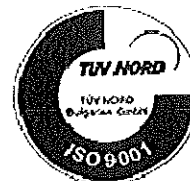


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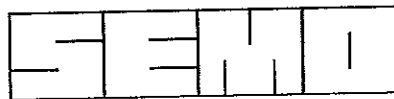
## **ТЕХНИЧЕСКО ПРЕДЛОЖЕНИЕ**

*«Доставка на миниатюрни прекъсвачи»  
Реф. № PPD 17-109*

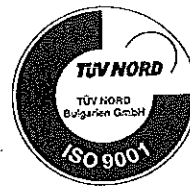
*Обособена позиция 2 – Доставка на еднополюсни и триполюсни  
миниатюрни товари прекъсвачи*

СЕПТЕМВРИ 2017

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Приложение № 3  
поставя се в комплекта  
на техническото  
предложение  
ОБРАЗЕЦ

## ПРЕДЛОЖЕНИЕ

за участие в „открита“ по вид процедура за сключване на рамково споразумение с предмет:

“ Доставка на миниатюрни прекъсвачи“, реф. № PPD 17-109, обособена позиция № 2 ✓  
Доставка на еднополюсни и триполюсни миниатюрни товарови прекъсвачи

ДО: „ЧЕЗ РАЗПРЕДЕЛЕНИЕ БЪЛГАРИЯ“ АД,

ОТ: „СЕМО“ ООД

адрес: гр. София, бул. Ботевградско шосе № 247 Транскапитал сграда 2 офис 2506

тел.: 02 / 931 01 77, факс: 02/ 9424757; e-mail: engineering@semo.bg

Единен идентификационен код: 121837062,

Представявано от Евгени Бенински – Управител ✓

Лице за контакти: Евгени Бенински тел.: 02 / 931 01 77, факс: 02/ 9424757; e-mail: engineering@semo.bg

УВАЖАЕМИ ГОСПОЖИ И ГОСПОДА,

Предоставяме на Вашето внимание предложението ни за изпълнение на обществена поръчка с реф. PPD 17-109 и предмет: Доставка на миниатюрни прекъсвачи“, обособена позиция №: 2  
Доставка на еднополюсни и триполюсни миниатюрни товарови прекъсвачи ✓

1. Запознат съм и приемам изискванията на Възложителя, като представям техническите спецификации от раздел II на документацията за участие с попълнени всички изисквани стойности за всички позиции от предмета на поръчката и изискванията, описани в рамковото споразумение и приложенията към него.
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 протоколите от типовите изпитвания, които могат да се представят и само на английски език.

3. Запознат съм, че представените от нас технически документи (протоколи от изпитания, каталози и др.) 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. Всички стойности, попълнени в колона „Гарантирано предложение“ на приложените таблици от Технически спецификации от раздел II от документацията за участие, са точни и истински.

6. Предлагам следният гаранционен срок за предлаганите стоки – 24 месеца / не по-малко от 24 месеца /, от датата на приемно - предавателен протокол за получаване на стоката от Възложителя.

7. Запознат съм, че видовете стоки и прогнозните количества за доставка ще бъдат посочени от Възложителя при провеждане на вътрешен конкурентен избор.

8. Приемам количества със срокове за доставка на стоката, съгласно Приложение 3 към настоящото Техническо предложение.

9. Приемам, че в срок до 14 (не повече от 14 дни) от датата на подписване на рамково споразумение с Възложителя, ще сключа договор с посоченият/те в офертата подизпълнител/и (попълва се, ако участникът е декларирал, че ще използва подизпълнител/и).

10. Запознат съм, че при последваща обществена поръчка чрез вътрешен конкурентен избор за сключване на конкретен договор, изборът на изпълнител при определяне на икономически най-изгодната оферта ще бъде направен по критерий за възлагане - „най-ниска цена“.

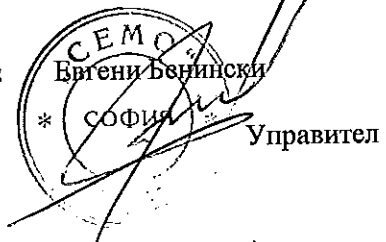
11. Запознат съм, че максималният срок за изпълнение на конкретен договор ще бъде определен от Възложителя в поканата за участие при последващата обществена поръчка чрез вътрешен конкурентен избор.

**Приложения към настоящото техническо предложение:**

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

Дата: 25.09.2017г.

ПОДПИС и ПЕЧАТ:



**Забележки:**

1. Настоящото предложение за изпълнение на поръчката е образец, който е един и същ за всички обособени позиции от предмета на поръчката.
2. В случай, че участник участва за повече от една обособена позиция, то настоящият образец на предложение за изпълнение на поръчката се попълва поотделно за всяка една от тях, като номера на съответната обособена позиция се посочва на съответното място в образца и се поставя в комплекта документи на техническо предложение за съответната обособена позиция.

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## ОБОСОБЕНА ПОЗИЦИЯ 2

**Наименование на материала:** Еднополюсни и триполюсни миниатюрни товари прекъсвач-разединители 63 А, широчина на полюс 18 mm

**Кратко наименование на материала:** Мини тов. прек. 63 А, шир. 18 mm

**Област:** G – Инсталации  
(Електромерни табла)

**Категория:** 17–Комутационни апарати НН

**Мерна единица:** Брой

**Аварийни запаси:** Да

### Характеристика на материала:

Миниатюрните товари прекъсвач-разединители представляват механични комутационни апарати, способни да провеждат и да включват/изключват ръчно електрически ток 63 А във вериги при нормални условия и да провеждат за определено време токове във вериги при условията на претоварване и късо съединение.

Тялото на миниатюрните товари прекъсвач-разединители е изработено чрез формоване на устойчив на нагряване, на огън и на механични удари изолационен материал с максимална широчина на един полюс 18 mm. В монтирано състояние съгласно инструкциите на производителя и след опроводяване активните части на миниатюрните товари прекъсвач-разединители не са достъпни.

Средството (лостът) за управление при вертикално монтиране на миниатюрните товари прекъсвач-разединители се движи в направление „нагоре – надолу“, при което контактите се затварят при движение „нагоре“. Миниатюрните товари прекъсвач-разединители са снабдени с ясно видимо от челната страна средство за указване на затвореното и отвореното положение на контактната система.

Стойностите на прегряването на частите на миниатюрните товари прекъсвач-разединители при нормален работен режим при температура до 40°C не трябва да надвишават посочените в таблица 2 и таблица 3 от БДС EN 60947-1:2007 стойности или еквивалентно/и.

За свързване на проводниците от външната верига се използват винтови клеми с притискаща пластина с обхват на номиналните напречни сечения на проводниците от 6 mm<sup>2</sup> до 25 mm<sup>2</sup>. Конструкцията на винтовите клеми трябва да позволява лесно въвеждане на проводниците, при което не се освобождават напълно съставните им части, както и лесно освобождаване на проводниците в експлоатационни условия.

Миниатюрните товари прекъсвач-разединители конструктивно са приспособени за закрепване на монтажна шина с DIN – профил с размери 35x7,5 mm съгласно БДС EN 60715:2003 "Размери на комутационни апарати за ниско напрежение или еквивалентно/и. Стандартизирано монтиране върху релси за механична опора на електрически устройства в уредби с комутационни апарати за ниско напрежение (IEC 60715:1981 +A1:1995) или еквивалентно/и.

Миниатюрните товари прекъсвач-разединители са маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3:2009 и CE маркировка за съответствие или еквивалентно/и.

Миниатюрните товари прекъсвач-разединители са пакетирани в картонени кутии, на които е залепен етикет с наименование на материала „Миниатюрен товар прекъсвач-разединител“, техническите данни и броя на миниатюрните товари прекъсвач-разединители, годината на производство, партидните номера и стандарта, в съответствие с който са произведени и изпитани - БДС EN 60947-3:2009 или еквивалентно/и.

### Използване:

Миниатюрните товари прекъсвач-разединители са предназначени за монтиране в електромерни табла за директно измерване на електрическата енергия и се използват за ръчно включване и изключване на вериги, захранващи битови и други подобни уреди.

### Съответствие на предлаганото изпълнение с нормативно-техническите документи:

Триполюсните и еднополюсните стопяем цилиндричен предпазител-прекъсвач-разединители трябва да отговарят най-малко на посочените по-долу стандарти или еквиваленти:

- БДС EN 60947-1:2007 „Комутационни апарати за ниско напрежение. Част 1. Общи правила (IEC 60947-1:2007)“ или еквивалентно;

- БДС EN 60947-1:2007/A1:2011 „Комутационни апарати за ниско напрежение. Част 1: Общи правила (IEC 60947-1:2007/A1:2010)“ или еквивалентно; и
- БДС EN 60947-3:2009 „Комутационни апарати за ниско напрежение. Част 3: Товарови прекъсвачи, разединители, товаров прекъсвач-разединители и апарати, комбинирани с предпазители (IEC 60947-3:2008)“ или еквивалентно.

и да бъдат оценени 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.

#### Изискване 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	Приложение № 1 Приложение № 2
2.	Техническо описание и чертежи с нанесени на тях размери	Приложение № 3
3.	ЕО декларация за съответствие	Приложение № 4
4.	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 № 5
5.	Сертификат/акредитация на независимата изпитвателна лаборатория, провела типовите изпитвания по т. 4 – заверено копие	Приложение № 6
6.	Инструкции за транспортиране, складиране, монтиране, вкл. въртящия момент на затягане на клемовите съединения, обслужване и поддържане	Приложение № 7

#### Технически данни

##### 1. Работна среда:

№ по ред	Наименование	Стойност
1.1	Място на монтиране	На закрито
1.2	Максимална околна температура	+ 40°C
1.3	Минимална околна температура	Минус 5°C
1.4	Максимална средна околна температура 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 мрежа НН:

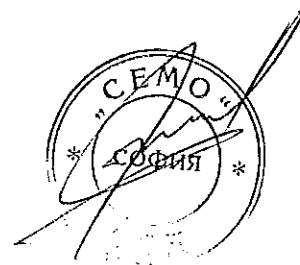
№ по ред	Наименование	Стойност
2.1	Номинално напрежение	400 / 230 V
2.2	Максимално напрежение	440 / 253 V
2.3	Номинална честота	50 Hz
2.4	Брой проводници в разпределителната мрежа	4 проводна мрежа (L <sub>1</sub> , L <sub>2</sub> , L <sub>3</sub> , PEN)
2.5	Схема на разпределителната мрежа	TN-C

### 3. Технически параметри и други данни

№ по ред	Характеристика	Изискване	Гарантирано предложение
3.1	Обявен ток ( $I_e$ )	63 A	63 A
3.2	Обявено работно напрежение ( $U_e$ )	-	-
3.2.1	Еднополюсни прекъсвачи	230/400 V	230/400 V
3.2.2	Триполюсни прекъсвачи	400 V	400 V
3.3	Обявена честота ( $f_n$ )	50 Hz	50 Hz
3.4	Обявено издържано импулсно напрежение ( $U_{imp}$ )	min 6 kV	6 kV
3.5	Обявено напрежение на изолацията ( $U_i$ )	min. 440 V	500 V
3.6	Изпитване на включвателната и изключвателната способност съгл. т. т. 4.3.5.2 и 4.3.5.3 от БДС EN 60947-3:2009 или еквивалентно/и	min 189 A ( $1,05 U_e \cos\phi=0,65$ )	189 A ( $1,05 U_e \cos\phi=0,65$ )
3.7	Обявен краткотрайно издържан ток ( $I_{cw}$ ) съгл. т. 4.3.6.1 от БДС EN 60947-3:2009 или еквивалентно/и	min 756 A / 1 s	756 A / 1 s
3.8	Категория на приложение (при 400V AC)	AC 22 В или по-висока	AC 22 A
3.9	Степен на защита от проникване на твърди тела и вода	min IP20	IP20
3.10	Износоустойчивост	-	-
3.10.1	Електрическа (брой к.ц.)	min 200 бр.	1500
3.10.2	Механична (брой к.ц.)	min 800 бр.	8500
3.11	Монтажна ширина на един полюс	max 18 mm	18 mm
3.12	Експлоатационна дълготрайност	min 30 години	30 години

### 4. Миниатюрни товарни прекъсвач-разединители 63 А, широчина на полюс 18 mm

№ на стандарта	Брой на полюсите	Съкратено наименование	Обявен ток, А	Тегло, g
20 17 1881	1	Мини тов. прек. 63 А, шир. 18 mm, 1P	63	66.67
20 17 1883	3	Мини тов. прек. 63 А, шир. 18 mm, 3P	63	195.83



**Наименование на материала:** Еднополюсни и триполюсни миниатюрни товари прекъсвач-разединители 125 А, широчина на полюс 27 mm

**Съкратено наименование на материала:** Мини тов. прек. 125 А, шир. 27 mm

**Област на приложение:** G – Инсталации  
(Електромерни табла)

**Категория:** 17–Комутационни апарати НН

**Мерна единица:** Брой

**Аварийни запаси:** Да

**Характеристика на материала:**

Миниатюрните товари прекъсвач-разединители представляват механични комутационни апарати, способни да провеждат и да включват/изключват ръчно електрически ток 125 А във вериги при нормални условия и да провеждат за определено време токове във вериги при условията на претоварване и късо съединение.

Тялото на миниатюрните товари прекъсвач-разединители е изработено чрез формоване на устойчив на нагряване, на огън и на механични удари изолационен материал с максимална широчина на един полюс 27 mm. В монтирано състояние съгласно инструкциите на производителя и след опроводяване активните части на миниатюрните товари прекъсвач-разединители не са достъпни.

Средството (лостът) за управление при вертикално монтиране на миниатюрните товари прекъсвач-разединители се движи в направление „нагоре – надолу“, при което контактите се затварят при движение „нагоре“. Миниатюрните товари прекъсвач-разединители са снабдени с ясно видимо от челната страна средство за указване на затвореното и отвореното положение на контактната система.

Стойностите на прегряването на частите на миниатюрните товари прекъсвач-разединители при нормален работен режим при температура до 40°C не трябва да надвишават посочените в таблица 2 и таблица 3 от БДС EN 60947-1 стойности или еквивалентно/и.

За свързване на проводниците от външната верига се използват винтови клеми с притискаща пластина с обхват на номиналните напречни сечения на проводниците от 6 mm<sup>2</sup> до 25 mm<sup>2</sup>. Конструкцията на винтовите клеми трябва да позволява лесно въвеждане на проводниците, при което не се освобождават напълно съставните им части, както и лесно освобождаване на проводниците в експлоатационни условия.

Миниатюрните товари прекъсвач-разединители конструктивно са приспособени за закрепване на монтажна шина с DIN – профил с размери 35x7,5 mm съгласно БДС EN 60715 или еквивалентно/и.

Миниатюрните товари прекъсвач-разединители са маркирани с информацията съгласно т. 5.2 от БДС EN 60947-3 и SE маркировка за съответствие или еквивалентно/и.

Миниатюрните товари прекъсвач-разединители са пакетирани в картонени кутии, на които е залепен етикет с наименование на материала „Миниатюрен товар прекъсвач-разединител“, техническите данни и броя на миниатюрните товари прекъсвач-разединители, годината на производство, партидните номера и стандарта, в съответствие с който са произведени и изпитани - БДС EN 60947-3 или еквивалентно/и.

**Използване:**

Миниатюрните товари прекъсвач-разединители са предназначени за монтиране в електромерни табла за директно измерване на електрическата енергия и се използват за ръчно включване и изключване на вериги, охранващи битови и други подобни уреди.

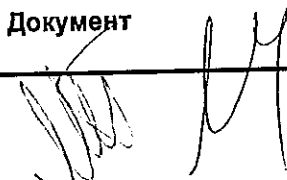

**Съответствие на предлаганото изпълнение с нормативно-техническите документи:**

Миниатюрните товари прекъсвач-разединители трябва да отговарят най-малко на посочените по-долу стандарти или еквиваленти:

- БДС EN 60947-1:2007 „Комутационни апарати за ниско напрежение. Част 1: Общи правила (IEC 60947-1:2007)“ или еквивалентно; и
- БДС EN 60947-3: 2009 „Комутационни апарати за ниско напрежение. Част 3: Товари прекъсвачи, разединители, товари прекъсвач-разединители и апарати комбинирани със стопяеми предпазители (IEC 60947-3:2008)“ или еквивалентно; и

да бъдат оценени 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.

**Изискване към документацията и изпитванията:**

№ по ред	Документ	Приложение № (или текст)
		

№ по ред	Документ	Приложение № (или текст)
1.	Точно означение на типа, производителя и страната на производство (произход) и последно издание на каталога на производителя	Приложение № 8 Приложение № 9
2.	Техническо описание и чертежи с нанесени на тях размери	Приложение № 10
3.	ЕО декларация за съответствие	Приложение № 11
4.	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 № 12
5.	Сертификат/акредитация на независимата изпитвателна лаборатория, провела типовите изпитвания по т. 4 – заверено копие	Приложение № 13
6.	Инструкции за транспортиране, складиране, монтиране, вкл. въртящия момент на затягане на клемовите съединения, обслужване и поддържане	Приложение № 14

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

#### Технически данни:

##### 1. Характеристики на работната среда

№ по ред	Характеристика	Стойност
1.1	Място на монтиране	На закрито
1.2	Максимална околна температура	+ 40°C
1.3	Минимална околна температура	Минус 5°C
1.4	Максимална средна околна температура 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 електрическата разпределителна мрежа

№ по ред	Параметър	Стойност
2.1	Номинално напрежение	400 / 230 V
2.2	Максимално напрежение	440 / 253 V
2.3	Номинална честота	50 Hz
2.4	Брой проводници в разпределителната мрежа	4 проводна мрежа (L <sub>1</sub> , L <sub>2</sub> , L <sub>3</sub> , PEN)
2.5	Схема на разпределителната мрежа	TN-C

##### 3. Общи технически характеристики и други данни

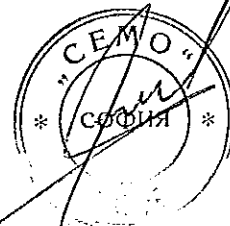
№ по ред	Характеристика	Изискване	Гарантирано предложение
3.1	Обявен ток ( $I_b$ )	125 A	125 A
3.2	Обявено работно напрежение ( $U_b$ )	-	-
3.2.1	Еднополюсни прекъсвачи	230 V	230 V
3.2.2	Триполюсни прекъсвачи	230/400 V	230/400 V
3.3	Обявена честота ( $f_n$ )	50 Hz	50 Hz



№ по ред	Характеристика	Изискване	Гарантирано предложение
3.4	Обявено издържано импулсно напрежение ( $U_{imp}$ )	min 6 kV	6 kV
3.5	Обявено напрежение на изолацията ( $U_i$ )	min. 440 V	500 V
3.6	Изпитване на включвателната и изключвателната способност съгл. т. т. 4.3.5.2 и 4.3.5.3 от БДС EN 60947-3 или еквивалентно/и	min 375 A ( $1,05 U_e \cos\phi=0,65$ )	375 A ( $1,05 U_e \cos\phi=0,65$ )
3.7	Обявен краткотрайно издържан ток ( $I_{cw}$ ) съгл. т. 4.3.6.1 от БДС EN 60947-3 или еквивалентно/и	min 1500 A / 1 s	1500 A / 1 s
3.8	Категория на приложение (при 400V AC)	AC 22 В или по-висока	AC 22 A
3.9	Степен на защита от проникване на твърди тела и вода	min IP20	min IP20
3.10	Износоустойчивост	-	-
3.10.1	Електрическа (брой к.ц.)	min 200 бр.	1500
3.10.2	Механична (брой к.ц.)	min 1400 бр.	8500
3.11	Монтажна ширина на един полюс	max 27 mm	18 mm
3.12	Експлоатационна дълготрайност	min 30 години	30 години

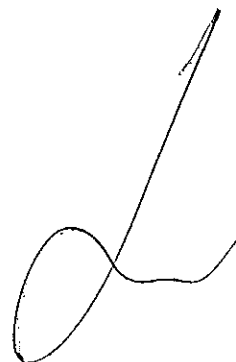
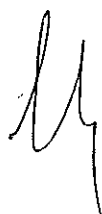
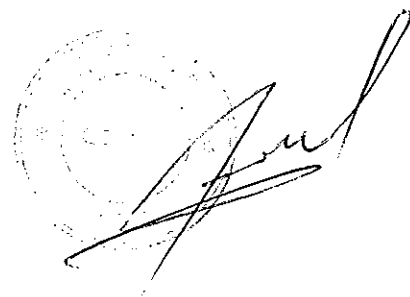
#### 4. Миниатюрни товари прекъсвач-разединители 125 А, ширина на полюс 27 mm

№ на стандарта	Брой на полюсите	Обявен ток, А	Тегло, g
20 17 2791	1	125	90
20 17 2793	3	125	270

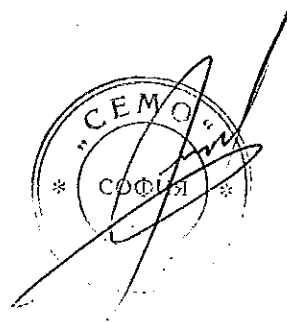


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**Приложение № 1**

A handwritten signature in black ink, consisting of a large loop followed by a vertical stroke and a horizontal tail.A handwritten signature in black ink, appearing as a stylized, cursive mark.A handwritten signature in black ink, consisting of a few simple, connected strokes.A handwritten signature in black ink, written over a circular stamp. The signature is a cursive name, and the stamp is a faint, circular seal.

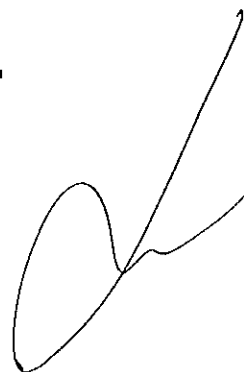

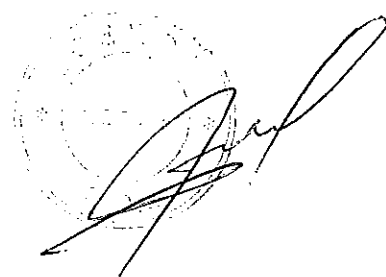
№ на стандарта	Брой на полюсите	Съкратено наименование	Обявен ток,	Предложение	Производител	Страна на произход
20 17 1881	1	Мини тов.прек. 63А, шир. 18,1Р	63	NH2-100/1P 63A	Chint	Китай
20 17 1883	3	Мини тов.прек. 63А, шир. 18,3Р	63	NH2-100/3P 63A	Chint	Китай



*[Handwritten signature]*

*[Handwritten initials]*

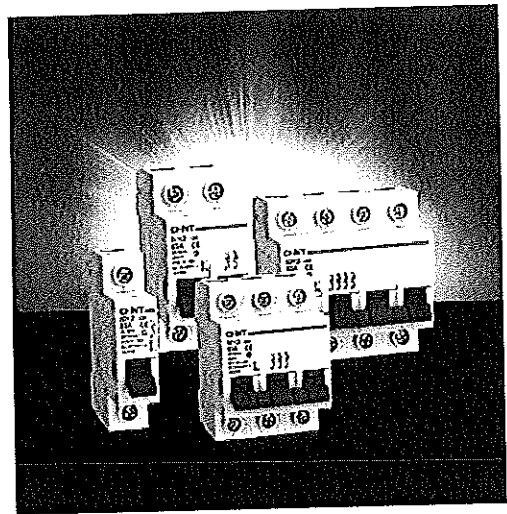
**Приложение № 2**

A handwritten signature in black ink, consisting of a large loop followed by a few strokes.A handwritten signature in black ink, appearing to be 'S. G.'.A handwritten signature in black ink, overlapping a faint circular stamp or seal.

# Товаров прекъсвач NH2 - шалтер

## 1. Характеристики

- 1.1 В отворена позиция товарният прекъсвач изпълнява изискванията за изолиране на веригата;
- 1.2 Сертификати: CE, SEMKO, UKRTEST, PCT, RCC.



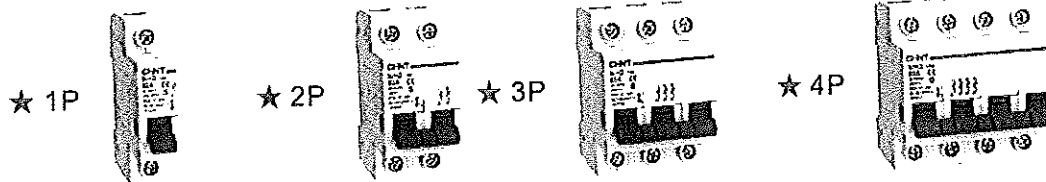
## 2. Технически параметри

Стандарт		IEC/EN 60947-3	
Електрически характеристики	Номинално напрежение Ue	V	230/400
	Номинален ток Ie	A	32, 63, 100
	Номинална честота	Hz	50/60
	Номинално импулсно напрежение, Uimp	V	6000
	Номинален кратковремен ток на издържане Icw		12Ie, 1s
	Номинална включвателна и изключвателна способност		3Ie, 1.05Ue, cosφ=0.65
	Номинална способност на включване на ток на късо съединение		20Ie, t=0.1s
	Изпитвателно напрежение с пром. честота за 1 минута	kV	2.5
	Изоляционно напрежение Ui	V	500
	Степен на замърсяване		2
Категория на използване		AC-22A	
Механични характеристики	Електрически живот		1500
	Механичен живот		8500
	Степен на защита		IP20
	Околна температура (при средnodневна температура ≤ 35°C)	°C	-5...+40
Температура на съхранение	°C	-25...+70	
Инсталация	Тип на свързването		кабел/шинен гребен
	Размер на отвора за кабела	mm <sup>2</sup>	50
	Размер на отвора за шинния гребен	AWG	18-1/0
		mm <sup>2</sup>	50
	Момент на затягане	AWG	18-1/0
		N*m	2.5
Свързване	In-lbs.	22	
			отгоре и отдолу

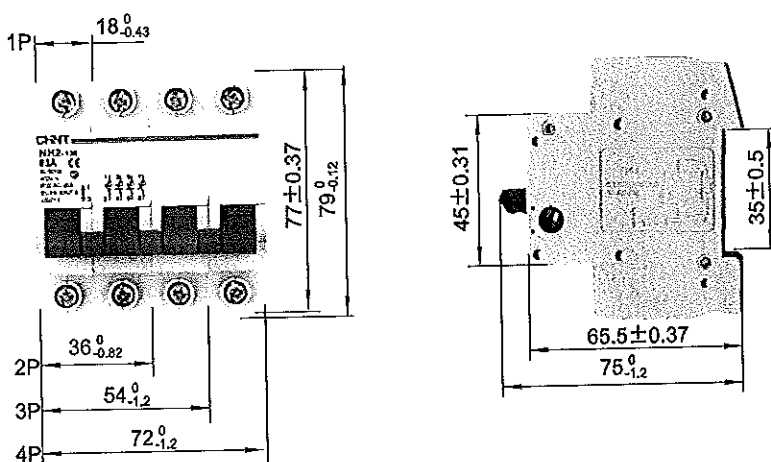
**ВЯРНО С ОРИГИНАЛА**



3.Продуктова гама



4. Габаритни и монтажни размери (mm)



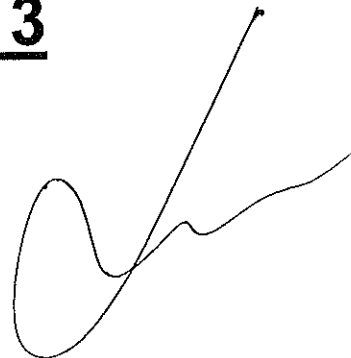
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**ВЯРНО С ОРИГИНАЛА**

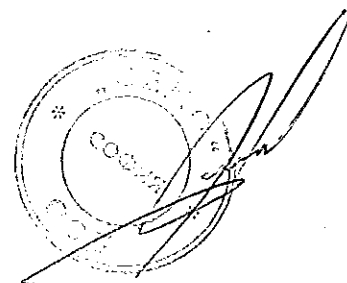
СЕРТИФИКАЦИЯ  
СОФИА

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**Приложение № 3**



ВЯРНО С ОРИГИНАЛОМ



# NH2-100

## Товаров прекъсвач

### Техническо описание

#### 1. Приложение

Товаровия прекъсвач от серията NH2-100 притежава висока динамична устойчивост. Приложим е за инсталиране в разпределителни и контролни променливотокови вериги с честота на мрежата 50/60Hz, номинално напрежение 230/400VAC. Основното му приложение е като главен шалтер и електрически табла. Освен това се използва и за контрол на не големи електрически устройства и осветление. Намира широко приложение в индустрията, минното производство, административни и жилищни згради.

Този продукт отговаря на стандарт IEC60947-3.

#### 2. Условия на работа

##### 2.1. Околна температура

Горната граница на температурата на околната среда е  $+40^{\circ}\text{C}$ , долната граница е  $-5^{\circ}\text{C}$ . Средната температура за 24 часа не трябва да превишава  $+35^{\circ}\text{C}$ .

##### 2.2. Надморска височина

Надморската височина на мястото на инсталиране не трябва да превишава 2000m.

##### 2.3. Атмосферни условия

Относителната влажност на въздуха не трябва да превишава 50%, когато най – високата температура на околната среда е  $+40^{\circ}\text{C}$ . Относителната влажност може да бъде по висока при по – ниски температурни условия, например относителна влажност 90%, когато температурата е  $+20^{\circ}\text{C}$ . Трябва да се отчете и появата на конденз по повърността на продукта поради температурна промяна.

##### 2.4. Степен на замърсяване: II степен.

##### 2.5. Начин на инсталиране

Приет начин на монтаж върху стоманена TH35 – 7.5 шина.

##### 2.6. Изисквания при монтаж

Наклона на вертикалната равнина да не превишава  $5^{\circ}\text{C}$ .

##### 2.7. Начин на свързване

Стягане на проводника с винт. Въртящ момент на затягане: 2.5 Nm

ВЕРНО С ОРГИНАЛА



### 3. Основна спецификация и технически параметри

#### 3.1. Тип и обозначение

#### NH2-100

N – Фирмен код

H – Товаров прекъсвач

2 – Номер на модела

100 – Номинален ток на корпуса

#### 3.2. Класификация

##### 3.2.1. Според номиналния ток

$I_e$  : 32A, 63A, 100A.

3.2.2. Съгласно броя на полюсите: еднополюсни, двуполосни, триполюсни, четириполюсни.

#### 3.3. Основни технически параметри

3.3.1. Краткотраен издържан ток:  $12I_e/1s$

3.3.2. Включвателна и изключвателна способност:  $3I_e, 1.05U_e, \cos\phi = 0.65$

3.3.3 Включвателна способност:  $20I_e/ 0.1s, \cos\phi = 0.9$

3.3.4. Износоустойчивост

8 500 цикъла без товар, 1500 цикъла под товар , общо 10 000 цикъла  $\cos\phi = 0.8$ , честота на операциите 120 цикъла за час.

#### 3.4. Габаритни размери

Габаритните размери са показани на фиг. 1

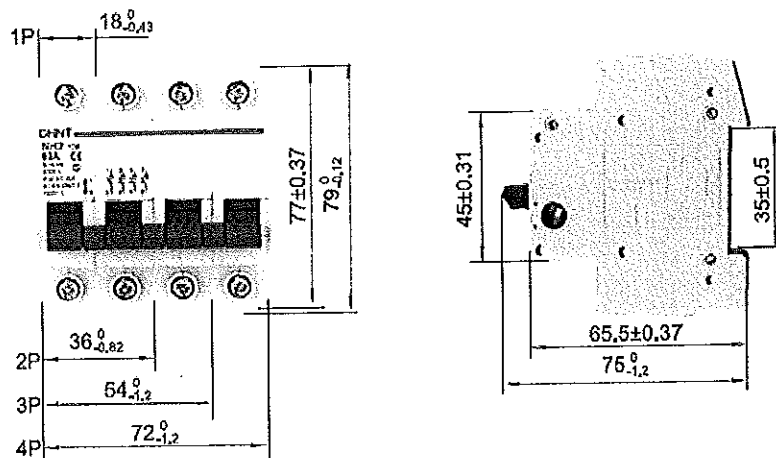
ВЯРНО С ОРГИНАЛА

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*[Handwritten signature]*

*[Handwritten signature]*

*[Circular stamp with signature]*



фиг. 1

## 4. Основна структура и принцип на работа

### 4.1. Структура

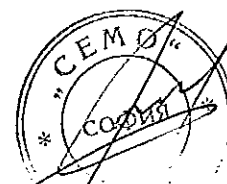
Товаровият прекъсвач е съставен основно от изолационна обвивка, работен механизъм, контактна система и клеми за свързване.

Работният механизъм използва енергията на заредена пружина. Устройство за индикация показва състоянието на подвижния контакт на товарния прекъсвач посредством твърда възка към ръкохватката.

### 4.2. Принцип на работа

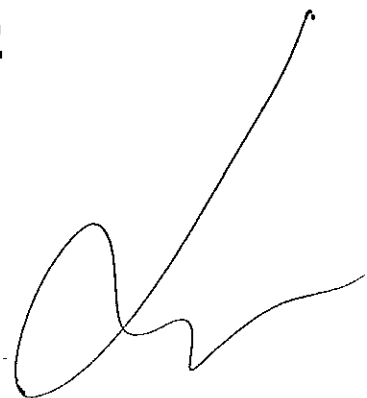
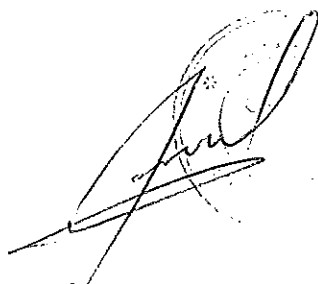
Под действието на пружината, ръкохватката задвижва подвижния контакт във включено или изключено положение с помощта на твърда връзка, като по този начин осъществява надеждно разединяване на веригата.

**ВЯРНО С ОРИГИНАЛА**



*[Handwritten signatures]*

**Приложение № 4**

A large, stylized handwritten signature in black ink, consisting of a large loop followed by a horizontal stroke and a long, thin tail extending upwards and to the right.A small, stylized handwritten signature in black ink, appearing as a series of connected loops.A small, stylized handwritten signature in black ink, consisting of a few sharp, angular strokes.A large, stylized handwritten signature in black ink, featuring a prominent loop and a long, sweeping tail.

# CHINT

浙江正泰电器股份有限公司  
ZHEJIANG CHINT ELECTRICS CO., LTD.

## EC Declaration of Conformity

Issuer's name and address:

Zhejiang Chint Electrics CO., Ltd. ;  
No.1 CHINT Road, CHINT Industrial Zone, North Baixiang,  
Yueqing, Zhejiang Province, P.R. China 325603

Products:

**Disconnecter: NH2 series**

The designated product satisfies the provision for CE marking according to the  
European Low Voltage Directive:

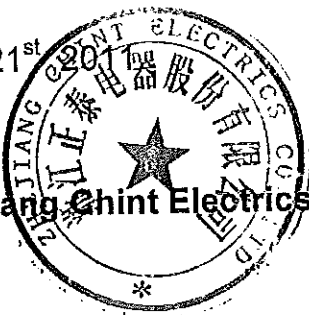
2006/95/EC

Comply with the standards: EN/ IEC 60947-3:1999+A1+A2;

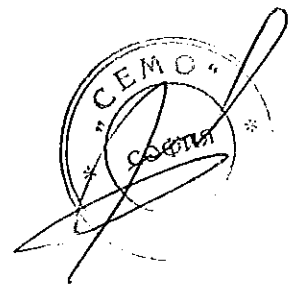
Full compliance with the standards tested by Intertek ELT SEMKO.

License No. 903790

Mar.21<sup>st</sup>



Zhejiang Chint Electrics CO., Ltd.



中国 · 温州 · 北白象镇正泰高科技工业园区  
No.1 CHINT Road, CHINT Industrial Zone, North Baixiang,  
Yueqing, Zhejiang Province, P.R. China 325603  
Tel/Fax: 86-577-6287777/62775769 E-mail: gmb@chint.com

ЧИНТ

ЕО Декларация за съответствие

Име и адрес на клиента  
„Джеджанг ЧИНТ Електрик Ко., ООД

ЧИНТ Хай-Тек Индустриална зона, Северен Байксианг,

Провинция Джеджанг, Н.Р. Китай 325603

Продукт:

Серия товари прекъсвачи NH2

Обозначения продукт е в съответствие с изискванията за обезпечаването на СЕ маркировката Европейската Директива за ниско напрежение.

**2006/95/ЕС**

Отговаря на стандарт: EN/IEC 60947 – 3: 1999 + A1 + A2

В пълно съответствие със стандартите тествани от Интертек СЕМКО АВ

Лиценз № 903790

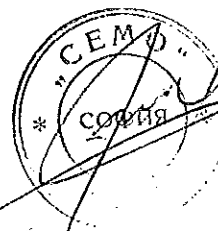
21 Март 2011

печат: (не се чете)

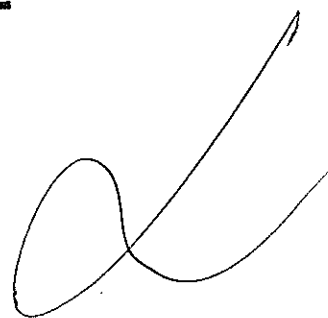
„Джеджанг ЧИНТ Електрик Ко., ООД

Чинт Хай-тех Индустриал Зоун, Норд Байксианг, Провинция Джеджанг, Н.Р. Китай 325603  
тел/факс: 86-577-6287777/ 62775769, е-мейл: [gmb@chint.com](mailto:gmb@chint.com)

**ВЯРНО С ОРИГИНАЛА**



**Приложение № 5**

A large, stylized handwritten signature in black ink, consisting of a large loop followed by a long, sweeping stroke.A handwritten signature in black ink, positioned over a circular stamp. The stamp contains some illegible text and a star-like symbol. To the left of the signature is another smaller handwritten mark.

<b>TEST REPORT</b> <b>IEC 60947-3</b> <b>Low-voltage switchgear and controlgear</b> <b>Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units</b>	
Report Reference No.....	306906-1
Tested by (name and signature).....	Roger Larsson <i>Roger Larsson</i>
Approved by (name and signature) ..	Åke Leander <i>Åke Leander</i>
Date of issue.....	11 September 2003
CB Testing Laboratory.....	INTERTEK SEMKO AB
Address.....	P.O. Box 1103, Torshamnsgatan 43, SE - 164 22 Kista, Sweden
Testing location/procedure .....	CBTL <input checked="" type="checkbox"/> SMT <input type="checkbox"/> TMP <input type="checkbox"/>
Applicant's Name.....	Chint Group Corporation
Address.....	Zhengtai Bldg., Liushi Industrial Zone Wenzhou 325604, CHINA
<b>Test specification</b>	
Standard .....	IEC 60947-3 : 2001-05 (Consolidated Ed. 2.1)
Test procedure.....	CB Scheme
Non-standard test method.....	N/A
Test Report Form No.....	IEC60947_3_A/02-12
TRF Originator .....	
Master TRF.....	Dated 2002-12
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Test item description.....	Switch/disconnector
Trade Mark .....	<b>CHINT</b>
Manufacturer .....	Chint Group Corporation, Chint High-tech Industrial Zone North Baixiang, Wenzhou, Zhejiang, CHINA
Model/Type reference.....	NH2-100
Rating(s).....	230V; 100A(32, 63, 100A).



ВЯРНО С ОРЪЖИВАТА

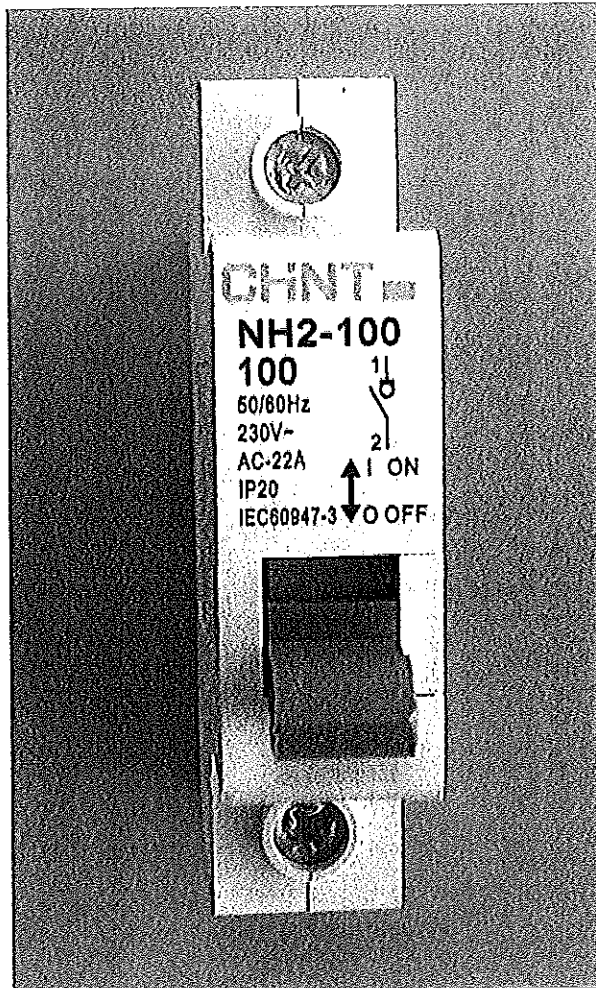
*Åke Leander*

TRF:IEC60947\_3A

Intertek Semko AB

Torshamnsgatan 43, Box 1103, SE-164 22 Kista, Sweden  
 Telephone +46 8 750 00 00, Fax +46 8 750 60 30, www.sweden.intertek-etlsemko.com  
 Registered in Sweden: No SE556024059901, Registered office: As address

Copy of marking plate



*[Handwritten signature]*

Summary of testing:

Number of tests for test procedure, according to clause 8.3.2.1.3, table 11, table 13 and table 14

No. of poles	In(A)	Test sequence and number of samples				
		I	II	III	IV	V
1P	100	1	1	1	-	-
1P	32	-	-	1	-	-

TRF:IEC60947\_3A

**ВЕРНО С ОРИГИНАЛОМ**

*[Handwritten signature]*



**Test items particulars:**

- method of operation.....: Dependent manual operation
- number of poles.....: 1
- kind of current.....: AC
- number of phases.....: 1
- rated frequency (Hz).....: 50/60
- number of positions of the main contacts.....: 2

**Rated and limiting values, main circuit:**

- rated operational voltage  $U_e$  (V).....: 230
- rated insulation voltage  $U_i$  (V).....: 500
- rated impulse withstand voltage  $U_{imp}$  (kV).....: N / A
- conventional free air thermal current  $I_{th}$  (A).....: 100
- conventional enclosed thermal current  $I_{the}$  (A).....: N / A
- rated operational current  $I_e$  (A).....: 32, 63, 100
- rated uninterrupted current  $I_u$  (A).....: 32, 63, 100
- utilization category.....: AC-22A

**Short-circuit characteristic:**

- rated short-time withstand current  $I_{cw}$ .....: 12 $I_e$ , 1s
- rated short-time making capacity  $I_{cm}$ .....: 28,4 $I_e$  (peak value)
- rated conditional short-circuit current.....: N / A

**Rated and limiting values, auxiliary circuits:**

- rated operational voltage (V).....: N / A
- rated frequency (Hz).....: N / A
- number of circuits.....: N / A
- number and kind of contact elements.....: N / A

**Co-ordination of short-circuit protective devices.....: N / A**

- kind of protective device.....: N / A

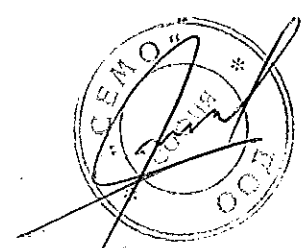
**Possible test case verdicts**

- Test case does not apply to the test object.....: N/A
- Test item does meet the requirement.....: P(ass)
- Test item does not meet the requirement.....: F(all)

**Testing**

- Date of receipt of test item.....: 2003-05-10
- Date(s) of performance of test.....: 2003-07-10 - 2003-09-10

**ВЕРНО С ОРИГИНАЛОМ**



**General remarks:**

**General remarks**

**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 IEC60067-1.**

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.

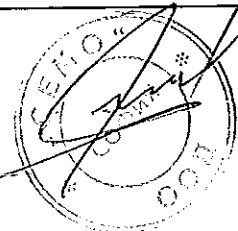
"(see appended table)" refers to a table appended to the report.

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

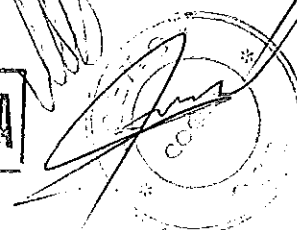
**General product information:**



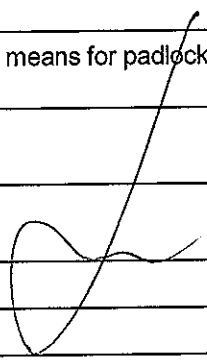
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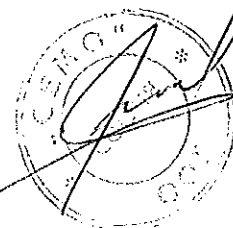
IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
5.2	<b>MARKING</b>		
	Marking on equipment itself or on nameplate or nameplates attached to the equipment and legible from the front after mounting		
	- indication of the open and closed position	ON and OFF	P
	- suitability for isolation		P
	- disconnectors AC-20 and DC-20 only: marked "Do not operate under load"		N/A
	Marking on equipment not needed to be visible after mounting:		
	- manufacturer's name or trademark	<b>CHNT</b>	P
	- type designation or serial number	NH2-100	P
	- rated operational current (A)	100	P
	- rated operational voltage (V)	230	P
	- utilization category	AC-22A	P
	- rated frequency	50/60	P
	- manufacturer's claim for compliance with IEC 60947-3	IEC60947-3	P
	- degree of protection	IP20	P
	Marking on fuse-combination units:		
	- fuse type		N/A
	- maximum rated current		N/A
	- power loss of the fuse-link		N/A
	Identification of terminals:		
	- line terminals	The connection is immaterial	N/A
	- load terminals	The connection is immaterial	N/A
	- neutral pole terminal		N/A
	- protective earth terminal		N/A
	Data in the manufacturer's published information:		
	- rated insulation voltage (V)	500	P
	- rated impulse withstand voltage for equipment suitable for isolation or when determined		N/A
	- pollution degree, if different from 3		N/A
	- rated duty	Uninterrupted duty	P
	- rated short-time withstand current and duration	12Ie, 1s	P
	- rated short-circuit making capacity	28,4Ie (peak value)	P
	- rated conditional short-circuit current		N/A
7.1	<b>CONSTRUCTION</b>		
7.1.1	Materials		



IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
	Resistance to abnormal heat and fire (according to 7.1.1.1 of IEC 60947-1) of insulating current-carrying parts		P
7.1.2	Current-carrying parts and their connection		
7.1.3	Clearances and creepage distances:		
	Clearances distances:		
	- Uimp is given as:	Not given but tested acc.4kV	
	- max. value of rated operational voltage to earth	230V	
	- nominal voltage of supply system:	230V	
	- overvoltage category:	III	
	- pollution degree:	3	
	- field-in or homogeneous:	Field-in	
	- minimum clearances (mm):	3	
	- measured clearances (mm):	>3	P
	Creepage distances		
	Pollution degree .....	3	
	- rated insulation voltage Ui (V)	500	
	- pollution degree	3	
	- comparative tracking index (V)	175	
	- material group	IIIa	
	Minimum creepage distances (mm)	8	
	Measured creepage distances (mm)	>8	P
7.1.4	Actuator		
7.1.4.1	Insulation		P
7.1.4.2	Direction of movement		P
7.1.5 of Part 1	Indication of contact position		
7.1.5.1	Indicating means		P
7.1.5.2	Indication by the actuator		P
7.1.6	Additional safety requirements for equipment suitable for isolation		
7.1.6.1	Additional constructional requirements for equipment suitable for isolation (Ue > 50 V):		P
	- marking according to 5.2.1b		P
	- indication of the position of the contacts		P
	- construction of the actuating mechanism		P
	- minimum clearances across open contacts (see Table 13, Part 1) (mm) .....	3	
	- measured clearances (mm) .....	>4	P
	- test Uimp across gap (kV) .....	4,0	P

IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
7.1.6.2	Supplementary requirements for equipment with provision for electrical interlocking with contactors or circuit-breakers:		
	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: $\geq 20$ 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
7.1.6.3	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
7.1.7 of Part 1	Terminals		
7.1.7.1	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

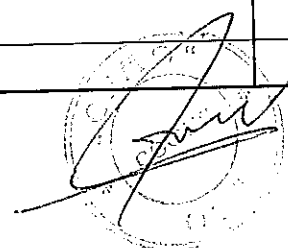
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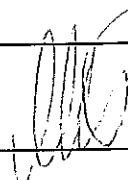
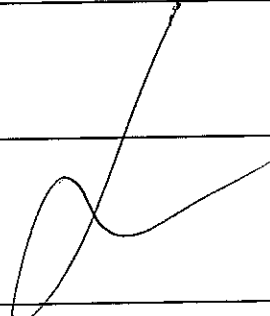


IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict

8.2.4	Mechanical properties of terminals		
	Mechanical strength of terminals		
	Maximum cross-sectional area of conductor (mm <sup>2</sup> ) .....	35	
	Diameter of thread (mm) .....	6	
	Torque (Nm) .....	2,5	
	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 <sup>2</sup> ) .....	6	
	Number of conductor of the smallest cross section .....	2	
	Diameter of bushing hole (mm) .....	9,5	
	height between the equipment and the platen(mm) :	279	
	Mass at the conductor(s) (kg) .....	1,4	
	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. ....	80	
	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 <sup>2</sup> ) .....	35	
	Number of conductor of the largest cross section :	1	
	Diameter of bushing hole (mm) .....	14,3	
	height between the equipment and the platen(mm) :	318	
	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 and smallest cross-sectional area (mm <sup>2</sup> ) .....	35/4	
	Number of conductor of the smallest cross section, number of conductor of the largest cross section . :	1/1	
	Diameter of bushing hole (mm) .....	14,3/9,5	
	height between the equipment and the platen(mm) :	318/279	

IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
	Mass at the conductor(s) (kg) .....	6,8/0,9	
	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.....	190/80	
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P
7.1.7.2	Connection capacity		
	Type of conductors .....	Rigid-solid or stranded or flexible cable	P
	Minimum cross-sectional area of conductor (mm <sup>2</sup> ) :	4	P
	Maximum cross-sectional area of conductor (mm <sup>2</sup> ) .....	35	P
	Number of conductors simultaneously connectable to the terminal .....	2 for 4mm <sup>2</sup> 1 for 35mm <sup>2</sup>	P
7.1.7.3	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
7.1.7.4	Terminal identification and marking		
	Terminal intended exclusively for the neutral conductor		N/A
	Protective earth terminal		N/A
	Other terminals		P
7.1.8	Additional requirements for equipment provided with a neutral pole		
	Marking of neutral pole		N/A
	The switched neutral pole does not break before and does not make after the other poles		N/A
	Conventional thermal current of neutral pole		N/A
7.1.9	Provisions for protective earthing		
7.1.9.1	The exposed conductive parts are electrically interconnected and connected to a protective earth terminal		N/A
7.1.9.2	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
7.1.9.3	Protective earth terminal marking and identification		N/A



IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
7.1.10	Enclosure for equipment		
7.1.10.1	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
	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
7.1.10.2	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
7.1.11	Degree of protection of enclosed equipment		
	Degree of protection ..... : IP20		P

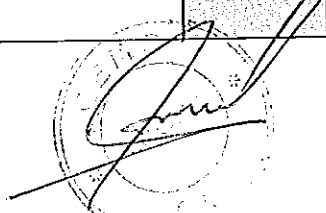
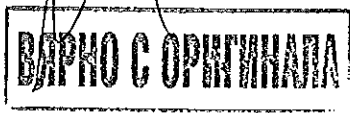
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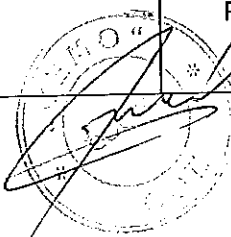


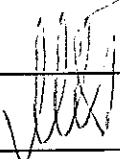
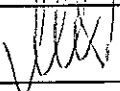
IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict

8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS -1 sample: 1 pole, 100A		
8.3.3.1	Temperature-rise		
	ambient temperature 10-40 °C .....	26	
	test enclosure W x H x D (mm x mm x mm) .....	--	
	material of enclosure .....	--	
	Main circuits, test conditions:		
	- conventional thermal current I <sub>th</sub> (A) .....	100	
	- conventional enclosed thermal current I <sub>the</sub> (A) ..	--	
	- cable/busbar cross-section (mm <sup>2</sup> ) / length (mm) .:	35/2	
	Fuse-link details (fuse-combination units only):		
	- manufacturer's name, trademark or identification mark .....	--	
	- manufacturer's model or type reference .....	--	
	- rated current (A) .....	--	
	- power loss (W) .....	--	
	- rated breaking capacity (kA) .....	--	
	Temperature-rise of phase poles	(see appended table)	P
	Temperature-rise of neutral pole (if applicable)	(see appended table)	N/A
	Temperature-rise of accessible parts	(see appended table)	P
	Auxiliary circuits, test conditions:		
	- rated operation current (A) .....	--	
	- cable cross-section (mm <sup>2</sup> ) .....	--	
	Temperature-rise of terminals	(see appended table)	N/A
	Temperature-rise of accessible parts	(see appended table)	N/A
8.3.3.2	Test of dielectric properties, impulse withstand voltage (U <sub>imp</sub> indicated):		
	- rated impulse withstand voltage (kV) .....		
	- test U <sub>imp</sub> main circuits (kV) .....		N/A
	- test U <sub>imp</sub> auxiliary circuits (kV) .....		N/A
	- test U <sub>imp</sub> on open main contacts (equipment suitable for isolating) (kV) .....		N/A
	Test of dielectric properties, dielectric withstand voltage (U <sub>imp</sub> not indicated):		
	- rated insulation voltage (V) .....	500	
	- main circuits, test voltage for 1 min. (V) .....	2500	P
	- control and auxiliary circuits, test voltage for 1 min. (V) .....		N/A
8.3.3.3	Making and breaking capacity		
	- utilization category .....	AC-22A	

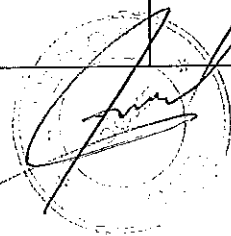


IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
	- rated operational voltage $U_e$ (V) .....	230	
	- rated operational current $I_e$ (A) or power (kW) ...	100A	
	Conditions for make/break operations or make operation, AC-23A and AC-23B only:		
	- test voltage, $U = 1,05 U_e$ ..... (V):	L1: L2: L3:	N/A
	- test current, $I = x I_e$ ..... (A):	L1: L2: L3:	N/A
	- power factor.....	L1: L2: L3:	N/A
	Conditions for break operation, AC-23A and AC-23B only:		
	- test voltage, $U = 1,05 U_e$ ..... (V):	L1: L2: L3:	N/A
	- test current, $I = \dots\dots\dots x I_e$ (A):	L1: L2: L3:	N/A
	- power factor .....	L1: L2: L3:	N/A
	Conditions for make/break operations, other than AC-23A/B:		
	- test voltage, $U = 1,05 U_e$ ..... (V):	L1: 244 L2: -- L3: --	P
	- test current, $I = 3 x I_e$ ..... (A):	L1: 300,5 L2: -- L3: --	P
	- power factor, 0,65.....	L1: 0,63 L2: -- L3: --	P
	Number of make/break or make and break operations .....	5	P
	- transient recovery voltage (V) .....	L1: 244 L2: -- L3: --	P
	- recovery voltage duration ( $\geq 50$ ms)		P
	- current duration (ms) .....	1000	P
	- time interval between operations (s) .....	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		
	- oscillatory frequency (kHz) .....	80,7	
	- measured oscillatory frequency (kHz) .....	L1: 81,2 L2: -- L3: --	P



IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
	- factor $\gamma$ .....	L1: 1,10 L2: -- L3: --	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
8.3.3.4	Dielectric verification		
	test voltage (2 Ue) with a minimum of 1000V r.m.s. for 1 min. (V) .....	1000V	P
	No flashover or breakdown		P
8.3.3.5	Leakage current		
	test voltage (1,1 Ue) (V) .....	253	
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): $\leq 0,5$ mA/pole ....		N/A
	Leakage current (other utilization categories): $\leq 2$ mA/pole) .....	<0,2mA	P
8.3.3.6	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....	35	
	- test current Ie (A) .....	100	
	Temperature-rise of main circuit terminals ( $\leq 80$ K) .....	43	P
8.3.3.7	Strength of actuator mechanism (switch-disconnectors and Ue > 50 V only)		
	- actuator type (fig.) .....	Figure 1b	
	- actuating force for opening (N) .....	17	
	- test force with blocked main contacts (N) .....	51	
	Position indicator does not show OFF-position after capture of test force at blocked main contacts		P

8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY -1 sample: 1 pole, 100A		
8.3.4.1	Operational performance test		
	- utilization category .....	AC-22A	
	- rated operational voltage (V) .....	230	
	- rated operational current (A) .....	100	
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....	L1: 240 L2: -- L3: --	P
	- test current (A) .....	L1: 100,5 L2: -- L3: --	P



IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
	- power factor/time constant .....	L1: 0,78 L2: -- L3: --	P
	Number of cycles with current .....	1500	P
	Number of cycles without current .....	8500	P
	First test sequence (with/without current) .....	8500	P
	Second test sequence (with/without current) .....	1500	P
	- time interval between first and second test sequence .....	30s	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
8.3.1.1.6	Condition of the equipment after the operational performance test		P
8.3.4.2	Dielectric verification		
	test voltage (2 Ue) with a minimum of 1000V r.m.s. for 1 min. (V) .....	1000V	P
	No flashover or breakdown		P
8.3.4.3	Leakage current		
	test voltage (1,1 Ue) (V) .....	253	
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): $\leq 0,5$ mA/pole .....		N/A
	Leakage current (other utilization categories): $\leq 2$ mA/pole) .....	$<0,2$ mA	P
8.3.4.4	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....	35	
	- test current Ie (A) .....	100	
	Temperature-rise of main circuit terminals( $\leq 80$ K) :	44	P

8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY -1 sample: 1 pole, 100A		
8.3.5.1	Short-time withstand current test		
	Rated short-time withstand current Icw (A) ( $\geq 12I_e$ max) .....	1200	
	test voltage (V) .....	L1: 244 L2: -- L3: --	P
	r.m.s. test current (A) .....	L1: 1210 L2: -- L3: --	P
	peak test current (A) .....	L1: 1710 L2: -- L3: --	P

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Cl.	Requirement – Test	Result	Verdict
	power factor/time constant .....	L1: 0,90 L2: -- L3: --	P
	test duration (s) .....	1,05	P
8.3.5.1.5	Behaviour of the equipment during the test		P
8.3.5.1.6	Conditions of the equipment after the test		P
8.3.5.2	Short-circuit making capacity		
	Rated short-circuit making capacity I <sub>cm</sub> (A) .....	2000(r.m.s.)	
	test voltage (1.05xU <sub>e</sub> ) ..... (V):	L1: 240 L2: -- L3: --	P
	r.m.s. test current (A) .....	L1: 2050 L2: -- L3: --	P
	power factor/time constant .....	L1: 0,90 L2: -- L3: --	P
	current duration (s) .....	0,20	P
	1 <sup>st</sup> making cycle: maximum peak test current (kA) :	2,90	P
	2 <sup>nd</sup> making cycle: maximum peak test current (kA) : .....	2,90	P
	Time interval between the cycles	3min	P
8.3.5.2.5	Behaviour of the equipment during the test		P
8.3.5.2.6	Conditions of the equipment after the test		P
8.3.5.3	Dielectric verification		
	test voltage (2 U <sub>e</sub> ) with a minimum of 1000V r.m.s. for 1 min. (V) .....	1000V	
	No flashover or breakdown		P
8.3.5.4	Leakage current		
	test voltage (1,1 U <sub>e</sub> ) (V) .....	253	P
	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 .....	<0,2mA	P
8.3.5.5	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....	35	
	- test current I <sub>e</sub> (A) .....	100	
	Temperature-rise of main circuit terminals(≤ 80 K) :	45	P

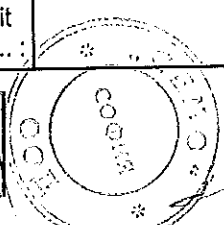
ВЯРНО С ОРЪГИНАЛА

IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY -1 sample: 1 pole, 32A		
8.3.5.1	Short-time withstand current test		
	Rated short-time withstand current $I_{cw}$ (A) ( $\geq 12I_e$ max) .....	384	
	test voltage (V) .....	L1: 244 L2: -- L3: --	P
	r.m.s. test current (A) .....	L1: 390 L2: -- L3: --	P
	peak test current (A) .....	L1: 560 L2: -- L3: --	P
	power factor/time constant .....	L1: 0,90 L2: -- L3: --	P
	test duration (s) .....	1,09	P
8.3.5.1.5	Behaviour of the equipment during the test		P
8.3.5.1.6	Conditions of the equipment after the test		P
8.3.5.2	Short-circuit making capacity		
	Rated short-circuit making capacity $I_{cm}$ (A) .....	640(r.m.s.)	
	test voltage ( $1.05 \times U_e$ ) .....	L1: 244 L2: -- L3: --	P
	r.m.s. test current (A) .....	L1: 650 L2: -- L3: --	P
	power factor/time constant .....	L1: 0,90 L2: -- L3: --	P
	current duration (s) .....	0,2	P
	1 <sup>st</sup> making cycle: maximum peak test current (kA) :	0,91	P
	2 <sup>nd</sup> making cycle: maximum peak test current (kA) .....	0,92	P
	Time interval between the cycles	3min	P
8.3.5.2.5	Behaviour of the equipment during the test		P
8.3.5.2.6	Conditions of the equipment after the test		P
8.3.5.3	Dielectric verification		
	test voltage ( $2 U_e$ ) with a minimum of 1000V r.m.s. for 1 min. (V) .....	1000V	
	No flashover or breakdown		P
8.3.5.4	Leakage current		

IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
	test voltage (1,1 Ue) (V) .....	253	P
	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 .....	<0,2mA	P
8.3.5.5	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....		
	- test current Ie (A) .....		
	Temperature-rise of main circuit terminals(≤ 80 K) :		N/A

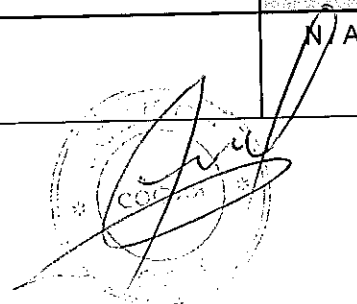
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT		
	Protective device details:		
	- manufacturer's name, trademark or identification mark .....		
	- manufacturer's model or type reference .....		
	- rated voltage (V) .....		
	- rated current (A) .....		
	- rated breaking capacity (kA) .....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

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IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
	- max. let-through current (kA) .....	L1: L2: L3:	N/A
	- Joule integral I <sup>2</sup> dt (A <sup>2</sup> s) .....	L1: L2: L3:	N/A
8.3.6.2.5	Behaviour of the equipment during the test		N/A
8.3.6.2.6	Conditions of the equipment after the test		N/A
8.3.6.3	Dielectric verification		
	test voltage (2 Ue) with a minimum of 1000V r.m.s. for 1 min. (V) .....		N/A
	No flashover or breakdown		N/A
8.3.6.4	Leakage current		
	test voltage (1,1 Ue) (V) .....		N/A
	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 .....		N/A
8.3.6.5	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....		
	- test current Ie (A) .....		
	Temperature-rise of main circuit terminals(≤ 80 K) :		N/A

8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY		
8.3.7.1	Overload test		
	ambient temperature 10-40 °C .....		
	test enclosure W x H x D (mm x mm x mm) .....		
	material of enclosure .....		
	test current 1,6xI <sub>th</sub> e or 1,6xI <sub>th</sub> h (A) .....		
	cable/busbar cross-section (mm <sup>2</sup> ) / length (mm) ..		
	Fuse-link details:		
	- manufacturer's name, trademark or identification mark .....		
	- rated current (A) .....		
	- power loss (W) .....		
	- rated breaking capacity (kA) .....		
	- time duration of the overload test (s) .....		
	Within 3 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed		N/A





IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
	The equipment has not undergone any impairment hindering such operation		N / A
8.3.7.2	Dielectric verification		
	test voltage (2 Ue) with a minimum of 1000V r.m.s. for 1 min. (V) .....		N / A
	No flashover or breakdown		N / A
8.3.7.3	Leakage current		
	test voltage (1,1 Ue) (V) .....		N / A
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) $\leq 0,5$ mA/pole .....		N / A
	Leakage current (other utilization categories) $\leq 2$ mA/pole .....		N / A
8.3.7.4	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....		
	- test current Ie (A) .....		
	Temperature-rise of main circuit terminals ( $\leq 80$ K) :		N / A

8.4	ELECTROMAGNETIC COMPATIBILITY TESTS		
8.4.1	Immunity (for equipment incorporating electronic circuits)		
7.3.2.2	Tests of table 6 .....	(see appended tables)	
	No unintentional separation or closing of contacts has occurred during these tests .....		N / A
8.4.2	Emission (for equipment incorporating electronic circuits)		
7.3.3.2	Tests of table 7 .....	(see appended tables)	
	No unintentional separation or closing of contacts has occurred during these tests .....		N / A

IEC 60 947-3				
TABLE: temperature rise measurements				
Temperature rise dT of part: For clause 8.3.3.1		Phase	dT (K)	Required dT (K)
1	Terminals for external connections	Max for all	37	70
2	Non-metallic handle	Max for all	7	25
3	Non-metallic parts intended to be touched but not hand-held	Max for all	19	40
For clause 8.3.3.6				
1	Terminals for external connections	Max for all	43	80
2	Non-metallic handle	Max for all	10	25
3	Non-metallic parts intended to be touched but not hand-held	Max for all	20	40
For clause 8.3.4.4				

IEC 60 947-3				
Cl.	Requirement – Test	Result		Verdict

1	Terminals for external connections	Max for all	44	80
2	Non-metallic handle	Max for all	10	25
3	Non-metallic parts intended to be touched but not hand-held	Max for all	21	40
For clause 8.3.5.5				
1	Terminals for external connections	Max for all	45	80
2	Non-metallic handle	Max for all	10	25
3	Non-metallic parts intended to be touched but not hand-held	Max for all	22	40

TABLE: Resistance to heat (Ball pressure test)

no.	Specimen					Verdict
	Description	Colour	Temp. °C	Impress diam. mm	Result diam. mm	
1	Enclosure	white	125	2,0	<1,0	P
2	Non-metallic mechanical parts	white	125	2,0	<1,0	P
3	Non-metallic handle	Blue	125	2,0	<1,0	P

TABLE: Resistance to fire (Glow wire test)

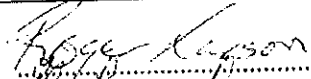
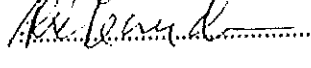
no.	Specimen							Verdict
	Description	Colour	Thick (mm)	Temp °C	burning after t (s)	drops	support burning	
1	Enclosure	white	2,5	960	-	No	No	P
2	Non-metallic mechanical parts	white	2,5	960	-	No	No	P
3	Non-metallic handle	Blue	2,5	850	-	No	No	P

TABLE: Resistance to tracking (tracking test)

no.	Specimen							Verdict
	Description	Colour	Drops (no.)	Voltage (V)	Burning	Current (A)	Result	
1	Enclosure	white	>50	175	-	-	No flashovers	P
2	Non-metallic mechanical parts	white	>50	175	-	-	No flashovers	P
3	Non-metallic handle	Blue	>50	175	-	-	No flashovers	P

ВЯРНО С ОПРИТНАТА



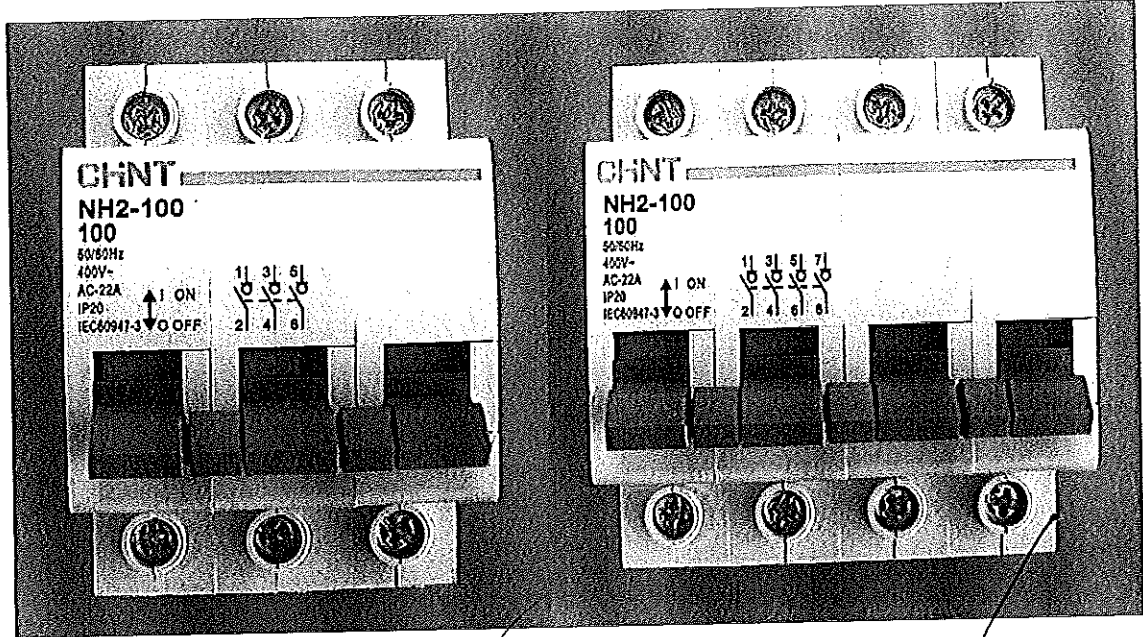
<b>TEST REPORT</b> <b>IEC 60947-3</b> <b>Low-voltage switchgear and controlgear</b> <b>Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units</b>	
Report Reference No. ....	306906-3
Tested by (name and signature).....	Roger Larsson 
Approved by (name and signature) ..:	Åke Leander 
Date of issue.....	11 september 2003
CB Testing Laboratory.....	INTERTEK SEMKO AB
Address.....	P.O. Box 1103, Torshamnsgatan 43, SE - 164 22 Kista, Sweden
Testing location/procedure .....	CBTL <input checked="" type="checkbox"/> SMT <input type="checkbox"/> TMP <input type="checkbox"/>
Applicant's Name.....	Chint Group Corporation
Address.....	Zhengtai Bldg., Liushi Industrial Zone Wenzhou 325604, CHINA
<b>Test specification</b>	
Standard .....	IEC 60947-3 : 2001-05 (Consolidated Ed. 2.1)
Test procedure.....	CB Scheme
Non-standard test method.....	N/A
Test Report Form No. ....	IEC60947_3_A/02-12
TRF Originator .....	
Master TRF .....	Dated 2002-12
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Test item description.....	Switch/disconnector
Trade Mark .....	<b>CHNT</b>
Manufacturer .....	Chint Group Corporation, Chint High-tech Industrial Zone North Baixiang, Wenzhou, Zhejiang, CHINA
Model/Type reference.....	NH2-100
Rating(s) .....	400V; 100A(32, 63, 100A).



TRF:IEC60947\_3A

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Copy of marking plate



Summary of testing:

Number of tests for test procedure, according to clause 8.3.2.1.3, table 11, table 13 and table 14

No. of poles	In(A)	Test sequence and number of samples				
		I	II	III	IV	V
4P	100	1	1	1	-	-
4P	32	-	-	1	-	-

Note: According to clause 8.3.2.1.3, test performed on switched four pole are deemed to cover also three switched pole devices.

**ВЯРНО С ОРИГИНАЛА**

**Test items particulars:**

- method of operation.....: Dependent manual operation
- number of poles.....: 3 and 4
- kind of current.....: AC
- number of phases.....: 3
- rated frequency (Hz).....: 50/60
- number of positions of the main contacts.....: 2

**Rated and limiting values, main circuit:**

- rated operational voltage  $U_e$  (V).....: 400
- rated insulation voltage  $U_i$  (V).....: 500
- rated impulse withstand voltage  $U_{imp}$  (kV).....: N / A
- conventional free air thermal current  $I_{th}$  (A).....: 100
- conventional enclosed thermal current  $I_{the}$  (A).....: N / A
- rated operational current  $I_e$  (A).....: 32, 63, 100
- rated uninterrupted current  $I_u$  (A).....: 32, 63, 100
- utilization category.....: AC-22A

**Short-circuit characteristic:**

- rated short-time withstand current  $I_{cw}$ .....: 12 $I_e$ , 1s
- rated short-time making capacity  $I_{cm}$ .....: 28,4 $I_e$  (peak value)
- rated conditional short-circuit current.....: N / A

**Rated and limiting values, auxiliary circuits:**

- rated operational voltage (V).....: N / A
- rated frequency (Hz).....: N / A
- number of circuits.....: N / A
- number and kind of contact elements.....: N / A

**Co-ordination of short-circuit protective devices.....: N / A**

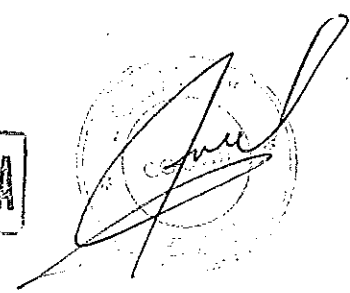
- kind of protective device.....: N / A

**Possible test case verdicts**

- Test case does not apply to the test object.....: N/A
- Test item does meet the requirement.....: P(ass)
- Test item does not meet the requirement.....: F(ail)

**Testing**

- Date of receipt of test item.....: 2003-05-10
- Date(s) of performance of test.....: 2003-07-10 - 2003-09-10



**General remarks:**

**General remarks**

**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.**

The test results presented in this report relate only to the object tested.

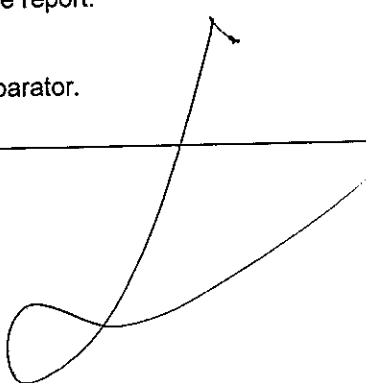
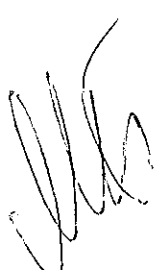
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"(see Enclosure #)" refers to additional information appended to the report.

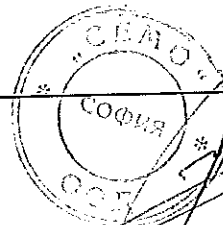
"(see appended table)" refers to a table appended to the report.

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

**General product information:**



**ВЯРНО С ОРИГИНАЛА**

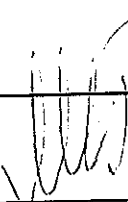
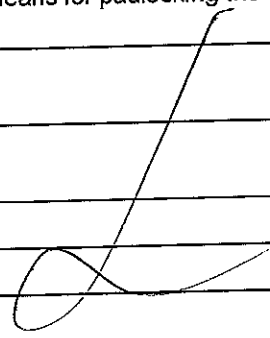


IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
5.2	MARKING		
	Marking on equipment itself or on nameplate or nameplates attached to the equipment and legible from the front after mounting		
	- indication of the open and closed position	ON and OFF	P
	- suitability for isolation		P
	- disconnectors AC-20 and DC-20 only: marked "Do not operate under load"		N/A
	Marking on equipment not needed to be visible after mounting:		
	- manufacturer's name or trademark	CHNT	P
	- type designation or serial number	NH2-100	P
	- rated operational current (A)	100	P
	- rated operational voltage (V)	400	P
	- utilization category	AC-22A	P
	- rated frequency		P
	- manufacturer's claim for compliance with IEC 60947-3	IEC60947-3	P
	- degree of protection	IP20	P
	Marking on fuse-combination units:		
	- fuse type		N/A
	- maximum rated current		N/A
	- power loss of the fuse-link		N/A
	Identification of terminals:		
	- line terminals	The connection is immaterial	N/A
	- load terminals	The connection is immaterial	N/A
	- neutral pole terminal		N/A
	- protective earth terminal		N/A
	Data in the manufacturer's published information:		
	- rated insulation voltage (V)	500	P
	- rated impulse withstand voltage for equipment suitable for isolation or when determined		N/A
	- pollution degree, if different from 3		N/A
	- rated duty	Uninterrupted duty	P
	- rated short-time withstand current and duration	12Ie, 1s	P
	- rated short-circuit making capacity	28,4Ie (peak value)	P
	- rated conditional short-circuit current		N/A
7.1	CONSTRUCTION		
7.1.1	Materials		

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Cl.	Requirement – Test	Result	Verdict
	Resistance to abnormal heat and fire (according to 7.1.1.1 of IEC 60947-1) of insulating current-carrying parts		P
7.1.2	Current-carrying parts and their connection		
7.1.3	Clearances and creepage distances:		
	Clearances distances:		
	- Uimp is given as:	Not given but tested acc.4kV	
	- max. value of rated operational voltage to earth	230V	
	- nominal voltage of supply system:	400V	
	- overvoltage category:	III	
	- pollution degree:	3	
	- field-in or homogeneous:	Field-in	
	- minimum clearances (mm):	3	
	- measured clearances (mm):	>3	P
	Creepage distances		
	Pollution degree .....	3	
	- rated insulation voltage Ui (V)	500	
	- pollution degree	3	
	- comparative tracking index (VTI)	175	
	- material group	IIIa	
	Minimum creepage distances (mm)	8	
	Measured creepage distances (mm)	>8	P
7.1.4	Actuator		
7.1.4.1	Insulation		P
7.1.4.2	Direction of movement		P
7.1.5 of Part 1	Indication of contact position		
7.1.5.1	Indicating means		P
7.1.5.2	Indication by the actuator		P
7.1.6	Additional safety requirements for equipment suitable for isolation		
7.1.6.1	Additional constructional requirements for equipment suitable for isolation (Ue > 50 V):		P
	- marking according to 5.2.1b		P
	- indication of the position of the contacts		P
	- construction of the actuating mechanism		P
	- minimum clearances across open contacts (see Table 13, Part 1) (mm) .....	3	
	- measured clearances (mm) .....	>4	P
	- test Uimp across gap (kV) .....	4.0	P


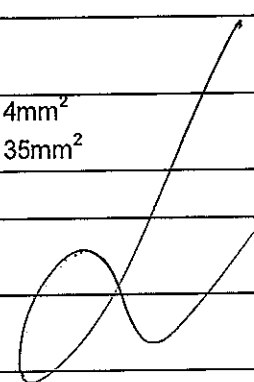


IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
7.1.6.2	Supplementary requirements for equipment with provision for electrical interlocking with contactors or circuit-breakers:		
	Auxiliary switch is rated according to IEC 60947-5-1 (unless the equipment is rated AC-23)		N/A
	Time interval between opening of the contacts of the auxiliary contact and the contacts of the main poles: $\geq 20$ 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
7.1.6.3	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
7.1.7 of Part 1	Terminals		
7.1.7.1	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

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Cl.	Requirement – Test	Result	Verdict

8.2.4	Mechanical properties of terminals		
	Mechanical strength of terminals		
	Maximum cross-sectional area of conductor (mm <sup>2</sup> ) .....	35	
	Diameter of thread (mm) .....	6	
	Torque (Nm) .....	2,5	
	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 <sup>2</sup> ) .....	6	
	Number of conductor of the smallest cross section .....	2	
	Diameter of bushing hole (mm) .....	9,5	
	height between the equipment and the platen(mm) :	279	
	Mass at the conductor(s) (kg) .....	1,4	
	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. ....	80	
	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 <sup>2</sup> ) .....	35	
	Number of conductor of the largest cross section :	1	
	Diameter of bushing hole (mm) .....	14,3	
	height between the equipment and the platen(mm) :	318	
	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 and smallest cross-sectional area (mm <sup>2</sup> ) .....	35/4	
	Number of conductor of the smallest cross section, number of conductor of the largest cross section . :	1/1	
	Diameter of bushing hole (mm) .....	14,3/9,5	
	height between the equipment and the platen(mm) :	318/279	

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Cl.	Requirement – Test	Result	Verdict
	Mass at the conductor(s) (kg) .....	6,8/0,9	
	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.....	190/80	
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P
7.1.7.2	Connection capacity		
	Type of conductors .....	Rigid-solid or stranded or flexible cable	P
	Minimum cross-sectional area of conductor (mm <sup>2</sup> ) :	4	P
	Maximum cross-sectional area of conductor (mm <sup>2</sup> ) .....	35	P
	Number of conductors simultaneously connectable to the terminal .....	2 for 4mm <sup>2</sup> 1 for 35mm <sup>2</sup>	P
7.1.7.3	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
7.1.7.4	Terminal identification and marking		
	Terminal intended exclusively for the neutral conductor		N/A
	Protective earth terminal		N/A
	Other terminals		P
7.1.8	Additional requirements for equipment provided with a neutral pole		
	Marking of neutral pole		N/A
	The switched neutral pole does not break before and does not make after the other poles		N/A
	Conventional thermal current of neutral pole		N/A
7.1.9	Provisions for protective earthing		
7.1.9.1	The exposed conductive parts are electrically interconnected and connected to a protective earth terminal		N/A
7.1.9.2	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
7.1.9.3	Protective earth terminal marking and identification		N/A

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Cl.	Requirement – Test	Result	Verdict
7.1.10	Enclosure for equipment		
7.1.10.1	Design		
	When the enclosure is opened, all parts requiring access for installation and maintenance are readily accessible	<i>[Handwritten signature]</i>	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
	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	<i>[Handwritten signature]</i>	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
7.1.10.2	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
7.1.11	Degree of protection of enclosed equipment		
	Degree of protection ..... : IP20		P

**ВАРНО С ОРЪЖИНАТА**

IEC 60 947-3			
Cl.	Requirement – Test	Result	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS -1 sample: 2 poles, 100A		
8.3.3.1	Temperature-rise		
	ambient temperature 10-40 °C .....	26	
	test enclosure W x H x D (mm x mm x mm) .....	--	
	material of enclosure .....	--	
	Main circuits, test conditions:		
	- conventional thermal current I <sub>th</sub> (A) .....	100	
	- conventional enclosed thermal current I <sub>the</sub> (A) ..	--	
	- cable/busbar cross-section (mm <sup>2</sup> ) / length (mm) .	35/2	
	Fuse-link details (fuse-combination units only):		
	- manufacturer's name, trademark or identification mark .....	--	
	- manufacturer's model or type reference .....	--	
	- rated current (A) .....	--	
	- power loss (W) .....	--	
	- rated breaking capacity (kA) .....	--	
	Temperature-rise of phase poles	(see appended table)	P
	Temperature-rise of neutral pole (if applicable)	(see appended table)	N/A
	Temperature-rise of accessible parts	(see appended table)	P
	Auxiliary circuits, test conditions:		
	- rated operation current (A) .....	--	
	- cable cross-section (mm <sup>2</sup> ) .....	--	
	Temperature-rise of terminals	(see appended table)	N/A
	Temperature-rise of accessible parts	(see appended table)	N/A
8.3.3.2	Test of dielectric properties, impulse withstand voltage (U <sub>imp</sub> indicated):		
	- rated impulse withstand voltage (kV) .....		
	- test U <sub>imp</sub> main circuits (kV) .....		N/A
	- test U <sub>imp</sub> auxiliary circuits (kV) .....		N/A
	- test U <sub>imp</sub> on open main contacts (equipment suitable for isolating) (kV) .....		N/A
	Test of dielectric properties, dielectric withstand voltage (U <sub>imp</sub> not indicated):		
	- rated insulation voltage (V) .....	500	
	- main circuits, test voltage for 1 min. (V) .....	2500	P
	- control and auxiliary circuits, test voltage for 1 min. (V) .....		N/A
8.3.3.3	Making and breaking capacity		
	- utilization category .....	AC-22A	

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Cl.	Requirement – Test	Result	Verdict
	- rated operational voltage $U_e$ (V) .....	400	
	- rated operational current $I_e$ (A) or power (kW) ...	100A	
	Conditions for make/break operations or make operation, AC-23A and AC-23B only:		
	- test voltage, $U = 1,05 U_e$ ..... (V):	L1: L2: L3:	N/A
	- test current, $I = x I_e$ ..... (A):	L1: L2: L3:	N/A
	- power factor.....	L1: L2: L3:	N/A
	Conditions for break operation, AC-23A and AC-23B only:		
	- test voltage, $U = 1,05 U_e$ ..... (V):	L1: L2: L3:	N/A
	- test current, $I = \dots \dots \dots x I_e$ (A):	L1: L2: L3:	N/A
	- power factor .....	L1: L2: L3:	N/A
	Conditions for make/break operations, other than AC-23A/B:		
	- test voltage, $U = 1,05 U_e$ ..... (V):	L1: 422 L2: 422 L3: 423	P
	- test current, $I = 3 x I_e$ ..... (A):	L1: 300,6 L2: 300,6 L3: 300,8	P
	- power factor, 0,65.....	L1: 0,63 L2: 0,63 L3: 0,63	P
	Number of make/break or make and break operations .....	5	P
	- transient recovery voltage (V) .....	L1: 422 L2: 422 L3: 423	P
	- recovery voltage duration ( $\geq 50$ ms)		P
	- current duration (ms) .....	1000	P
	- time interval between operations (s) .....	30	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		
	- oscillatory frequency (kHz) .....	80,7	
	- measured oscillatory frequency (kHz) .....	L1: 81,1 L2: 81,1 L3: 81,1	

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Cl.	Requirement – Test	Result	Verdict
	- factor $\gamma$ .....	L1: 1,05 L2: 1,05 L3: 1,05	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
8.3.3.4	Dielectric verification		
	test voltage (2 Ue) with a minimum of 1000V r.m.s. for 1 min. (V) .....	1000V	P
	No flashover or breakdown		P
8.3.3.5	Leakage current		
	test voltage (1,1 Ue) (V) .....	440	
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): $\leq 0,5$ mA/pole .....		N/A
	Leakage current (other utilization categories): $\leq 2$ mA/pole) .....	<0,2mA	P
8.3.3.6	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....	35	
	- test current Ie (A) .....	100	
	Temperature-rise of main circuit terminals ( $\leq 80$ K) .....	45	P
8.3.3.7	Strength of actuator mechanism (switch-disconnectors and Ue > 50 V only)		
	- actuator type (fig.) .....	Figure 1b	
	- actuating force for opening (N) .....	55	
	- test force with blocked main contacts (N) .....	150	
	Position indicator does not show OFF-position after capture of test force at blocked main contacts		P

8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY -1 sample: 4 poles, 100A		
8.3.4.1	Operational performance test		
	- utilization category .....	AC-22A	
	- rated operational voltage (V) .....	400	
	- rated operational current (A) .....	100	
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....	L1: 422 L2: 422 L3: 422	P
	- test current (A) .....	L1: 100,5 L2: 100,4 L3: 100,5	P

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Cl.	Requirement – Test	Result	Verdict
	- power factor/time constant .....	L1: 0,78 L2: 0,78 L3: 0,78	P
	Number of cycles with current .....	1500	P
	Number of cycles without current .....	8500	P
	First test sequence (with/without current) .....	8500	P
	Second test sequence (with/without current) .....	1500	P
	- time interval between first and second test sequence .....	30s	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
8.3.1.1.6	Condition of the equipment after the operational performance test		P
8.3.4.2	Dielectric verification		
	test voltage (2 Ue) with a minimum of 1000V r.m.s. for 1 min. (V) .....	1000V	P
	No flashover or breakdown		P
8.3.4.3	Leakage current		
	test voltage (1,1 Ue) (V) .....	440	
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): $\leq 0,5$ mA/pole .....		N/A
	Leakage current (other utilization categories): $\leq 2$ mA/pole .....	$<0,2$ mA	P
8.3.4.4	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....	35	
	- test current Ie (A) .....	100	
	Temperature-rise of main circuit terminals ( $\leq 80$ K) :	46	P

8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY -1 sample: 4 poles, 100A		
8.3.5.1	Short-time withstand current test		
	Rated short-time withstand current I <sub>sw</sub> (A) ( $\geq 12I_e$ max) .....	1200	
	test voltage (V) .....	L1: 422 L2: 422 L3: 422	P
	r.m.s. test current (A) .....	L1: 1210 L2: 1210 L3: 1210	P
	peak test current (A) .....	L1: 1720 L2: 1720 L3: 1720	P



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Cl.	Requirement – Test	Result	Verdict
	power factor/time constant .....	L1: 0,90 L2: 0,90 L3: 0,90	P
	test duration (s) .....	1,07	P
8.3.5.1.5	Behaviour of the equipment during the test		P
8.3.5.1.6	Conditions of the equipment after the test		P
8.3.5.2	Short-circuit making capacity		
	Rated short-circuit making capacity I <sub>cm</sub> (A) .....	2000(r.m.s.)	
	test voltage (1.05xU <sub>e</sub> ) ..... (V):	L1: 422 L2: 422 L3: 422	P
	r.m.s. test current (A) .....	L1: 2050 L2: 2050 L3: 2050	P
	power factor/time constant .....	L1: 0,90 L2: 0,90 L3: 0,90	P
	current duration (s) .....	0,25	P
	1 <sup>st</sup> making cycle: maximum peak test current (kA) :	2,93	P
	2 <sup>nd</sup> making cycle: maximum peak test current (kA) : .....	2,92	P
	Time interval between the cycles	3min	P
8.3.5.2.5	Behaviour of the equipment during the test		P
8.3.5.2.6	Conditions of the equipment after the test		P
8.3.5.3	Dielectric verification		
	test voltage (2 U <sub>e</sub> ) with a minimum of 1000V r.m.s. for 1 min. (V) .....	1000V	
	No flashover or breakdown		P
8.3.5.4	Leakage current		
	test voltage (1,1 U <sub>e</sub> ) (V) .....	440	P
	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 .....	<0,2mA	P
8.3.5.5	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....	35	
	- test current I <sub>e</sub> (A) .....	100	
	Temperature-rise of main circuit terminals(≤ 80 K) :	49	P

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Cl.	Requirement – Test	Result	Verdict
8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY -1 sample: 4 poles, 32A		
8.3.5.1	Short-time withstand current test		
	Rated short-time withstand current $I_{cw}$ (A) ( $\geq 12I_e$ max) .....	384	
	test voltage (V) .....	L1: 422 L2: 422 L3: 422	P
	r.m.s. test current (A) .....	L1: 390 L2: 390 L3: 390	P
	peak test current (A) .....	L1: 560 L2: 560 L3: 560	P
	power factor/time constant .....	L1: 0,90 L2: 0,90 L3: 0,90	P
	test duration (s) .....	1,04	P
8.3.5.1.5	Behaviour of the equipment during the test		P
8.3.5.1.6	Conditions of the equipment after the test		P
8.3.5.2	Short-circuit making capacity		
	Rated short-circuit making capacity $I_{cm}$ (A) .....	640(r.m.s.)	
	test voltage ( $1.05xU_e$ ) .....	L1: 422 L2: 422 L3: 422	P
	r.m.s. test current (A) .....	L1: 650 L2: 650 L3: 650	P
	power factor/time constant .....	L1: 0,90 L2: 0,90 L3: 0,90	P
	current duration (s) .....	0,22	P
	1 <sup>st</sup> making cycle: maximum peak test current (kA) :	0,93	P
	2 <sup>nd</sup> making cycle: maximum peak test current (kA) .....	0,92	P
	Time interval between the cycles	3min	P
8.3.5.2.5	Behaviour of the equipment during the test		P
8.3.5.2.6	Conditions of the equipment after the test		P
8.3.5.3	Dielectric verification		
	test voltage ( $2 U_e$ ) with a minimum of 1000V r.m.s. for 1 min. (V) .....	1000V	
	No flashover or breakdown		P
8.3.5.4	Leakage current		

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Cl.	Requirement – Test	Result	Verdict
	test voltage (1,1 Ue) (V) .....	440	P
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) $\leq 0,5$ mA/pole .....		N/A
	Leakage current (other utilization categories) $\leq 2,0$ mA/pole .....	<0,2mA	P
8.3.5.5	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....		
	- test current I <sub>e</sub> (A) .....		
	Temperature-rise of main circuit terminals( $\leq 80$ K) :		N/A
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT		
	Protective device details:		
	- 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	Fuse protected short-circuit withstand		
	test voltage (1,05 Ue) (V) .....	L1: L2: L3:	N/A
	test current (kA) .....	L1: L2: L3:	N/A
	rated frequency (Hz) .....		N/A
	power factor .....		N/A
	Time constant (ms) .....		N/A
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....	L1: L2: L3:	N/A
	- Joule integral I <sup>2</sup> dt (A <sup>2</sup> s) .....	L1: L2: L3:	N/A
	Fuse protected short-circuit making		
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....		N/A
	- point at which the measurement is made .....		N/A
	- test speed during the fuse protected short-circuit making (m/s) .....		N/A

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Cl.	Requirement – Test	Result	Verdict
	- max. let-through current (kA) .....	L1: L2: L3:	N/A
	- Joule integral I <sup>2</sup> dt (A <sup>2</sup> s) .....	L1: L2: L3:	N/A
8.3.6.2.5	Behaviour of the equipment during the test		N/A
8.3.6.2.6	Conditions of the equipment after the test		N/A
8.3.6.3	Dielectric verification		
	test voltage (2 Ue) with a minimum of 1000V r.m.s. for 1 min. (V) .....		N/A
	No flashover or breakdown		N/A
8.3.6.4	Leakage current		
	test voltage (1,1 Ue) (V) .....		N/A
	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 .....		N/A
8.3.6.5	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....		
	- test current Ie (A) .....		
	Temperature-rise of main circuit terminals(≤ 80 K) :		N/A

8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY		
8.3.7.1	Overload test		
	ambient temperature 10-40 °C .....		
	test enclosure W x H x D (mm x mm x mm) .....		
	material of enclosure .....		
	test current 1,6xIthe or 1,6xIth (A) .....		
	cable/busbar cross-section (mm <sup>2</sup> ) / length (mm) .. :		
	Fuse-link details:		
	- manufacturer's name, trademark or identification mark .....		
	- rated current (A) .....		
	- power loss (W) .....		
	- rated breaking capacity (kA) .....		
	- time duration of the overload test (s) .....		
	Within 3 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed		N/A

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Cl.	Requirement – Test	Result	Verdict
	The equipment has not undergone any impairment hindering such operation		N/A
8.3.7.2	Dielectric verification		
	test voltage (2 Ue) with a minimum of 1000V r.m.s. for 1 min. (V) .....		N/A
	No flashover or breakdown		N/A
8.3.7.3	Leakage current		
	test voltage (1,1 Ue) (V) .....		N/A
	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
8.3.7.4	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....		
	- test current Ie (A) .....		
	Temperature-rise of main circuit terminals(≤ 80 K) :		N/A

8.4	ELECTROMAGNETIC COMPATIBILITY TESTS		
8.4.1	Immunity (for equipment incorporating electronic circuits)		
7.3.2.2	Tests of table 6 .....	(see appended tables)	
	No unintentional separation or closing of contacts has occurred during these tests .....		N/A
8.4.2	Emission (for equipment incorporating electronic circuits)		
7.3.3.2	Tests of table 7 .....	(see appended tables)	
	No unintentional separation or closing of contacts has occurred during these tests .....		N/A

IEC 60 947-3				
TABLE: temperature rise measurements				
Temperature rise dT of part:		Phase	dT (K)	Required dT (K)
For clause 8:3.3.1				
1	Terminals for external connections	Max for all	40	70
2	Non-metallic handle	Max for all	9	25
3	Non-metallic parts intended to be touched but not hand-held	Max for all	23	40
For clause 8:3.3.6				
1	Terminals for external connections	Max for all	45	80
2	Non-metallic handle	Max for all	10	25
3	Non-metallic parts intended to be touched but not hand-held	Max for all	22	40
For clause 8:3.4.4				

IEC 60 947-3				
Cl.	Requirement – Test	Result		Verdict
1	Terminals for external connections	Max for all	46	80
2	Non-metallic handle	Max for all	10	25
3	Non-metallic parts intended to be touched but not hand-held	Max for all	23	40
For clause 8.3.5.5				
1	Terminals for external connections	Max for all	49	80
2	Non-metallic handle	Max for all	10	25
3	Non-metallic parts intended to be touched but not hand-held	Max for all	25	40

TABLE: Resistance to heat (Ball pressure test)						Verdict
no.	Specimen					
	Description	Colour	Temp. °C	Impress diam. mm	Result diam. mm	
1	Enclosure	white	125	2,0	<1,0	P
2	Non-metallic mechanical parts	white	125	2,0	<1,0	P
3	Non-metallic handle	Blue	125	2,0	<1,0	P

TABLE: Resistance to fire (Glow wire test)								Verdict
no.	Specimen							
	Description	Colour	Thick (mm)	Temp. °C	burning after t (s)	drops	support burning	
1	Enclosure	white	2,5	960	-	No	No	P
2	Non-metallic mechanical parts	white	2,5	960	-	No	No	P
3	Non-metallic handle	Blue	2,5	850	-	No	No	P

TABLE: Resistance to tracking (tracking test)								Verdict
no.	Specimen							
	Description	Colour	Drops (no.)	Voltage (V)	Burning	Current (A)	Result	
1	Enclosure	white	>50	175	-	-	No flashovers	P
2	Non-metallic mechanical parts	white	>50	175	-	-	No flashovers	P
3	Non-metallic handle	Blue	>50	175	-	-	No flashovers	P

ВЯРНО С ОРГИНАЛАТА

DEKRA Testing Services (Zhejiang) Co., Ltd.

page 1 of 3

Project No.: 3300188

Sample No. 1 #	Test date: (yyyy/mm/dd) 2011/03/22	Standard: IEC/EN 60947-3	Clause: 8.3.3.2 Dielectric properties
Applicant's name: <i>Chint</i>		Type reference: <i>NH2-100/4P</i>	
Ambient temperature: <i>21.4</i> °C		Humidity: <i>43.8</i> %RH	

Any actuator of insulation material and any non-metallic enclosure of equipment intended to be used without an additional enclosure shall be covered with metal foil and connected to the frame or mounting plate

TEST DATA

Tested items	Applied time		Applied times	
	Impulse withstand voltage (kV)	Disruptive discharge during the test	Power frequency withstand voltage (V)	Disruptive discharge during the test
impulse withstand voltage	5 s		5 times for each polarity	
Power frequency withstand voltage				
Testing location normal positions of operation. (trip free, close, open position)				
i) Between all terminals of the main circuit connected together (incl. control and auxiliary circuits connected to the main circuit) and the enclosure or mounting plate, with the contacts in all normal positions of operation.		<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>7.3 kV</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ii) Between each pole and the other poles connected together and to the enclosure or mounting plate, with the contacts in all normal positions of operation.		<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>7.3 kV</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
iii) Between each control and auxiliary circuit not normally connected to the main circuit and: <input type="checkbox"/> the main circuit <input type="checkbox"/> the other circuits <input type="checkbox"/> the exposed conductive parts <input type="checkbox"/> the enclosure for mounting plate		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
iv) Between line and load terminal in the open position		<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>9.8 kV</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Leakage current test: 1.1 Ue, not exceed 0.5 mA	Applied voltage: _____ V			
Measured value				
A (R)	B (Y)			
C (B)	N			
Remark: <i>U<sub>imp</sub> = 6 kV</i>				

Note: "x" is checked

Equipment List

DEKRA-clb-505

CONCLUSION

**Pass / Fail**

AUTHORIZATION

Tested by:

*Baker*

**ВЕРНО С ОПИШИВАТА**

Reviewed by:

DEKRA Testing Services (Zhejiang) Co., Ltd.

*[Handwritten signature]*

Sample No. <i>171</i>	Test date: (yyyy/mm/dd) <i>2011/05/22</i>	Standard: <b>IEC/EN 60947-3</b>	Clause: 8.3.3.2 Dielectric properties
Applicant's name: <i>chint</i>		Type reference: <i>MH2-100/4P</i>	
Ambient temperature: <i>21.4</i> °C		Humidity: <i>43.8</i> %RH	

Any actuator of insulation material and any non-metallic enclosure of equipment intended to be used without an additional enclosure shall be covered with metal foil and connected to the frame or mounting plate

TEST DATA

Tested items	Applied time	Applied times
Impulse withstand voltage	---	5 times for each polarity
Power frequency withstand voltage	5 s	---
Testing location normal positions of operation. (trip free, close, open position)	Impulse withstand voltage (kV)	Power frequency withstand voltage (V)
i) Between all terminals of the main circuit connected together (incl. control and auxiliary circuits connected to the main circuit) and the enclosure or mounting plate, with the contacts in all normal positions of operation.	<input type="checkbox"/> Yes <input type="checkbox"/> No	Discharge during the test <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>9.8 kV</i>
ii) Between each pole and the other poles connected together and to the enclosure or mounting plate, with the contacts in all normal positions of operation.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>9.8 kV</i>
iii) Between each control and auxiliary circuit not normally connected to the main circuit and: <input type="checkbox"/> the main circuit <input type="checkbox"/> the other circuits <input type="checkbox"/> the exposed conductive parts <input type="checkbox"/> the enclosure for mounting plate	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
iv) Between line and load terminal in the open position	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>12.3 kV</i>

Leakage current test: 1.1 Ue, not exceed 0,5 mA Applied voltage: \_\_\_\_\_ V

Measured value

A (R)	B (Y)
C (B)	N

Remark: *Uimp = 8 kV*

Note: "x" is checked

Equipment List

*DEKRA-03-505*

CONCLUSION

**Pass / Fail**

AUTHORIZATION

Tested by:

*Baker*

Reviewed by:

*Max Ma*

**ВАРНО С ОПРИТНАТА**



DEKRA Testing Services (Zhejiang) Co., Ltd.

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page 3 of 3

Project No.: 3302188

Sample No. 2 #	Test date: (yyyy/mm/dd) 2011/03/22	Standard: IEC/EN 60947-3	Clause: 8.3.3.2 Dielectric properties
Applicant's name: <i>Chint</i>		Type reference: <i>NH2-100/4P</i>	
Ambient temperature: <i>21.4</i> °C		Humidity: <i>43.8</i> %RH	
Any actuator of insulation material and any non-metallic enclosure of equipment intended to be used without an additional enclosure shall be covered with metal foil and connected to the frame or mounting plate			
TEST DATA			
Tested items	Applied time		Applied times
impulse withstand voltage			5 times for each polarity
Power frequency withstand voltage			
Testing location normal positions of operation. (trip free, close, open position)	Impulse withstand voltage (kV)	Disruptive discharge during the test	Power frequency withstand voltage (V) / Disruptive discharge during the test
i) Between all terminals of the main circuit connected together (incl. control and auxiliary circuits connected to the main circuit) and the enclosure or mounting plate, with the contacts in all normal positions of operation.		<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>9.8 kV</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ii) Between each pole and the other poles connected together and to the enclosure or mounting plate, with the contacts in all normal positions of operation.		<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>9.8 kV</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
iii) Between each control and auxiliary circuit not normally connected to the main circuit and: <input type="checkbox"/> the main circuit <input type="checkbox"/> the other circuits <input type="checkbox"/> the exposed conductive parts <input type="checkbox"/> the enclosure for mounting plate		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
iv) Between line and load terminal in the open position		<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>12.3 kV</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Leakage current test: 1.1 Ue, not exceed 0,5 mA		Applied voltage: _____ V	
Measured value			
A (R)	B (Y)		
C (B)	N		
Remark:	<i>U<sub>imp</sub> = 8 kV</i>		

Notes: "x" is checked

Equipment List	
<i>DEKRA-CIS-505</i>	
CONCLUSION	AUTHORIZATION
<b>Pass / Fail</b>	Tested by: <i>Baber</i> Reviewed by: <i>[Signature]</i>

**ВАРНО С ОПРИМНАТА**

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**Приложение № 6**

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International Electrotechnical Commission



IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE)

# CERTIFICATE OF ACCEPTANCE

TO PARTICIPATE IN THE IECEE CB-SCHEME

**Intertek Semko AB**

Torshamnsgatan 43, SE-164 22 Kista, Stockholm, Sweden

*[Handwritten signature]*

has been assessed and determined to fully comply with the requirements of ISO/IEC 17025: 2005-05, The Basic Rules, IECEE 01: 2014-11 and Rules of Procedure IECEE 02: 2015-06, and the relevant IECEE CB-Scheme Operational Documents.

**Intertek Semko AB**

is therefore entitled to operate as a Sweden CB Testing Laboratory under the responsibility of Intertek Semko AB as National Certification Body and to carry out testing within the IECEE CB Scheme for the Scope (Product Category(ies) and Standard(s)) as listed in the relevant part of the IECEE Web Site at [www.iecee.org](http://www.iecee.org), and is subject to all other terms as set forth in the IECEE Basic Rules and Rules of Procedure

This certificate remains valid until October 7<sup>th</sup> 2018 at which time it will be reissued by the IECEE Executive Secretary upon successful completion of the normally scheduled 3-year Reassessment Programme administered by the IECEE CB Scheme.

Signed by:

*[Handwritten signature]*

Kerry McMANAMA  
IECEE EXECUTIVE SECRETARY AND COO

Date of Issue: 2016-03-17  
TL013

**ВЪРНО С ОПТИМИЗАЦИЯ**

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International Electrotechnical  
Commission



IEC System of Conformity Assessment  
Schemes for Electrotechnical  
Equipment and Components (IECEE)

## CERTIFICATE OF ACCEPTANCE

TO PARTICIPATE IN THE IECEE CB-SCHEME

*[Handwritten signature]*

**DEKRA Testing Services (Zhejiang) Co., Ltd.**  
No. 5. Changjiang Road, Great Bridge Industrial Park, North Baixiang, Wenzhou, Zhejiang, 325603, P.R.China

has been assessed and determined to fully comply with the requirements of ISO/IEC 17025: 2005-05, The Basic Rules, IECEE 01: 2014-11 and Rules of Procedure IECEE 02: 2015-06, and the relevant IECEE CB-Scheme Operational Documents.

**DEKRA Testing Services (Zhejiang) Co., Ltd.**

is therefore entitled to operate as a Chinese CB Testing Laboratory under the responsibility of DEKRA Certification B.V. as National Certification Body and to carry out testing within the IECEE CB Scheme for the Scope (Product Category(ies) and Standard(s)) as listed in the relevant part of the IECEE Web Site at [www.iecee.org](http://www.iecee.org), and is subject to all other terms as set forth in the IECEE Basic Rules and Rules of Procedure

This certificate remains valid until December 31<sup>st</sup> 2017 at which time it will be reissued by the IECEE Executive Secretary upon successful completion of the normally scheduled 3-year Reassessment Programme administered by the IECEE CB Scheme.

Signed by:

*[Handwritten signature]*

Kerry McMANAMA  
IECEE EXECUTIVE SECRETARY AND COO

Date of Issue: 2017-02-17  
TL241

**ВЪРНО С ОПРИТНАТА**

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**Приложение № 7**

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# НН2-100

## Товаров прекъсвач

### Инструкция за работа

#### 1. Приложение

Товаровия прекъсвач от серията НН2-100 притежава висока динамична устойчивост. Приложим е за инсталиране в разпределителни и контролни променливотокови вериги с честота на мрежата 50/60Hz, номинално напрежение 230/400VAC. Основното му приложение е като главен шалтер в електрически табла. Освен това се използва и за контрол на неголеми електрически устройства и осветление. Намира широко приложение в индустрията, минното производство, административни и жилищни сгради.

Този продукт отговаря на стандарт IEC60947-3.

#### 2. Условия на работа

##### 2.1. Околна температура

Горната граница на температурата на околната среда е +40°C, долната граница е - 5°C. Средната температура за 24 часа не трябва да превишава +35°C.

##### 2.2. Надморска височина

Надморската височина на мястото на инсталиране не трябва да превишава 2000m.

##### 2.3. Атмосферни условия

Относителната влажност на въздуха не трябва да превишава 50%, когато най – високата температура на околната среда е +40°C. Относителната влажност може да бъде по висока при по – ниски температурни условия, например относителна влажност 90%, когато температурата е +20°C. Трябва да се отчете и появата на конденз по повърността на продукта поради температурна промяна.

##### 2.4. Степен на замърсяване: II степен.

##### 2.5. Начин на инсталиране

Приет начин на монтаж върху стоманена ТН35 – 7.5 шина.

##### 2.6. Изисквания при монтаж

Наклон на вертикалната равнина да не превишава 5°C.

##### 2.7. Начин на свързване

Стягане на проводника с винт. Въртящ момент на затягане: 2.5 Nm

ВЯРНО С ОРИГИНАЛА

### 3. Основна спецификация и технически параметри

#### 3.1. Тип и обозначение

#### NH2-100

N – Фирмен код

H – Товаров прекъсвач

2 – Номер на модела

100 – Номинален ток на корпуса

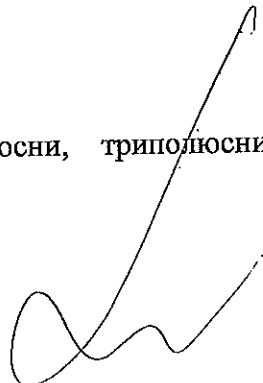


#### 3.2. Класификация

##### 3.2.1. Според номиналния ток

Ie : 32A, 63A, 100A.

3.2.2. Съгласно броя на полюсите: еднополюсни, двуполюсни, триполюсни, четириполюсни.



#### 3.3. Основни технически параметри

3.3.1. Краткотраен издържан ток:  $12I_e/1s$

3.3.2. Включвателна и изключвателна способност:  $3I_e, 1.05U_e, \cos\varphi = 0.65$

3.3.3 Включвателна способност:  $20I_e/ 0.1s, \cos\varphi = 0.9$

##### 3.3.4. Износоустойчивост

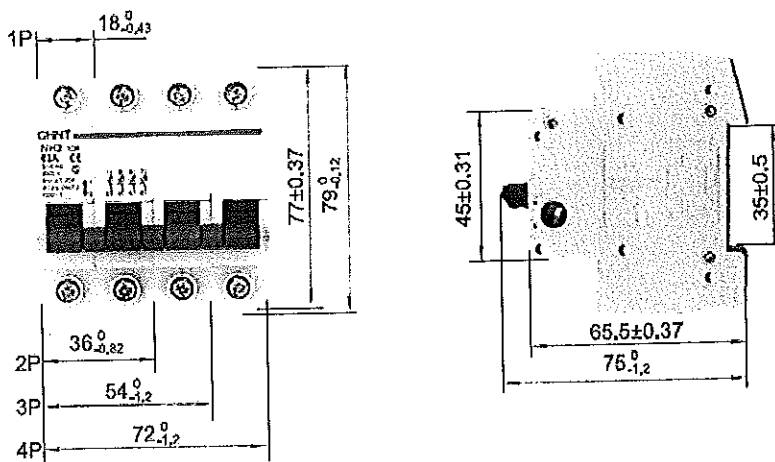
8 500 цикъла без товар, 1500 цикъла под товар , общо 10 000 цикъла  $\cos\varphi = 0.8$ , честота на операциите 120 цикъла за час.

#### 3.4. Габаритни и монтажни размери

Габаритните и монтажните размери са показани на фиг. 1 и фиг. 2

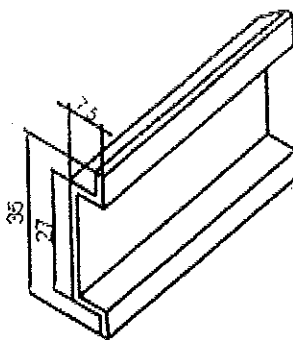
**ВЯРНО С ОРГИНАЛА**





фиг. 1

ТН35-7.5 монтажна шина



Фиг. 2

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## 4. Основна структура и принципи на работа

### 4.1. Структура

Товаровия прекъсвач е съставен основно от изолационна обвивка, работен механизъм, контактна система и клеми за свързване.

Работния механизъм използва енергията на заредена пружина. Устройство за индикация показва състоянието на подвижния контакт на товарния прекъсвач посредством твърда възка към ръкохватката.

### 4. 2. Принцип на работа

Под действието на пружината, ръкохватката задвижва подвижния контакт във включено или изключено положение с помощта на твърда връзка, като по този начин осъществява надеждно разединяване на веригата.

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## 5. Монтаж и поддръжка

### 5.1. Монтаж.

5. 1. 1. Проверете дали маркировката на товаровия прекъсвач е в съгласие с условията на работа в които ще се монтира.

5. 1. 2. Поставете товаровия прекъсвач върху монтажната шина от фиг. 2, издърпайте стопера и фиксирайте товаровия прекъсвач върху шината. Върнете стопера в първоначалното му положение за да застопорите разединителя.

5. 1. 3. Преместете ръкохватката в горно положение за да включите товаровия прекъсвач, като знакът за включено положение ще се появи за да покаже че устройството е включено. Преместете ръкохватката обратно за да изключите веригата, ще се появи индикация за изключено положение на товаровия прекъсвач.

5. 1. 4. Свържете захранващата линия към горната клемма на товаровия прекъсвач, а изходящата линия към долния терминал. При трифазна линия трябва да се съобразят последователността на фазите. Поставете проводника в клемния отвор и притегнете болта. Въртящия момент на затягане е 2.5 Nm. Не оставяйте оголени части от проводника извън отвора.

5. 1. 5. Включете и изключете товаровия прекъсвач няколко пъти преди да подадете захранване за да се уверите, че работи без затруднения.

### 5. 2. Обслужване

5. 2. 1. Проверявайте изправността и работата на товаровия прекъсвач периодично, като интервалите на проверка зависят от условията на работа.

5. 2. 2. Продуктът трябва да бъде защитен от пряко попадение на вода и да се пази от механични повреди

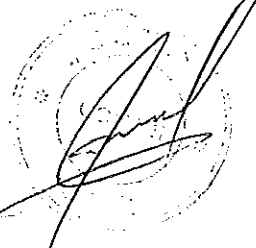
## 6. Съхранение

6.1. Да се съхранява при температури от - 25°C до + 70°C.


## 7. Транспортиране

7.1. Товарите прекъсвачи следва да бъдат транспортирани в оригиналните си опаковки с подходящи транспортни средства

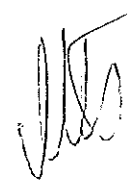
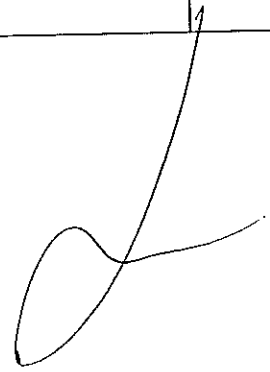
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**Приложение № 8**



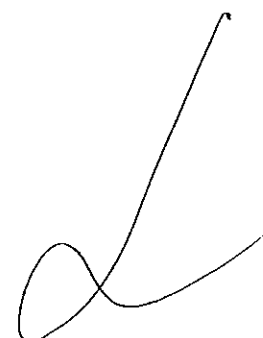
№ на стандарта	Брой на полюсите	Съкратено наименование	Обявен ток,	Предложение	Производител	Страна на произход
20 17 2791	1	Мини тов.прек. 125А, шир. 27,1Р	125	НН4-125/1Р 125А	Chint	Китай
20 17 2793	3	Мини тов.прек. 125А, шир. 27,3Р	125	НН4-125/3Р 125А	Chint	Китай



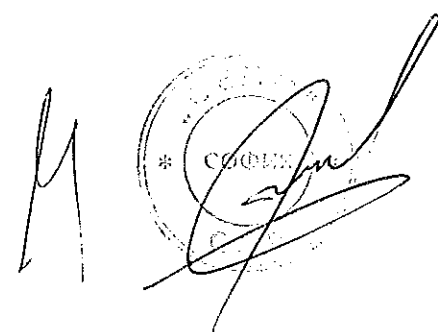
**ВЯРНО С ОРИГИНАЛА**



115



**Приложение № 9**

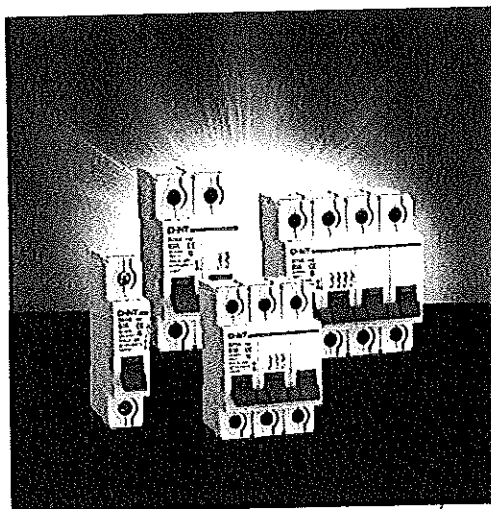


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# Товаров прекъсвач NH4 - шалтер

## 1. Характеристики

- 1.1 В отворена позиция товарният прекъсвач изпълнява изискванията за изолиране на веригата;
- 1.2 Сертификати: CE, SEMKO, UKRTEST, PCT, RCC.



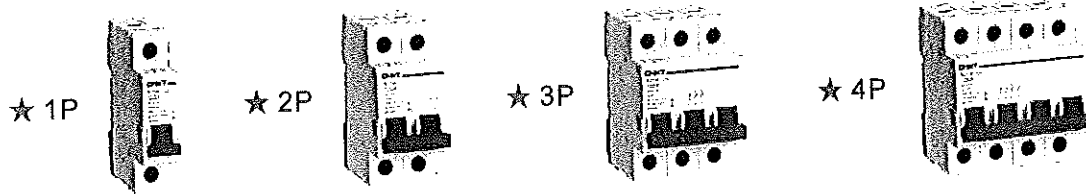
## 2. Технически параметри

Стандарт		IEC/EN 60947-3	
Електрически характеристики	Номинално напрежение $U_e$	V	230/400
	Номинален ток $I_e$	A	32, 63, 100, 125
	Номинална честота	Hz	50/60
	Номинално импулсно напрежение, $U_{imp}$	V	6000
	Номинален кратковремен ток на издържане $I_{cw}$		12I <sub>e</sub> , 1s
	Номинална включвателна и изключвателна способност		3I <sub>e</sub> , 1.05U <sub>e</sub> , cosφ=0.85
	Номинална способност на включване на ток на късо съединение		20I <sub>e</sub> , t=0.1s
	Изпитвателно напрежение с пром. честота за 1 минута	kV	2
	Изоляционно напрежение $U_i$	V	500
	Степен на замърсяване		2
Категория на използване		AC-22A	
Механични характеристики	Електрически живот		1500
	Механичен живот		8500
	Степен на защита		IP20
	Околна температура (при средnodневна температура ≤ 35°C)	°C	-5...+40
	Температура на съхранение	°C	-25...+70
Инсталация	Тип на свързването		кабел/шинен гребен
	Размер на отвора за кабела	mm <sup>2</sup>	50
		AWG	18-1/0
	Размер на отвора за шинния гребен	mm <sup>2</sup>	50
		AWG	18-1/0
	Момент на затягане	N*m	2.5
		ln-lbs.	22
Свързване		отгоре и отдолу	

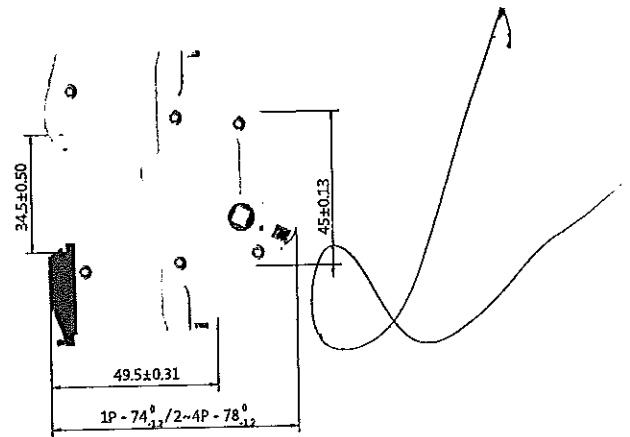
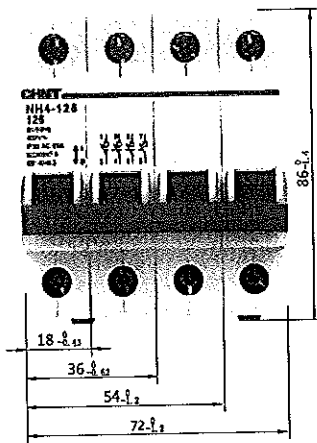
**ВЯРНО С ОРИГИНАЛА**

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3. Продуктова гама



4. Габаритни и монтажни размери (mm)



**ВЯРНО С ОРИГИНАЛА**

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**Приложение № 10**

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11/15

# NH4-125

## Товаров прекъсвач

### Техническо описание

#### 1. Приложение

Товаровия прекъсвач от серията NH4-125 притежава висока динамична устойчивост. Приложим е за инсталиране в разпределителни и контролни променливотокови вериги с честота на мрежата 50/60Hz, номинално напрежение 230/400VAC. Основното му приложение е като главен шалтер в електрически табла. Освен това се използва и за контрол на неголеми електрически устройства и осветление. Намира широко приложение в индустрията, минното производство, административни и жилищни згради.

Този продукт отговаря на стандарт IEC60947-3.

#### 2. Условия на работа

##### 2.1. Околна температура

Горната граница на температурата на околната среда е +40°C, долната граница е - 5°C. Средната температура за 24 часа не трябва да превишава +35°C.

##### 2.2. Надморска височина

Надморската височина на мястото на инсталиране не трябва да превишава 2000m.

##### 2.3. Атмосферни условия

Относителната влажност на въздуха не трябва да превишава 50%, когато най – високата температура на околната среда е +40°C. Относителната влажност може да бъде по висока при по – ниски температурни условия, например относителна влажност 90%, когато температурата е +20°C. Трябва да се отчете и появата на конденз по повърността на продукта поради температурна промяна.

##### 2.4. Степен на замърсяване: II степен.

##### 2.5. Начин на инсталиране

Приет начин на монтаж върху стоманена TH35 – 7.5 шина.

##### 2.6. Изисквания при монтаж

Наклона на вертикалната равнина да не превишава 5°C.

##### 2.7. Начин на свързване

Стягане на проводника с винт. Въртящ момент на затягане: 2.5 Nm


 **ВЯРНО С ОРИГИНАЛА**



### 3. Основна спецификация и технически параметри

#### 3.1. Тип и обозначение

##### NH4-125

N – Фирмен код

H – Товаров прекъсвач

4 – Номер на модела

125 – Номинален ток на корпуса

#### 3.2. Класификация

##### 3.2.1. Според номиналния ток

Ie : 32A, 63A, 100A, 125A.

3.2.2. Съгласно броя на полюсите: еднополюсни, двуполосни, триполюсни, четириполосни.

#### 3.3. Основни технически параметри

3.3.1. Краткотраен издържан ток:  $12I_e/1s$

3.3.2. Включвателна и изключвателна способност:  $3I_e, 1.05U_e, \cos\phi = 0.65$

3.3.3. Включвателна способност:  $20I_e/0.1s, \cos\phi = 0.9$

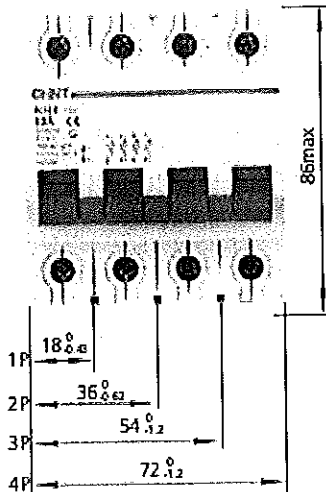
##### 3.3.4. Износоустойчивост

8 500 цикъла без товар, 1500 цикъла под товар, общо 10 000 цикъла  $\cos\phi = 0.8$ , честота на операциите 120 цикъла за час.

#### 3.4. Габаритни размери

Габаритните размери са показани на фиг. 1

ВЯРНО С ОРГИНАЛА



фиг. 1

#### 4. Основна структура и принцип на работа

##### 4.1. Структура

Товаровия прекъсвач е съставен основно от изолационна обвивка, работен механизъм, контактна система и клеми за свързване.

Работния механизъм използва енергията на заредена пружина. Устройство за индикация показва състоянието на подвижния контакт на товария прекъсвач посредством твърда връзка към ръкохватката.

##### 4.2. Принцип на работа

Под действието на пружината, ръкохватката задвижва подвижния контакт във включено или изключено положение с помощта на твърда връзка, като по този начин осъществява надеждно разединяване на веригата.

ВЯРНО С ОРИГИНАЛА

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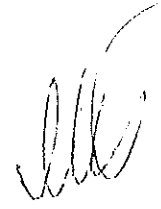
**Приложение № 11**

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*Handwritten signature over a circular stamp*

# CHINT

浙江正泰电器股份有限公司  
ZHEJIANG CHINT ELECTRICS CO., LTD.



## EC Declaration of Conformity

Issuer's name and address:

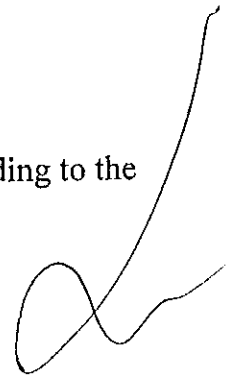
**Zhejiang Chint Electrics CO., Ltd. ;**  
**No.1 CHINT Road, CHINT Industrial Zone, North Baixiang,**  
**Yueqing, Zhejiang Province, P.R. China 325603**

Products:

**Disconnecter: NH4 series**

The designated product satisfies the provision for CE marking according to the  
European Low Voltage Directive:

**2006/95/EC**



Comply with the standards:

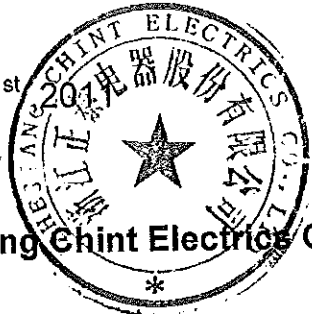
**EN/ IEC 60947-1:2004;**

**EN/ IEC 60947-3:1999+A1+A2;**

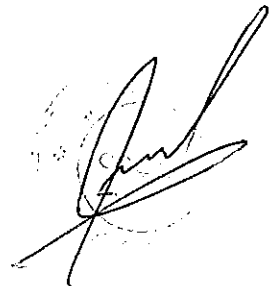
Full compliance with the standards tested by Intertek ELT SEMKO.

License No. 711745

Mar.21<sup>st</sup>



Zhejiang Chint Electrics CO., Ltd.



中国 · 温州 · 北白象镇正泰高科技工业园区  
No.1 CHINT Road, CHINT Industrial Zone, North Baixiang,  
Yueqing, Zhejiang Province, P.R. China 325603  
Tel/Fax: 86-577-6287777/62775769 E-mail: gmb@chint.com

ЧИНТ

ЕО Декларация за съответствие



Име и адрес на клиента

„Джеджанг ЧИНТ Електрик Ко., ООД

ЧИНТ Хай-Тек Индуриална зона, Северен Байксианг,

Провинция Джеджанг, Н.Р. Китай 325603

Продукт:

Серия товарови прекъсвачи NH4

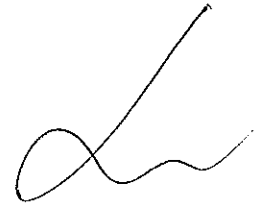
Обозначения продукт е в съответствие с изискванията за обезпечаването на СЕ маркировката Европейската Директива за ниско напрежение.

**2006/95/ЕС**

Отговаря на стандарти:

EN/IEC 60947 – 1: 2004;

EN/IEC 60947 – 1: 1999 + A1 + A2;



В пълно съответствие със стандартите тествани от Интертек СЕМКО АВ

Лиценз № 711745

21 Март 2011

печат: (не се чете)

„Джеджанг ЧИНТ Електрик Ко., ООД

Чинт Хай-тех Индуриал Зоун, Норд Байксианг, Провинция Джеджанг, Н.Р. Китай 325603  
тел/факс: 86-577-6287777/ 62775769, е-мейл: [gmb@chint.com](mailto:gmb@chint.com)

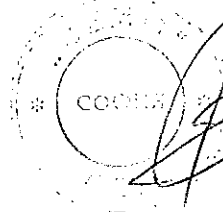


✓ ВЯРНО С ОРНИНАЛА

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**Приложение № 12**

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# Test Report

Name of products: Switch-disconnectors

Type: NH4-125

Applicant: Zhejiang CHINT Electric Co., Ltd

Kind of test: Commission test

*Handwritten signature*

DEKRA Testing Services (Zhejiang) Co., Ltd



Doc: 2012-09-01  
Version 2.0

**ВЯРНО С ОРИГИНАЛА**

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*Handwritten signature*

# Declaration

1. Without the official testing stamp of DEKRA Testing Services (Zhejiang) Co. Ltd, this test report is invalid.
2. This test report is invalid without appropriate signatures in the Tested by, Checked by, Approved by boxes.
3. This test result applies only to the inspected and tested sample stipulated in the report.
4. This test report may not be reproduced unless it is reproduced in full and with the written approval of DEKRA Testing Services (Zhejiang) Co., Ltd.

Name of Lab: DEKRA Testing Services (Zhejiang) Co., Ltd

Address: No.5, Changjiang Road, Great Bridge Industrial Park, North  
Baixiang, Wenzhou, Zhejiang 325603, P.R. China

Tel: 0577-62868000

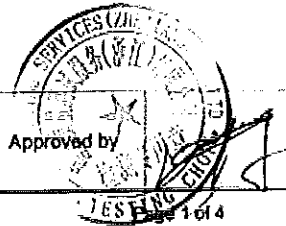
Fax: 0577-62919889

Date: 2011-09-01  
Version: 2.0

**ВЕРНО С ОРИГИНАЛОМ**



**Test Report**

Project No.	3305179		Trade mark	CHINT	
Name of Product	Switch-disconnectors		Type	NH4-125	
Rated parameters	AC-22A: 63 A, Ui=690 V, Uimp=6 kV			Pole number	4
Applicant	Name	Zhejiang CHINT Electric Co., Ltd			
	Address	No.1, Chint Road, Chint Industrial Zone, North Baixiang Yueqing, 325603, Zhejiang, China			
Manufacturer	Name	Zhejiang CHINT Electric Co., Ltd			
	Address	No.1, Chint Road, Chint Industrial Zone, North Baixiang Yueqing, 325603, Zhejiang, China			
Quantity of samples	1	Contact Person	Xu Jianhui	Date of sample available	2013-05-29
Testing Location (if different from DEKRA Lab)	Testing Lab	/			
	Address	/			
Test requirements	IEC 60947.3-2012 and Commission Testing agreement : 3305179				
Test duration	2013-05-30				
Test result	Pass		Issue date	2013-05-31	
Remarks					
Tested by	MaxMa	Reviewed by	Jiang	Approved by	

**ВЯРНО С ОРИГИНАЛА**

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## Product Description

1. Name and type of product:

Switch-disconnectors: NH4-125

2. Primary technical parameters:

AC-22A: 63 A,  $U_i=690$  V,  $U_{imp}=6$  kV

3. Photograph of the product:

3.1 Copy of the marking plate:

3.2 Copy of shape of the products:

4. Test remarks

5. General remark:

The meaning for all the symbols used in this report:

'P': Test object does meet the standards and/or applicant's requirement;

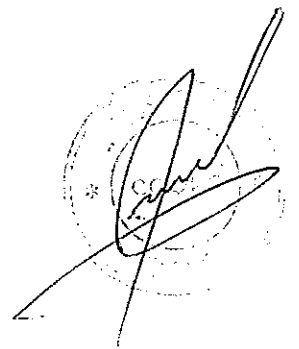
'F': Test object does not meet standards and/or applicant's requirement;

'/': For description: not applicable or the information is not required or not provided by the applicant;

For test verdict: test case does not apply to the test object or just part of items conducted in the specified test program;

'\*': Test case is not conducted as some tests in the sequence have failed already.

**ВЕРНО С ОРИГИНАЛОМ**





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Clause	Requirement - test	Results-Remarks	Verdict
8.3.3.2	Dielectric properties	1#	P
	Verification of impulse withstand voltage		
	Test voltage: 7.3 kV	7.3	
	Test position:		
	between all the terminals of the main circuit connected together and the enclosure or mounting plate, with the contacts in all normal positions of operation	No disruptive discharge during the test	
	between each pole of the main circuit and the other poles connected together and to the enclosure ore mounting plate with the contacts in all normal positions of operation		
	Test voltage: 9.8 kV	9.8	
	Test position:		
	Between the line and load terminals of the equipment with the contacts in the open position	No disruptive discharge during the test	
	Verification of power-frequency withstand voltage		
	Test voltage: 1890 V	1890	
	Test time: 5 s	5	
	Test position:		
	between all the terminals of the main circuit connected together and the enclosure or mounting plate, with the contacts in all normal positions of operation	No breakdown and no flashover	
	between each pole of the main circuit and the other poles connected together and to the enclosure ore mounting plate with the contacts in all normal positions of operation		

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**ВЕРНО С ОРИГИНАЛА**

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<b>TEST REPORT</b> <b>IEC/EN 60947-3</b> <b>Low-voltage switchgear and controlgear</b> <b>Part 3: Switches, disconnectors, switch-disconnectors and fuse combination units</b>	
Report Reference No.....	711745-3
Tested by (name+signature) .....	Jonas Estelli <i>[Signature]</i>
Witnessed by (name+signature) .....	
Supervised by (name+signature) .....	
Approved by (name+signature).....	Roger Larson <i>[Signature]</i>
Date of issue .....	05 September 2007
CB/CCA Testing Laboratory .....	SEMKO AB
Address .....	Thorshamnsgatan 43 Box 1103, SE-164 22 Kista SWEDEN
Testing procedure .....	CBTL <input checked="" type="checkbox"/> RMT <input type="checkbox"/> SMT <input type="checkbox"/> WMT <input type="checkbox"/> TMP <input type="checkbox"/>
Testing location/ address .....	Thorshamnsgatan 43 Box 1103, SE-164 22 Kista SWEDEN
Applicant's name .....	Zhejiang Chint Electrics Co., Ltd.
Address .....	Chint High-tech Industrial Zone, North Balxiang 325603, Wenzhou, Zhejiang, P.R.China
<b>Test specification:</b>	
Standard .....	<input checked="" type="checkbox"/> IEC 60947-3:1999 (Second Edition) + A1:2001 + A2:2005 in conjunction with IEC 60947-1:2004 (Fourth Edition) <input checked="" type="checkbox"/> EN 60947-3:1999 + A1:2001 + A2:2005 in conjunction with EN 60947-1:2004
Test procedure .....	CB / CCA
Non-standard test method.....	N/A
Test Report Form No. ....	IECEN60947_3B
Test Report Form(s) Originator.....	OVE
Master TRF .....	Dated 2006-08
<b>Copyright © 2008 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.</b> This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
Test item description .....	Switch-disconnectors
Trade Mark .....	CHNT
Manufacturer .....	Same as applicant
Model/Type reference .....	NH4-125
Ratings .....	$U_n = 415V\sim$ $I_n = 32, 63, 100, 125A$



**ВЕРНО С ОРИГИНАЛА**

S 110 07 20 (02/04) 2.001/08

<b>Test item particulars</b> .....	
- method of operation.....	Dependent manual operation
- switching positions.....	2
- number of poles.....	3
- kind of current.....	a.c.
- number of phases.....	3
- rated frequency (Hz).....	50/60
- number of positions of the main contacts.....	2
<b>Rated and limiting values, main circuit</b> .....	
- rated operational voltage $U_e$ (V).....	415
- rated insulation voltage $U_i$ (V).....	415
- rated impulse withstand voltage $U_{imp}$ (kV).....	4
- conventional free air thermal current $I_{th}$ (A).....	32, 63, 100, 125
- conventional enclosed thermal current $I_{the}$ (A).....	N/A
- rated operational current $I_e$ (A).....	32, 63, 100, 125
- rated uninterrupted current $I_u$ (A).....	32, 63, 100, 125
- utilization category.....	AC-22A
<b>Short-circuit characteristic</b> .....	
- rated short-time withstand current $I_{ow}$ (kA).....	12I <sub>e</sub> , 1s
- rated short-time making capacity $I_{cm}$ (kA).....	20I <sub>e</sub>
- rated conditional short-circuit current.....	N/A
<b>Rated and limiting values, auxiliary circuits</b> .....	
- rated operational voltage (V).....	N/A
- rated frequency (Hz).....	N/A
- number of circuits.....	N/A
- number and kind of contact elements.....	N/A
<b>Co-ordination of short-circuit protective devices</b> .....	
- kind of protective device.....	N/A

**Possible test case verdicts:**

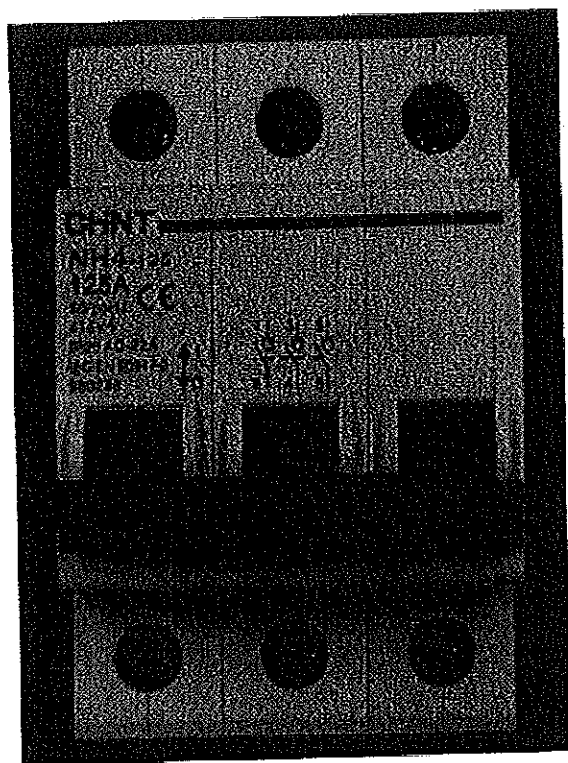
- test case does not apply to the test object.....	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement.....	F (Fail)

**Testing**.....

Date of receipt of test item.....	June 10, 2007
Date (s) of performance of tests.....	From June 10, 2007 to August 17, 2007

ВАРНО С ОРЪЖИНАТА

Copy of marking plate:



## Summary of testing:

Number of tests for test procedure, according to clause 8.3.2.1.3, table 11, 13, 14, 15 and 16

Test report ref. No.	No. of poles	$I_a(A)$	Test sequence and number of samples				
			I	II	III <sup>b)</sup>	IV <sup>c)</sup>	V <sup>d)</sup>
711745-1	1P	125	1	1	1	-	-
	1P	32	-	-	1	-	-
711745-2	2P	125	1	1	1	-	-
	2P	32	-	-	1	-	-
711745-3 <sup>a)</sup>	3P	-	-	-	-	-	-
711745-4	4P	125	1	1	1	-	-
	4P	32	-	-	1	-	-

## Notes:

- a) The tests of three-pole switch are omitted when four-pole switch has been tested according to clause 8.3.2.1.3 of IEC60 947-3
- b) Test sequence III is not mandatory if test sequence IV is carried out.
- c) Test sequence IV is not mandatory if test sequence III is carried out.

ВАРНО С ОРНИНАТА

**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.

**Note: EN Group Differences together with National Differences and Special National Conditions, if any, are in the Appendix to the main body of this TRF.**

Throughout this report a comma (point) is used as the decimal separator.  
This test report is valid only being read together with the test reports of 711745-1, 711745-2 and 711745-4.

**General product information:**

$U_e = 240V\sim(1P), 415V\sim(2, 3, 4P)$

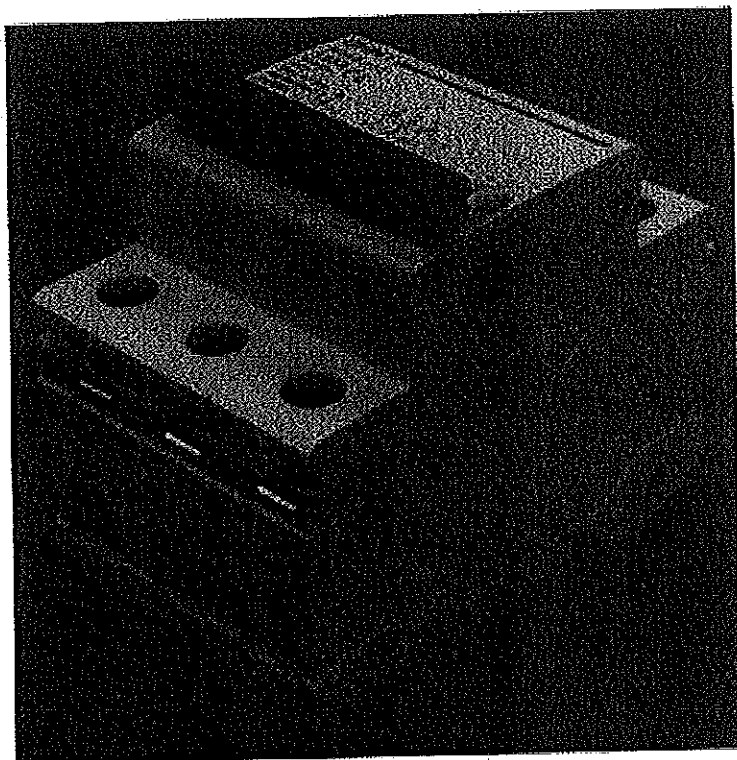
$I_e = 32, 63, 100, 125A$

$I_{ex} = 12I_e, 1s; I_{em} = 20I_e; AC-22A$

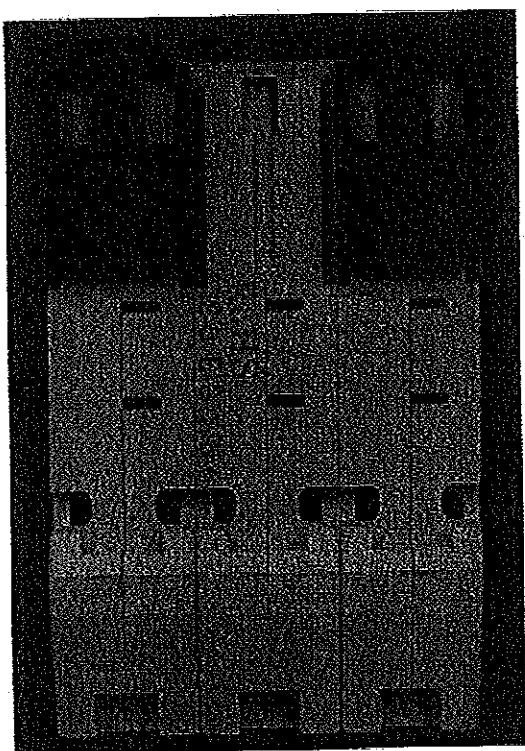
ДЕПТО С ОПТИМАЛНА



Photos of product:



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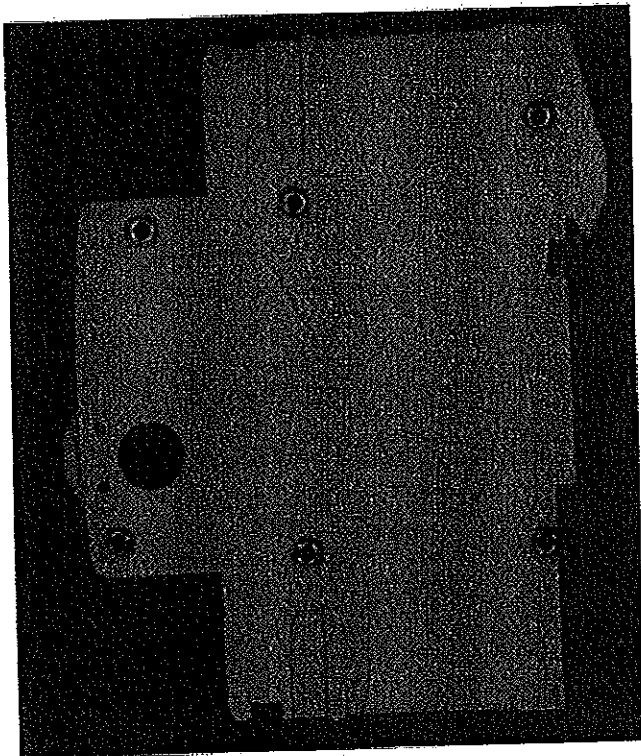
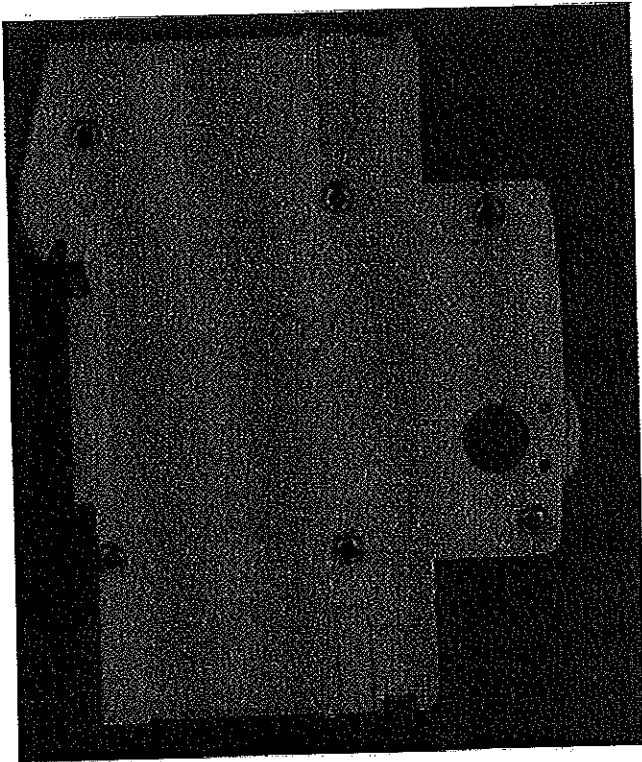


*[Handwritten signature]*

ВЕРНО С ОРИГИНАЛА

*[Handwritten signature]*

Photos of product:



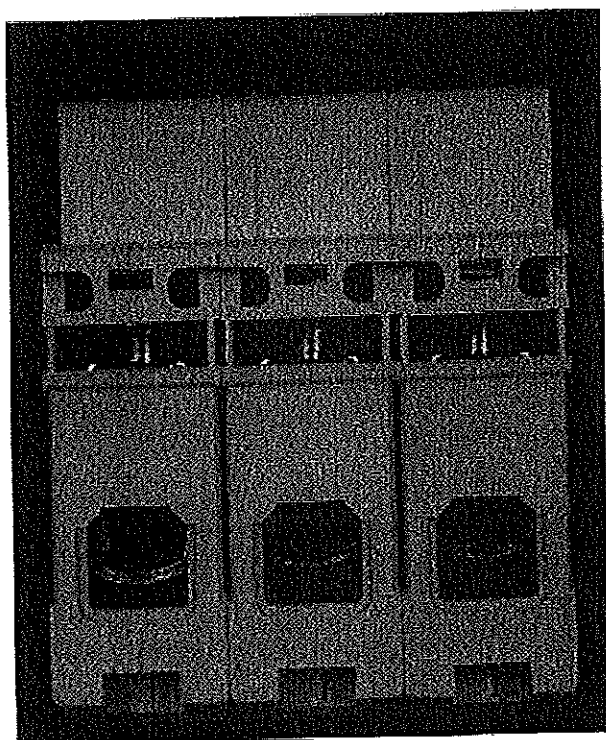
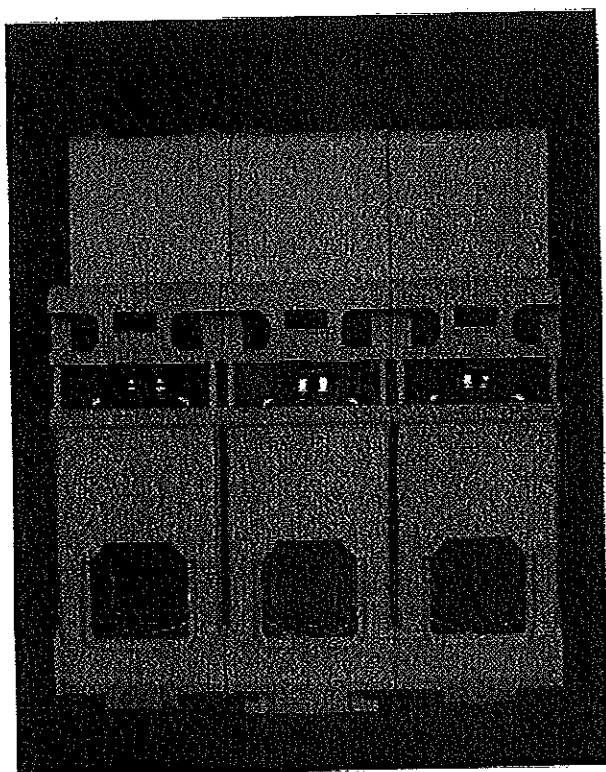
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**ВЯРНО С ОРГИНАЛА**

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Photos of product:



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**ВЯРНО С ОРИГИНАЛА**

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<b>TEST REPORT</b> <b>IEC/EN 60947-3</b> <b>Low-voltage switchgear and controlgear</b> <b>Part 3: Switches, disconnectors, switch-disconnectors and fuse combination units</b>	
Report Reference No.....	711745-4
Tested by (name+signature) .....	Jonas Estelli <i>Jonas Estelli</i>
Witnessed by (name+signature) .....	.....
Supervised by (name+signature) .....	..... <i>Roger Larson</i>
Approved by (name+signature) .....	Roger Larson
Date of issue .....	05 September 2007
CB/CCA Testing Laboratory .....	SEMKO AB
Address .....	Thorshamnsgatan 43 Box 1103, SE-164 22 Kista SWEDEN
Testing procedure .....	CBTL <input checked="" type="checkbox"/> RMT <input type="checkbox"/> SMT <input type="checkbox"/> WMT <input type="checkbox"/> TMP <input type="checkbox"/>
Testing location/ address .....	Thorshamnsgatan 43 Box 1103, SE-164 22 Kista SWEDEN
Applicant's name .....	Zhejiang Chint Electric Co., Ltd.
Address .....	Chint High-tech Industrial Zone, North Baixiang 325603, Wenzhou, Zhejiang, P.R.China
<b>Test specification:</b>	
Standard .....	<input checked="" type="checkbox"/> IEC 60947-3:1999 (Second Edition) + A1:2001 + A2:2005 in conjunction with IEC 60947-1:2004 (Fourth Edition) <input checked="" type="checkbox"/> EN 60947-3:1999 + A1:2001 + A2:2005 in conjunction with EN 60947-1:2004
Test procedure .....	CB / CCA
Non-standard test method .....	N/A
Test Report Form No. ....	IECEN60947_3B
Test Report Form(s) Originator .....	OVÉ
Master TRF .....	Dated 2006-08
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Test item description .....	Switch-disconnectors
Trade Mark .....	CHNT
Manufacturer .....	Same as applicant
Model/Type reference .....	NH4-125
Ratings .....	$U_n = 415V\sim$ $I_n = 32, 63, 100, 125A$

**ВЯРКО С ОРНИЦИМАТА**

Intertek Semko AB

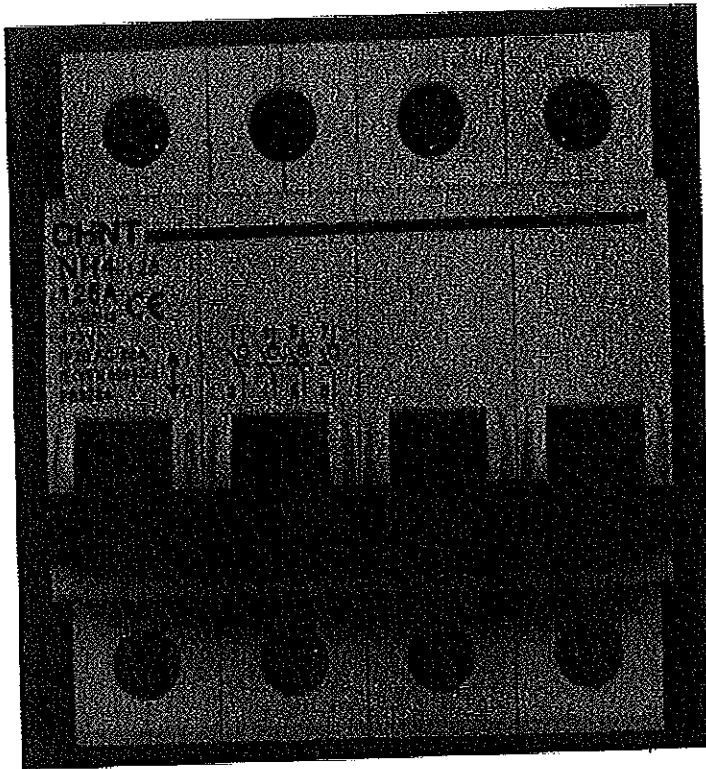
Thorshamnsgatan 43, Box 1103, SE-164 22 Kista, Sweden  
 Telephone +46 8 750 00 00, Fax +46 8 750 60 30, www.sweden.intertek-etlsemko.com  
 Registered in Sweden. No SE556024059901. Registered office: As address



<b>Test item particulars</b>	
- method of operation	: Dependent manual operation
- switching positions	: 2
- number of poles	: 4
- kind of current	: a.c.
- number of phases	: 3
- rated frequency (Hz)	: 50/60
- number of positions of the main contacts	: 2
<b>Rated and limiting values, main circuit</b>	
- rated operational voltage $U_e$ (V)	: 415
- rated insulation voltage $U_i$ (V)	: 415
- rated impulse withstand voltage $U_{imp}$ (kV)	: 4
- conventional free air thermal current $I_{th}$ (A)	: 32, 63, 100, 125
- conventional enclosed thermal current $I_{the}$ (A)	: N/A
- rated operational current $I_e$ (A)	: 32, 63, 100, 125
- rated uninterrupted current $I_u$ (A)	: 32, 63, 100, 125
- utilization category	: AC-22A
<b>Short-circuit characteristic</b>	
- rated short-time withstand current $I_{cw}$ (kA)	: 12I <sub>e</sub> , 1s
- rated short-time making capacity $I_{cm}$ (kA)	: 20I <sub>e</sub>
- rated conditional short-circuit current	: N/A
<b>Rated and limiting values, auxiliary circuits</b>	
- rated operational voltage (V)	: N/A
- rated frequency (Hz)	: N/A
- number of circuits	: N/A
- number and kind of contact elements	: N/A
<b>Co-ordination of short-circuit protective devices</b>	
- kind of protective device	: N/A
<b>Possible test case verdicts:</b>	
- 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)
<b>Testing</b>	
Date of receipt of test item	: June 10, 2007
Date (s) of performance of tests	: From June 10, 2007 to August 17, 2007

**ВЯРНО С ОРЪГИНАЛА**

Copy of marking plate:



**Summary of testing:**

Number of tests for test procedure, according to clause 8.3.2.1.3, table 11, 13, 14, 15 and 16

Test report ref. No.	No. of poles	I <sub>n</sub> (A)	Test sequence and number of samples				
			I	II	III <sup>b)</sup>	IV <sup>c)</sup>	V <sup>d)</sup>
711745-1	1P	125	1	1	1	-	-
	1P	32	-	-	1	-	-
711745-2	2P	125	1	1	1	-	-
	2P	32	-	-	1	-	-
711745-3 <sup>b)</sup>	3P	-	-	-	-	-	-
711745-4	4P	125	1	1	1	-	-
	4P	32	-	-	1	-	-

**Notes:**

- a) The tests of three-pole switch are omitted when four-pole switch has been tested according to clause 8.3.2.1.3 of IEC60 947-3
- b) Test sequence III is not mandatory if test sequence IV is carried out.
- c) Test sequence IV is not mandatory if test sequence III is carried out.

**ВЪРНО С ОПРИТНАТА**

**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.

**Note: EN Group Differences together with National Differences and Special National Conditions, if any, are in the Appendix to the main body of this TRF.**

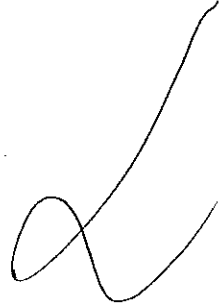
Throughout this report a comma (point) is used as the decimal separator.  
This test report is valid only being read together with the test reports of 711745-1, 711745-2, 711745-3.

**General product information:**

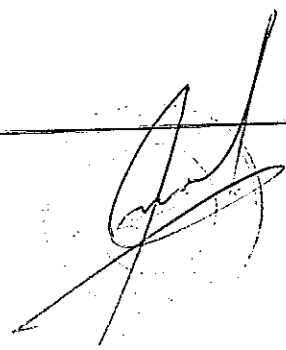
$U_e = 240V \sim (1P), 415V \sim (2, 3, 4P)$

$I_e = 32, 63, 100, 125A$

$I_{ow} = 12I_n, 1s; I_{on} = 20I_e; AC-22A$



ВЯРНО С ОПРИНТАТА



IEC / EN 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		
	- indication of the open and closed position	I and O	P
	- suitability for isolation		P
	- disconnectors AC-20 and DC-20 only: marked "Do not operate under load"		N/A
	Marking on equipment not needed to be visible after mounting:		
	- manufacturer's name or trademark	CHNT	P
	- type designation or serial number	NH4-125	P
	- rated operational current	32, 63, 100, 125A	P
	- rated operational voltage	415V~	P
	- utilization category	AC-22A	P
	- rated frequency	50/60	P
	- manufacturer's claim for compliance with IEC/EN 60947-3	IEC/EN 60947-3	P
	- degree of protection	IP20	P
	Marking on fuse-combination units:		
	- fuse type		N/A
	- maximum rated current		N/A
	- power loss of the fuse-link		N/A
	Identification of terminals:		
	- line terminals	"1", "3", "5", "7"	P
	- load terminals	"2", "4", "6", "8"	P
	- neutral pole terminal		N/A
	- protective earth terminal		N/A
	Data in the manufacturer's published information:		
	- rated insulation voltage	415V~	P
	- rated impulse withstand voltage for equipment suitable for isolation or when determined	4kA	P
	- pollution degree, if different from 3		N/A
	- rated duty	Uninterrupted duty	P
	- rated short-time withstand current and duration	12I <sub>n</sub> , 1s	P
	- rated short-circuit making capacity	20I <sub>n</sub>	P
	- rated conditional short-circuit current		N/A

TRF No. IEC/EN60947\_3B

ВАРНО С ОРНИКАНА



IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
7.1	CONSTRUCTION		
7.1.1	Materials		
7.1.1.1	Resistance to abnormal heat and fire		
	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		
	No visible flame and no sustained glowing		N/A
	Flames and glowing extinguish within 30 s	13s	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		
	No visible flame and no sustained glowing		N/A
	Flames and glowing extinguish within 30 s	17s	P
	No ignition of the tissue paper		P
7.1.2	Current-carrying parts and their connection	Copper alloy	P
7.1.3	Clearances:		
	Rated impulse withstand voltage .....	4kV	
	-pollution degree .....	3	
	-inhomogeneous or homogeneous .....	inhomogeneous	
	Minimum clearance distances(mm) .....	3	
	Measured clearance distances(mm) .....	8,1	P
	Creepage distances :		
	Pollution degree .....	3	
	Comparative tracking index (V) .....	175	
	Material group .....	IIIa	
	Rated insulation voltage $U_i(V)$ .....	415	
	Minimum creepage distances(mm) .....	6,3	
	Measured creepage distances(mm) .....	6,8	P
7.1.4	Actuator		
7.1.4.1	Insulation		
	Actuator insulated from live parts for		
	- rated insulation voltage		P
	- rated impulse withstand voltage		
	Actuator made of metal		

IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- connected to a protective conductor or provided with an additional insulation		N/A
	Actuator made of or covered by 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		P
7.1.4.2	Direction of movement		P
	The direction of operation for actuators shall where applicable conform to IEC 60447		
	There is no doubt of the "I" and "O" position and the direction of operation	I and O	P
7.1.5 of Part 1	Indication of contact position		
7.1.5.1	Indicating means	Symbol visible after mounting	P
7.1.5.2	Indication by the actuator	Actuator have distinct rest position	P
7.1.6	Additional safety requirements for equipment suitable for isolation		
7.1.6.1	Additional constructional requirements for equipment suitable for isolation ( $U_e > 50$ V):		
	- marking according to 5.2.1b		P
	- indication of the position of the contacts		P
	- construction of the actuating mechanism		P
	- minimum clearances across open contacts (see Table XIII, Part 1) (mm) .....	3	P
	- measured clearances (mm) .....	8,1	P
	- test $U_{imp}$ across gap (kV) .....	6,2(sea level)	P
7.1.6.2	Supplementary requirements for equipment with provision for electrical interlocking with contactors or circuit-breakers:		
	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: $\geq 20$ 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 / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.6.3	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
7.1.7 of Part 1	Terminals		
7.1.7.1	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		
	Mechanical strength of terminals		
	Maximum cross-sectional area of conductor (mm <sup>2</sup> ) .....	50	
	Diameter of thread (mm) .....	5,8	
	Torque (Nm) .....	2,5	
	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 <sup>2</sup> ) .....	4,0	
	Number of conductor of the smallest cross section :	2	
	Diameter of bushing hole (mm) .....	9,5	
	Height between the equipment and the platen .....	280	
	Mass at the conductor(s) (kg) .....	0,9	

IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	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. .... :	60	
	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 <sup>2</sup> ) .....	50	
	Number of conductor of the largest cross section .. :	1	
	Diameter of bushing hole (mm) .....	15,9	
	Height between the equipment and the platen .....	343	
	Mass at the conductor(s) (kg) .....	9,5	
	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. .... :	236	
	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 (mm <sup>2</sup> ) .....		
	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
7.1.7.2	Connection capacity		
	Type of conductors .....	Solid or rigid (stranded)	
	Minimum cross-sectional area of conductor (mm <sup>2</sup> ) :	4,0	

TRF No. IEC/EN60947\_3B

ВРНО С ОПРЕДНАТА

IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Maximum cross-sectional area of conductor (mm <sup>2</sup> )	50	
	Number of conductors simultaneously connectable to the terminal	1(50mm <sup>2</sup> ), 2(4,0mm <sup>2</sup> )	
7.1.7.3	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
7.1.7.4	Terminal identification and marking		
	Terminal intended exclusively for the neutral conductor		N/A
	Protective earth terminal		N/A
	Other terminals		P
7.1.8	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
7.1.9	Provisions for protective earthing		
7.1.9.1	The exposed conductive parts are electrically interconnected and connected to a protective earth terminal		N/A
7.1.9.2	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
7.1.9.3	Protective earth terminal marking and identification		N/A
7.1.10	Enclosure for equipment		
7.1.10.1	Design		

IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	When the enclosure is opened, all parts requiring access for installation and maintenance are readily accessible	No enclosure	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
	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
7.1.10.2	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
7.1.11	Degree of protection of enclosed equipment		
	Degree of protection ..... : IP20		P

8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS		
	-1 sample: 4 poles, 125A		
8.3.3.1	Temperature-rise		
	ambient temperature 10-40 °C .....	28	
	test enclosure W x H x D (mm x mm x mm) .....	In free air	
	material of enclosure .....	-	
	Main circuits, test conditions:		
	- conventional thermal current Ith (A) .....	125	

IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- conventional enclosed thermal current $I_{the}$ (A) ... :	—	
	- cable/busbar cross-section (mm <sup>2</sup> ) / length (m)..... :	50/2	
	Fuse-link details (fuse-combination units only):		
	- 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 on page 30	P
	Auxiliary circuits, test conditions:		
	- rated operation current (A) .....	1	
	- cable cross-section (mm <sup>2</sup> ) .....	1	
	Measured temperature-rise..... :	see appended table 8.3.3.1 on page ___	N/A
8.3.3.2	Test of dielectric properties		
	Rated impulse withstand voltage (kV) .....	4	
	- test $U_{imp}$ main circuits (kV) .....	4,8	P
	- test $U_{imp}$ auxiliary circuits (kV) .....		N/A
	- test $U_{imp}$ on open main contacts (equipment suitable for isolation) (kV) .....	6,2(sea level)	P
	Power-frequency withstand voltage (V) .....		
	- main circuits, test voltage for 5 sec. (V) .....	2500V	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 $1,1 U_e$ (V) .....	457V	
	Measured leakage current (mA) .....	$4,2 \times 10^{-3}$ mA (max. value)	P
8.3.3.3	Making and breaking capacity		
	- utilization category .....	AC-22A	
	- rated operational voltage $U_e$ (V) .....	415V~	
	- rated operational current $I_e$ (A) or power (kW) .....	125A	

IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
Conditions for make/break operations or make operation, AC-23A and AC-23B only:			
	- test voltage, $U = 1,05 U_e$ .....(V):	L1: L2: L3:	N/A
	- test current, $I =$ .....x $I_e$ (A):	L1: L2: L3:	N/A
	- power factor.....:	L1: L2: L3:	N/A
Conditions for break operation, AC-23A and AC-23B only:			
	- test voltage, $U = 1,05 U_e$ .....(V):	L1: L2: L3:	N/A
	- test current, $I =$ .....x $I_e$ (A):	L1: L2: L3:	N/A
	- power factor.....:	L1: L2: L3:	N/A
Conditions for make/break operations, other than AC-23A/B:			
	- test voltage, $U = 1,05 U_e$ .....(V):	L1: 438 L2: 438 L3: 438	P
	- test current, $I = 3 \times I_e$ ..... (A):	L1: 378 L2: 378 L3: 378	P
	- power factor/ time constant: 0,60-0,70.....:	L1: 0,63 L2: 0,63 L3: 0,63	P
	Number of make/break or make and break operations.....:	5	P
	- recovery voltage duration ( $\geq 50$ ms)	100ms	P
	- current duration (ms).....:	500ms	P
	- time interval between operations.....:	30s	P
Characteristic of transient recovery voltage for AC-22 and AC-23 only			
	- oscillatory frequency (kHz).....:	52,5	
	- measured oscillatory frequency (kHz).....:	L1: 52,7 L2: 52,7 L3: 52,7	P

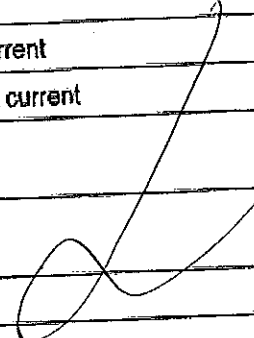
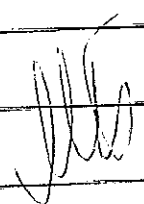
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IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- factor $\gamma$ .....	L1: 1,12 L2: 1,12 L3: 1,12	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		
	Test performed without:		
	- endanger to the 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		
	Immediately after the test equipment must work satisfactorily		
	- 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		
	test voltage: $2 \cdot U_e$ with a minimum of 1000V~.....	1000V~	
	No flashover or breakdown		P
8.3.3.5	Leakage current		
	test voltage (1,1 $U_e$ ) (V) .....	457	
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): $\leq 0,5$ mA/pole .....		N/A
	Leakage current (other utilization categories): $\leq 2$ mA/pole) .....	$4,5 \times 10^{-3}$ mA (max. value)	P
8.3.3.6	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....	50	
	- test current $I_e$ (A) .....	125	
	Measured temperature-rise.....	see appended table 8.3.3.6 on page 30	P
8.3.3.7	Strength of actuator mechanism		
8.2.5	Verification of the strength of actuator mechanism and position indicating device		
	- actuator type (fig.) .....	Figure 1b	
8.2.5.2.1	Dependent and independent manual operation		

IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- actuating force for opening (N) .....	44	
	- test force with blocked main contacts (N) .....	50	
	- used method to keep the contact closed .....		
	During and after the test, open position not indicated.....		P
	Equipment with locking mean, no locking in the open position while test force is applied.....		P
8.2.5.2.2	Dependent power operation		
	- 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		
	- 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

8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY		
	- 1 sample: 4 poles, 125A		
8.3.4.1	Operational performance test		
	- utilization category .....	AC-22A	
	- rated operational voltage (V) .....	415V-	
	- rated operational current (A) .....	125A	
	Test conditions for electrical operation cycles:		

IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- test voltage (V): $1,0xU_e$ .....	L1: 418 L2: 418 L3: 418	P
	- test current (A): $1,0xI_e$ .....	L1: 126 L2: 126 L3: 126	P
	- power factor/time constant : $0,75 \sim 0,85$ .....	L1: 0,78 L2: 0,78 L3: 0,78	P
	Number of cycles with current .....	1000	P
	Number of cycles without current .....	7000	P
	First test sequence (with/without current) .....	With current	P
	Second test sequence (with/without current) .....	Without current	P
	- time interval between first and second test sequence .....	30s	P
8.3.4.1.5	Behaviour of the equipment during the operational performance test		
	Test performed without:		P
	- 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
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		
	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		
8.3.4.2	Dielectric verification		
	test voltage: $2 \cdot U_e$ with a minimum of 1000V~ .....	1000V~	P
	No breakdown or flashover		
8.3.4.3	Leakage current		
	test voltage ( $1,1 U_e$ ) (V) .....	457	
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) $\leq 0,5$ mA/pole .....		N/A



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Clause	Requirement + Test	Result - Remark	Verdict

	Leakage current (other utilization categories) $\leq 2$ mA/pole .....	$3,6 \times 10^{-3}$ mA (max. value)	P
8.3.4.4	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....	50	
	- test current I <sub>e</sub> (A) .....	125	
	Measured temperature-rise.....	see appended table 8.3.4.4 on page 30	P

8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY		
	- 1 sample: 4 poles, 125A		
8.3.5.1	Short-time withstand current test		
	Rated short-time withstand current I <sub>ow</sub> (A) (>12.I <sub>e</sub> max) .....	12.I <sub>e</sub>	
	test voltage (V) .....	L1: 438 L2: 438 L3: 438	P
	r.m.s. test current (A) .....	L1: $1,52 \times 10^3$ L2: $1,52 \times 10^3$ L3: $1,52 \times 10^3$	P
	peak test current (A) .....	L1: $2,26 \times 10^3$ L2: $2,26 \times 10^3$ L3: $2,26 \times 10^3$	P
	power factor/time constant .....	L1: 0,95 L2: 0,95 L3: 0,95	P
	test duration (s) .....	1,0	P
8.3.5.1.5	Behaviour of the equipment during the test		
	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		
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		
	Immediately after the test equipment must work satisfactorily		

IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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
8.3.5.2	Short-circuit making capacity		
	Rated short-circuit making capacity I <sub>cm</sub> (A) ..... :	20.I <sub>e</sub>	
	test voltage (1.05xU <sub>e</sub> ) .....(V):	L1: 438 L2: 438 L3: 438	P
	r.m.s. test current (A) .....	L1: 1,78x10 <sup>3</sup> L2: 1,78x10 <sup>3</sup> L3: 1,78x10 <sup>3</sup>	P
	maximum peak test current (factor n)	2,52x10 <sup>3</sup> A	P
	power factor/time constant .....	L1: 0,88 L2: 0,88 L3: 0,88	P
	current duration (s) .....	0,15s	P
	Time interval between the cycles	30s	P
8.3.5.2.5	Behaviour of the equipment during the test		
	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		
	Immediately after the test equipment must work satisfactorily		
	- 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
8.3.5.3	Dielectric verification		
	test voltage: 2*U <sub>e</sub> with a minimum of 1000V- .....	1000	
	No flashover or breakdown		P
8.3.5.4	Leakage current		
	test voltage (1,1 U <sub>e</sub> ) (V) .....	457	



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Clause	Requirement + Test	Result - Remark	Verdict
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) $\leq 0,5$ mA/pole .....		N/A
	Leakage current (other utilization categories) $\leq 2,0$ mA/pole .....	$3,6 \times 10^{-3}$ mA (max. value)	P
8.3.5.5	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....	50	
	- test current I <sub>e</sub> (A) .....	125	
	Measured temperature-rise.....	see appended table 8.3.5.5 on page 30	P

8.3.5	<b>TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY</b>		
	- 1 sample: 4 poles, 32A		
8.3.5.1	Short-time withstand current test		
	Rated short-time withstand current I <sub>sw</sub> (A) (>12.I <sub>e</sub> max) .....	12.I <sub>e</sub>	
	test voltage (V) .....	L1: 438 L2: 438 L3: 438	P
	r.m.s. test current (A) .....	L1: 386 L2: 386 L3: 386	P
	peak test current (A) .....	L1: 532 L2: 532 L3: 532	P
	power factor/time constant .....	L1: 0,95 L2: 0,95 L3: 0,95	P
	test duration (s) .....	1,0	P
8.3.5.1.5	Behaviour of the equipment during the test		
	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		
	Immediately after the test equipment must work satisfactorily		

IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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
8.3.5.2	Short-circuit making capacity		
	Rated short-circuit making capacity I <sub>cm</sub> (A) .....	20 I <sub>e</sub>	
	test voltage (1.05xU <sub>e</sub> ) .....(V):	L1: 438 L2: 438 L3: 438	P
	r.m.s. test current (A) .....	L1: 457 L2: 457 L3: 457	P
	maximum peak test current (factor n)	648A	P
	power factor/time constant .....	L1: 0,95 L2: 0,95 L3: 0,95	P
	current duration (s) .....	0,15s	P
	Time interval between the cycles	30s	P
8.3.5.2.5	Behaviour of the equipment during the test		
	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		
	Immediately after the test equipment must work satisfactorily		
	- 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
8.3.5.3	Dielectric verification		
	test voltage: 2*U <sub>e</sub> with a minimum of 1000V~ .....	1000	
	No flashover or breakdown		P
8.3.5.4	Leakage current		
	test voltage (1,1 U <sub>e</sub> ) (V) .....	457	

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Clause	Requirement + Test	Result - Remark	Verdict
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) $\leq 0,5$ mA/pole .....		N/A
	Leakage current (other utilization categories) $\leq 2,0$ mA/pole .....	$5,1 \times 10^{-3}$ mA (max. value)	P
8.3.5.5	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....		
	- test current I <sub>e</sub> (A) .....		
	Measured temperature-rise .....	/	N/A

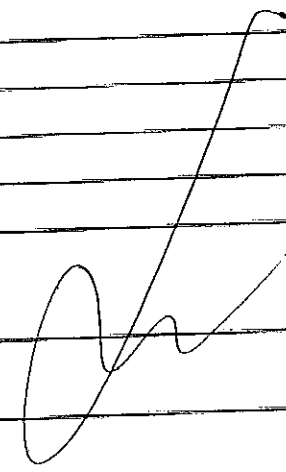
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT		
	Protective device details:		
	- manufacturer's name, trademark or identification mark .....		
	- manufacturer's model or type reference .....		
	- rated voltage (V) .....		
	- rated current (A) .....		
	- rated breaking capacity (kA) .....		
8.3.6.2	Fuse protected short-circuit withstand		
	test voltage (1,05 U <sub>e</sub> ) (V) .....	L1: L2: L3:	N/A
	test current (kA) .....	L1: L2: L3:	N/A
	rated frequency (Hz) .....		N/A
	power factor .....		N/A
	Time constant (ms) .....		N/A
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....	L1: L2: L3:	N/A
	- Joule integral I <sup>2</sup> dt (kA <sup>2</sup> s) .....	L1: L2: L3:	N/A
	Fuse protected short-circuit making		
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....		N/A
	- point at which the measurement is made .....		N/A

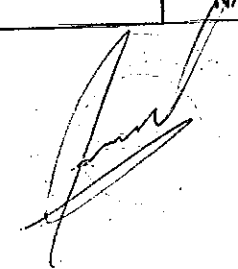


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Clause	Requirement + Test	Result - Remark	Verdict
	- test speed during the fuse protected short-circuit making (m/s) .....		N/A
	- max. let-through current (kA) .....	L1: L2: L3:	N/A
	- Joule integral I <sup>2</sup> dt (kA <sup>2</sup> s) .....	L1: L2: L3:	N/A
8.3.6.2.5	Behaviour of the equipment during the test		
	Test performed without:		N/A
	- 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		
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		
	Immediately after the test equipment must work satisfactorily		
	- 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
8.3.6.3	Dielectric verification		
	test voltage: 2*Ue with a minimum of 1000V~ .....		
	No flashover or breakdown		N/A
8.3.6.4	Leakage current		
	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) ≤ 2,0 mA/pole .....		N/A
8.3.6.5	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....		
	- test current Ie (A) .....		
	Measured temperature-rise.....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7	<b>TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY</b>		
8.3.7.1	Overload test		
	ambient temperature 10-40 °C .....		
	test enclosure W x H x D (mm x mm x mm) .....		
	material of enclosure .....		
	test current 1,6xI <sub>th</sub> e or 1,6xI <sub>th</sub> (A) .....		
	cable/busbar cross-section (mm <sup>2</sup> ) / length (m) .....		
	Fuse-link details:		
	- manufacturer's name, trademark or identification mark .....		
	- 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/A
	Required opening force not greater than the test force of 8.2.5.2 and table 8		N/A
	The equipment has not undergone any impairment hindering such operation		N/A
8.3.7.2	Dielectric verification		
	test voltage: 2*U <sub>e</sub> with a minimum of 1000V~ .....		
	No flashover or breakdown		N/A
8.3.7.3	Leakage current		
	test voltage (1,1 U <sub>e</sub> ) (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
8.3.7.4	Temperature-rise verification		
	Fuse links aged during the overload test are replaced by new fuse-links .....		
	- conductor cross-section (mm <sup>2</sup> ) .....		
	- test current I <sub>e</sub> (A) .....		
	Measured temperature-rise .....		N/A



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Clause	Requirement + Test	Result - Remark	Verdict

8.4	ELECTROMAGNETIC COMPATIBILITY TESTS		
8.4.1	Immunity		
8.4.1.1	Equipment not incorporating electronic circuits: no tests necessary		
8.4.1.2	Equipment incorporating electronic circuits:		
	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 6 apply		N/A
	Performed tests .....	see .....	N/A
	No unintentional separation or closing of contacts has occurred during these tests .....		N/A
8.4.2	Emission		
8.4.2.1	Equipment not incorporating electronic circuits: no tests necessary		N/A
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 .....	see .....	N/A

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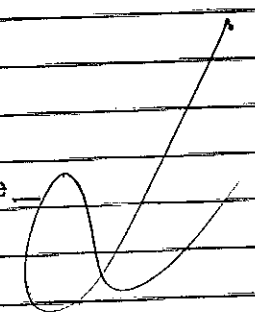
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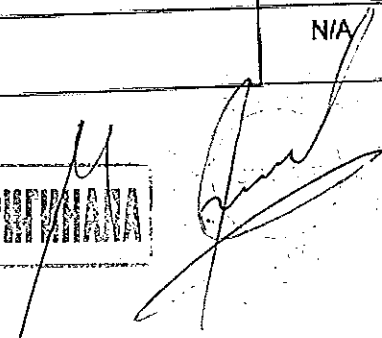
IEC / EN 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

Annex A (normative)			
A	Equipment for direct switching of a single motor		
A.1	Additional rated duties .....		N/A
A.1.1	- intermittent periodic duty		N/A
	- intermittent duty		
A.1.1.1	Classes of intermittent duty .....		N/A
	-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.1.2	Temporary duty.....		
A.5	Mechanical durability:		N/A
	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.6	Electrical durability:		N/A
	- test according to manufacturer's instruction		
A.7	Verification of making and breaking capacities:		N/A
	- utilization category .....		N/A
	- rated operational voltage $U_e$ (V) .....		N/A
	- rated operational current $I_e$ (A) or power (kW) .....		N/A
	Conditions for make/break operations or make operations:		N/A
	- test voltage, $U = 1,05 U_e$ .....(V):	L1: L2: L3:	
	- test current, $I =$ ..... x $I_e$ (A):	L1: L2: L3:	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- power factor.....	L1: L2: L3:	N/A
	Conditions for make/break operations:		
	- test voltage, $U = 1,05 U_e$ .....(V):	L1: L2: L3:	N/A
	- test current, $I =$ .....x $I_e$ (A):	L1: L2: L3:	N/A
	- power factor/ time constant .....	L1: L2: L3:	N/A
	Number of make/break or make and break operations .....		N/A
	- recovery voltage duration ( $\geq 50$ ms)		N/A
	- current duration (ms) .....		N/A
	- time interval between operations .....		N/A
	Characteristic of transient recovery voltage if necessary:		
	- oscillatory frequency (kHz) .....		
	- measured oscillatory frequency (kHz) .....	L1: L2: L3:	N/A
	- factor $\gamma$ .....	L1: L2: L3:	N/A
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		
	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		
	Immediately after the test equipment must work satisfactorily		

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
8.3.3.4	Dielectric verification		
	test voltage: $2 \cdot U_e$ with a minimum of 1000V~ .....		
	No flashover or breakdown		
8.3.3.5	Leakage current		N/A
	test voltage (1,1 $U_e$ ) (V) .....		N/A
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): $\leq 0,5$ mA/pole .....		N/A
	Leakage current (other utilization categories): $\leq 2$ mA/pole) .....		N/A
8.3.3.6	Temperature-rise verification		N/A
	- conductor cross-section (mm <sup>2</sup> ) .....		N/A
	- test current $I_e$ (A) .....		N/A
	Measured temperature-rise .....	see 	
A.8	Operational performance test:		N/A
	- utilization category .....		N/A
	- rated operational voltage (V) .....		N/A
	- rated operational current (A) .....		N/A
	Test conditions for electrical operation cycles:		N/A
	- test voltage (V) .....	L1: L2: L3:	N/A
	- test current (A) .....	L1: L2: L3:	N/A
	- power factor/time constant .....	L1: L2: L3:	N/A
	Number of cycles with current .....		N/A
	Number of cycles without current .....		N/A
	First test sequence (with/without current) .....		N/A
	Second test sequence (with/without current) .....		N/A
	- time interval between first and second test sequence .....		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.5	Behaviour of the equipment during the operational performance test		
	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		
	Immediately after the test equipment must work satisfactorily		
	- 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		
	test voltage: $2 \cdot U_e$ with a minimum of 1000V~ .....		N/A
	No breakdown or flashover		N/A
8.3.4.3	Leakage current		
	test voltage (1,1 $U_e$ ) (V) .....		
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) $\leq 0,5$ mA/pole .....		N/A
	Leakage current (other utilization categories) $\leq 2$ mA/pole .....		N/A
8.3.4.4	Temperature-rise verification		
	- conductor cross-section (mm <sup>2</sup> ) .....		N/A
	- test current $I_e$ (A) .....		N/A
	Measured temperature-rise .....	see	N/A
			N/A
A.9	Special tests:	see	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Annex C (normative)			
C	Single pole operated three pole switches		N/A
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/A
C.2	Additional-tests to be performed on single pole operated three pole switches		N/A
	Test "8.3.3.3 Making and breaking capacities" according to test sequence I with following modifications		N/A
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle.....		N/A
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....		N/A
	Test performed in a three phase circuit		N/A
	Test "8.3.4.1 Operational performance" according to test sequence II with following modifications		N/A
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle.....		N/A
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....		N/A
	Test performed in a three phase circuit		N/A
	Test "8.3.6.2 Fuse protected short circuit test" according to test sequence IV with following modifications		N/A
	For the making test L1 shall be open and L2 closed, L3 is subjected to the required make operation cycle.....		N/A
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....		N/A
	Test performed in a three phase circuit		N/A
C.5	Instruction for use		N/A
	The product literature includes following statement :		N/A
	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/A

**ВАРНО С ОРНИВАТА**

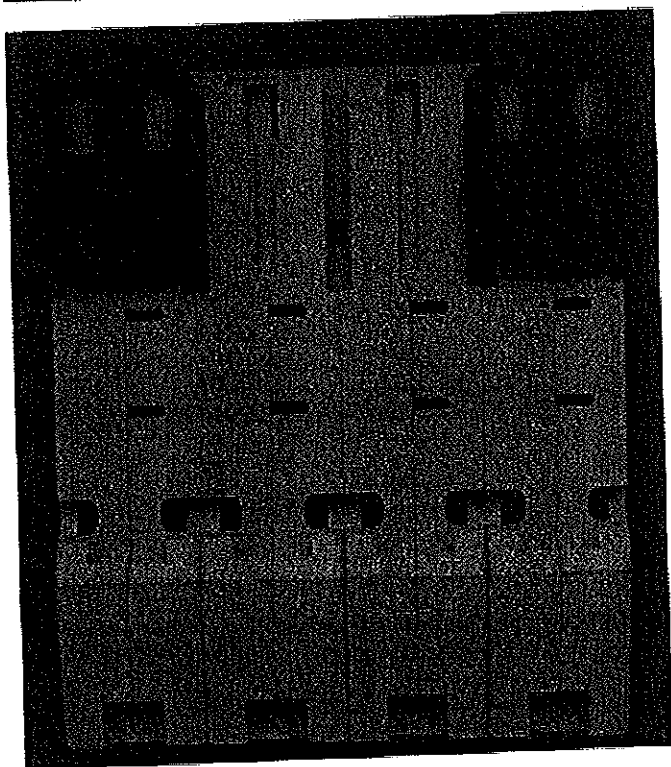
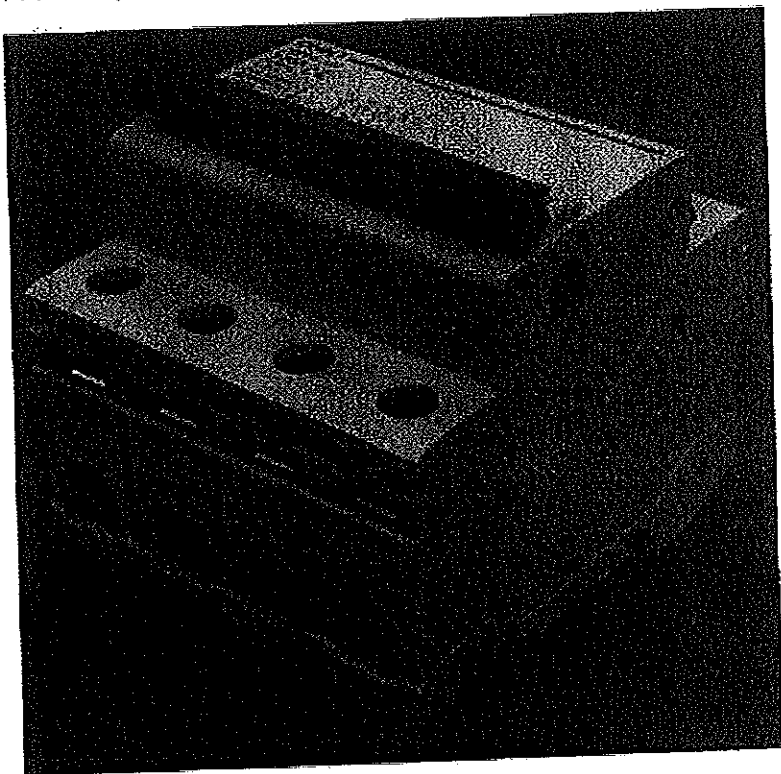


Appended table:

8.3.3.1 TABLE: Temperature-rise (measurements)			
Temperature rise $\Delta T$ of part: 4 poles, 25A		$\Delta T$ (K) measured	$\Delta T$ (K) required
Terminals		55	70
Manual operating means: metallic/ non-metallic		11	25
Parts intended to be touched but not hand-held: metallic / non-metallic		24	40
Parts which need not be touched during normal operation		25	40
supplementary information:			
8.3.3.6 TABLE: Temperature-rise (measurements)			
Temperature rise $\Delta T$ of part: 4 poles, 25A		$\Delta T$ (K) measured	$\Delta T$ (K) required
Terminals		63	80
Manual operating means: metallic/ non-metallic		14	25
Parts intended to be touched but not hand-held: metallic / non-metallic		30	40
Parts which need not be touched during normal operation		31	40
supplementary information:			
8.3.4.3 TABLE: Temperature-rise (measurements)			
Temperature rise $\Delta T$ of part: 4 poles, 32A		$\Delta T$ (K) measured	$\Delta T$ (K) required
Terminals		62	80
Manual operating means: metallic/ non-metallic		13	25
Parts intended to be touched but not hand-held: metallic / non-metallic		25	40
Parts which need not be touched during normal operation		26	40
supplementary information:			
8.3.6.5 TABLE: Temperature-rise (measurements)			
Temperature rise $\Delta T$ of part: 4 poles, 32A		$\Delta T$ (K) measured	$\Delta T$ (K) required
Terminals		63	80
Manual operating means: metallic/ non-metallic		14	25
Parts intended to be touched but not hand-held: metallic / non-metallic		28	40
Parts which need not be touched during normal operation		27	40
supplementary information:			

ВЕРНО С ОРИГИНАЛОМ

Photos of product:



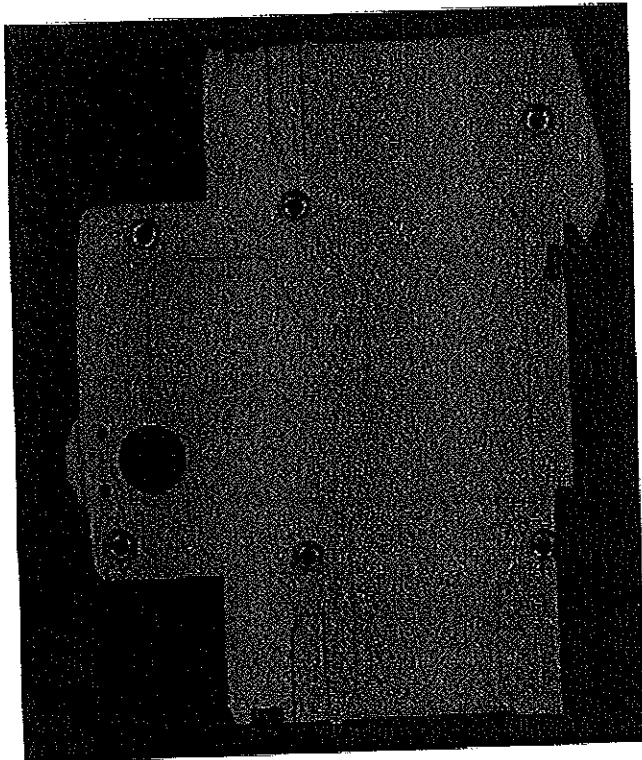
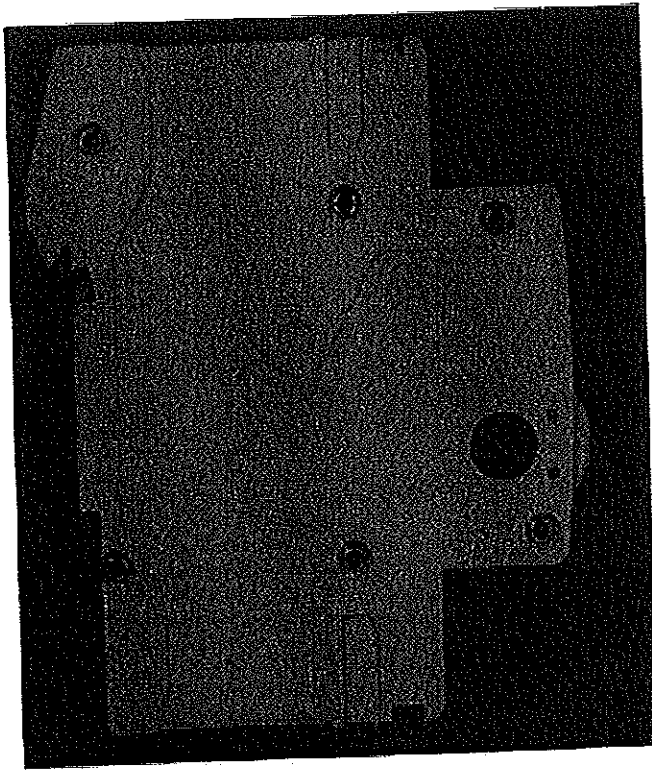
*[Handwritten signature]*

TRF No. IECEN60947\_3B

**ВЯРНО С ОРЪНИКАЛА**

*[Handwritten signature]*

Photos of product:



*[Handwritten signature]*

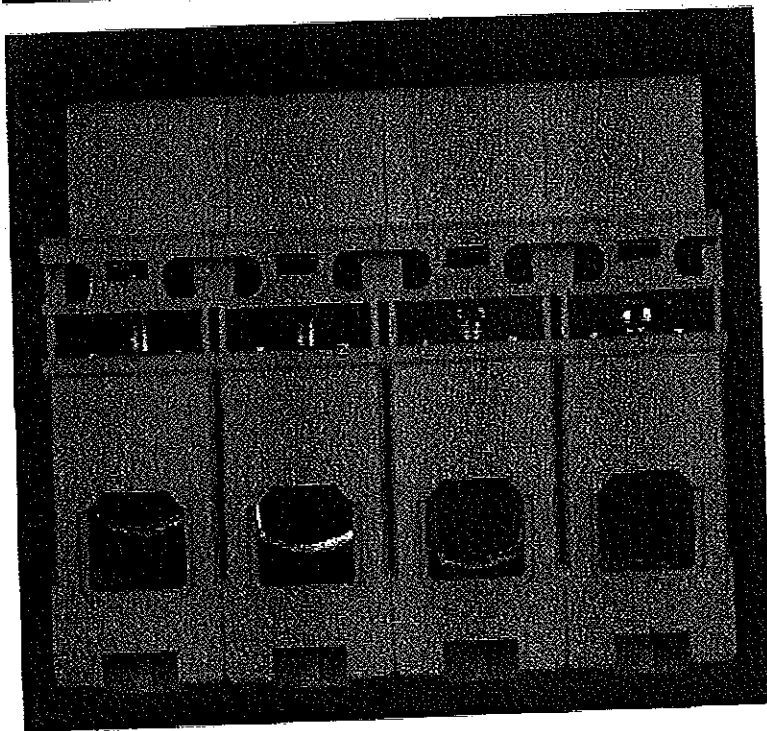
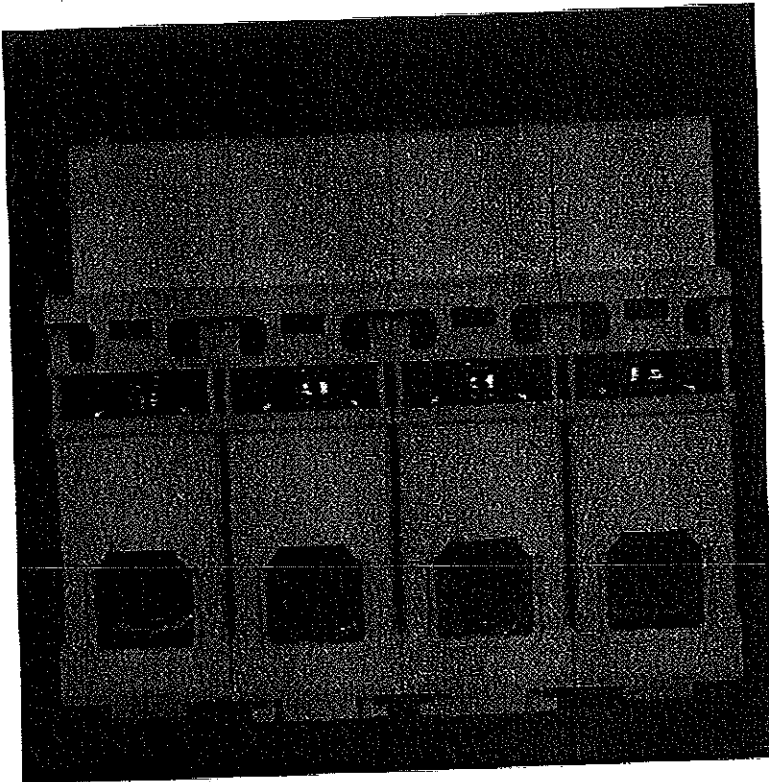
*[Handwritten signature]*

*[Handwritten signature]*

TRF No: IECEN60947\_3B

**ВЕРНО С ОРИГИНАЛОМ**

Photos of product:



*[Handwritten signature]*

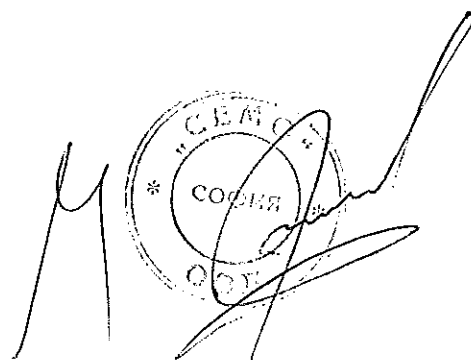
*[Handwritten signature]*

*[Handwritten signature]*

TRF No. IECEN60947\_3B

**ВЯРНО С ОРИГИНАЛА**

**Приложение № 13**

A handwritten signature in black ink, consisting of a large, stylized initial 'A' followed by several smaller, cursive letters.A handwritten signature in black ink, written over a circular stamp. The stamp contains the text "СЕРВИС" at the top, "СОФИА" in the center, and "ООО" at the bottom. To the left of the stamp is a large, stylized handwritten letter 'M'.

International Electrotechnical  
Commission



IEC System of Conformity Assessment  
Schemes for Electrotechnical  
Equipment and Components (IECEE)

## CERTIFICATE OF ACCEPTANCE

TO PARTICIPATE IN THE IECEE CB-SCHEME

**DEKRA Testing Services (Zhejiang) Co., Ltd.**  
No. 5. Changjiang Road, Great Bridge Industrial Park, North Baixiang, Wenzhou, Zhejiang, 325603, P.R.China

has been assessed and determined to fully comply with the requirements of ISO/IEC 17025: 2005-05, The Basic Rules, IECEE 01: 2014-11 and Rules of Procedure IECEE 02: 2015-06, and the relevant IECEE CB-Scheme Operational Documents.

**DEKRA Testing Services (Zhejiang) Co., Ltd.**

is therefore entitled to operate as a Chinese CB Testing Laboratory under the responsibility of DEKRA Certification B.V. as National Certification Body and to carry out testing within the IECEE CB Scheme for the Scope (Product Category(ies) and Standard(s)) as listed in the relevant part of the IECEE Web Site at [www.iecee.org](http://www.iecee.org), and is subject to all other terms as set forth in the IECEE Basic Rules and Rules of Procedure

This certificate remains valid until December 31<sup>st</sup> 2017 at which time it will be reissued by the IECEE Executive Secretary upon successful completion of the normally scheduled 3-year Reassessment Programme administered by the IECEE CB Scheme.

Signed by:

Kerry McMANAMA  
IECEE EXECUTIVE SECRETARY AND COO

Date of Issue: 2017-02-17  
TL241

ВЯРНО С ОРНИЦИКАТА

International Electrotechnical  
Commission



IEC System of Conformity Assessment  
Schemes for Electrotechnical  
Equipment and Components (IECEE)

## CERTIFICATE OF ACCEPTANCE

TO PARTICIPATE IN THE IECEE CB-SCHEME

**Intertek Semko AB**

Torshamnsgatan 43, SE-164 22 Kista, Stockholm, Sweden

has been assessed and determined to fully comply with the requirements of ISO/IEC 17025: 2005-05, The Basic Rules, IECEE 01: 2014-11 and Rules of Procedure IECEE 02: 2015-06, and the relevant IECEE CB-Scheme Operational Documents.

**Intertek Semko AB**

is therefore entitled to operate as a Sweden CB Testing Laboratory under the responsibility of Intertek Semko AB as National Certification Body and to carry out testing within the IECEE CB Scheme for the Scope (Product Category(ies) and Standard(s)) as listed in the relevant part of the IECEE Web Site at [www.iecee.org](http://www.iecee.org), and is subject to all other terms as set forth in the IECEE Basic Rules and Rules of Procedure

This certificate remains valid until October 7<sup>th</sup> 2018 at which time it will be reissued by the IECEE Executive Secretary upon successful completion of the normally scheduled 3-year Reassessment Programme administered by the IECEE CB Scheme.

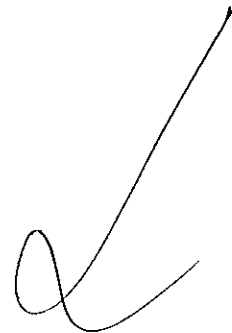
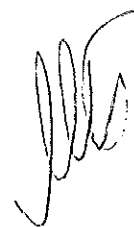
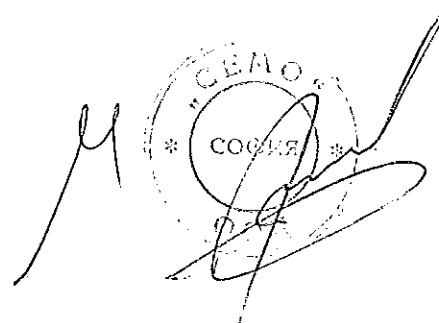
Signed by:

Kerry McMANAMA  
IECEE EXECUTIVE SECRETARY AND COO

Date of Issue: 2016-03-17  
TL013

ВАРНО С ОРИГИНАЛА

**Приложение № 14**

A handwritten signature consisting of a large, sweeping initial 'A' followed by a few cursive strokes.A handwritten signature consisting of several vertical, parallel strokes.A handwritten signature and an official circular stamp. The stamp contains the text "СВАО" at the top and "СОСЯ" at the bottom, with two asterisks on either side of the bottom text. The signature is written over the stamp.



# НН4-125

## Товаров прекъсвач

### Инструкция за работа

#### 1. Приложение

Товаровия прекъсвач от серията НН4-125 притежава висока динамична устойчивост. Приложим е за инсталиране в разпределителни и контролни променливотокови вериги с честота на мрежата 50/60Hz, номинално напрежение 230/400VАС. Основното му приложение е като главен шалтер и електрически табла. Освен това се използва и за контрол на не големи електрически устройства и осветление. Намира широко приложение в индустрията, минното производство, административни и жилищни згради.

Този продукт отговаря на стандарт IEC60947-3.

#### 2. Условия на работа

##### 2.1. Околна температура

Горната граница на температурата на околната среда е +40°C, долната граница е - 5°C. Средната температура за 24 часа не трябва да превишава +35°C.

##### 2.2. Надморска височина

Надморската височина на мястото на инсталиране не трябва да превишава 2000m.

##### 2.3. Атмосферни условия

Относителната влажност на въздуха не трябва да превишава 50%, когато най – високата температура на околната среда е +40°C. Относителната влажност може да бъде по висока при по – ниски температурни условия, например относителна влажност 90%, когато температурата е +20°C. Трябва да се отчете и появата на конденз по повърността на продукта поради температурна промяна.

##### 2.4. Степен на замърсяване: II степен.

##### 2.5. Начин на инсталиране

Приет начин на монтаж върху стоманена ТН35 – 7.5 шина.

##### 2.6. Изисквания при монтаж

Наклона на вертикалната равнина да не превишава 5°C.

##### 2.7. Начин на свързване

Стягане на проводника с винт. Въртящ момент на затягане: 2.5 Nm

ВАЖНО С ОБУЧАВАТА

### 3. Основна спецификация и технически параметри

#### 3.1. Тип и обозначение

#### NH4-125

N – Фирмен код

H – Товаров прекъсвач

4 – Номер на модела

125 – Номинален ток на корпуса

#### 3.2. Класификация

##### 3.2.1. Според номиналния ток

$I_e$  : 32A, 63A, 100A, 125A.

3.2.2. Съгласно броя на полюсите: еднополюсни, двуполюсни, триполюсни, четириполюсни.

#### 3.3. Основни технически параметри

3.3.1. Краткотраен издържан ток:  $12I_e/1s$

3.3.2. Включвателна и изключвателна способност:  $3I_e, 1.05U_e, \cos\phi = 0.65$

3.3.3. Включвателна способност:  $20I_e/0.1s, \cos\phi = 0.9$

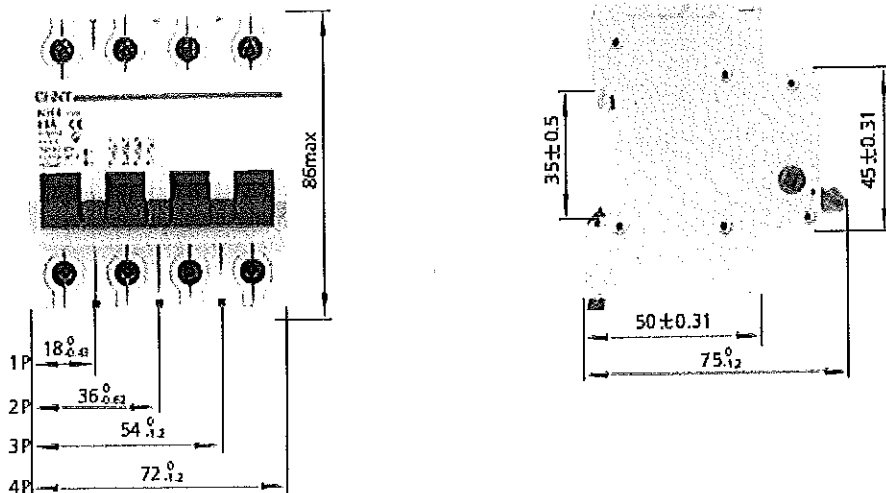
3.3.4. Износоустойчивост

8 500 цикъла без товар, 1500 цикъла под товар, общо 10 000 цикъла  $\cos\phi = 0.8$ , честота на операциите 120 цикъла за час.

#### 3.4. Габаритни и монтажни размери

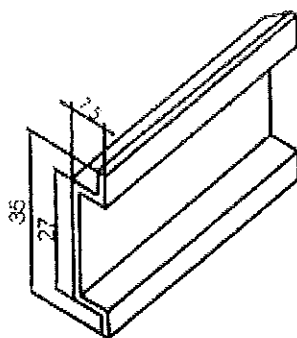
Габаритните и монтажните размери са показани на фиг. 1 и фиг. 2

ВЯРНО С ОРНИШАТА



фиг. 1

ТН35-7.5 монтажна шина



Фиг. 2

## 4. Основна структура и принцип на работа

### 4.1. Структура

Товаровия прекъсвач е съставен основно от изолационна обвивка, работен механизъм, контактна система и клеми за свързване.

Работния механизъм използва енергията на заредена пружина. Устройството за индикация показва състоянието на подвижния контакт на товарния прекъсвач посредством твърда възка към ръкохватката.

### 4. 2. Принцип на работа

Под действието на пружината, ръкохватката задвижва подвижния контакт във включено или изключено положение с помощта на твърда възка, като по този начин осъществява надеждно разединяване на веригата.

ВЯРНО С ОРИГИНАЛА

## 5. Монтаж и поддръжка

### 5.1. Монтаж.

5. 1. 1. Проверете дали маркировката на товаровия прекъсвач е в съгласие с условията на работа в които ще се монтира.

5. 1. 2. Поставете товаровия прекъсвач върху монтажната шина от фиг. 2, издърпайте стопера и фиксирайте товаровия прекъсвач върху шината. Върнете стопера в първоначалното му положение за да застопорите разединителя.

5. 1. 3. Преместете ръкохватката в горно положение за да включите товаровия прекъсвач, като знакът за включено положение ще се появи за да покаже че устройството е включено. Преместе ръкохватката обратно за да изключите веригата, ще се появи индикация за изключено положение на товаровия прекъсвач.

5. 1. 4. Свържете захранващата линия към горната клемма на товаровия прекъсвач, а изходящата линия към долния терминал. При трифазна линия трябва да се съобразят последователността на фазите. Поставете проводника в клемния отвор и притегнете болта. Въртящия момент на затягане е 2.5 Nm. Не оставяйте оголени части от проводника извън отвора.

5. 1. 5. Включете и изключете товаровия прекъсвач няколко пъти преди да подадете захранване за да се уверите, че работи без затруднения.

### 5. 2. Обслужване

5. 2. 1. Проверявайте изправността и работата на товаровия прекъсвач периодично, като интервалите на проверка зависят от условията на работа.

5. 2. 2. Продуктът трябва да бъде защитен от пряко попадение от вода и да се пази от механични повреди

## 6. Съхранение

6.1. Да се съхранява при температури от - 25°C до + 70°C.

## 7. Транспортиране

7.1. Товарите прекъсвачи следва да бъдат транспортирани в оригиналните си опаковки с подходящи транспортни средства

ВЯРНО С ОРИГИНАЛА



**Приложение 3 към Техническо предложение**

**За Обособена позиция 2**

**СРОКОВЕ ЗА ДОСТАВКА**

№	Наименование	Мярк а	Количество със срок на доставка до 7 кал. дни	Количество със срок на доставка до 30 кал. дни
1	2	3	4	5
1	Мини тов. прек. 63 А, шир.18 mm, 1P	бр.	2 000	7 500
2	Мини тов. прек. 63 А, шир.18 mm, 3P	бр.	500	2 000
3	Мини тов. прек. 125 А, шир.27 mm, 1P	бр.	50	150
4	Мини тов. прек. 125 А, шир.27 mm, 3P	бр.	150	300

**Забележки:**

- 1/ Срокът на доставките започва да тече от датата на изпращане на поръчката.
- 2/ Количествата в колона 4, 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 да 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 4 и 5.
- 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 4 и 5.
- 7/ Количествата за доставка в колони 4 и 5 са отделни и независими едно от друго.
- 8/ Количествата за доставка в колона 5 не включват в себе си количествата за доставка в колона 4.
- 9/ Възложителят има право да направи едновременно поръчки за доставка на количества от колони 4 и 5.

Дата 25.09.2017 г.

**ПОДПИС и ПЕЧАТ:** \*  **Евгени Бенински**  
Управител

Семо ООД  
София,  
бул. Ботевградско шосе 247  
Сграда 2, офис 2506  
trade@semo.bg tel: + 359 2 94 24 754  
engineering@semo.bg tel: + 359 2 931 01 77  
fax: +359 2 94 24 762



www.semo.bg



ОБРАЗЕЦ

## ДЕКЛАРАЦИЯ

за приемане на условията в проекта на рамково споразумение и проекта на конкретен договор, неразделна част от рамковото споразумение

Долуподписаният/-ната/ Евгени Иванов Бенински, в качеството ми на представляващ „СЕМО“ ООД, участник в процедура за възлагане на обществена поръчка с реф. № PPD 17-109 и предмет: „Доставка на миниатюрни прекъсвачи“, обособена/и позиция/и

Обособена позиция № 2 Доставка на еднополюсни и триполюсни миниатюрни товарни прекъсвачи.

### ДЕКЛАРИРАМ, ЧЕ:

1. Приемам условията в проекта на рамково споразумение, приложен в документацията за участие.
2. Приемам условията в проекта на конкретен договор, неразделна част от рамковото споразумение, приложен в документацията за участие.

Дата: 25.09.2017 г.

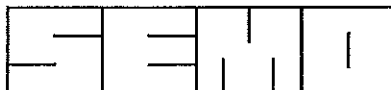
Декларатор:  
Евгени Бенински

### Забележка:

Декларацията се подписва от законния представител на участника или от надлежно упълномощено лице, което подава офертата.

Когато участник подава оферта за повече от една обособена позиция, може да бъде изготвена, подписана и подадена само една декларация (според настоящия образец), но на съответното място в декларацията задължително се отбелязват номерата на всички обособени позиции, за които участникът участва. Възможно е по преценка на участника, когато същият участва за повече от една обособена позиция, да изготви и подпише отделни декларации (съобразно настоящия образец) за всяка отделна обособена позиция, за която участва.

Семо ООД  
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fax: +359 2 94 24 762



www.semo.bg



Приложение № 5  
поставя се в комплекта на  
техническото предложение  
ОБРАЗЕЦ!

## ДЕКЛАРАЦИЯ

за срока на валидност на офертата

Долуподписаният/ -ата <sup>✓</sup>Евгени Иванов Бенински,  
притежаващ/а лична карта №645135038, издадена на 21.02.2012г. от МВР – гр. София, адрес: гр. София ул.  
Св. Иван Рилски, бл. 42, ет 6, ап 14  
в качеството ми на <sup>✓</sup>Управител  
на „СЕМО“ ЕООД,

участник в процедура за възлагане на обществена поръчка с реф. № PPD 17-109 и предмет „Доставка на  
миниатюрни прекъсвачи“, обособена/и позиция/и

Обособена позиция № 2 Доставка на еднополосни и триполосни миниатюрни товари прекъсвачи.

### ДЕКЛАРИРАМ, ЧЕ:

С подаване на настоящата оферта, направените от нас предложения и поети ангажименти за обособена/и  
позиция/и №№:

Обособена позиция № 2 Доставка на еднополосни и триполосни миниатюрни товари прекъсвачи.,

са валидни за срока, посочен в обявлението, считано от крайния срок за подаване на офертите.

Дата 25.09.2017 г.

Декларатор:  
Евгени Бенински

### Забележка:

Декларацията се подписва от законния представител на участника или от надлежно упълномощено лице,  
което подава офертата.

Когато участник подава оферта за повече от една обособена позиция, може да бъде изготвена,  
подписана и подадена само една декларация (според настоящия образец), но на съответното място в  
декларацията задължително се отбелязват номерата на всички обособени позиции, за които участникът  
участва. Възможно е по преценка на участника, когато същият участва за повече от една обособена  
позиция, да изготви и подпише отделни декларации (съобразно настоящия образец) за всяка отделна  
обособена позиция, за която участва.