ПРЕДЛОЖЕНИЕ

за изпълнение на обществената поръчка
за обособена позиция 2

ДО: „ЧЕЗ РАЗПРЕДЕЛЕНИЕ БЪЛГАРИЯ" АД,

ОТ: ...."КОНТРАГЕНТ 35 ЕООД".....
(участник)
адрес: гр.Стара Загора ,ул."Войвода Стойно Черногорски" № 23
тел.: 042/ 600 131 ; факс: 042/ 600 129; e-mail: office@contragent.com.
Единен идентификационен код: 833055130,
Представлявано от Станчо Иванов Пантов – Управител (*длъжност*)
Лице за контакти: Станчо Иванов Пантов, тел.: 042/ 600 131 ; факс: 042/ 600 129; e-mail: office@contragent.com.

УВАЖАЕМИ ГОСПОЖИ И ГОСПОДА,

Предоставяме на Вашето внимание предложението ни за изпълнение на обществена поръчка с **реф.№ PPD 16-094** и предмет: **„Доставка на разединители", Обособена позиция 2.**
1. Запознат съм и приемам изискванията на Възложителя, като представям техническите спецификации от раздел II на документацията с попълнени всички изисквани стойности за всички позиции от стоката по предмета на поръчката.
2.Представям всички изисквани данни и документи, посочени в Приложение 2 от настоящото техническо предложение. Запознат съм с изискването, че представените документи трябва да бъдат на български език или с превод на български език, придружени с оригиналните документи, с изключение на каталозите и протоколите от типови изпитания /в случай, че се изискват такива/ за материалите, които могат да се представят и само на английски език.
3. Запознат съм, че представените от нас технически документи са доказателство за декларираните от мен технически данни и параметри в техническите спецификации на стоката.
4. Потвърждавам, че представяните от нас стоки, описани в Техническото ни предложение, ще отговарят на посочените от възложителя стандарти или на еквивалентни. В случай, че даден материал отговаря на стандарт, еквивалентен на посочения се задължаваме да го отразим в отделен документ и да представим доказателства за еквивалентността на двата стандарта.
5. Предлагам гаранционен срок за предлаганите стоки - **24 (двадесет и четири)** месеца / *не по-малко от 24 месеца*/, от датата на приемо – предавателен протокол за получаване на стоката от Възложителя.
6. Приемам количества със срокове за доставка на стоката и опаковка, съгласно Приложение 3 и Приложение 4 към настоящото Техническо предложение.

Приложения:

1. *Технически изисквания и спецификации за изпълнение на поръчката – раздел IV от документацията за участие – попълнени на съответните места;*
2. *Изисквани документи от Технически изисквания и спецификации;*
3. *Срокове за доставка;*
4. *Опаковка.*

Дата: **26.01.2017г.**

ПОДПИС и ПЕЧАТ:

Станчо Пантов
(име и фамилия)

Управител
(длъжност на представляващия участника)

ТЕХНИЧЕСКИ СПЕЦИФИКАЦИИ И ИЗИСКВАНИЯ НА ВЪЗЛОЖИТЕЛЯ ЗА ИЗПЪЛНЕНИЕ НА ПОРЪЧКАТА
ОБОСОБЕНА ПОЗИЦИЯ 2

Наименование на материала: Вертикален предпазител-разединител НН 400 А, с триполюсно управление

Съкратено наименование на материала: ВПР НН, 400 А, 3-полюсно управление

Област: Н – Трансформаторни постове

Категория: 16 - Предпазители, основи за предпазители и предпазител-разединители

Мерна единица: Брой

Аварийни запаси: Да

Характеристика на материала:

Триполюсен предпазител-разединител с вертикална конструкция, с обявен работен ток 400 А, с общо управление на полюсите, за директен монтаж върху събирателни шини с междуосово разстояние 185 mm, за високомощни предпазители със стопяема вложка НН, система А (NH система), с характеристика gG, размер 2, съответстващи на БДС EN 60269-1 и БДС HD 60269-2.

Използване:

Вертикалният предпазител-разединител е предназначен за включване, изключване, разединяване и защита на кабелни линии НН.

Съответствие на предлаганото изпълнение с нормативно-техническите документи:

Триполюсният вертикален предпазител-разединител за 400 А, с общо управление на полюсите трябва да отговаря на приложимите български и международни стандарти или еквиваленти и на техните валидни изменения и поправки:

- БДС EN 60947-1:2007 „Комутационни апарати за ниско напрежение. Част 1: Общи правила (IEC 60947-1:2007)"; и
- БДС EN 60947-3:2009 „Комутационни апарати за ниско напрежение. Част 3: Товарови прекъсвачи, разединители, товарови прекъсвач-разединители и апарати комбинирани със стопяеми предпазители (IEC 60947-3:2008)";
- БДС EN 60269-1:2007 „Стопяеми предпазители за ниско напрежение. Част 1: Общи изисквания (IEC 60269-1:2006)";
- БДС HD 60269-2:2013 „Стопяеми предпазители за ниско напрежение. Част 2: Допълнителни изисквания за стопяеми предпазители, предназначени за използване от квалифицирани лица (стопяеми предпазители предимно за промишлено приложение). Примери за стандартизирани системи за стопяеми предпазители от А до К (IEC 60269-2:2013, с промени)";
- БДС EN 60664-1:2007 „Координация на изолацията за съоръжения в електроразпределителни мрежи за ниско напрежение. Част 1: Правила, изисквания и изпитвания (IEC 60664-1:2007)";
- БДС EN 60529+A1:2004 „Степени на защита, осигурени от обвивката (IP код) (IEC 60529:1989 + A1:1999)"

и

да бъде оценен положително по реда и при условията на Наредбата за съществените изисквания и оценяване на съответствието на електрически съоръжения, предназначени за използване в определени граници на напрежението, приета с ПМС № 182 от 6.07.2001 г., обн., ДВ, бр. 62 от 13.07.2001 г. .....

Изисквания към документацията и изпитванията

№ по ред	Документ	Приложение № или текст
1.	Точно означение на типа, производителя и страната на производство (произход) и последно издание на каталога на производителя	Тип E3 NH-LA-LEI 2 3P V2N EVU Производител EFEN GmbH Германия Каталог Приложение No 1
2.	Техническо описание и чертежи с нанесени на тях размери	Приложение No 2

№ по ред	Документ	Приложение № или текст
3.	Протоколи от типови изпитвания на английски или български език, проведени от независима изпитвателна лаборатория – заверени копия, с приложен списък на отделните изпитвания на български език	**Приложение No 3**
4.	Сертификат/акредитация на независимата изпитвателна лаборатория, провела типовите изпитвания по т. 3 – заверено копие	**Приложение No 4**
5.	ЕО декларация за съответствие	**Приложение No 5**
6.	Декларация за съответствие на предлаганото изпълнение с изискванията на техническата спецификация на този стандарт за материал, вкл. на параграфи „Характеристика на материала" и „Съответствие на предложеното изпълнение с нормативно-техническите документи" по-горе	**Приложение No 6**
7.	Инструкции за транспортиране, складиране, монтиране, поддържане и експлоатация	**Приложение No 7**

Забележка: Всички оригинални документи трябва да бъдат на български език или с превод на български език. (Каталозите и протоколите от проверките и изпитванията могат да бъдат и само на английски.)

Технически данни:

1. Характеристики на работната среда

№ по ред	Наименование	Стойност
1.1	Място на монтиране	На закрито
1.2	Максимална температура на въздуха в околната среда	+ 40°C
1.3	Минимална температура на въздуха в околната среда	Минус 5°C
1.4	Максимална средна температура на въздуха в околната среда за период от 24 ч.	+ 35°C
1.5	Относителна влажност (при 20°C)	До 90 %
1.6	Степен на замърсяване	3
1.7	Надморска височина	До 2000 m

2. Параметри на електроразпределителната мрежата НН

№ по ред	Наименование	Стойност
2.1	Номинално напрежение	400 / 230 V
2.2	Максимално напрежение	440 / 253 V
2.3	Номинална честота	50 Hz
2.4	Електроразпределителна мрежа	4 проводна мрежа (L_1, L_2, L_3, PEN)
2.5	Схема на електроразпределителната мрежа	TN-C

3. Технически параметри и други данни

№ по ред	Технически характеристики	Изискване	Гарантирано предложение

№ по ред	Технически характеристики	Изискване	Гарантирано предложение
3.1	Обявено работно напрежение, U_e	min 690 (500) V AC	**690 V**
3.2	Брой на полюсите	3	**3**
3.3	Обявена честота	50 Hz	**50 Hz**
3.4	Категория по пренапрежение съгласно БДС EN 60664-1	IV	**IV**
3.5	Обявено издържано импулсно напрежение, U_{imp}	8 kV	**12 kV**
3.6	Обявено напрежение на изолацията, U_i AC	min 800 V	**1000 V**
3.7	Обявен работен ток, I_e	400 A	**400 A**
3.8	Термичен ток със стопяема вложка, I_{th}	400 A	**400 A**
3.9	Условен ток на късо съединение (ефективна стойност) при 400 V AC	min 50 kA	**50 kA**
3.10	Размер на стопяемите вложки (съгласно серията БДС EN 60269)	2	**2**
3.11	Максимален обявен ток на стопяемите вложки, I_n	400 A	**400 A**
3.12	Категория на приложение (при 400 V AC)	AC 22 B или по висока	**AC 22 B**
3.13	Механична износоустойчивост, брой на комутационните цикли	min 800	**800**
3.14	Електрическа износоустойчивост, брой на комутационните цикли	min 200	**200**
3.15	Управление	Триполюсно (едновременно включване и изключване на трите полюса)	**Триполюсно (едновременно включване и изключване на трите полюса)**
3.16	Основни размери:	-	-
3.16a	широчина	max 100 mm	**100 mm**
3.16b	височина (измерена от края на клемните съединения)	680 mm - информативно	**680 mm - информативно**
3.17	Разстояние между осите на събирателните шини	185 mm	**185 mm**
3.18	Присъединяване към събирателните шини	Клеми за свързване без необходимост от пробиване на шините	**Клеми за свързване без необходимост от пробиване на шините**
3.19	Степен на защита срещу проникване на твърди тела и вода във вътрешността и допир до части под напрежение от лицевата страна съгласно БДС EN 60529+A1 или еквивалентно.	min IP20	**IP20**
3.20	Клемови съединения за токопроводимите жила на присъединяваните кабелни линии	Вертикалните предпазител-разединители трябва да бъдат съоръжени с V-съединителна арматура за свързване на токопроводими кабелни жила в диапазона най-малко от 35 mm^2 те до 185 mm^2 sm.	**Вертикалните предпазител-разединители ще бъдат съоръжени с V-съединителна арматура за свързване на токопроводими кабелни жила в диапазона от 35 mm^2 ге до 185 mm^2 sm.**

№ по ред	Технически характеристики	Изискване	Гарантирано предложение
3.21	Маркировка	Вертикалните предпазител-разединители трябва да бъдат маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3 или еквивалентно и инициалите „CE".	**Вертикалните предпазител-разединители ще бъдат маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3 или еквивалентно и инициалите „CE".**
3.22	Тегло, kg	Да се посочи	**4.900**

Наименование на материала: Вертикален предпазител-разединител НН 630 А, с триполюсно управление

Съкратено наименование на материала: ВПР НН, 630 А, 3-полюсно управление

Област: Н – Трансформаторни постове

Категория: 16 - Предпазители, основи за предпазители и предпазител - разединители

Мерна единица: Брой

Аварийни запаси: Да

Характеристика на материала:

Триполюсен предпазител-разединител с вертикална конструкция, с обявен работен ток 630 А, с общо управление на полюсите, за директен монтаж върху събирателни шини с междуосово разстояние 185 mm, за високомощни предпазители със стопяема вложка НН, система А (NH система), с характеристика gG, размер 3, съответстващи на БДС EN 60269-1 и БДС HD 60269-2.

Използване:

Вертикалният предпазител-разединител е предназначен за включване, изключване, разединяване и защита на кабелни линии НН.

Съответствие на предлаганото изпълнение с нормативно-техническите документи:

Триполюсният вертикален предпазител-разединител за 630 А, с общо управление на полюсите трябва да отговаря най-малко на посочените по-долу стандарти или еквиваленти и на техните валидни изменения и допълнения:

- БДС EN 60947-1:2007 „Комутационни апарати за ниско напрежение. Част 1: Общи правила (IEC 60947-1:2007)"; и
- БДС EN 60947-3:2009 „Комутационни апарати за ниско напрежение. Част 3: Товарови прекъсвачи, разединители, товарови прекъсвач-разединители и апарати комбинирани със стопяеми предпазители (IEC 60947-3:2008)";
- БДС EN 60269-1:2007 „Стопяеми предпазители за ниско напрежение. Част 1: Общи изисквания (IEC 60269-1:2006)";
- БДС HD 60269-2:2013 „Стопяеми предпазители за ниско напрежение. Част 2: Допълнителни изисквания за стопяеми предпазители, предназначени за използване от квалифицирани лица (стопяеми предпазители предимно за промишлено приложение). Примери за стандартизирани системи за стопяеми предпазители от А до К (IEC 60269-2:2013, с промени)";
- БДС EN 60664-1:2007 „Координация на изолацията за съоръжения в електроразпределителни мрежи за ниско напрежение. Част 1: Правила, изисквания и изпитвания (IEC 60664-1:2007)";
- БДС EN 60529+A1:2004 „Степени на защита, осигурени от обвивката (IP код) (IEC 60529:1989 + A1:1999)"

и

да бъде оценен положително по реда и при условията на Наредбата за съществените изисквания и оценяване на съответствието на електрически съоръжения, предназначени за

използване в определени граници на напрежението, приета с ПМС № 182 от 6.07.2001 г., обн., ДВ, бр. 62 от 13.07.2001 г. .....

Изисквания към документацията и изпитванията

№ по ред	Документ	Приложение № или текст
1.	Точно означение на типа, производителя и страната на производство (произход) и последно издание на каталога на производителя	Тип E³ NH-LA-LEI 3 3P V2N Производител: **EFEN GmbH Германия** Каталог **Приложение No 1**
2.	Техническо описание и чертежи с нанесени на тях размери	**Приложение No 2**
3.	Протоколи от типови изпитвания на английски или български език, проведени от независима изпитвателна лаборатория – заверени копия, с приложен списък на отделните изпитвания на български език	**Приложение No 8**
4.	Сертификат/акредитация на независимата изпитвателна лаборатория, провела типовите изпитвания по т. 3 – заверено копие	**Приложение No 4**
5.	ЕО декларация за съответствие	**Приложение No 9**
6.	Декларация за съответствие на предлаганото изпълнение с изискванията на техническата спецификация на този стандарт за материал, вкл. на параграфи „Характеристика на материала" и „Съответствие на предложеното изпълнение с нормативно-техническите документи" по-горе	**Приложение No 6**

Забележка: Всички оригинални документи трябва да бъдат на български език или с превод на български език. (Каталозите и протоколите от проверките и изпитванията могат да бъдат и само на английски.)

Технически данни:

3. Характеристики на работната среда

№ по ред	Наименование	Стойност
1.1	Място на монтиране	На закрито
1.2	Максимална температура на въздуха в околната среда	+ 40°C
1.3	Минимална температура на въздуха в околната среда	Минус 5°C
1.4	Максимална средна температура на въздуха в околната среда за период от 24 ч.	+ 35°C
1.5	Относителна влажност (при 20°C)	До 90 %
1.6	Степен на замърсяване	3
1.7	Надморска височина	До 2000 m

4. Параметри на електроразпределителната мрежата НН

№ по ред	Наименование	Стойност
2.1	Номинално напрежение	400 / 230 V
2.2	Максимално напрежение	440 / 253 V
2.3	Номинална честота	50 Hz
2.4	Електроразпределителна мрежа	4 проводна мрежа (L_1, L_2, L_3, PEN)
2.5	Схема на електроразпределителната мрежа	TN-C

3. Технически параметри и други данни

№ по ред	Технически характеристики	Изискване	Гарантирано предложение
3.1	Обявено работно напрежение, U_e	690 (500) V AC	**690 V AC**
3.2	Брой на полюсите	3	**3**
3.3	Обявена честота	50 Hz	**50 Hz**
3.4	Категория по пренапрежение съгласно БДС EN 60664-1	IV	**IV**
3.5	Обявено издържано импулсно напрежение, U_{imp}	8 kV	**12 kV**
3.6	Обявено напрежение на изолацията, U_i AC	min 800 V	**1000 V**
3.7	Обявен работен ток, I_e	630 A	**630 A**
3.8	Термичен ток със стопяема вложка, I_{th}	630 A	**630 A**
3.9	Условен ток на късо съединение (ефективна стойност) при 400 V AC	min 50 kA	**50 kA**
3.10	Размер на стопяемите вложки (съгласно серията БДС EN(HD) 60269)	3	**3**
3.11	Максимален обявен ток на стопяемите вложки, I_n	630 A	**630 A**
3.12	Категория на приложение (при 400 V AC)	AC 22 B или по-висока	**AC 22 B**
3.13	Механична износоустойчивост, брой на комутационните цикли	min 800	**800**
3.14	Електрическа износоустойчивост, брой на комутационните цикли	min 200	**200**
3.15	Управление	Триполюсно (едновременно включване и изключване на трите полюса)	**Триполюсно (едновременно включване и изключване на трите полюса)**
3.16	Основни размери:	-	-
3.16a	широчина	max 100 mm	**100 mm**
3.16b	височина (измерена от края на клемните съединения)	680 mm - информативно	**680 mm**
3.17	Разстояние между осите на събирателните шини	185 mm	**185 mm**
3.18	Присъединяване към събирателните шини	Клеми за свързване без необходимост от пробиване на шините	**Клеми за свързване без необходимост от пробиване на шините**
3.19	Степен на защита срещу проникване на твърди тела и вода във вътрешността и допир до части под напрежение от лицевата страна съгласно БДС EN 60529+A1 или еквивалентно.	min IP20	**IP20**
3.20	Клемови съединения за токопроводимите жила на присъединяваните кабелни линии	Вертикалните предпазител-разединители трябва да бъдат съоръжени с V-съединителна арматура за свързване на токопроводими кабелни жила в диапазона най-малко от 35 mm^2 ге до 185 mm^2 sm.	**Вертикалните предпазител-разединители ще бъдат съоръжени с V-съединителна арматура за свързване на токопроводими кабелни жила в диапазона от 35 mm^2 ге до 185 mm^2 sm.**

№ по ред	Технически характеристики	Изискване	Гарантирано предложение
3.21	Маркировка	Вертикалните предпазител-разединители трябва да бъде маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3или еквивалентно и инициалите „CE".	**Вертикалните предпазител-разединители ще бъдат маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3или еквивалентно и инициалите „CE".**
3.22	Тегло, kg	Да се посочи	**5,436**

Наименование на материала: Вертикален разединител НН 1000 А, с триполюсно управление

Съкратено наименование на материала: ВР НН, 1000 А, 3-полюсно управление

Област: Н – Трансформаторни постове **Категория:** 16 - Предпазители, основи за предпазители и предпазител-разединители

Мерна единица: Брой **Аварийни запаси:** Да

Характеристика на материала:

Триполюсен разединител с вертикална конструкция, с обявен работен ток 1000 А, с общо управление на полюсите, за директен монтаж върху събирателни шини с междуосово разстояние 185 mm, съоръжен с твърди връзки (тоководещи шини), система А (NH система), размер 3, съответстващи на БДС EN 60269-1и БДС HD 60269-2.

Използване:

Вертикалният предпазител-разединител е предназначен за свързване на шинните системи на разпределителните табла посредством едножилни кабели НН.

Съответствие на предлаганото изпълнение с нормативно-техническите документи:

Триполюсният вертикален разединител за 1000 А, с общо управление на полюсите трябва да отговаря най-малко на посочените по-долу стандарти или еквиваленти и на техните валидни изменения и допълнения:

- БДС EN 60947-1:2007 „Комутационни апарати за ниско напрежение. Част 1: Общи правила (IEC 60947-1:2007)"; и
- БДС EN 60947-3:2009 „Комутационни апарати за ниско напрежение. Част 3: Товарови прекъсвачи, разединители, товарови прекъсвач-разединители и апарати комбинирани със стопяеми предпазители (IEC 60947-3:2008)";
- БДС EN 60269-1:2007 „Стопяеми предпазители за ниско напрежение. Част 1: Общи изисквания (IEC 60269-1:2006)";
- БДС HD 60269-2:2013 „Стопяеми предпазители за ниско напрежение. Част 2: Допълнителни изисквания за стопяеми предпазители, предназначени за използване от квалифицирани лица (стопяеми предпазители предимно за промишлено приложение). Примери за стандартизирани системи за стопяеми предпазители от А до К (IEC 60269-2:2013, с промени)";
- БДС EN 60664-1:2007 „Координация на изолацията за съоръжения в електроразпределителни мрежи за ниско напрежение. Част 1: Правила, изисквания и изпитвания (IEC 60664-1:2007)";
- БДС EN 60529+A1:2004 „Степени на защита, осигурени от обвивката (IP код) (IEC 60529:1989 + A1:1999)"

И

да бъде оценен положително по реда и при условията на Наредбата за съществените изисквания и оценяване на съответствието на електрически съоръжения, предназначени за

използване в определени граници на напрежението, приета с ПМС № 182 от 6.07.2001 г., обн., ДВ, бр. 62 от 13.07.2001 г. .....

Изисквания към документацията и изпитванията

№ по ред	Документ	Приложение № или текст
1.	Точно означение на типа, производителя и страната на производство (произход) и последно издание на каталога на производителя	Тип E3 NH-LA-TR-LEI 1000A 3P U6 Производител: **EFEN GmbH Германия** Каталог **Приложение No 1**
2.	Техническо описание и чертежи с нанесени на тях размери	**Приложение No 10**
3.	Протоколи от типови изпитвания на английски или български език, проведени от независима изпитвателна лаборатория – заверени копия, с приложен списък на отделните изпитвания на български език	**Приложение No 11**
4.	Сертификат/акредитация на независимата изпитвателна лаборатория, провела типовите изпитвания по т. 3 – заверено копие	**Приложение No 4**
5.	ЕО декларация за съответствие	**Приложение No 12**
6.	Декларация за съответствие на предлаганото изпълнение с изискванията на техническата спецификация на този стандарт за материал, вкл. на параграфи „Характеристика на материала" и „Съответствие на предложеното изпълнение с нормативно-техническите документи" по-горе	**Приложение No 6**

Забележка: Всички оригинални документи трябва да бъдат на български език или с превод на български език. (Каталозите и протоколите от проверките и изпитванията могат да бъдат и само на английски.)

Технически данни:

5. Характеристики на работната среда

№ по ред	Наименование	Стойност
1.1	Място на монтиране	На закрито
1.2	Максимална температура на въздуха в околната среда	+ 40°C
1.3	Минимална температура на въздуха в околната среда	Минус 5°C
1.4	Максимална средна температура на въздуха в околната среда за период от 24 ч.	+ 35°C
1.5	Относителна влажност (при 20°C)	До 90 %
1.6	Степен на замърсяване	3
1.7	Надморска височина	До 2000 m

6. Параметри на електроразпределителната мрежата НН

№ по ред	Наименование	Стойност
2.1	Номинално напрежение	400 / 230 V
2.2	Максимално напрежение	440 / 253 V
2.3	Номинална честота	50 Hz

2.4	Електроразпределителна мрежа	4 проводна мрежа (L_1, L_2, L_3, PEN)
2.5	Схема на електроразпределителната мрежа	TN-C

3. Технически параметри и други данни

№ по ред	Технически характеристики	Изискване	Гарантирано предложение
3.1	Обявено работно напрежение, U_e	690 (500) V AC	**690 V AC**
3.2	Брой на полюсите	3	**3**
3.3	Обявена честота	50 Hz	**50 Hz**
3.4	Категория по пренапрежение съгласно БДС EN 60664-1	IV	**IV**
3.5	Обявено издържано импулсно напрежение, U_{imp}	8 kV	**12 kV**
3.6	Обявено напрежение на изолацията, U_i AC	min 800 V	**1000 V**
3.7	Обявен работен ток, I_e	1000 A	**1000 A**
3.8	Термичен ток със стопяема вложка, I_{th}	1000 A	**1000 A**
3.9	Условен ток на късо съединение (ефективна стойност) при 400 V AC	min 50 kA	**50 kA**
3.10	Размер на твърдите връзки/тоководещи шини (съгласно серията БДС EN 60269)	3	**3**
3.11	Максимален обявен ток на стопяемите вложки, I_n	1000 A	**1000 A**
3.12	Категория на приложение (при 400 V AC)	AC 20 B или по-висока	**AC 20 B**
3.13	Механична износоустойчивост, брой на комутационните цикли	min 500	**800**
3.14	Електрическа износоустойчивост, брой на комутационните цикли	min 100	**200**
3.15	Управление	Триполюсно (едновременно включване и изключване на трите полюса)	**Триполюсно (едновременно включване и изключване на трите полюса)**
3.16	Основни размери:	-	**-**
3.16a	широчина	max 100 mm	**100 mm**
3.16b	височина (измерена от края на клемните съединения)	680 mm - информативно	**680 mm**
3.17	Разстояние между осите на събирателните шини	185 mm	**185 mm**
3.18	Присъединяване към събирателните шини	Клеми за свързване без необходимост от пробиване на шините	**Клеми за свързване без необходимост от пробиване на шините**
3.19	Степен на защита срещу проникване на твърди тела и вода във вътрешността и допир до части под напрежение от лицевата страна съгласно БДС EN 60529+A1или еквивалентно.	min IP20	**IP20**

№ по ред	Технически характеристики	Изискване	Гарантирано предложение
3.20	Клемови съединения за токопроводимите жила на присъединяваните кабелни линии	Вертикалните разединители трябва да бъдат съоръжени с V-съединителна арматура(винтова връзка) за свързване на токопроводими кабелни жила в диапазона най-малко от 185 mm^2 ге до 240 mm^2 sm.	**Вертикалните разединители ще бъдат съоръжени с винтови връзки за свързване на токопроводими кабелни жила в диапазона най-малко от 185 mm^2 ге до 240 mm^2 sm.**
3.21	Маркировка	Вертикалните разединители трябва да бъде маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3 или еквивалентно и инициалите „CE".	**Вертикалните разединители ще бъдат маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3или еквивалентно и инициалите „CE".**
3.22	Тегло, kg	Да се посочи	**7.600**

КОНТРАГЕНТ 35" ЕООД

Приложение №1

EFEN

Power distribution components

NH Fuse-Switches, vertical design and Fuse-Rails

As a specialist for safety interfaces, EFEN offers a proven assortment of NH Fuse-Switches, vertical-design and Fuse-Rails in various series with many options and versions for customer-oriented solutions.

ВЯРНО С ОРИГИНАЛА

System

The vertical-design NH fuse-switches of the E^3 series have been developed to meet all current and future needs of the modern power industry.

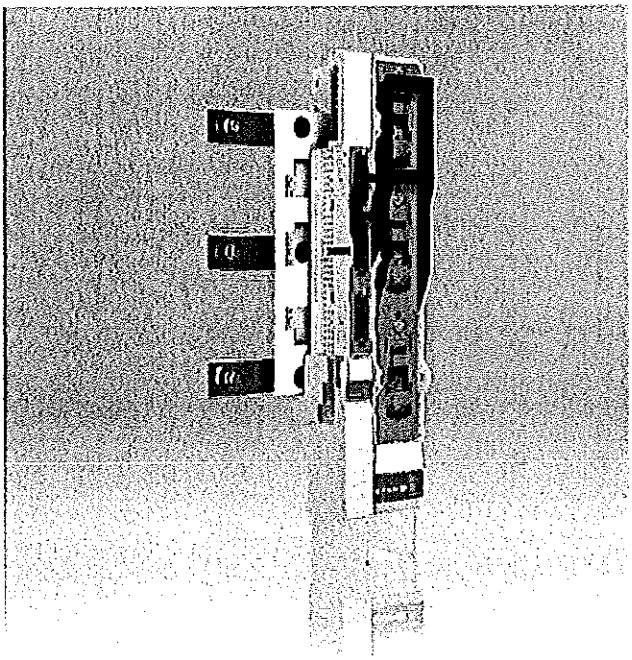
The series has been developed with a special focus on the responsible handling of energy as a resource. The ease of installation sets standards when installing and connecting. Excellent electric parameters such as 120 kA short-circuit resistance complement the product.

Features

All components are made of high-quality materials. Full range of accessories for monitoring and controlling provides the user with various options. They can be retrofitted at all times.

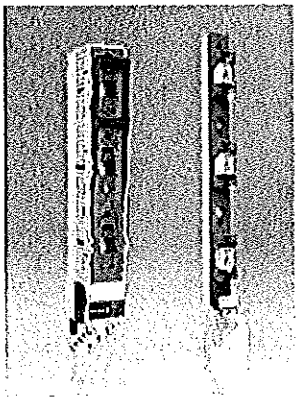
Mounting without drilling is equally possible at all times. There are various locking and park-position options to ensure safety.

-29-

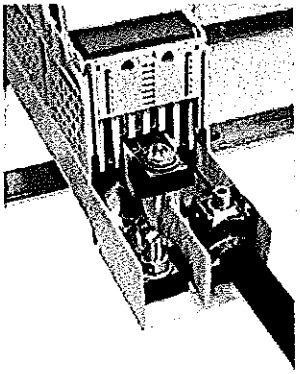


NH Fuse-Switches, vertical design and Fuse-Rails

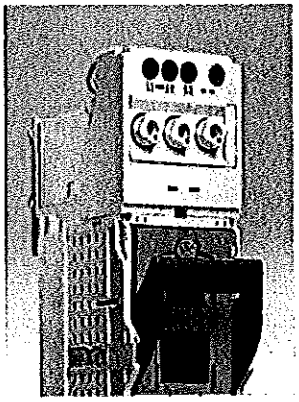
ϵ^3 NH Fuse-Switches, vertical-design and Fuse-Rails



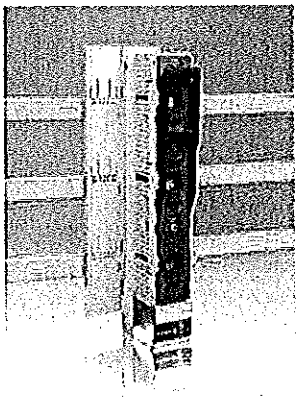
Multiple connection options



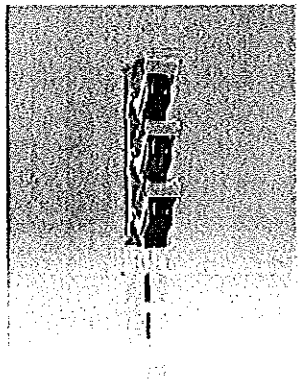
Multifunctional device carrier



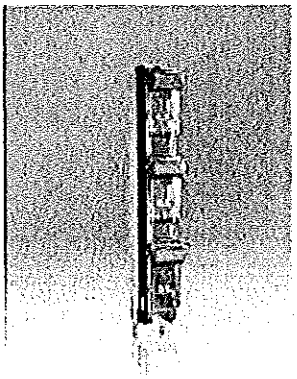
Touch protection system IP2X



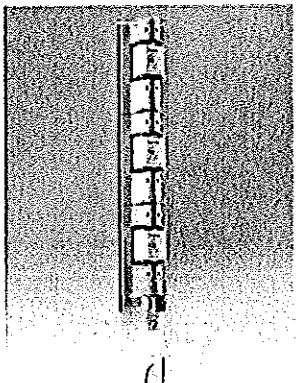
NH Fuse-Switch, vertical design 630 kVA



NH Fuse-Switch, vertical design, size 4a, 1-pole switching



NH Fuse-Rail EDURO Series



E³ NH Fuse-Switches, vertical design, 3-pole switching for 185 mm busbar systems

▶ Technical data, page 211

38064-0020

E³ NH Fuse-Switches, vertical design, size 00/185, 3-pole switching, 160 A, for 185 mm busbar mounting

Features:
- Direct mounting
- Variant with elevated feed bracket at 150 mm installation depth
- Variant for installation of PSR 203 current transformers

Designation	Size	Amps	PU	Product designation	Order no.
With multiple-use terminal (bolt M8), for hook-mounting	00/185	160	1	E³ NH-La-Lei 00/185 3P U5	38064-0020
With box clamp 95 mm², for hook-mounting	00/185	160	1	E³ NH-La-Lei 00/185 3P R5	38066-0020
V-terminal (not including V-clamps)	00/185	160	1	E³ NH-La-Lei 00/185 3P SWP V2	38065-0021
With multiple-use terminal (bolt M8), elevated feed bracket adjacent to size 1 – 3	00/185	160	1	E³ NH-LA-LEI 00/185 3P Eh5 U5	38064-0070
With box clamp 95 mm², with elevated feed bracket for direct mounting adjacent to size 1 – 3	00/185	160	1	E³ NH-LA-LEI 00/185 3P Eh5 R5	38066-0070
With multiple-use terminal (bolt M8), elevated feed bracket adjacent to size 1 – 3, ready for PSR 203 transformer installation	00/185	160	1	E³ NH-LA-LEI 00/185 3P WV EH5 U5	38064-0090
With box clamp 95 mm², with elevated feed bracket for direct mounting adjacent to size 1 – 3, ready for PSR 203 transformer installation	00/185	160	1	E³ NH-LA-LEI 00/185 3P WV EH5 R5	38066-0090

38016-0020

E³ NH Fuse-Switches, vertical design, size 1 to 3, 3-pole switching, for 185 mm busbar systems

Designation	Size	Amps	PU	Product designation	Order no.
With multiple-use terminal (bolt M12)	1	250	1	E³ NH-LA-LEI 1 3P U6	38016-0020
With multiple-use terminal (bolt M12)	2	400	1	E³ NH-LA-LEI 2 3P U6	38026-0020
With multiple-use terminal (bolt M12)	3	630	1	E³ NH-LA-LEI 3 3P U6	38036-0020
With V2N terminal (not including clamps)	1	250	1	E³ NH-LA-LEI 1 3P V2N	38015-0020
With V2N terminal (not including clamps)	2	400	1	E³ NH-LA-LEI 2 3P V2N	38025-0020
With V2N terminal (not including clamps)	3	630	1	E³ NH-LA-LEI 3 3P V2N	38035-0020

38070-0730

E³ NH Fuse-Switches, vertical design, size 3, 3-pole switching, for 185 mm busbar systems, 910 A

Designation	Size	Amps	PU	Product designation	Order no.
Screw terminal 3 x 185 mm²	3	910	1	E³ NH-La-Lei 3 910A 3P 3x185mm²	38070-0670
Screw terminal M12 rear, horizontal	3	910	1	E³ NH-La-Lei 3 910A 3Phh L6	38070-0730
Special screw terminal M16 and M12	3	910	1	E³ NH-La-Lei 3 910A 3PHg L8L6	38070-0770
Screw terminal M12	3	910	1	E³ NH-La-Lei 3 910A 3P S6S6	38070-0790

38010-0160

E³ NH Fuse-Switches, vertical design, size 1 – 3, 3-pole switching, as coupling unit for connecting 2 busbar systems

Designation	Size	Amps	PU	Product designation	Order no.
Size 1, 3-pole switching	1	250	1	E³ NH-LA-LEI 1 3P KI	38010-0160
Size 2, 3-pole switching	2	400	1	E³ NH-LA-LEI 2 3P KI	38020-0160
Size 3, 3-pole switching	3	630	1	E³ NH-LA-LEI 3 3P KI	38030-0160

E³ NH Fuse-Switches, vertical design, 3-pole switching for 185 mm busbar systems

▶ Technical data, page 230

38036-0180

E³-NH Fuse-Switch, vertical design, size 3, 3-pole switching for parallel operation of 2 NH Fuse-Switches

Features:
- Terminal: four M12 bolts
- For other types please inquire
- Precise split of the current flow by pre-assembled terminals

Designation	Size	Amps	PU	Product designation	Order no.
E³-NH fuse-switch, vertical design, for parallel operation of 2 NH fuse-switches (twinning kit), terminal M12	3	1260	1	E³ NH-LA-LEI 3 3P Zw U6	**38036-0180**

38036-0080

E³ NH Fuse-Switches, vertical design, size 3, 3-pole switching with fixed 1000 A solid-links as feed switch

Features:
- Top or bottom terminal
- Two M12 screw terminals

Designation	Size	Amps	PU	Product designation	Order no.
Feed switch 1000 A with fixed solid-link	3	1000	1	E³ NH-LA-TR-LEI 1000A 3P U6	**38036-0080**

38030-0220

E³ NH Fuse-Switches, vertical design, for connecting 2 busbar systems, 3-pole, with fixed 1000 A solid-link

Designation	Size	Amps	PU	Product designation	Order no.
Incoming switch with integrated solid-link, for busbar isolation, internal terminal	3	1000	1	E³ NH-LA-TR-LEI 1000A 3P KL	**38030-0220**
Incoming switch with integrated solid-link, for busbar isolation, terminal on the right-hand side, for current transformer installation	3	1000	1	E³ NH-LA-TR-LEI 1000A 3P KL2	**38030-0240**

Internal terminal

Lateral terminal

E³ NH Fuse-Switches, vertical design, 3-pole switching for 185 mm busbar systems

▶ Technical data, page 236

38034-0300

E³ NH Fuse-Switches, vertical design, size 3, 3-pole switching, with fixed 1000-A solid-link for 2000 A

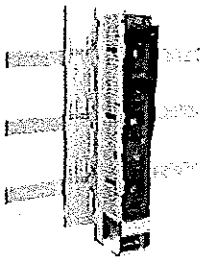
Designation	Size	Amps	PU	Product designation	Order no.
Multiple-use terminal (bolt M12)	3	2000	1	E³ NH-LA-TR-LEI 2x1000A 3P Zw U6	38036-0300
Coupling unit, supported on left-hand side	3	2000	1	E³ NH-LA-TR-LEI 2000A 3P KL2	38030-0350

38016-0460

E³ NH Fuse-Switches, vertical design, size 1 to 3, 3-pole switching, for 185 mm busbar systems, high performance

Features:
- 20 % less power dissipation
- 120 kA short-circuit resistance
- Excellent economic efficiency

Designation	Size	Amps	PU	Product designation	Order no.
With multiple-use terminal (bolt M12)	1	250	1	E³ NH-LA-LEI 1 3P HP U6	38016-0460
With multiple-use terminal (bolt M12)	2	400	1	E³ NH-LA-LEI 2 3P HP U6	38026-0460
With multiple-use terminal (bolt M12)	3	630	1	E³ NH-LA-LEI 3 3P HP U6	38036-0460



Example for IP2X application

E³ NH Fuse-Switches, vertical design, for IP2X applications

Designation	Size	Amps	PU	Product designation	Order no.
E³ NH-LA-LEI 00/185 1P Bh IP20 U5	00/185	160	1	E³ NH-LA-LEI 00/185 1P Bh IP20 U5	38064-0500
E³ NH-LA-Lei 00/185 3P Bh IP20 U5	00/185	160	1	E³ NH-LA-Lei 00/185 3P Bh IP20 U5	38064-0520
E³ NH-LA-LEI 1 3P IP20 U6	1	250	1	E³ NH-LA-LEI 1 3P IP20 U6	38016-0520
E³ NH-LA-LEI 2 3P IP20 U6	2	400	1	E³ NH-LA-LEI 2 3P IP20 U6	38026-0520
E³ NH-LA-LEI 3 3P IP20 U6	3	630	1	E³ NH-LA-LEI 3 3P IP20 U6	38036-0520
Busbar cover IP20	00-3		1	Sammelschienenabdeckung IP20	36329-0010
Feeding clamp IP2X V2MD 240sm / 300rm	00-3		3	Einspeiseklemme IP2X V2MD 240sm/300rm	36846-0040

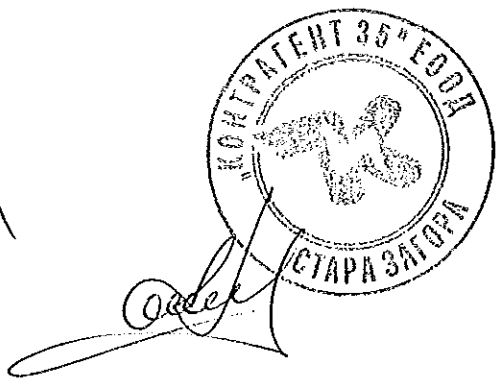
NH Fuse-Switches, vertical design, 3-pole switching, for 185 mm busbar systems

▶ Technical data, page 238

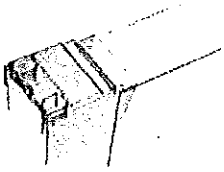
38300-1275

NH Fuse-Switches, vertical design, size 3, 3-pole switching, 630 kVA, NTSL series

Designation	Size	Amps	PU	Product designation	Order no.
Screw terminal M12, bottom terminal, 3-pole switching	3	630kVA	1	NH-LA-LEI 3 3PU 630KVA VE SM ST GG L6	**38300-1275**
Screw terminal M12, top terminal, 3-pole switching	3	630kVA	1	NH-LA-LEI 3 3PO 630KVA VE SM ST GG L6	**38350-1275**
Special terminal for 60 mm busbars, top terminal, 3-pole switching	3	630kVA	1	NH-LA-LEI 3 3PO 630KVA SV L8 (L6)	**38350-1595**
Screw terminal M12, rear terminal, 3-pole switching	3	630kVA	1	NH-LA-LEI 3 3PH 630KVA VE GG S6	**38374-1495**



Accessories
NH Fuse-Switches, vertical design, size 1 – 3

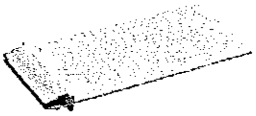


36435-0010

Terminal cover, long

Features:
- Terminal cover 36444-0010
- For optimal protection against accidental contact

Designation	Size	PU	Product designation	Order no.
E³ terminal cover, extra long	1-3	1	E³ Anschlussraumabdeckung extra lang	**36435-0010**



36381-0010

Partition wall

Features:
- Partition wall for terminal space
- For long cable lugs
- 95 mm long

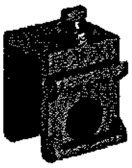
Designation	Size	PU	Product designation	Order no.
Partition wall for terminal space when using long lugs, 95 mm long	1-3	1	Trennwand E³ Gr.1-3	**36381-0010**

36438-0010

Terminal cover, short

Features:
- For use with V-clamps and box clamps

Designation	Size	PU	Product designation	Order no.
Terminal cover, short, for V-clamps or steel box clamps	1-3	1	Anschlussraumabdeckung E³ Gr.1-3 kurz	**36438-0010**



36331-0010

Angle bracket

Features:
- For top or side mounting with size 00 – 3
- 5 mm grid, installation depth 120 – 150 mm
- Clips onto universal sideframe
- For bolting the protection cover- with thread M6 or hole for PT screws Ø 3.5 mm

Designation	Size	PU	Product designation	Order no.
Lateral angle bracket for mounting universal sideframes	00-3	4	ABSTÜTZW. SET=4ST. E³ GR.00-3	**36331-0010**

36390-0010

Sideframe, universal

Features:
- Clips onto angle bracket, length 850 mm
- Fits on all sides

Designation	PU	Product designation	Order no.
Sideframe, universal, for E³ NH fuse-switches, vertical design, length 850 mm	1	Blendstreifen E³ 850mm	**36390-0010**

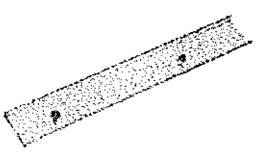
ВЯРНО С ОРИГИНАЛА

36727-0010

Lateral cover

Features:
- Lateral cover for busbars
- Fits E³-NH fuse-switch, vertical design

Designation	Size	PU	Product designation	Order no.
Lateral safety cover, m ounted on device	00/185 3	1	Seitlicher Berührungsschutz E³ 00/185- 3	**36727-0010**

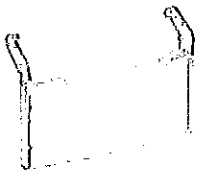


36409-0010

Blanking cover

Features:
- Covers busbars

Designation	Size	PU	Product designation	Order no.
Cover mounts directly onto busbar	1-3	1	E³ Reserveplatzabdeckung	**36409-0010**
Cover with spacer bolts for elevated mounting	1-3	1	E³ Reserveplatzabdeckung m. Bolzen	**36410-0010**

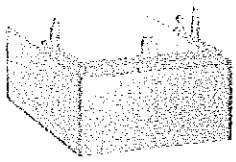


36356-0010

Identification holder

Features:
- Provides space for additional information
- Can also be used as top cover

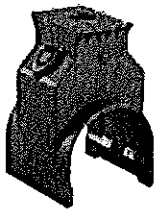
Designation	Size	PU	Product designation	Order no.
Identification holder, clips to top or bottom	1-3	1	Bez.-schildträger kompl. kurz Gr.1 EFEN	36356-0010
Identification holder, compl., short, size 2, EFEN		1	Bez.-schildträger kompl. kurz Gr.2 EFEN	36356-0020
Identification holder, compl., short, size 3, EFEN		1	Bez.-schildträger kompl. kurz Gr.3 EFEN	36356-0030
Identification holder E³, short, neutral		2	Beschriftungsträger E³ kurz neutral	36405-0010



31946-0100

Extension for terminal cover for EKDEO series

Designation	PU	Product designation	Order no.
Extension for terminal cover for EKDEO series	1	ARA-VERLÄNGERUNG LA-LEI 1/2 EVU	31946-0100



31607-0100

Connecting material

Designation	PU	Product designation	Order no.
V2N insulating cap	1	ISOLIERKAPPE V2N „lange Variante"	31516-0100
Insulating cap V2 MD	1	ISOLIERKAPPE V2 MD	31607-0100
1 SATZ V-KLEMME 35-70 SM MIT LASCHE	3	1 SATZ V-KLEMME 35-70 SM MIT LASCHE	36025-0010
V-clamp 35 – 25 mm² sm, 70 – 240 mm² se (1 kit = 3 pieces)	3	1 SATZ V-KLEMME 35-185 SM V2	36025-0060
1 kit (3 pieces) of claw clamps M12 for 50 – 150 mm² se	3	ANSCHLUSSKLEMMEN 50-150 SE FÜR S6 1 SATZ	36063-0010

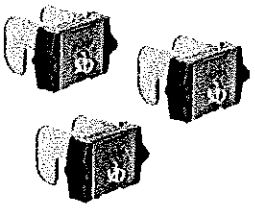
Accessories
NH Fuse-Switches, vertical design, size 1 – 3

36298-0010

Aluminum V-clamp

Features:
- Kit = 3 pieces

Designation	PU	Product designation	Order no.
V2MD clamp for 25 – 300 mm² se	3	1 Satz Klemmen V2 MD 240sm/300rm	**36298-0010**

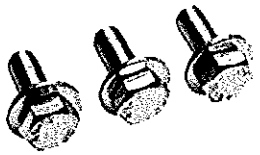


36354-0010

Contact hook

Features:
- Easy to retrofit
- Busbar thickness 5 – 10 mm
- Max. busbar width 100 mm
- Not suitable for coupling units
- Kit = 3 pieces

Designation	Size	PU	Product designation	Order no.
Contact hooks for E³-NH fuse-switches, vertical design, size 1 – 3 for direct mounting to busbars with a thickness of 5 – 10 mm	1-3	3	HAKENKLEMME E³ 1-3 1 Satz (3 Stück)	**36354-0010**

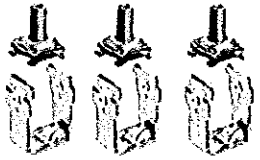


36719-0010

Screw terminal M12x30

Features:
- With coiled spring element, ø 28 mm
- For busbar mounting or terminal connection
- Kit = 3 pieces

Designation	Size	PU	Product designation	Order no.
Screw terminal M12 x 30, with coiled spring element	1-3	3	Sammelsch. Anschl. M12x30 1Satz (3Stück)	**36719-0010**
Retrofit kit for stud		3	Nachrüstsatz B6 E³ 1-3	**36369-0010**

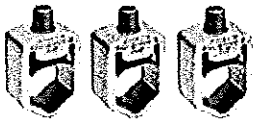


36350-0010

Steel captive clamp

Features:
- Steel captive clamp for multiple-use terminal
- Can retrofitted to screw terminal M12
- Corrosion-resistant
- Kit = 3 pieces

Designation	Size	PU	Product designation	Order no.
Steel captive clamp for retrofitting of multiple-use terminal, 35-240 rm, 35-300 re, 50-300 sm/se	1-3	3	Klemme E³ FEST 50-240sm 1SATZ (3ST)	**36350-0010**

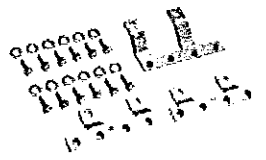


36298-0010

V-clamps

Features:
- Kit = 3 pieces

Designation	PU	Product designation	Order no.
V2MD clamp for 25 – 300 mm² se	3	1 Satz Klemmen V2 MD 240sm/300rm	**36298-0010**

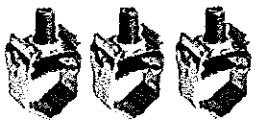


36851-0010

Connecting pieces and terminal kits for parallel switches

Designation	PU	Product designation	Order no.
Connecting piece 2 x cover E³, 1-3, 3-pole	1	Verbindungssatz 2xDeckel E³ 1-3 3-polig	**36849-0010**
Connecting piece 2 x cover E³, 1-3, 1-pole	3	Verbindungssatz 2xDeckel E³ 1-3 1-polig	**36850-0010**
Terminal kit 2 x E³, 1-3 parallel	1	Anschlussgarnitur 2x E³ 1-3 parallel	**36851-0010**

-37-

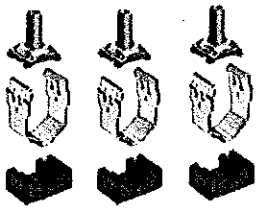


36353-0010

V-clamp

Features:
- Kit = 3 pieces

Designation	Size	PU	Product designation	Order no.
Steel V-clamp, 35-240 rm, 35-300 re, 50-240 sm, 50-300 se	1-3	3	Klemme E³ VST 35-240rm 1Satz (3St)	36353-0010
E³ clamp COMPL., 2 x 95 – 185sm, 1 kit (3 pcs)		3	Klemme E³ VST 2x95-185sm 1SATZ (3ST)	36754-0010

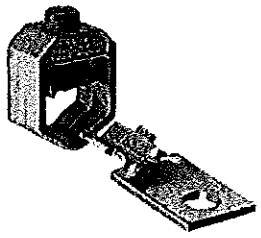


36351-0010

Steel captive V-clamp

Features:
- For retrofitting to V-clamp for size 1 – 3
- Kit = 3 pieces

Designation	Size	PU	Product designation	Order no.
Steel captive V-clamp, 35-240 rm, 35-300 re, 50-240 sm, 50-300 se	1-3	3	Klemme E³ VEST 35-240rm 1Satz (3St)	36351-0010

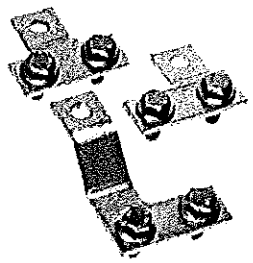


36299-0010

PEN lug

Features:
- For V-clamps- Twist-proof

Designation	Size	PU	Product designation	Order no.
PEN connection with lug, twist-proof, V2 MD-clamp, 25 – 300 mm²	1-3	3	PEN-Anschluss 1Satz (3St)	36404-0010
PEN-connection with lug, twist-proof, V2 MD clamp, 25 – 300 mm² se		1	PEN-Anschluss m. Klemme V2MD 240sm/300rm	36299-0010
MP terminal unit V2N 300 rm/sm		1	MP-Anschlusseinheit V2N 300 rm/sm	36138-0020

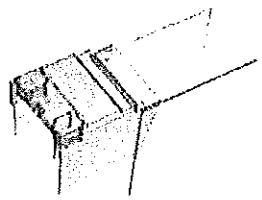


36444-0010

Connecting kit for 2 x 300 mm²

Features:
- For E³-NH fuse-switches, vertical design, of sizes 1 – 3
- Per phase 2 x max. 300 mm²

Designation	Size	PU	Product designation	Order no.
E³ connecting kit for 2 x 300 mm²	1-3	1	E³ Anschlussset 2x 300mm²	36444-0010



36435-0010

Terminal cover, long

Features:
- Terminal cover 36444-0010
- For optimal protection against accidental contact

Designation	Size	PU	Product designation	Order no.
E³ terminal cover, extra long	1-3	1	E³ Anschlussraumabdeckung extra lang	36435-0010

Feeding clamp

Designation	PU	Product designation	Order no.
Feeding clamp IP2X COMPL. 35 – 240rm	3	Einspeiseklemme IP2X VST 35-240rm	36846-0010

Accessories
NH Fuse-Switches, vertical design, size 1 – 3

36431-0010

E³-wiring kit for voltage cut-out

Features:
- Ready for connection to E³-NH fuse-switch, vertical design
- Connects to input or output
- Includes cable holder and terminal screws

Designation	PU	Product designation	Order no.
Wiring kit for voltage cut-out	1	Verdrahtungskit f. Spannungsabnahme	**36431-0010**

36430-0010

E³-wiring kit for current transformers

Features:
- Secondary lines 2.5 mm², black, no. 1 – 6
- Fits plug connections, isolation terminals or metering devices
- For top or bottom terminal
- Impulse-withstand voltage 3 kV
- Includes cable holder

Designation	PU	Product designation	Order no.
1-phase wiring kit for current transformers, secondary line 2.5 mm², black, no. 1 – 6, impulse-withstand voltage 3 kV	1	Verdrahtungskit f. 1 Stromwandler	**36429-0010**
3-phase wiring kit for current transformers, secondary line 2.5 mm², black, no. 1 – 6, impulse-withstand voltage 3 kV	1	E³ Verdrahtungskit f. 3 Stromwandler	**36430-0010**

36382-0010

Clip-on E³-cable holder

Features:
- Clip-on holder for neat cable routing
- For voltage metering or secondary lines

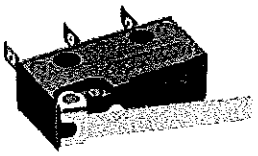
Designation	PU	Product designation	Order no.
Clip-on cable holder, mounted on rear side	1	Kabelhalter E³ Gr.1-3	**36382-0010**

36379-0010

Window locking system

Features:
- Locks sliding window
- Installs internally
Screws
- Kit = 3 pieces

Designation	Size	PU	Product designation	Order no.
Window locking system against unauthorized use	00 - 3	3	1Satz (3St) Stromdiebstahlsich. E³ 00-3	**36379-0010**



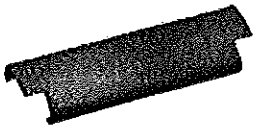
36375-0010

Microswitch for position indication

Features:
- NC-contact or NO-contact microswitch- 2 A / 250 V AC plug-in tab 2.8 x 0.5 mm

Use:
- 3 microswitches for 1-pole switching- 1 microswitch for 3-pole switching

Designation	PU	Product designation	Order no.
Microswitch for switch position indication, 1 NC contact or 1 NO contact, 1 kit = 6 pieces	6	Mikrosch.Schaltstellung. E³1-3(1Set=6St)	**36375-0010**

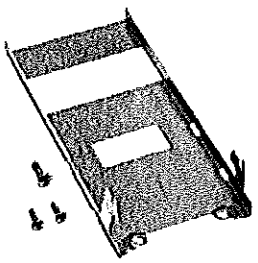


36407-0010

Handle cover

Features:
- Clips onto handle
- Red color
- 1 kit = 3 pieces

Designation	Size	PU	Product designation	Order no.
Clip-on handle cover, red	1-3	3	Griffblende E³ Gr.1-3 rot 3St	**36407-0010**

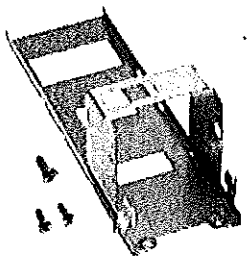


36420-0010

Device carrier, low, with isolation terminal holder

Features:
- Fits E³-NH fuse-switches, vertical design
- With isolation terminal holder
  e. g. in combination with multifunctional measurement device
- Includes mounting and earth screws

Designation	PU	Product designation	Order no.
Device carrier, low, with isolation terminal holder	1	Halteplatte mittel	**36420-0010**

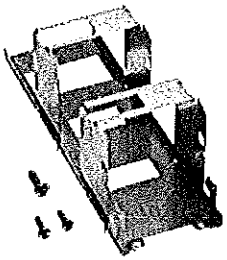


36421-0010

Device carrier with DIN adapter and isolation terminal holders

Features:
- Fits E³-NH fuse-switches, vertical design
- One DIN adapter on front face
- With isolation terminal holder
- Includes mounting and earth screws

Designation	PU	Product designation	Order no.
Device carrier with DIN adapter and isolation terminal holders, 352 mm long	1	Geräteträger lang 1 DIN-Schienenhalter	**36421-0010**

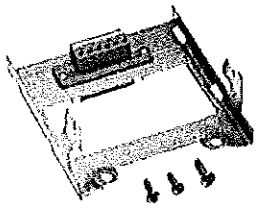


36374-0010

Device carrier with two DIN adapters and isolation terminal holders

Features:
- Fits E³-NH fuse-switches, vertical design
- Two DIN adapters on front face
  and low isolation terminal holders
- Includes mounting and earth screws

Designation	PU	Product designation	Order no.
Device carrier with 2 DIN adapters and isolation terminal holders	1	Gerätetr.2DIN-Schienenh. Messw. Trennkl	**36374-0010**

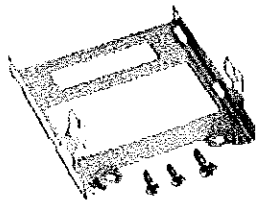


36370-0010

Device carrier, low, with 6-pole plug-connection

Features:
- Fits E³-NH fuse-switches, vertical design
- Terminal cross-section 2.5 mm²
- 250 V / 12 A
- e. g. microswitch or current transformer wiring
- Includes mounting and earth screws

Designation	PU	Product designation	Order no.
Device carrier, low, with 6-pole plug-connection, clamp cross-section 2.5 mm², 250 V / 12 A	1	Geräteträger kurz mit Stecker 6p.	**36370-0010**



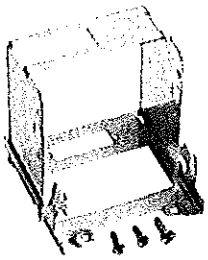
36419-0010

Device carrier, low, with DIN adapter

Features:
- Fits E³-NH fuse-switches, vertical design
- For the installation of devices and terminals
- Includes mounting and earth screws

Designation	PU	Product designation	Order no.
Device carrier, low, with DIN adapter	1	Halteplatte kurz	**36419-0010**

Accessories
NH Fuse-Switches, vertical design, size 1 – 3

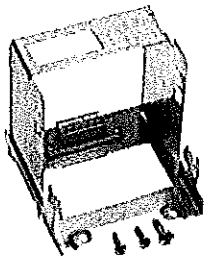


36371-0010

Device carrier with DIN adapter

Features:
- Fits E^3-NH fuse-switches, vertical design
- One DIN-adapter on front face
- Includes mounting and earth screws

Designation	PU	Product designation	Order no.
Device carrier with DIN adapter	1	Gerätetr. 1 DIN-Schienenhalter	**36371-0010**

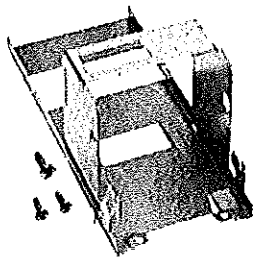


36372-0010

Device carrier with DIN adapter and 6-pole plug-connection

Features:
- Fits E^3-NH fuse-switches, vertical design
- One DIN-adapter on front face
- 6-pole plug connection
- Terminal cross-section 2.5 mm²
- 250 V / 12 A
- Includes mounting and earth screws

Designation	PU	Product designation	Order no.
Device carrier with DIN adapter and 6-pole plug-connection, clamp cross-section 2.5 mm², 250 V / 12 A	1	Gerätetr. 1DIN-Schienenh. Steckverb.6p	**36372-0010**

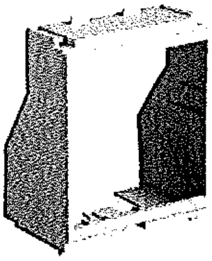


36373-0010

Device carrier with DIN adapter and isolation terminal holders

Features:
- Fits E^3-NH fuse-switches, vertical design
- One DIN-adapter on front face
- With isolation terminal holder
- Includes mounting and earth screws

Designation	PU	Product designation	Order no.
Device carrier with DIN adapter and isolation terminal holders, 225 mm long	1	Gerätetr. 1DIN-Schienenh. Messw. Trennkl	**36373-0010**

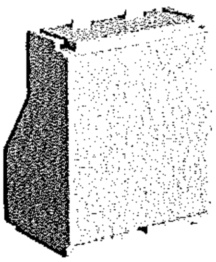


36422-0010

Device carrier, long, 120 mm

Features:
- For flush installation of device
- Frames can be joined

Designation	Size	PU	Product designation	Order no.
Device carrier E³, size 1 – 3, long, 72 x 72 mm	1-3	1	Gerätehalter E³ Gr.1-3 lang 72x72mm	**36383-0010**
Device carrier E³, size 1 – 3, long, 96 x 96 mm	1-3	1	Gerätehalter E³ Gr.1-3 lang 96x96mm	**36422-0010**
Device carrier E³, size 1 – 3, long, blank	1-3	1	Gerätehalter E³ Gr.1-3 lang blind	**36423-0010**

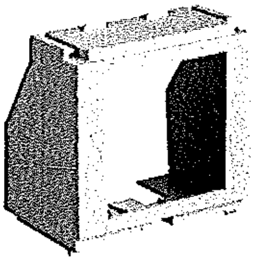


36437-0010

Device carrier

Features:
- Covers oversized cut-outs
- Length adjustment up to 100 mm
- Installation depth to front of 150 mm

Designation	PU	Product designation	Order no.
Device carrier, 120 mm long, blanking element for adjustment	1	E³ Geräteh. Gr.1-3 lang blind Ausgl.	**36437-0010**

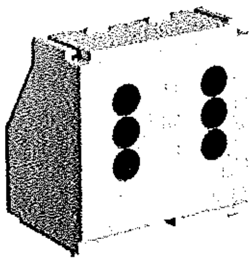


36424-0010

Device carrier, short, 97 mm

Features:
- For flush installation of device

Designation	PU	Product designation	Order no.
Device carrier, 97 mm long, cut-out 72 x 96, for flush installation	1	Gerätehalter E³ Gr.1-3 kurz 72x72mm	**36424-0010**
Device carrier, 97 mm long, blanking element	1	Gerätehalter E³ Gr.1-3 kurz blind	**36425-0010**



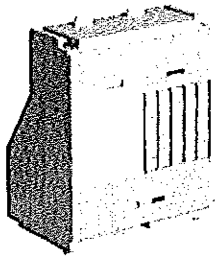
36427-0010

Device carrier, short, 97 mm

Features:
- For plug-in metering devices

Designation	PU	Product designation	Order no.
Device carrier, 97 mm, for clip-on metering devices, 1-phase	1	Gerätehalter kurz 1phasig	**36426-0010**
Device carrier, 97 mm, for clip-on metering devices, 3-phase	1	Gerätehalter E³ Gr.1-3 kurz 3phasig	**36427-0010**

ВЯРНО С ОРИГИНАЛА



36428-0010

Device cover

Features:
- Snaps onto E³-NH fuse-switch, vertical design
- Device carrier and cover can be joined
- Can be trimmed to fit devices of 45 – 90 mm width

Designation	PU	Product designation	Order no.
Device cover, can be trimmed to fit devices of 45 – 90 mm width	1	Geräteabdeckung E³ Gr.1-3 NEOZED	**36428-0010**

Accessories
NH Fuse-Switches, vertical design, size 1 – 3

36434-0010

Sealing kit

Features:
- Fits device cover 36428-0010 and surge/overcurrent protectors
- For D01 fuse bases or other devices

Designation	PU	Product designation	Order no.
Sealing kit for device cover 36428-0010	1	Plombierung mit Bügel	**36434-0010**

ВЯРНО С ОРИГИНАЛА

„КОНТРАГЕНТ 55" ЕООД
ДИРЕКТОР

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ε³ NH Fuse-Switches, vertical design
Technical data for connecting hardware, size 1 – 3

Feed connection	Item number	Terminal area	Bolt	Drive	Tightening torque
	36354-0010	Busbar thickness 5 – 10 mm Busbar width max. 100 mm	M10	INB5	20 Nm

Output connection					
	36719-0010 36344-0010 36369-0010		M12 M12x30 M12x30	SW19 SW19 INB10	32 Nm 32 Nm 32 Nm
	36350-0010 Suitable for aluminum	35-240 rm 35-300 re 50-300 sm/se	M12	INB6	25 Nm
	36298-0010	25-240 rm/re 35-240 sm 35-300 se	M12	INB6	30 Nm
	36353-0010	35-240 rm 35-300 re 50-240 sm 50-300 se	M12	INB6	25 Nm
	36351-0010	35-240 rm 35-300 re 50-240 sm 50-300 se	M12	INB6	25 Nm

Power distribution components

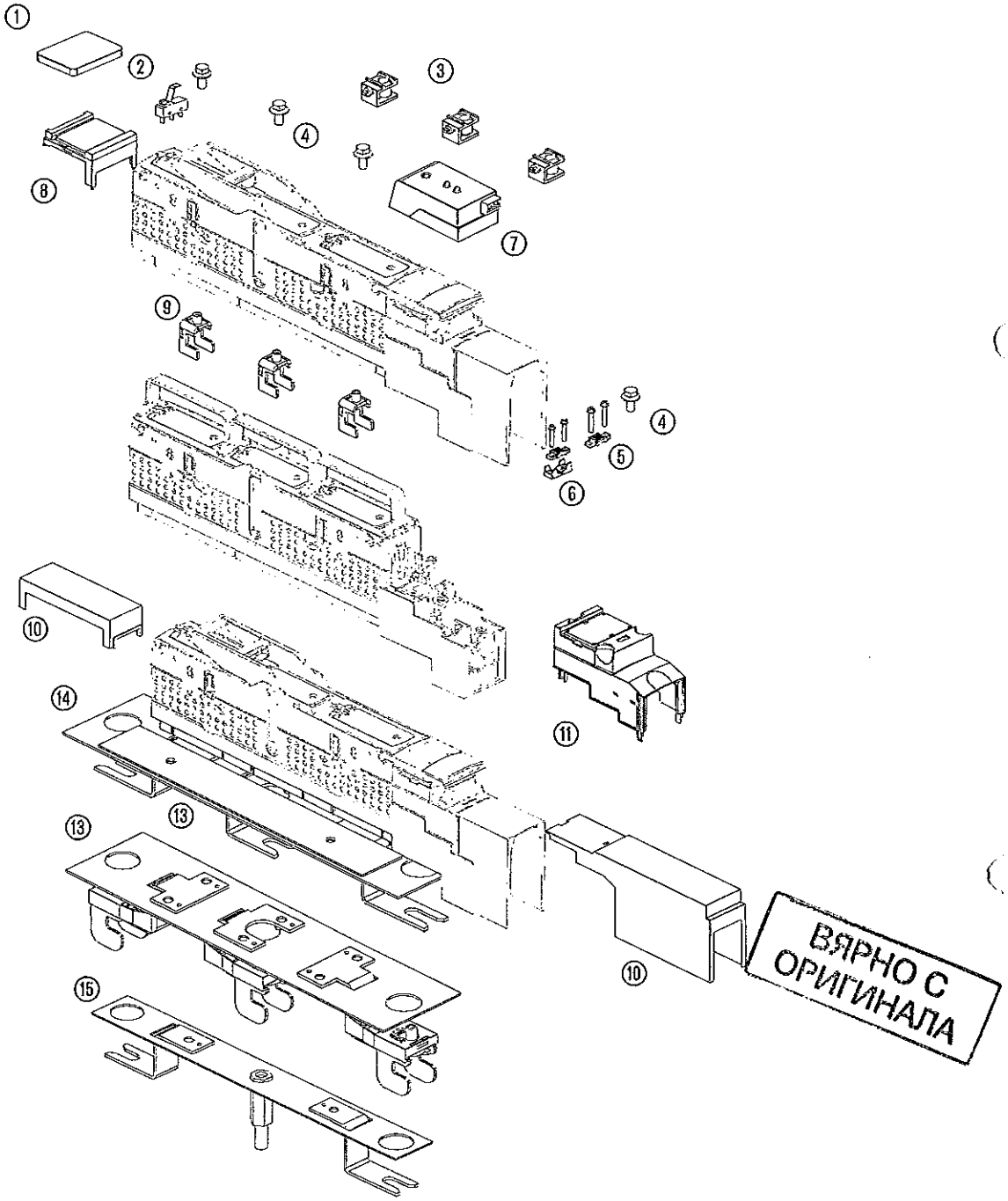
ВЯРНО С ОРИГИНАЛА

Conductor types

- rm = round, stranded
- re = round and solid or round and stranded and condensed
- sm = sector, stranded 60°, 90°, 100° or 120°
- se = sector, solid 90° or 120°

E³ NH Fuse-Switches, vertical design

E³ NH Fuse-Switches, horizontal design, 00/60 and 00/100
Accessories

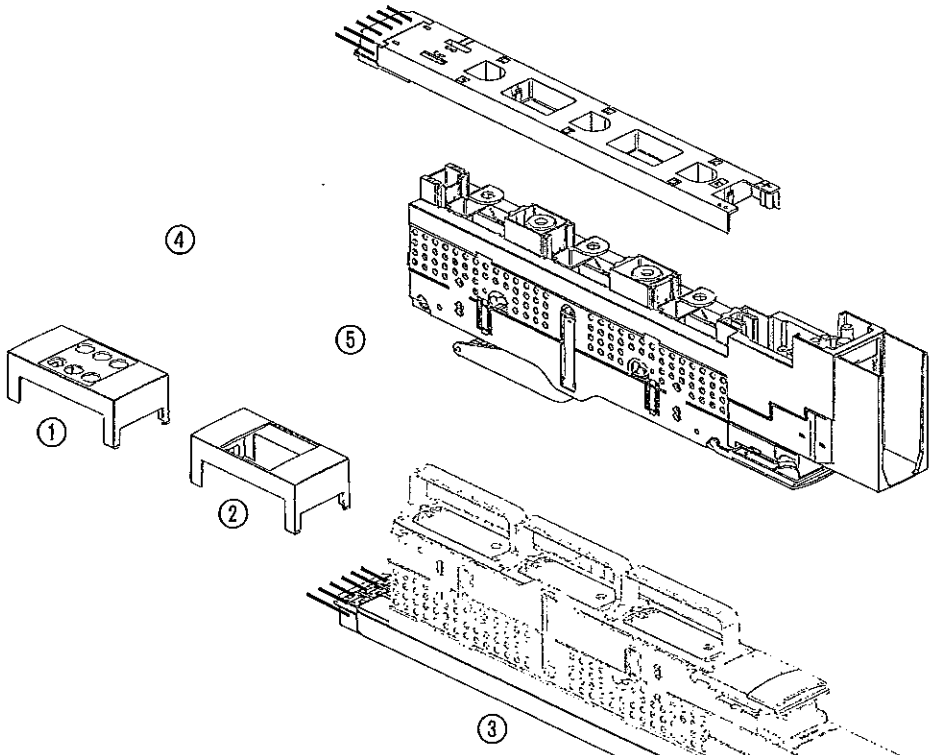


① 36380-0010 Identification label E³, size 00/60 to 00/185
② 36335-0010 6 microswitches for switch position indication E³, size 00/60 to 00/185
③ 36331-0010 Angle bracket Kit = 4 pieces E³, size 00 – 3
④ 36376-0010 3 bolts M8x25, hexagon socket
⑤ 36377-0010 3 pressure plates E³, size 00 (for direct cable-connection)
⑥ 36378-0010 3 pressure plates with contact prisms E³, size 00 (für direct connection)
⑦ Electronic fuse-monitoring
⑧ 36389-0010 Identification holder, size 00/60 to 00/185, top
⑨ included in the device (contact hooks)
⑩ 36330-0010 Frame for length adjustment, kit, E³, size 00/60 to 00/185
⑪ included in the device (contact hooks)
⑫ 36445-0010 E³ blanking cover, size 00/100 to 00/185
⑫ 36440-0010 Twin adapter E³, size 00/100 hook-mounting
⑭ 36337-0010 Twin adapter E³, size 00/100
⑮ 36339-0010 Single adapter E³, size 00/100

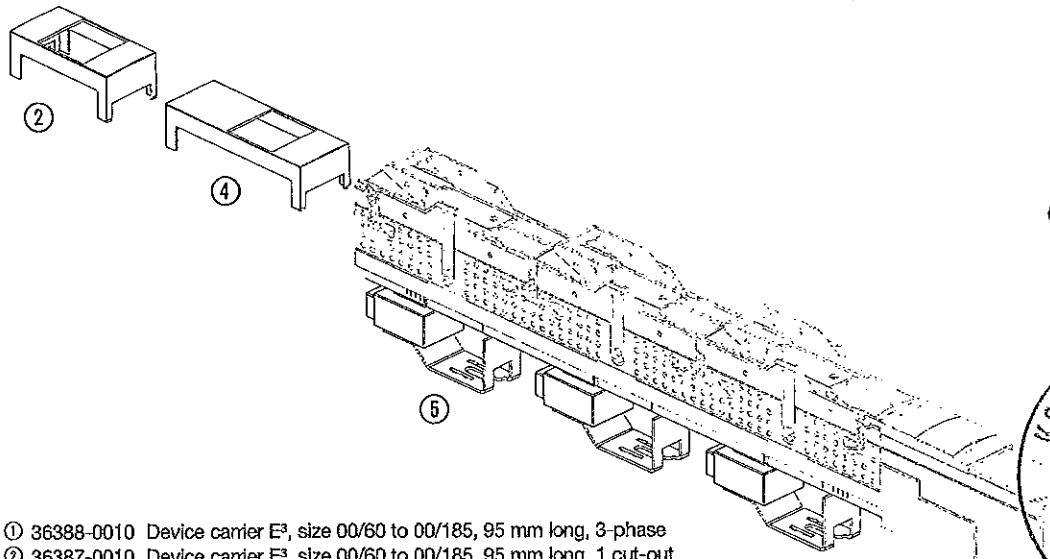
Note: For fuse-monitoring, refer to section on metering and communicating.

E³ NH Fuse-Switches, vertical design

E³-NH Fuse-Switch, vertical design, size 00/100 mm
Variant for installation of current transformer block
Accessories



E³-NH Fuse-Switch, vertical design
Size 00/185 mm
Variant for installation of a single current transformer
Accessories

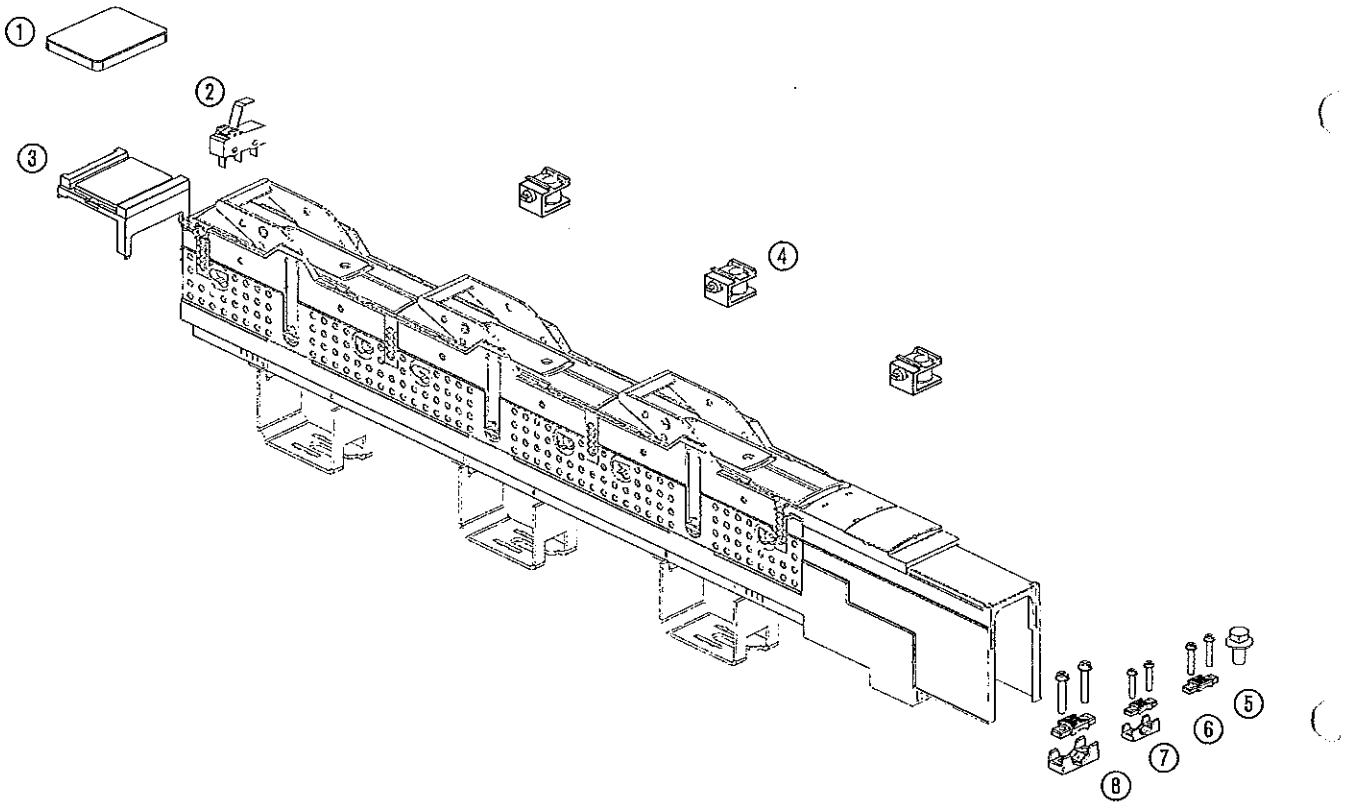


① 36388-0010 Device carrier E³, size 00/60 to 00/185, 95 mm long, 3-phase
② 36387-0010 Device carrier E³, size 00/60 to 00/185, 95 mm long, 1 cut-out
③ E³ low-voltage current transformer block
④ 36385-0010 Device carrier E³, size 00/60 to 00/185, 135 mm long, 1 cut-out
⑤ Variant for installation of PSR 203 current transformer

Note: For current transformers refer to section on metering and communicating

E³ NH Fuse-Switches, vertical design

E³-NH Fuse-Switch, vertical design,
size 00/185
Direct mounting for size 1 – 3
Accessories



ВЯРНО С ОРИГИНАЛА

①	36380-0010	Identification label E³, size 00/60 to 00/185
②	36335-0010	6 microswitches for switch position indication E³ size 00/60 to 00/185
③	36389-0010	Identification holder, size 00/60 to 00/185, top
④	36331-0010	Angle bracket (kit = 4 pieces) E³, size 00 – 3
⑤	36376-0010	3 bolts M8x25, hexagon socket
⑥	36377-0010	3 pressure plates E³, size 00
⑦	36378-0010	3 pressure plates with contact prism E³, size 00
⑧	36366-0010	3 pressure plates with contact prism E³, 00/185

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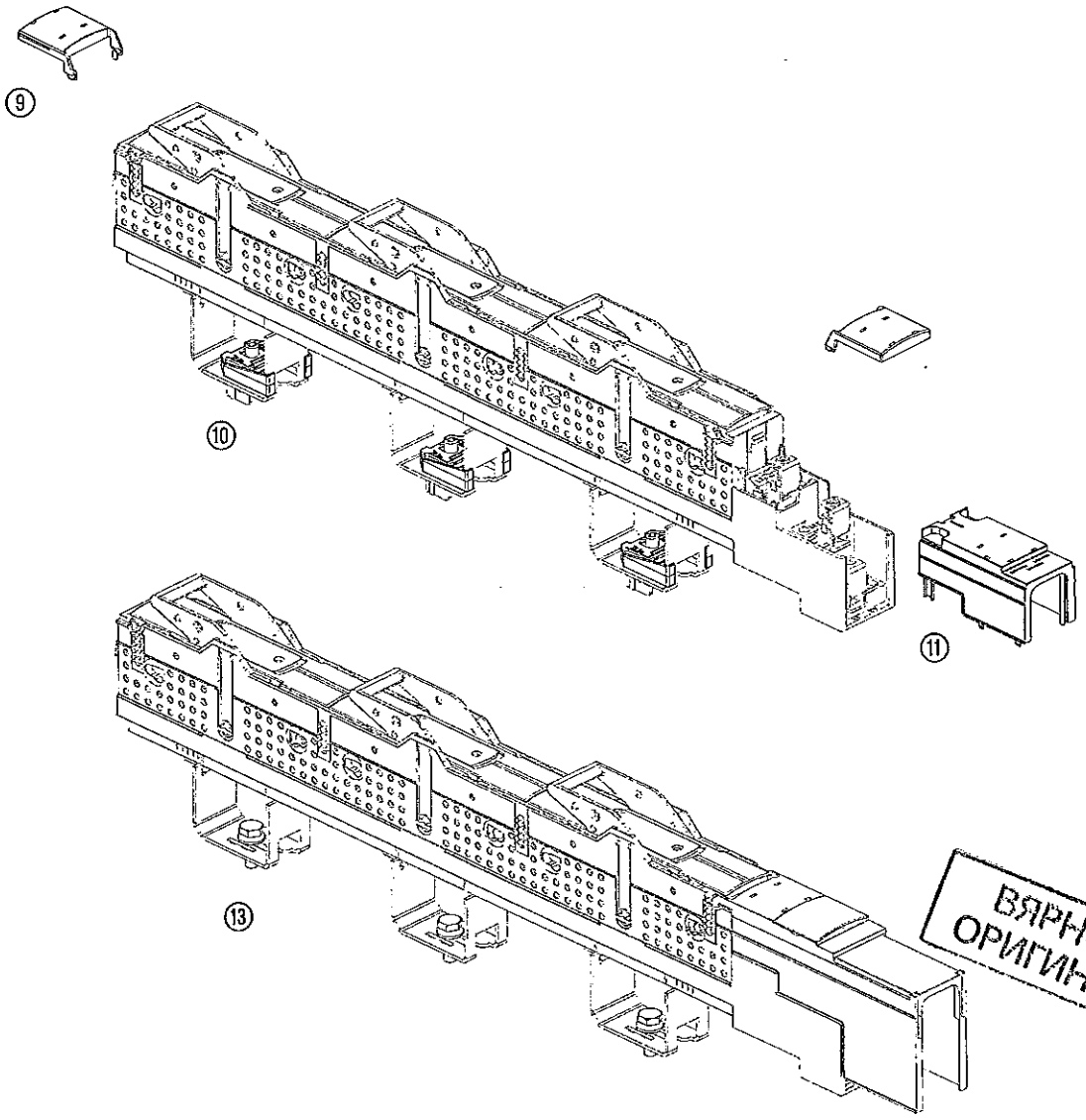
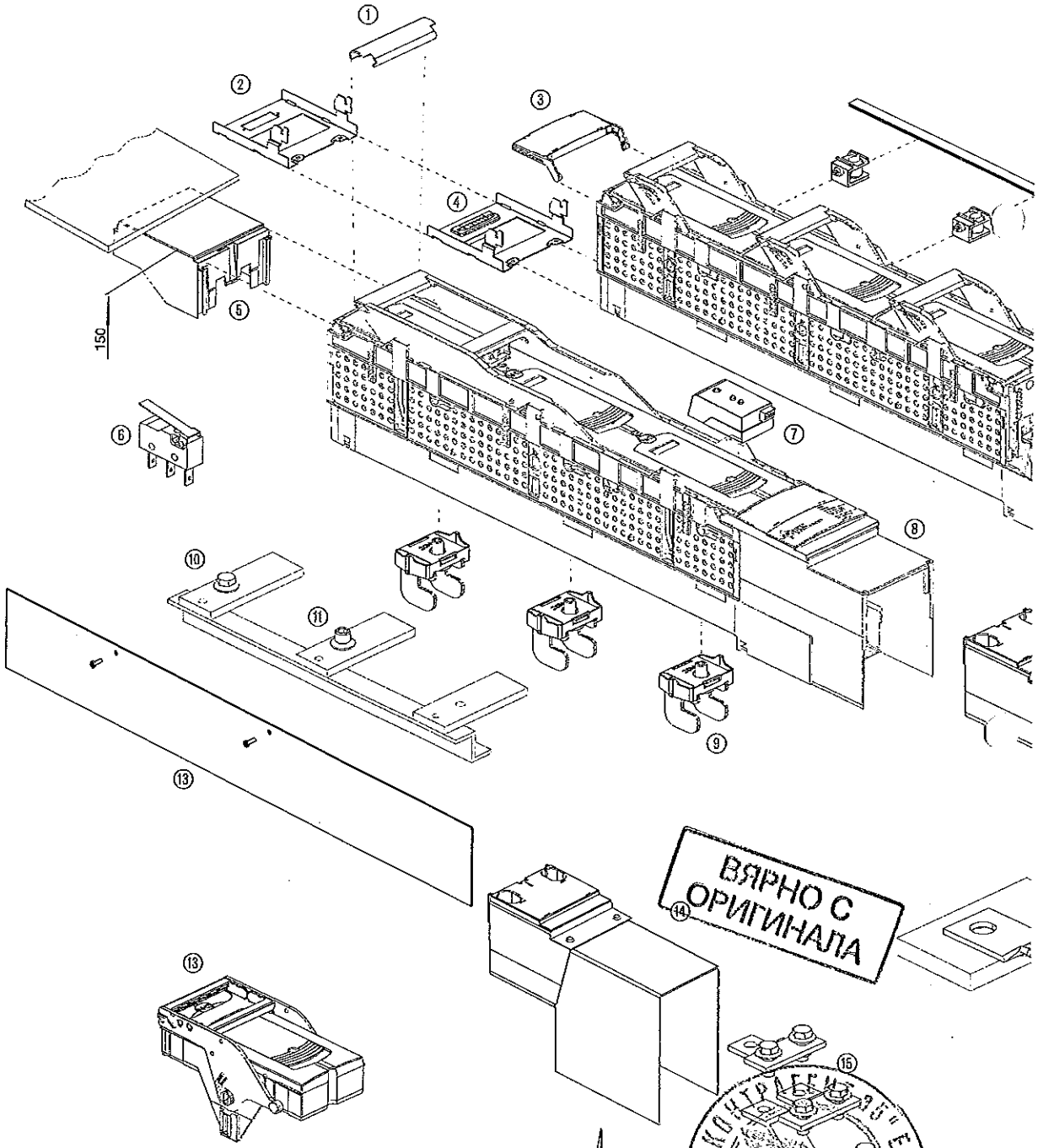
E³-NH Fuse-Switch, vertical design, size 00/185
Direct mounting for size 1 – 3
Accessories



⑨ 36391-0010 Clip-on identification holder, short, E³, size 00/185
⑩ 36367-0010 3 contact hooks E³ 00/185 Eh 50 mm
⑪ included in the device (terminal cover)
⑫ 36376-0010 3 bolts M8x25, hexagon socket

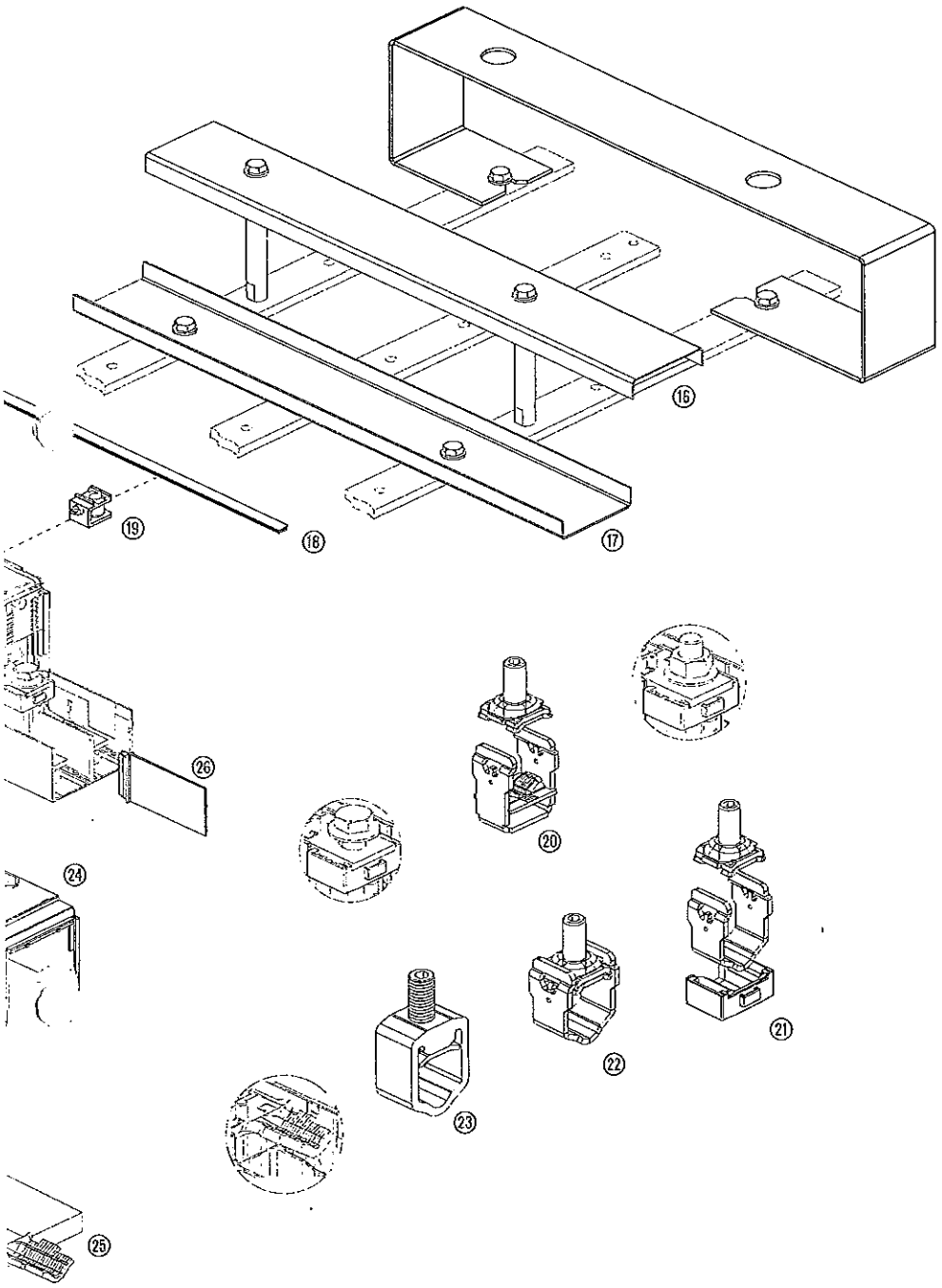
E3 NH Fuse-Switches, vertical design

E3-NH Fuse-Switch, vertical design,
size 1 – 3
Accessories



ВЯРНО С ОРИГИНАЛА

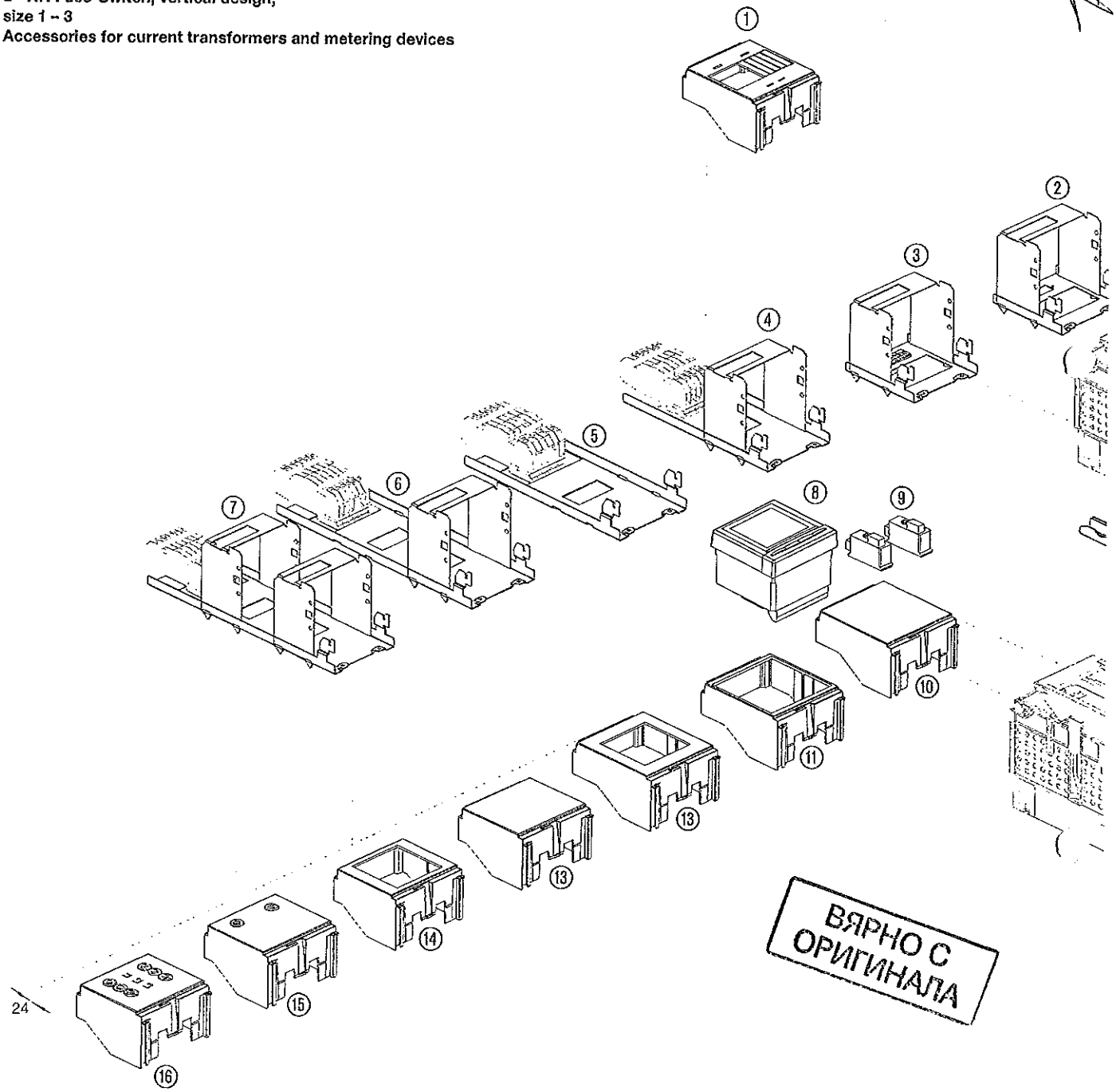
- 49 -



① 36407-0010 Handle cover E³, size 1-3, red, 3 pieces
② 36419-0010 Device carrier, low, with DIN adapter
③ 36356-0010 Designation Identification holder complete, short, size 1, EFEN
④ 36370-0010 Device carrier, low, with 6-pole plug-connection
⑤ 36437-0010 Device carrier E³, size 1 – 3, long, blanking element for adjustment
⑥ 36375-0010 6 microswitches for switch position indication E³, size, 1 – 3
⑦ Electronic fuse-monitoring
⑪ Included in the device (terminal cover)
⑨ 36354-0010 Contact hooks E³, size 1 – 3, 3 pieces
⑩ 36719-0010 Busbar terminal M12x30, 3 pieces
⑪ Upon request
⑫ 36727-0010 Lateral safety cover E³, size 00/185 – 3
⑫ Devices with flush handle
⑭ 36435-0010 E³ terminal cover, extra-long, size 1 – 3
⑮ 36444-0010 E³ connecting kit for 2 x 300 mm², size 1 – 3
⑯ 36410-0010 E³ blanking cover with stud size 1 – 3
⑰ 36409-0010 E³ blanking cover, size 1 – 3
⑱ 36390-0010 E³ universal sideframe 850 mm
⑲ 36331-0010 E³ angle bracket 4 pieces, size 00 – 3
⑳ 36350-0010 E³ clamp, fixed, 50 – 300 sm, 3 pieces, size 1-3
㉑ 36351-0010 E³ clamp, VEST, 35 – 240 sm, 3 pieces, size 1 – 3
㉒ 36353-0010 E³ clamp, complete, 35 – 240 mm, 3 pieces, size 1 – 3
㉓ 36298-0010 V2 MD clamp 240 sm / mm 3 pieces, size 1 – 3
㉔ 36438-0010 Terminal cover, short, E³, size 1 – 3
㉕ 36404-0010 PEN connection, size 1 – 3

ϵ^3 NH Fuse-Switches, vertical design

ϵ^3-NH Fuse-Switch, vertical design,
size 1 – 3
Accessories for current transformers and metering devices



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ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35" ЕООД
СТАРА ЗАГОРА

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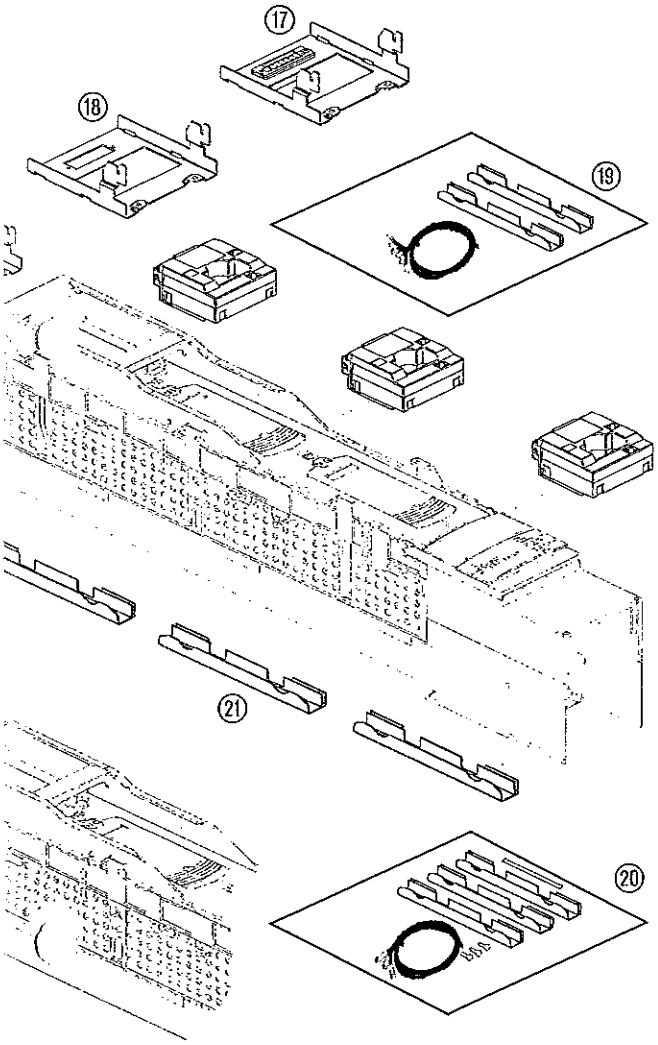
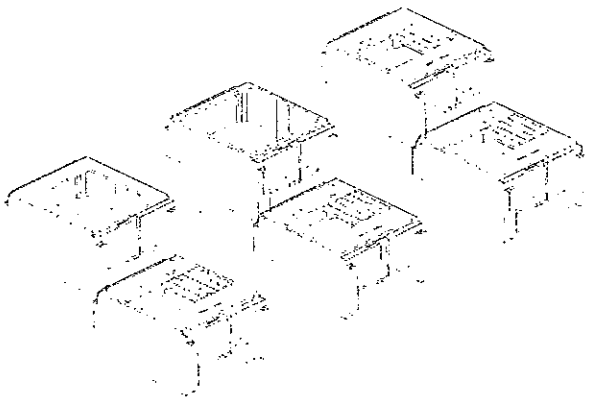
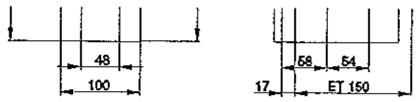
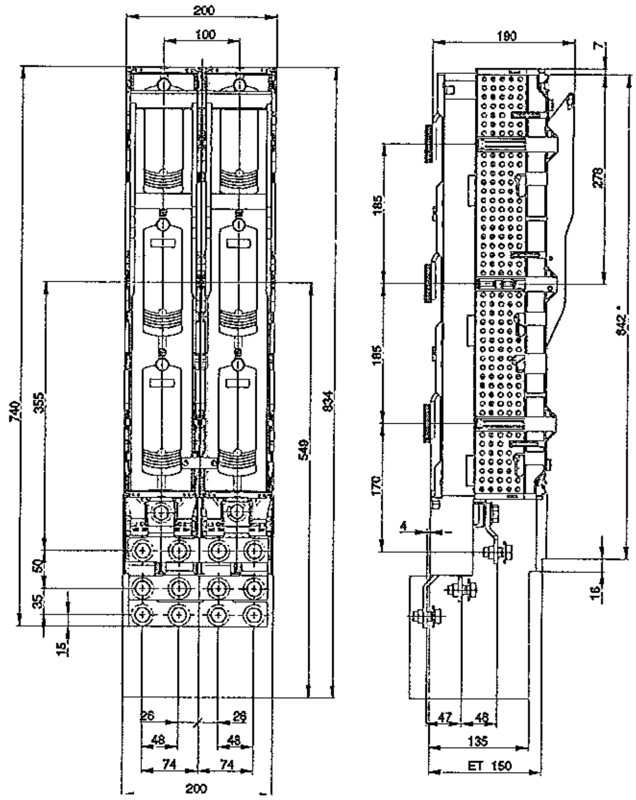




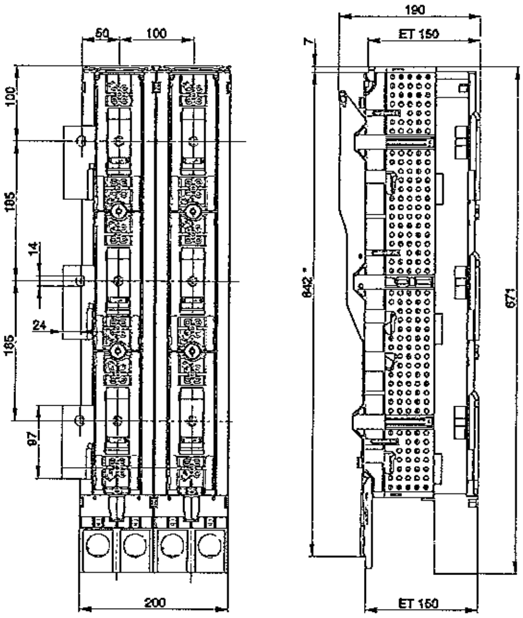
① 36428-0010 Device cover E³, size 1 – 3
② 36371-0010 Device carrier with DIN adapter
③ 36372-0010 Device carrier with DIN adapter, 6-pole plug-connection
④ 36373-0010 Device carrier with DIN adapter with isolation terminal holder
⑤ 36420-0010 Device carrier, low, with isolation terminal holder
⑥ 36421-0010 Device carrier, long, with DIN adapter
⑦ 36374-0010 Device carrier with 2 DIN adapters with isolation terminal holder
⑧ EM multifunctional metering devices
⑨ EM clip-on modules
⑩ 36437-0010 Device carrier E³, long, blanking element for adjustment, size 1 – 3
⑪ 36422-0010 Device carrier E³, long, 96 x 96 mm, size 1 – 3
⑫ 36383-0010 Device carrier E³, long, 72 x 72 mm, size 1 – 3
⑫ 36425-0010 Device carrier E³, short, blanking element, size 1 – 3
⑭ 36424-0010 Device carrier E³, short, 72 x 96 mm, size 1 – 3
⑮ 36426-0010 Device carrier E³, short, 1-phase, size 1 – 3
⑯ 36427-0010 Device carrier E³, short, 3-phase, size 1 – 3
⑰ 36370-0010 Device carrier E³, low, with 6-pole plug
⑱ 36419-0010 Device carrier E³, low, with DIN adapter
⑲ 36429-0010 Wiring kit, 1-phase, for current transformers
⑳ 36431-0010 Wiring kit for voltage metering
㉑ 36382-0010 E³ clip-on cable holders, size 1 – 3



Feed switch 1000 A with fixed solid-link, parallel switching

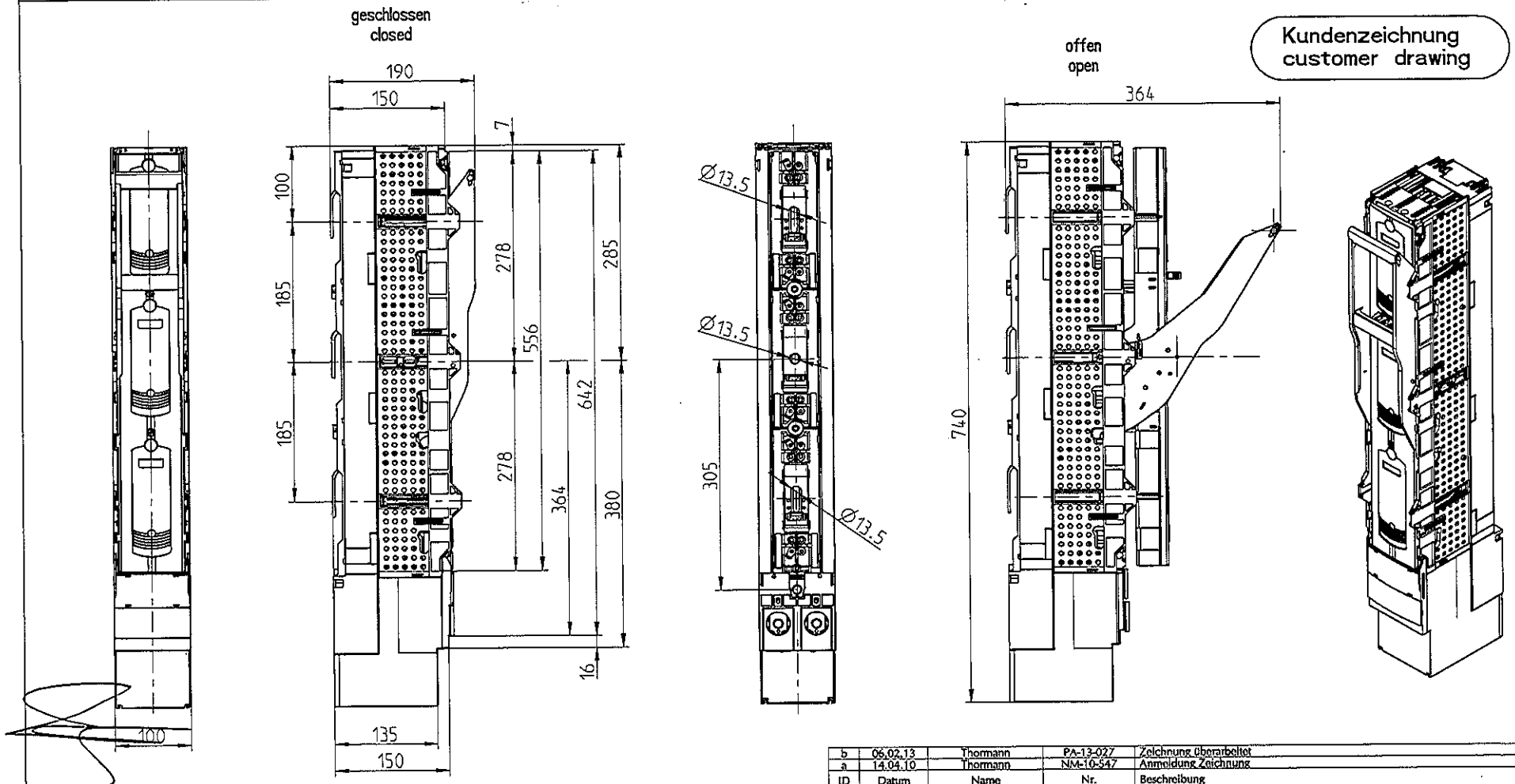


Feed switch 1000 A with fixed solid-link, parallel switching, terminal on the left-hand side



Cut-out dimensions ET 150 = * dimensions + 1 mm
Cut-out dimensions ET 120 - 145 = ** dimensions + 1 mm
ET = installation depth of the cover

ВЯРНО С ОРИГИНАЛА



b	06.02.13	Thormann	PA-13-027	Zeichnung überarbeitet
a	14.04.10	Thormann	NM-10-547	Anmeldung Zeichnung
ID	Datum date	Name name	Nr. no.	Beschreibung description

sonstige Normen: further standarts:

lifecycle : Manufactured

	designer :	checker :	Rev. :
date:	21.04.2009	15.05.2009	b
name:	Thormann	Plechinger	

EFEN

Werkstoff / material : /

Bezeichnung / designation :
E³ NH-Lastschaltleiste
E³ NH-fuse-switch vertical design
Gr. 1-3 3-polig
size 1-3 3-pole

Massstab scale : /

Datei / file : 400A_U6_MASSBILD

Ident-Nr. / part-no. : 380xx-0020

Alle Einheiten im metrischen System !
All units in metric system !

Gewicht / weight : /

Oberflaeche / area : /

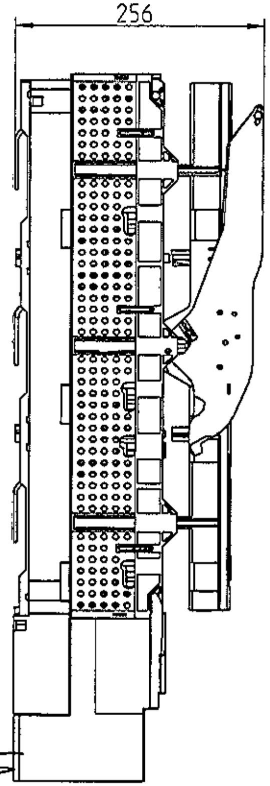
Project:

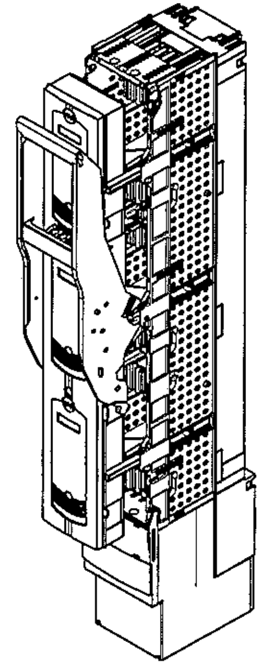
Ersatz fuer / replacement for :
Ersetzt durch / replaced by :

Blatt / page : 1/3 format : A3

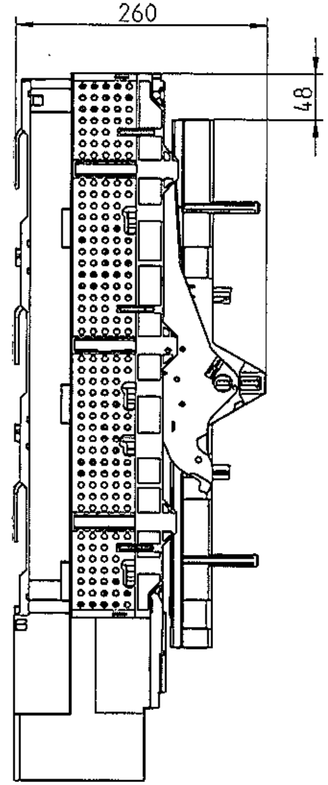
Kundenzeichnung
customer drawing

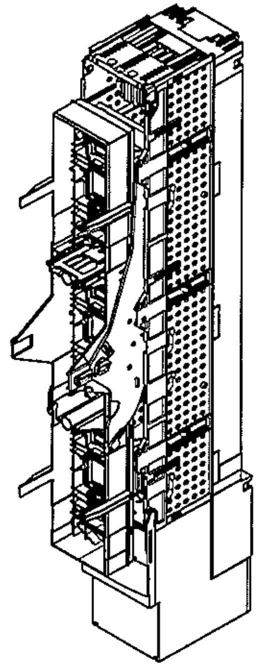
Trennstellung 1
locking position 1





Trennstellung 2
locking position 2



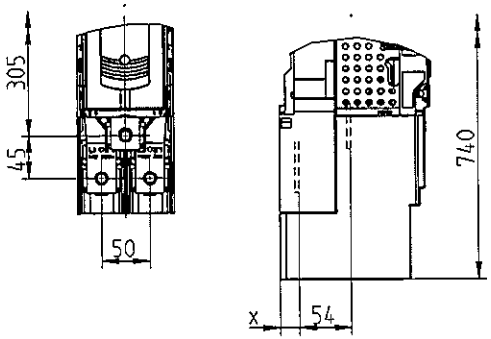


ID	Datum / date	Name / name	Nr. / no.	Beschreibung / description
b	06.02.13	Thormann	PA-13-027	Zeichnung überarbeitet
a	14.04.10	Thormann	NM-10-547	Anmeldung Zeichnung

Allgemeintoleranz / general tolerances : ISO 8015	*lifecycle* : Manufactured			EFEN
	designer : / date: 21.04.2009 / name: Thormann	checker : / 15.05.2009 / Plechinger	Rev. : b	Datei / file : 400A_U6_MASSBILD
Werkstoff / material :	Bezeichnung / designation : E³ NH-Lastschaltleiste / E³ NH-fuse-switch vertical design / Gr. 1-3 3-polig / size 1-3 3-pole		Massstab / scale : /	Ident-Nr. / part-no. : 380xx-0020
Gewicht / weight : /				Alle Einheiten im metrischen System ! All units in metric system !
Oberflaeche / area : /	"Schutzvermerk ISO 16016 beachten"			Ersatz fuer / replacement for : / Ersetzt durch / replaced by :
				Blatt / page : 2/3 format : A3

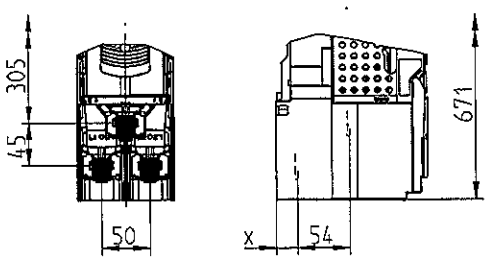
Kundenzeichnung
customer drawing

Anschlussbereich
connection area



380x6-0020

Universalanschluss mit
Schraube M12



380x5-0020

V2N Anschluss

Kabelschuh mit max. 44mm Breite
Anschlussmoment M12: 32 Nm

Variante	x
38016-0020	19
38026-0020	20
38036-0020	21
38015-0020	21
38025-0020	22
38035-0020	23

ID	Datum date	Name name	Nr. no.	Beschreibung description
b	06.02.13	Thormann	PA-13-027	Zeichnung überarbeitet
a	14.04.10	Thormann	NM-10-547	Anmeldung Zeichnung

Allgemeintoleranz
general tolerances :
ISO 8015

lifecycle : Manufactured

	designer :	checker :	Rev. :
date:	21.04.2006	15.05.2009	b
name:	Thormann	Plechinger	

EFEN

Werkstoff / material :

Bezeichnung / designation :
E³ NH-Lastschaltleiste
E³ NH-fuse-switch vertical design
Gr. 1-3 3-polig
size 1-3 3-pole

Massstab
scale : /

Datei / file : 400A_U6_MASSBILD

Ident-Nr. / part-no. : 380xx-0020

Alle Einheiten im metrischen System !
All units in metric system !

Gewicht / weight : /

Oberflaeche / area : /

"Schutzvermerk ISO 16016 beachten"

Ersatz fuer / replacement for :
Ersetzt durch / replaced by :

Blatt / page : 3/3

format : A3

KOPIE

Приложение № 4

Национален орган за акредитация

AKKREDITIERUNG AUSTRIA / АВСТРИЙСКА СЛУЖБА ПО АКРЕДИТАЦИЯ

Потвърждава акредитацията на

(AIT) Austrian Institute of Technology GmbH/ Австрийския технологичен институт

Donau-City-Straße 1, A-1220 Wien

Идентификационен №. **0001**

като

Изпитваща лаборатория съгласно EN ISO/IEC 17025:2005

Начална дата на акредитация: 01.02.1993

Адрес на организацията *:*
Standort Tulln, Konrad-Lorenz-StraBe 24, A-3430 Tulln
Standort Wien, Giefinggasse 2, A-1210 Wien

ВЕРНО С ОРИГИНАЛА

Информация за обхвата на акредитацията и Австрийската служба по акредитация / Akkreditierung Austria
http://www.bmwfw.gv.at/akkreditierung

Акредитацията е обвързана с постановление, което потвърждава, че Органът за оценяване на съответствието отговаря на изискванията на EN ISO / IEC 17025: 2005. *Това потвърждение за акредитация не може да бъде възпроизведено, освен в цялостен вид.*

11.02.2016
Дата

Dipl.-Ing. Dr. Norman Brunner
Директор на Австрийската служба по акредитация/ *Akkreditierung Austria*

Abteilung 1/12 - Akkreditierung Austria
1010 Wien | Stubenring 1 | Tel.: +43 (0)1 711 00 - 8236 | Fax: +43 (0)1 711 00 93 - 8236 | DVR 0037257 E-Mail:
akkreditierung@bmwfw.gv.at | www.bmwfw.gv.at/akkreditierung

Akkreditierung Austria

ilac-MRA

bmwfw
Bundesministerium für
Wissenschaft, Forschung und Wirtschaft

Die Nationale Akkreditierungsstelle / *The National Accreditation Body*

AKKREDITIERUNG AUSTRIA

bestätigt die Akkreditierung der Rechtsperson / *confirms the accreditation of*

AIT Austrian Institute of Technology GmbH

Donau-City-Straße 1, A-1220 Wien

Identifikationsnummer / *ID-number*: **0001**

als / as

Prüfstelle / *Testing Laboratory*
gemäß / *according to* EN ISO/IEC 17025:2005

Datum der Erstakkreditierung / *Initial date of accreditation*: **01.12.1993**

Standorte/Organisationseinheiten / *sites/units*:
Standort Tulln, Konrad-Lorenz-Straße 24, A-3430 Tulln
Standort Wien, Giefinggasse 2, A-1210 Wien

BARHO C OPHTHARA

Informationen zum Akkreditierungsumfang und zu Akkreditierung Austria / *Information about the accreditation scope and Akkreditierung Austria* http://www.bmwfw.gv.at/akkreditierung

Die Akkreditierung wurde mittels Bescheid erteilt und damit bestätigt, dass die Konformitätsbewertungsstelle die Anforderungen der **EN ISO/IEC 17025:2005** erfüllt. Diese Bestätigung der Akkreditierung darf nur unverändert weiterverbreitet werden.

*The accreditation was granted by a decree which confirms, that the Conformity Assessment Body fulfills the requirements of **EN ISO/IEC 17025:2005**. This confirmation of accreditation may not be reproduced other than in full.*

11.02.2016
Datum / *Date*

Dipl.-Ing. Dr. Norman Brunner
Leiter Akkreditierung Austria / *Head Akkreditierung Austria*

Abteilung I/12 - Akkreditierung Austria
1010 Wien | Stubenring 1 | Tel.: +43 (0)1 711 00 - 8236 | Fax: +43 (0)1 711 00 93 - 8236 | DVR 0037257
E-Mail: akkreditierung@bmwfw.gv.at | www.bmwfw.gv.at/akkreditierung

Приложение № 5

EFEN

EG-Konformitätserklärung
EC Conformity Declaration

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ НА СТАНДАРТ

Hersteller (Name, Adresse): *Производител (Име, Адрес):*	EFEN GmbH Schlangenbader Strafie 40 D-65344 Eltville/Rhein
Produktbezeichnung: *Описание на продукта:*	NH-Sicherungs-Lastschaltleiste Baugrofie 1, 2, 3 *NH вертикални разединители за предпазители НН размер 1, 2, 3*
Type: *Тип:*	E^3 E^3

Das bezeichnete Produkt stimmt mit den Vorschriften folgender europaischer Richtlinien in der Fassung der entsprechenden Anderungsrichtlinien uberein:
Описаните продукти отговарят на предписанията на следните Европейски Директиви в техните коригирани версии:

Nr. 2006/95/EG „Niederspannungsrichtlinie" (NSR)
Nr. 2006/95/EC „Директива Ниско напрежение" (LVD)

Nr. 2004/108/EG „EMV-Richtlinie" (EMVR)
Nr. 2004/108/EC „Директива Електромагнитна съвместимост" (EMCD)

Nr. 2002/95/EG „Beschrankung der Verwendung bestimmter gefahrlicher Stoffe in Elektro-und Elektronikgeraten" (RoHS) *No. 2002/95/EC „ограничение за използването на някои опасни вещества в електрическо и електронно оборудване (RoHS)*

Das bezeichnete Produkt ist nach den Regeln unseres von der DQS (Deutsche Gesellschaft zur Zertifizierung von Managementsystemen) nach DIN EN ISO 9001 zertifizierten Qualitats-Managementsystems in Ubereinstimmung mit folgenden Normen konstruiert und gefertigt:
Описаният продукт е проектиран и произведен на основата на нашата Система за управление на качеството DIN EN ISO 9001, която е сертифицирана от DQS (Германската асоциация за сертификация на системи за управление) да съответстват на следните стандарти:

IEC/EN 60947-3 : 1999 VDE 0660 Teil 107 : 2000-02

Anbringung der CE - Kennzeichnung:
2010 *Поставяне на CE маркировка:*

Aussteller / *Издател:* EFEN GmbH Eltville,

Ort, Datum / *Място, Дата:* 2010-01-08

Rechtsverbindliehe Unterschrift:
Подписи:
Инж. В.В. Кирш
Инж. А.С. Фаст

Diese Erklarung bescheinigt die Ubereinstimmung mit den genannten europaischen Richtlinien und gilt weltweit in Bezug auf die angefuhrten Normen, beinhaltet jedoch keine Zusicherung von Eigenschaften.
Тази декларация удостоверява съответствието с описаните Европейски Директиви и е валидна по целия свят относно горепосочените стандарти, но не включва в себе си гаранция за собственост

EG-Konformitätserklärung
EC Conformity Declaration

Hersteller (Name, Adresse): *Manufacturer (Name, Address):*	EFEN GmbH Schlangenbader Straße 40 D-65344 Eltville/Rhein
Produktbezeichnung: *Product designation:*	NH-Sicherungs-Lastschaltleiste Baugröße 1, 2, 3 *NH Fuse-Switch disconnectors vertical design size 1, 2, 3*
Type: *Type:*	E³ *E³*

Das bezeichnete Produkt stimmt mit den Vorschriften folgender europäischer Richtlinien in der Fassung der entsprechenden Änderungsrichtlinien überein:
The designated product conforms to the provisions of the following European directives in the version of the amended directives:

Nr. 2006/95/EG „Niederspannungsrichtlinie" (NSR)
Nr. 2006/95/EC „Low Voltage Directive" (LVD)

Nr. 2004/108/EG „EMV-Richtlinie" (EMVR)
Nr. 2004/108/EC „EMC Directive" (EMCD)

Nr. 2002/95/EG „Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten" (RoHS)
No. 2002/95/EC „Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS)

Das bezeichnete Produkt ist nach den Regeln unseres von der DQS (Deutsche Gesellschaft zur Zertifizierung von Managementsystemen) nach DIN EN ISO 9001 zertifizierten Qualitäts-Managementsystems in Übereinstimmung mit folgenden Normen konstruiert und gefertigt:

The described product is constructed and manufactured based on our Quality Management System according to DIN EN ISO 9001 which has been certified by the DQS (German association for the Certification of Management Systems) to comply with the following standards:

IEC/EN 60947-3 : 1999 VDE 0660 Teil 107 : 2000-02

Anbringung der CE - Kennzeichnung: 2010
Affixing of the CE marking:

Aussteller / *Issuer:* EFEN GmbH

Ort, Datum / *Place, Date* : Eltville, 2010-01-08

Rechtsverbindliche Unterschrift:
Legally binding signature:

i.V. W.Kirsch

I.A. S.Fast

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten europäischen Richtlinien und gilt weltweit in Bezug auf die angeführten Normen, beinhaltet jedoch keine Zusicherung von Eigenschaften.
This declaration certifies compliance with the indicated European directives and is valid world wide with respect to the a. m. standards but implies no warranty of properties.

EFEN GmbH
Schlangenbader Str. 40 • D-65344 Eltville • Tel. +49 6129 46 - 0 • Fax 46 - 222 • efen@efen.com • www.efen.com

OVE Qsterrachisdier Verfeand fur Elaktratechnik

STC/AT **958**

Декларация за съответствие

Продукт	**Low-Voltage Fuse-Switch-Disconnector (185 mm Busbar System)**
Изпитан по молба на	**EFEN GmbH 65344 Eltville, Schlangenbaderstrasse 40, Germany**
Произведено в (име и място)	**EFEN GmbH 04938 Uebigau, Gewerbepark Nord Nr. 6, Germany** **Dongguan EFEN Electrical Products Co., Ltd. Two Floor B4 Building, Longgang Ind. Park, Shipai Town, 523357 Donguan City, Guangdong Province, China**
Оценка и основни характеристики	**AC-23B 400V/400A; AC-22B 500V/400A; AC-21B 690V/400A; Ui 1000V AC; Виж стр.4 от Протокола от изпитване**
Търговска марка (ако има такава)	**EFEN**
Тип (Реф. №)	**E^3 NH-La-Lei 2 xx yyy; Виж стр.6 от Протокола от изпитване**

Допълнителна информация (ако е необходима)

Образец от продукта е тестван и е установено, че е в съответствие с

EN 60947-1:2007, EN 60947-3:2009

Както е посочено в Протокола (Реф. №) **2.03.01139.1.0/EFEN E^3/2/185/CB/CCA**

Тази Декларация за съответствие е резултат от изпитването на образец от продукта, представена в съответствие с разпоредбите на съответния специфичен стандарт.
Тази Декларация за съответствие е създадена от орган, който участва пряко в Споразумението за сертифициране CENELEC (CCA) от 11 септември 1973, ревизирана на 29 март 1983 г., 3-ти Септември, 2004 и 18 април 2007 г. (включвайки допълнения от 1 до 4). Всеки друг орган, участващи в CCA може да вземе тази декларация като основа за издаване на национален знак за съответствие или за национално одобрение, както е посочено в OD CCA 226 списък на актуалните решения на клауза CCA Група 2.10.

Österreichischer Verband für Elektrotechnik
Ръководител изпитване & сертифициране

OVE

Виена, 2010-11-02

Dipl.-Ing. W. Martin

OVE - Изпитване & Сертифициране
1190 Wien, Kahlenberger Str. 2A, Austria
Tel.: +43 1 370 58 06 Fax.:+43 1 370 58 06-199 ZVR: 327279890 DVR: 1055887

Акредитирани от Австрийското министерство на икономиката, Семейството и Младежта като сертифициращ орган на продукти и процеси в областта на електротехниката и електроуредите включително безопасност и EMC

OVE Österreichischer Verband für Elektrotechnik

STATEMENT OF CONFORMITY

STC/AT **958**

Erzeugnis *Product*	**Low-Voltage Fuse-Switch-Disconnector (185 mm Busbar System)**
Geprüft im Auftrag von *Tested by request of*	**EFEN GmbH** **65344 Eltville, Schlangenbaderstrasse 40, Germany**
Hergestellt von (Firma und Ort) *Manufactured at (name and place)*	**EFEN GmbH** **04938 Uebigau, Gewerbepark Nord Nr. 6, Germany** **Dongguan EFEN Electrical Products Co., Ltd.** **Two Floor B4 Building, Longgang Ind. Park, Shipai Town,** **523357 Donguan City, Guangdong Province, China**
Betriebsdaten und wichtige Merkmale *Rating and principal characteristics*	**AC-23B 400V/400A; AC-22B 500V/400A; AC-21B 690V/400A;** **Ui 1000V AC; see page 4 of Test Report**
Warenzeichen (falls vorhanden) *Trade mark (if any)*	**EFEN**
Typenbezeichnung *Model/Type Ref.*	**E^3 NH-La-Lei 2 xx yyy;** **see page 6 of Test Report**
Zusätzliche Information (falls erforderlich) *Additional information (if necessary)*	

Ein Muster dieses Erzeugnisses ist geprüft und als in Übereinstimmung mit
A sample of the product has been tested and found to be in conformity with

EN 60947-1:2007, EN 60947-3:2009

befunden worden, wie es aus den Prüfberichten hervorgeht (Aktenzeichen/Nr.)
as shown in the test reports (reference No.). **2.03.01139.1.0/EFEN E^3/2/185/CB/CCA**

Diese Konformitätsaussage ist das Ergebnis einer Prüfung, die an einem eingereichten Muster eines Erzeugnisses in Übereinstimmung mit den Bestimmungen der jeweiligen Norm durchgeführt worden ist.
Diese Konformitätsaussage ist von einer Stelle ausgestellt worden, die direkt am CENELEC-Zertifizierungs-Abkommen (CCA) vom 11. September 1973, revidiert am 29. März 1983, 3. September 2004 und 18. April 2007 (einschließlich der Ergänzungen 1 bis 4) teilnimmt. Jede andere am CCA teilnehmende Stelle kann diese Konformitätsaussage als Grundlage für die Erteilung eines nationalen Konformitätszeichens (Prüfzeichens) oder einer nationalen Zulassung heranziehen, wie es im OD CCA 226 Zusammenstellung der Beschlüsse Punkt 2.10 festgelegt ist.

This Statement of Conformity is the result of testing a sample of the product submitted, in accordance with the provisions of the relevant specific standard.

This Statement of Conformity has been established by a body which participates directly in the CENELEC Certification Agreement (CCA) of September 11th, 1973 as revised on March 29th, 1983, September 3rd, 2004 and April 18th, 2007 (including addenda 1 to 4). Any other body participating in the CCA may take this Statement as a basis for granting a national mark of conformity or a national approval as specified in the OD CCA 226 List of Current Decisions of CCA Group clause 2.10.

Österreichischer Verband für Elektrotechnik
Head of Testing & Certification

Digitally signed by W. Martin
Email=w.martin@ove.at

Vienna, 2010-11-02 Dipl.-Ing. W. Martin

OVE - Testing & Certification
1190 Wien, Kahlenberger Str. 2A, Austria
Tel.: +43 1 370 58 06 Fax.:+43 1 370 58 06-199
ZVR: 327279890 DVR: 1055887

Приложение № 6

ДЕКЛАРАЦИЯ

от
Станчо Иванов Пантов, ЕГН 5410167621,

с постоянен адрес : гр. Стара Загора, община Стара Загора, ул. Българско Опълчение 5
настоящ адрес : гр. Стара Загора, община Стара Загора, ул. Българско Опълчение 5,
лична карта № 644865478, издадена от МВР, гр. Стара Загора, на 02.10.2013 г.,

с длъжност :Управител на "Контрагент 35" ЕООД,

в качеството ми на представляващ „Контрагент 35" ЕООД - кандидат за участие в процедура за възлагане на обществена поръчка с **реф.№ PPD 16-094** и предмет: **„Доставка на разединители", Обособена позиция 2-Вертикални разединители ниско напрежение (НН).**

ДЕКЛАРИРАМ, ЧЕ:

Предлаганите от нас

- **Вертикален предпазител-разединител Ниско Напрежение 400 А, размер 2, с триполюсно управление -** Тип **E3 NH-LA-LEI 2 3P V2N EVU,** Производител :**EFEN GmbH Германия;**
- **Вертикален предпазител-разединител Ниско Напрежение 630 А, размер 3, с триполюсно управление-** Тип **E³ NH-LA-LEI 3 3P V2N,** Производител :**EFEN GmbH Германия;**
- **Вертикален разединител Ниско Напрежение 1000 А, с триполюсно управление-** Тип **E3 NH-LA-TR-LEI 1000A 3P U6,** Производител :**EFEN GmbH Германия;**

предмет на горепосочената обществена поръчка, съответстват на изискванията на техническата спецификация на този стандарт за материал, вкл. на параграфи „Характеристика на материала" и „Съответствие на предложеното изпълнение с нормативно-техническите документи" по-горе.

Известна ми е отговорността по чл. 313 от Наказателния кодекс за посочване на неверни данни.

Дата: 26.01. 2017 г.

ДЕКЛАРАТОР: .....

Приложение № 7

Всичко за енергетиката от една ръка

Всичко за енергетиката от една ръка
TRADE COMPANY
CONTRAGENT
КОНТРАГЕНТ 35

TÜVRheinland CERT ISO 9001

6000 Стара Загора; ул. Индустриална, ПК 177; **тел.** (042) 551-73 **факс:** (042) 600-129, **e-mail:** office@contragent.com
1233 София; ж.к. Банишора, ул. Опълченска, бл.42А, вх. Ж, пом. 1, **тел.** (02) 931-0473, **факс:** (02) 931-4184, sofia@contragent.com
4000 Пловдив; бул. Коматевско шосе 26, , **тел.** (032) 67-37-31, **факс:** (032) 67-37-32, plovdiv@contragent.com
9000 Варна; ПК 150; **тел.** (052) 599 631, **факс:** (052) 599 632, varna@contragent.com
Web site: www.contragent.com

Инструкция за транспорт, съхранение, монтаж ,поддържане и експлоатация.

Относно: открита процедура на за възлагане на обществена поръчка с реф.№ PPD 16-094 и предмет: „Доставка на разединители", Обособена позиция 2- Вертикални разединители ниско напрежение (НН).

Транспорт:
Вертикални товарови разединители се транспортират в затворени транспортни средства в оригиналната си опаковка. Да се предпазват от влага. При транспорт да се предпазват от падане, за да се избегне повреда на корпуса. Температурни условия на транспорт:
-40^{0}C до + 80^{0}C.

Съхранение:
Вертикални товарови разединители се съхраняват в затворени складови помещения в оригиналната си опаковка. Да се съхраняват далече от източници на влага.
Температурни условия на съхранение:
-40^{0}C до + 80^{0}C.

Монтаж:
Монтажът се извършва единствено от обучен за това персонал.
По време на монтаж да се спазват всички изисквания за безопасност съгласно местното законодателство. Не се изискват специални инструменти за монтаж.

Поддържане и експлоатация:
Да се спазват всички изисквания за безопасност съгласно местното законодателство.
Температурни условия на експлоатация: -20^{0}C до + 70^{0}C.

26.01.2017г..

Подпис:_____
Станчо Пантов

Приложение № 3

AUSTRIAN INSTITUTE OF TECHNOLOGY

Test Report

Project designation	**Type Test according to IEC 60947-1 and IEC 60947-3**
Product description	**Low-Voltage single pole or three pole operated Fuse-Switch-Disconnectors type E³ NH-La-Lei 2 EVU (185mm Busbar System)**
Client	EFEN GmbH Schlangenbader Straße 40 D-65344 Eltville GERMANY
Order from / No.	02/2015 / ---
Project number	2.03.02930.1.0/EFEN E³/2/185/EVU
Date of issue	04.05.2015
Test engineer	Ing.J.Ainetter
Total number of issues / No.	1 / 1
Number of pages	5
Annex: Number of pages	CB - Test Report No. 2.03.02930.1.0/EFEN E³/2/185/EVU/CB (113 pages)

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ ЗД "ЕФЕН" СТАРА ЗАГОРА

AUSTRIAN INSTITUTE OF TECHNOLOGY

Test item

Identification:

Low-voltage single pole or three pole operated fuse-switch-disconnectors E³ NH-La-Lei 2 EVU (EVU-Variant)

Manufacturer:	EFEN GmbH
Trademark:	EFEN
Number of poles:	3
Size:	2
Busbar system:	185mm
Rated operational voltage(s):	400V a.c. up to 690V a.c.
Rated operational current(s):	400A
Rated frequency:	50/60Hz

Summary of variants:

See page 4

Technical data and description:

See page 5

Testing location, Period of testing

Testing location:

AIT Austrian Institute of Technology GmbH
Business Unit Electric Energy Systems
Giefinggasse 2
1210 Vienna
AUSTRIA

Period of testing:

08 to 10/2009 and 02 to 04/2015

Test(s)

Test(s) performed:

Type test

Test standard(s):

IEC 60947-1:2011 (Edition 5.1)
IEC 60947-3:2012 (Edition 3.1)

Test procedure(s):

CB Scheme

Result

The low-voltage single pole or three pole operated fuse-switch-disconnectors E³ NH-La-Lei 2 EVU (185mm busbar system) have passed the type test successfully.

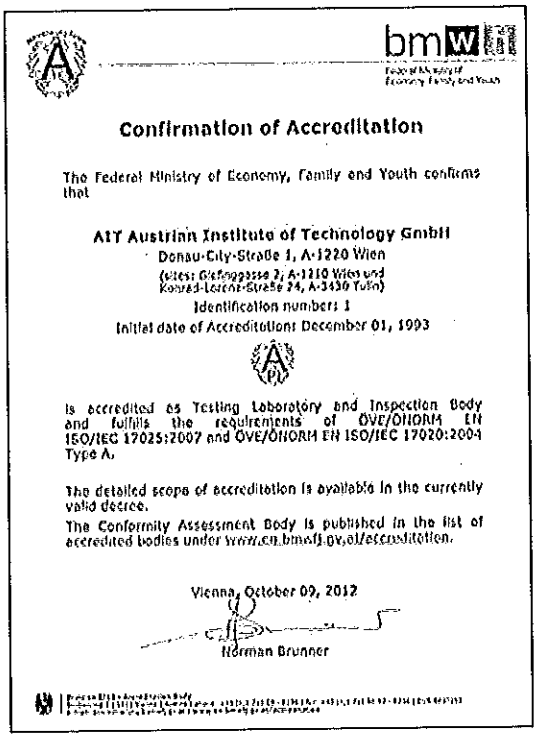
ВЯРНО С ОРИГИНАЛА

Austrian Institute of Technology GmbH akkreditierte Prüfstelle Seal СТАРА ЗАГОРА ЕООД

Test engineer	Responsible for the content
Ing. Johann Ainetter	Ing. Karl Farthofer

AUSTRIAN INSTITUTE OF TECHNOLOGY

Testing laboratory



Confirmation of Accreditation

The Federal Ministry of Economy, Family and Youth confirms that

AIT Austrian Institute of Technology GmbH
Donau-City-Straße 1, A-1220 Wien
(sites: Giefinggasse 2, A-1210 Wien und
Konrad-Lorenz-Straße 24, A-3430 Tulln)
Identification number: 1
Initial date of Accreditation: December 01, 1993

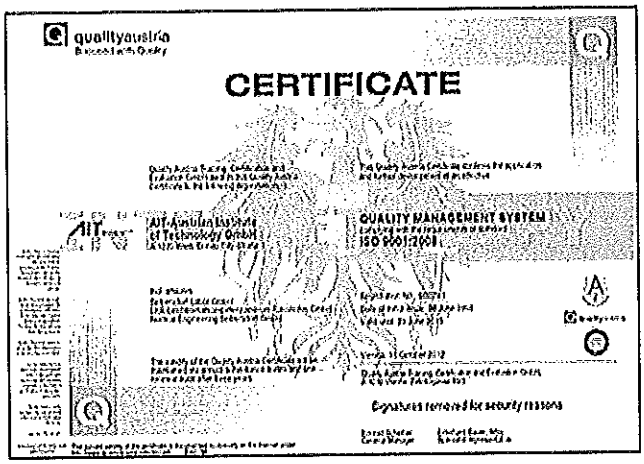
is accredited as Testing Laboratory and Inspection Body and fulfills the requirements of ÖVE/ÖNORM EN ISO/IEC 17025:2007 and ÖVE/ÖNORM EN ISO/IEC 17020:2004 Type A.

The detailed scope of accreditation is available in the currently valid decree.
The Conformity Assessment Body is published in the list of accredited bodies under www.en.bmwfj.gv.at/accreditation.

Vienna, October 09, 2012

Norman Brunner

ACCREDITED
according to
EN ISO/IEC 17025
confirmed by
BMWFJ
with GZ 92714/237-IV/9/00



CERTIFICATE

QUALITY MANAGEMENT SYSTEM
ISO 9001:2008

CERTIFIED
according to
ISO 9001
confirmed by
Quality Austria
with Reg. No. 00229/1

ВЯРНО С ОРИГИНАЛА

CERTIFICATE OF ACCEPTANCE

AIT Austrian Institute of Technology GmbH

Giefinggasse 2, A-1210 Vienna, Austria

AIT Austrian Institute of Technology GmbH

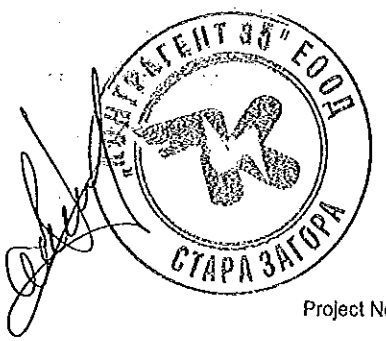
RECOGNIZED CB TESTING LABORATORY
confirmed by
International Electrotechnical Commission
under the responsibility of
OVE
as the National Certification Body

"КОНТРАГЕНТ 35" ЕООД
ГАРА ЗАГОРА

Summary of variants:

Designation	Description
E³ NH-La-Lei 2 1P EVU U6	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ screw terminals M12 (outgoing)
E³ NH-La-Lei 2 1P EVU B6	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ bolt terminals M12 (outgoing)
E³ NH-La-Lei 2 1P EVU V2N	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ V-shape terminals (outgoing)
E³ NH-La-Lei 2 3P EVU U6	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ screw terminals M12 (outgoing)
E³ NH-La-Lei 2 3P EVU B6	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ bolt terminals M12 (outgoing)
E³ NH-La-Lei 2 3P EVU V2N	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ V-shape terminals (outgoing)

ВЯРНО С ОРИГИНАЛА



Technical data and description

Test item	Low-voltage single pole or three pole operated fuse-switch-disconnectors (EVU variant)
Trademark	EFEN
Model/Type reference	E³ NH-La-Lei 2 EVU
Variants	See page 4
Manufacturer	EFEN GmbH
Factory location	Gewerbepark Nord 6, D-04938 Uebigau / Elster
Method of operation	Dependent manual operation
Switching positions	ON / OFF
Number of poles	3
Nature of supply	AC
Utilization category	AC-23B at 400V/400A AC-22B at 500V/400A AC-21B at 690V/400A
Rated operational voltage	400V up to 690V
Rated operational current	400A
Rated frequency	50/60Hz
Conventional free air thermal current with fuse-links	400A
Conventional free air thermal current with solid-links	480A
Rated insulation voltage	1000V
Rated impulse withstand voltage	12kV
Rated short-time withstand current	10000A / 1s 15000A / 1s (with locked operating means)
Rated conditional short-circuit current	120kA at 400V with 400A fuse-links 120kA at 500V with 400A fuse-links 100kA at 690V with 315A fuse-links
Degree of protection	IP 2X
Kind of protective device	Fuse-links NH2 (up to 400A)

ВЯРНО С ОРИГИНАЛА

Test Report issued under the responsibility of:

OVE

TEST REPORT
IEC 60947-3
Low-voltage switchgear and controlgear
Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units

Report Number. ..... :	2.03.02930.1.0/EFEN E³/2/185/EVU/CB
Date of issue ..... :	04.05.2015
Total number of pages ..... :	113
Applicant's name ..... :	EFEN GmbH
Address ..... :	D-65344 Eltville, Schlangenbader Straße 40, GERMANY
Test specification:	
Standard ..... :	IEC 60947-3:2008 (3rd Edition)+A1:2012 in conjunction with IEC 60947-1:2007 (5th Edition)+A1:2010
Test procedure ..... :	CB-Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60947_3C
Test Report Form(s) Originator .... :	OVE
Master TRF ..... :	Dated 2013-05

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Low-voltage single pole or three pole operated fuse-switch-disconnectors (EVU variant)
Trade Mark ..... :	EFEN
Manufacturer ..... :	EFEN GmbH
Model/Type reference ..... :	E³ NH-La-Lei 2 EVU (185mm busbar system)
Variants ..... :	See page 8
Ratings ..... :	400V a.c. up to 690V a.c. // 400A // 50Hz/60Hz // 3-pole

Testing procedure and testing location:			
☒	**CB Testing Laboratory:**	AIT Austrian Institute of Technology GmbH	
Testing location/ address .....:		Giefinggasse 2, 1210 Vienna, AUSTRIA	
☐	**Associated CB Laboratory:**		
Testing location/ address .....:			
	Tested by (name + signature).....:	Ing. Johann Ainetter	
	Approved by (name + signature) ..:	Ing. Karl Farthofer	
☐	**Testing procedure: TMP**		
Testing location/ address .....:			
	Tested by (name + signature).....:		
	Approved by (name + signature) ..:		
☐	**Testing procedure: WMT**		
Testing location/ address .....:			
	Tested by (name + signature).....:		
	Witnessed by (name + signature) .:		
	Approved by (name + signature) ..:		
☐	**Testing procedure: SMT**		
Testing location/ address .....:			
	Tested by (name + signature).....:		
	Approved by (name + signature) ..:		
	Supervised by (name + signature):		

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35 "ЕООД" СТАРА ЗАГОРА

List of Attachments (including a total number of pages in each attachment):

Summary of testing:

Tests performed (name of test and test clause):

A type test was performed according to

- IEC 60947-1:2011 (Edition 5.1)
- IEC 60947-3:2012 (Edition 3.1):

Clause:	Test:	Sample No.
7	Constructional requirements	E^3 NH-La-Lei 2 1P EVU U6/1, E^3 NH-La-Lei 2 3P EVU V2N/1
8.3.3	Test sequence I	E^3 NH-La-Lei 2 1P EVU U6/2/3/4/5, E^3 NH-La-Lei 2 1P EVU V2N/2/3/4/5, E^3 NH-La-Lei 2 3P EVU U6/2/3/4/5, E^3 NH-La-Lei 2 3P EVU V2N/2/3/4/5
8.3.4	Test sequence II	E^3 NH-La-Lei 2 1P EVU U6/6/7/8, E^3 NH-La-Lei 2 1P EVU V2N/6/7/8, E^3 NH-La-Lei 2 3P EVU U6/6/7/8, E^3 NH-La-Lei 2 3P EVU V2N/6/7/8
8.3.5	Test sequence III	E^3 NH-La-Lei 2 1P EVU U6/9/10, E^3 NH-La-Lei 2 1P EVU V2N/9/10, E^3 NH-La-Lei 2 3P EVU U6/9/10, E^3 NH-La-Lei 2 3P EVU V2N/9/10
8.3.6	Test sequence IV	E^3 NH-La-Lei 2 1P EVU U6/11/12, E^3 NH-La-Lei 2 1P EVU V2N/11/12, E^3 NH-La-Lei 2 3P EVU U6/11/12, E^3 NH-La-Lei 2 3P EVU V2N/11/12
8.3.7	Test sequence V	E^3 NH-La-Lei 2 1P EVU U6/13/14, E^3 NH-La-Lei 2 1P EVU V2N/13/14, E^3 NH-La-Lei 2 3P EVU U6/13/14, E^3 NH-La-Lei 2 3P EVU V2N/13/14

The low-voltage single pole or three pole operated
fuse-switch-disconnectors

- E^3 NH-La-Lei 2 EVU
  (185mm busbar system, EVU variant)

have passed the type test successfully.

Testing location:

AIT Austrian Institute of Technology GmbH
Business Unit Electric Energy Systems
Giefinggasse 2
1210 Vienna
AUSTRIA

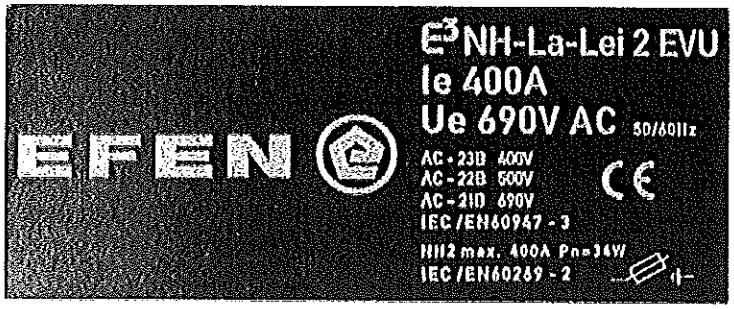
The AIT Austrian Institute of Technology GmbH
is a recognized CB Testing Laboratory under the responsibility of OVE as the National Certification Body.

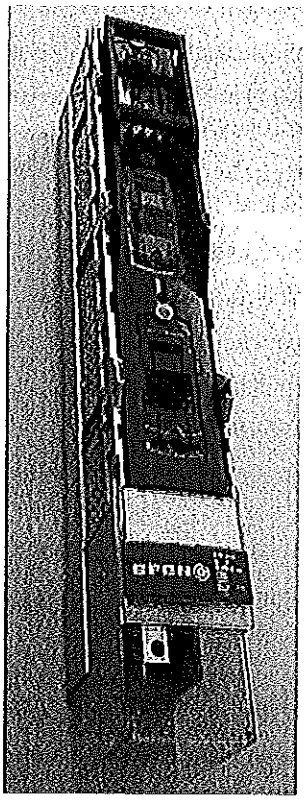
Summary of compliance with National Differences:

КОНТРАГЕНТ 35 ЕООД СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

Copy of marking plate/Picture of test item:





ВЯРНО С ОРИГИНАЛА

„КОНТРАГЕНТ 95" ЕООД СТАРА ЗАГОРА

Test item particulars:			
- method of operation ..... :	Dependent manual operation		
- suitability for isolation ..... :	Suitable		
- degree of protection ..... :	IP 2X		
- number of poles ..... :	3		
- kind of current ..... :	AC		
-in the case of a.c., number of phases and rated frequency ..... :	3 phases / 50/60Hz		
- number of positions of the main contacts (if more than two) ..... :	2 ON/OFF		
-breaking arrangement for fused devices ..... :	---		
Rated and limiting values, main circuit:			
- rated operational voltage U_e (V) ..... :	400	500	690
- rated insulation voltage U_i (V) ..... :	1000		
- rated impulse withstand voltage U_{imp} (kV) ..... :	12		
- conventional free air thermal current Ith with fuse-links (A) ..... :	400		
- conventional free air thermal current Ith with solid-links (A) ..... :	480		
- rated operational current I_e (A) ..... :	400	400	400
- rated uninterrupted current I_u (A) ..... :	400 (maximum power dissipation = 34W)		
- rated frequency (Hz) ..... :	50/60		
- utilization category ..... :	AC-23B	AC-22B	AC-21B
Short-circuit characteristic:			
- rated short-time withstand current I_{cw} (kA) ..... :	10000 / 1s 15000 / 1s (with locked operating means)		
- rated short-time making capacity I_{cm} (kA) ..... :	---		
- rated conditional short-circuit current ..... :	120kA at 400V with 400A fuse-links 120kA at 500V with 400A fuse-links 100kA at 690V with 315A fuse-links		
Control circuits ..... :	---		
Auxiliary circuits ..... :	---		
Relays and releases ..... :	---		
Co-ordination with short-circuit protective devices ..... :			
- kind of protective device ..... :	Fuse-links NH2 (up to 400A)		

ИЗПЪЛНИТЕЛЕН ДИРЕКТОР ЕООД СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

Possible test case verdicts:	
- test case does not apply to the test object .....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing.....:	
Date of receipt of test item.....:	08/2009 and 02/2015
Date (s) of performance of tests .....:	08 to 10/2009 and 02 to 04/2015

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 6.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....: ☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) .....:	**EFEN GmbH** **Gewerbepark Nord 6** **04938 Uebigau / Elster** **GERMANY**

ВЯРНО С ОРИГИНАЛА

„КОНТРАГЕНТ 35" ЕООД СТАРА ЗАГОРА

General product information:

Low-voltage
single pole or three pole operated
fuse-switch-disconnectors
(185mm busbar system, EVU variant)
for use with NH2 fuse-links

type

E³ NH-La-Lei 2 EVU

Remark to test performance:

At all tests concerning making and breaking capacity, operational performance capability and performance under short-circuit conditions, a metallic screen were placed to the equipment, in accordance with the arrangements and distances specified by the manufacturer:

- Distance above to metallic screen: 50mm
- Distance lateral to metallic screen: 10mm

Remark for use of the fuse-switch-disconnectors:

The maximum power dissipation of the fuse-links suitable for use with the fuse-switch-disconnectors is 34W. Fuse-links with rated voltage 690V of the appropriate size (NH2) may have a power dissipation exceeding this value.

It has to be taken into consideration that the maximum power dissipation of

34W

will not be exceeded for use in uninterrupted duty.

КОНТРАГЕНТ ЗА "ЕООД" СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

Summary of variants:

E³ NH-La-Lei 2 1P EVU U6:	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ screw terminals M12 (outgoing)
E³ NH-La-Lei 2 1P EVU B6:	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ bolt terminals M12 (outgoing)
E³ NH-La-Lei 2 1P EVU V2N:	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ V-shape terminals (outgoing)
E³ NH-La-Lei 2 3P EVU U6:	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ screw terminals M12 (outgoing)
E³ NH-La-Lei 2 3P EVU B6:	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ bolt terminals M12 (outgoing)
E³ NH-La-Lei 2 3P EVU V2N:	Fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ V-shape terminals (outgoing)

ВЯРНО С ОРИГИНАЛА

"КОНТРАГЕНТ 95" ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

5.2	MARKING		
	Marking on equipment itself or on nameplate or nameplates attached to the equipment and legible from the front after mounting		P
	- indication of the open and closed position	Visible open and closed position	P
	- suitability for isolation	In open position	P
	- disconnectors AC-20 and DC-20 only: marked "Do not operate under load"		N/A
	Following marking is visible after mounting:		
	- direction of movement of the actuator (see 7.1.5.2)		P
	- indication of the position of the actuator (see also 7.1.6.1 and 7.1.6.2)		P
	- approval or certification mark, if applicable		N/A
	- for miniaturized equipment, symbol, colour code or letter code		N/A
	- terminal identification and marking (see 7.1.8.4)		P
	- IP code and class of protection against electric shock, when applicable (marked preferably on the equipment as far as possible)		P
	- suitability for isolation, where applicable, with the isolation function symbol according to IEC 60617-7, reference 07-01-03, combined with the appropriate function symbol for the equipment		P
	- this symbols are clearly and unmistakably marked		P
	- this symbols are visible when the equipment is installed as in service and the actuator is accessible		P
	In the case of electronically controlled electromagnets, information other than that given in 5.1 may also be necessary (see also 4.5 and Annex U)		N/A
	The indication "s", "sol", "r" or "f" for non-universal screwless terminals shall be marked on the device or, if the space available is not sufficient, on the smallest package unit or in technical information provided with the product		N/A

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Marking on equipment not needed to be visible after mounting:		
	- manufacturer's name or trademark	EFEN	P
	- type designation or serial number	E³ NH-La-Lei 2 EVU	P
	- rated operational currents or rated powers	Ie 400A	P
	- rated operational voltage	Ue 690V AC	P
	- utilization category	AC 23B 400V AC 22B 500V AC 21B 690V	P
	- rated frequency or the indication "DC"	50/60Hz	P
	- manufacturer's claim for compliance with IEC 60947-3	IEC/EN 60947-3	P
	- degree of protection	IP2X	P
	Marking on fuse-combination units:		P
	- fuse type	NH2	P
	- maximum rated current	max. 400A	P
	- power loss of the fuse-link	Pn=34W	P
	Identification of terminals:		P
	- line terminals, unless connection is immaterial	Yes	P
	- load terminals, unless connection is immaterial	Yes	P
	- neutral pole terminal		N/A
	- protective earth terminal		N/A
	Data in the manufacturer's published information:		P
	- rated insulation voltage	Ui=1000V	P
	- rated impulse withstand voltage for equipment suitable for isolation or when determined	Uimp=12kV	P
	- pollution degree, if different from 3	3	P
	- rated duty	Uninterrupted duty	P
	- rated short-time withstand current and duration	Icw=10000A/1s	P
	- rated short-circuit making capacity	-	N/A
	- rated conditional short-circuit current	120kA at 400V with 400A fuse-links 120kA at 500V with 400A fuse-links 100kA at 690V with 315A fuse-links	P
5.3	Instructions for installation, operation and maintenance		P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ "Э" ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

6	NORMAL SERVICE, MOUNTING AND TRANSPORT CONDITIONS		
6.1	Normal service conditions		P
6.1.1	Ambient air temperature	up to +35°C with peaks up to +40°C	P
6.1.2	Altitude	≤ 2000m	P
6.1.3	Atmospheric conditions		P
6.1.3.1	Humidity	≤ 50% at 40°C	P
6.1.3.2	Pollution degree	3	P
6.1.4	Shock and vibration	Under consideration	N/A
6.2	Conditions during transport and storage	-25°C to +55°C	P
6.3	Mounting	See mounting instruction	P
7	CONSTRUCTIONAL AND PERFORMANCE REQUIREMENTS		
7.1	Constructional requirements		
7.1.1	General		
7.1.2	Materials		
7.1.2.1	General material requirements		
	Parts of insulating materials which might be exposed to thermal stresses due to electrical effects within the equipment shall not be adversely affected by abnormal heat and by fire.		P
	The manufacturer specifies which test method, 7.1.2.2 or 7.1.2.3, is to be used.....:	Test method acc. to 7.1.2.2	
7.1.2.2	Glow wire Testing		
	The suitability of materials used is verified by making tests on.....: or	sections taken from the equipment	P
	- providing data from the insulating material supplier fulfilling the requirements according to IEC 60695-2-12		N/A
	Glow-wire test according to IEC 60695-2-10 and IEC 60695-2-11		—
	Parts made of insulating material necessary to retain current-carrying parts in position: test temperature 960 °C		P
	No visible flame and no sustained glowing		N/A
	Flames and glowing extinguish within 30 s	Extinguishing immediately after removing the glow-wire	P
	No ignition of the tissue paper		P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Parts of insulating material not necessary to retain current-carrying parts in position, even though in contact with them: test temperature 650 °C		
	No visible flame and no sustained glowing	No visible flame	P
	Flames and glowing extinguish within 30 s		N/A
	No ignition of the tissue paper		P
7.1.2.3	Test based on flammability category		
	For parts of insulating materials, hot wire ignition and, where applicable, arc ignition tests as specified in 8.2.1.1.2, shall be made based on flammability category		N/A
	Tests on materials are made in accordance with Annex M		N/A
	The hot wire ignition (HWI) and arc ignition (AI) test value requirements related to the material flammability category shall conform to Table M.1 or M.2		N/A
	Alternatively, the manufacturer may provide data from the insulating material supplier fulfilling the requirements given in Annex M		N/A
7.1.3	Current-carrying parts and their connections		P
	Current-carrying parts have the necessary mechanical strength and current-carrying capacity for their intended use		P
	For electrical connections, no contact pressure is transmitted through insulating material other than ceramic or other material with characteristics not less suitable, unless there is sufficient resiliency in the metallic parts to compensate for any possible shrinkage or yielding of the insulation material		P
7.1.4	Clearances.......................................:	See appended table 7.1.4	P
	Creepage distances.......................................:	See appended table 7.1.4	P
	Pollution degree ....:	3	—
	Comparative tracking index (V) ....:	500	—
	Material group ....:	II	—
7.1.5	Actuator		P
7.1.5.1	Insulation		—
	Actuator insulated from live parts for		—
	- rated insulation voltage	1000V	P
	- rated impulse withstand voltage	12kV	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 95 ЕООД СТАРА ЗАГОРА

- 65 -

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Actuator made of metal	No	—
	- connected to a protective conductor or provided with an additional insulation		N/A
	Actuator made of or covered by insulating material.....:	Made of insulating material	—
	- internal metal parts, which might become accessible in the event of an insulation failure, are also insulated from live parts for the rated insulation voltage		N/A
7.1.5.2	Direction of movement		P
	The direction of operation for actuators shall where applicable conform to IEC 60447		P
	There is no doubt of the "I" and "O" position and the direction of operation	Visible open and closed position	P
7.1.6	Indication of contact position		
7.1.6.1	Indicating means	Actuator	P
7.1.6.2	Indication by the actuator	Yes	P
7.1.7	Additional safety requirements for equipment suitable for isolation		
7.1.7.1	Additional constructional requirements		
	- marking according to 5.2.1b	Yes	P
	- indication of the position of the contacts	See clause 7.1.5.2	P
	- construction of the actuating mechanism		P
	- minimum clearances across open contacts (see Table 13, Part 1) (mm) .....:	14	—
	- measured clearances (mm) .....:	> 20	P
	- test Uimp across gap (kV) .....:	18,5	P
7.1.7.2	Supplementary requirements for equipment with provision for electrical interlocking with contactors or circuit-breakers:		N/A
	Auxiliary switch is rated according to IEC 60947-5-1 (unless the equipment is rated AC-23)		N/A
	Time interval between opening of the contacts of the auxiliary contact and the contacts of the main poles: ≥20 ms .....:	-	—
	Measured time interval (ms) .....:	-	N/A
	During the closing operation the contacts of the auxiliary switch closes after or simultaneously with the contacts of the main poles		N/A

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.7.3	Supplementary requirements for equipment provided with means for padlocking the open position:		
	The locking means is so designed that it cannot be removed with the appropriate padlock(s) installed		N/A
	Test force F applied to the actuator in an attempt to operate to the closed position (N) .....:	-	—
	Rated impulse withstand voltage (kV) .....:	-	—
	Test Uimp on open main contacts at the test force		N/A
7.1.8	Terminals		
7.1.8.1	All parts of terminals which maintain contact and carry current are of metal having adequate mechanical strength	(see 8.2.4 below)	P
	Terminal connections are such that necessary contact pressure is maintained	(see 8.2.4 below)	P
	Terminals are so constructed that the conductor is clamped between suitable surfaces without damage to the conductor and terminal	(see 8.2.4 below)	P
	Terminals do not allow the conductor to be displaced or to be displaced themselves in a manner detrimental to the operator of equipment and the insulation voltage is not reduced below the rated value	(see 8.2.4 below)	P
	Screwless-type clamping units, unless otherwise specified by the manufacturer, shall accept rigid and flexible conductors as indicated in Table 1		N/A
	On screwless-type clamping unit, the connection or disconnection of conductors shall be made as follows:		
	– on universal clamping units by the use of a general purpose tool or a convenient device, integral with the clamping unit to open it for the insertion or withdrawal of the conductors		N/A
	– on push-wire clamping units by simple insertion. For the disconnection of the conductors an operation other than a pull only on the conductor shall be necessary. The use of a general purpose tool or of a convenient device, integral with the clamping unit is allowed in order to "open" it and to assist the insertion or the withdrawal of the conductor		N/A

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КОНТРАГЕНТ 35 ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.2.4	Mechanical properties of terminals		
	Mechanical strength of terminals		P
	Maximum cross-sectional area of conductor (mm^2) / (mm x mm) .....:	300 (cables) 40 x 10 (bars)	—
	Diameter of thread (mm) .....:	12	—
	Torque (Nm) .....:	32 x 1,1 = 35,2	—
	5 times on 2 separate clamping units		P
	Testing for damage to and accidental loosening of conductor (flexion test)		
	Conductor of the smallest cross-sectional area (mm^2) .....:	35 (V-shape terminals)	—
	Number of conductor of the smallest cross section:	1	—
	Diameter of bushing hole (mm) .....:	14,5	—
	Height between the equipment and the platen .....:	320	—
	Mass at the conductor(s) (kg) .....:	6,8	—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Pull-out test		
	Force (N), applied for 1 min. .....:	190	—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Conductor of the largest cross-sectional area (mm^2) .....:	300 (V-shape terminals)	—
	Number of conductor of the largest cross section .:	1	—
	Diameter of bushing hole (mm) .....:	28,6	—
	Height between the equipment and the platen .....:	464	—
	Mass at the conductor(s) (kg) .....:	22,7	—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Pull-out test		
	Force (N), applied for 1 min. .....:	578	—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Conductor of the largest and smallest cross-sectional area (mm²) .....:	-	—
	Number of conductor of the smallest cross section, number of conductor of the largest cross section ..:	-	—
	Diameter of bushing hole (mm) .....:	-	—
	Height between the equipment and the platen .....:	-	—
	Mass at the conductor(s) (kg) .....:	-	—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		N/A
	Pull-out test		
	Force (N), applied for 1 min.....:	-	—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		N/A
7.1.8.2	Connection capacity		
	Type of conductors .....:	Cables: Cu or Al, rigid or flexible Bars: Cu or Al	—
	Minimum cross-sectional area of conductor (mm²) .....:	35	—
	Maximum cross-sectional area of conductor (mm²) .....:	300	—
	Number of conductors simultaneously connectable to the terminal .....:	2	—
7.1.8.3	Connection		
	Terminals for connection to external conductors are readily accessible during installation		P
	Clamping screws and nuts do not serve to fix any other component		P
7.1.8.4	Terminal identification and marking		
	Terminal intended exclusively for the neutral conductor		N/A
	Protective earth terminal		N/A
	Other terminals		P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.9	Additional requirements for equipment provided with a neutral pole		
	Equipment provided with a pole intended for the connection of neutral, this pole shall be clearly marked by the letter "N"		N/A
	The switched neutral pole does not break before and does not make after the other poles except		N/A
	- a pole having the appropriate short-circuit breaking and making capacity is used as neutral pole, all poles may operate together		N/A
	Conventional thermal current of neutral pole		N/A
7.1.10	Provisions for protective earthing		
7.1.10.1	The exposed conductive parts are electrically interconnected and connected to a protective earth terminal		N/A
7.1.10.2	Protective earth terminal is readily accessible		N/A
	Protective earth terminal is suitably protected against corrosion		N/A
	Electrical continuity between the exposed conductive parts of the protective earth terminal and the metal sheathing of connecting conductors		N/A
	Protective earth terminal has no other functions		N/A
7.1.10.3	Protective earth terminal marking and identification		N/A
7.1.11	Enclosure for equipment		
7.1.11.1	Design		
	When the enclosure is opened, all parts requiring access for installation and maintenance are readily accessible		N/A
	Sufficient space is provided inside the enclosure		N/A
	The fixed parts of a metal enclosure are electrically connected to the other exposed conductive parts of the equipment and connected to a terminal which enables them to be earthed or connected to a protective conductor		N/A
	Under no circumstances a removable metal part of the enclosure is insulated from the part carrying the earth terminal when the removable part is in place		N/A
	The removable parts of the enclosure are firmly secured to the fixed parts by a device such that they cannot be accidentally loosened or detached owing to the effects of operation of the equipment or vibrations		N/A

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	When an enclosure is so designed as to allow the covers to be opened without the use of tools, means is provided to prevent loss of the fastening devices		N/A
	If the enclosure is used for mounting push-buttons, it is not possible to remove the buttons from the outside of the enclosure		N/A
7.1.11.2	Insulation		
	If, in order to prevent accidental contact between a metallic enclosure and live parts, the enclosure is partly or completely lined with insulating material, then this lining is securely fixed to the enclosure		N/A
7.1.12	Degree of protection of enclosed equipment		
	Degree of protection .....:	IP 2X	P
7.1.13	Conduit pull-out, torque and bending with metallic conduits		
	Withstand the stress occurring during its installation .....:	-	N/A

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IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3	TEST SEQUENCE I GENERAL PERFORMANCE CHARACTERISTICS		
8.3.3.1	Temperature-rise		P
	Type E³ NH-La-Lei 2 1P EVU U6 with fuse-links 400A		
	ambient temperature 10-40 °C .....:	22	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		P
	- rated operational current Ie (A) .....:	400	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm).....:	240 / 30x10 2000 / 600	—
	Fuse-link details (fuse-combination units only):		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Measured temperature-rise.....:	See appended table 8.3.3.1-a	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²).....:	-	—
	Measured temperature-rise.....:	-	N/A

КОНТРАГЕНТ 35 ЕООД СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	Temperature-rise		P
	Type E³ NH-La-Lei 2 1P EVU V2N with fuse-links 400A		
	ambient temperature 10-40 °C .....:	21	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		P
	- rated operational current Ie (A) .....:	400	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm).....:	240 / 30x10 2000 / 600	—
	Fuse-link details (fuse-combination units only):		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Measured temperature-rise.....:	See appended table 8.3.3.1-b	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²).....:	-	—
	Measured temperature-rise.....:	-	N/A

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.1	Temperature-rise		P
	Type E³ NH-La-Lei 2 3P EVU U6 with fuse-links 400A		
	ambient temperature 10-40 °C .....:	22	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		P
	- rated operational current Ie (A) .....:	400	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm).....:	240 / 30x10 2000 / 600	—
	Fuse-link details (fuse-combination units only):		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Measured temperature-rise.....:	See appended table 8.3.3.1-c	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²).....:	-	—
	Measured temperature-rise.....:	-	N/A

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ АД "ЕФОН" СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	Temperature-rise		P
	Type E³ NH-La-Lel 2 3P EVU V2N with fuse-links 400A		
	ambient temperature 10-40 °C ..... :	22,5	—
	test enclosure W x H x D (mm x mm x mm) ..... :	-	—
	material of enclosure ..... :	-	—
	Main circuits, test conditions:		P
	- rated operational current Ie (A) ..... :	400	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm) ..... :	240 / 30x10 2000 / 600	—
	Fuse-link details (fuse-combination units only):		P
	- manufacturer's name, trademark or identification mark ..... :	EFEN	—
	- manufacturer's model or type reference ..... :	35054.0150	—
	- rated current (A) ..... :	400	—
	- power loss (W) ..... :	34 max.	—
	- rated breaking capacity (kA) ..... :	120	—
	Measured temperature-rise ..... :	See appended table 8.3.3.1-d	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) ..... :	-	—
	- cable cross-section (mm²) ..... :	-	—
	Measured temperature-rise ..... :	-	N/A

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КОНТРАГЕН 2004 ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	Temperature-rise		P
	Type E³ NH-La-Lei 2 1P EVU U6 with solid-links		
	ambient temperature 10-40 °C .....:	22	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		P
	- rated operational current Ie (A) .....:	480	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm).....:	240 / 30x10 2000 / 600	—
	Fuse-link details (fuse-combination units only):		P
	- manufacturer's name, trademark or identification mark .....:	-	—
	- manufacturer's model or type reference .....:	-	—
	- rated current (A) .....:	-	—
	- power loss (W) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
	Measured temperature-rise.....:	See appended table 8.3.3.1-e	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²).....:	-	—
	Measured temperature-rise.....:	-	N/A

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	Temperature-rise		P
	Type E³ NH-La-Lei 2 1P EVU U6 V2N with solid-links		
	ambient temperature 10-40 °C .....:	22	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		P
	- rated operational current Ie (A) .....:	480	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm).....:	240 / 30x10 2000 / 600	—
	Fuse-link details (fuse-combination units only):		P
	- manufacturer's name, trademark or identification mark .....:	-	—
	- manufacturer's model or type reference .....:	-	—
	- rated current (A) .....:	-	—
	- power loss (W) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
	Measured temperature-rise.....:	See appended table 8.3.3.1-f	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²).....:	-	—
	Measured temperature-rise.....:	-	N/A

ВЯРНО С ОРИГИНАЛА

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	Temperature-rise		P
	Type E³ NH-La-Lel 2 3P EVU U6 with solid-links		
	ambient temperature 10-40 °C .....:	22	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		P
	- rated operational current Ie (A) .....:	480	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm).....:	240 / 30x10 2000 / 600	—
	Fuse-link details (fuse-combination units only):		P
	- manufacturer's name, trademark or identification mark .....:	-	—
	- manufacturer's model or type reference .....:	-	—
	- rated current (A) .....:	-	—
	- power loss (W) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
	Measured temperature-rise.....:	See appended table 8.3.3.1-g	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²).....:	-	—
	Measured temperature-rise.....:	-	N/A

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35 ГОДИНИ СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	Temperature-rise		P
	Type E³ NH-La-Lei 2 3P EVU V2N with solid-links		
	ambient temperature 10-40 °C ...:	22	—
	test enclosure W x H x D (mm x mm x mm) ...:	-	—
	material of enclosure ...:	-	—
	Main circuits, test conditions:		P
	- rated operational current Ie (A) ...:	480	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm)...:	240 / 30x10 2000 / 600	—
	Fuse-link details (fuse-combination units only):		P
	- manufacturer's name, trademark or identification mark ...:	-	—
	- manufacturer's model or type reference ...:	-	—
	- rated current (A) ...:	-	—
	- power loss (W) ...:	-	—
	- rated breaking capacity (kA) ...:	-	—
	Measured temperature-rise...:	See appended table 8.3.3.1-h	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) ...:	-	—
	- cable cross-section (mm²)...:	-	—
	Measured temperature-rise...:	-	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.2	Test of dielectric properties		P
	Type E³ NH-La-Lei 2 1P EVU U6		
	Rated impulse withstand voltage (kV) .....:	12	—
	- test Uimp main circuits (kV) .....:	14,8	P
	- test Uimp auxiliary circuits (kV) .....:	-	N/A
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) .....:	18,5	P
	Power-frequency withstand voltage (V) .....:	1000	—
	- main circuits, test voltage for 5 sec. (V) .....:	2200	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) .....:	-	N/A
	Devices, which have been disconnected for the power-frequency withstand voltage test .....:	-	N/A
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V).....:	760	—
	Measured leakage current (mA).....:	< 0,1	P

8.3.3.2	Test of dielectric properties		P
	Type E³ NH-La-Lei 2 3P EVU V2N		
	Rated impulse withstand voltage (kV) .....:	12	—
	- test Uimp main circuits (kV) .....:	14,8	P
	- test Uimp auxiliary circuits (kV) .....:	-	N/A
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) .....:	18,5	P
	Power-frequency withstand voltage (V) .....:	1000	—
	- main circuits, test voltage for 5 sec. (V) .....:	2200	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) .....:	-	N/A
	Devices, which have been disconnected for the power-frequency withstand voltage test .....:	-	N/A
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V).....:	760	—
	Measured leakage current (mA).....:	< 0,1	P

ВЯРНО С ОРИГИНАЛА

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.3	Making and breaking capacity		P
	Type E³ NH-La-Lei 2 1P EVU U6: AC-23B at 400V/400A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-23B	—
	- rated operational voltage Ue (V) .....:	400	—
	- rated operational current Ie (A) or power (kW) ....:	400	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conditions for make operation, AC-23A and AC-23B only:		P
	- test voltage, U = 1,05 Ue..... (V):	L1: 423 L2: 424 L3: 423	—
	- test current, I = 10.... x Ie (A):	L1: 4017 L2: 4024 L3: 4014	—
	- power factor .....:	L1: 0,36 L2: 0,35 L3: 0,36	—
	Conditions for break operation, AC-23A and AC-23B only:		P
	- test voltage, U = 1,05 Ue..... (V):	L1: 423 L2: 424 L3: 423	—
	- test current, I = 8..... x Ie (A):	L1: 3209 L2: 3215 L3: 3205	—
	- power factor .....:	L1: 0,34 L2: 0,34 L3: 0,34	—

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		N/A
	- test voltage, U = 1,05 Ue.....(V):	L1: - L2: - L3: -	—
	- test current, I = __ x Ie (A):	L1: - L2: - L3: -	—
	- power factor / ~~time constant~~ .....:	L1: - L2: - L3: -	—
	Number of make/break or make and break operations .....:	3 and 3	P
	- recovery voltage duration (≥ 50 ms) .....:	350	P
	- current duration (ms) .....:	240 and 220	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		P
	- oscillatory frequency (kHz) .....:	83,26	—
	- measured oscillatory frequency (kHz) .....:	L1: 83,3 L2: 83,3 L3: 83,3	P
	- factor γ .....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

ИЗПЪЛНИТЕЛНА АГЕНЦИЯ ПО ЕДНА СТАРА ЗАГОРА

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IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.3.6-a	P

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КОНТРАГЕНТ ЗЕЛЕНОГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		P
	- actuator type (fig.) .....:	1e	—
8.2.5.2.1	Dependent and independent manual operation		P
	- actuating force for opening (N) .....:	205	—
	- test force with blocked main contacts (N) .....:	400	—
	- used method to keep the contact closed .....:	Brazing	—
	During and after the test, open position not indicated .....:	No open position	P
	Equipment with locking mean, no locking in the open position while test force is applied .....:	No locking mechanism in open position	N/A
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position .....:		N/A
	- used method to keep the contact closed .....:	-	N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-	N/A
	During and after the test, open position not indicated .....:	-	N/A
	Equipment show no damage impairing its normal operation .....:	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:	-	N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position .....:		N/A
	- used method to keep the contact closed .....:	-	N/A
	- stored energy of the power operator released (3 times) .....:	-	N/A
	During and after the test, open position not indicated .....:	-	N/A
	Equipment show no damage impairing its normal operation .....:	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:	-	N/A

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.3	Making and breaking capacity		P
	Type E³ NH-La-Lei 2 3P EVU U6: AC-23B at 400V/400A		
	- utilization category .....:	AC-23B	—
	- rated operational voltage Ue (V) .....:	400	—
	- rated operational current Ie (A) or power (kW) ....:	400	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conditions for make operation, AC-23A and AC-23B only:		P
	- test voltage, U = 1,05 Ue..... (V):	L1: 423 L2: 424 L3: 423	—
	- test current, I = 10.... x Ie (A):	L1: 4017 L2: 4024 L3: 4014	—
	- power factor .....:	L1: 0,36 L2: 0,35 L3: 0,36	—
	Conditions for break operation, AC-23A and AC-23B only:		P
	- test voltage, U = 1,05 Ue..... (V):	L1: 423 L2: 424 L3: 423	—
	- test current, I = 8..... x Ie (A):	L1: 3209 L2: 3215 L3: 3205	—
	- power factor .....:	L1: 0,34 L2: 0,34 L3: 0,34	—

ВЯРНО С ОРИГИНАЛА

"КОНТРАГЕНТ 35" ЕООД СТАРОЗАГОРА

IEC 60947-3

Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		N/A
	- test voltage, U = 1,05 Ue..................................(V):	L1: - L2: - L3: -	—
	- test current, I = __ x Ie (A):	L1: - L2: - L3: -	—
	- power factor / ~~time constant~~ ....:	L1: - L2: - L3: -	—
	Number of make/break or make and break operations ....:	3 and 3	P
	- recovery voltage duration (≥ 50 ms) ....:	350	P
	- current duration (ms) ....:	240 and 220	—
	- time interval between operations (s) ....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		P
	- oscillatory frequency (kHz) ....:	83,26	—
	- measured oscillatory frequency (kHz) ....:	L1: 83,3 L2: 83,3 L3: 83,3	P
	- factor γ ....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.3.6-b	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ АД 2003 СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		P
	- actuator type (fig.) .....:	1e	—
8.2.5.2.1	Dependent and independent manual operation		P
	- actuating force for opening (N) .....:	205	—
	- test force with blocked main contacts (N) .....:	400	—
	- used method to keep the contact closed .....:	Brazing	—
	During and after the test, open position not indicated .....:	No open position	P
	Equipment with locking mean, no locking in the open position while test force is applied .....:	No locking mechanism in open position	N/A
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position .....:		N/A
	- used method to keep the contact closed .....:	-	N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-	N/A
	During and after the test, open position not indicated .....:	-	N/A
	Equipment show no damage impairing its normal operation .....:	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:	-	N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position .....:		N/A
	- used method to keep the contact closed .....:	-	N/A
	- stored energy of the power operator released (3 times) .....:	-	N/A
	During and after the test, open position not indicated .....:	-	N/A
	Equipment show no damage impairing its normal operation .....:	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:	-	N/A

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.3	Making and breaking capacity		P
	Type E³ NH-La-Lei 2 1P EVU U6: AC-22B at 500V/400A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-22B	—
	- rated operational voltage Ue (V) .....:	500	—
	- rated operational current Ie (A) or power (kW) ....:	400	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conditions for make operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue.....(V):	L1: - L2: - L3: -	—
	- test current, I = 10....x Ie (A):	L1: - L2: - L3: -	—
	- power factor.....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue.....(V):	L1: - L2: - L3: -	—
	- test current, I = 8.....x Ie (A):	L1: - L2: - L3: -	—
	- power factor.....:	L1: - L2: - L3: -	—

ВЯРНО С ОРИГИНАЛА

"КОНТРАГЕНТ 35" ЕООД СТАНОВА ОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		P
	- test voltage, U = 1,05 Ue..... (V):	L1: 525 L2: 527 L3: 526	—
	- test current, I = 3 x Ie (A):	L1: 1217 L2: 1224 L3: 1210	—
	- power factor / ~~time constant~~ .....:	L1: 0,64 L2: 0,65 L3: 0,64	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration (≥ 50 ms) .....:	250	P
	- current duration (ms) .....:	300	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		P
	- oscillatory frequency (kHz) .....:	57,24	—
	- measured oscillatory frequency (kHz) .....:	L1: 57,1 L2: 57,1 L3: 57,1	P
	- factor γ .....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

КОНТРАГЕНТ ЗА ЕФЕЕ СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.3.6-c	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ АД СТАРА ЗАГОРА 6003

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		P
	- actuator type (fig.) .....:	1e	—
8.2.5.2.1	Dependent and independent manual operation		P
	- actuating force for opening (N) .....:	205	—
	- test force with blocked main contacts (N) .....:	400	—
	- used method to keep the contact closed .....:	Brazing	—
	During and after the test, open position not indicated .....:	No open position	P
	Equipment with locking mean, no locking in the open position while test force is applied .....:	No locking mechanism in open position	N/A
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position .....:		N/A
	- used method to keep the contact closed .....:	-	N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-	N/A
	During and after the test, open position not indicated .....:	-	N/A
	Equipment show no damage impairing its normal operation .....:	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:	-	N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position .....:		N/A
	- used method to keep the contact closed .....:	-	N/A
	- stored energy of the power operator released (3 times) .....:	-	N/A
	During and after the test, open position not indicated .....:	-	N/A
	Equipment show no damage impairing its normal operation .....:	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:	-	N/A

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.3	Making and breaking capacity		P
	Type E³ NH-La-Lei 2 3P EVU U6: AC-22B at 500V/400A		
	- utilization category .....:	AC-22B	—
	- rated operational voltage Ue (V) .....:	500	—
	- rated operational current Ie (A) or power (kW) ....:	400	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conditions for make operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue.....(V):	L1: - L2: - L3: -	—
	- test current, I = 10.... x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue.....(V):	L1: - L2: - L3: -	—
	- test current, I = 8..... x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		P
	- test voltage, U = 1,05 Ue..... (V):	L1: 525 L2: 527 L3: 526	—
	- test current, I = 3 x Ie (A):	L1: 1217 L2: 1224 L3: 1210	—
	- power factor / ~~time constant~~ .....:	L1: 0,64 L2: 0,65 L3: 0,64	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration (≥ 50 ms) .....:	Permanent	P
	- current duration (ms) .....:	300	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		P
	- oscillatory frequency (kHz) .....:	57,24	—
	- measured oscillatory frequency (kHz) .....:	L1: 57,1 L2: 57,1 L3: 57,1	P
	- factor γ .....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.3.6-d	P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		P
	- actuator type (fig.) .....:	1e	—
8.2.5.2.1	Dependent and independent manual operation		P
	- actuating force for opening (N) .....:	205	—
	- test force with blocked main contacts (N) .....:	400	—
	- used method to keep the contact closed .....:	Brazing	—
	During and after the test, open position not indicated .....:	No open position	P
	Equipment with locking mean, no locking in the open position while test force is applied .....:	No locking mechanism in open position	N/A
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position .....:		N/A
	- used method to keep the contact closed .....:	-	N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-	N/A
	During and after the test, open position not indicated .....:	-	N/A
	Equipment show no damage impairing its normal operation .....:	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:	-	N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position .....:		N/A
	- used method to keep the contact closed .....:	-	N/A
	- stored energy of the power operator released (3 times) .....:	-	N/A
	During and after the test, open position not indicated .....:	-	N/A
	Equipment show no damage impairing its normal operation .....:	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:	-	N/A

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.3	Making and breaking capacity		P
	Type E³ NH-La-Lei 2 1P EVU U6: AC-21B at 690V/400A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-21B	—
	- rated operational voltage Ue (V) .....:	690	—
	- rated operational current Ie (A) or power (kW) ....:	400	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conditions for make operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue..... (V):	L1: - L2: - L3: -	—
	- test current, I = 10.... x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue..... (V):	L1: - L2: - L3: -	—
	- test current, I = 8..... x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—

ВЯРНО С ОРИГИНАЛА

„КОНТРАГЕНТ ЗА" ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		P
	- test voltage, U = 1,05 Ue..... (V):	L1: 729 L2: 730 L3: 727	—
	- test current, I = 1,5 x Ie (A):	L1: 607 L2: 613 L3: 604	—
	- power factor / ~~time constant~~ .....:	L1: 0,96 L2: 0,96 L3: 0,95	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration (≥ 50 ms) .....:	250	P
	- current duration (ms) .....:	290	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		N/A
	- oscillatory frequency (kHz) .....:	-	—
	- measured oscillatory frequency (kHz) .....:	L1: - L2: - L3: -	N/A
	- factor γ .....:	L1: - L2: - L3: -	N/A
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

КОНТРАГЕНТ 35" ЕООД СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.3.6-e	P

ВЯРНО С ОРИГИНАЛА

"КОНТРАГЕНТ ЗА ЕФЕН" СОФИЯ БЪЛГАРИЯ

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		P
	- actuator type (fig.) ..... :	1e	—
8.2.5.2.1	Dependent and independent manual operation		P
	- actuating force for opening (N) ..... :	205	—
	- test force with blocked main contacts (N) ..... :	400	—
	- used method to keep the contact closed ..... :	Brazing	—
	During and after the test, open position not indicated ..... :	No open position	P
	Equipment with locking mean, no locking in the open position while test force is applied ..... :	No locking mechanism in open position	N/A
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position ..... :		N/A
	- used method to keep the contact closed ..... :	-	N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) ..... :	-	N/A
	During and after the test, open position not indicated ..... :	-	N/A
	Equipment show no damage impairing its normal operation ..... :	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied ..... :	-	N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position ..... :		N/A
	- used method to keep the contact closed ..... :	-	N/A
	- stored energy of the power operator released (3 times) ..... :	-	N/A
	During and after the test, open position not indicated ..... :	-	N/A
	Equipment show no damage impairing its normal operation ..... :	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied ..... :	-	N/A

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.3	Making and breaking capacity		P
	Type E³ NH-La-Lei 2 3P EVU U6: AC-21B at 690V/400A		
	- utilization category .....:	AC-21B	—
	- rated operational voltage Ue (V) .....:	690	—
	- rated operational current Ie (A) or power (kW) ....:	400	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conditions for make operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue..... (V):	L1: - L2: - L3: -	—
	- test current, I = 10.... x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue..... (V):	L1: - L2: - L3: -	—
	- test current, I = 8..... x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		P
	- test voltage, U = 1,05 Ue..... (V):	L1: 729 L2: 730 L3: 727	—
	- test current, I = 1,5 x Ie (A):	L1: 607 L2: 613 L3: 604	—
	- power factor / ~~time constant~~ .....:	L1: 0,96 L2: 0,96 L3: 0,95	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration (≥ 50 ms) .....:	Permanent	P
	- current duration (ms) .....:	290	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		N/A
	- oscillatory frequency (kHz) .....:	-	—
	- measured oscillatory frequency (kHz) .....:	L1: - L2: - L3: -	N/A
	- factor γ .....:	L1: - L2: - L3: -	N/A
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~........:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) ....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) ....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ....:	EFEN	—
	- manufacturer's model or type reference ....:	35054.0150	—
	- rated current (A) ....:	400	—
	- power loss (W) ....:	34 max.	—
	- rated breaking capacity (kA) ....:	120	—
	- conductor cross-section (mm²) ....:	240	—
	- test current Ie (A) ....:	400	—
	Measured temperature-rise......................................:	see appended table 8.3.3.6-f	P

ВЯРНО С ОРИГИНАЛА

„КОНТРАГЕНТ 35" ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		P
	- actuator type (fig.) ..... :	1e	—
8.2.5.2.1	Dependent and independent manual operation		P
	- actuating force for opening (N) ..... :	205	—
	- test force with blocked main contacts (N) ..... :	400	—
	- used method to keep the contact closed ..... :	Brazing	—
	During and after the test, open position not indicated ..... :	No open position	P
	Equipment with locking mean, no locking in the open position while test force is applied ..... :	No locking mechanism in open position	N/A
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position ..... :		N/A
	- used method to keep the contact closed ..... :	-	N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) ..... :	-	N/A
	During and after the test, open position not indicated ..... :	-	N/A
	Equipment show no damage impairing its normal operation ..... :	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied ..... :	-	N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position ..... :		N/A
	- used method to keep the contact closed ..... :	-	N/A
	- stored energy of the power operator released (3 times) ..... :	-	N/A
	During and after the test, open position not indicated ..... :	-	N/A
	Equipment show no damage impairing its normal operation ..... :	-	N/A
	Equipment with locking mean, no locking in the open position while test force is applied ..... :	-	N/A

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY		
8.3.4.1	Operational performance test		P
	Type E³ NH-La-Lei 2 1P EVU U6: AC-23B at 400V/400A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-23B	—
	- rated operational voltage (V) .....:	400	—
	- rated operational current (A) .....:	400	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 404 L2: 405 L3: 404	—
	- test current (A) .....:	L1: 410 L2: 414 L3: 406	—
	- power factor / ~~time constant~~ .....:	L1: 0,65 L2: 0,65 L3: 0,65	—
	- time interval between operations (s) .....:	30	P
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	250	P
	- current duration (ms) .....:	290	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	< 1	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.4.4-a	P

КОНТРАГЕНТ ЗА "ЕФЕН" СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1	Operational performance test		P
	Type E³ NH-La-Lei 2 3P EVU U6: AC-23B at 400V/400A		
	- utilization category .....:	AC-23B	—
	- rated operational voltage (V) .....:	400	—
	- rated operational current (A) .....:	400	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 404 L2: 405 L3: 404	—
	- test current (A) .....:	L1: 410 L2: 414 L3: 406	—
	- power factor / ~~time constant~~ .....:	L1: 0,65 L2: 0,65 L3: 0,65	—
	- time interval between operations (s) .....:	30	P
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	290	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	< 1	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.4.4-b	P

КОНТРАГЕНТ ЗА ЕФОН СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1	Operational performance test		P
	Type E³ NH-La-Lei 2 1P EVU U6: AC-22B at 500V/400A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-22B	—
	- rated operational voltage (V) .....:	500	—
	- rated operational current (A) .....:	400	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 507 L2: 509 L3: 509	—
	- test current (A) .....:	L1: 412 L2: 417 L3: 409	—
	- power factor / ~~time constant~~ .....:	L1: 0,80 L2: 0,79 L3: 0,79	—
	- time interval between operations (s) .....:	30	P
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	250	P
	- current duration (ms) .....:	290	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	< 1	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.4.4-c	P

КОНТРАГЕНТ ЗАО "ЕФЕН" СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1	Operational performance test		P
	Type E³ NH-La-Lei 2 3P EVU U6: AC-22B at 500V/400A		
	- utilization category .....:	AC-22B	—
	- rated operational voltage (V) .....:	500	—
	- rated operational current (A) .....:	400	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 507 L2: 509 L3: 508	—
	- test current (A) .....:	L1: 412 L2: 417 L3: 409	—
	- power factor / ~~time constant~~ .....:	L1: 0,80 L2: 0,79 L3: 0,79	—
	- time interval between operations (s) .....:	30	P
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	290	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	< 1	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.4.4-d	P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1	Operational performance test		P
	Type E³ NH-La-Lei 2 1P EVU U6: AC-21B at 690V/400A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-21B	—
	- rated operational voltage (V) .....:	690	—
	- rated operational current (A) .....:	400	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 693 L2: 695 L3: 694	—
	- test current (A) .....:	L1: 407 L2: 412 L3: 403	—
	- power factor / ~~time-constant~~ .....:	L1: 0,93 L2: 0,93 L3: 0,94	—
	- time interval between operations (s) .....:	30	P
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	250	P
	- current duration (ms) .....:	290	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	< 1	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.4.4-e	P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1	Operational performance test		P
	Type E³ NH-La-Lei 2 3P EVU U6: AC-21B at 690V/400A		
	- utilization category .....:	AC-21B	—
	- rated operational voltage (V) .....:	690	—
	- rated operational current (A) .....:	400	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 693 L2: 695 L3: 694	—
	- test current (A) .....:	L1: 407 L2: 412 L3: 403	—
	- power factor / ~~time constant~~ .....:	L1: 0,93 L2: 0,93 L3: 0,94	—
	- time interval between operations (s) .....:	30	P
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	290	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35 "ЕСЕН" ЗАТОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	< 1	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.4.4-f	P

КОНТРАГЕНТ 35 "ЕФЕН" СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY		
8.3.5.1	Short-time withstand current test		P
	Type E³ NH-La-Lei 2 1P EVU U6		
	Rated short-time withstand current Icw (A) (>12.Ie max) ....:	10000 / 1s	P
	test voltage (V) ....:	L1: 695 L2: 695 L3: 694	—
	r.m.s. test current (A) ....:	L1: 10060 L2: 10100 L3: 10040	—
	peak test current (A) ....:	L1: 17040 L2: 15060 L3: 17980	—
	power factor/~~time constant~~ ....:	L1: 0,46 L2: 0,46 L3: 0,46	—
	factor *n* ....:	1,72	—
	test duration (s) ....:	1005	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N/A
	Rated short-circuit making capacity Icm (A) .....:	-	N/A
	test voltage (1,05 x Ue) ..... (V):	L1: - L2: - L3: -	—
	r.m.s. test current (A) .....:	L1: - L2: - L3: -	—
	maximum peak test current (factor n)		N/A
	power factor/time constant .....:	L1: - L2: - L3: -	N/A
	current duration (s) .....:	-	—
	Time interval between the cycles		—
8.3.5.2.5	Behaviour of the equipment during the test		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	-cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A

КОНТРАГЕНТ 30 ГОДИНИ СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.5.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.5.4	Leakage current		P
	test voltage (1,1x Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	< 1	P
8.3.5.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.5.5-a	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35 ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.1	Short-time withstand current test		P
	Type E³ NH-La-Lei 2 1P EVU U6 with locked operating means		
	Rated short-time withstand current Icw (A) (>12.Ie max) .....:	15000 / 1s	P
	test voltage (V) .....:	L1: 694 L2: 695 L3: 693	—
	r.m.s. test current (A) .....:	L1: 15120 L2: 15170 L3: 15090	—
	peak test current (A) .....:	L1: 31040 L2: 28700 L3: 21860	—
	power factor/~~time constant~~ .....:	L1: 0,27 L2: 0,27 L3: 0,27	—
	factor *n* .....:	2,05	—
	test duration (s) .....:	1010	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N/A
	Rated short-circuit making capacity Icm (A) .....:	-	N/A
	test voltage (1,05 x Ue) ..... (V):	L1: - L2: - L3: -	—
	r.m.s. test current (A) .....:	L1: - L2: - L3: -	—
	maximum peak test current (factor n)		N/A
	power factor/time constant .....:	L1: - L2: - L3: -	N/A
	current duration (s) .....:	-	—
	Time interval between the cycles		—
8.3.5.2.5	Behaviour of the equipment during the test		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	-cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.5.4	Leakage current		P
	test voltage (1,1x Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	< 1	P
8.3.5.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.5.5-b	P

ВЯРНО С ОРИГИНАЛА

ИЗПЪЛНИТЕЛНА АГЕНЦИЯ "ЖЕЛЕЗОПЪТНА ИНФРАСТРУКТУРА" СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.1	Short-time withstand current test		P
	Type E³ NH-La-Lei 2 3P EVU U6		
	Rated short-time withstand current Icw (A) (>12.Ie max) .....:	10000 / 1s	P
	test voltage (V) .....:	L1: 695 L2: 695 L3: 694	—
	r.m.s. test current (A) .....:	L1: 10060 L2: 10100 L3: 10040	—
	peak test current (A) .....:	L1: 17040 L2: 15060 L3: 17980	—
	power factor/~~time constant~~ .....:	L1: 0,46 L2: 0,46 L3: 0,46	—
	factor *n* .....:	1,72	—
	test duration (s) .....:	1010	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35 ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N/A
	Rated short-circuit making capacity Icm (A) .....:	-	N/A
	test voltage (1,05 x Ue) ..... (V):	L1: - L2: - L3: -	—
	r.m.s. test current (A) .....:	L1: - L2: - L3: -	—
	maximum peak test current (factor n)		N/A
	power factor/time constant .....:	L1: - L2: - L3: -	N/A
	current duration (s) .....:	-	—
	Time interval between the cycles		—
8.3.5.2.5	Behaviour of the equipment during the test		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	-cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A

IEC 60947-3

Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~........:	1380	—
	No flashover or breakdown		P
8.3.5.4	Leakage current		P
	test voltage (1,1x Ue) (V) ....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole ......:	-	N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole ....:	< 1	P
8.3.5.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ....:	EFEN	—
	- manufacturer's model or type reference ....:	35054.0150	—
	- rated current (A) ....:	400	—
	- power loss (W) ....:	34 max.	—
	- rated breaking capacity (kA) ....:	120	—
	- conductor cross-section (mm²) ....:	240	—
	- test current Ie (A) ....:	400	—
	Measured temperature-rise....................................:	see appended table 8.3.5.5-c	P

ВЯРНО С ОРИГИНАЛА

„КОНТРАГЕНТ 35" ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.1	Short-time withstand current test		P
	Type E³ NH-La-Lei 2 3P EVU U6 with locked operating means		
	Rated short-time withstand current Icw (A) (>12.Ie max) ..... :	15000 / 1s	P
	test voltage (V) ..... :	L1: 694 L2: 695 L3: 693	—
	r.m.s. test current (A) ..... :	L1: 15120 L2: 15170 L3: 15090	—
	peak test current (A) ..... :	L1: 31040 L2: 28700 L3: 21860	—
	power factor/~~time constant~~ ..... :	L1: 0,27 L2: 0,27 L3: 0,27	—
	factor *n* ..... :	2,05	—
	test duration (s) ..... :	1005	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N/A
	Rated short-circuit making capacity Icm (A) ....:	-	N/A
	test voltage (1,05 x Ue) ....(V):	L1: - L2: - L3: -	—
	r.m.s. test current (A) ....:	L1: - L2: - L3: -	—
	maximum peak test current (factor n)		N/A
	power factor/time constant ....:	L1: - L2: - L3: -	N/A
	current duration (s) ....:	-	—
	Time interval between the cycles		—
8.3.5.2.5	Behaviour of the equipment during the test		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	-cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.5.4	Leakage current		P
	test voltage (1,1x Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	< 1	P
8.3.5.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.5.5-d	P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT		
	Conditional short-circuit current test		
	Type E³ NH-La-Lei 2 1P EVU U6: 120kA at 500V with fuse-links 400A (L1 open, L2 closed, L3 operated)		
	Protective device details:		P
	- manufacturer's name, trademark or identification mark ...:	EFEN	—
	- manufacturer's model or type reference ...:	35054.0150	—
	- rated voltage (V) ...:	500	—
	- rated current (A) ...:	400	—
	- rated breaking capacity (kA) ...:	120	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 x Ue) (V) ...:	L1: 526 L2: 528 L3: 527	—
	test current (kA) ...:	L1: 120920 L2: 121280 L3: 120650	—
	rated frequency (Hz) ...:	50	—
	power factor ...:	0,17	—
	time constant (ms) ...:	-	—
	factor *n* ...:	2,22	—
	Fuse protected short-circuit withstand (equipment in closed position)		P
	- max. let-through current (kA) ...:	L1: 38670 L2: 16460 L3: 28390	—
	- Joule integral I²dt (A²s) ...:	L1: 1653000 L2: 423250 L3: 1075000	—

ВЯРНО С ОРИГИНАЛА

„КОНТРАГЕНТ 93" ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	0,93	—
	- point at which the measurement is made .....:	Handle of the actuator	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	0,91	—
	- max. let-through current (kA) .....:	L1: - L2: 36200 L3: 36200	—
	- Joule integral I^2dt (A^2s) .....:	L1: - L2: 1211000 L3: 1211000	—
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ ЗА ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	< 1	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.6.5-a	P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

	Conditional short-circuit current test		
	Type E³ NH-La-Lei 2 3P EVU U6: 120kA at 500V with fuse-links 400A		
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	400	—
	- rated breaking capacity (kA) .....:	120	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 x Ue) (V) .....:	L1: 526 L2: 528 L3: 527	—
	test current (kA) .....:	L1: 120920 L2: 121280 L3: 120650	—
	rated frequency (Hz) .....:	50	—
	power factor .....:	0,17	—
	time constant (ms) .....:	-	—
	factor *n* .....:	2,22	—
	Fuse protected short-circuit withstand (equipment in closed position)		P
	- max. let-through current (kA) .....:	L1: 13980 L2: 46900 L3: 33090	—
	- Joule integral I²dt (A²s) .....:	L1: 111310 L2: 1587000 L3: 813860	—

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 36 ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	0,93	—
	- point at which the measurement is made .....:	Handle of the actuator	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	0,91	—
	- max. let-through current (kA) .....:	L1: 38420 L2: 38420 L3: 0	—
	- Joule integral I^2dt (A^2s) .....:	L1: 1158000 L2: 1158000 L3: 0	—
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35 ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	< 1	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.6.5-b	P

ВЯРНО С ОРИГИНАЛА

ИЗПЪЛНИТЕЛНА АГЕНЦИЯ 35 ГОДИНА СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

	Conditional short-circuit current test		
	Type E³ NH-La-Lei 2 1P EVU U6: 100kA at 690V with fuse-links 315A (L1 open, L2 closed, L3 operated)		
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35124.1100	—
	- rated voltage (V) .....:	690	—
	- rated current (A) .....:	315	—
	- rated breaking capacity (kA) .....:	100	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 x Ue) (V) .....:	L1: 726 L2: 726 L3: 725	—
	test current (kA) .....:	L1: 100560 L2: 100830 L3: 100210	—
	rated frequency (Hz) .....:	50	—
	power factor .....:	0,15	—
	time constant (ms) .....:	-	—
	factor *n* .....:	2,24	—
	Fuse protected short-circuit withstand (equipment in closed position)		P
	- max. let-through current (kA) .....:	L1: 27180 L2: 12050 L3: 34300	—
	- Joule integral I²dt (A²s) .....:	L1: 851470 L2: 135280 L3: 892060	—

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	0,93	—
	- point at which the measurement is made .....:	Handle of the actuator	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	0,91	—
	- max. let-through current (kA) .....:	L1: - L2: 32750 L3: 32750	—
	- Joule integral I^2dt (A^2s) .....:	L1: - L2: 843600 L3: 843600	—
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	< 1	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.6.5-c	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ ЗА ЕВЗП СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

	Conditional short-circuit current test		
	Type E³ NH-La-Lei 2 3P EVU U6: 100kA at 690V with fuse-links 315A		
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35124.1100	—
	- rated voltage (V) .....:	690	—
	- rated current (A) .....:	315	—
	- rated breaking capacity (kA) .....:	100	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 x Ue) (V) .....:	L1: 726 L2: 726 L3: 725	—
	test current (kA) .....:	L1: 100560 L2: 100830 L3: 100210	—
	rated frequency (Hz) .....:	50	—
	power factor .....:	0,15	—
	time constant (ms) .....:	-	—
	factor *n* .....:	2,24	—
	Fuse protected short-circuit withstand (equipment in closed position)		P
	- max. let-through current (kA) .....:	L1: 9050 L2: 32460 L3: 34010	—
	- Joule integral I²dt (A²s) .....:	L1: 111400 L2: 884570 L3: 861900	—

КОНТРАГЕНТ 35 ГОДА СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) ....:	0,93	—
	- point at which the measurement is made ....:	Handle of the actuator	—
	- test speed during the fuse protected short-circuit making (m/s) ....:	0,91	—
	- max. let-through current (kA) ....:	L1: 34180 L2: 34180 L3: 0	—
	- Joule integral I^2dt (A^2s) ....:	L1: 821590 L2: 821590 L3: 0	—
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	- equipment is able to carry its rated current after normal closing operation		P

ВЯРНО С ОРИГИНАЛА

„КОНТРАГЕНТ 35" ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	< 1	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise.....:	see appended table 8.3.6.5-d	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35 "ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY		
8.3.7.1	Overload test		P
	Type E³ NH-La-Lei 2 1P EVU U6		
	ambient temperature 10-40 °C .....:	22	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	test current 1,6xIthe or 1,6xIth (A) .....:	640	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm).....:	240 / 30x10 2000 / 600	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- time duration of the overload test (s) .....:	1137	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed	Opened and closed	P
	Required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2 mA)/pole .....:	< 1	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35 ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.7.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Fuse links aged during the overload test are replaced by new fuse-links .....:	Yes	P
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise .....:	see appended table 8.3.7.4-a	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ ЗД "ЕОЗД" СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.7.1	Overload test		P
	Type E³ NH-La-Lei 2 1P EVU V2N		
	ambient temperature 10-40 °C .....:	21,5	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	test current 1,6xIthe or 1,6xIth (A) .....:	640	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm).....:	240 / 30x10 2000 / 600	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- time duration of the overload test (s) .....:	1084	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed	Opened and closed	P
	Required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2 mA)/pole .....:	< 1	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35" ЕООД СТАРШИ ТАКТОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.7.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Fuse links aged during the overload test are replaced by new fuse-links .....:	Yes	P
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise .....:	see appended table 8.3.7.4-b	P

ВЯРНО С ОРИГИНАЛА

ПОЛИГРАФЕНТ 35 ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.7.1	Overload test		P
	Type E³ NH-La-Lei 2 3P EVU U6		
	ambient temperature 10-40 °C .....:	22	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	test current 1,6xIthe or 1,6xIth (A) .....:	640	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm).....:	240 / 30x10 2000 / 600	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- time duration of the overload test (s) .....:	992	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed	Opened and closed	P
	Required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2 mA)/pole .....:	< 1	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ „5" ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.7.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Fuse links aged during the overload test are replaced by new fuse-links .....:	Yes	P
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise .....:	see appended table 8.3.7.4-c	P

ИЗПЪЛНИТЕЛЕН ДИРЕКТОР СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.7.1	Overload test		P
	Type E³ NH-La-Lei 2 3P EVU V2N		
	ambient temperature 10-40 °C .....:	22,5	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	test current 1,6xIthe or 1,6xIth (A) .....:	640	—
	- cable/busbar cross-section (mm²/mm x mm) / length (mm).....:	240 / 30x10 2000 / 600	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	- time duration of the overload test (s) .....:	1105	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed	Opened and closed	P
	Required opening force not greater than the test force of 8.2.5.2 and table 17 of IEC 60947-1		P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~.....:	1380	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2 mA)/pole .....:	< 1	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35" ЕФЕН СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.7.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35054.0150	—
	- rated current (A) .....:	400	—
	- power loss (W) .....:	34 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Fuse links aged during the overload test are replaced by new fuse-links .....:	Yes	P
	- conductor cross-section (mm²) .....:	240	—
	- test current Ie (A) .....:	400	—
	Measured temperature-rise .....:	see appended table 8.3.7.4-d	P

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35 ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.4	ELECTROMAGNETIC COMPATIBILITY TESTS		
8.4.1	Immunity		P
8.4.1.1	Equipment not incorporating electronic circuits: no tests necessary		P
8.4.1.2	Equipment incorporating electronic circuits:		N/A
	Equipment utilizing circuits in which all components are passive are not required to be tested		N/A
	All other equipment, requirements according to 7.3.3.2 of IEC 60947-1 and limits according table 6 apply		N/A
	Performed tests.....:	-	N/A
	No unintentional separation or closing of contacts has occurred during these tests .....:	-	N/A
8.4.2	Emission		P
8.4.2.1	Equipment not incorporating electronic circuits: no tests necessary		P
8.4.2.2	Equipment incorporating electronic circuits:		N/A
	Equipment utilizing circuits in which all components are passive are not required to be tested		N/A
	All other equipment, requirements according to 7.3.3.2 and limits according table 7 apply		N/A
	Performed tests.....:	-	N/A

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35 "ЕВРО" СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Annex A (normative)		
A	Equipment for direct switching of a single motor		
A.2	Additional rated duties .....:	-	N/A
A.2.1	- intermittent periodic duty		N/A
	- intermittent duty		N/A
	Classes of intermittent duty:		
	-class 1: up to 1 operating cycle per hour		N/A
	-class 3: up to 3 operating cycle per hour		N/A
	-class 12: up to 12 operating cycles per hour		N/A
	-class 30: up to 30 operating cycles per hour		N/A
	-class 120: up to 120 operating cycles per hour		N/A
A.2.2	Temporary duty.....:	-	N/A
A.6	Mechanical durability:		
	Equipment mounted according to manufacturer's instruction		N/A
	Preferred number of no-load operating cycles expressed in millions .....:	-	N/A
	0,001 – 0,003 – 0,01 – 0,03 – 0,1 – 0,3 – 1		N/A
	If no mechanical endurance is stated by the manufacturer, a minimum mechanical endurance according to the class of intermittent duty shall be tested.		N/A
	Number of no-load operating cycles performed .....:	-	N/A
A.7	Electrical durability:		N/A
	- test according to manufacturer's instruction		N/A
A.8	Verification of making and breaking capacities:		
	- utilization category .....:	-	—
	- rated operational voltage Ue (V) .....:	-	—
	- rated operational current Ie (A) or power (kW) ....:	-	—
	Conditions for make/break operations or make operations:		—
	- test voltage, U = 1,05 Ue.....(V):	L1: - L2: - L3: -	—
	- test current, I = ...x Ie (A):	L1: - L2: - L3: -	—
	power factor.....	L1: - L2: - L3: -	—

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations:		N/A
	- test voltage, U = 1,05 Ue..... (V):	L1: - L2: - L3: -	—
	- test current, I = ... x Ie (A):	L1: - L2: - L3: -	—
	- power factor/ time constant .....:	L1: - L2: - L3: -	—
	Number of make/break or make and break operations .....:	-	N/A
	- recovery voltage duration (≥ 50 ms)		N/A
	- current duration (ms) .....:	-	—
	- time interval between operations .....:	-	N/A
	Characteristic of transient recovery voltage if necessary:		N/A
	- oscillatory frequency (kHz) .....:	-	—
	- measured oscillatory frequency (kHz) .....:	L1: - L2: - L3: -	N/A
	- factor γ .....:	L1: - L2: - L3: -	N/A
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	- cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.4	Dielectric verification		N/A
	test voltage: 2*Ue with a minimum of 1000V~.....:	-	—
	No flashover or breakdown		N/A
8.3.3.5	Leakage current		N/A
	test voltage (1,1 Ue) (V) .....:	-	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	-	N/A
8.3.3.6	Temperature-rise verification		N/A
	- conductor cross-section (mm²) .....:	-	—
	- test current Ie (A) .....:	-	—
	Measured temperature-rise.....:	-	N/A
A.9	Operational performance test:		N/A
	- utilization category .....:	-	—
	- rated operational voltage (V) .....:	-	—
	- rated operational current (A) .....:	-	—
	Test conditions for electrical operation cycles:		N/A
	- test voltage (V) .....:	L1: - L2: - L3: -	—
	- test current (A) .....:	L1: - L2: - L3: -	—
	- power factor/time constant .....:	L1: - L2: - L3: -	—
	Number of cycles with current .....:	-	N/A
	Number of cycles without current .....:	-	N/A
	First test sequence (with/without current) .....:	-	—
	Second test sequence (with/without current) .....:	-	—
	- time interval between first and second test sequence .....:	-	—

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.5	Behaviour of the equipment during the operational performance test		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	-cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A
8.3.4.2	Dielectric verification		N/A
	test voltage: 2*Ue with a minimum of 1000V~.....:	-	—
	No breakdown or flashover		N/A
8.3.4.3	Leakage current		N/A
	test voltage (1,1 Ue) (V) .....:	-	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	-	N/A
8.3.4.4	Temperature-rise verification		N/A
	- conductor cross-section (mm²) .....:	-	—
	- test current Ie (A) .....:	-	—
	Measured temperature-rise.....:	-	N/A
			N/A
A.10	Special tests:		N/A

ВЯРНО С ОРИГИНАЛА

"КОНТРАГЕНТ 35" ЕООД ГР. ПАЗАРДЖИК

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

Annex C (normative)			
C	Single pole operated three pole switches		
C.2	Additional-tests to be performed on single pole operated three pole switches		P
C.3.1	Test "8.3.3.3 Making and breaking capacities" according to test sequence I with following modifications:		P
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle.....:	See clause 8.3.3.3	P
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....:	See clause 8.3.3.3	P
	Test performed in a three phase circuit according to Figure 5 of IEC 60947-1		P
C.3.1	Test "8.3.4.1 Operational performance" according to test sequence II with following modifications:		P
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle.....:	See clause 8.3.4.1	P
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....:	See clause 8.3.4.1	P
	Test performed in a three phase circuit according to Figure 5 of IEC 60947-1		P
C.3.2	Test "8.3.6.2 Fuse protected short circuit test" according to test sequence IV with following modifications:		P
	For the making test L1 is open and L2 closed, L3 is subjected to the required make operation cycle .....:	See clause 8.3.6.2	P
	Test performed in a three phase circuit according to Figure 11 of IEC 60947-1		P
C.4	Condition of equipment after tests		P
	The equipment complies with the relevant clauses of 8.3.3.3.6, 8.3.4.1.6 and 8.3.5.2.6		P
C.5	Instruction for use		P
	The product literature includes following statement:		P
	These devices are intended for power distribution systems where switching and/or isolating of an individual phase may be necessary and shall not be used for the switching of the primary circuit of three-phase equipment.		P

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

7.1.4	TABLE: Clearance and creepage distance measurements				P
Clearance cl and creepage distance dcr between:	cl (mm) required	cl (mm) measured	dcr (mm) required	dcr (mm) measured	
Each pole and the other poles connected together	14	> 15	14	> 15	
Line terminal(s) connected together and load terminal(s) connected together	14	> 15	14	> 15	
Terminals and cover	14	> 15	14	> 15	
Main circuit and other circuits	-	-	-	-	
supplementary information:					

8.3.3.1-a	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:	dT (K) measured	dT (K) required	
Terminals: tin plated copper	≤ 51	65	
Manual operating means: non-metallic	10	25	
Parts intended to be touched but not hand-held: non-metallic	24	40	
Parts which need not be touched during normal operation: non-metallic	29	50	
supplementary information:			

8.3.3.1-b	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:	dT (K) measured	dT (K) required	
Terminals: tin plated copper	≤ 52	65	
Manual operating means: non-metallic	9	25	
Parts intended to be touched but not hand-held: non-metallic	21	40	
Parts which need not be touched during normal operation: non-metallic	27	50	
supplementary information:			

ВЯРНО С ОРИГИНАЛА

„КОНТРАГЕНТ 95" ЕООД СТОЛА ЗАГОРК

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1-c	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 50	65
Manual operating means: non-metallic		10	25
Parts intended to be touched but not hand-held: non-metallic		23	40
Parts which need not be touched during normal operation: non-metallic		28	50
supplementary information:			

8.3.3.1-d	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 49	65
Manual operating means: non-metallic		8	25
Parts intended to be touched but not hand-held: non-metallic		21	40
Parts which need not be touched during normal operation: non-metallic		31	50
supplementary information:			

8.3.3.1-e	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 63	65
Manual operating means: non-metallic		10	25
Parts intended to be touched but not hand-held: non-metallic		24	40
Parts which need not be touched during normal operation: non-metallic		32	50
supplementary information:			

ИЗПЪЛНИТЕЛЕН ДИРЕКТОР ЕООД СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1-f	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 62	65
Manual operating means: non-metallic		10	25
Parts intended to be touched but not hand-held: non-metallic		21	40
Parts which need not be touched during normal operation: non-metallic		33	50
supplementary information:			

8.3.3.1-g	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 63	65
Manual operating means: non-metallic		9	25
Parts intended to be touched but not hand-held: non-metallic		24	40
Parts which need not be touched during normal operation: non-metallic		29	50
supplementary information:			

8.3.3.1-h	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 62	65
Manual operating means: non-metallic		9	25
Parts intended to be touched but not hand-held: non-metallic		25	40
Parts which need not be touched during normal operation: non-metallic		31	50
supplementary information:			

ВЯРНО С ОРИГИНАЛА

„КОНТРАГЕНТ 35" ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.6-a	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 57	80
Manual operating means: non-metallic		14	35
Parts intended to be touched but not hand-held: non-metallic		39	50
Parts which need not be touched during normal operation: non-metallic		35	60
supplementary information:			

8.3.3.6-b	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 55	80
Manual operating means: non-metallic		12	35
Parts intended to be touched but not hand-held: non-metallic		55	50
Parts which need not be touched during normal operation: non-metallic		32	60
supplementary information:			

8.3.3.6-c	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 59	80
Manual operating means: non-metallic		15	35
Parts intended to be touched but not hand-held: non-metallic		28	50
Parts which need not be touched during normal operation: non-metallic		36	60
supplementary information:			

КОНТРАГЕНТ 35" ЕООД СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.6-d	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 54	80
Manual operating means: non-metallic		12	35
Parts intended to be touched but not hand-held: non-metallic		26	50
Parts which need not be touched during normal operation: non-metallic		31	60
supplementary information:			

8.3.3.6-e	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 56	80
Manual operating means: non-metallic		17	35
Parts intended to be touched but not hand-held: non-metallic		27	50
Parts which need not be touched during normal operation: non-metallic		38	60
supplementary information:			

8.3.3.6-f	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 57	80
Manual operating means: non-metallic		14	35
Parts intended to be touched but not hand-held: non-metallic		26	50
Parts which need not be touched during normal operation: non-metallic		33	60
supplementary information:			

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35" ЕФЕН СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.4.4-a	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 56	80
Manual operating means: non-metallic		14	35
Parts intended to be touched but not hand-held: non-metallic		27	50
Parts which need not be touched during normal operation: non-metallic		34	60
supplementary information:			

8.3.4.4-b	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 55	80
Manual operating means: non-metallic		13	35
Parts intended to be touched but not hand-held: non-metallic		24	50
Parts which need not be touched during normal operation: non-metallic		35	60
supplementary information:			

8.3.4.4-c	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 55	80
Manual operating means: non-metallic		12	35
Parts intended to be touched but not hand-held: non-metallic		23	50
Parts which need not be touched during normal operation: non-metallic		30	60
supplementary information:			

КОНТРОЛЕНТ ЗОО ЕООД СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.4.4-d	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 56	80
Manual operating means: non-metallic		14	35
Parts intended to be touched but not hand-held: non-metallic		24	50
Parts which need not be touched during normal operation: non-metallic		33	60
supplementary information:			

8.3.4.4-e	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 58	80
Manual operating means: non-metallic		14	35
Parts intended to be touched but not hand-held: non-metallic		27	50
Parts which need not be touched during normal operation: non-metallic		35	60
supplementary information:			

8.3.4.4-f	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 56	80
Manual operating means: non-metallic		13	35
Parts intended to be touched but not hand-held: non-metallic		25	50
Parts which need not be touched during normal operation: non-metallic		30	60
supplementary information:			

ВЯРНО С ОРИГИНАЛА

"КОНТРОЛЕНТ" ЕООД СТАРА ЗАГОРА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.5.5-a	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 54	80
Manual operating means: non-metallic		12	35
Parts intended to be touched but not hand-held: non-metallic		26	50
Parts which need not be touched during normal operation: non-metallic		30	60
supplementary information:			

8.3.5.5-b	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 55	80
Manual operating means: non-metallic		11	35
Parts intended to be touched but not hand-held: non-metallic		28	50
Parts which need not be touched during normal operation: non-metallic		33	60
supplementary information:			

8.3.5.5-c	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 52	80
Manual operating means: non-metallic		11	35
Parts intended to be touched but not hand-held: non-metallic		23	50
Parts which need not be touched during normal operation: non-metallic		28	60
supplementary information:			

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.5.5-d	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K), measured	dT (K) required
Terminals: tin plated copper		≤ 53	80
Manual operating means: non-metallic		11	35
Parts intended to be touched but not hand-held: non-metallic		25	50
Parts which need not be touched during normal operation: non-metallic		30	60
supplementary information:			

8.3.6.5-a	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 56	80
Manual operating means: non-metallic		13	35
Parts intended to be touched but not hand-held: non-metallic		27	50
Parts which need not be touched during normal operation: non-metallic		32	60
supplementary information:			

8.3.6.5-b	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 56	80
Manual operating means: non-metallic		14	35
Parts intended to be touched but not hand-held: non-metallic		25	50
Parts which need not be touched during normal operation: non-metallic		31	60
supplementary information:			

ВЯРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.6.5-c	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 57	80
Manual operating means: non-metallic		15	35
Parts intended to be touched but not hand-held: non-metallic		27	50
Parts which need not be touched during normal operation: non-metallic		37	60
supplementary information:			

8.3.6.5-d	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 56	80
Manual operating means: non-metallic		12	35
Parts intended to be touched but not hand-held: non-metallic		25	50
Parts which need not be touched during normal operation: non-metallic		32	60
supplementary information:			

8.3.7.4-a	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 55	80
Manual operating means: non-metallic		12	35
Parts intended to be touched but not hand-held: non-metallic		24	50
Parts which need not be touched during normal operation: non-metallic		31	60
supplementary information:			

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.7.4-b	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 53	80
Manual operating means: non-metallic		10	35
Parts intended to be touched but not hand-held: non-metallic		24	50
Parts which need not be touched during normal operation: non-metallic		29	60
supplementary information:			

8.3.7.4-c	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 54	80
Manual operating means: non-metallic		11	35
Parts intended to be touched but not hand-held: non-metallic		23	50
Parts which need not be touched during normal operation: non-metallic		29	60
supplementary information:			

8.3.7.4-d	TABLE: Temperature-rise measurements		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals: tin plated copper		≤ 52	80
Manual operating means: non-metallic		10	35
Parts intended to be touched but not hand-held: non-metallic		21	50
Parts which need not be touched during normal operation: non-metallic		26	60
supplementary information:			

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ ЕАД 1504 СТАРА ЗАГОРА

List of test equipment used:

Measured quantity	Device	Manufacturer	Code
Voltage (tests up to 10kA)	Voltage divider 1:2000 Difference amplifier AM 502 Signal memory recorder TRA 800	AIT Tektronix W&W	- AM 502/1...3 TRA800
Current (tests up to 10kA)	Lin. Current transformer LGSSO Burden 1Ω Signal memory recorder TRA 800	Ritz AIT W&W	WLIN5000/1...3 - TRA800
Voltage (tests above 10kA)	Insulating measuring amplifier Arcus Signal memory recorder 2580-P	Rohrer Nicolet	T908D 2580-P
Current (tests above 10kA)	Lin current transformer LGSSO Burden 0,7mΩ Signal memory recorder 2580-P	Ritz AIT Nicolet	WLIN6000.HVF/1...3 - 2580-P
Current (tests at reduced voltage)	Current transformer GE 4461 Current transformer AETt10 True-RMS amperemeter Cl. 0,5 Digital multimeter Fluke 185	Goerz Siemens Norma Fluke	WI600/1...3 WI4000/1...3 A0,5/4 FLUKE185/2
Transient recovery voltage	Adjustment equipment for TRV Oscilloscope G 801.1	AIT Tektronix	- G801.1
Dielectric properties	High-voltage test equipment 90-1F with measuring equipment Impulse tester 35 Impulse voltmeter 64M Oscilloscope 9430	Elabo Haefely Haefely Le Croy	HSG5KV G304 G502 G805
Leakage current	High-voltage test equipment 90-1F Digital multimeter Fluke 185 Digital multimeter Fluke 187	Elabo Fluke Fluke	HSG5KV FLUKE185/2 G922
Time	Signal memory recorders Digital stopwatch	W&W, Nicolet Quantum	TRA800, 2580-P 938-3
Temperature	Data Logger Unit 34970A Temperature meter TESTO 901	Agilent Testoterm	942 TESTO
Abnormal heat and fire	Glow-wire test device with measuring equipment	Friborg	GLOW
Mechanical strength of terminals	Test equipment	AIT	MSD
Insertability of unprepared conductors	Test gauge	AIT	Gauge 1...16
Strength of actuator mechanism	Test equipment	Sauter GmbH	FH1K
Degree of protection	Test probe Test equipment for ingress of water	PTL, Friborg PTL, Friborg	PTL1...3 X1...X4
Clearances creepage distances	Digital slide gauge	Spiral	SCHUB-1
Torque	Torque meter	Rahsol	6JY050958

СТАРА ЗАГОРА

ВЯРНО С ОРИГИНАЛА

Приложение № 8

1

Accredited by BMWA with GZ: 92714/237-IV/9/00 as test- and inspection body
and with BGBl. II Nr. 244//2005 as certification body for personnel

AUSTRIAN INSTITUTE
OF TECHNOLOGY

Test Report

Project Designation

TYPE TEST
AT LOW-VOLTAGE VERTICAL
SINGLE POLE OR THREE POLE OPERATED
FUSE-SWITCH-DISCONNECTORS
E^3 NH-LA-LEI 3
(185mm BUSBAR SYSTEM)

Client

EFEN GmbH
Schlangenbader Straße 40
D-65344 Eltville
GERMANY

Order from / No. 05/2009 / ---

ВЯРНО С ОРИГИНАЛА

Project Number 2.03.01139.1.0/EFEN E^3/3/185

Test Engineer Ing. J. Ainetter

Date of issue	15.12.2009
Total number of issues / No.	1 / 1
Number of pages	6
Annex: Number of pages	CB/CCA - Test Report No. 2.03.01139.1.0/EFEN E^3/3/185/CB/CCA (89 pages)

„КОНТРАГЕНТ 35" ЕООД СТАРА ЗАГОРА

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AUSTRIAN INSTITUTE OF TECHNOLOGY

Test item

Identification:

Low-voltage vertical single pole or three pole operated fuse-switch-disconnectors
E³ NH-La-Lei 3

Manufacturer:	EFEN GmbH and Donguan EFEN Electrical Products Co.Ltd.
Trademark:	EFEN
Number of poles:	3
Size:	3
Busbar system:	185mm
Rated operational voltage(s):	400V a.c. up to 690V a.c.
Rated operational current(s):	630A
Rated frequency:	50Hz/60Hz

Summary of variants:

See page 4

Technical data and description:

See page 5

Testing location, Period of testing

Testing location:

Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.
Business Unit Electric Energy Systems
Power Service Center
A-1210 Vienna, Giefinggasse 2
AUSTRIA

Period of testing:

08 to 10/2009

Test(s)

Test(s) performed:

Type test

Test standard(s):

IEC 60947-1:2007 (5th Edition) and IEC 60947-3:2008 (3rd Edition)
EN 60947-1:2007 and EN 60947-3:2009

Test procedure(s):

CB Scheme and CCA Scheme

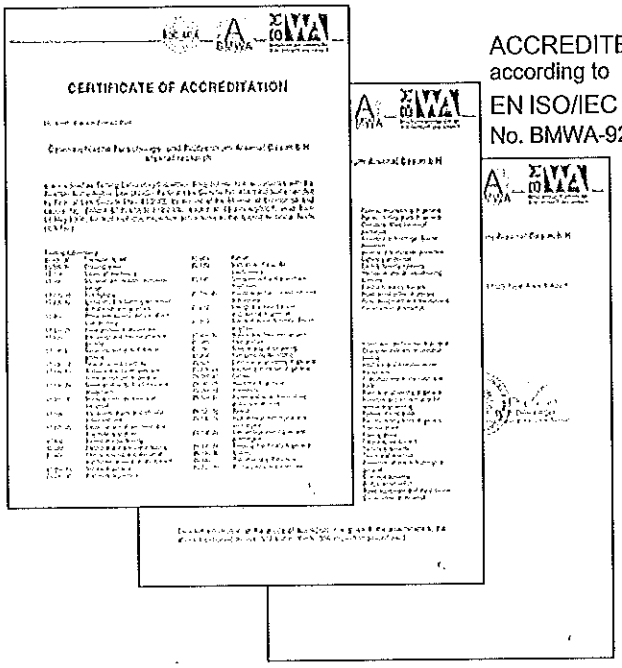
Result

The low-voltage vertical single pole or three pole operated fuse-switch-disconnectors E³ NH-La-Lei 3 (185mm busbar system) have passed the type test successfully.

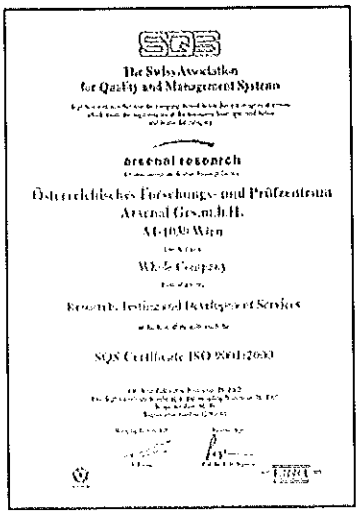
Test Engineer	Project Engineer, technical responsibility
Ing.J.Ainetter	Ing.K.Farthofer

AUSTRIAN INSTITUTE OF TECHNOLOGY

Testing laboratory

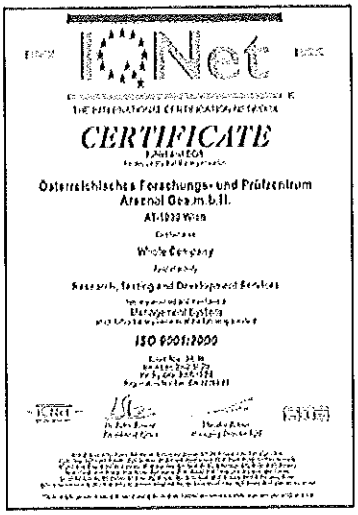


ACCREDITED
according to
EN ISO/IEC 17025
No. BMWA-92.714/0532-I/12/2006



CERTIFICATED
according to
ISO 9001
Reg. No. 12769-03

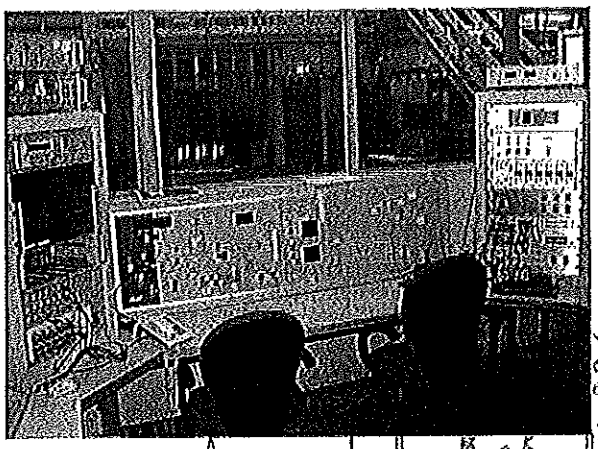
RECOGNIZED
CB TESTING LABORATORY
under the responsibility of OVE
as the National Certification Body



ВЯРНО С ОРИГИНАЛА

POWER SERVICE CENTER:

Control station for tests up to 15kA



Control station for tests above 15kA

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Summary of variant(s)

Designation	Description
E³ NH-La-Lei 3 1P U6	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ screw terminals M12 (outgoing)
E³ NH-La-Lei 3 1P B6	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ bolt terminals M12 (outgoing)
E³ NH-La-Lei 3 1P V2N	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ V-shape terminals (outgoing)
E³ NH-La-Lei 3 3P U6	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ screw terminals M12 (outgoing)
E³ NH-La-Lei 3 3P B6	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ bolt terminals M12 (outgoing)
E³ NH-La-Lei 3 3P V2N	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ V-shape terminals (outgoing)

ВЯРНО С ОРИГИНАЛА

КОНТРАГЕНТ 35 ЕООД СТАРА ЗАГОРА

Technical data and description

Test item	Low-voltage vertical single pole or three pole operated fuse-switch-disconnectors
Trademark	EFEN
Model/Type reference	E³ NH-La-Lei 3
Variants	See page 4
Manufacturer	EFEN GmbH Donguan EFEN Electrical Products Co.Ltd.
Place of manufacture	Gewerbepark Nord 6, D-04938 Uebigau / Elster 523357 Shipai/Donguan, P.R. China
Method of operation	Dependent manual operation
Switching positions	ON / OFF
Number of poles	3
Nature of supply	AC
Utilization category	AC-23B at 400V/630A AC-22B at 500V/630A AC-21B at 690V/630A
Rated operational voltage	400V up to 690V
Rated operational current	630A
Rated frequency	50Hz/60Hz
Conventional free air thermal current with fuse-links	630A
Rated insulation voltage	1000V
Rated impulse withstand voltage	12kV
Rated short-time withstand current	15000A / 1s 20000A / 1s (with locked operating means)
Rated conditional short-circuit current	120kA at 400V with 630A fuse-links 120kA at 500V with 630A fuse-links 100kA at 690V with 500A fuse-links
Degree of protection	IP 2X
Kind of protective device	Fuse-links NH3 (up to 630A)

Measuring equipment

Measured quantity	Device	Manufacturer	Code
Voltage (tests up to 15kA)	Voltage divider 1:2000 Difference amplifier AM 502 Signal memory recorder TRA 800	ÖFPZ Arsenal Tektronix W&W	- AM 502/1...3 TRA800
Current (tests up to 15kA)	Lin. current transformer LGSSO Burden 1Ω Signal memory recorder TRA 800	Ritz ÖFPZ Arsenal W&W	WLIN5000/1...3 - TRA800
Voltage (tests above 15kA)	3-channel insulating measuring amplifier Signal memory recorder SMR II	Rohrer W&W	T908D SMRII64/1
Current (tests above 15kA)	Lin. current transformer LGSSO Burden 0,7mΩ Signal memory recorder SMR II	Ritz ÖFPZ Arsenal W&W	WLIN6000.HVF/1...3 - SMRII64/1
Current (tests at reduced voltage)	Current transformer GE 4461 Current transformer AETt10 True-RMS amperemeter Kl. 0,5 Digital multimeter Fluke 185	Goerz Siemens Norma Fluke	WI600/1...3 WI4000/1...3 A0,5/1...3 FLUKE185/1, 2
Transient recovery voltage	Adjustment equipment for TRV Oscilloscope G 801.1	ÖFPZ Arsenal Tektronix	- G801.1
Dielectric properties	High-voltage test equipment 90-1F with measuring equipment Impulse tester 35 Impulse voltmeter 64M Oscilloscope 9410	Elabo Haefely Haefely Le Croy	HSG5KV G304 G502 G803
Leakage current	High-voltage test equipment 90-1F Digital multimeter Fluke 185 Digital multimeter Fluke 185	Elabo Fluke Fluke	HSG5KV FLUKE185/1 FLUKE185/2
Time	Signal memory recorders Stopwatch	W&W Junghans	TRA800, SMRII64/1 938-2
Temperature	24-channel recorder Polycomp SK30 Temperature meter TESTO 901	H & B Testoterm	SK 30 TESTO
Abnormal heat and fire	Glow-wire test device with measuring equipment	ÖFPZ Arsenal	-
Mechanical strength of terminals	Test equipment	ÖFPZ Arsenal	-
Insertability of unprepared conductors	Gauges	ÖFPZ Arsenal	-
Strength of actuator/mechanism	Test equipment	Schatz	-
Degree of protection	Test probe	PTL	-
Clearances, creepage distances	Digital slide gauge CD-20D	Mitutoyo	SCHUB

Test Report issued under the responsibility of:

OVE

TEST REPORT
IEC 60947-3
Low-voltage switchgear and controlgear
Part 3: Switches, disconnectors, switch-disconnectors and fuse combination units

Report Reference No.	2.03.01139.1.0/EFEN E³/3/185/CB/CCA
Date of issue.....	15.12.2009
Total number of pages	89
CB Testing Laboratory.....	Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.
Address	A-1210 Vienna, Giefingasse 2, AUSTRIA
Applicant's name.....	EFEN GmbH
Address	D-65344 Eltville, Schlangenbader Straße 40, GERMANY
Test specification:	
Standard.....	IEC 60947-3: 3rd Edition (2008) in conjunction with IEC 60947-1: 5th Edition (2007)
Test procedure	CB
Non-standard test method.....	N/A
Test Report Form No.	IEC60947_3B
Test Report Form(s) Originator	OVE
Master TRF.....	Dated 2009-08

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description	Low-voltage vertical single pole or three pole operated fuse-switch-disconnectors
Trademark.....	EFEN
Manufacturer	EFEN GmbH, Donguan EFEN Electrical Products Co.Ltd.
Model/Type reference	E³ NH-La-Lei 3 (185mm busbar system)
Variant(s).....	See page 6
Ratings	400V a.c. up to 690V a.c. // 630A // 50Hz/60Hz // 3-pole

ВЯРНО С ОРИГИНАЛА

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Testing procedure and testing location:		
☒ **CB Testing Laboratory:**	Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.	
Testing location / address .....:	A-1210 Vienna, Giefingasse 2, AUSTRIA	
☐ **Associated CB Laboratory:**	---	
Testing location / address .....:	---	
Tested by (name + signature) .....:	Ing.J.Ainetter	.....
Approved by (name + signature)....:	Ing.K.Farthofer	.....
☐ Testing procedure: TMP		
Testing location / address .....:	---	
Tested by (name + signature) .....:	---	.....
Approved by (name + signature)....:	---	.....
☐ Testing procedure: WMT		
Testing location / address .....:	---	
Tested by (name + signature) .....:	---	.....
Witnessed by (name + signature)...:	---	.....
Approved by (name + signature)....:	---	.....
☐ Testing procedure: SMT		
Testing location / address .....:	---	
Tested by (name + signature) .....:	---	.....
Approved by (name + signature)....:	---	.....
Supervised by (name + signature) .:	---	.....
☐ Testing procedure: RMT		
Testing location / address .....:	---	
Tested by (name + signature) .....:	---	.....
Approved by (name + signature)....:	---	.....
Supervised by (name + signature) .:	---	.....

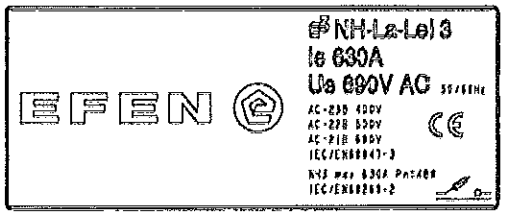
ВЯРНО С ОРИГИНАЛА

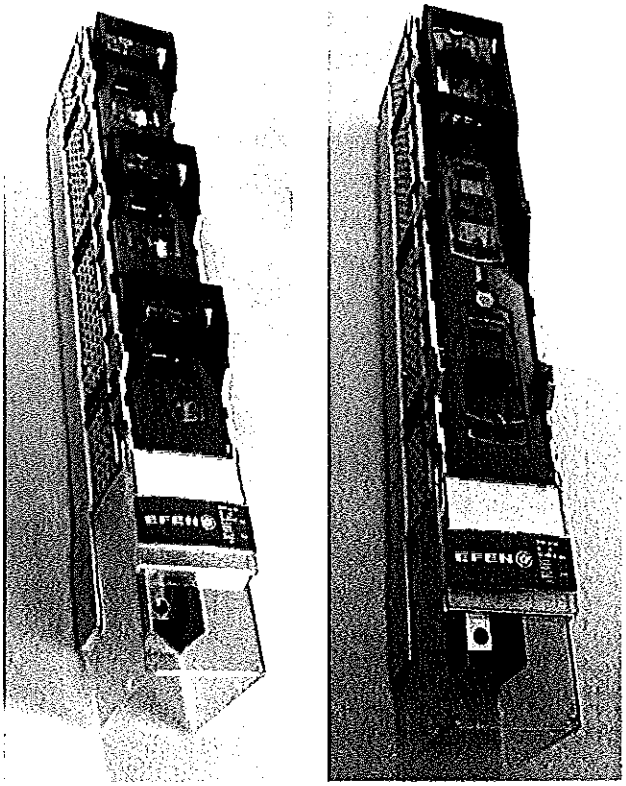
Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
A type test was performed according to ▪ IEC 60947-1:2007 (5th Edition) ▪ IEC 60947-3:2008 (3rd Edition) and ▪ EN 60947-1:2007 ▪ EN 60947-3:2009.	Österreichisches Forschungs- und Prüfzentrum (ÖFPZ) Arsenal Ges.m.b.H. Business Unit Electric Energy Systems Power Service Center A-1210 Vienna, Giefinggasse 2 AUSTRIA The ÖFPZ Arsenal Ges.m.b.H. is a recognized CB Testing Laboratory under the responsibility of OVE as the National Certification Body.
The low-voltage vertical single pole or three pole operated fuse-switch-disconnectors ▪ E³ NH-La-Lei 3 have passed the type test successfully.	This test report is valid as a CB Test Report as well as a CCA Test Report.

Summary of compliance with National Differences:

Copy of marking plate/Picture of test item:





Test item particulars:			
- method of operation ..... :	Dependent manual operation		
- suitability for isolation ..... :	Suitable		
- degree of protection ..... :	IP 2X		
- number of poles..... :	3		
- kind of current..... :	AC		
- number of positions of the main contacts..... :	2		
- number of phases..... :	3		
Rated and limiting values, main circuit:			
- rated operational voltage Ue (V)..... :	400	500	690
- rated insulation voltage Ui (V)..... :	1000		
- rated impulse withstand voltage Uimp (kV)..... :	12		
- conventional free air thermal current Ith with fuse-links (A) ..... :	630		
- conventional enclosed thermal current Ithe (A)..... :	-		
- rated operational current Ie (A)..... :	630	630	630
- rated uninterrupted current Iu (A) ..... :	630 (maximum power dissipation = 48W)		
- rated frequency (Hz)..... :	50/60		
- utilization category..... :	AC-23B	AC-22B	AC-21B
Short-circuit characteristic:			
- rated short-time withstand current Icw (A)..... :	15000 / 1s 20000 / 1s (with locked operating means)		
- rated short-time making capacity Icm (A)..... :	-		
- rated conditional short-circuit current (kA)..... :	120kA at 400V with 630A fuse-links 120kA at 500V with 630A fuse-links 100kA at 690V with 500A fuse-links		
Control circuits ..... :	-		
Auxiliary circuits ..... :	-		
Relays and releases..... :	-		
Co-ordination of short-circuit protective devices:			
- kind of protective device..... :	Fuse-links NH3 (up to 630A)		

Possible test case verdicts:	
- test case does not apply to the test object ..... :	N (Not applicable)
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing:	
Date of receipt of test item ..... :	08/2009
Date(s) of performance of tests..... :	08 to 10/2009

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

"(See enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

General product information:

Low-voltage
vertical
single pole or three pole operated
fuse-switch-disconnectors
(185mm busbar system)
for use with NH3 fuse-links

type

E³ NH-La-Lei 3

Remark to test performance:

At all tests concerning making and breaking capacity, operational performance capability and performance under short-circuit conditions, a metallic screen were placed to the equipment, in accordance with the arrangements and distances specified by the manufacturer:

- ⇨ Distance above to metallic screen: 50mm
- ⇨ Distance lateral to metallic screen: 10mm

Remark for use of the fuse-switch-disconnectors:

The maximum power dissipation of the fuse-links suitable for use with the vertical fuse-switch-disconnectors is 48W. Fuse-links with rated voltage 690V of the appropriate size (NH3) may have a power dissipation exceeding this value.

It has to be taken into consideration that the maximum power dissipation of

48W

will not be exceeded for use in uninterrupted duty.

Summary of variant(s):

E³ NH-La-Lei 3 1P U6:	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ screw terminals M12 (outgoing)
E³ NH-La-Lei 3 1P B6:	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ bolt terminals M12 (outgoing)
E³ NH-La-Lei 3 1P V2N:	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ V-shape terminals (outgoing)
E³ NH-La-Lei 3 3P U6:	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ screw terminals M12 (outgoing)
E³ NH-La-Lei 3 3P B6:	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ bolt terminals M12 (outgoing)
E³ NH-La-Lei 3 3P V2N:	Vertical fuse-switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ V-shape terminals (outgoing)

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

5.2	MARKING		P
	Marking on equipment itself or on nameplate or nameplates attached to the equipment and legible from the front after mounting		P
	- indication of the open and closed position	Visible open and closed position	P
	- suitability for isolation	In open position	P
	- disconnectors AC-20 and DC-20 only: marked "Do not operate under load"		N
	Marking on equipment not needed to be visible after mounting:		P
	- manufacturer's name or trademark	EFEN	P
	- type designation or serial number	E³ NH-La-Lei 3	P
	- rated operational current	Ie 630A	P
	- rated operational voltage	Ue 690V AC	P
	- utilization category	AC 23B 400V AC 22B 500V AC 21B 690V	P
	- rated frequency	50/60Hz	P
	- manufacturer's claim for compliance with IEC 60947-3	IEC/EN 60947-3	P
	- degree of protection	IP 2X	P
	Marking on fuse-combination units:		P
	- fuse type	NH3	P
	- maximum rated current	max. 630A	P
	- power loss of the fuse-link	Pn=48W	P
	Identification of terminals:		P
	- line terminals	Yes	P
	- load terminals	Yes	P
	- neutral pole terminal		N
	- protective earth terminal		N
	Data in the manufacturer's published information:		P
	- rated insulation voltage	Ui=1000V	P
	- rated impulse withstand voltage for equipment suitable for isolation or when determined	Uimp=12kV	P
	- pollution degree, if different from 3	3	P
	- rated duty	Uninterrupted duty	P
	- rated short-time withstand current and duration	Icw=15000A/1s	P
	- rated short-circuit making capacity		N
	- rated conditional short-circuit current	120kA at 400V with 630A fuse-links 120kA at 500V with 630A fuse-links 100kA at 690V with 500A fuse-links	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
5.3	Instructions for installation, operation and maintenance		P
6	Normal service, mounting and transport conditions		P
7.1	CONSTRUCTIONAL AND PERFORMANCE REQUIREMENTS		P
7.1.2	Materials		P
7.1.2.2	Resistance to abnormal heat and fire		P
	Test performed on.....:	Sections taken from the equipment	P
	Glow-wire test according to IEC 60695-2-10 and IEC 60695-2-11		—
	Parts made of insulating material necessary to retain current-carrying parts in position: test temperature 960 °C		P
	No visible flame and no sustained glowing		N
	Flames and glowing extinguish within 30 s	Extinguishing immediately after removing the glow-wire	P
	No ignition of the tissue paper		P
	Parts of insulating material not necessary to retain current-carrying parts in position, even though in contact with them: test temperature 650 °C		P
	No visible flame and no sustained glowing	No visible flame	P
	Flames and glowing extinguish within 30 s		N
	No ignition of the tissue paper		P
7.1.3 of Part 1	Current-carrying parts and their connection		P
7.1.4	Clearances .....:	14mm (min.) > 15mm (measured)	P
	Creepage distances .....:	14mm (min.) > 15mm (measured)	P
	Pollution degree .....:	3	—
	Comparative tracking index (V) .....:	500	—
	Material group .....:	II	—
7.1.5 of Part 1	Actuator		P
7.1.5.1	Insulation		—
	Actuator insulated from live parts for		—
	- rated insulation voltage	1000V	P
	- rated impulse withstand voltage	12kV	P
	Actuator made of metal	No	—
	- connected to a protective conductor or provided with an additional insulation		N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Actuator made of or covered by insulating material	Made of insulating material	—
	- internal metal parts, which might become accessible in the event of an insulation failure, are also insulated from live parts for the rated insulation voltage		N
7.1.5.2	Direction of movement		P
	The direction of operation for actuators shall where applicable conform to IEC 60447		P
	There is no doubt of the "I" and "O" position and the direction of operation	Visible open and closed position	P
7.1.6 of Part 1	Indication of contact position		P
7.1.6.1	Indicating means	Actuator	P
7.1.6.2	Indication by the actuator	Yes	P
7.1.7	Additional safety requirements for equipment suitable for isolation		P
7.1.7.1	Additional constructional requirements		P
	- marking according to 5.2.1b	Yes	P
	- indication of the position of the contacts	See clause 7.1.5.2	P
	- construction of the actuating mechanism		P
	- minimum clearances across open contacts (see Table 13, Part 1) (mm) .....:	14	—
	- measured clearances (mm) .....:	> 20	P
	- test Uimp across gap (kV) .....:	18,5	P
7.1.7.2	Supplementary requirements for equipment with provision for electrical interlocking with contactors or circuit-breakers:		N
	Auxiliary switch is rated according to IEC 60947-5-1 (unless the equipment is rated AC-23)		N
	Time interval between opening of the contacts of the auxiliary contact and the contacts of the main poles: ≥20 ms .....:	-	—
	Measured time interval (ms) .....:	-	N
	During the closing operation the contacts of the auxiliary switch closes after or simultaneously with the contacts of the main poles		N
7.1.7.3	Supplementary requirements for equipment provided with means for padlocking the open position:		N
	The locking means is so designed that it cannot be removed with the appropriate padlock(s) installed		—
	Test force F applied to the actuator in an attempt to operate to the closed position (N) .....:	-	—

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated impulse withstand voltage (kV) .....:	-	—
	Test Uimp on open main contacts at the test force		N
7.1.8 of Part 1	Terminals		P
7.1.8.1	All parts of terminals which maintain contact and carry current are of metal having adequate mechanical strength	See 8.2.4 below	P
	Terminal connections are such that necessary contact pressure is maintained	See 8.2.4 below	P
	Terminals are so constructed that the conductor is clamped between suitable surfaces without damage to the conductor and terminal	See 8.2.4 below	P
	Terminals do not allow the conductor to be displaced or to be displaced themselves in a manner detrimental to the operator of equipment and the insulation voltage is not reduced below the rated value	See 8.2.4 below	P
8.2.4	Mechanical properties of terminals		P
	Mechanical strength of terminals		P
	Maximum cross-sectional area of conductor (mm^2) / (mm x mm) .....:	300 (cables) 40 x 10 (bars)	—
	Diameter of thread (mm) .....:	12	—
	Torque (Nm) .....:	32 x 1,1 = 35,2	—
	5 times on 2 separate clamping units		P
	Testing for damage to and accidental loosening of conductor (flexion test)		P
	Conductor of the smallest cross-sectional area (mm^2) .....:	35 (V-shape terminals)	—
	Number of conductor of the smallest cross section:	2	—
	Diameter of bushing hole (mm) .....:	14,5	—
	Height between the equipment and the platen .....:	320	—
	Mass at the conductor(s) (kg) .....:	6,8	—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Pull-out test		P
	Force (N), applied for 1 min. .....:	190	—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Conductor of the largest cross-sectional area (mm²) .....:	300 (V-shape terminals)	—
	Number of conductor of the largest cross section .:	2	—
	Diameter of bushing hole (mm) .....:	28,6	—
	Height between the equipment and the platen .....:	464	—
	Mass at the conductor(s) (kg) .....:	22,7	—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Pull-out test		P
	Force (N), applied for 1 min. .....:	578	—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Conductor of the largest and smallest cross-sectional area (mm²) .....:	-	—
	Number of conductor of the smallest cross section, number of conductor of the largest cross section ...:	-	—
	Diameter of bushing hole (mm) .....:	-	—
	Height between the equipment and the platen .....:	-	—
	Mass at the conductor(s) (kg) .....:	-	—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		N
	Pull-out test		N
	Force (N), applied for 1 min.....:	-	—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		N
7.1.8.2	Connection capacity		P
	Type of conductors .....:	Cables: Cu or Al, rigid or flexible Bars: Cu or Al	—
	Minimum cross-sectional area of conductor (mm²) ...:	35	—
	Maximum cross-sectional area of conductor (mm²)...:	300	—
	Number of conductors simultaneously connectable to the terminal .....:	2	—
7.1.8.3	Connection		P
	Terminals for connection to external conductors are readily accessible during installation		P
	Clamping screws and nuts do not serve to fix any other component		P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.8.4	Terminal identification and marking		P
	Terminal intended exclusively for the neutral conductor		N
	Protective earth terminal		N
	Other terminals		P
7.1.9	Additional requirements for equipment provided with a neutral pole		N
	Equipment provided with a pole intended for the connection of neutral, this pole shall be clearly marked by the letter "N"		N
	The switched neutral pole does not break before and does not make after the other poles except		N
	- a pole having the appropriate short-circuit breaking and making capacity is used as neutral pole, all poles may operate together		N
	Conventional thermal current of neutral pole		N
7.1.10	Provisions for protective earthing		N
7.1.10.1	The exposed conductive parts are electrically interconnected and connected to a protective earth terminal		N
7.1.10.2	Protective earth terminal is readily accessible		N
	Protective earth terminal is suitably protected against corrosion		N
	Electrical continuity between the exposed conductive parts of the protective earth terminal and the metal sheathing of connecting conductors		N
	Protective earth terminal has no other functions		N
7.1.10.3	Protective earth terminal marking and identification		N
7.1.11	Enclosure for equipment		N
7.1.11.1	Design		N
	When the enclosure is opened, all parts requiring access for installation and maintenance are readily accessible		N
	Sufficient space is provided inside the enclosure		N
	The fixed parts of a metal enclosure are electrically connected to the other exposed conductive parts of the equipment and connected to a terminal which enables them to be earthed or connected to a protective conductor		N
	Under no circumstances a removable metal part of enclosure is insulated from the part carrying the earth terminal when the removable part is in place		N

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Clause	Requirement + Test	Result - Remark	Verdict
	The removable parts of the enclosure are firmly secured to the fixed parts by a device such that they cannot be accidentally loosened or detached owing to the effects of operation of the equipment or vibrations		N
	If an enclosure is designed as to allow the covers to be opened without the use of tools, means is provided to prevent loss of the fastening devices		N
	If the enclosure is used for mounting push-buttons, it is not possible to remove the buttons from the outside of the enclosure		N
7.1.11.2	Insulation		N
	If, in order to prevent accidental contact between a metallic enclosure and live parts, the enclosure is partly or completely lined with insulating material, then this lining is securely fixed to the enclosure		N
7.1.12	Degree of protection of enclosed equipment		P
	Degree of protection .....:	IP 2X	P
7.1.13	Conduit pull-out, torque and bending with metallic conduits		N
	Withstand the stress occurring during its installation .....:	-	N

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS		P
8.3.3.1	Temperature-rise		P
	Type E³ NH-LA-LEI 3 1P U6 with fuse-links 630A		
	ambient temperature 10-40 °C .....:	22,5	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		—
	- conventional thermal current Ith (A) .....:	630	—
	- conventional enclosed thermal current Ithe (A) ...:	-	—
	- cable/busbar cross-section (mm²)/(mm x mm)....:	2 x 185 / 40x10	—
	- cable/busbar length (mm)/(mm).....:	2000 / 600	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Measured temperature-rise .....:	See appended table 1	P
	Auxiliary circuits, test conditions:		N
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²) .....:	-	—
	Measured temperature-rise .....:	-	N

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	Temperature-rise		P
	Type E³ NH-LA-LEI 3 1P V2N with fuse-links 630A		
	ambient temperature 10-40 °C .....:	22	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		—
	- conventional thermal current Ith (A) .....:	630	—
	- conventional enclosed thermal current Ithe (A) ...:	-	—
	- cable/busbar cross-section (mm²)/(mm x mm)....:	2 x 185 / 40x10	—
	- cable/busbar length (mm)/(mm).....:	2000 / 600	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Measured temperature-rise .....:	See appended table 2	P
	Auxiliary circuits, test conditions:		N
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²) .....:	-	—
	Measured temperature-rise .....:	-	N

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.1	Temperature-rise		P
	Type E³ NH-LA-LEI 3 3P U6 with fuse-links 630A		
	ambient temperature 10-40 °C .....:	23	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		—
	- conventional thermal current Ith (A) .....:	630	—
	- conventional enclosed thermal current Ithe (A) ...:	-	—
	- cable/busbar cross-section (mm²)/(mm x mm)....:	2 x 185 / 40x10	—
	- cable/busbar length (mm)/(mm).....:	2000 / 600	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Measured temperature-rise .....:	See appended table 3	P
	Auxiliary circuits, test conditions:		N
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²) .....:	-	—
	Measured temperature-rise .....:	-	N

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	Temperature-rise		P
	Type E³ NH-LA-LEI 3 3P V2N with fuse-links 630A		
	ambient temperature 10-40 °C .....:	23	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		—
	- conventional thermal current Ith (A) .....:	630	—
	- conventional enclosed thermal current Ithe (A) ...:	-	—
	- cable/busbar cross-section (mm²)/(mm x mm)....:	2 x 185 / 40x10	—
	- cable/busbar length (mm)/(mm).....:	2000 / 600	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Measured temperature-rise .....:	See appended table 4	P
	Auxiliary circuits, test conditions:		N
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²) .....:	-	—
	Measured temperature-rise .....:	-	N

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.2	Test of dielectric properties		P
	Type E³ NH-LA-LEI 3 1P U6		
	Rated impulse withstand voltage (kV) .....:	12	—
	- test Uimp main circuits (kV) .....:	14,8	P
	- test Uimp auxiliary circuits (kV) .....:	-	N
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) .....:	18,5	P
	Power-frequency withstand voltage (V) .....:	1000	—
	- main circuits, test voltage for 5 sec. (V) .....:	2200	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) .....:	-	N
	Devices, which have been disconnected for the power-frequency withstand voltage test.....	-	N
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V).....:	760	—
	Measured leakage current (mA).....:	< 0,1	P
8.3.3.2	Test of dielectric properties		P
	Type E³ NH-LA-LEI 3 3P V2N		
	Rated impulse withstand voltage (kV) .....:	12	—
	- test Uimp main circuits (kV) .....:	14,8	P
	- test Uimp auxiliary circuits (kV) .....:	-	N
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) .....:	18,5	P
	Power-frequency withstand voltage (V) .....:	1000	—
	- main circuits, test voltage for 5 sec. (V) .....:	2200	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) .....:	-	N
	Devices, which have been disconnected for the power-frequency withstand voltage test.....	-	N
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V).....:	760	—
	Measured leakage current (mA).....:	< 0,1	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3	Making and breaking capacity		P
	Type E³ NH-LA-LEI 3 1P U6: AC-23B at 400V/630A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-23B	—
	- rated operational voltage Ue (V) .....:	400	—
	- rated operational current Ie (A) .....:	630	—
	Conditions for make operation, AC-23A and AC-23B only:		P
	- test voltage, U = 1,05 Ue .....(V):	L1: 425 L2: 425 L3: 424	—
	- test current, I = ... 10 x Ie (A):	L1: 6320 L2: 6335 L3: 6314	—
	- power factor .....:	L1: 0,34 L2: 0,35 L3: 0,34	—
	Conditions for break operation, AC-23A and AC-23B only:		P
	- test voltage, U = 1,05 Ue .....(V):	L1: 425 L2: 425 L3: 424	—
	- test current, I = ... 8 x Ie (A):	L1: 5057 L2: 5068 L3: 5052	—
	- power factor .....:	L1: 0,37 L2: 0,37 L3: 0,37	—
	Conditions for make/break operations, other than AC-23A and AC-23B:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor / time constant .....:	L1: - L2: - L3: -	—
	Number of make/break or make and break operations .....:	3 and 3	P
	- recovery voltage duration ≥ 50 ms (ms).....:	340	P
	- current duration (ms) .....:	240 and 230	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		P
	- oscillatory frequency (kHz) .....:	91,17	—
	- measured oscillatory frequency (kHz).....:	L1: 91,0 L2: 91,0 L3: 91,0	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- factor γ .....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conductor cross-section (mm²) .....:	2 x 185	—
	Test current Ie (A) .....:	630	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 60	80	P
	Manual operating means: non-metallic	14	35	P
	Parts intended to be touched but not hand-held: non-metallic	28	50	P
	Parts which need not be touched during normal operation: non-metallic	36	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.) .....:	1e		—
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N) .....:	220		—
	- test force with blocked main contacts (N) .....:	400		—
	- used method to keep the contact closed .....:	Brazing		—
	During and after the test, open position not indicated .....:	No open position		P
	Equipment with locking mean, no locking in the open position while test force is applied.....:	No locking mechanism in open position		N
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N
8.2.5.2.3	Independent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- stored energy of the power operator released (3 times).....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3	Making and breaking capacity		P
	Type E³ NH-LA-LEI 3 3P U6: AC-23B at 400V/630A		
	- utilization category .....:	AC-23B	—
	- rated operational voltage Ue (V) .....:	400	—
	- rated operational current Ie (A) .....:	630	—
	Conditions for make operation, AC-23A and AC-23B only:		P
	- test voltage, U = 1,05 Ue .....(V):	L1: 425 L2: 425 L3: 424	—
	- test current, I = ... 10 x Ie (A):	L1: 6320 L2: 6335 L3: 6314	—
	- power factor .....:	L1: 0,34 L2: 0,35 L3: 0,34	—
	Conditions for break operation, AC-23A and AC-23B only:		P
	- test voltage, U = 1,05 Ue .....(V):	L1: 425 L2: 425 L3: 424	—
	- test current, I = ... 8 x Ie (A):	L1: 5057 L2: 5068 L3: 5052	—
	- power factor .....:	L1: 0,37 L2: 0,37 L3: 0,37	—
	Conditions for make/break operations, other than AC-23A and AC-23B:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor / time constant .....:	L1: - L2: - L3: -	—
	Number of make/break or make and break operations .....:	3 and 3	P
	- recovery voltage duration ≥ 50 ms (ms).....:	340	P
	- current duration (ms) .....:	240 and 230	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		P
	- oscillatory frequency (kHz) .....:	91,17	—
	- measured oscillatory frequency (kHz) .....:	L1: 91,0 L2: 91,0 L3: 91,0	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- factor γ .....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conductor cross-section (mm²) .....:	2 x 185	—
	Test current Ie (A) .....:	630	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 62	80	P
	Manual operating means: non-metallic	13	35	P
	Parts intended to be touched but not hand-held: non-metallic	26	50	P
	Parts which need not be touched during normal operation: non-metallic	34	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.) .....:	1e		—
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N) .....:	220		—
	- test force with blocked main contacts (N) .....:	400		—
	- used method to keep the contact closed .....:	Brazing		—
	During and after the test, open position not indicated .....:	No open position		P
	Equipment with locking mean, no locking in the open position while test force is applied.....:	No locking mechanism in open position		N
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N
8.2.5.2.3	Independent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- stored energy of the power operator released (3 times).....:			N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.3	Making and breaking capacity		P
	Type E³ NH-LA-LEI 3 1P U6: AC-22B at 500V/630A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-22B	—
	- rated operational voltage Ue (V) .....:	500	—
	- rated operational current Ie (A) .....:	630	—
	Conditions for make operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for make/break operations, other than AC-23A and AC-23B:		P
	- test voltage, U = 1,05 Ue .....(V):	L1: 527 L2: 528 L3: 526	—
	- test current, I = ... 3 x Ie (A):	L1: 1904 L2: 1910 L3: 1898	—
	- power factor / ~~time constant~~ .....:	L1: 0,62 L2: 0,62 L3: 0,62	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration ≥ 50 ms (ms).....:	260	P
	- current duration (ms) .....:	280	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		P
	- oscillatory frequency (kHz) .....:	62,68	—
	- measured oscillatory frequency (kHz) .....:	L1: 62,7 L2: 62,7 L3: 62,7	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- factor γ .....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conductor cross-section (mm²) .....:	2 x 185	—
	Test current Ie (A) .....:	630	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 62	80	P
	Manual operating means: non-metallic	14	35	P
	Parts intended to be touched but not hand-held: non-metallic	29	50	P
	Parts which need not be touched during normal operation: non-metallic	38	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.) .....:	1e		—
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N) .....:	220		—
	- test force with blocked main contacts (N) .....:	400		—
	- used method to keep the contact closed .....:	Brazing		—
	During and after the test, open position not indicated .....:	No open position		P
	Equipment with locking mean, no locking in the open position while test force is applied.....:	No locking mechanism in open position		N
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N
8.2.5.2.3	Independent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- stored energy of the power operator released (3 times).....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3	Making and breaking capacity		P
	Type E³ NH-LA-LEI 3 3P U6: AC-22B at 500V/630A		
	- utilization category .....:	AC-22B	—
	- rated operational voltage Ue (V) .....:	500	—
	- rated operational current Ie (A) .....:	630	—
	Conditions for make operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for make/break operations, other than AC-23A and AC-23B:		P
	- test voltage, U = 1,05 Ue .....(V):	L1: 527 L2: 528 L3: 526	—
	- test current, I = ... 3 x Ie (A):	L1: 1904 L2: 1910 L3: 1898	—
	- power factor / ~~time constant~~ .....:	L1: 0,62 L2: 0,62 L3: 0,62	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	280	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		P
	- oscillatory frequency (kHz) .....:	62,68	—
	- measured oscillatory frequency (kHz) .....:	L1: 62,7 L2: 62,7 L3: 62,7	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- factor γ .....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conductor cross-section (mm²) .....:	2 x 185	—
	Test current Ie (A) .....:	630	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 61	80	P
	Manual operating means: non-metallic	14	35	P
	Parts intended to be touched but not hand-held: non-metallic	26	50	P
	Parts which need not be touched during normal operation: non-metallic	35	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.) .....:	1e		—
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N) .....:	220		—
	- test force with blocked main contacts (N) .....:	400		—
	- used method to keep the contact closed .....:	Brazing		—
	During and after the test, open position not indicated .....:	No open position		P
	Equipment with locking mean, no locking in the open position while test force is applied.....:	No locking mechanism in open position		N
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N
8.2.5.2.3	Independent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- stored energy of the power operator released (3 times).....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.3	Making and breaking capacity		P
	Type E³ NH-LA-LEI 3 1P U6: AC-21B at 690V/630A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-21B	—
	- rated operational voltage Ue (V) .....:	690	—
	- rated operational current Ie (A) .....:	630	—
	Conditions for make operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for make/break operations, other than AC-23A and AC-23B:		P
	- test voltage, U = 1,05 Ue .....(V):	L1: 727 L2: 729 L3: 728	—
	- test current, I = ... 1,5 x Ie (A):	L1: 954 L2: 957 L3: 952	—
	- power factor / ~~time constant~~ .....:	L1: 0,95 L2: 0,94 L3: 0,95	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration ≥ 50 ms (ms).....:	260	P
	- current duration (ms) .....:	280	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		N
	- oscillatory frequency (kHz) .....:	-	—
	- measured oscillatory frequency (kHz) .....:	L1: - L2: - L3: -	N

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Clause	Requirement + Test	Result - Remark	Verdict
	- factor γ .....:	L1: - L2: - L3: -	N
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conductor cross-section (mm²) .....:	2 x 185	—
	Test current Ie (A) .....:	630	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 59	80	P
	Manual operating means: non-metallic	14	35	P
	Parts intended to be touched but not hand-held: non-metallic	27	50	P
	Parts which need not be touched during normal operation: non-metallic	35	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.) .....:	1e		—
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N) .....:	220		—
	- test force with blocked main contacts (N) .....:	400		—
	- used method to keep the contact closed .....:	Brazing		—
	During and after the test, open position not indicated .....:	No open position		P
	Equipment with locking mean, no locking in the open position while test force is applied.....:	No locking mechanism in open position		N
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N
8.2.5.2.3	Independent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- stored energy of the power operator released (3 times).....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.3	Making and breaking capacity		P
	Type E³ NH-LA-LEI 3 3P U6: AC-21B at 690V/630A		
	- utilization category .....:	AC-21B	—
	- rated operational voltage Ue (V) .....:	690	—
	- rated operational current Ie (A) .....:	630	—
	Conditions for make operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for make/break operations, other than AC-23A and AC-23B:		P
	- test voltage, U = 1,05 Ue .....(V):	L1: 727 L2: 729 L3: 728	—
	- test current, I = ... 1,5 x Ie (A):	L1: 954 L2: 957 L3: 952	—
	- power factor / ~~time constant~~ .....:	L1: 0,95 L2: 0,94 L3: 0,95	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	280	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		N
	- oscillatory frequency (kHz) .....:	-	—
	- measured oscillatory frequency (kHz) .....:	L1: - L2: - L3: -	N

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Clause	Requirement + Test	Result - Remark	Verdict
	- factor γ .....:	L1: - L2: - L3: -	N
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conductor cross-section (mm²) .....:	2 x 185	—
	Test current Ie (A) .....:	630	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 62	80	P
	Manual operating means: non-metallic	14	35	P
	Parts intended to be touched but not hand-held: non-metallic	27	50	P
	Parts which need not be touched during normal operation: non-metallic	36	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.) .....:	1e		—
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N) .....:	220		—
	- test force with blocked main contacts (N) .....:	400		—
	- used method to keep the contact closed .....:	Brazing		—
	During and after the test, open position not indicated .....:	No open position		P
	Equipment with locking mean, no locking in the open position while test force is applied.....:	No locking mechanism in open position		N
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N
8.2.5.2.3	Independent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- stored energy of the power operator released (3 times).....:	-		N
	During and after the test, open position not indicated .....:			N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY		P
8.3.4.1	Operational performance test		P
	Type E³ NH-LA-LEI 3 1P U6: AC-23B at 400V/630A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-23B	—
	- rated operational voltage (V) .....:	400	—
	- rated operational current (A) .....:	630	—
	Test conditions for electrical operation cycles:		P
	- test voltage (V) .....:	L1: 406 L2: 407 L3: 404	—
	- test current (A) .....:	L1: 639 L2: 642 L3: 635	—
	- power factor / ~~time constant~~ .....:	L1: 0,64 L2: 0,63 L3: 0,64	—
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	260	P
	- current duration (ms) .....:	280	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.4.2	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No breakdown or flashover			P
8.3.4.3	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.4.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 60	80	P
	Manual operating means: non-metallic	13	35	P
	Parts intended to be touched but not hand-held: non-metallic	27	50	P
	Parts which need not be touched during normal operation: non-metallic	35	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1	Operational performance test		P
	Type E³ NH-LA-LEI 3 3P U6: AC-23B at 400V/630A		
	- utilization category .....:	AC-23B	—
	- rated operational voltage (V) .....:	400	—
	- rated operational current (A) .....:	630	—
	Test conditions for electrical operation cycles:		P
	- test voltage (V) .....:	L1: 406 L2: 407 L3: 404	—
	- test current (A) .....:	L1: 639 L2: 642 L3: 635	—
	- power factor / ~~time constant~~ .....:	L1: 0,64 L2: 0,63 L3: 0,64	—
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	280	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.4.2	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No breakdown or flashover			P
8.3.4.3	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.4.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 62	80	P
	Manual operating means: non-metallic	14	35	P
	Parts intended to be touched but not hand-held: non-metallic	27	50	P
	Parts which need not be touched during normal operation: non-metallic	35	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1	Operational performance test		P
	Type E³ NH-LA-LEI 3 1P U6: AC-22B at 500V/630A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-22B	—
	- rated operational voltage (V) .....:	500	—
	- rated operational current (A) .....:	630	—
	Test conditions for electrical operation cycles:		P
	- test voltage (V) .....:	L1: 507 L2: 509 L3: 508	—
	- test current (A) .....:	L1: 638 L2: 643 L3: 635	—
	- power factor / ~~time constant~~ .....:	L1: 0,81 L2: 0,81 L3: 0,80	—
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	260	P
	- current duration (ms) .....:	280	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.4.2	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No breakdown or flashover			P
8.3.4.3	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.4.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 63	80	P
	Manual operating means: non-metallic	14	35	P
	Parts intended to be touched but not hand-held: non-metallic	27	50	P
	Parts which need not be touched during normal operation: non-metallic	36	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1	Operational performance test		P
	Type E³ NH-LA-LEI 3 3P U6: AC-22B at 500V/630A		
	- utilization category .....:	AC-22B	—
	- rated operational voltage (V) .....:	500	—
	- rated operational current (A) .....:	630	—
	Test conditions for electrical operation cycles:		P
	- test voltage (V) .....:	L1: 507 L2: 509 L3: 508	—
	- test current (A) .....:	L1: 638 L2: 643 L3: 635	—
	- power factor / ~~time constant~~ .....:	L1: 0,81 L2: 0,81 L3: 0,80	—
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	280	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.4.2	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No breakdown or flashover			P
8.3.4.3	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.4.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 61	80	P
	Manual operating means: non-metallic	13	35	P
	Parts intended to be touched but not hand-held: non-metallic	26	50	P
	Parts which need not be touched during normal operation: non-metallic	37	60	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1	Operational performance test		P
	Type E³ NH-LA-LEI 3 1P U6: AC-21B at 690V/630A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-21B	—
	- rated operational voltage (V) .....:	690	—
	- rated operational current (A) .....:	630	—
	Test conditions for electrical operation cycles:		P
	- test voltage (V) .....:	L1: 693 L2: 694 L3: 694	—
	- test current (A) .....:	L1: 640 L2: 646 L3: 638	—
	- power factor / ~~time constant~~ .....:	L1: 0,96 L2: 0,95 L3: 0,95	—
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	260	P
	- current duration (ms) .....:	280	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.4.2	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No breakdown or flashover			P
8.3.4.3	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.4.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 61	80	P
	Manual operating means: non-metallic	13	35	P
	Parts intended to be touched but not hand-held: non-metallic	26	50	P
	Parts which need not be touched during normal operation: non-metallic	34	60	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1	Operational performance test		P
	Type E³ NH-LA-LEI 3 3P U6: AC-21B at 690V/630A		
	- utilization category .....:	AC-21B	—
	- rated operational voltage (V) .....:	690	—
	- rated operational current (A) .....:	630	—
	Test conditions for electrical operation cycles:		P
	- test voltage (V) .....:	L1: 693 L2: 694 L3: 694	—
	- test current (A) .....:	L1: 640 L2: 646 L3: 638	—
	- power factor / ~~time constant~~ .....:	L1: 0,96 L2: 0,95 L3: 0,95	—
	Number of cycles with current .....:	200	P
	Number of cycles without current .....:	800	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	280	—
	- time interval between operations (s) .....:	60	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.4.2	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No breakdown or flashover			P
8.3.4.3	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.4.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 59	80	P
	Manual operating means: non-metallic	13	35	P
	Parts intended to be touched but not hand-held: non-metallic	25	50	P
	Parts which need not be touched during normal operation: non-metallic	35	60	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY		P
8.3.5.1	Short-time withstand current test		P
	Type E³ NH-LA-LEI 3 1P U6		
	Rated short-time withstand current Icw (A) (≥ 12 Ie max.) .....:	15000 / 1s	P
	- test voltage (V) .....:	L1: 694 L2: 695 L3: 693	—
	- r.m.s. test current (A) .....:	L1: 15120 L2: 15170 L3: 15090	—
	- peak test current (A) .....:	L1: 31040 L2: 28700 L3: 21860	—
	- power factor / ~~time constant~~ .....:	L1: 0,27 L2: 0,27 L3: 0,27	—
	- factor n .....:	2,05	—
	Test duration (ms) .....:	1010	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N
	Rated short-circuit making capacity Icm (A) .....:	-	N
	- test voltage (1,05 x Ue) .....(V):	L1: - L2: - L3: -	—
	- r.m.s. test current (A) .....(A):	L1: - L2: - L3: -	—
	- maximum peak test current (factor n) .....:	-	N
	- power factor / time constant .....:	L1: - L2: - L3: -	N
	Current duration (s) .....:	-	—
	Time interval between the cycles .....:	-	—
8.3.5.2.5	Behaviour of the equipment during the test		N
	Test performed without:		—
	- endanger to the operator		N
	-cause damage to adjacent equipment		N
	No permanent arcing		N
	No flash over between poles and poles and frame		N
	No melting of the fuse in the detection circuit		N
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N
	Immediately after the test equipment must work satisfactorily		N
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N
	- equipment is able to carry its rated current after normal closing operation		N

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.5.3	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No flashover or breakdown			P
8.3.5.4	Leakage current			P
	test voltage 1,1 Ue (V) ...:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole ...:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) ...:	< 1		P
8.3.5.5	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark ...:	EFEN		—
	- manufacturer's model or type reference ...:	35078.0060		—
	- rated voltage (V) ...:	500		—
	- rated current (A) ...:	630		—
	- power loss (W) ...:	45 max.		—
	- rated breaking capacity (kA) ...:	120		—
	Conductor cross-section (mm²) ...:	2 x 185		—
	Test current Ie (A) ...:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 57	80	P
	Manual operating means: non-metallic	12	35	P
	Parts intended to be touched but not hand-held: non-metallic	27	50	P
	Parts which need not be touched during normal operation: non-metallic	33	60	P

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.5.1	Short-time withstand current test		P
	Type E³ NH-LA-LEI 3 1P U6 with locked operating means		
	Rated short-time withstand current Icw (A) (≥ 12 Ie max.) .....:	20000 / 1s	P
	- test voltage (V) .....:	L1: 693 L2: 695 L3: 694	—
	- r.m.s. test current (A) .....:	L1: 20150 L2: 20430 L3: 20080	—
	- peak test current (A) .....:	L1: 41560 L2: 36070 L3: 29540	—
	- power factor / ~~time constant~~ .....:	L1: 0,25 L2: 0,25 L3: 0,25	—
	- factor n .....:	2,06	—
	Test duration (ms) .....:	1010	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N
	Rated short-circuit making capacity Icm (A) .....:	-	N
	- test voltage (1,05 x Ue) .....(V):	L1: - L2: - L3: -	—
	- r.m.s. test current (A) .....(A):	L1: - L2: - L3: -	—
	- maximum peak test current (factor n) .....:	-	N
	- power factor / time constant .....:	L1: - L2: - L3: -	N
	Current duration (s) .....:	-	—
	Time interval between the cycles .....:	-	—
8.3.5.2.5	Behaviour of the equipment during the test		N
	Test performed without:		—
	- endanger to the operator		N
	-cause damage to adjacent equipment		N
	No permanent arcing		N
	No flash over between poles and poles and frame		N
	No melting of the fuse in the detection circuit		N
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N
	Immediately after the test equipment must work satisfactorily		N
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N
	- equipment is able to carry its rated current after normal closing operation		N

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.5.3	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No flashover or breakdown			P
8.3.5.4	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.5.5	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 58	80	P
	Manual operating means: non-metallic	12	35	P
	Parts intended to be touched but not hand-held: non-metallic	26	50	P
	Parts which need not be touched during normal operation: non-metallic	31	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.1	Short-time withstand current test		P
	Type E³ NH-LA-LEI 3 3P U6		
	Rated short-time withstand current Icw (A) (≥ 12 Ie max.) .....:	15000 / 1s	P
	- test voltage (V) .....:	L1: 694 L2: 695 L3: 693	—
	- r.m.s. test current (A) .....:	L1: 15120 L2: 15170 L3: 15090	—
	- peak test current (A) .....:	L1: 31040 L2: 28700 L3: 21860	—
	- power factor / ~~time constant~~ .....:	L1: 0,27 L2: 0,27 L3: 0,27	—
	- factor n .....:	2,05	—
	Test duration (ms) .....:	1000	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N
	Rated short-circuit making capacity Icm (A) .....:	-	N
	- test voltage (1,05 x Ue) .....(V):	L1: - L2: - L3: -	—
	- r.m.s. test current (A) .....(A):	L1: - L2: - L3: -	—
	- maximum peak test current (factor n) .....:	-	N
	- power factor / time constant .....:	L1: - L2: - L3: -	N
	Current duration (s) .....:	-	—
	Time interval between the cycles .....:	-	—
8.3.5.2.5	Behaviour of the equipment during the test		N
	Test performed without:		—
	- endanger to the operator		N
	-cause damage to adjacent equipment		N
	No permanent arcing		N
	No flash over between poles and poles and frame		N
	No melting of the fuse in the detection circuit		N
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N
	Immediately after the test equipment must work satisfactorily		N
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N
	- equipment is able to carry its rated current after normal closing operation		N

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.5.3	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No flashover or breakdown			P
8.3.5.4	Leakage current			P
	test voltage 1,1 Ue (V) ...:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole ...:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) ...:	< 1		P
8.3.5.5	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark ...:	EFEN		—
	- manufacturer's model or type reference ...:	35078.0060		—
	- rated voltage (V) ...:	500		—
	- rated current (A) ...:	630		—
	- power loss (W) ...:	45 max.		—
	- rated breaking capacity (kA) ...:	120		—
	Conductor cross-section (mm²) ...:	2 x 185		—
	Test current Ie (A) ...:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 59	80	P
	Manual operating means: non-metallic	12	35	P
	Parts intended to be touched but not hand-held: non-metallic	26	50	P
	Parts which need not be touched during normal operation: non-metallic	33	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.1	Short-time withstand current test		P
	Type E³ NH-LA-LEI 3 3P U6 with locked operating means		
	Rated short-time withstand current Icw (A) (≥ 12 Ie max.) .....:	20000 / 1s	P
	- test voltage (V) .....:	L1: 693 L2: 695 L3: 694	—
	- r.m.s. test current (A) .....:	L1: 20150 L2: 20430 L3: 20080	—
	- peak test current (A) .....:	L1: 41560 L2: 36070 L3: 29540	—
	- power factor / ~~time constant~~ .....:	L1: 0,25 L2: 0,25 L3: 0,25	—
	- factor n .....:	2,06	—
	Test duration (ms) .....:	1005	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N
	Rated short-circuit making capacity Icm (A) .....:	-	N
	- test voltage (1,05 x Ue) .....(V):	L1: - L2: - L3: -	—
	- r.m.s. test current (A) .....(A):	L1: - L2: - L3: -	—
	- maximum peak test current (factor n) .....:	-	N
	- power factor / time constant .....:	L1: - L2: - L3: -	N
	Current duration (s) .....:	-	—
	Time interval between the cycles .....:	-	—
8.3.5.2.5	Behaviour of the equipment during the test		N
	Test performed without:		—
	- endanger to the operator		N
	-cause damage to adjacent equipment		N
	No permanent arcing		N
	No flash over between poles and poles and frame		N
	No melting of the fuse in the detection circuit		N
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N
	Immediately after the test equipment must work satisfactorily		N
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N
	- equipment is able to carry its rated current after normal closing operation		N

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.5.3	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No flashover or breakdown			P
8.3.5.4	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.5.5	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 60	80	P
	Manual operating means: non-metallic	12	35	P
	Parts intended to be touched but not hand-held: non-metallic	27	50	P
	Parts which need not be touched during normal operation: non-metallic	32	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT		P
	Conditional short-circuit current test		P
	Type E³ NH-LA-LEI 3 1P U6: 120kA at 500V with fuse-links 630A (L1 open, L2 closed, L3 operated)		
	Protective device details:		P
	- manufacturer's name, trademark or identification mark ..... :	EFEN	—
	- manufacturer's model or type reference ..... :	35078.0060	—
	- rated voltage (V) ..... :	500	—
	- rated current (A) ..... :	630	—
	- rated breaking capacity (kA) ..... :	120	—
8.3.6.2	Conditional short-circuit current test values		P
	- test voltage (1,05 Ue) (V) ..... :	L1: 526 L2: 529 L3: 527	—
	- test current (A) ..... :	L1: 120920 L2: 121280 L3: 120660	—
	- rated frequency (Hz) ..... :	50	—
	- power factor ..... :	0,17	—
	- time constant (ms) ..... :	-	—
	- factor n ..... :	2,22	—
	Fuse protected short-circuit withstand (equipment in closed position)		P
	- max. let-through current (A) ..... :	L1: 33940 L2: 36510 L3: 64280	—
	- Joule integral I²dt (A²s) ..... :	L1: 2787000 L2: 4165000 L3: 5630000	—
	Fuse protected short-circuit making (equipment closing on to short-circuit)		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) ..... :	0,91	—
	- point at which the measurement is made ..... :	Handle of the actuator	—
	- test speed during the fuse protected short-circuit making (m/s) ..... :	0,90	—
	- max. let-through current (A) ..... :	L1: - L2: 57030 L3: 57030	—
	- Joule integral I²dt (A²s) ..... :	L1: - L2: 4469000 L3: 4469000	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ....:	1380	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conductor cross-section (mm²) .....:	2 x 185	—
	Test current Ie (A) .....:	630	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 61	80	P
	Manual operating means: non-metallic	13	35	P
	Parts intended to be touched but not hand-held: non-metallic	27	50	P
	Parts which need not be touched during normal operation: non-metallic	34	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditional short-circuit current test		P
	Type E³ NH-LA-LEI 3 3P U6: 120kA at 500V with fuse-links 630A		
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- rated breaking capacity (kA) .....:	120	—
8.3.6.2	Conditional short-circuit current test values		P
	- test voltage (1,05 Ue) (V) .....:	L1: 526 L2: 529 L3: 527	—
	- test current (A) .....:	L1: 120920 L2: 121280 L3: 120660	—
	- rated frequency (Hz) .....:	50	—
	- power factor .....:	0,17	—
	- time constant (ms) .....:	-	—
	- factor n .....:	2,22	—
	Fuse protected short-circuit withstand (equipment in closed position)		P
	- max. let-through current (A) .....:	L1: 58630 L2: 17140 L3: 64770	—
	- Joule integral I²dt (A²s) .....:	L1: 4013000 L2: 588790 L3: 4835000	—
	Fuse protected short-circuit making (equipment closing on to short-circuit)		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	0,91	—
	- point at which the measurement is made .....:	Handle of the actuator	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	0,90	—
	- max. let-through current (A) .....:	L1: 0 L2: 58970 L3: 58970	—
	- Joule integral I²dt (A²s) .....:	L1: 0 L2: 3954000 L3: 3954000	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conductor cross-section (mm²) .....:	2 x 185	—
	Test current Ie (A) .....:	630	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 59	80	P
	Manual operating means: non-metallic	12	35	P
	Parts intended to be touched but not hand-held: non-metallic	27	50	P
	Parts which need not be touched during normal operation: non-metallic	34	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditional short-circuit current test		P
	Type E³ NH-LA-LEI 3 1P U6: 100kA at 690V with fuse-links 500A (L1 open, L2 closed, L3 operated)		
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35135.1010	—
	- rated voltage (V) .....:	690	—
	- rated current (A) .....:	500	—
	- rated breaking capacity (kA) .....:	100	—
8.3.6.2	Conditional short-circuit current test values		P
	- test voltage (1,05 Ue) (V) .....:	L1: 725 L2: 726 L3: 725	—
	- test current (A) .....:	L1: 100560 L2: 100830 L3: 100210	—
	- rated frequency (Hz) .....:	50	—
	- power factor .....:	0,15	—
	- time constant (ms) .....:	-	—
	- factor n .....:	2,24	—
	Fuse protected short-circuit withstand (equipment in closed position)		P
	- max. let-through current (A) .....:	L1: 33820 L2: 25420 L3: 53000	—
	- Joule integral I^2dt (A^2s) .....:	L1: 2871000 L2: 1594000 L3: 3401000	—
	Fuse protected short-circuit making (equipment closing on to short-circuit)		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	0,91	—
	- point at which the measurement is made .....:	Handle of the actuator	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	0,90	—
	- max. let-through current (A) .....:	L1: - L2: 50730 L3: 50730	—
	- Joule integral I^2dt (A^2s) .....:	L1: - L2: 2731000 L3: 2731000	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conductor cross-section (mm²) .....:	2 x 185	—
	Test current Ie (A) .....:	630	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 61	80	P
	Manual operating means: non-metallic	14	35	P
	Parts intended to be touched but not hand-held: non-metallic	28	50	P
	Parts which need not be touched during normal operation: non-metallic	36	60	P

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Clause	Requirement + Test	Result - Remark	Verdict

	Conditional short-circuit current test		P
	Type E³ NH-LA-LEI 3 3P U6: 100kA at 690V with fuse-links 500A		
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35135.1010	—
	- rated voltage (V) .....:	690	—
	- rated current (A) .....:	500	—
	- rated breaking capacity (kA) .....:	100	—
8.3.6.2	Conditional short-circuit current test values		P
	- test voltage (1,05 Ue) (V) .....:	L1: 725 L2: 726 L3: 725	—
	- test current (A) .....:	L1: 100560 L2: 100830 L3: 100210	—
	- rated frequency (Hz) .....:	50	—
	- power factor .....:	0,15	—
	- time constant (ms) .....:	-	—
	- factor n .....:	2,24	—
	Fuse protected short-circuit withstand (equipment in closed position)		P
	- max. let-through current (A) .....:	L1: 27260 L2: 31100 L3: 51430	—
	- Joule integral I²dt (A²s) .....:	L1: 1783000 L2: 2463000 L3: 3551000	—
	Fuse protected short-circuit making (equipment closing on to short-circuit)		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	0,91	—
	- point at which the measurement is made .....:	Handle of the actuator	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	0,90	—
	- max. let-through current (A) .....:	L1: 0 L2: 48520 L3: 48520	—
	- Joule integral I²dt (A²s) .....:	L1: 0 L2: 2693000 L3: 2693000	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Conductor cross-section (mm²) .....:	2 x 185	—
	Test current Ie (A) .....:	630	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 65	80	P
	Manual operating means: non-metallic	13	35	P
	Parts intended to be touched but not hand-held: non-metallic	28	50	P
	Parts which need not be touched during normal operation: non-metallic	37	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY		P
8.3.7.1	Overload test		P
	Type E³ NH-LA-LEI 3 1P U6		
	ambient temperature 10-40 °C .....:	22	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	test current 1,6 x Ithe or 1,6 x Ith (A) .....:	1008	—
	cable/busbar cross-section (mm²)/(mm x mm).....:	2 x 185 / 40x10	—
	cable/busbar length (mm)/(mm).....:	2000 / 600	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Time duration of the overload test (s) .....:	1804	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed	Opened and closed	P
	Required opening force not greater than the test force of 8.2.5.2 and table 8		P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	—
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.7.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Fuse link(s) aged during the overload test are replaced by new fuse-link(s).....:	Yes		P
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 59	80	P
	Manual operating means: non-metallic	12	35	P
	Parts intended to be touched but not hand-held: non-metallic	27	50	P
	Parts which need not be touched during normal operation: non-metallic	32	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7.1	Overload test		P
	Type E³ NH-LA-LEI 3 1P V2N		
	ambient temperature 10-40 °C .....:	23	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	test current 1,6 x Ithe or 1,6 x Ith (A) .....:	1008	—
	cable/busbar cross-section (mm²)/(mm x mm).....:	2 x 185 / 40x10	—
	cable/busbar length (mm)/(mm).....:	2000 / 600	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Time duration of the overload test (s) .....:	1734	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed	Opened and closed	P
	Required opening force not greater than the test force of 8.2.5.2 and table 8		P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.7.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Fuse link(s) aged during the overload test are replaced by new fuse-link(s).....:	Yes		P
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 54	80	P
	Manual operating means: non-metallic	10	35	P
	Parts intended to be touched but not hand-held: non-metallic	24	50	P
	Parts which need not be touched during normal operation: non-metallic	31	60	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.7.1	Overload test		P
	Type E³ NH-LA-LEI 3 3P U6		
	ambient temperature 10-40 °C .....:	22	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	test current 1,6 x Ithe or 1,6 x Ith (A) .....:	1008	—
	cable/busbar cross-section (mm²)/(mm x mm).....:	2 x 185 / 40x10	—
	cable/busbar length (mm)/(mm).....:	2000 / 600	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Time duration of the overload test (s) .....:	1854	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed	Opened and closed	P
	Required opening force not greater than the test force of 8.2.5.2 and table 8		P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P

IEC 60947-3				
Clause	Requirement + Test	Result - Remark		Verdict
8.3.7.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Fuse link(s) aged during the overload test are replaced by new fuse-link(s).....:	Yes		P
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 58	80	P
	Manual operating means: non-metallic	12	35	P
	Parts intended to be touched but not hand-held: non-metallic	27	50	P
	Parts which need not be touched during normal operation: non-metallic	33	60	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.7.1	Overload test		P
	Type E³ NH-LA-LEI 3 3P V2N		
	ambient temperature 10-40 °C .....:	22	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	test current 1,6 x Ithe or 1,6 x Ith (A) .....:	1008	—
	cable/busbar cross-section (mm²)/(mm x mm).....:	2 x 185 / 40x10	—
	cable/busbar length (mm)/(mm).....:	2000 / 600	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	EFEN	—
	- manufacturer's model or type reference .....:	35078.0060	—
	- rated voltage (V) .....:	500	—
	- rated current (A) .....:	630	—
	- power loss (W) .....:	45 max.	—
	- rated breaking capacity (kA) .....:	120	—
	Time duration of the overload test (s) .....:	1935	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed	Opened and closed	P
	Required opening force not greater than the test force of 8.2.5.2 and table 8		P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P

IEC 60947-3				
Clause	Requirement + Test	Result - Remark		Verdict
8.3.7.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	EFEN		—
	- manufacturer's model or type reference .....:	35078.0060		—
	- rated voltage (V) .....:	500		—
	- rated current (A) .....:	630		—
	- power loss (W) .....:	45 max.		—
	- rated breaking capacity (kA) .....:	120		—
	Fuse link(s) aged during the overload test are replaced by new fuse-link(s).....:	Yes		P
	Conductor cross-section (mm²) .....:	2 x 185		—
	Test current Ie (A) .....:	630		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 56	80	P
	Manual operating means: non-metallic	11	35	P
	Parts intended to be touched but not hand-held: non-metallic	25	50	P
	Parts which need not be touched during normal operation: non-metallic	30	60	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.4	ELECTROMAGNETIC COMPATIBILITY TESTS		P
8.4.1	Immunity		P
8.4.1.1	Equipment not incorporating electronic circuits: no tests necessary		P
8.4.1.2	Equipment incorporating electronic circuits:		N
	Equipment utilizing circuits in which all components are passive are not required to be tested		N
	All other equipment, requirements according to 7.3.3.2 and limits according table 6 apply		N
	Performed tests ..... :	-	N
	No unintentional separation or closing of contacts has occurred during these tests ..... :	-	N
8.4.2	Emission		P
8.4.2.1	Equipment not incorporating electronic circuits: no tests necessary		P
8.4.2.2	Equipment incorporating electronic circuits:		N
	Equipment utilizing circuits in which all components are passive are not required to be tested		N
	All other equipment, requirements according to 7.3.3.2 and limits according table 7 apply		N
	Performed tests ..... :	-	N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Annex A (normative)		N
A	Equipment for direct switching of a single motor		N
A.1	Additional rated duties ..... :	-	N
A.1.1	- intermittent periodic duty		N
	- intermittent duty		N
A.1.1.1	Classes of intermittent duty ..... :	-	N
	-class 1: up to 1 operating cycle per hour		N
	-class 3: up to 3 operating cycle per hour		N
	-class 12: up to 12 operating cycles per hour		N
	-class 30: up to 30 operating cycles per hour		N
	-class 120: up to 120 operating cycles per hour		N
A.1.2	Temporary duty ..... :	-	N
A.5	Mechanical durability:		N
	Equipment mounted according to manufacturer's instruction		N
	Preferred number of no-load operating cycles expressed in millions..... :	-	N
	0,001 – 0,003 – 0,01 – 0,03 – 0,1 – 0,3 - 1		N
	If no mechanical endurance is stated by the manufacturer, a minimum mechanical endurance according to the class of intermittent duty shall be tested.		N
	Number of no-load operating cycles performed..... :	-	N
A.6	Electrical durability:		N
	- test according to manufacturer's instruction		N
A.7	Verification of making and breaking capacities:		N
	- utilization category ..... :	-	—
	- rated operational voltage Ue (V) ..... :	-	—
	- rated operational current Ie (A) ..... :	-	—
	Conditions for make/break operations or make operations:		—
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor ..... :	L1: - L2: - L3: -	—

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor / time constant .....:	L1: - L2: - L3: -	—
	Number of make/break or make and break operations .....:	-	N
	- recovery voltage duration ≥ 50 ms (ms)		N
	- current duration (ms) .....:	-	—
	- time interval between operations (s) .....:	-	N
	Characteristic of transient recovery voltage if necessary:		N
	- oscillatory frequency (kHz) .....:	-	—
	- measured oscillatory frequency (kHz) .....:	L1: - L2: - L3: -	N
	- factor γ .....:	L1: - L2: - L3: -	N
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		N
	Test performed without:		—
	- endanger to the operator		N
	- cause damage to adjacent equipment		N
	No permanent arcing		N
	No flash over between poles and poles and frame		N
	No melting of the fuse in the detection circuit		N
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		N
	Immediately after the test equipment must work satisfactorily		N
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N
	- equipment is able to carry its rated current after normal closing operation		N
8.3.3.4	Dielectric verification		N
	test voltage 2 Ue with a minimum of 1000V~ (V) ....:	-	—
	No flashover or breakdown		N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.5	Leakage current		N
	test voltage 1,1 Ue (V) .....:	-	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories): ≤ 2 mA/pole (mA) .....:	-	N
8.3.3.6	Temperature-rise verification		N
	- conductor cross-section (mm²) .....:	-	—
	- test current Ie (A) .....:	-	—
	Measured temperature-rise .....:	-	N
A.8	Operational performance test:		N
	- utilization category .....:	-	—
	- rated operational voltage (V) .....:	-	—
	- rated operational current (A) .....:	-	—
	Test conditions for electrical operation cycles:		N
	- test voltage (V) .....:	L1: - L2: - L3: -	—
	- test current (A) .....:	L1: - L2: - L3: -	—
	- power factor / time constant .....:	L1: - L2: - L3: -	—
	Number of cycles with current .....:	-	N
	Number of cycles without current .....:	-	N
	First test sequence (with/without current) .....:	-	—
	Second test sequence (with/without current) .....:	-	—
	- time interval between first and second test sequence .....:	-	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	-	N
	- current duration (ms) .....:	-	—
	- time interval between operations (s) .....:	-	N
8.3.4.1.5	Behaviour of the equipment during the operational performance test		N
	Test performed without:		—
	- endanger to the operator		N
	-cause damage to adjacent equipment		N
	No permanent arcing		N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	No flash over between poles and poles and frame		N
	No melting of the fuse in the detection circuit		N
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		N
	Immediately after the test equipment must work satisfactorily		N
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N
	- equipment is able to carry its rated current after normal closing operation		N
8.3.4.2	Dielectric verification		N
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	-	—
	No breakdown or flashover		N
8.3.4.3	Leakage current		N
	test voltage 1,1 Ue (V) .....:	-	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	-	N
8.3.4.4	Temperature-rise verification		N
	- conductor cross-section (mm²) .....:	-	—
	- test current Ie (A) .....:	-	—
	Measured temperature-rise .....:	-	N
A.9	Special tests:	-	N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

	Annex C (normative)		N
C	Single pole operated three pole switches		N
C.1	Three pole operated switches of fundamentally the same design, already successfully tested are deemed to satisfy the requirements of individually operated three pole devices.		N
C.2	Additional-tests to be performed on single pole operated three pole switches		N
	Test "8.3.3.3 Making and breaking capacities" according to test sequence I with following modifications		N
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle.....:	-	N
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....:	-	N
	Test performed in a three phase circuit		N
	Test "8.3.4.1 Operational performance" according to test sequence II with following modifications		N
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle.....:	-	N
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....:	-	N
	Test performed in a three phase circuit		N
	Test "8.3.6.2 Fuse protected short circuit test" according to test sequence IV with following modifications		N
	For the making test L1 shall be open and L2 closed, L3 is subjected to the required make operation cycle.....:	-	N
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....:	-	N
	Test performed in a three phase circuit		N
C.5	Instruction for use		N
	The product literature includes following statement.....:	-	N
	These devices are intended for power distribution systems where switching and/or isolating of an individual phase may be necessary and shall not be used for the switching of the primary circuit of three-phase equipment.		N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	TABLE 1: Temperature-rise: E³ NH-LA-LEI 3 1P U6 with fuse-links 630A			P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals	Incoming: tin plated copper	L1	55	65
		L2	54	
		L3	52	
	Outgoing: tin plated copper	L1	55	65
		L2	56	
		L3	55	
Manual operating means: non-metallic			12	25
Parts intended to be touched but not hand-held: non-metallic			25	40
Parts which need not be touched during normal operation: non-metallic			32	50
Supplementary information: ---				

8.3.3.1	TABLE 2: Temperature-rise: E³ NH-LA-LEI 3 1P V2N with fuse-links 630A			P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals	Incoming: tin plated copper	L1	51	65
		L2	53	
		L3	50	
	Outgoing: tin plated copper	L1	52	65
		L2	54	
		L3	50	
Manual operating means: non-metallic			10	25
Parts intended to be touched but not hand-held: non-metallic			24	40
Parts which need not be touched during normal operation: non-metallic			30	50
Supplementary information: ---				

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	TABLE 3: Temperature-rise: E³ NH-LA-LEI 3 3P U6 with fuse-links 630A			P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals	Incoming: tin plated copper	L1	53	65
		L2	54	
		L3	51	
	Outgoing: tin plated copper	L1	53	65
		L2	57	
		L3	55	
Manual operating means: non-metallic			11	25
Parts intended to be touched but not hand-held: non-metallic			26	40
Parts which need not be touched during normal operation: non-metallic			32	50
Supplementary information: ---				

8.3.3.1	TABLE 4: Temperature-rise: E³ NH-LA-LEI 3 3P V2N with fuse-links 630A			P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals	Incoming: tin plated copper	L1	51	65
		L2	54	
		L3	49	
	Outgoing: tin plated copper	L1	54	65
		L2	55	
		L3	52	
Manual operating means: non-metallic			11	25
Parts intended to be touched but not hand-held: non-metallic			25	40
Parts which need not be touched during normal operation: non-metallic			33	50
Supplementary information: ---				

List of test equipment used:

Measured quantity	Device	Manufacturer	Code
Voltage (tests up to 15kA)	Voltage divider 1:2000 Difference amplifier AM 502 Signal memory recorder TRA 800	ÖFPZ Arsenal Tektronix W&W	- AM 502/1...3 TRA800
Current (tests up to 15kA)	Lin. current transformer LGSSO Burden 1Ω Signal memory recorder TRA 800	Ritz ÖFPZ Arsenal W&W	WLIN5000/1...3 - TRA800
Voltage (tests above 15kA)	3-channel insulating measuring amplifier Signal memory recorder SMR II	Rohrer W&W	T908D SMRII64/1
Current (tests above 15kA)	Lin. current transformer LGSSO Burden 0,7mΩ Signal memory recorder SMR II	Ritz ÖFPZ Arsenal W&W	WLIN6000.HVF/1...3 - SMRII64/1
Current (tests at reduced voltage)	Current transformer GE 4461 Current transformer AETt10 True-RMS amperemeter Kl. 0,5 Digital multimeter Fluke 185	Goerz Siemens Norma Fluke	WI600/1...3 WI4000/1...3 A0,5/1...3 FLUKE185/1, 2
Transient recovery voltage	Adjustment equipment for TRV Oscilloscope G 801.1	ÖFPZ Arsenal Tektronix	- G801.1
Dielectric properties	High-voltage test equipment 90-1F with measuring equipment Impulse tester 35 Impulse voltmeter 64M Oscilloscope 9410	Elabo Haefely Haefely Le Croy	HSG5KV G304 G502 G803
Leakage current	High-voltage test equipment 90-1F Digital multimeter Fluke 185 Digital multimeter Fluke 185	Elabo Fluke Fluke	HSG5KV FLUKE185/1 FLUKE185/2
Time	Signal memory recorders Stopwatch	W&W Junghans	TRA800, SMRII64/1 938-2
Temperature	24-channel recorder Polycomp SK30 Temperature meter TESTO 901	H & B Testoterm	SK 30 TESTO
Abnormal heat and fire	Glow-wire test device with measuring equipment	ÖFPZ Arsenal	-
Mechanical strength of terminals	Test equipment	ÖFPZ Arsenal	-
Insertability of unprepared conductors	Gauges	ÖFPZ Arsenal	-
Strength of actuator mechanism	Test equipment	Schatz	-
Degree of protection	Test probe	PTL	-
Clearances, creepage distances	Digital slide gauge CD-20D	Mitutoyo	SCHUB

Приложение № 9

EFEN

EG-Konformitätserklärung
EC Conformity Declaration

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ НА СТАНДАРТ

Hersteller (Name, Adresse): *Производител (Име, Адрес):*	EFEN GmbH Schlangenbader Strafie 40 D-65344 Eltville/Rhein
Produktbezeichnung: *Описание на продукта:*	NH-Sicherungs-Lastschaltleiste Baugrofie 1, 2, 3 *NH вертикални разединители за предпазители НН размер 1, 2, 3*
Type: *Тип:*	E^3 E^3

Das bezeichnete Produkt stimmt mit den Vorschriften folgender europaischer Richtlinien in der Fassung der entsprechenden Anderungsrichtlinien uberein:
Описаните продукти отговарят на предписанията на следните Европейски Директиви в техните коригирани версии:

Nr. 2006/95/EG „Niederspannungsrichtlinie" (NSR)
Nr. 2006/95/EC „Директива Ниско напрежение"
(LVD)

Nr. 2004/108/EG „EMV-Richtlinie" (EMVR)
Nr. 2004/108/EC „Директива Електромагнитна съвместимост"
(EMCD)

Nr. 2002/95/EG „Beschrankung der Verwendung bestimmter gefahrlicher Stoffe in Elektro-und Elektronikgeraten" (RoHS) *No. 2002/95/EC „ограничение за използването на някои опасни вещества в електрическо и електронно оборудване (RoHS)*

Das bezeichnete Produkt ist nach den Regeln unseres von der DQS (Deutsche Gesellschaft zur Zertifizierung von Managementsystemen) nach DIN EN ISO 9001 zertifizierten Qualitats-Managementsystems in Ubereinstimmung mit folgenden Normen konstruiert und gefertigt:
Описаният продукт е проектиран и произведен на основата на нашата Система за управление на качеството DIN EN ISO 9001, която е сертифицирана от DQS (Германската асоциация за сертификация на системи за управление) да съответстват на следните стандарти:

IEC/EN 60947-3 : 1999 VDE 0660 Teil 107 : 2000-02

Anbringung der CE - Kennzeichnung:
2010 *Поставяне на CE маркировка:*

Aussteller / *Издател:* EFEN GmbH Eltville,

Ort, Datum / *Място, Дата*: 2010-01-08

Rechtsverbindliehe Unterschrift:
Подписи:
Инж. В.В. Кирш
Инж. А.С. Фаст

Diese Erklarung bescheinigt die Ubereinstimmung mit den genannten europaischen Richtlinien und gilt weltweit in Bezug auf die angefuhrten Normen, beinhaltet jedoch keine Zusicherung von Eigenschaften.
Тази декларация удостоверява съответствието с описаните Европейски Директиви и е валидна по целия свят относно горепосочените стандарти, но не включва в себе си гаранция за собственост

EG-Konformitätserklärung
EC Conformity Declaration

Hersteller (Name, Adresse): *Manufacturer (Name, Address):*	EFEN GmbH Schlangenbader Straße 40 D-65344 Eltville/Rhein
Produktbezeichnung: *Product designation:*	NH-Sicherungs-Lastschaltleiste Baugröße 1, 2, 3 *NH Fuse-Switch disconnectors vertical desigen size 1, 2, 3*
Type: *Type:*	E^3 E^3

Das bezeichnete Produkt stimmt mit den Vorschriften folgender europäischer Richtlinien in der Fassung der entsprechenden Änderungsrichtlinien überein:
The designated product conforms to the provisions of the following European directives in the version of the amended directives:

Nr. 2006/95/EG „Niederspannungsrichtlinie" (NSR)
Nr. 2006/95/EC „Low Voltage Directive" (LVD)

Nr. 2004/108/EG „EMV-Richtlinie" (EMVR)
Nr. 2004/108/EC „EMC Directive" (EMCD)

Nr. 2002/95/EG „Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten" (RoHS)
No. 2002/95/EC „Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS)

Das bezeichnete Produkt ist nach den Regeln unseres von der DQS (Deutsche Gesellschaft zur Zertifizierung von Managementsystemen) nach DIN EN ISO 9001 zertifizierten Qualitäts-Managementsystems in Übereinstimmung mit folgenden Normen konstruiert und gefertigt:

The described product is constructed and manufactured based on our Quality Management System according to DIN EN ISO 9001 which has been certified by the DQS (German association for the Certification of Management Systems) to comply with the following standards:

IEC/EN 60947-3 : 1999 VDE 0660 Teil 107 : 2000-02

Anbringung der CE - Kennzeichnung: 2010
Affixing of the CE marking:

Aussteller / *Issuer:* EFEN GmbH

Ort, Datum / *Place, Date* : Eltville, 2010-01-08

Rechtsverbindliche Unterschrift:
Legally binding signature:

i.V. W. Kirsch

i.A. S.Fast

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten europäischen Richtlinien und gilt weltweit in Bezug auf die angeführten Normen, beinhaltet jedoch keine Zusicherung von Eigenschaften.
This declaration certifies compliance with the indicated European directives and is valid world wide with respect to the a. m. standards but implies no warranty of properties.

EFEN GmbH
Schlangenbader Str. 40 • D-65344 Eltville • Tel. +49 6129 46 - 0 • Fax 46 - 222 • efen@efen.com • www.efen.com

OVE Qsterrachisdier Verfeand fur Elaktratechnik

Декларация за съответствие

STC/AT 960

Продукт	**Разединител предпазител за ниско напражение (185 mm Шина система)**
Изпитан по молба на	**EFEN GmbH 65344 Eltville, Schlangenbaderstrasse 40, Germany**
Произведено в (име и място)	**EFEN GmbH 04938 Uebigau, Gewerbepark Nord Nr. 6, Germany** **Dongguan EFEN Electrical Products Co., Ltd. Two Floor B4 Building, Longgang Ind. Park, Shipai Town, 523357 Donguan City, Guangdong Province, China**
Оценка и основни характеристики	**AC-23B 400V/630A; AC-22B 500V/630A; AC-21B 690V/630A; Ui 1000V AC; Виж стр.4 от Протокола от изпитване**
Търговска марка (ако има такава)	**EFEN**
Тип (Реф. №)	**E^3 NH-La-Lei 3 xx yyy; Виж стр.6 от Протокола от изпитване**
Допълнителна информация (ако е необходима)	

Образец от продукта е тестван и е установено, че е в съответствие с

EN 60947-1:2007, EN 60947-3:2009

Както е посочено в Протокола (Реф. №) **2.03.01139.1.0/EFEN E^3/3/185/CB/CCA**

Тази Декларация за съответствие е резултат от изпитването на образец от продукта, представена в съответствие с разпоредбите на съответния специфичен стандарт.
Тази Декларация за съответствие е създадена от орган, който участва пряко в Споразумението за сертифициране CENELEC (CCA) от 11 септември 1973, ревизирана на 29 март 1983 г., 3-ти Септември, 2004 и 18 април 2007 г. (включвайки допълнения от 1 до 4). Всеки друг орган, участващи в CCA може да вземе тази декларация като основа за издаване на национален знак за съответствие или за национално одобрение, както е посочено в OD CCA 226 Списък на актуалните решения клауза CCA 2.10.

OVE
Österreichischer Verband für Elektrotechnik
Ръководител изпитване & сертифициране

Виена, 2010-11-02

Dipl.-Ing. W. Martin

OVE - - Изпитване & Сертиициране
1190 Wien, Kahlenberger Str. 2A, Austria
Tel.: +43 1 370 58 06 Fax.:+43 1 370 58 06-199 ZVR: 327279890 DVR: 1055887

Акредитирани от Австрийското министерство на икономиката, Семейството и Младежта като сертифициращ орган на продукти и процеси в областта на електротехниката и електрониката включително безопасност и EMC

OVE Österreichischer Verband für Elektrotechnik

STATEMENT OF CONFORMITY

STC/AT **960**

Erzeugnis *Product*	**Low-Voltage Fuse-Switch-Disconnector** **(185 mm Busbar System)**
Geprüft im Auftrag von *Tested by request of*	**EFEN GmbH** **65344 Eltville, Schlangenbaderstrasse 40, Germany**
Hergestellt von (Firma und Ort) *Manufactured at (name and place)*	**EFEN GmbH** **04938 Uebigau, Gewerbepark Nord Nr. 6, Germany** **Dongguan EFEN Electrical Products Co., Ltd.** **Two Floor B4 Building, Longgang Ind. Park, Shipai Town,** **523357 Donguan City, Guangdong Province, China**
Betriebsdaten und wichtige Merkmale *Rating and principal characteristics*	**AC-23B 400V/630A; AC-22B 500V/630A; AC-21B 690V/630A;** **UI 1000V AC; see page 4 of Test Report**
Warenzeichen (falls vorhanden) *Trade mark (if any)*	**EFEN**
Typenbezeichnung *Model/Type Ref.*	**E^3 NH-La-Lei 3 xx yyy;** **see page 6 of Test Report**
Zusätzliche Information (falls erforderlich) *Additional information (if necessary)*	

Ein Muster dieses Erzeugnisses ist geprüft und als in Übereinstimmung mit
A sample of the product has been tested and found to be in conformity with

EN 60947-1:2007, EN 60947-3:2009

befunden worden, wie es aus den Prüfberichten hervorgeht (Aktenzeichen/Nr.)
as shown in the test reports (reference No.). **2.03.01139.1.0/EFEN E^3/3/185/CB/CCA**

Diese Konformitätsaussage ist das Ergebnis einer Prüfung, die an einem eingereichten Muster eines Erzeugnisses in Übereinstimmung mit den Bestimmungen der jeweiligen Norm durchgeführt worden ist.
Diese Konformitätsaussage ist von einer Stelle ausgestellt worden, die direkt am CENELEC-Zertifizierungs-Abkommen (CCA) vom 11. September 1973, revidiert am 29. März 1983, 3. September 2004 und 18. April 2007 (einschließlich der Ergänzungen 1 bis 4) teilnimmt. Jede andere am CCA teilnehmende Stelle kann diese Konformitätsaussage als Grundlage für die Erteilung eines nationalen Konformitätszeichens (Prüfzeichens) oder einer nationalen Zulassung heranziehen, wie es im OD CCA 226 Zusammenstellung der Beschlüsse Punkt 2.10 festgelegt ist.

This Statement of Conformity is the result of testing a sample of the product submitted, in accordance with the provisions of the relevant specific standard.

This Statement of Conformity has been established by a body which participates directly in the CENELEC Certification Agreement (CCA) of September 11th, 1973 as revised on March 29th, 1983, September 3rd, 2004 and April 18th, 2007 (including addenda 1 to 4). Any other body participating in the CCA may take this Statement as a basis for granting a national mark of conformity or a national approval as specified in the OD CCA 226 List of Current Decisions of CCA Group clause 2.10.

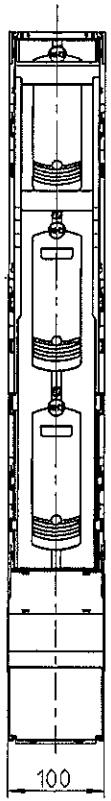
Österreichischer Verband für Elektrotechnik
Head of Testing & Certification

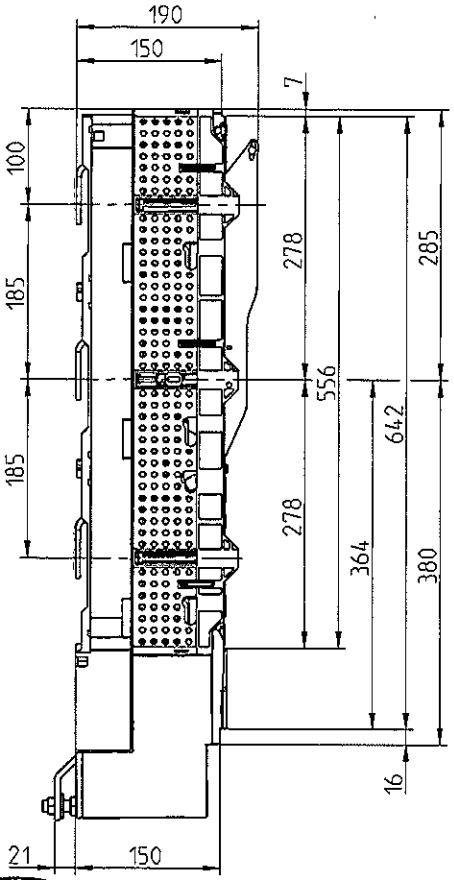
Digitally signed by W. Martin
Email=w.martin@ove.at

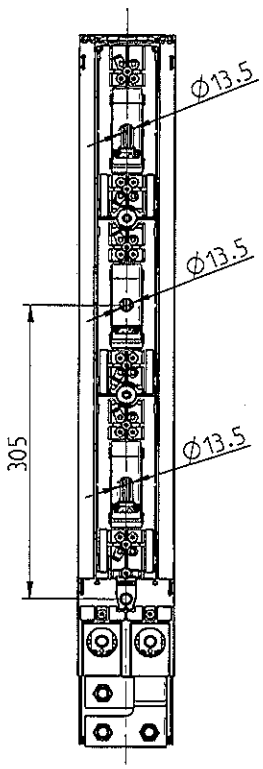
Vienna, 2010-11-02 Dipl.-Ing. W. Martin

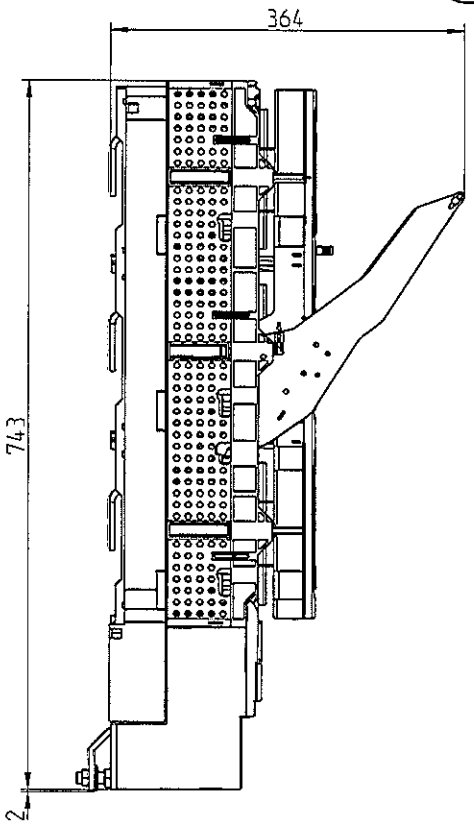
OVE - Testing & Certification
1190 Wien, Kahlenberger Str. 2A, Austria
Tel.: +43 1 370 58 06 Fax.:+43 1 370 58 06-199
ZVR: 327279890 DVR: 1055887

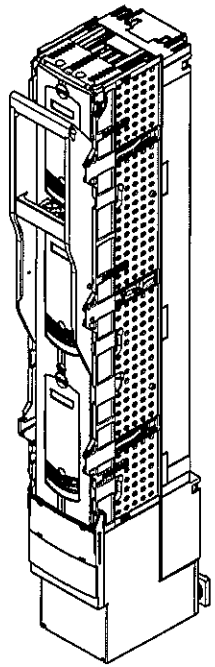
-175-











geschlossen
closed

offen
open

Kundenzeichnung
customer drawing

b	03.07.14	Thormann	13-027	Zeichnung überarbeitet
a	24.10.11	Grünwald	AM-11-198	-
ID	Datum date	Name name	Nr. no.	Beschreibung description

sonstige Normen: further standarts:

lifecycle : Manufactured

	designer :	checker :	Rev. :
date:	04.10.11	03.07.2014	b
name:	Gruenw5	Kölebl	

EFEN

Werkstoff / material :

Bezeichnung / designation :
E³ NH-Lasttrennleiste
E³ NH-fuse-switch
Gr 3, 3-polig 1000A
size 3, 3-pole 1000A

Massstab scale : /

Datei / file : 38036-0080

Ident-Nr. / part-no. : 38036-0080

Gewicht / weight :

Alle Einheiten im metrischen System !
All units in metric system !

Oberflaeche / area :

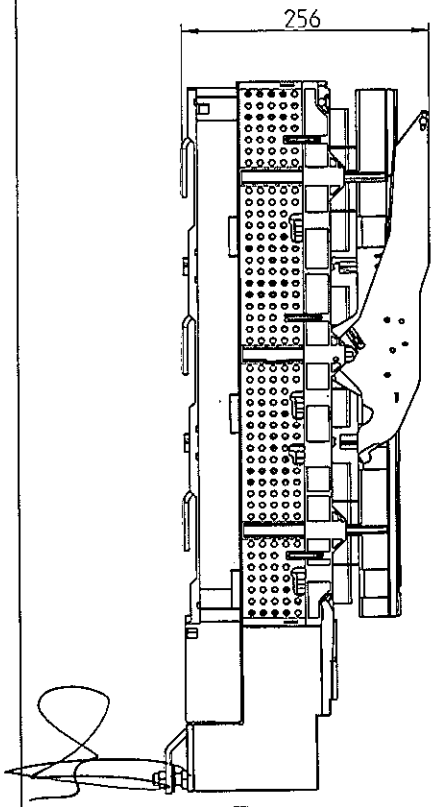
Schutzvermerk ISO 16016 beachten
Copyright according to ISO 16016

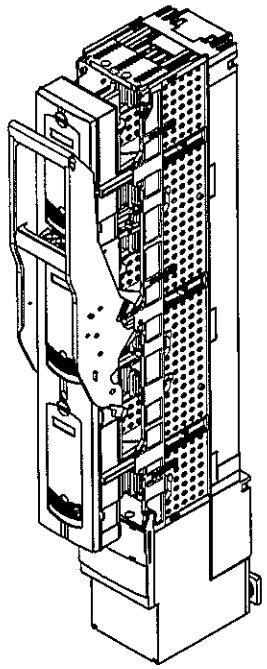
Ersatz fuer / replacement for :
Ersetzt durch / replaced by :

Ptoject:

Blatt / page : 1/3 format : A3

Trennstellung 1
locking position 1





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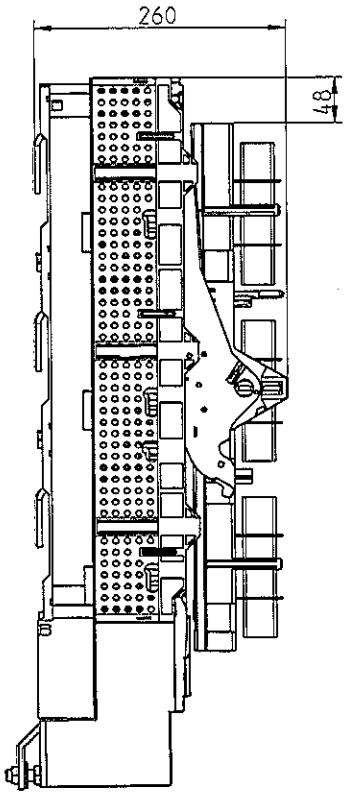
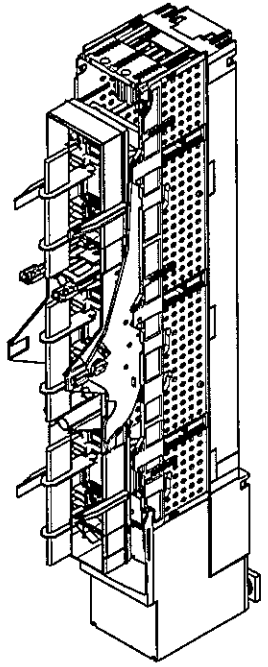
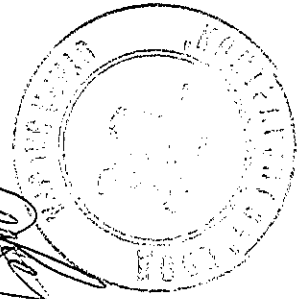
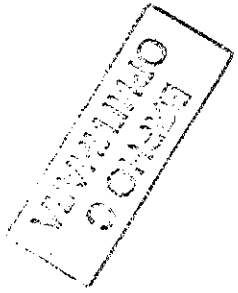




Kundenzeichnung
customer drawing





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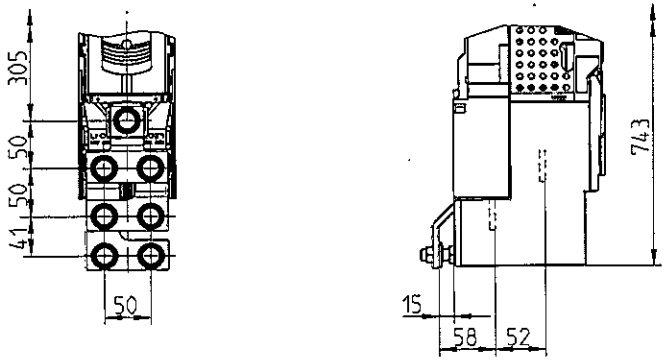
a	24.10.11	Grünwald	AM-T1-198	-
ID	Datum date	Name name	Nr. no.	Beschreibung description

sonstige Normen: further standarts:	*lifecycle :*	Manufactured				
		designer :	*checker :*	*Rev. :*		EFEN
	date:	04.10.11	03.07.2014	b		
	name:	GruenwS	Kölebl			
Werkstoff / material :	*Bezeichnung / designation :*				*Massstab scale :*	*Datei / file :* 38036-0080
	E 3 NH-Lasttrennleiste					*Ident-Nr. / part-no. :* 38036-0080
Gewicht / weight :	E 3 NH-fuse-switch				/	Alle Einheiten im metrischen System !
	Gr 3, 3-polig 1000A					All units in metric system !
	size 3, 3-pole 1000A					
Oberflaeche / area :	Schutzvermerk ISO 16016 beachten					Ersatz fuer / replacement for :
	Copyright according to ISO 16016					Ersetzt durch / replaced by :
Ptoject:						Blatt / page : 2/3 format : A3

Kundenzeichnung
customer drawing

Anschlussbereich
connection area



b	10.07.14	Thormann	13-027	Zeichnung überarbeitet
a	24.10.11	Grünwald	AM-11-198	-
ID	Datum date	Name name	Nr. no.	Beschreibung description

sonstige Normen: further standarts:

lifecycle : Manufactured

	designer :	checker :	Rev. :
date:	04.10.11	03.07.2014	b
name:	GruenwS	K.Bleibl	

EFEN

Werkstoff / material :

Bezeichnung / designation :
E³ NH-Lasttrennleiste
E³ NH-fuse-switch
Gr 3, 3-polig 1000A
size 3, 3-pole 1000A

Massstab scale : /

Datei / file : 38036-0080

Ident-Nr. / part-no. : 38036-0080

Gewicht / weight : /

Alle Einheiten im metrischen System !
All units in metric system !

Oberflaeche / area : /

Project:

Ersatz fuer / replacement for :
Ersetzt durch / replaced by :

Blatt / page : 3/3 format : A3

Приложение № 11

AUSTRIAN INSTITUTE OF TECHNOLOGY

Accredited by BMWA with GZ: 92714/237-IV/9/00 as test- and inspection body
and with BGBl. II Nr. 244//2005 as certification body for personnel

Test Report

Project Designation

TYPE TEST
AT LOW-VOLTAGE
SINGLE POLE OR THREE POLE OPERATED
SWITCH-DISCONNECTORS
E³ NH-LA-TR-LEI 1000A
(185mm BUSBAR SYSTEM)

Client

EFEN GmbH
Schlangenbader Straße 40
D-65344 Eltville
GERMANY

Order from / No. 04/2011 / ---

Project Number 2.03.02266.1.0/EFEN E³ NH-La-Tr-Lei/1000 Test Engineer Ing.J.Ainetter

Date of issue	30.08.2011
Total number of issues / No.	1 / 1
Number of pages	6
Annex: Number of pages	CB/CCA - Test Report No. 2.03.02266.1.0/EFEN E³ NH-La-Tr-Lei/1000/CB/CCA (61 pages)

The results relate exclusively to the terms tested.

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Test item

Identification:

Low-voltage single pole or three pole operated switch-disconnectors E³ NH-La-Tr-Lei 1000A

Manufacturer:	EFEN GmbH
Trademark:	EFEN
Number of poles:	3
Size:	3
Busbar system:	185mm
Rated operational voltage(s):	400V a.c. up to 690V a.c.
Rated operational current(s):	1000A
Rated frequency:	50Hz/60Hz

Summary of variants:

See page 4

Technical data and description:

See page 5

Testing location, Period of testing

Testing location:

Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.
Business Unit Electric Energy Systems
Power Service Center
Giefinggasse 2
A-1210 Vienna
AUSTRIA

Period of testing:

04 to 06/2011

Test(s)

Test(s) performed:

Type test

Test standard(s):

IEC 60947-1:2011 (Edition 5.1) and IEC 60947-3:2008 (Edition 3.0)
EN 60947-1:2007+A1:2011 and EN 60947-3:2009

Test procedure(s):

CB Scheme and CCA Scheme

Result

The low-voltage single pole or three pole operated switch-disconnectors E³ NH-La-Tr-Lei 1000A have passed the type test successfully.

Test Engineer

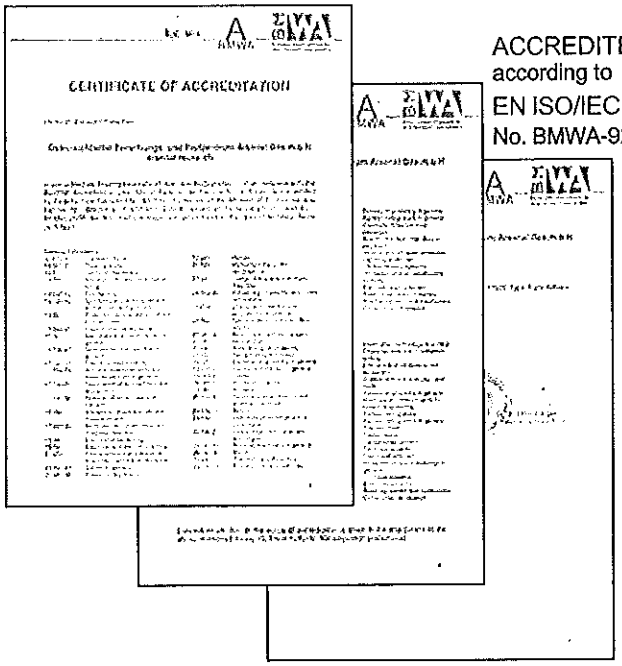
Ing.J.Ainetter

Project Engineer,
technical responsibility

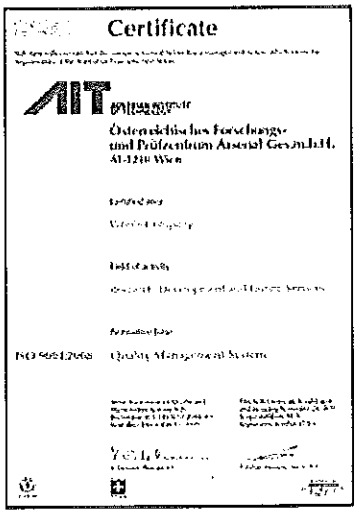
Ing.K.Farthofer

AUSTRIAN INSTITUTE OF TECHNOLOGY

Testing laboratory



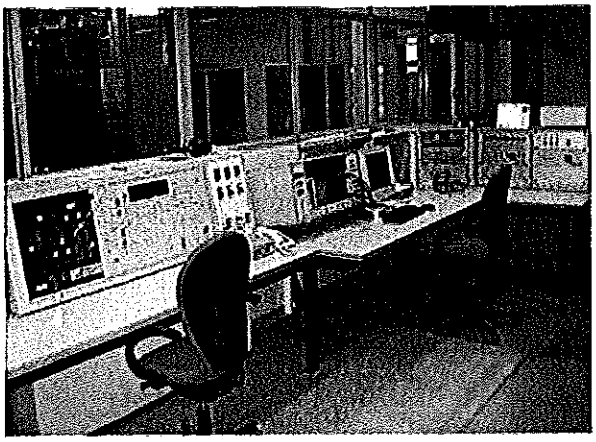
ACCREDITED
according to
EN ISO/IEC 17025
No. BMWA-92.714/0504-I/12/2007



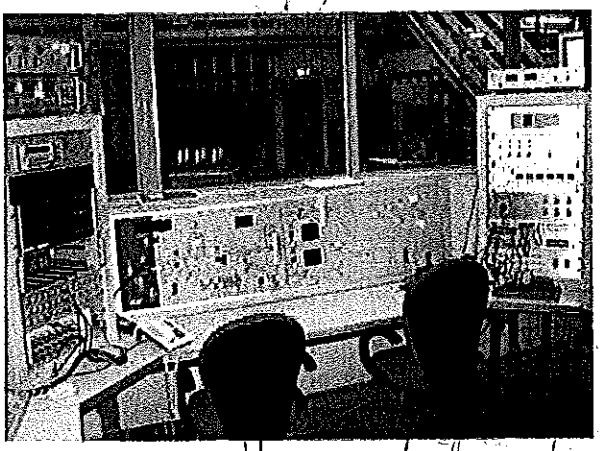
CERTIFICATED
according to
ISO 9001
Reg. No. 12769

RECOGNIZED
CB TESTING LABORATORY
under the responsibility of OVE
as the National Certification Body

POWER SERVICE CENTER:



Control station for tests up to 15kA



Control station for tests above 15kA

- 180 -

Summary of variants

Designation	Description
E³ NH-La-Tr-Lei 1000A 1P	Switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 1-pole operated ▪ screw terminals M12 (incoming) ▪ terminal adapter with screws M12 (outgoing)
E³ NH-La-Tr-Lei 1000A 3P	Switch-disconnector for busbar mounting ▪ busbar system 185mm ▪ 3-pole operated ▪ screw terminals M12 (incoming) ▪ terminal adapter with screws M12 (outgoing)

Technical data and description

Test item	Low-voltage single pole or three pole operated switch-disconnectors
Trademark	EFEN
Model/Type reference	E³ NH-La-Tr-Lei 1000A
Variants	See page 4
Manufacturer	EFEN GmbH
Place of manufacture	Gewerbepark Nord 6, D-04938 Uebigau / Elster
Method of operation	Dependent manual operation
Switching positions	ON / OFF
Number of poles	3
Nature of supply	AC
Utilization category	AC-22B at 400V/1000A AC-21B at 500V/1000A AC-21B at 690V/1000A
Rated operational voltage	400V up to 690V
Rated operational current	1000A
Rated frequency	50Hz/60Hz
Conventional free air thermal current (with solid-links)	1000A
Rated insulation voltage	1000V
Rated impulse withstand voltage	12kV
Rated short-time withstand current	15000A / 1s (without locked operating means) 25000A / 1s (with locked operating means)
Rated short-circuit making capacity	22000A peak
Degree of protection	IP 2X

Measuring equipment

Measured quantity	Device	Manufacturer	Code
Voltage (tests up to 15kA)	Voltage divider 1:2000 Difference amplifier AM 502 Signal memory recorder TRA 800	ÖFPZ Arsenal Tektronix W&W	- AM 502/1...3 TRA800
Current (tests up to 15kA)	Lin. current transformer LGSSO Burden 1Ω Signal memory recorder TRA 800	Ritz ÖFPZ Arsenal W&W	WLIN5000/1...3 - TRA800
Voltage (tests above 15kA)	3-channel insulating measuring amplifier Signal memory recorder SMR II	Rohrer W&W	T908D SMRII64/1
Current (tests above 15kA)	Lin. current transformer LGSSO Burden 0,7mΩ Signal memory recorder SMR II	Ritz ÖFPZ Arsenal W&W	WLIN6000.HVF/1...3 - SMRII64/1
Current (tests at reduced voltage)	Current transformer GE 4461 Current transformer AETt10 True-RMS amperemeter Kl. 0,5 Digital multimeter Fluke 185	Goerz Siemens Norma Fluke	WI600/1...3 WI4000/1...3 A0,5/1...3 FLUKE185/1, 2
Transient recovery voltage	Adjustment equipment for TRV Oscilloscope G 801.1	ÖFPZ Arsenal Tektronix	- G801.1
Dielectric properties	High-voltage test equipment 90-1F with measuring equipment Impulse tester 35 Impulse voltmeter 64M Oscilloscope 9410	Elabo Haefely Haefely Le Croy	HSG5KV G304 G502 G803
Leakage current	High-voltage test equipment 90-1F Digital multimeter Fluke 185 Digital multimeter Fluke 185	Elabo Fluke Fluke	HSG5KV FLUKE185/1 FLUKE185/2
Time	Signal memory recorders Stopwatch	W&W Junghans	TRA800, SMRII64/1 938-2
Temperature	24-channel recorder Polycomp SK30 Temperature meter TESTO 901	H & B Testoterm	SK 30 TESTO
Abnormal heat and fire	Glow-wire test device with measuring equipment	Friborg	GLOW
Mechanical strength of terminals	Test equipment	ÖFPZ Arsenal	-
Insertability of unprepared conductors	Gauges	ÖFPZ Arsenal	-
Strength of actuator mechanism	Test equipment	Schatz	-
Degree of protection	Test probe	PTL	-
Clearances, creepage distances	Digital slide gauge CD-20D	Mitutoyo	SCHUB

Test Report issued under the responsibility of:

OVE

TEST REPORT
IEC 60947-3
Low-voltage switchgear and controlgear
Part 3: Switches, disconnectors, switch-disconnectors and fuse combination units

Report Reference No.	2.03.02266.1.0/EFEN E³ NH-La-Tr-Lei/1000/CB/CCA
Date of issue.....	30.08.2011
Total number of pages	61
CB Testing Laboratory.....	Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.
Address	A-1210 Vienna, Giefingasse 2, AUSTRIA
Applicant's name.....	EFEN GmbH
Address	D-65344 Eltville, Schlangenbader Straße 40, GERMANY
Test specification:	
Standard.....	IEC 60947-3: 3rd Edition (2008) in conjunction with IEC 60947-1: 5th Edition (2007)
Test procedure	CB
Non-standard test method.....	N/A
Test Report Form No.	IEC60947_3B
Test Report Form(s) Originator	OVE
Master TRF.....	Dated 2009-08

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description	Low-voltage single pole or three pole operated switch-disconnectors
Trademark	EFEN
Manufacturer	EFEN GmbH
Model/Type reference	E³ NH-La-Tr-Lei 1000A (185mm busbar system)
Variant(s).....	See page 6
Ratings	400V a.c. up to 690V a.c. // 1000A // 50Hz/60Hz // 3-pole

Testing procedure and testing location:

☒ **CB Testing Laboratory:** Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.

Testing location / address .....: A-1210 Vienna, Giefingasse 2, AUSTRIA

☐ **Associated CB Laboratory:** ---

Testing location / address .....: ---

Tested by (name + signature) .....: Ing.J.Ainetter .....

Approved by (name + signature)....: Ing.K.Farthofer .....

☐ Testing procedure: TMP

Testing location / address .....: ---

Tested by (name + signature) .....: --- .....

Approved by (name + signature)....: --- .....

☐ Testing procedure: WMT

Testing location / address .....: ---

Tested by (name + signature) .....: --- .....

Witnessed by (name + signature)...: --- .....

Approved by (name + signature)....: --- .....

☐ Testing procedure: SMT

Testing location / address .....: ---

Tested by (name + signature) .....: --- .....

Approved by (name + signature)....: --- .....

Supervised by (name + signature) .: --- .....

☐ Testing procedure: RMT

Testing location / address .....: ---

Tested by (name + signature) .....: --- .....

Approved by (name + signature)....: --- .....

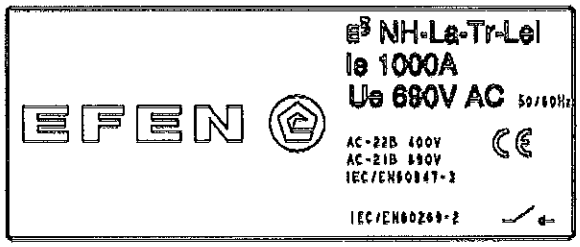
Supervised by (name + signature) .: --- .....

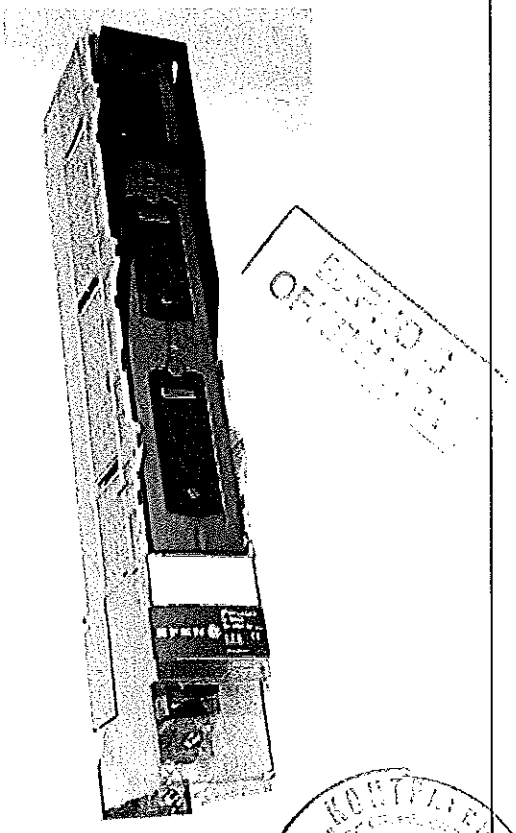
Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
A type test was performed according to ▪ IEC 60947-1:2011 (Edition 5.1) ▪ IEC 60947-3:2008 (Edition 3.0) and ▪ EN 60947-1:2007+A1:2011 ▪ EN 60947-3:2009. The low-voltage single pole or three pole operated switch-disconnectors ▪ E³ NH-La-Tr-Lei 1000A have passed the type test successfully.	Österreichisches Forschungs- und Prüfzentrum (ÖFPZ) Arsenal Ges.m.b.H. Business Unit Electric Energy Systems Power Service Center Giefinggasse 2 A-1210 Vienna AUSTRIA The ÖFPZ Arsenal Ges.m.b.H. is a recognized CB Testing Laboratory under the responsibility of OVE as the National Certification Body.

Summary of compliance with National Differences:

Copy of marking plate/Picture of test item:





E³ NH-La-Tr-Lei 1000A, three pole operated

Test item particulars:			
- method of operation ..... :	Dependent manual operation		
- suitability for isolation ..... :	Suitable		
- degree of protection ..... :	IP 2X		
- number of poles..... :	3		
- kind of current..... :	AC		
- number of positions of the main contacts..... :	2		
- number of phases..... :	3		
Rated and limiting values, main circuit:			
- rated operational voltage Ue (V)..... :	400	500	690
- rated insulation voltage Ui (V)..... :	1000		
- rated impulse withstand voltage Uimp (kV)..... :	12		
- conventional free air thermal current Ith with fuse-links (A) ..... :	---		
- conventional free air thermal current Ith with solid-links (A)..... :	1000		
- conventional enclosed thermal current Ithe (A)..... :	---		
- rated operational current Ie (A)..... :	1000	1000	1000
- rated uninterrupted current Iu (A) ..... :	1000		
- rated frequency (Hz)..... :	50/60		
- utilization category..... :	AC-22B	AC-21B	AC-21B
Short-circuit characteristic:			
- rated short-time withstand current Icw (A)..... :	15000 / 1s (without locked operating means) 25000 / 1s (with locked operating means)		
- rated short-time making capacity Icm (A)..... :	22000 peak		
- rated conditional short-circuit current (kA)..... :	---		
Control circuits ..... :	---		
Auxiliary circuits ..... :	---		
Relays and releases ..... :	---		
Co-ordination of short-circuit protective devices:			
- kind of protective device..... :	Fuse-links		

Possible test case verdicts:	
- test case does not apply to the test object ..... :	N (Not applicable)
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)

Testing:	
Date of receipt of test item ..... :	04/2011
Date(s) of performance of tests..... :	04 to 06/2011

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

"(See enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

General product information:

Low-voltage
single pole or three pole operated
switch-disconnectors
(185mm busbar system)

type

E³ NH-La-Tr-Lei 1000A

Remark to test performance:

At all tests concerning making and breaking capacity, operational performance capability and performance under short-circuit conditions, a metallic screen were placed to the equipment, in accordance with the arrangements and distances specified by the manufacturer:

- ⇨ Distance above to metallic screen: 50mm
- ⇨ Distance lateral to metallic screen: 10mm

Summary of variants:

E³ NH-La-Tr-Lei 1000A 1P: Switch-disconnector for busbar mounting
- busbar system 185mm
- 1-pole operated
- screw terminals M12 (incoming)
- terminal adapter with screws M12 (outgoing)

E³ NH-La-Tr-Lei 1000A 3P: Switch-disconnector for busbar mounting
- busbar system 185mm
- 3-pole operated
- screw terminals M12 (incoming)
- terminal adapter with screws M12 (outgoing)

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
5.2	MARKING		P
	Marking on equipment itself or on nameplate or nameplates attached to the equipment and legible from the front after mounting		P
	- indication of the open and closed position	Visible open and closed position	P
	- suitability for isolation	In open position	P
	- disconnectors AC-20 and DC-20 only: marked "Do not operate under load"		N
	Marking on equipment not needed to be visible after mounting:		P
	- manufacturer's name or trademark	EFEN	P
	- type designation or serial number	E³ NH-La-Tr-Lei 1000A	P
	- rated operational current	Ie 1000A	P
	- rated operational voltage	Ue 690V AC	P
	- utilization category	AC 22B 400V AC 21B 690V	P
	- rated frequency	50/60Hz	P
	- manufacturer's claim for compliance with IEC 60947-3	IEC/EN 60947-3	P
	- degree of protection	IP 2X	P
	Marking on fuse-combination units:		N
	- fuse type		N
	- maximum rated current		N
	- power loss of the fuse-link		N
	Identification of terminals:		P
	- line terminals	Yes	P
	- load terminals	Yes	P
	- neutral pole terminal		N
	- protective earth terminal		N
	Data in the manufacturer's published information:		P
	- rated insulation voltage	Ui=1000V	P
	- rated impulse withstand voltage for equipment suitable for isolation or when determined	Uimp=12kV	P
	- pollution degree, if different from 3	3	P
	- rated duty	Uninterrupted duty	P
	- rated short-time withstand current and duration	Icw=15000A/1s (without locked operating means) Icw=25000A/1s (with locked operating means)	P
	- rated short-circuit making capacity	Icm=22000A peak	P
	- rated conditional short-circuit current		N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
5.3	Instructions for installation, operation and maintenance		P
6	Normal service, mounting and transport conditions		P
7.1	CONSTRUCTIONAL AND PERFORMANCE REQUIREMENTS		P
7.1.2	Materials		P
7.1.2.2	Resistance to abnormal heat and fire		P
	Test performed on.....:	Sections taken from the equipment	P
	Glow-wire test according to IEC 60695-2-10 and IEC 60695-2-11		—
	Parts made of insulating material necessary to retain current-carrying parts in position: test temperature 960 °C		P
	No visible flame and no sustained glowing		N
	Flames and glowing extinguish within 30 s	Extinguishing immediately after removing the glow-wire	P
	No ignition of the tissue paper		P
	Parts of insulating material not necessary to retain current-carrying parts in position, even though in contact with them: test temperature 650 °C		P
	No visible flame and no sustained glowing	No visible flame	P
	Flames and glowing extinguish within 30 s		N
	No ignition of the tissue paper		P
7.1.3 of Part 1	Current-carrying parts and their connection		P
7.1.4	Clearances .....:	14mm (min.) > 15mm (measured)	P
	Creepage distances .....:	14mm (min.) > 15mm (measured)	P
	Pollution degree .....:	3	—
	Comparative tracking index (V) .....:	500	—
	Material group .....:	II	—
7.1.5 of Part 1	Actuator		P
7.1.5.1	Insulation		—
	Actuator insulated from live parts for		—
	- rated insulation voltage	1000V	P
	- rated impulse withstand voltage	12kV	P
	Actuator made of metal	No	—
	- connected to a protective conductor or provided with an additional insulation		N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Actuator made of or covered by insulating material	Made of insulating material	—
	- internal metal parts, which might become accessible in the event of an insulation failure, are also insulated from live parts for the rated insulation voltage		N
7.1.5.2	Direction of movement		P
	The direction of operation for actuators shall where applicable conform to IEC 60447		P
	There is no doubt of the "I" and "O" position and the direction of operation	Visible open and closed position	P
7.1.6 of Part 1	Indication of contact position		P
7.1.6.1	Indicating means	Actuator	P
7.1.6.2	Indication by the actuator	Yes	P
7.1.7	Additional safety requirements for equipment suitable for isolation		P
7.1.7.1	Additional constructional requirements		P
	- marking according to 5.2.1b	Yes	P
	- indication of the position of the contacts	See clause 7.1.5.2	P
	- construction of the actuating mechanism		P
	- minimum clearances across open contacts (see Table 13, Part 1) (mm) .....:	14	—
	- measured clearances (mm) .....:	> 20	P
	- test Uimp across gap (kV) .....:	18,5	P
7.1.7.2	Supplementary requirements for equipment with provision for electrical interlocking with contactors or circuit-breakers:		N
	Auxiliary switch is rated according to IEC 60947-5-1 (unless the equipment is rated AC-23)		N
	Time interval between opening of the contacts of the auxiliary contact and the contacts of the main poles: ≥20 ms .....:	-	—
	Measured time interval (ms) .....:	-	N
	During the closing operation the contacts of the auxiliary switch closes after or simultaneously with the contacts of the main poles		N
7.1.7.3	Supplementary requirements for equipment provided with means for padlocking the open position:		N
	The locking means is so designed that it cannot be removed with the appropriate padlock(s) installed		N
	Test force F applied to the actuator in an attempt to operate to the closed position (N) .....:	-	—

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated impulse withstand voltage (kV) .....:	-	—
	Test Uimp on open main contacts at the test force		N
7.1.8 of Part 1	Terminals		P
7.1.8.1	All parts of terminals which maintain contact and carry current are of metal having adequate mechanical strength	See 8.2.4 below	P
	Terminal connections are such that necessary contact pressure is maintained	See 8.2.4 below	P
	Terminals are so constructed that the conductor is clamped between suitable surfaces without damage to the conductor and terminal	See 8.2.4 below	P
	Terminals do not allow the conductor to be displaced or to be displaced themselves in a manner detrimental to the operator of equipment and the insulation voltage is not reduced below the rated value	See 8.2.4 below	P
8.2.4	Mechanical properties of terminals		P
	Mechanical strength of terminals		P
	Maximum cross-sectional area of conductor (mm²) / (mmxmm) .....:	2 x 60x5 (bars)	—
	Diameter of thread (mm) .....:	12	—
	Torque (Nm) .....:	32 x 1,1 = 35,2	—
	5 times on 2 separate clamping units		P
	Testing for damage to and accidental loosening of conductor (flexion test)		N
	Conductor of the smallest cross-sectional area (mm²) .....:	-	—
	Number of conductor of the smallest cross section..:	-	—
	Diameter of bushing hole (mm) .....:	-	—
	Height between the equipment and the platen .....:	-	—
	Mass at the conductor(s) (kg) .....:	-	—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		N
	Pull-out test		N
	Force (N), applied for 1 min. .....:	-	—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Conductor of the largest cross-sectional area (mm²) .....:	-	—
	Number of conductor of the largest cross section ..:	-	—
	Diameter of bushing hole (mm) .....:	-	—
	Height between the equipment and the platen .....:	-	—
	Mass at the conductor(s) (kg) .....:	-	—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		N
	Pull-out test		N
	Force (N), applied for 1 min. .....:	-	—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		N
	Conductor of the largest and smallest cross-sectional area (mm²) .....:	-	—
	Number of conductor of the smallest cross section, number of conductor of the largest cross section ...:	-	—
	Diameter of bushing hole (mm) .....:	-	—
	Height between the equipment and the platen .....:	-	—
	Mass at the conductor(s) (kg) .....:	-	—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		N
	Pull-out test		N
	Force (N), applied for 1 min. .....:	-	—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		N
7.1.8.2	Connection capacity		P
	Type of conductors .....:	Bars: Copper	—
	Minimum cross-sectional area of conductor (mm²) / (mmxmm) .....:	2 x 30x5	—
	Maximum cross-sectional area of conductor (mm²) / (mmxmm) .....:	2 x 60x5	—
	Number of conductors simultaneously connectable to the terminal .....:	2	—
7.1.8.3	Connection		P
	Terminals for connection to external conductors are readily accessible during installation		P
	Clamping screws and nuts do not serve to fix any other component		P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.8.4	Terminal identification and marking		P
	Terminal intended exclusively for the neutral conductor		N
	Protective earth terminal		N
	Other terminals		P
7.1.9	Additional requirements for equipment provided with a neutral pole		N
	Equipment provided with a pole intended for the connection of neutral, this pole shall be clearly marked by the letter "N"		N
	The switched neutral pole does not break before and does not make after the other poles except		N
	- a pole having the appropriate short-circuit breaking and making capacity is used as neutral pole, all poles may operate together		N
	Conventional thermal current of neutral pole		N
7.1.10	Provisions for protective earthing		N
7.1.10.1	The exposed conductive parts are electrically interconnected and connected to a protective earth terminal		N
7.1.10.2	Protective earth terminal is readily accessible		N
	Protective earth terminal is suitably protected against corrosion		N
	Electrical continuity between the exposed conductive parts of the protective earth terminal and the metal sheathing of connecting conductors		N
	Protective earth terminal has no other functions		N
7.1.10.3	Protective earth terminal marking and identification		N
7.1.11	Enclosure for equipment		N
7.1.11.1	Design		N
	When the enclosure is opened, all parts requiring access for installation and maintenance are readily accessible		N
	Sufficient space is provided inside the enclosure		N
	The fixed parts of a metal enclosure are electrically connected to the other exposed conductive parts of the equipment and connected to a terminal which enables them to be earthed or connected to a protective conductor		N
	Under no circumstances a removable metal part of enclosure is insulated from the part carrying the earth terminal when the removable part is in place		N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	The removable parts of the enclosure are firmly secured to the fixed parts by a device such that they cannot be accidentally loosened or detached owing to the effects of operation of the equipment or vibrations		N
	If an enclosure is designed as to allow the covers to be opened without the use of tools, means is provided to prevent loss of the fastening devices		N
	If the enclosure is used for mounting push-buttons, it is not possible to remove the buttons from the outside of the enclosure		N
7.1.11.2	Insulation		N
	If, in order to prevent accidental contact between a metallic enclosure and live parts, the enclosure is partly or completely lined with insulating material, then this lining is securely fixed to the enclosure		N
7.1.12	Degree of protection of enclosed equipment		P
	Degree of protection .....:	IP 2X	P
7.1.13	Conduit pull-out, torque and bending with metallic conduits		N
	Withstand the stress occurring during its installation .....:	-	N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS		P
8.3.3.1	Temperature-rise		P
	Type E³ NH-La-Tr-Lei 1000A 1P with solid-links		
	ambient temperature 10-40 °C .....:	23	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		—
	- conventional thermal current Ith (A) .....:	1000	—
	- conventional enclosed thermal current Ithe (A) ...:	-	—
	- cable(bar) / busbar cross-section (mm²) / (mmxmm).....:	2 x 60x5 / 60x10	—
	- cable(bar) / busbar length (mm) / (mm).....:	2000 / 600	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	-	—
	- manufacturer's model or type reference .....:	-	—
	- rated voltage (V) .....:	-	—
	- rated current (A) .....:	-	—
	- power loss (W) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
	Measured temperature-rise .....:	See appended table 1	P
	Auxiliary circuits, test conditions:		N
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²) .....:	-	—
	Measured temperature-rise .....:	-	N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.1	Temperature-rise		P
	Type E³ NH-La-Tr-Lei 1000A 3P with solid-links		
	ambient temperature 10-40 °C .....:	23	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	Main circuits, test conditions:		—
	- conventional thermal current Ith (A) .....:	1000	—
	- conventional enclosed thermal current Ithe (A) ...:	-	—
	- cable(bar) / busbar cross-section (mm²) / (mmxmm).....:	2 x 60x5 / 60x10	—
	- cable(bar) / busbar length (mm) / (mm).....:	2000 / 600	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	-	—
	- manufacturer's model or type reference .....:	-	—
	- rated voltage (V) .....:	-	—
	- rated current (A) .....:	-	—
	- power loss (W) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
	Measured temperature-rise .....:	See appended table 2	P
	Auxiliary circuits, test conditions:		N
	- rated operation current (A) .....:	-	—
	- cable cross-section (mm²) .....:	-	—
	Measured temperature-rise .....:	-	N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.2	Test of dielectric properties		P
	Type E³ NH-La-Tr-Lei 1000A 1P		
	Rated impulse withstand voltage (kV) .....:	12	—
	- test Uimp main circuits (kV) .....:	14,8	P
	- test Uimp auxiliary circuits (kV) .....:	-	N
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) .....:	18,5	P
	Power-frequency withstand voltage (V) .....:	1000	—
	- main circuits, test voltage for 5 sec. (V) .....:	2200	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) .....:	-	N
	Devices, which have been disconnected for the power-frequency withstand voltage test.....	-	N
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V).....:	760	—
	Measured leakage current (mA).....:	< 0,1	P

8.3.3.2	Test of dielectric properties		P
	Type E³ NH-La-Tr-Lei 1000A 3P		
	Rated impulse withstand voltage (kV) .....:	12	—
	- test Uimp main circuits (kV) .....:	14,8	P
	- test Uimp auxiliary circuits (kV) .....:	-	N
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) .....:	18,5	P
	Power-frequency withstand voltage (V) .....:	1000	—
	- main circuits, test voltage for 5 sec. (V) .....:	2200	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) .....:	-	N
	Devices, which have been disconnected for the power-frequency withstand voltage test.....	-	N
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V).....:	760	—
	Measured leakage current (mA).....:	< 0,1	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3	Making and breaking capacity		P
	Type E³ NH-La-Tr-Lei 1000A 1P: AC-22B at 400V/1000A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-22B	—
	- rated operational voltage Ue (V) .....:	400	—
	- rated operational current Ie (A) .....:	1000	—
	Conditions for make operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for make/break operations, other than AC-23A and AC-23B:		P
	- test voltage, U = 1,05 Ue .....(V):	L1: 425 L2: 427 L3: 426	—
	- test current, I = ... 3 x Ie (A):	L1: 3022 L2: 3030 L3: 3016	—
	- power factor / ~~time constant~~ .....:	L1: 0,64 L2: 0,65 L3: 0,65	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	350	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		P
	- oscillatory frequency (kHz) .....:	82,19	—
	- measured oscillatory frequency (kHz) .....:	L1: 83,3 L2: 83,3 L3: 83,3	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- factor γ .....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ....:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	-	—
	- manufacturer's model or type reference .....:	-	—
	- rated voltage (V) .....:	-	—
	- rated current (A) .....:	-	—
	- power loss (W) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5	—
	Test current Ie (A) .....:	1000	—

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 76	80	P
	Manual operating means: non-metallic	6	35	P
	Parts intended to be touched but not hand-held: non-metallic	24	50	P
	Parts which need not be touched during normal operation: non-metallic	29	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.) .....:	1e		—
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N) .....:	240		—
	- test force with blocked main contacts (N) .....:	400		—
	- used method to keep the contact closed .....:	Brazing		—
	During and after the test, open position not indicated .....:	No open position		P
	Equipment with locking mean, no locking in the open position while test force is applied.....:	No locking mechanism in open position		N
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N
8.2.5.2.3	Independent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- stored energy of the power operator released (3 times).....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3	Making and breaking capacity		P
	Type E³ NH-La-Tr-Lei 1000A 3P: AC-22B at 400V/1000A		
	- utilization category .....:	AC-22B	—
	- rated operational voltage Ue (V) .....:	400	—
	- rated operational current Ie (A) .....:	1000	—
	Conditions for make operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue.....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue.....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for make/break operations, other than AC-23A and AC-23B:		P
	- test voltage, U = 1,05 Ue.....(V):	L1: 426 L2: 427 L3: 426	—
	- test current, I = ... 3 x Ie (A):	L1: 3022 L2: 3030 L3: 3015	—
	- power factor / ~~time constant~~ .....:	L1: 0,64 L2: 0,65 L3: 0,65	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	3340	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		P
	- oscillatory frequency (kHz) .....:	82,19	—
	- measured oscillatory frequency (kHz) .....:	L1: 83,3 L2: 83,3 L3: 83,3	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- factor γ .....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		
	- manufacturer's name, trademark or identification mark .....:	-	
	- manufacturer's model or type reference .....:	-	—
	- rated voltage (V) .....:	-	—
	- rated current (A) .....:	-	—
	- power loss (W) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5	—
	Test current Ie (A) .....:	1000	

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 78	80	P
	Manual operating means: non-metallic	6	35	P
	Parts intended to be touched but not hand-held: non-metallic	26	50	P
	Parts which need not be touched during normal operation: non-metallic	30	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.) .....:	1e		—
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N) .....:	240		—
	- test force with blocked main contacts (N) .....:	400		—
	- used method to keep the contact closed .....:	Brazing		—
	During and after the test, open position not indicated .....:	No open position		P
	Equipment with locking mean, no locking in the open position while test force is applied.....:	No locking mechanism in open position		N
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N
8.2.5.2.3	Independent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- stored energy of the power operator released (3 times).....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3	Making and breaking capacity		P
	Type E³ NH-La-Tr-Lei 1000A 1P: AC-21B at 690V/1000A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
	- utilization category .....:	AC-21B	—
	- rated operational voltage Ue (V) .....:	690	—
	- rated operational current Ie (A) .....:	1000	—
	Conditions for make operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for make/break operations, other than AC-23A and AC-23B:		P
	- test voltage, U = 1,05 Ue .....(V):	L1: 728 L2: 730 L3: 726	—
	- test current, I = ... 1,5 x Ie (A):	L1: 1518 L2: 1524 L3: 1511	—
	- power factor / ~~time constant~~ .....:	L1: 0,97 L2: 0,97 L3: 0,97	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	340	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		N
	- oscillatory frequency (kHz) .....:	-	—
	- measured oscillatory frequency (kHz) .....:	L1: - L2: - L3: -	N

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Clause	Requirement + Test	Result - Remark	Verdict
	- factor γ .....:	L1: - L2: - L3: -	N
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ....:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	-	—
	- manufacturer's model or type reference .....:	-	—
	- rated voltage (V) .....:	-	—
	- rated current (A) .....:	-	—
	- power loss (W) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5	—
	Test current Ie (A) .....:	1000	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 73	80	P
	Manual operating means: non-metallic	5	35	P
	Parts intended to be touched but not hand-held: non-metallic	22	50	P
	Parts which need not be touched during normal operation: non-metallic	30	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.) .....:	1e		—
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N) .....:	240		—
	- test force with blocked main contacts (N) .....:	400		—
	- used method to keep the contact closed .....:	Brazing		—
	During and after the test, open position not indicated .....:	No open position		P
	Equipment with locking mean, no locking in the open position while test force is applied.....:	No locking mechanism in open position		N
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N
8.2.5.2.3	Independent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- stored energy of the power operator released (3 times).....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3	Making and breaking capacity		P
	Type E³ NH-La-Tr-Lei 1000A 3P: AC-21B at 690V/1000A		
	- utilization category .....:	AC-21B	—
	- rated operational voltage Ue (V) .....:	690	—
	- rated operational current Ie (A) .....:	1000	—
	Conditions for make operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue.....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for break operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue.....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	—
	Conditions for make/break operations, other than AC-23A and AC-23B:		P
	- test voltage, U = 1,05 Ue.....(V):	L1: 728 L2: 730 L3: 726	—
	- test current, I = ... 1,5 x Ie (A):	L1: 1518 L2: 1524 L3: 1511	—
	- power factor / ~~time constant~~ .....:	L1: 0,97 L2: 0,97 L3: 0,97	—
	Number of make/break or make and break operations .....:	5	P
	- recovery voltage duration ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	345	—
	- time interval between operations (s) .....:	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		N
	- oscillatory frequency (kHz) .....:	-	—
	- measured oscillatory frequency (kHz) .....:	L1: - L2: - L3: -	N

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Clause	Requirement + Test	Result - Remark	Verdict
	- factor γ .....:	L1: - L2: - L3: -	N
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V) .....:	760	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	-	—
	- manufacturer's model or type reference .....:	-	—
	- rated voltage (V) .....:	-	—
	- rated current (A) .....:	-	—
	- power loss (W) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5	—
	Test current Ie (A) .....:	1000	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 75	80	P
	Manual operating means: non-metallic	6	35	P
	Parts intended to be touched but not hand-held: non-metallic	25	50	P
	Parts which need not be touched during normal operation: non-metallic	28	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.) .....:	1e		—
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N) .....:	240		—
	- test force with blocked main contacts (N) .....:	400		—
	- used method to keep the contact closed .....:	Brazing		—
	During and after the test, open position not indicated .....:	No open position		P
	Equipment with locking mean, no locking in the open position while test force is applied.....:	No locking mechanism in open position		N
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N
8.2.5.2.3	Independent power operation			N
	- main contacts fixed together in the closed position .....:	-		N
	- used method to keep the contact closed .....:	-		N
	- stored energy of the power operator released (3 times).....:	-		N
	During and after the test, open position not indicated .....:	-		N
	Equipment show no damage impairing its normal operation.....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied.....:	-		N

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY		P
	Type E³ NH-La-Tr-Lei 1000A 1P: AC-22B at 400V/1000A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
8.3.4.1	Operational performance test		P
	- utilization category .....:	AC-22B	—
	- rated operational voltage (V) .....:	400	—
	- rated operational current (A) .....:	1000	—
	Test conditions for electrical operation cycles:		P
	- test voltage (V) .....:	L1: 407 L2: 407 L3: 405	—
	- test current (A) .....:	L1: 1020 L2: 1029 L3: 1014	—
	- power factor / ~~time constant~~ .....:	L1: 0,81 L2: 0,82 L3: 0,81	—
	Number of cycles with current .....:	100	P
	Number of cycles without current .....:	500	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	360	—
	- time interval between operations (s) .....:	180	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.4.2	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No breakdown or flashover			P
8.3.4.3	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.4.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	-		—
	- manufacturer's model or type reference .....:	-		—
	- rated voltage (V) .....:	-		—
	- rated current (A) .....:	-		—
	- power loss (W) .....:	-		—
	- rated breaking capacity (kA) .....:	-		—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5		—
	Test current Ie (A) .....:	1000		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 73	80	P
	Manual operating means: non-metallic	5	35	P
	Parts intended to be touched but not hand-held: non-metallic	26	50	P
	Parts which need not be touched during normal operation: non-metallic	32	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY		P
	Type E³ NH-La-Tr-Lei 1000A 3P: AC-22B at 400V/1000A		
8.3.4.1	Operational performance test		P
	- utilization category .....:	AC-22B	—
	- rated operational voltage (V) .....:	400	—
	- rated operational current (A) .....:	1000	—
	Test conditions for electrical operation cycles:		P
	- test voltage (V) .....:	L1: 406 L2: 407 L3: 405	—
	- test current (A) .....:	L1: 1020 L2: 1029 L3: 1014	—
	- power factor / ~~time constant~~ .....:	L1: 0,81 L2: 0,81 L3: 0,81	—
	Number of cycles with current .....:	100	P
	Number of cycles without current .....:	500	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	350	—
	- time interval between operations (s) .....:	180	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.4.2	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No breakdown or flashover			P
8.3.4.3	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.4.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	-		—
	- manufacturer's model or type reference .....:	-		—
	- rated voltage (V) .....:	-		—
	- rated current (A) .....:	-		—
	- power loss (W) .....:	-		—
	- rated breaking capacity (kA) .....:	-		—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5		—
	Test current Ie (A) .....:	1000		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 78	80	P
	Manual operating means: non-metallic	7	35	P
	Parts intended to be touched but not hand-held: non-metallic	28	50	P
	Parts which need not be touched during normal operation: non-metallic	35	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY		P
	Type E³ NH-La-Tr-Lei 1000A 1P: AC-21B at 690V/1000A (Test 1: L1 and L2 closed, L3 operated; Test 2: L1 operated, L2 closed, L3 open)		
8.3.4.1	Operational performance test		P
	- utilization category .....:	AC-21B	—
	- rated operational voltage (V) .....:	690	—
	- rated operational current (A) .....:	1000	—
	Test conditions for electrical operation cycles:		P
	- test voltage (V) .....:	L1: 695 L2: 696 L3: 694	—
	- test current (A) .....:	L1: 1024 L2: 1033 L3: 1017	—
	- power factor / ~~time constant~~ .....:	L1: 0,93 L2: 0,93 L3: 0,94	—
	Number of cycles with current .....:	100	P
	Number of cycles without current .....:	500	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	350	—
	- time interval between operations (s) .....:	180	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.4.2	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No breakdown or flashover			P
8.3.4.3	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.4.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	-		—
	- manufacturer's model or type reference .....:	-		—
	- rated voltage (V) .....:	-		—
	- rated current (A) .....:	-		—
	- power loss (W) .....:	-		—
	- rated breaking capacity (kA) .....:	-		—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5		—
	Test current Ie (A) .....:	1000		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 76	80	P
	Manual operating means: non-metallic	6	35	P
	Parts intended to be touched but not hand-held: non-metallic	24	50	P
	Parts which need not be touched during normal operation: non-metallic	30	60	P

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY		P
	Type E³ NH-La-Tr-Lei 1000A 3P: AC-21B at 690V/1000A		
8.3.4.1	Operational performance test		P
	- utilization category .....:	AC-21B	—
	- rated operational voltage (V) .....:	690	—
	- rated operational current (A) .....:	1000	—
	Test conditions for electrical operation cycles:		P
	- test voltage (V) .....:	L1: 695 L2: 696 L3: 694	—
	- test current (A) .....:	L1: 1024 L2: 1033 L3: 1017	—
	- power factor / ~~time constant~~ .....:	L1: 0,93 L2: 0,93 L3: 0,94	—
	Number of cycles with current .....:	100	P
	Number of cycles without current .....:	500	P
	First test sequence (with/without current) .....:	With	—
	Second test sequence (with/without current) .....:	Without	—
	- time interval between first and second test sequence .....:	No time interval	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	Permanent	P
	- current duration (ms) .....:	340	—
	- time interval between operations (s) .....:	180	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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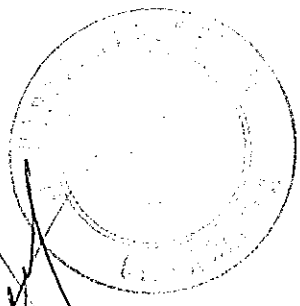
Clause	Requirement + Test	Result - Remark		Verdict
8.3.4.2	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No breakdown or flashover			P
8.3.4.3	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.4.4	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	-		—
	- manufacturer's model or type reference .....:	-		—
	- rated voltage (V) .....:	-		—
	- rated current (A) .....:	-		—
	- power loss (W) .....:	-		—
	- rated breaking capacity (kA) .....:	-		—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5		—
	Test current Ie (A) .....:	1000		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 73	80	P
	Manual operating means: non-metallic	5	35	P
	Parts intended to be touched but not hand-held: non-metallic	23	50	P
	Parts which need not be touched during normal operation: non-metallic	33	60	P



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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY		P
	Type E³ NH-La-Tr-Lei 1000A 1P without locked operating means (L1 open, L2 closed, L3 operated at short-circuit making capacity)		
8.3.5.1	Short-time withstand current test		P
	Rated short-time withstand current Icw (A) (≥ 12 Ie max.) .....:	15000 / 1s	P
	- test voltage (V) .....:	L1: 695 L2: 696 L3: 694	—
	- r.m.s. test current (A) .....:	L1: 15100 L2: 15140 L3: 15060	—
	- peak test current (A) .....:	L1: 27380 L2: 22860 L3: 30950	—
	- power factor / ~~time constant~~ .....:	L1: 0,26 L2: 0,26 L3: 0,26	—
	- factor n .....:	2,06	—
	Test duration (ms) .....:	1005	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		P
	Rated short-circuit making capacity Icm (A) .....:	22000 peak	P
	- test voltage (1,05 x Ue) .....(V):	L1: 727 L2: 728 L3: 726	—
	- r.m.s. test current (A) .....:	L1: 10780 L2: 10910 L3: 10720	—
	- peak test current (A) .....:	L1: 22070 L2: 15840 L3: 18350	—
	- power factor / ~~time constant~~ .....:	L1: 0,27 L2: 0,27 L3: 0,27	—
	- factor n .....:	2,05	—
	Current duration (s) .....:	65	—
	Time interval between the cycles (min) .....:	3	—
8.3.5.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	-cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.5.3	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No flashover or breakdown			P
8.3.5.4	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.5.5	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	-		—
	- manufacturer's model or type reference .....:	-		—
	- rated voltage (V) .....:	-		—
	- rated current (A) .....:	-		—
	- power loss (W) .....:	-		—
	- rated breaking capacity (kA) .....:	-		—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5		—
	Test current Ie (A) .....:	1000		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 73	80	P
	Manual operating means: non-metallic	6	35	P
	Parts intended to be touched but not hand-held: non-metallic	23	50	P
	Parts which need not be touched during normal operation: non-metallic	28	60	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY		P
	Type E³ NH-La-Tr-Lei 1000A 3P without locked operating means		
8.3.5.1	Short-time withstand current test		P
	Rated short-time withstand current Icw (A) (≥ 12 Ie max.) .....:	15000 / 1s	P
	- test voltage (V) .....:	L1: 695 L2: 696 L3: 694	—
	- r.m.s. test current (A) .....:	L1: 15100 L2: 15140 L3: 15060	—
	- peak test current (A) .....:	L1: 27380 L2: 22860 L3: 30950	—
	- power factor / ~~time constant~~ .....:	L1: 0,26 L2: 0,26 L3: 0,26	—
	- factor n .....:	2,06	—
	Test duration (ms) .....:	1010	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		P
	Rated short-circuit making capacity Icm (A) .....:	22000 peak	P
	- test voltage (1,05 x Ue) .....(V):	L1: 727 L2: 728 L3: 726	—
	- r.m.s. test current (A) .....:	L1: 10780 L2: 10910 L3: 10720	—
	- peak test current (A) .....:	L1: 22070 L2: 15840 L3: 18350	—
	- power factor / ~~time-constant~~ .....:	L1: 0,27 L2: 0,27 L3: 0,27	—
	- factor n .....:	2,05	—
	Current duration (s) .....:	75	—
	Time interval between the cycles (min) .....:	3	—
8.3.5.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	-cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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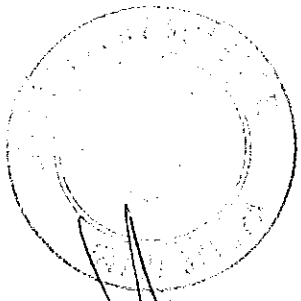
Clause	Requirement + Test	Result - Remark		Verdict
8.3.5.3	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No flashover or breakdown			P
8.3.5.4	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.5.5	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	-		—
	- manufacturer's model or type reference .....:	-		—
	- rated voltage (V) .....:	-		—
	- rated current (A) .....:	-		—
	- power loss (W) .....:	-		—
	- rated breaking capacity (kA) .....:	-		—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5		—
	Test current Ie (A) .....:	1000		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 75	80	P
	Manual operating means: non-metallic	5	35	P
	Parts intended to be touched but not hand-held: non-metallic	26	50	P
	Parts which need not be touched during normal operation: non-metallic	34	60	P



IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY		P
	Type E³ NH-La-Tr-Lei 1000A 1P with locked operating means		
8.3.5.1	Short-time withstand current test		P
	Rated short-time withstand current Icw (A) (≥ 12 Ie max.) .....:	25000 / 1s	P
	- test voltage (V) .....:	L1: 695 L2: 696 L3: 695	—
	- r.m.s. test current (A) .....:	L1: 25640 L2: 25930 L3: 25320	—
	- peak test current (A) .....:	L1: 54270 L2: 42860 L3: 36500	—
	- power factor / ~~time constant~~ .....:	L1: 0,23 L2: 0,23 L3: 0,23	—
	- factor n .....:	2,12	—
	Test duration (ms) .....:	1010	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N
	Rated short-circuit making capacity Icm (A) .....:	-	N
	- test voltage (1,05 x Ue) .....(V):	L1: - L2: - L3: -	—
	- r.m.s. test current (A) .....:	L1: - L2: - L3: -	—
	- peak test current (A) .....:	L1: - L2: - L3: -	—
	- power factor / time constant .....:	L1: - L2: - L3: -	—
	- factor n .....:	-	—
	Current duration (s) .....:	-	—
	Time interval between the cycles (min) .....:	-	—
8.3.5.2.5	Behaviour of the equipment during the test		N
	Test performed without:		—
	- endanger to the operator		N
	-cause damage to adjacent equipment		N
	No permanent arcing		N
	No flash over between poles and poles and frame		N
	No melting of the fuse in the detection circuit		N
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N
	Immediately after the test equipment must work satisfactorily		N
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N
	- equipment is able to carry its rated current after normal closing operation		N

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Clause	Requirement + Test	Result - Remark		Verdict
8.3.5.3	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No flashover or breakdown			P
8.3.5.4	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.5.5	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	-		—
	- manufacturer's model or type reference .....:	-		—
	- rated voltage (V) .....:	-		—
	- rated current (A) .....:	-		—
	- power loss (W) .....:	-		—
	- rated breaking capacity (kA) .....:	-		—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5		—
	Test current Ie (A) .....:	1000		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 71	80	P
	Manual operating means: non-metallic	5	35	P
	Parts intended to be touched but not hand-held: non-metallic	21	50	P
	Parts which need not be touched during normal operation: non-metallic	28	60	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY		P
	Type E³ NH-La-Tr-Lei 1000A 3P with locked operating means		
8.3.5.1	Short-time withstand current test		P
	Rated short-time withstand current Icw (A) (≥ 12 Ie max.) .....:	25000 / 1s	P
	- test voltage (V) .....:	L1: 695 L2: 696 L3: 694	—
	- r.m.s. test current (A) .....:	L1: 25640 L2: 25930 L3: 25320	—
	- peak test current (A) .....:	L1: 54270 L2: 42860 L3: 36500	—
	- power factor / ~~time constant~~ .....:	L1: 0,23 L2: 0,23 L3: 0,23	—
	- factor n .....:	2,12	—
	Test duration (ms) .....:	1005	—
8.3.5.1.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N
	Rated short-circuit making capacity Icm (A) .....:	-	N
	- test voltage (1,05 x Ue) .....(V):	L1: - L2: - L3: -	—
	- r.m.s. test current (A) .....:	L1: - L2: - L3: -	—
	- peak test current (A) .....:	L1: - L2: - L3: -	—
	- power factor / time constant .....:	L1: - L2: - L3: -	—
	- factor n .....:	-	—
	Current duration (s) .....:	-	—
	Time interval between the cycles (min) .....:	-	—
8.3.5.2.5	Behaviour of the equipment during the test		N
	Test performed without:		—
	- endanger to the operator		N
	-cause damage to adjacent equipment		N
	No permanent arcing		N
	No flash over between poles and poles and frame		N
	No melting of the fuse in the detection circuit		N
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N
	Immediately after the test equipment must work satisfactorily		N
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N
	- equipment is able to carry its rated current after normal closing operation		N

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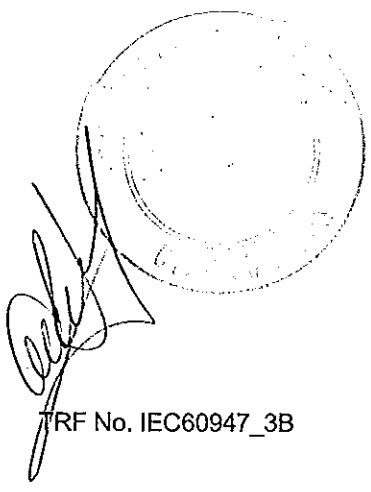
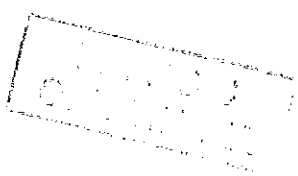
Clause	Requirement + Test	Result - Remark		Verdict
8.3.5.3	Dielectric verification			P
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	1380		—
	No flashover or breakdown			P
8.3.5.4	Leakage current			P
	test voltage 1,1 Ue (V) .....:	760		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-		N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	< 1		P
8.3.5.5	Temperature-rise verification			P
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	-		—
	- manufacturer's model or type reference .....:	-		—
	- rated voltage (V) .....:	-		—
	- rated current (A) .....:	-		—
	- power loss (W) .....:	-		—
	- rated breaking capacity (kA) .....:	-		—
	Conductor cross-section (mm²) / (mmxmm) .....:	2 x 60x5		—
	Test current Ie (A) .....:	1000		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 72	80	P
	Manual operating means: non-metallic	5	35	P
	Parts intended to be touched but not hand-held: non-metallic	23	50	P
	Parts which need not be touched during normal operation: non-metallic	27	60	P





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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT		N
	Conditional short-circuit current test		N
	Protective device details:		N
	- manufacturer's name, trademark or identification mark .....:	-	—
	- manufacturer's model or type reference .....:	-	—
	- rated voltage (V) .....:	-	—
	- rated current (A) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
8.3.6.2	Conditional short-circuit current test values		N
	- test voltage (1,05 Ue) (V) .....:	L1: - L2: - L3: -	—
	- test current (A) .....:	L1: - L2: - L3: -	—
	- rated frequency (Hz) .....:	-	—
	- power factor .....:	-	—
	- time constant (ms) .....:	-	—
	- factor n .....:	-	—
	Fuse protected short-circuit withstand (equipment in closed position)		N
	- max. let-through current (A) .....:	L1: - L2: - L3: -	—
	- Joule integral I^2dt (A^2s) .....:	L1: - L2: - L3: -	—
	Fuse protected short-circuit making (equipment closing on to short-circuit)		N
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	-	—
	- point at which the measurement is made .....:	-	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	-	—
	- max. let-through current (A) .....:	L1: - L2: - L3: -	—
	- Joule integral I^2dt (A^2s) .....:	L1: - L2: - L3: -	—

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		N
	Test performed without:		—
	- endanger to the operator		N
	- cause damage to adjacent equipment		N
	No permanent arcing		N
	No flash over between poles and poles and frame		N
	No melting of the fuse in the detection circuit		N
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		N
	Immediately after the test equipment must work satisfactorily		N
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N
	- equipment is able to carry its rated current after normal closing operation		N
8.3.6.3	Dielectric verification		N
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	-	—
	No flashover or breakdown		N
8.3.6.4	Leakage current		N
	test voltage 1,1 Ue (V) .....:	-	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	-	N
8.3.6.5	Temperature-rise verification		N
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	-	—
	- manufacturer's model or type reference .....:	-	—
	- rated voltage (V) .....:	-	—
	- rated current (A) .....:	-	—
	- power loss (W) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
	Conductor cross-section (mm²) / (mmxmm) .....:	-	—
	Test current Ie (A) .....:	-	—

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

	Temperature-rise dT of part:	dT (K) measured	dT (K) required	N
	Terminals	-	-	N
	Manual operating means: non-metallic	-	-	N
	Parts intended to be touched but not hand-held: non-metallic	-	-	N
	Parts which need not be touched during normal operation: non-metallic	-	-	N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY		N
8.3.7.1	Overload test		N
	ambient temperature 10-40 °C .....:	-	—
	test enclosure W x H x D (mm x mm x mm) .....:	-	—
	material of enclosure .....:	-	—
	test current 1,6 x Ithe or 1,6 x Ith (A) .....:	-	—
	cable/busbar cross-section (mm²)/(mmxmm).....:	-	—
	cable/busbar length (mm)/(mm).....:	-	—
	Fuse-link details:		N
	- manufacturer's name, trademark or identification mark .....:	-	—
	- manufacturer's model or type reference .....:	-	—
	- rated voltage (V) .....:	-	—
	- rated current (A) .....:	-	—
	- power loss (W) .....:	-	—
	- rated breaking capacity (kA) .....:	-	—
	Time duration of the overload test (s) .....:	-	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed		N
	Required opening force not greater than the test force of 8.2.5.2 and table 8		N
	The equipment has not undergone any impairment hindering such operation		N
8.3.7.2	Dielectric verification		N
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	-	—
	No flashover or breakdown		N
8.3.7.3	Leakage current		N
	test voltage 1,1 Ue (V) .....:	-	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	-	N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.7.4	Temperature-rise verification			N
	Fuse-link details (fuse-combination units only):			—
	- manufacturer's name, trademark or identification mark .....:	-		—
	- manufacturer's model or type reference .....:	-		—
	- rated voltage (V) .....:	-		—
	- rated current (A) .....:	-		—
	- power loss (W) .....:	-		—
	- rated breaking capacity (kA) .....:	-		—
	Fuse link(s) aged during the overload test are replaced by new fuse-link(s).....:	-		N
	Conductor cross-section (mm²) / (mmxmm) .....:	-		—
	Test current Ie (A) .....:	-		—
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	N
	Terminals	-	-	N
	Manual operating means: non-metallic	-	-	N
	Parts intended to be touched but not hand-held: non-metallic	-	-	N
	Parts which need not be touched during normal operation: non-metallic	-	-	N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.4	ELECTROMAGNETIC COMPATIBILITY TESTS		P
8.4.1	Immunity		P
8.4.1.1	Equipment not incorporating electronic circuits: no tests necessary		P
8.4.1.2	Equipment incorporating electronic circuits:		N
	Equipment utilizing circuits in which all components are passive are not required to be tested		N
	All other equipment, requirements according to 7.3.3.2 and limits according table 6 apply		N
	Performed tests.....:	-	N
	No unintentional separation or closing of contacts has occurred during these tests .....:	-	N
8.4.2	Emission		P
8.4.2.1	Equipment not incorporating electronic circuits: no tests necessary		P
8.4.2.2	Equipment incorporating electronic circuits:		N
	Equipment utilizing circuits in which all components are passive are not required to be tested		N
	All other equipment, requirements according to 7.3.3.2 and limits according table 7 apply		N
	Performed tests.....:	-	N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Annex A (normative)		N
A	Equipment for direct switching of a single motor		N
A.1	Additional rated duties .....:	-	N
A.1.1	- intermittent periodic duty		N
	- intermittent duty		N
A.1.1.1	Classes of intermittent duty .....:	-	N
	-class 1: up to 1 operating cycle per hour		N
	-class 3: up to 3 operating cycle per hour		N
	-class 12: up to 12 operating cycles per hour		N
	-class 30: up to 30 operating cycles per hour		N
	-class 120: up to 120 operating cycles per hour		N
A.1.2	Temporary duty .....:	-	N
A.5	Mechanical durability:		N
	Equipment mounted according to manufacturer's instruction		N
	Preferred number of no-load operating cycles expressed in millions.....:	-	N
	0,001 – 0,003 – 0,01 – 0,03 – 0,1 – 0,3 - 1		N
	If no mechanical endurance is stated by the manufacturer, a minimum mechanical endurance according to the class of intermittent duty shall be tested.		N
	Number of no-load operating cycles performed.....:	-	N
A.6	Electrical durability:		N
	- test according to manufacturer's instruction		N
A.7	Verification of making and breaking capacities:		N
	- utilization category .....:	-	—
	- rated operational voltage Ue (V) .....:	-	—
	- rated operational current Ie (A) .....:	-	—
	Conditions for make/break operations or make operations:		—
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor .....:	L1: - L2: - L3: -	

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations:		N
	- test voltage, U = 1,05 Ue .....(V):	L1: - L2: - L3: -	—
	- test current, I = ... _ x Ie (A):	L1: - L2: - L3: -	—
	- power factor / time constant .....:	L1: - L2: - L3: -	—
	Number of make/break or make and break operations .....:	-	N
	- recovery voltage duration ≥ 50 ms (ms)		N
	- current duration (ms) .....:	-	—
	- time interval between operations (s) .....:	-	N
	Characteristic of transient recovery voltage if necessary:		N
	- oscillatory frequency (kHz) .....:	-	—
	- measured oscillatory frequency (kHz) .....:	L1: - L2: - L3: -	N
	- factor γ .....:	L1: - L2: - L3: -	N
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		N
	Test performed without:		—
	- endanger to the operator		N
	- cause damage to adjacent equipment		N
	No permanent arcing		N
	No flash over between poles and poles and frame		N
	No melting of the fuse in the detection circuit		N
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		N
	Immediately after the test equipment must work satisfactorily		N
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N
	- equipment is able to carry its rated current after normal closing operation		N
8.3.3.4	Dielectric verification		N
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	-	—
	No flashover or breakdown		N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.5	Leakage current		N
	test voltage 1,1 Ue (V) .....:	-	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories): ≤ 2 mA/pole (mA) .....:	-	N
8.3.3.6	Temperature-rise verification		N
	- conductor cross-section (mm²) .....:	-	—
	- test current Ie (A) .....:	-	—
	Measured temperature-rise .....:	-	N
A.8	Operational performance test:		N
	- utilization category .....:	-	—
	- rated operational voltage (V) .....:	-	—
	- rated operational current (A) .....:	-	—
	Test conditions for electrical operation cycles:		N
	- test voltage (V) .....:	L1: - L2: - L3: -	—
	- test current (A) .....:	L1: - L2: - L3: -	—
	- power factor / time constant .....:	L1: - L2: - L3: -	—
	Number of cycles with current .....:	-	N
	Number of cycles without current .....:	-	N
	First test sequence (with/without current) .....:	-	—
	Second test sequence (with/without current) .....:	-	—
	- time interval between first and second test sequence .....:	-	—
	- recovery voltage duration at operatons with current ≥ 50 ms (ms).....:	-	N
	- current duration (ms) .....:	-	—
	- time interval between operations (s) .....:	-	N
8.3.4.1.5	Behaviour of the equipment during the operational performance test		N
	Test performed without:		—
	- endanger to the operator		N
	-cause damage to adjacent equipment		N
	No permanent arcing		N

Равно с оригинала

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	No flash over between poles and poles and frame		N
	No melting of the fuse in the detection circuit		N
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		N
	Immediately after the test equipment must work satisfactorily		N
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N
	- equipment is able to carry its rated current after normal closing operation		N
8.3.4.2	Dielectric verification		N
	test voltage 2 Ue with a minimum of 1000V~ (V) ...:	-	—
	No breakdown or flashover		N
8.3.4.3	Leakage current		N
	test voltage 1,1 Ue (V) .....:	-	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA) .....:	-	N
8.3.4.4	Temperature-rise verification		N
	- conductor cross-section (mm²) .....:	-	—
	- test current Ie (A) .....:	-	—
	Measured temperature-rise .....:	-	N
A.9	Special tests:	-	N

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Annex C (normative)		P
C	Single pole operated three pole switches		P
C.1	Three pole operated switches of fundamentally the same design, already successfully tested are deemed to satisfy the requirements of individually operated three pole devices.		P
C.2	Additional-tests to be performed on single pole operated three pole switches		P
	Test "8.3.3.3 Making and breaking capacities" according to test sequence I with following modifications		P
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle.....:	Yes	P
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....:	Yes	P
	Test performed in a three phase circuit		P
	Test "8.3.4.1 Operational performance" according to test sequence II with following modifications		P
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle.....:	Yes	P
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....:	Yes	P
	Test performed in a three phase circuit		P
	Test "8.3.6.2 Fuse protected short circuit test" according to test sequence IV with following modifications		P
	For the making test L1 shall be open and L2 closed, L3 is subjected to the required make operation cycle.....:	Yes	P
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....:	Yes	P
	Test performed in a three phase circuit		P
C.5	Instruction for use		P
	The product literature includes following statement:		P
	These devices are intended for power distribution systems where switching and/or isolating of an individual phase may be necessary and shall not be used for the switching of the primary circuit of three-phase equipment.		P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	TABLE 1: Temperature-rise: E³ NH-La-Tr-Lei 1000A 1P with solid-links			P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals	Incoming: tin plated copper	L1	62	65
		L2	64	
		L3	60	
	Outgoing: silver plated copper	L1	63	70
		L2	68	
		L3	70	
Manual operating means: non-metallic			5	25
Parts intended to be touched but not hand-held: non-metallic			21	40
Parts which need not be touched during normal operation: non-metallic			26	50
Supplementary information: ---				

8.3.3.1	TABLE 2: Temperature-rise: E³ NH-La-Tr-Lei 1000A 3P with solid-links			P
Temperature rise dT of part:			dT (K) measured	dT (K) required
Terminals	Incoming: tin plated copper	L1	61	65
		L2	65	
		L3	63	
	Outgoing: silver plated copper	L1	64	70
		L2	66	
		L3	69	
Manual operating means: non-metallic			6	25
Parts intended to be touched but not hand-held: non-metallic			22	40
Parts which need not be touched during normal operation: non-metallic			26	50
Supplementary information: ---				

List of test equipment used:

Measured quantity	Device	Manufacturer	Code
Voltage (tests up to 15kA)	Voltage divider 1:2000 Difference amplifier AM 502 Signal memory recorder TRA 800	ÖFPZ Arsenal Tektronix W&W	- AM 502/1...3 TRA800
Current (tests up to 15kA)	Lin. current transformer LGSSO Burden 1Ω Signal memory recorder TRA 800	Ritz ÖFPZ Arsenal W&W	WLIN5000/1...3 - TRA800
Voltage (tests above 15kA)	3-channel insulating measuring amplifier Signal memory recorder SMR II	Rohrer W&W	T908D SMRII64/1
Current (tests above 15kA)	Lin. current transformer LGSSO Burden 0,7mΩ Signal memory recorder SMR II	Ritz ÖFPZ Arsenal W&W	WLIN6000.HVF/1...3 - SMRII64/1
Current (tests at reduced voltage)	Current transformer GE 4461 Current transformer AETt10 True-RMS amperemeter Kl. 0,5 Digital multimeter Fluke 185	Goerz Siemens Norma Fluke	WI600/1...3 WI4000/1...3 A0,5/1...3 FLUKE185/1, 2
Transient recovery voltage	Adjustment equipment for TRV Oscilloscope G 801.1	ÖFPZ Arsenal Tektronix	- G801.1
Dielectric properties	High-voltage test equipment 90-1F with measuring equipment Impulse tester 35 Impulse voltmeter 64M Oscilloscope 9410	Elabo Haefely Haefely Le Croy	HSG5KV G304 G502 G803
Leakage current	High-voltage test equipment 90-1F Digital multimeter Fluke 185 Digital multimeter Fluke 185	Elabo Fluke Fluke	HSG5KV FLUKE185/1 FLUKE185/2
Time	Signal memory recorders Stopwatch	W&W Junghans	TRA800, SMRII64/1 938-2
Temperature	24-channel recorder Polycomp SK30 Temperature meter TESTO 901	H & B Testoterm	SK 30 TESTO
Abnormal heat and fire	Glow-wire test device with measuring equipment	Friborg	GLOW
Mechanical strength of terminals	Test equipment	ÖFPZ Arsenal	-
Insertability of unprepared conductors	Gauges	ÖFPZ Arsenal	-
Strength of actuator mechanism	Test equipment	Schatz	-
Degree of protection	Test probe	PTL	-
Clearances, creepage distances	Digital slide gauge CD-20D	Mitutoyo	SCHUB

EFEN

EG-Konformitätserklärung
EC Conformity Declaration

IN THE LINE OF POWER

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ НА СТАНДАРТ

Hersteller (Name, Adresse): *Производител (Име, Адрес):*	EFEN GmbH Schlangenbader Strafie 40 D-65344 Eltville/Rhein
Produktbezeichnung: *Описание на продукта:*	NH-Sicherungs-Lastschaltleiste Baugrofie 1, 2, 3 *NH вертикални разединители,размер 3,с твърди връзки*
Type: *Тип:*	E^3 *NH-La-Tr-Lei* E^3 *NH-La-Tr-Lei*

Das bezeichnete Produkt stimmt mit den Vorschriften folgender europaischer Richtlinien in der Fassung der entsprechenden Anderungsrichtlinien uberein:
Описаните продукти отговарят на предписанията на следните Европейски Директиви в техните коригирани версии:
Nr. 2014/35/EU „Niederspannungsrichtlinie" (Amtsblatt der EU L96/357-374)
Nr. 2014/35/EU „Директива Ниско напрежение" (Официален вестник на EU L96/357-374*)*
Nr. 2014/30/EG „EMV-Richtlinie" (Amtsblatt der EU L96/79-106)
Nr. 2014/30/EC „Директива Електромагнитна съвместимост" (Официален вестник на EU L96/79-106)
Nr. 2011/65/EG „Beschrankung der Verwendung bestimmter gefahrlicher Stoffe in Elektro-und Elektronikgeraten" (Amtsblatt der EU L174/88-110)
No. 2011/65/EC „Ограничение за използването на някои опасни вещества в електрическо и електронно оборудване (Официален вестник на EU L174/88-110)
Nr. 1907/2006/EG „Verordnung zur Registrierung,Bewertuhg,Zulassung und Beschrankung chemischer Stoffe,REACH" (Amtsblatt der EU L136/3-280)
Nr. 1907/2006/EC "Регламент относно регистрацията, оценката, разрешението за и ограничаването на химични вещества " (Официален вестник на EU L136/3-280)
Das bezeichnete Produkt ist nach den Regeln unseres von der DQS (Deutsche Gesellschaft zur Zertifizierung von Managementsystemen) nach DIN EN ISO 9001 zertifizierten Qualitats-Managementsystems in Ubereinstimmung mit folgenden Normen konstruiert und gefertigt:
Описаният продукт е проектиран и произведен на основата на нашата Система за управление на качеството DIN EN ISO 9001, която е сертифицирана от DQS (Германската асоциация за сертификация на системи за управление) да съответстват на следните стандарти:

ВЯРНО С ОРИГИНАЛА

IEC/EN 60947-1 : 2007/A2:2014
VDE 0660-100:2015-09
EN 60947-3 : 2009/A2:2015
IEC 60947-3:2008/A2:2015
VDE 0660-107:2012-12/A1:2015-03

Anbringung der CE - Kennzeichnung:
2010 Поставяне на CE маркировка:
Aussteller / *Издател:*
Ort, Datum / *Място, Дата*: EFEN GmbH Eltville,

2010-01-08

Rechtsverbindliehe Unterschrift:
Подписи:
Инж. В.В. Кирш
Инж. А.С. Фаст

Diese Erklarung bescheinigt die Ubereinstimmung mit den genannten europaischen Richtlinien und gilt weltweit in Bezug auf die angefuhrten Normen, beinhaltet jedoch keine Zusicherung von Eigenschaften.
Тази декларация удостоверява съответствието с описаните Европейски Директиви и е валидна по целия свят относно горепосочените стандарти, но не включва в себе си гаранция за собственост

EFEN

IN THE LINE OF POWER

EG-Konformitätserklärung
EC Conformity Declaration

Hersteller (Name, Adresse):
Manufacturer (Name, Address):
EFEN GmbH
Zum Gunterstal
66440 Blieskastel-Germany

Produktbezeichnung:
Product designation:
E³ NH-Last-Trennleiste, Baugröße 3, mit Trennmesser
E³ NH Switch disconnectors vertical design, size 3, with solid-links

Type:
E³ NH-La-Tr-Lei

Das bezeichnete Produkt stimmt mit den Vorschriften folgender europäischer Richtlinien in der Fassung der entsprechenden Änderungsrichtlinien überein:
The designated product conforms to the provisions of the following European directives in the version of the amended directives:

Nr. 2014/35/EU „Niederspannungsrichtlinie" (Amtsblatt der EU L96/357-374)
Nr. 2014/35/EU „Low Voltage Directive" (official journal of the EU L96/357-374)

Nr. 2014/30/EG „EMV-Richtlinie" (Amtsblatt der EU L96/79-106)
Nr. 2014/30/EU „EMC Directive" (official journal of the EU L96/79-106)

Nr. 2011/65/EU „Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten" (Amtsblatt der EU L174/88-110)
No. 2011/65/EC „Restriction of the use of certain Hazardous Substances in electrical and electronic equipment" (official journal of the EU L174/88-110)

Nr. 1907/2006/EG "Verordnung zur Registrierung, Bewertung, Zulassung und Beschränkung chemischer Stoffe, REACH" (Amtsblatt der EU L136/3-280)
No. 1907/2006/EC „Regulation concerning the Registration, Evaluation, Authorisation and Restriction of chemical substances, REACH" (official journal of the EU L136/3-280)

Das bezeichnete Produkt ist nach den Regeln unseres von der DQS (Deutsche Gesellschaft zur Zertifizierung von Managementsystemen) nach DIN EN ISO 9001 zertifizierten Qualitäts-Managementsystems in Übereinstimmung mit folgenden Normen konstruiert und gefertigt:
The described product is constructed and manufactured based on our Quality Management System according to DIN EN ISO 9001 which has been certified by the DQS (German association for the Certification of Management Systems) to comply with the following standards:

IEC/EN 60947-1:2007/A2:2014
VDE 0660-100:2015-09
EN 60947-3:2009/A2:2015
IEC 60947-3:2008/A2:2015
VDE 0660-107:2012-12/A1:2015-03
Anbringung der CE – Kennzeichnung / *Affixing of the CE marking*: 2011

Aussteller / *Issuer:* EFEN GmbH Ort, Datum / *Place, Date:* Eltville, 2016-10-17

Rechtsverbindliche Unterschrift / *Legally binding signature:*

i.V. J. Plechinger i.A. S.Fast

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten europäischen Richtlinien und gilt weltweit in Bezug auf die angeführten Normen, beinhaltet jedoch keine Zusicherung von Eigenschaften.
This declaration certifies compliance with the indicated European directives and is valid world wide with respect to the a. m. standards but implies no warranty of properties.

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Приложение 3 към Техническо предложение за обособена опзиция 2

СРОКОВЕ ЗА ДОСТАВКА

№	Наименование	Мярка	Миним. размер на партида (Z)	Количество със срок на доставка до 7 кал. дни	Количество със срок на доставка до 30 кал. дни
1	2	3	4	5	6
1	Вертикален предпазител-разединител НН 400 А, с триполюсно управление	бр.	1	5	21
2	Вертикален предпазител-разединител НН 630 А, с триполюсно управление	бр.	1	1	2
3	Вертикален разединител НН 1000 А, с триполюсно управление	бр.	1	1	2

Забележки:

1/ Срокът на доставките започва да тече от датата на изпращане на поръчката.

2/ Количествата в колона 5, със срок на доставка до 7 /седем/ календарни дни, се доставят след SAP поръчка до посочените в обявлението складове на Възложителя за покриване на спешни нужди на Възложителя.

Възложителят може до поръчва посоченото спешно количество веднъж месечно.

3/ В случай, че крайният срок на доставката съвпада с празничен или неработен ден, то доставката се извършва не по-късно от първия работен ден след изтичането на срока.

4/ При поръчки на Възложителя на количества в рамките на потвърдените от Изпълнителя и недоставени в посочените срокове, ще бъдат налагани неустойки, съгласно условията на договора.

5/ Възложителят може да поръча количества по-малки от посочените в колони 5 и 6.

6/ Възложителят може да поръчва количества по-високи от посочените в колони 4 и 5, като това обстоятелство ще бъде посочено текстово в съответната поръчка изпратена към Изпълнителя. С потвърждението на поръчката, Изпълнителят вписва в същата очаквана дата за доставка на количествата надвишаващи посочените в колони 5 и 6.

7/ Количествата за доставка в колони 5 и 6 са отделни и независими едно от друго.

8/ Количествата за доставка в колона 6 не включват в себе си количествата за доставка в колона 5.

9/ Възложителят има право да направи едновременно поръчки за доставка на количества от колони 5 и 6.

Дата **26.01.2016** година

Участник _____
(подпис и печат)
Представляващ по регистрация

Име и Фамилия **Станчо Пантов**

Приложение 4 към Техническо предложение
За Обособена позиция 2

ОПАКОВКА

SAP № на стоката	Наименование на стоката	Участник			
		Вид опаковка	Брой на стоката в опаковка	Общ брой опаковки	Общо бруто тегло, кг.
	Вертикален предпазител-разединител НН 400 А, с триполюсно управление	кашон	1	500	2 980 кг
	Вертикален предпазител-разединител НН 630 А, с триполюсно управление	кашон	1	40	246 кг
	Вертикален разединител НН 1000 А, с триполюсно управление	кашон	1	40	314 кг

Участник _____
(подпис и печат)
Представляващ по регистрация

Дата **26.01.2016** година

Име и Фамилия **Станчо Пантов**

поставя се в комплекта на техническото предложение