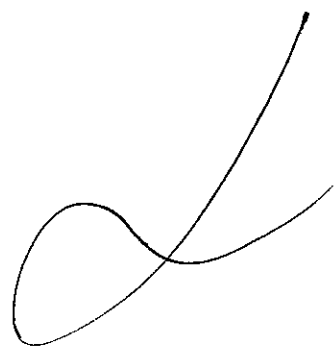


СММ

# ТЕХНИЧЕСКИ ИЗИСКВАНИЯ И СПЕЦИФИКАЦИИ

ОТ:

**АМ ЕЛЕКТРИК**





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## ТЕХНИЧЕСКИ ИЗИСКВАНИЯ И СПЕЦИФИКАЦИИ ЗА ИЗПЪЛНЕНИЕ НА ПОРЪЧКАТА ЗА ОБОСОБЕНА ПОЗИЦИЯ 1

### I. Еднополюсни и триполюсни миниатюрни автоматични прекъсвачи до 63 А, 10 кА, широчина на полюс 18 mm

Кратко наименование на материала: Мин.авт.прек.до 63А, шир. 18

Област: G – Инсталации (Електромерни табла) Категория: 17–Комутационни апарати НН

Мерна единица: Брой Аварийни запаси: Да

#### Характеристика на материала:

Миниатюрните автоматични прекъсвачи представляват механични комутационни апарати, способни да провеждат и да включват/изключват ръчно електрически токове във вериги при нормални условия и да включват, да провеждат за определено време и да изключват автоматично токове във вериги при условията на претоварване и късо съединение.

Тялото на миниатюрните автоматични прекъсвачи 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 прекъсвачи не са достъпни.

Средството (лостът) за управление при вертикално монтиране на миниатюрните автоматични прекъсвачи се движи в направление „нагоре – надолу“, при което контактите се затварят при движение „нагоре“. Миниатюрните прекъсвачи 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 прекъсвачи при нормален работен режим при температура до 40°C не трябва да надвишават посочените в таблица 6 от БДС EN 60898-1:2006 стойности или еквивалентно/и.

Изолационните разстояния през въздуха и изолационните разстояния по повърхността на изолацията не трябва да бъдат по-малки от посочените в таблица 4 на БДС EN 60898-1:2006 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 съгласно таблица 5 на БДС EN 60898 или еквивалентно/и. 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 прекъсвачи 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 прекъсвачи са маркирани с информацията съгласно т. 6 от БДС EN 60898-1:2006 или еквивалентно/и и SE маркировка за съответствие.

Миниатюрните прекъсвачи са пакетирани в картонени кутии, на които е залепен етикет с наименование на материала „Миниатюрни автоматични прекъсвачи“, техническите данни и броя на миниатюрните прекъсвачи, годината на производство, партидните номера и стандарта, в съответствие, с който са произведени и изпитани - БДС EN 60898-1:2006 или еквивалентно/и.





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**Използване:**

Миниатурните автоматични прекъсвачи са предназначени за монтиране в електромерни табла за директно измерване на електрическата енергия и се използват за защита срещу свръхтокове на вериги, захранващи битови и други подобни уреди.

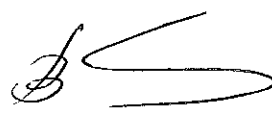
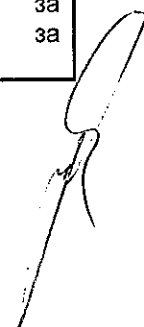
**Съответствие на предлаганото изпълнение с нормативно-техническите документи:**

Миниатурните автоматични прекъсвачи отговарят на посочените по-долу стандарти или еквиваленти, включително на техните валидни изменения и допълнения:

- БДС EN 60898-1:2006 „Автоматични прекъсвачи за защита срещу свръхтокове на битови и други подобни уредби или еквивалентно. Част 1 Автоматични прекъсвачи за работа с променливо напрежение (IEC 60898-1:2002, с промени)” и на неговите валидни изменения и допълнения или еквивалентно;
- БДС EN 60898-1:2003/A1:2006 „Автоматични прекъсвачи за защита срещу свръхтокове на битови и други подобни уредби. Част 1 Автоматични прекъсвачи за работа с променливо напрежение (IEC 60898-1:2003/A1:2003)” или еквивалентно;
- БДС EN 60898-1:2003/A11:2006 „Автоматични прекъсвачи за защита срещу свръхтокове на битови и други подобни уредби или еквивалентно. Част 1 Автоматични прекъсвачи за работа с променливо напрежение”;
- БДС EN 60947-2:2006 „Комутационни апарати за ниско напрежение. Част 2: Автоматични прекъсвачи (IEC 60947-2:2006)” и на неговите валидни изменения и допълнения или еквивалентно при запазване на времетоковите характеристики на задействане съгласно БДС EN 60898-1:2006 или еквивалентно и осигуряване на еквивалентни или по-високи технически параметри, включително гранични и работни изключвателни възможности при късо съединение;
- БДС EN 60947-2:2006/A1:2009 „Комутационни апарати за ниско напрежение. Част 2: Автоматични прекъсвачи” 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	Попълнени в това приложение, приложен е и каталог на производителя
2.	Техническо описание и чертежи с нанесени на тях размери	Приложени в каталога на производителя
3.	ЕО декларация за съответствие	Приложена е декларация за съответствие за всеки тип



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№ по ред	Документ	Приложение № или текст
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	Приложени протоколи към техническото предложение, приложен списък с проведените изпитвания
5.	Сертификат/акредитация на независимата изпитвателна лаборатория, провела типовите изпитвания по т. 4 – заверено копие	Приложен сертификат към техническото предложение
6.	Инструкции за транспортиране, складиране, монтиране, вкл. въртящия момент на затягане на клемовите съединения, обслужване и поддържане	Приложени към предложението за изпълнение на поръчката

#### 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

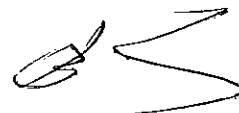





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### 3. Технически параметри и други данни

№ по ред	Характеристика	Изискване	Гарантирано предложение
3.1	Тип на времетоковата характеристика на задействане	C	Продуктът съответства на три вида криви B C D
3.2	Обявено работно напрежение ( $U_e$ )	-	-
3.2.1	Еднополюсни прекъсвачи	230/400 V	230/400V
3.2.2	Триполюсни прекъсвачи	400 V	400V
3.3	Обявена честота ( $f_n$ )	50 Hz	50Hz/60Hz
3.4	Обявено напрежение на изолацията ( $U_i$ )	min 440 V	min 440V
3.5	Обявено издържано импулсно напрежение ( $U_{Imp}$ )	min 6 kV	min 6kV
3.6	Категория по пренапрежение	IV	IV
3.7	Обявена комутационна възможност при късо съединение ( $I_{cn}$ )	min 10 kA	$I_{cn}=10kA$
3.8	Степен на защита от проникване на твърди тела и вода	min IP20	IP20
3.9	Износоустойчивост	-	-
3.9.1	Електрическа (брой к.ц.)	min 4000 бр.	8000
3.9.2	Механична (брой к.ц.)	Да се посочи	10000
3.10	Монтажна ширина на един полюс	max 18 mm	18 mm
3.11	Конструкция	Тялото на автоматичните прекъсвачи е съоръжено с вход за присъединяване на фазовите захранващи проводници и отделен вход за присъединяване на размножителен гребен. Конструкцията на клемите за присъединяване на размножителния гребен към еднополюсните и триполюсните автоматични прекъсвачи трябва да бъде идентична, като при монтаж върху DIN- шина не трябва да създава предпоставки за влошаване на електрическите контакти.	Клемите на продуктите отговарят на двата начина на свързване на шината и проводниците, а режимите на свързване на 1P и 3P са идентични.
3.12	Експлоатационна дълготрайност	min 30 години	30 години

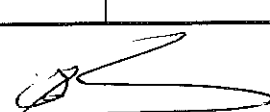





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**4. Миниатюрни автоматични прекъсвачи до 63 А / 10 кА – разсейвана мощност на полюс и тегло**

№ на стандарта	Брой на полюсите	Съкратено наименование	Обозначение	Обявен ток, А	Максимална разсейвана мощност, W		Тегло, g	Производителна страна на произход
					Изискване	Гарантирано предложение		
20 17 1801	1	Мин.авт.прек.до 63А, шир. 18,1Р 4А	MEB2-63 1P C4	4	3	1.8	106	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1802	1	Мин.авт.прек.до 63А, шир. 18,1Р 6А	MEB2-63 1P C6	6	3	1.8	106	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1803	1	Мин.авт.прек.до 63А, шир. 18,1Р 10А	MEB2-63 1P C10	10	3	1.8	104	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1804	1	Мин.авт.прек.до 63А, шир. 18,1Р 16А	MEB2-63 1P C16	16	3,5	2.1	104	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1805	1	Мин.авт.прек.до 63А, шир. 18,1Р 20А	MEB2-63 1P C20	20	4.5	2.7	104	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1806	1	Мин.авт.прек.до 63А, шир. 18,1Р 25А	MEB2-63 1P C25	25	4.5	2.7	104	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1807	1	Мин.авт.прек.до 63А, шир. 18,1Р 32А	MEB2-63 1P C32	32	6	3.6	106	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1808	1	Мин.авт.прек.до 63А, шир. 18,1Р 40А	MEB2-63 1P C40	40	7.5	4.5	106	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1809	1	Мин.авт.прек.до 63А, шир. 18,1Р 50А	MEB2-63 1P C50	50	9	5.4	108	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1810	1	Мин.авт.прек.до 63А, шир. 18,1Р	MEB2-63 1P C63	63	13	7.8	108	ZHEJIANG MICHAEL






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№ на стандарта	Брой на полюсите	Съкратено наименование	Обозначение	Обявен ток, А	Максимална разсейвана мощност, W		Тегло, g	Производителна страна на произход
					Изискване	Гарантирано предложение		
		63А						ELECTRIC CO.LTD, Китай
20 17 1811	3	Мин.авт.прек.до 63А, шир. 18,3Р 4А	МЕВ2-63 3Р С4	4	3	1.8/P	318	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1812	3	Мин.авт.прек.до 63А, шир. 18,3Р 6А	МЕВ2-633Р С6	6	3	1.8/P	318	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1813	3	Мин.авт.прек.до 63А, шир. 18,3Р 10А	МЕВ2-63 3Р С10	10	3	1.8/P	312	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1814	3	Мин.авт.прек.до 63А, шир. 18,3Р 16А	МЕВ2-63 3Р С16	16	3,5	2.1/P	312	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1815	3	Мин.авт.прек.до 63А, шир. 18,3Р 20А	МЕВ2-63 3Р С20	20	4.5	2.7/P	312	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1816	3	Мин.авт.прек.до 63А, шир. 18,3Р 25А	МЕВ2-63 3Р С25	25	4.5	2.7/P	312	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1817	3	Мин.авт.прек.до 63А, шир. 18,3Р 32А	МЕВ2-63 3Р С32	32	6	3.6/P	318	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1818	3	Мин.авт.прек.до 63А, шир. 18,3Р 40А	МЕВ2-63 3Р С40	40	7.5	4.5/P	318	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1819	3	Мин.авт.прек.до 63А, шир. 18,3Р 50А	МЕВ2-63 3Р С50	50	9	5.4/P	324	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 1820	3	Мин.авт.прек.до 63А, шир. 18,3Р	МЕВ2-63 3Р С63 63А	63	13	7.8/P	324	ZHEJIANG MICHAEL






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9009 Варна, ул. „Уста Колю Фичето“ №25Б, ет.4, тел.:052/511559, факс:052/505051, E-mail: office-vn@acm-bg.com

## II. Еднополюсни и триполюсни миниатюрни автоматични прекъсвачи до 125 А, 10 кА, широчина на полюс 27 mm

Кратко наименование на материала: Мин.авт.прек. до 125А, шир. 27

Област: G – Инсталации (Електромерни табла) Категория: 17– Комутационни апарати НН

Мерна единица: Брой Аварийни запаси: Да

### Характеристика на материала:

Миниатюрните автоматични прекъсвачи представляват механични комутационни апарати, способни да провеждат и да включват/изключват ръчно електрически токове във вериги при нормални условия и да включват, да провеждат за определено време и да изключват автоматично токове във вериги при условията на претоварване и късо съединение.

Тялото на миниатюрните автоматични прекъсвачи 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 прекъсвачи не са достъпни.

Средството (лостът) за управление при вертикално монтиране на миниатюрните автоматични прекъсвачи се движи в направление „нагоре – надолу“, при което контактите се затварят при движение „нагоре“. Миниатюрните прекъсвачи 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 прекъсвачи при нормален работен режим при температура до 40°C не трябва да надвишават посочените в таблица 6 от БДС EN 60898-1:2006 стойности или еквивалентно/и.

Изолационните разстояния през въздуха и изолационните разстояния по повърхността на изолацията не трябва да бъдат по-малки от посочените в таблица 4 на БДС EN 60898-1:2006 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 съгласно таблица 5 на БДС EN 60898-1:2006 или еквивалентно/и. 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 прекъсвачи 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.

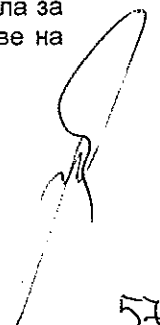
Миниатюрните прекъсвачи са маркирани с информацията съгласно т. 6 от БДС EN 60898-1:2006 и SE маркировка за съответствие или еквивалентно/и.

Миниатюрните прекъсвачи са пакетирани в картонени кутии, на които е залепен етикет с наименование на материала „Миниатюрни автоматични прекъсвачи“, техническите данни и броя на миниатюрните прекъсвачи, годината на производство, партидните номера и стандарта, в съответствие, с който са произведени и изпитани - БДС EN 60898-1:2006 или еквивалентно/и.

### Използване:

Миниатюрните автоматични прекъсвачи са предназначени за монтиране в електромерни табла за директно измерване на електрическата енергия и се използват за защита срещу свръхтокове на вериги, захранващи битови и други подобни уреди.

Съответствие на предлаганото изпълнение с нормативно-техническите документи:







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 6000 Стара Загора, ул. "Цар Иван Шишман" 77, офис 42, тел.: 042/601555, 602555, факс: 042/604555, E-mail: office-stz@acm-bg.com  
 9009 Варна, ул. „Уста Колю Фичето“ №25Б, ет.4, тел.:052/511559, факс:052/505051, E-mail: office-vn@acm-bg.com

Миниатюрните автоматични прекъсвачи отговарят на следните приложимите български и международни стандарти и нормативно-технически документи и на техните валидни изменения и поправки или еквиваленти:

- БДС EN 60898-1:2006 „Автоматични прекъсвачи за защита срещу свръхтокове на битови и други подобни уредби. Част 1 Автоматични прекъсвачи за работа с променливо напрежение (IEC 60898-1:2002, с промени)" и на неговите валидни изменения и допълнения или еквивалентно.
- БДС EN 60898-1:2003/A1:2006 „Автоматични прекъсвачи за защита срещу свръхтокове на битови и други подобни уредби. Част 1 Автоматични прекъсвачи за работа с променливо напрежение (IEC 60898-1:2003/A1:2003)" или еквивалентно.
- БДС EN 60898-1:2003/A11:2006 „Автоматични прекъсвачи за защита срещу свръхтокове на битови и други подобни уредби. Част 1 Автоматични прекъсвачи за работа с променливо напрежение" или еквивалентно.

или

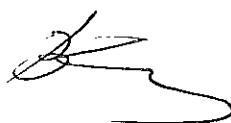
- БДС EN 60947-2:2006 „Комутационни апарати за ниско напрежение. Част 2: Автоматични прекъсвачи (IEC 60947-2:2006)" и на неговите валидни изменения и допълнения при запазване на времетоковите характеристики на задействане съгласно БДС EN 60898-1:2006 и осигуряване на еквивалентни или по-високи технически параметри, включително гранични и работни изключвателни възможности при късо съединение или еквивалентно.
- БДС EN 60947-2:2006/A1:2009 „Комутационни апарати за ниско напрежение. Част 2: Автоматични прекъсвачи" 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	Попълнени в това приложение, приложен е и каталог на производителя
2.	Техническо описание и чертежи с нанесени на тях размери	Приложени в каталога на производителя
3.	ЕО декларация за съответствие	Приложена е декларация за съответствие за всеки тип
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	Приложени протоколи към техническото предложение, приложен списък с проведените изпитвания
5.	Сертификат/акредитация на независимата изпитвателна лаборатория, провела типовите изпитвания по т. 4 – заверено копие	Приложен сертификат към техническото предложение
6.	Инструкции за транспортиране, складиране, монтиране, вкл. въртящия момент на затягане на клемовите съединения, обслужване и поддържане	Приложени към предложението за изпълнение на поръчката





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### 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	Тип на времетоковата характеристика на задействане	C	Продуктът съответства на три вида криви В С D
3.2	Обявено работно напрежение (U <sub>e</sub> )	-	-
3.2.1	Еднополюсни прекъсвачи	230/400 V	230/400V
3.2.2	Триполюсни прекъсвачи	400 V	400V
3.3	Обявена честота (f <sub>n</sub> )	50 Hz	50Hz
3.4	Обявено напрежение на изолацията (U <sub>i</sub> )	min. 440 V	min 440 V
3.5	Обявено издържано импулсно напрежение (U <sub>imp</sub> )	min 6 kV	min 6 kV
3.6	Категория по пренапрежение	IV	IV
3.7	Обявена комутационна възможност при късо съединение (I <sub>cn</sub> )	min 10 kA	I <sub>cn</sub> =10kA





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№ по ред	Характеристика	Изискване	Гарантирано предложение
3.8	Степен на защита от проникване на твърди тела и вода	min IP20	IP20
3.9	Износоустойчивост	-	-
3.9.1	Електрическа (брой к.ц.)	min 4000 бр.	4000
3.9.2	Механична (брой к.ц.)	Да се посочи	10000
3.10	Монтажна ширина на един полюс	max 27 mm	27mm
3.11	Експлоатационна дълготрайност	min 30 години	≥30

#### 4. Миниатюрните автоматични прекъсвачи 125 A / 10 kA – разсейвана мощност на полюс и тегло

№ на стандарта	Брой на полюсите	Съкратено наименование	Обозначение	Обявен ток, А	Макс. разсейва на мощност, W	Тегло, g	Производите, страна на произход
20 17 2701	1	Мин.авт.прек. до 125А, шир. 27,1P 40А	MEB1-125 1P C40	40	4	108	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 2702	1	Мин.авт.прек. до 125А, шир. 27,1P 50А	MEB1-125 1P C50	50	4.5	108	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 2703	1	Мин.авт.прек. до 125А, шир. 27,1P 63А	MEB1-125 1P C63	63	5.5	108	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 2704	1	Мин.авт.прек. до 125А, шир. 27,1P 80А	MEB1-125 1P C80	80	6	108	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 2705	1	Мин.авт.прек. до 125А, шир. 27,1P 100А	MEB1-125 1P C100	100	8	110	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 2706	1	Мин.авт.прек. до 125А, шир. 27,1P 125А	MEB1-125 1P C125	125	9.5	112	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 2707	3	Мин.авт.прек. до 125А, шир. 27,3P 40А	MEB1-125 3P C40	40	4/P	324	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 2708	3	Мин.авт.прек. до 125А, шир. 27,3P 50А	MEB1-125 3P C50	50	4.5/P	324	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 2709	3	Мин.авт.прек. до 125А, шир. 27,3P 63А	MEB1-125 3P C63	63	5.5/P	324	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 2710	3	Мин.авт.прек.	MEB1-125 3P C80	80	6/P	324	ZHEJIANG



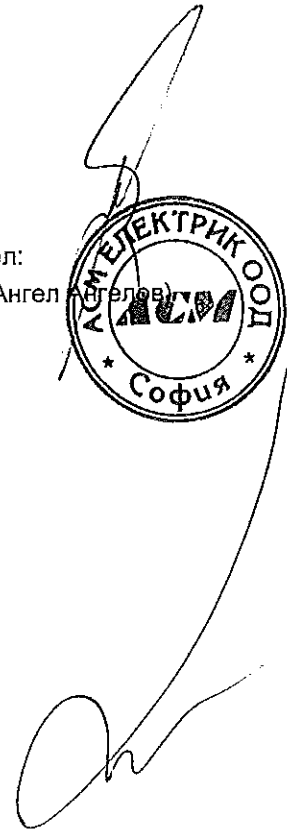
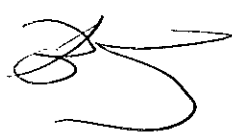


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		до 125А, шир. 27,3Р 80А					MICHAEL ELECTRIC CO.LTD, Китай
20 17 2711	3	Мин.авт.прек. до 125А, шир. 27,3Р 100А	MEB1-125 3P C100	100	8/P	330	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай
20 17 2712	3	Мин.авт.прек. до 125А, шир. 27, шир. 27,3Р 125А	MEB1-125 3P C125	125	9.5/P	336	ZHEJIANG MICHAEL ELECTRIC CO.LTD, Китай

28.09.2017  
гр.София

Управител:  
(Ангел Ангелов)

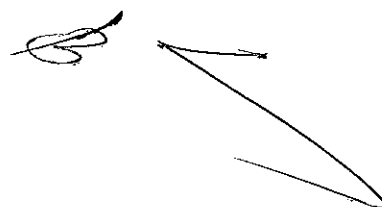
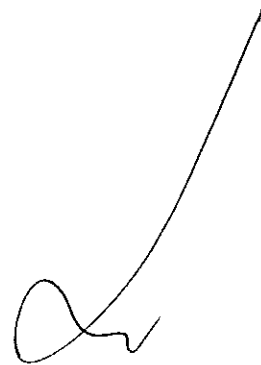






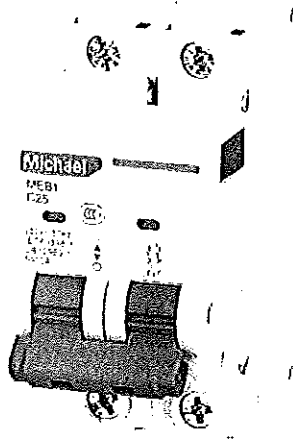
# КАТАЛОГ НА ПРЕДЛАГАНИТЕ ПРОДУКТИ

ОТ

ПРОИЗВОДИТЕЛЯ



## MEB1(C65 mini type□/DZ47 Circuit Breaker



### Range of application

This series of circuit breaker electrical accessories is our company specially designed for MEB1(C65 mini type□/DZ47 series accessories and other circuit breakers

Supporting the design of auxiliary components to achieve the circuit under voltage protection function

### Specification

Standard□IEC/EN60898-1 IEC/EN60947-2

Certificates□CB□CE

Number of Poles□1P,1P+N,2P,3P,3P+N,4P

Rated current In(A)□1-63

Rated frequency(Hz)□50/60

### Specification

MEB1 1 C 16 R100 G

Other functions□ Default□No overload effect G:Over voltage release

Rated residual currents(I<sub>Δn</sub>)( mA)  
30mA R:50mA R:75mA R100:100mA R300:300mA

Rated current In(A)□ 1-63A

Tripping characteristics□ B:Btype C: Ctype D:Dtype

Number of poles: 1:1P/1P+N 2:2P 3:3P 4:4P 6:3P+N

Type code

MEB1: Miniature circuit breaker

MEB1LE: Residual current circuit breaker

MEB1P: DPN circuit breaker

MEB1PLE: " Residual current circuit breaker with overcurrent protection"

MEB1-125□Miniature circuit breaker

MEB1LE-125:Residual current circuit breaker

MEB1G:Main switch

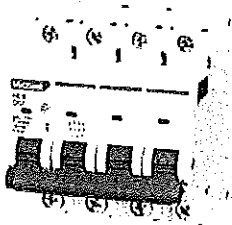
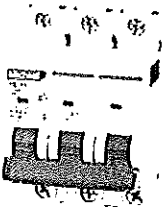
MEB1X:Modular socket

MEB1Y: Surge protective device

## Functions and Characters

MEB1 MCB have the below functions

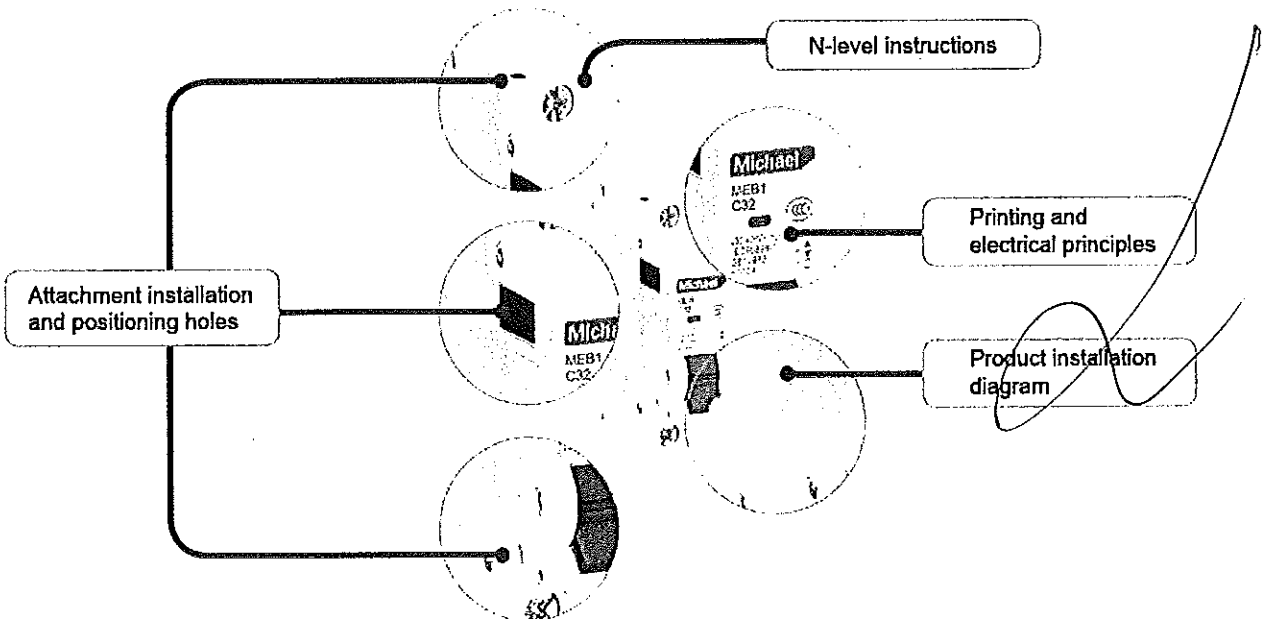
- Short-circuit protection
- Overload protection
- Isolation function



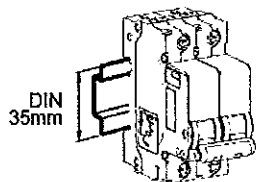
Main characteristics

Rated operational voltage(V)	IP:230/400 AC IP+N:230 AC 2P,3P,3P+N,4P: 400 AC
Rated current(A)	1-63
Rated frequency(HZ)	50/60
Number of poles	1P,1P+N,2P,3P,3P+N,4P
Breaking capacity(kA)	6

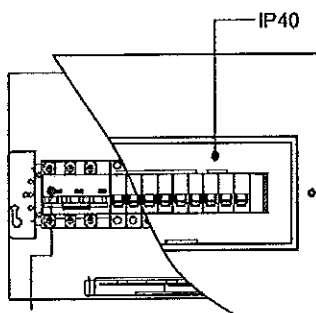
## Product details



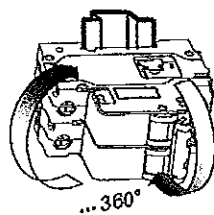
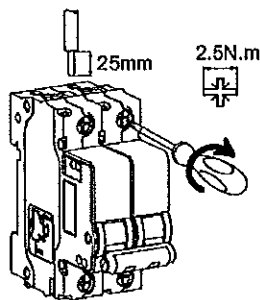
## Functions and Characters



on DIN rail (35mm)



IP20



With Flexible installation direction

### Electrical characteristics

Rated insulation voltage $U_i$	(V)	250(Relative / 500(relative phase))
Maximum operational voltage(VAC) $U_{Bmax}$	1P, 1P+N	(V) 230/400 AC
	2P, 3P, 4P, 3P+N	(V) 400 AC
	1P	(V) 60DC
Rated switching capacity $I_{cn}/I_{cn}$ (IEC/EN60898)		(kA) 6
Rated impulse withstand voltage $U_{imp}(kV)$ $U_{imp}(1.2/50)$		(kV) 4
Dielectric testing voltage		2kV $\square$ 50/60Hz One minute $\square$
Product-use category		A
Isolation function		have/with
Environmental protection class		2
Tripping characteristics		Thermal magnetic tripping
Electromagnetic tripping characteristics B type curve (3In~5In)		-
	(5In~10In)	■
	(10In~14In)	■
Electrical and mechanical accessories		■

### Mechanical characteristics

Manual control	Overcurrent fault	MEB1 there is residual current action trip instructions, reset button bounce, for the leakage trip
	Leakage failure	The circuit breaker and the residual current operating device are reset at the same time
Handle		The residual current operation device is reset first and the circuit breaker is reset
Mechanical life (times)	Times	15000
Electrical life (times)	Times	10000
Degree of protection	Mounting inside of electric distribution box	IP40
	direct install	IP20
Mechanical shock resistance		30g 3 times impacts, duration of 11ms( No significant vibration and shock)
Shock resistance 1 (IEC/EN600682-6)		No significant vibration and shock
The wet and heat resistance (IEC/600682-6)	damp and hot	2 Class 28 times cycle temperature 55 $\square$ relative humidity 90%~96% temperature 25 $\square$ relative humidity 90%~100%
Reference ambient temperature ( $\square$ )		$\square$ 30 $\square$
Ambient temperature ( $\square$ )		$\square$ -20 $\square$ +60 $\square$
Storage temperature ( $\square$ )		$\square$ -40 $\square$ ~70 $\square$

### Mounting position

Terminal tightening torque (N·m)		U type terminal
Maximum wiring ability	(A)	Current class 1-63:2.5mm <sup>2</sup>
Maximum limit torque	(A)	Current class 1-63:2.5N.m
Tool		Phillips screwdriver or a screwdriver
Installation		on DIN rail (35mm)
The way of inlet wire		Up and down into the line



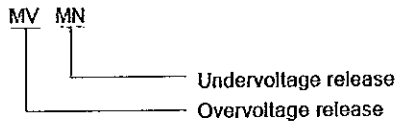
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**MEB1/DZ47 series accessories**

**Use range**

This series of circuit breaker electrical accessories play our company specially designed for MEB1/DZ47 series accessories and other circuit breakers. Supporting the design of auxiliary components, circuit breaker remote trip control, the state of the state function.

**Type of meaning** (Mns is Dropout release)



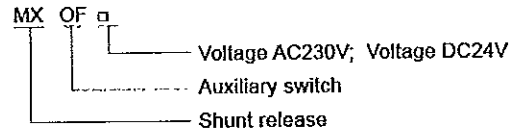
**Main technical parameters**

Product name	Type	Un Rated voltage	Tripping voltage
Overvoltage release	MV	230V	Overvoltage value Uvo=280V±5%
Undervoltage release	MN	230V	Undervoltage value Uoe=175V±5%
Under & over voltage release	MV+MN	230V	Overvoltage value Uvo=280V±5% Undervoltage value Uoe=175V±5%
Drop release	MNs	230V	Undervoltage value Uve=175V±5% Pressure loss value Uoe=0
Three phase four wire Under & over voltage release	MV+MN	230V	Overvoltage value Uvo=280V±5% Undervoltage value Uoe=170V±5%

**Use range**

This series of circuit breaker electrical accessories play our company specially designed for MEB1/DZ47 series accessories and other circuit breakers. Supporting the design of auxiliary components, circuit breaker remote trip control, the state of the state function.

**Type of meaning** (MX+OF Shunt release with Auxiliary switch)



Remark: Can be customized passive shunt release with auxiliary switch

**Main technical parameters**

Product name	Type	Un Rated voltage	Tripping voltage
Shunt release with Auxiliary switch	MX/MX+OF	AC230V	AC/DC1/110-400V
Shunt release with Auxiliary switch	MX/MX+OF	DC24V	AC/DC24-48V
Passive shunt release belt assist	MX+OF	AC230	AC/DC110-400V
Passive shunt release belt assist	MX+OF	DC24V	AC/DC24-48V

**Use range**

This series of circuit breaker electrical accessories play our company specially designed for MEB1/DZ47 series accessories and other circuit breakers. Supporting the design of auxiliary components, Working status indication and alarm function realized .

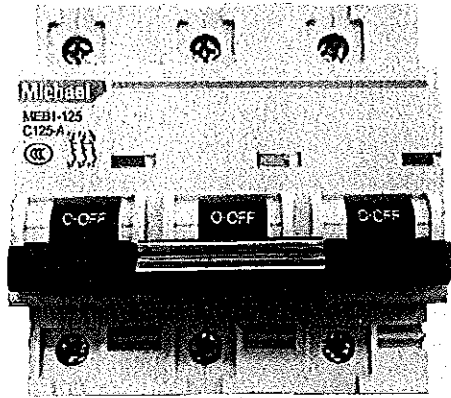
**Main technical parameters**

Product name	Type	Un Rated voltage	Tripping voltage
Auxiliary	OF	115/230/400V	103A
Warning	SD	115/230/400V	103A

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66

## MEB1-125



### Functions

Overload protection  
 Short circuit protection  
 Isolation  
 Used in residential building, non-residential building, energy sources, industry and infrastructure.

### Technical specifications

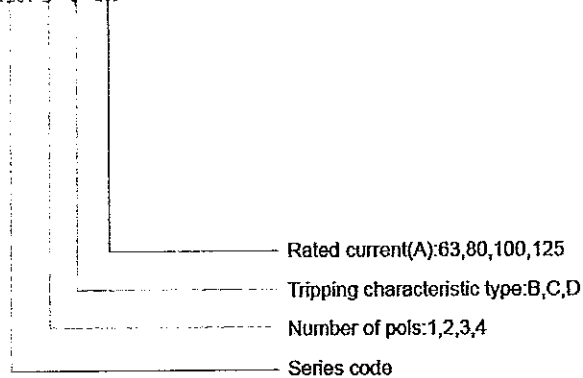
Standard: IEC 60898-1  
 Approval: CE  
 Rated current  $I_n$ (A): 63, 80, 100, 125  
 Rated voltage  $U_n$ (VAC): 230/400  
 Operational voltage(VAC):  
 Min: 24  
 Max: 250/440  
 Rated insulation voltage(VAC): 500  
 Number of poles: 1, 2, 3, 4  
 Tripping characteristics: B, C, D  
 release B( $I_n$ ): 4  
 release C( $I_n$ ): 8  
 release D( $I_n$ ): 14  
 Thermal operating limit( $I_n$ ): 1.05-1.30  
 Electrical life(times): 4,000  
 Mechanical life(times): 10,000  
 Breaking Capacity:

Model	Rated voltage(V)	Acc. to IEC60947-2		IEC60898-1
		$I_{cu}$ (kA)	$I_{cs}$ (kA)	$I_{cn}$
MEB1-125	1P	230/400	6	6
	2-4P	400	6	6

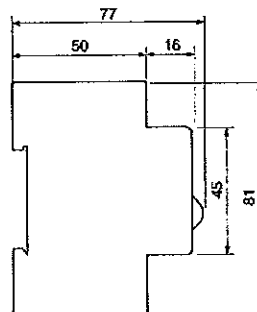
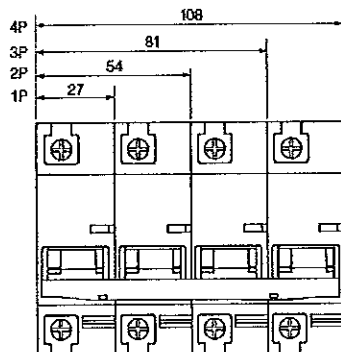
Degree of protection: IP20, with connected conductors  
 Mounting position: Any  
 Conductor cross-sections  
 Solid and stranded(mm<sup>2</sup>): 0.75-25  
 Finely stranded with end sleeve(mm<sup>2</sup>): 0.75-35  
 Terminal tightening torque(N·m): 3.5  
 Ambient temperature(°C): -25~+45, max. 95% humidity  
 Storage temperature(°C): -40~+75  
 Altitude max(meters): 2,000  
 Connection capacity(mm<sup>2</sup>): 1-35

### Type Designation

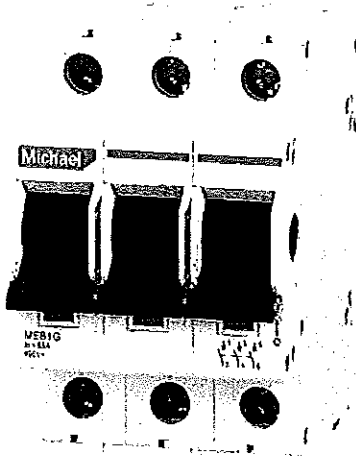
C125 3 C 083



### Dimensions (mm)



### MEB1G-100



#### Functions

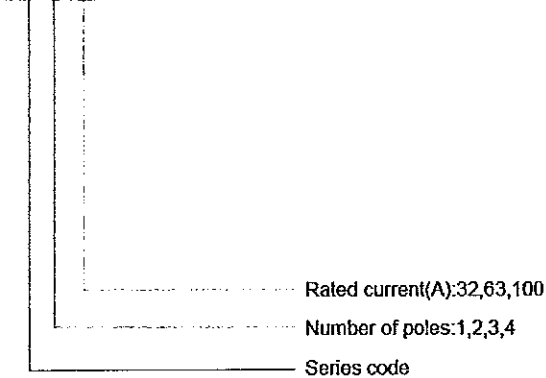
Making and breaking under load condition  
Providing safety isolation for terminal distribution system  
Used in residential building, non-residential building

#### Technical specifications

Standard: IEC 60947-3  
Approval: CE  
Rated current  $I_n$ (A): 32, 63, 100, 125  
Rated current  $I_n$ (VAC): 230/400  
Rated insulation voltage (VAC): 500  
Number of poles: 1, 2, 3, 4  
Rated short-time withstand current  $20 I_n$ : 1s  
Degree of protection: IP20, with connected conductors  
Electrical life (times): 10,000  
Mechanical life (times): 20,000  
Fire resistance according to UL 94: V0  
Mounting position: Any  
Conductor cross-sections  
Solid and stranded (mm<sup>2</sup>): 0.75-35  
Finely stranded with end sleeve (mm<sup>2</sup>): 0.75-25  
Terminal tightening torque (N·m): 2-2.5  
Ambient temperature (°C): -25~+45, max. 95% humidity  
Storage temperature (°C): -40~+75  
Altitude (meters): Max. 2,000

#### Type Designation

B1G 2 032

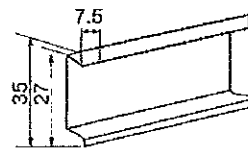
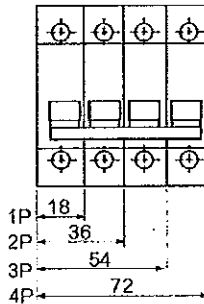
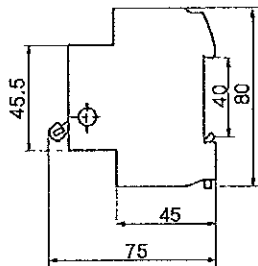


Rated current(A): 32, 63, 100

Number of poles: 1, 2, 3, 4

Series code

#### Dimensions (mm)



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**MEB2(C65)-63 MCB Mini Circuit  
Breaker**

**Type of meaning**

**Technical Data**

**Electrical Features**

Rated current  $I_n$  : 1, 2, 3, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63A  
 Poles: 1P, 1P+N, 2P, 3P, 3P+N, 4P  
 Rated voltage  $U_e$ : 240/415V  
 Insulation voltage  $U_i$  : 500V  
 Rated frequency: 50/60Hz  
 Rated breaking capacity : 10000A  
 Energy limiting class: 3  
 Rated impulse withstand voltage (1.2/50)  $U_{imp}$ : 6000V  
 Dielectric test voltage at ind. Freq. for min: 2kV  
 Pollution degree: 2  
 Thermo-magnetic release characteristic: B, C, D.



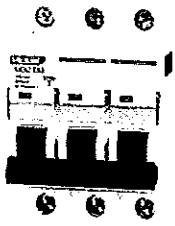
**Mechanical Features**

Electrical life: 4,000  
 Mechanical life: 10,000  
 Contact position indicator: Yes  
 Protection degree: IP20  
 Reference temperature for setting of thermal element: 300G  
 Ambient temperature (with daily average  $\leq 35^\circ\text{C}$ ):  $-5^\circ\text{C}$ ... $+40^\circ\text{C}$   
 Storage temperature:  $-25^\circ\text{C}$ ... $+70^\circ\text{C}$



**Installation**

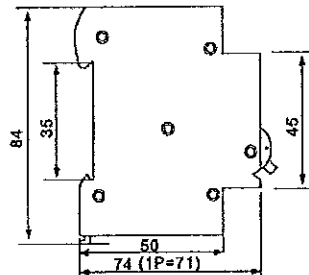
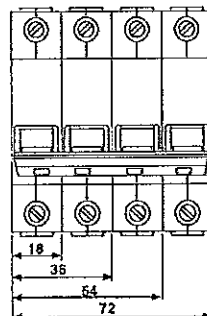
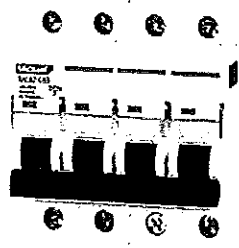
Terminal connection type: Cable/U-type busbar/Pin-type busbar  
 Terminal size top/bottom for cable: 25mm<sup>2</sup>  
 Terminal size top/bottom for busbar: 25mm<sup>2</sup>  
 Tightening torque 2.0 N\*m  
 Mounting: On DIN rail EN 60715(35mm) by means of fast clip device  
 Connection: From top and bottom



**Combination with accessories**

Auxiliary contact: Yes  
 Shunt release: Yes  
 Under voltage release: Yes  
 Alarm contact: Yes

**Dimensions (mm)**

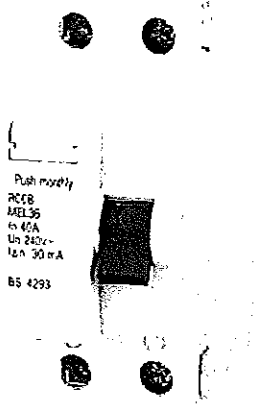


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## MEL36 Residual Current Circuit Breaker



### Function

Switching and isolation function  
Protect against electric shock caused by direct contact or indirect contact  
Protect against fire hazard caused by insulation faults  
Can be used in housing, tertiary sector and industry

### Feature

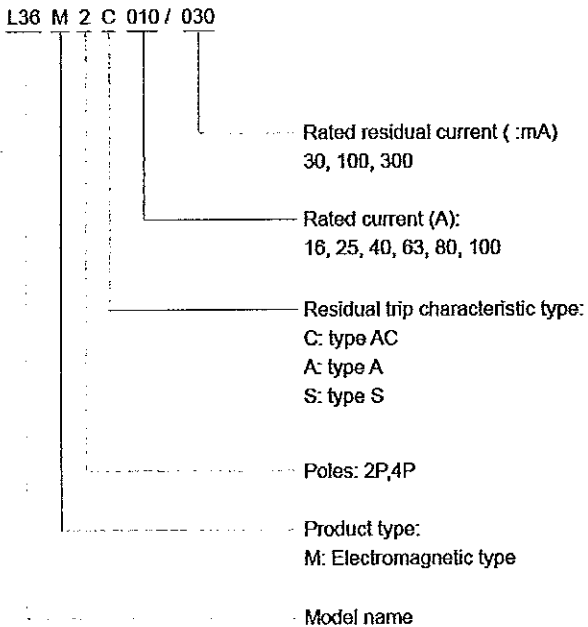
Electromagnetic type, voltage independent

### Technical Data

Standard: IEC 61008-1  
Rated voltage: 230/400V AC, 50/60 Hz  
Rated insulation voltage  $U_i$ : 500 V  
Rated current (A): 16, 25, 40, 63, 80, 100  
Rated tripping current (mA): 30, 100, 300  
Tripping sensitivities: AC, A, S  
Mechanical life: 10,000 times  
Electrical life: 2,000 times

Anti-interference level	0.5μs/100kHz □ 200A	peak value
	8/20μs □ 3,000A	peak value
Ambient air temperature Min/Max	□	-5/+40
Altitude Max	m	2,000
Cable size erminal busbar method	Min/Max	mm <sup>2</sup> 1/35
Screw torque	N·m	2.5
Outline dimensions	2P	mm 92×36×76
(length × width × height)	4P	mm 92×72×73
Weight	2P	kg 0.275
	4P	kg 0.360

### Type Designation



### Types

Both RCCBs and RCBOs are further divided into types depending on the operating function:

**Type AC**  : For which tripping is ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly rising.

**Type A**  : For which tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly rising.

**Type S**   : For selectivity, with time-relay.

### Tripping sensitivity date

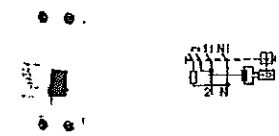
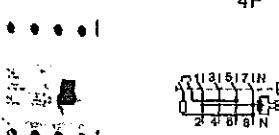
30mA: additional protection against direct contact  
100mA: co-ordinated with the earth system according to the formula  $I\Delta n < 50/R$ , to provide protection against indirect contact  
300mA: protection against indirect contact as well as fire hazard

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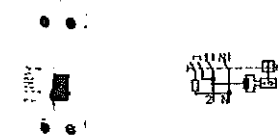
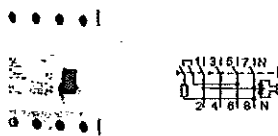
Order Code

Type AC

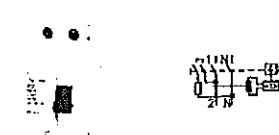

Magnetic type

	In(A)	30mA		100mA		300mA		Pack.
		Type Code	Order Code	Type Code	Order Code	Type Code	Order Code	
	2P	16	L36M 2C016/030 23702	L36M 2C016/100 23711	L36M 2C016/300 23720	1		
		25	L36M 2C025/030 23703	L36M 2C025/100 23712	L36M 2C025/300 23721	1		
		40	L36M 2C040/030 23705	L36M 2C040/100 23714	L36M 2C040/300 23723	1		
		63	L36M 2C063/030 23707	L36M 2C063/100 23716	L36M 2C063/300 23725	1		
		80	L36M 2C080/030 23708	L36M 2C080/100 23717	L36M 2C080/100 23726	1		
		100	L36M 2C100/030 23709	L36M 2C100/100 23718	L36M 2C100/100 23727	1		
	4P	16	L36M 4C016/030 23729	L36M 4C016/100 23738	L36M 4C016/300 23747	1		
		25	L36M 4C025/030 23730	L36M 4C025/100 23739	L36M 4C025/300 23748	1		
		40	L36M 4C040/030 23732	L36M 4C040/100 23741	L36M 4C040/300 23750	1		
		63	L36M 4C063/030 23734	L36M 4C063/100 23743	L36M 4C063/300 23752	1		
		80	L36M 4C080/030 23735	L36M 4C080/100 23744	L36M 4C080/100 23753	1		
		100	L36M 4C100/030 23736	L36M 4C100/100 23745	L36M 4C100/100 23754	1		

Type A

	2P	16	L36M 2A016/030 23756	L36M 2A016/100 23765	L36M 2A016/300 23774	1
		25	L36M 2A025/030 23757	L36M 2A025/100 23766	L36M 2A025/300 23775	1
		40	L36M 2A040/030 23759	L36M 2A040/100 23768	L36M 2A040/300 23777	1
		63	L36M 2A063/030 23761	L36M 2A063/100 23770	L36M 2A063/300 23779	1
		80	L36M 2A080/030 23762	L36M 2A080/100 23771	L36M 2A080/100 23780	1
		100	L36M 2A100/030 23763	L36M 2A100/100 23772	L36M 2A100/100 23781	1
	4P	16	L36M 4A016/030 23783	L36M 4A016/100 23792	L36M 4A016/300 23801	1
		25	L36M 4A025/030 23784	L36M 4A025/100 23793	L36M 4A025/300 23802	1
		40	L36M 4A040/030 23786	L36M 4A040/100 23795	L36M 4A040/300 23804	1
		63	L36M 4A063/030 23788	L36M 4A063/100 23797	L36M 4A063/300 23806	1
		80	L36M 4A080/030 23789	L36M 4A080/100 23798	L36M 4A080/100 23807	1
		100	L36M 4A100/030 23790	L36M 4A100/100 23799	L36M 4A100/100 23808	1

Type S

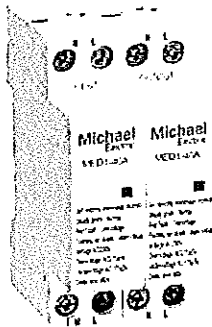
	In(A)	100mA		300mA		Pack.
		Type Code	Order Code	Type Code	Order Code	
	2P	40	L36M 2S040/100 23822	L36M 2S040/300 23831	1	
		63	L36M 2S063/100 23824	L36M 2S063/300 23833	1	
		80	L36M 2S080/100 23825	L36M 2S080/100 23834	1	
		100	L36M 2S100/100 23826	L36M 2S100/100 23835	1	
	4P	40	L36M 4S040/100 23849	L36M 4S040/300 23858	1	
		63	L36M 4S063/100 23851	L36M 4S063/300 23860	1	
		80	L36M 4S080/100 23852	L36M 4S080/100 23861	1	
		100	L36M 4S100/100 23853	L36M 4S100/100 23862	1	

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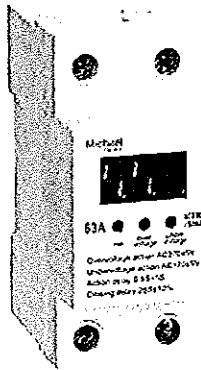
## MED1 series self recovery overvoltage protection device

### Use range

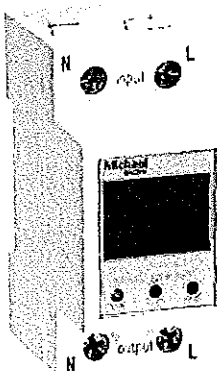
MED1 self recovery over voltage protection device is a new generation of home appliances protection device developed by our company. The utility model has the function of protection when the voltage is abnormal, and when the voltage of the utility model exceeds or is lower than the voltage value of the protector, the protector can be fast The power supply can be cut off quickly and reliably in order to protect the electric appliance and the personal safety. When the mains voltage is restored to normal, the protector The power supply is switched on, the power supply is restored, and the automatic control is realized. The utility model has the advantages of simple and convenient operation, stable and reliable performance. product Compact structure, beautiful appearance and MEB1 (C45) merger installation. Products comply with the JB/T12762 "self recovery over undervoltage protector" standard.



Up line Down line

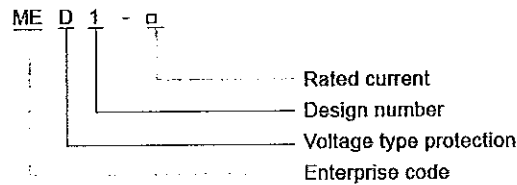


Up line



Up line

### Type of meaning



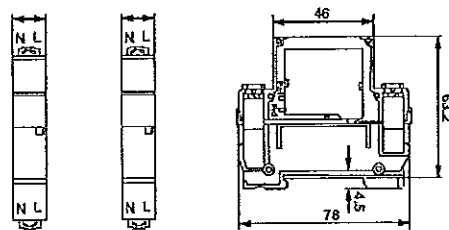
### Main technical data

Specification	Rated current In(A)	Rated voltage (V)	Rated frequency (Hz)	Overvoltage start value (V)	Normal recovery value (V)	Undervoltage start value (V)
Single-phase overvoltage	32 40 50 63	230AC	50	275± 5	255-285	160± 5

Specification	Normal recovery value (V)	Recovery delay time (S)	Self power (W)	Electrical, mechanical life
Single-phase overvoltage	180-205	≤ 60s	<1	> 100,000,00times

### Installation dimensions



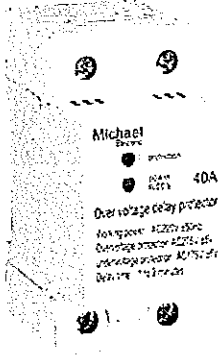
### Product Features

- 1 □ Red light flash, over voltage automatically disconnect
- 2 □ Slow flashing red light, under voltage automatically disconnect;
- 3 □ The green light is bright, the normal working voltage is switched on automatically.

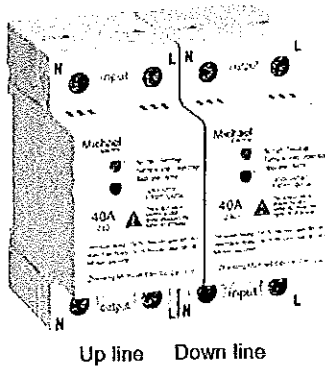
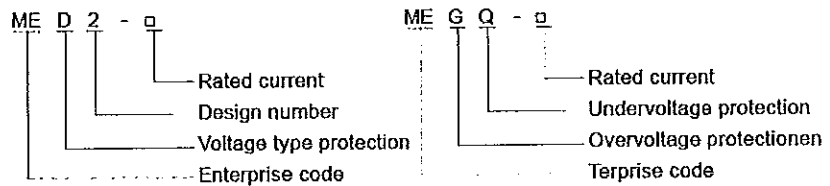
## MED2 single phase, MEGQ three-phase four wire series self recovery over and under voltage protector

### Use range

MED2 single phase, MEGQ three-phase four line self recovery over voltage protection device is a new generation of home appliances protection device developed by our company according to the current situation of electricity market. When the voltage of the utility model is more than or lower than the voltage value of the protector, the protector can cut off the power supply quickly and reliably, so as to protect the electric appliance and the personal safety. When the mains voltage returns to normal, the protector automatically turns on the power supply to restore the power supply and realize the automatic control. The utility model has the advantages of simple and convenient operation, stable and reliable performance. Compact structure, beautiful appearance and DZ47 (C45) merger installation. The product conforms to the standard of JB/T12762 self recovery over voltage protector.



### Type of meaning



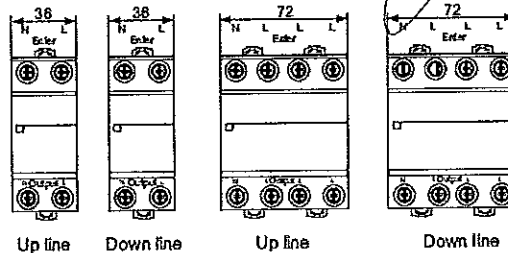
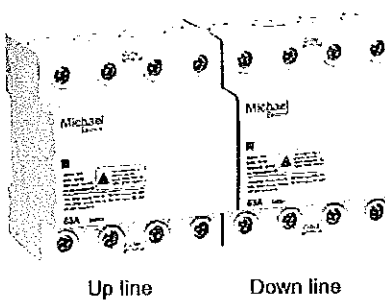
### Main technical data

Specification	Rated current In(A)	Rated voltage (V)	Rated frequency (Hz)	Overvoltage start value (V)	Normal recovery value (V)	Undervoltage start value (V)
Two-phase overvoltage	80	230AC		275±5	255-265	160±5
Three phase over voltage Three phase four wire overvoltage and phase	100	380AC	50	460±5	420-440	300±5

Specification	Normal recovery value (V)	Recovery delay time (S)	Self power (W)	Electrical mechanical life
Two-phase overvoltage	180-205		<1	
Three phase over voltage Three phase four wire overvoltage and phase	335±10	≤60s	<2	>10

### Installation dimensions



### Product Features

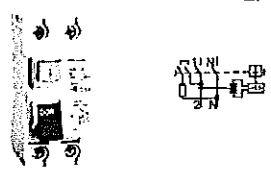
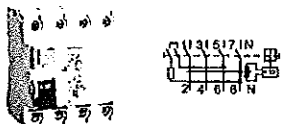
- 1 Red light flash, over voltage automatically disconnect
- 2 Slow flashing red light, under voltage automatically disconnect;
- 3 The green light is bright, the normal working voltage is switched on automatically
- 4 Red light is often bright, lack of phase (4 Pole products)
- 5 4 pole main characteristic of the product is the phase line voltage(L-N)





Order code

Type AC

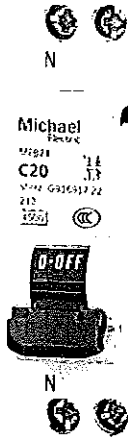
	In(A)	30mA		100mA		300mA		Pack.
		Type Code	Order Code	Type Code	Order Code	Type Code	Order Code	
	25	L18M 2C025/030	15200	L18M 2C025/100	15205	L18M 2C025/300	15210	1
	40	L18M 2C040/030	15201	L18M 2C040/100	15206	L18M 2C040/300	15211	1
	63	L18M 2C063/030	15202	L18M 2C063/100	15207	L18M 2C063/300	15212	1
	80	L18M 2C080/030	15203	L18M 2C080/100	15208	L18M 2C080/300	15213	1
	100	L18M 2C100/030	15204	L18M 2C100/100	15209	L18M 2C100/300	15214	1
	25	L18M 4C025/030	15220	L18M 4C025/100	15225	L18M 4C025/300	15230	1
	40	L18M 4C040/030	15221	L18M 4C040/100	15226	L18M 4C040/300	15231	1
	63	L18M 4C063/030	15222	L18M 4C063/100	15227	L18M 4C063/300	15232	1
	80	L18M 4C080/030	15223	L18M 4C080/100	15228	L18M 4C080/300	15233	1
	100	L18M 4C100/030	15224	L18M 4C100/100	15229	L18M 4C100/300	15234	1

**MEB28(C65)Line and neutral line protection circuit breaker**

**Use range**

MEB28 (C65) phase + neutral line protection circuit breaker (hereinafter referred to as the circuit breaker) is mainly applicable to AC 50Hz or 60Hz, rated voltage 230V, rated current protection circuit to 32A in overload, short circuit protection, but also under normal circumstances as the line is not frequent conversion, especially lighting distribution system suitable for industrial and commercial.

Product conforms to GB10963-1999, IEC60898-1995 standard.



**Main technical data**

**Classification**

Rated by current: 6A□10As 16A□20A□25A□32A six kinds;

Rated current In 6A□10As 16A□20A□25A□32A.1P+N

Type of instantaneous release is C□5In~10In)

Main technical parameters and indexes

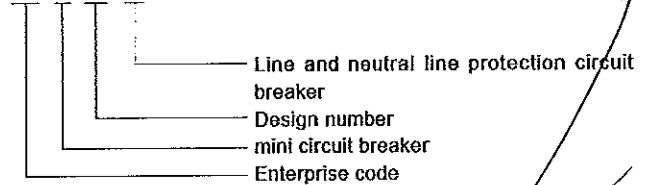
Time current characteristics are shown in the following tabl

Rated breaking capacity:4500A

Electrical mechanical life□40,000 times

**Type of meaning**

ME B 28 □



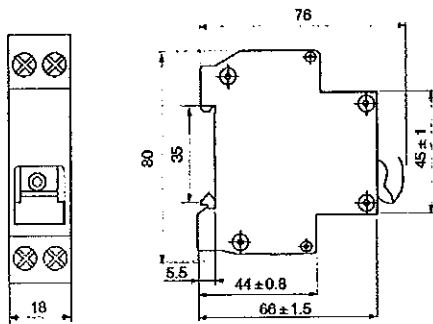
**Over-current protection**

Serial number	Rated current(A)	Initial state	Current of test	Preset time	Expected result	Remark
a		clod state	1.13In	t≥1h	no trip	
b		Immediately after the program "A" test	1.45In	t<1h	tripping	Current rises steadily to specified value in 5 Seconds
c	≤32A	clod state	2.55In	1s<t<60s	tripping	
d		clod state	5In	t≥0.1s	no trip	
e		clod state	10In	t<0.1s	tripping	

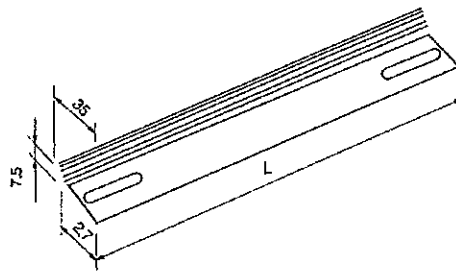
Connection :When the circuit breaker is used, select the section of copper wire

Rated current $I_n$ (A)	$I_n < 6$	$6 < I_n \leq 13$	$13 < I_n \leq 20$	$20 < I_n \leq 25$	$25 < I_n \leq 32$
cable cross-sectional area S (mm <sup>2</sup> )	1.5	2.5	4	6	10

### Overall dimensions (mm)

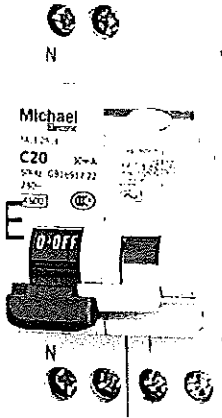


overall dimensions



mounting DIN rail dimensions

**MEB28LE(C65 type) Line and neutral line protection leakage circuit breaker**



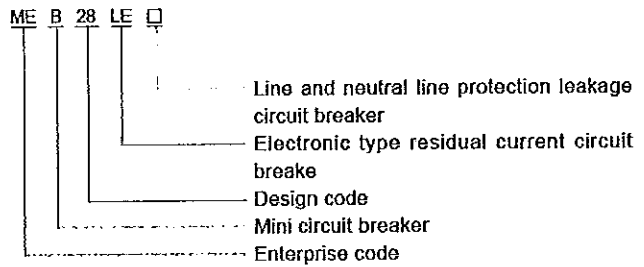
MEB28LE(C65) Line and neutral line protection leakage circuit breaker (hereinafter referred to as the leakage circuit breaker) is mainly applicable to AC 50Hz or 60Hz, rated voltage 230V, rated current protection circuit to 32A in overload, short circuit protection, but also under normal circumstances as the line is not frequent conversion, especially lighting distribution system suitable for industrial and commercial.  
Product conforms to GB10963-1999, IEC60898-1995 standard

**Main technical data**

Classification

Rated by current □6A □10A □16A □20A □25A □32A six kinds;  
(1P + N) with a poleguard with a protective pole;  
The type of instantaneous release is type C (5I<sub>n</sub> ~ 10I<sub>n</sub>).

**Type of meaning**



**Main technical data**

Shell grade Rated current (A)	po/e	Rated current(A)	Rated voltage(V)	Short circuit capacity COSφ	Transient overcurrent Release type
32	1P+N	6, 10, 16, 20, 25, 32	230	4500	0.80 C type

**Time current characteristic**

**Residual current protection**

Rated residual action current I<sub>cn</sub>:30mA

Rated residual current action I<sub>cn0</sub>

Overvoltage protection function □280V±5%

Rated residual current switching on and breaking capacity I<sub>m</sub>:500A

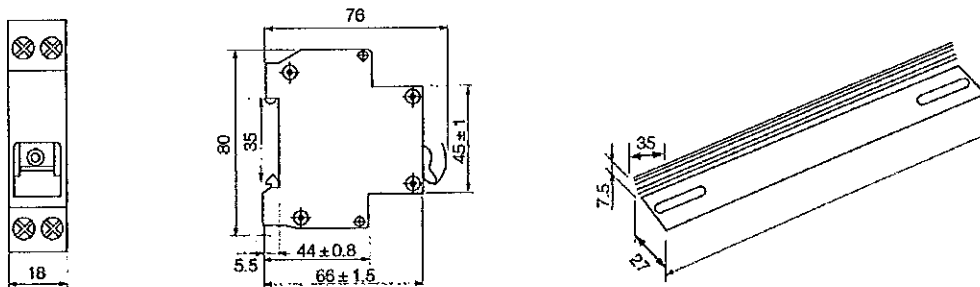
*gm*

Serial number	Trip rated current (A)	Initial state	Current of test	Preset time	Expected result	Test temperature	Remark	
a		clod state	1.13In	t > 1h	no trip			
b	< 32A	Immediately after the program "A" test	1.45In	t < 1h	tripping	30°C ~50°C	Current rises steadily to specified value in 5 Seconds	
c		clod state	2.55In	1s < t < 60s	tripping			
d		clod state	5In	t > 0.1s	no trip			Closing aid
e		clod state	10In	t < 0.1s	tripping			Switch on current

Breaking time of residual current action

In(A)	I Δ nA	Residual current Break time equal to the following values(s)				
		I Δ n	2I Δ n	5I Δ n	I Δ t	
6~32	0.03	0.1	0.08	0.04	0.04	

Overall dimensions (mm)



overall dimensions

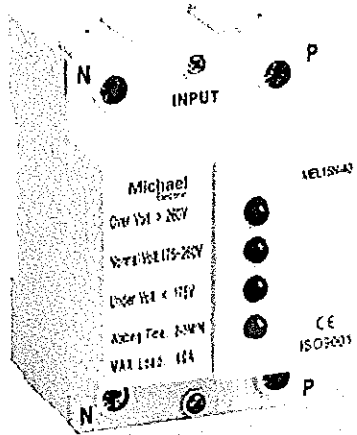
mounting DIN rail dimensions

*gm*

*gm*

*gm*

**MEL15N Full-automatic over-voltage/  
under-voltage protector**



**Main Technical Specifications**

- Rated AC voltage 220V and frequency 50Hz/60HZ
- Max Passing Current 20A, 32A, 40A
- Max. Loading power 4.4KVA, 6.6KVA, 8.8KVA
- Over-voltage action cut-off value  $>255\pm 5VAC$
- Normal-voltage action cut-off value 175 -260VAC
- Under-voltage action cut-off value  $<180\pm 5VAC$
- Electricity transmitting delay after cut-off 2~3 minutes
- Self power consumption  $\geq 2W$
- Mechanical life  $\geq 100000$  times

**Order Code**

In(A)	Type Code	Order Code	Pack.
20	L51N 20	24744	1
32	L51N 32	24745	1
40	L51N 40	24746	1



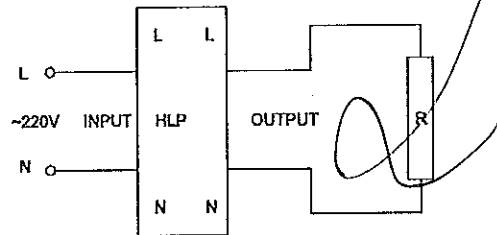
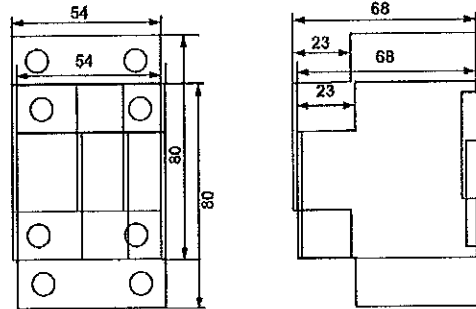
**Type Designation**

L15N 20

Rated current (A): 20, 32, 40,

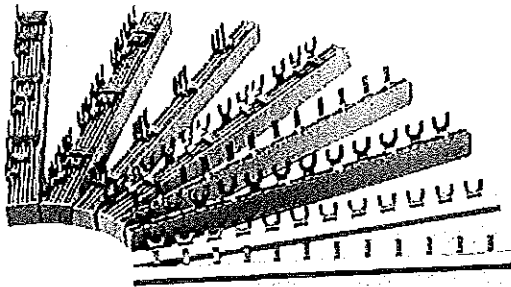
Model name

**Dimensions**





## MEA-BB Busbar Connection

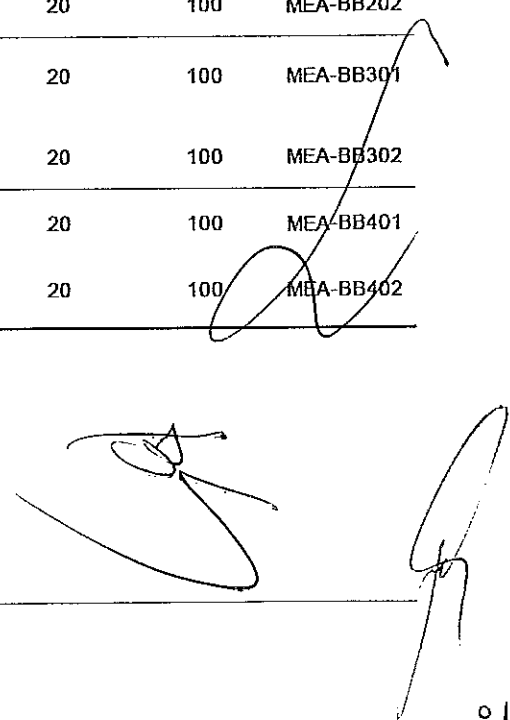


### Application

- The busbars make wiring of electrical item easy, enlarge connection area, decrease temperature rise and increase the electrical reliability of electrical items.
- Material is fire-resistant PVC and copper
- Current rating is up to 63A
- Rated voltage is up to 415V
- Applicable ambient temperature -25°C~+50°C
- Standard length 1m, other length to be made upon request.

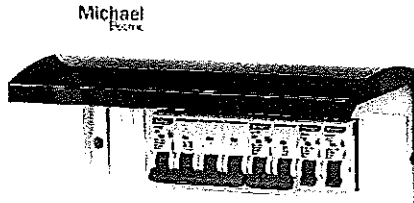
	Poles	Length (cm)	Type Code	Order Code	Pack.
Pin	1	100	MEA-BB101	24760	1
	2	100	MEA-BB201	24762	1
	3	100	MEA-BB301	24764	1
	4	100	MEA-BB401	24766	1
Fork	1	100	MEA-BB102	24761	1
	2	100	MEA-BB202	24763	1
	3	100	MEA-BB302	24765	1
	4	100	MEA-BB402	24767	1

Busbar connection	Inserting method	Current ratings (A)	Poles No	Cross section (cm)	Length (cm)	Category No.
	Pin type	63/1	56×1	20	100	MEA-BB101
	U type	63/1	56×1	20	100	MEA-BB102
	Pin type	63/2	27×2	20	100	MEA-BB201
	U type	63/2	27×2	20	100	MEA-BB202
	Pin type	63/3	18×3	20	100	MEA-BB301
	U type	63/3	18×3	20	100	MEA-BB302
	Pin type	63/4	14×4	20	100	MEA-BB401
	U type	63/4	14×4	20	100	MEA-BB402





**MED5 Distribution Box**



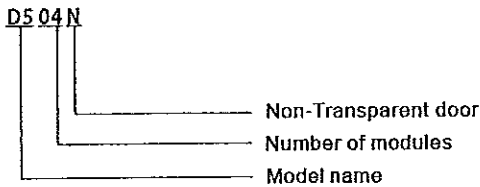
**Application**

This product applies to terminal of AC 50Hz(or 60Hz), rated operating voltage up to 400V and rated current up to 63A, equipped with various modular electric for functions of electric energy distribution, control, (short circuit, overload, earth leakage, over-voltage) protection, signal, measurement of terminal electric appliance.

**Normal application and installation conditions**

1. Ambient temperature: -5℃~+40℃. the average value within 24 hours shall not exceed +35℃;
2. Altitude: Installation altitude shall not exceed 2000m.
3. Atmosphere conditions:
  - A) humidity: Relative humidity shall not exceed 50% when the ambient temperature is +40℃. Higher relative humidity is allowed at lower temperature, for example, it can reach 90% at 20℃.
  - B) Pollution grade: grade 2
4. Installation category (over-voltage category): II

**Type Designation**



**Note** No mark means transparent door,  
B mark means non-transparent door  
Number of modules  
(4 6 8 10 12 18 24 36 available for selection)

**Main technical data**

Equipped with transparent/non-transparent arc door  
single row: door open upward 90 degrees;  
Rated current: 63A, 100A;  
Material: insulating, self-extinguishing fire-resisting material  
Protection level: indirect contact proof grade 2 protection;

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**Structure:**

Symmetric base enclosure: solid enclosure can be embedded into thinner wall; knockouts of various sizes on four sides of box;  
 Single row connecting rail can be adjusted vertically; single row: adjustable rail depth  
 Flat front panel can be used reversely; equipped with arc door; front panel shield can be knocked out to increase number of ways.

**Fittings inside of the box**

Attached with sticky label for marking on wire front panel; ready equipped with zero line and earth terminal bar and attached with zero bar, earth bar marks and alarm mark; users can select to connect with wire or insulating busbar method.

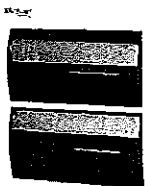
Loops	Zero bar length (mm)	Zero bar holes (piece)	Earth bar length (mm)	Earth bar holes (piece)	Width (mm)	Height (mm)
Distribution box M						
4	37	4M4X7+M4X7	29.5	3M4X7+M4X7	6	8
6	52	6M4X7+M4X7	29.5	3M4X7+M4X7	6	8
8	67	8M4X7+M4X7	37	4M4X7+M4X7	6	8
12	37+52	10M4X7+2M4X7	52	6M4X7+M4X7	6	8
18	74.5+37	13M4X7+2M4X7	74.5	9M4X7+M4X7	6	8
24	60+60+28+28	20M4X7+4M4X7	28+28	6M4X7+2M4X7	6	8
36	60+60+60+28	24M4X7+4M4X7	60+28	10M4X7+2M4X7	6	8

**Max. rated current up to 63A**

**Transparent door**



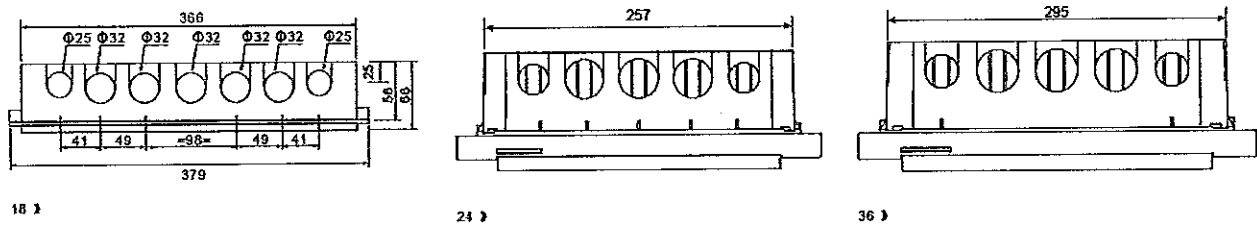
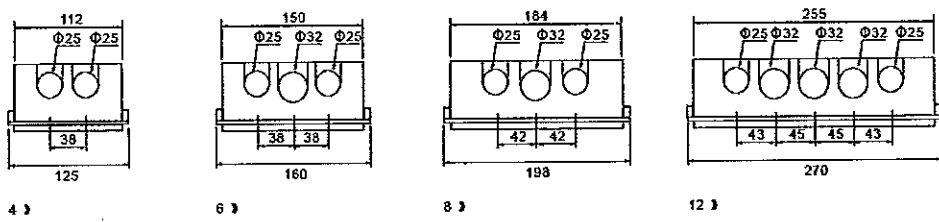
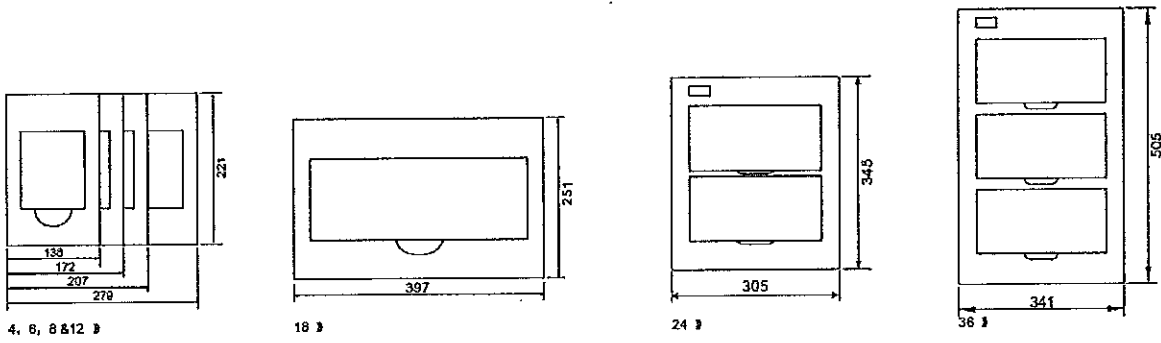
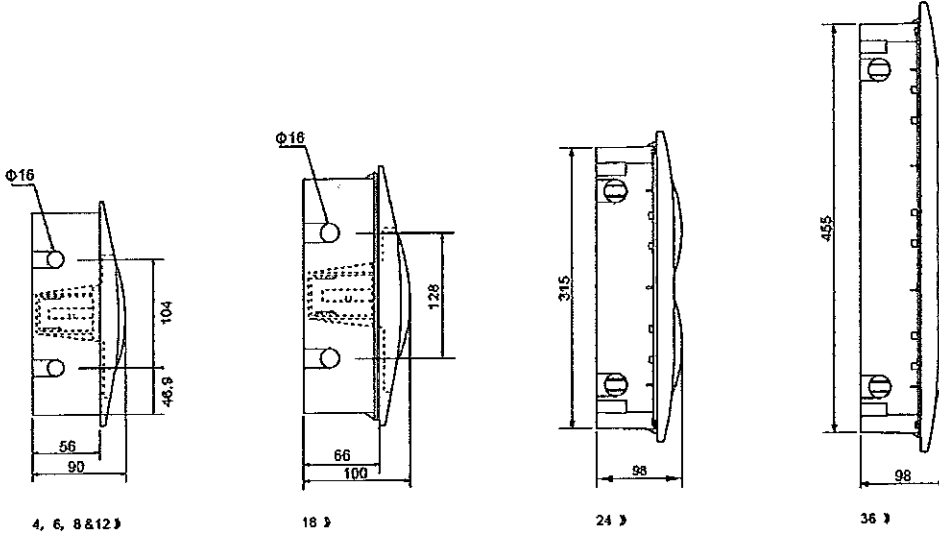
Module Number	Neutral bar holes	Earth bar holes	Type Code	Order Code	Pack.
4 module	4xφ5	3xφ5	D504	23159	1
6 module	6xφ5	3xφ5	D506	23165	1
8 module	8xφ5	4xφ5	D508	23171	1
12 module	10xφ5	6xφ5	D512	23139	1
18 module	13xφ5	9xφ5	D518	23145	1
24 module	20xφ5	6xφ5	D524	23150	1
36 module	24xφ5	10xφ5	D536	23154	1



**Non-Transparent door**

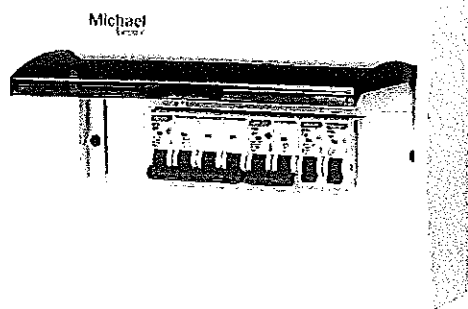
Module Number	Neutral bar holes	Earth bar holes	Type Code	Order Code	Pack.
4 module	4xφ5	3xφ5	D504N	23157	1
6 module	6xφ5	3xφ5	D506N	23163	1
8 module	8xφ5	4xφ5	D508N	23169	1
12 module	10xφ5	6xφ5	D512N	23137	1
18 module	13xφ5	9xφ5	D518N	23143	1
24 module	20xφ5	6xφ5	D524N	23149	1
36 module	24xφ5	10xφ5	D536N	23153	1

Outline dimensions:



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## MED6 Distribution Box



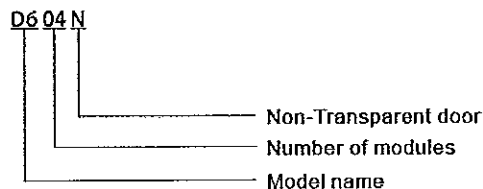
### Application

This product applies to terminal of AC 50Hz(or 60Hz), rated operating voltage up to 400V and rated current up to 63A, equipped with various modular electric for functions of electric energy distribution, control, (short circuit, overload, earth leakage, over-voltage) protection, signal, measurement of terminal electric appliance.

### Normal application and installation conditions

1. Ambient temperature:  $-5^{\circ}\text{C}\sim+40^{\circ}\text{C}$ . the average value within 24 hours shall not exceed  $+35^{\circ}\text{C}$ ;
2. Altitude: Installation altitude shall not exceed 2000m.
3. Atmosphere conditions: A) humidity:  
Relative humidity shall not exceed 50% when the ambient temperature is  $+40^{\circ}\text{C}$ . Higher relative humidity is permissible at lower temperature, for example, it can reach 90% at  $20^{\circ}\text{C}$ .  
B) Pollution grade: grade 2
4. Installation category (over-voltage category):  $\text{C}$

### Type Designation



### Main technical parameters

Equipped with transparent/non-transparent arc door  
single row: door open upward 90 degrees;  
Rated current: 63A, 100A;  
Material: insulating, self-extinguishing fire-resisting material  
Protection level: indirect contact proof grade 2 protection;

**Transparent door Max. rated current up to 63A**

Module Number	Neutral bar holes			Earth bar holes	Type Code	Order Code	Pack.
	1	2	3				
4 module	4xΦ5	-	-	3xΦ5	D604	23162	1
6 module	6xΦ5	-	-	3xΦ5	D606	23168	1
8 module	8xΦ5	-	-	4xΦ5	D608	23174	1
12 module	10xΦ5	-	-	6xΦ5	D612	23142	1
18 module	13xΦ5	-	-	9xΦ5	D618	23148	1
24 module	13xΦ5	9xΦ5	-	13xΦ5	D624	23152	1
36 module	13xΦ5	9xΦ5	9xΦ5	13xΦ5	D636	23156	1

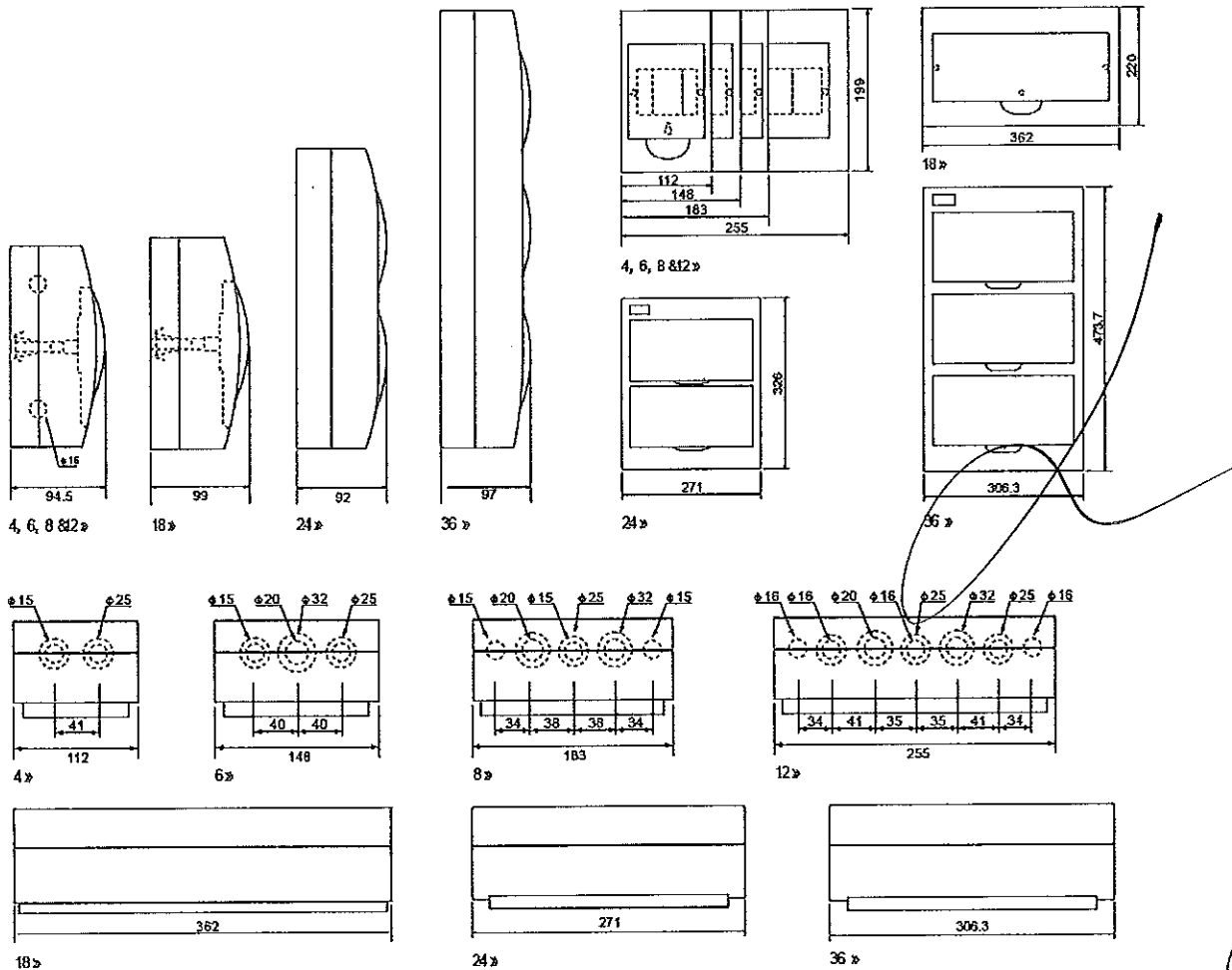


**Non-Transparent door**

Module Number	Neutral bar holes			Earth bar holes	Type Code	Order Code	Pack.
	1	2	3				
4 module	4xΦ5	-	-	3xΦ5	D604N	23161	1
6 module	6xΦ5	-	-	3xΦ5	D606N	23167	1
8 module	8xΦ5	-	-	4xΦ5	D608N	23173	1
12 module	10xΦ5	-	-	6xΦ5	D612N	23141	1
18 module	13xΦ5	-	-	9xΦ5	D618N	23147	1
24 module	13xΦ5	9xΦ5	-	13xΦ5	D624N	23151	1
36 module	13xΦ5	9xΦ5	9xΦ5	13xΦ5	D636N	23155	1

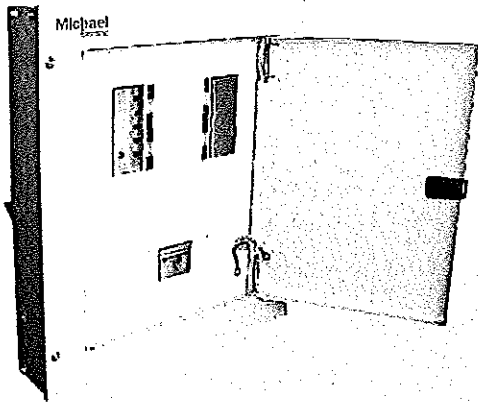


**Outline dimensions:**





## MED23 Three phase Metal Boxes



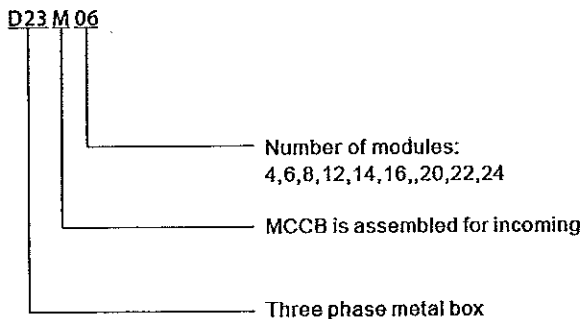
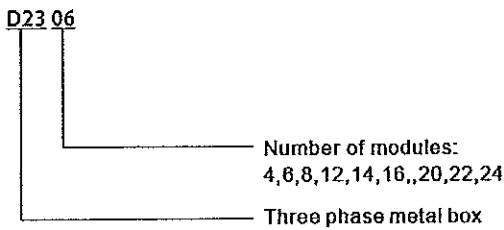
### Feature

- Surface mounting for indoor installations.
- Used for three phases circuit system.
- Assembled with neutral and PE terminals.
- Both Main Switch and MCCB can be mounted for incoming, wide range of MCB, RCCB, RCBO, and other modular devices can be mounted for outgoing.
- \*Please contact us for details if MCCB is needed for incoming.

### Technical data

- Rated voltage: 240/415V
- Frequency: 50/60Hz
- Max. incoming current: 200A
- Max. outgoing current: 63A
- Protection degree: IP40
- Max. cable size: 50mm<sup>2</sup> incoming terminals  
16mm<sup>2</sup> outgoing terminals
- Standard: IEC60439-3

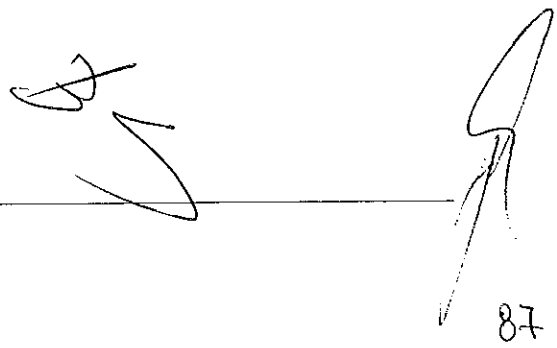
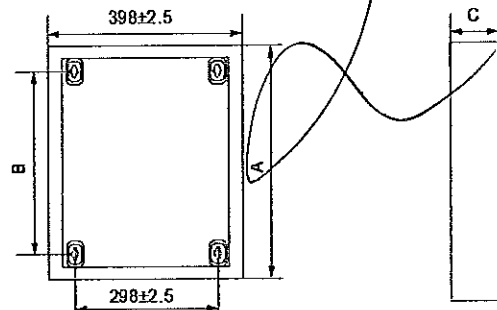
### Type Designation



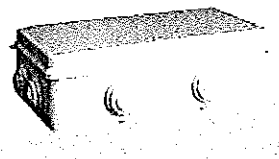
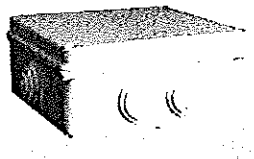
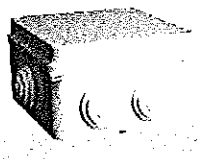
### Order Code

Type	Module Number	Type Code	Order Code	A	B	C
D23-4	4	D2304	17334	480±2	375±1.2	
D23-6	6	D2306	17335	534±2	429±2	
D23-8	8	D2308	17336	588±2	483±2	
D23-12	12	D2312	17337	696±2	591±2	112±0.8
D23-16	16	D2316	17338	804±2	699±2	
D23-20	20	D2320	17339	912±2	807±2	
D23-24	24	D2324	17340	1020±2	915±2	

### Outline dimensions

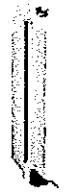
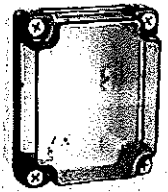
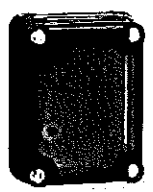


**Various Distribution Boxes**

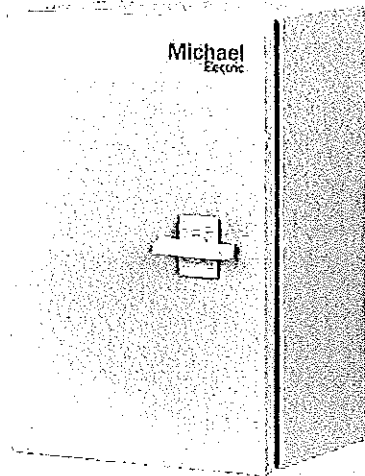


50x30	50x50	80x50	80x80x50	85x85x50	100x100x70	150x150x70
150x110x70	200x100x70	200x155x80	200x200x80	255x200x80	300x250x120	400x350x120

**N type water-proof boxes (color: "transparent coffee" or "white")**



## Metal Boxes Series MEM

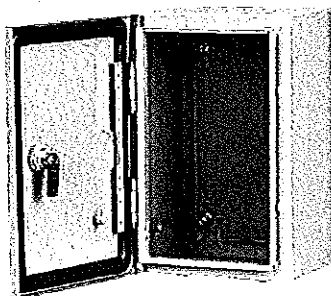
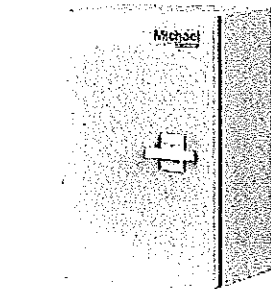


### Technical specifications

- Standard: IEC60529
- Approval: CE
- Material: Cold rolled plate/Galvanized sheet
  - Body and door: 1.5mm steel sheet
  - Mounting plate: 2.5mm steel sheet
- Finish:
  - Case and door: RAL 7032 mat finish
  - Mounting plate: RAL 2004 smooth finish
- Protection degree: IP 65
- Boxes are completed with:
  - Mounting plate
  - Gland plate and gasket
  - Locking system with 3mm double bar key
  - Package with hardware for earth connection and screws to mount all components

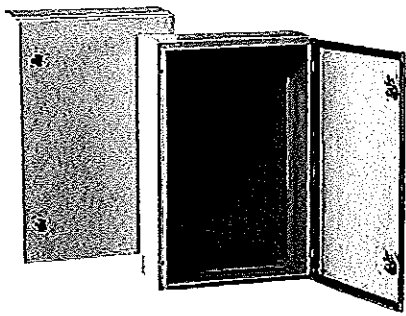
### Selection and ordering data

	Dimension (mm)			Type Code	Order Code
	Height	Width	Depth		
Single door series	200	200	150	M200*200*150	14672
	200	400	300	M200*400*300	14673
	250	200	150	M250*200*150	14674
	250	400	300	M250*400*300	14675
	250	500	400	M250*500*400	14676
	250	600	400	M250*600*400	14677
	250	600	600	M250*600*600	14678
	250	700	500	M250*700*500	14679
	250	400	300	M250*400*300	14680
	250	500	400	M250*500*400	14681
	250	600	400	M250*600*400	14682
	300	200	150	M300*200*150	14683
	300	200	200	M300*200*200	14684
	300	250	150	M300*250*150	14685
	300	250	200	M300*250*200	14686
	300	250	250	M300*250*250	14687
	300	300	150	M300*300*150	14688
	300	300	200	M300*300*200	14689
	300	300	250	M300*300*250	14690
	300	600	600	M300*600*600	14691
300	800	600	M300*800*600	14692	
300	1000	800	M300*1000*800	14693	
300	1200	800	M300*1200*800	14694	
300	1200	1000	M300*1200*1000	14695	
300	1400	800	M300*1400*800	14696	
300	1400	1000	M300*1400*1000	14697	
300	1400	1200	M300*1400*1200	14698	
300	1600	1000	M300*1600*1000	14699	
300	1800	800	M300*1800*800	14700	
300	1800	1000	M300*1800*1000	14701	
400	300	150	M400*300*150	14702	
400	300	200	M400*300*200	14703	
400	300	250	M400*300*250	14704	
400	300	300	M400*300*300	14705	
400	400	150	M400*400*150	14706	
400	400	200	M400*400*200	14707	
400	400	250	M400*400*250	14708	
400	400	300	M400*400*300	14709	
500	300	150	M500*300*150	14710	



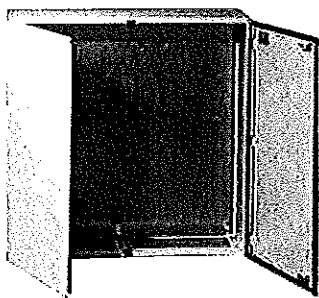


	Dimension (mm)			Type Code	Order Code
	Height	Width	Depth		
Single door series	500	300	200	M500*300*200	14711
	500	300	250	M500*300*250	14712
	500	300	300	M500*300*300	14713
	500	400	150	M500*400*150	14714
	500	400	200	M500*400*200	14715
	500	400	210	M500*400*210	14716
	500	400	250	M500*400*250	14717
	500	400	300	M500*400*300	14718
	500	500	150	M500*500*150	14719
	500	500	200	M500*500*200	14720
	500	500	250	M500*500*250	14721
	500	500	300	M500*500*300	14722
	600	400	150	M600*400*150	14723
	600	400	200	M600*400*200	14724
	600	400	250	M600*400*250	14725
	600	400	300	M600*400*300	14726
	600	500	150	M600*500*150	14727
	600	500	200	M600*500*200	14728
	600	500	250	M600*500*250	14729
	600	500	300	M600*500*300	14730
	600	600	150	M600*600*150	14731
	600	600	200	M600*600*200	14732
	600	600	250	M600*600*250	14733
	600	600	300	M600*600*300	14734
	600	600	350	M600*600*350	14735
	700	400	200	M700*400*200	14736
	700	400	300	M700*400*300	14737
	700	500	150	M700*500*150	14738
	700	500	200	M700*500*200	14739
	700	500	250	M700*500*250	14740
	700	500	300	M700*500*300	14741
	700	600	200	M700*600*200	14742
	700	600	250	M700*600*250	14743
	700	600	300	M700*600*300	14744
	800	600	200	M800*600*200	14745
	800	600	250	M800*600*250	14746
	800	600	300	M800*600*300	14747
	800	800	200	M800*800*200	14748
	800	800	250	M800*800*250	14749
	800	800	300	M800*800*300	14750
	1000	600	200	M1000*600*200	14751
	1000	600	250	M1000*600*250	14752
	1000	600	300	M1000*600*300	14753
	1000	700	200	M1000*700*200	14754
	1000	700	250	M1000*700*250	14755
	1000	800	200	M1000*800*200	14756
	1000	800	250	M1000*800*250	14757
	1000	800	300	M1000*800*300	14758
	1000	800	300	M1000*800*300	14759
	1200	600	200	M1200*600*200	14760
	1200	600	250	M1200*600*250	14761
	1200	600	300	M1200*600*300	14762
	1200	800	200	M1200*800*200	14763
	1200	800	250	M1200*800*250	14764
	1200	800	300	M1200*800*300	14765
	1200	1000	250	M1200*1000*250	14766
	1200	1000	300	M1200*1000*300	14767
	1200	1800	500	M1200*1800*500	14768
	1200	800	300	M1200*800*300	14769
	1400	800	300	M1400*800*300	14770
	1600	1000	300	M1600*1000*300	14771
	1800	800	300	M1800*800*300	14772
	1800	1000	300	M1800*1000*300	14773

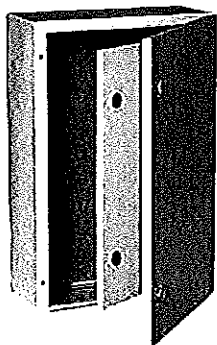


*SM*

	Dimension (mm)			Type Code	Order Code
	Height	Width	Depth		
Double door series	600	800	200	MD600*800*200	33132
	600	800	250	MD600*800*250	33133
	600	800	300	MD600*800*300	33134
	600	1000	200	MD600*1000*200	33135
	600	1000	250	MD600*1000*250	33136
	600	1000	300	MD600*1000*300	33137
	600	1200	250	MD600*1200*250	33138
	600	1200	300	MD600*1200*300	33139
	800	1200	250	MD800*1200*250	33140
	800	1200	300	MD800*1200*300	33141
	1000	1000	250	MD1000*1000*250	33142
	1000	1000	300	MD1000*1000*300	33143
	1000	1000	400	MD1000*1000*400	33144
	1200	1000	250	MD1200*1000*250	33145
	1200	1200	250	MD1200*1200*250	33146
	1200	1000	300	MD1200*1000*300	33147
	1200	1200	300	MD1200*1200*300	33148
	1200	1000	400	MD1200*1000*400	33149
	1200	1200	400	MD1200*1200*400	33150
	1400	1000	250	MD1400*1000*250	33151
1400	1000	300	MD1400*1000*300	33152	
1400	1000	400	MD1400*1000*400	33153	
1400	1200	300	MD1400*1200*300	33154	
1400	1200	400	MD1400*1200*400	33155	
1400	1400	300	MD1400*1400*300	33156	
1400	1400	400	MD1400*1400*400	33157	



Inner door series	400	300	200	MI400*300*200	33158
	400	400	200	MI400*400*200	33159
	500	300	200	MI500*300*200	33160
	500	400	200	MI500*400*200	33161
	500	500	200	MI500*500*200	33162
	600	400	200	MI600*400*200	33163
	600	500	200	MI600*500*200	33164
	600	600	200	MI600*600*200	33165
	700	500	200	MI700*500*200	33166
	800	600	200	MI800*600*200	33167
	800	800	200	MI800*800*200	33168
	400	300	250	MI400*300*250	33169
	400	400	250	MI400*400*250	33170
	500	300	250	MI500*300*250	33171
	500	400	250	MI500*400*250	33172
	500	500	250	MI500*500*250	33173
	600	400	250	MI600*400*250	33174
	600	500	250	MI600*500*250	33175
	600	600	250	MI600*600*250	33176

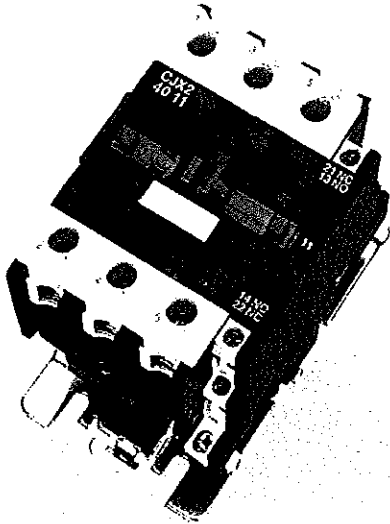


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**Contactors and Thermal Relays  
Series MEC8 & MER8**



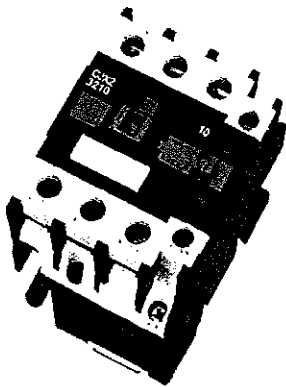
**Applications and functions for AC contactor**

Used for controlling 3-phase motors and generally for controlling power circuits.  
Used for many other applications such as isolation, capacitor switching and lighting.

**Applications and functions for thermal relay**

Protecting the loads from overload and phase failure  
Implementing short-circuit protection by means of a fuse or circuit breaker.  
Used for the protection of motors.

**Instruction of type code**



**For contactor**

C8 - 09 10 P7

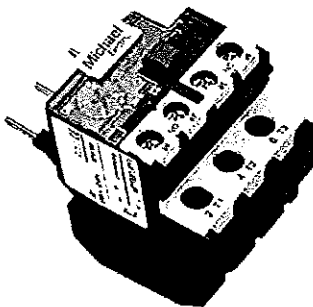
- Coil code
- Quantity of contact
- 10: 3NO+1NO (Ie≤32A)
- 01: 3NO+1NC (Ie≤32A)
- 11: 3NO+1NO+1NC
- 004: 4NO (except Ie=18A & Ie=32A)
- 008: 2NO+2NC (except Ie=18A & Ie=32A)
- Rated working current in category AC-3 at 400VAC(A):
- 09, 12, 18, 25, 32, 40, 50, 65, 80, 95
- Series Code

Notes: Contactor's base and contact support have black and white colors for selection

**For thermal relay**

R8 - 25 / 0.16

- Max. setting current range(A):
- 0.16: 0.1-0.16 10: 7-10
- 0.25: 0.16-0.25 13: 9-13
- 0.4: 0.25-0.4 18: 12-18
- 0.63: 0.4-0.63 25: 17-25
- 1: 0.63-1 32: 23-32
- 1.6: 1-1.6 36: 28-36
- 2: 1.25-2 40: 30-40
- 2.5: 1.6-2.5 50: 37-50
- 4: 2.5-4 65: 48-65
- 6: 4-6 70: 55-70
- 8: 5.5-8 80: 63-80
- 93: 80-93
- Rated frame current(A): 25, 36, 93
- Series code



## Technical specifications for type 3SC8

Type		C8-09	C8-12	C8-18	C8-25	C8-32	C8-40	C8-50	C8-65	C8-80	C8-95
Standard		IEC60947-4-1									
Approvals		SEMKO,CE,CB									
Number of poles		3.4	3.4	3	3.4	3	3.4	3.4	3.4	3.4	3.4
Rated operational current I <sub>e</sub> (A)	380V In AC-3	9	12	18	25	32	40	50	65	80	95
	In AC-1	3.5	5	7.7	8.5	12	18.5	24	28	37	44
	660V In AC-3	6.6	8.9	12	18	21	34	39	42	49	55
	440V In AC-4	1.5	2	3.8	4.4	7.5	9	12	14	17.3	21.3
Rated operational voltage U <sub>e</sub> (V)		690									
Frequency limits of the operational current (time/h)		25-400									
Rated conventional thermal current I <sub>th</sub> (A)		25	25	32	40	50	60	80	80	125	125
Rated insulation voltage U <sub>i</sub> (V)		690									
Rated impulse withstand voltage U <sub>imp</sub> (kV)		8									
Rated frequency (Hz)		50/60									
Rated making capacity (A)	400V	10 x I <sub>e</sub> AC-3 or 12 x I <sub>e</sub> AC-4									
Rated breaking capacity (A)	400V	8 x I <sub>e</sub> AC-3 or 10 x I <sub>e</sub> AC-4									
Rated operational power in category AC-3 (kw)	220/230/240V	2.2	3	4	5.5	7.5	11	15	18.5	22	25
	380/400V	4	5.5	7.5	11	15	18.5	22	30	37	45
	660/690V	5.5	7.5	10	15	18.5	30	33	37	45	45
Fuse protection against short-circuit (A)	Without thermal overload relay, Gg fuse Type 1	20	25	32	40	50	63	80	80	125	160
	type2	20	20	25	32	40	50	63	80	150	150
	With thermal overload relay	see specification and ordering data of R8, for a Morg Gfuse ratings corresponding to the associated thermal overload relay									
Average impedance per pole (mΩ)		2.5	2.5	2.5	2	2	1.5	1.5	1.5	0.8	0.8
Add-on auxiliary contact blocks	Front	C8-A1 and 3SC8-A1D									
	Side	C8-A1C									
	Front time delay	C8-A2									
	Front dust and damp protected	■									
Reversing contactor type		C8-DN									
Associated thermal overload relays		R8-25			R8-36			R8-93			
Operation cycles (times/hour)	Electrical AC-3	1200	1200	1200	1200	600	600	600	600	600	600
	Electrical AC-4	300	300	300	300	300	300	300	300	300	300
	Mechanical	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
Electrical life (X 10 <sup>3</sup> times)	AC-3	1000	1000	1000	1000	800	800	600	600	600	600
	AC-4	200	200	200	200	200	150	150	150	100	100
Mechanical life (X 10 <sup>3</sup> times)		10	10	10	10	8	8	8	8	6	6
Matching fuse model		RT16-20	RT16-20	RT16-32	RT16-40	RT16-50	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125
Tightening torque(N·m)		1.2	1.2	1.7	2.0	2.5	5	5	5	9	9
Connection		Flexible cable with cold-pressed 2 socket(mm <sup>2</sup> )									
		1/2.5	1/2.5	1/4	1/4	1.5/4	2.5/10	2.5/10	2.5/10	4/16	4/16
		Flexible cable without cold-pressed 2 socket(mm <sup>2</sup> )									
Cabling cross section (CU)		1/4	1/4	1.5/6	1.5/6	2.5/10	2.5/16	2.5/16	2.5/16	4/25	4/25
		1/4	1.5/4	1.5/6	1.5/6	1.5/10	2.5/25	2.5/25	2.5/25	4/50	4/50
Screw size		M3.5	M3.5	M3.5	M4	M4	M8	M8	M8	M10	M10
Degree of protection		IP20									
Ambient air temperature(°C)		-5 to +40,max. 95 % humidity									
Storage temperature(°C)		-40~+75									
Maximum operating altitude (meters)		2000									
Flame resistance	Conforming to UL 94	V1									

**Technical specifications for auxiliary contacts  
Incorporated in the contactor MEC8**

**Technical specifications for time delay contact  
Incorporated in the contactor 3SC8**

Standard IEC 60947-5-1  
 Number of auxiliary contacts: 2, 4  
 Mounting type: Front, side  
 Conventional heating current (A) : 10  
 Rated operational voltage Ue (V) : Up to 690  
 Rated insulation voltage Ui (V) : 690  
 Conventional thermal current Ith (A) : 10  
 Minimum switching capacity Imin (mA): 5  
 Short circuit protection(A) gG fuse: : 10 A  
 Rated making capacity (A) : 140

Standard: IEC 60255-5  
 Number of contacts : 2  
 Mounting type: Front  
 Delay time type: making time delay ,  
 breaking time delay  
 Timing ranges: 0.1-3,0.1-30,10-180  
 Repeat accuracy: ± 3 % (10 ms minimum)  
 Reset time  
 During time delay period(ms): 150  
 After time delay period (ms) : 50  
 Conventional heating current (A): 10  
 Rated operational voltage Ue (V) : Up to 690  
 Rated insulation voltage Ui (V) : 250  
 Conventional thermal current Ith (A) : 10

**Technical specifications for coil incorporated in contactor 3SC8**

Type	CB-09	CB-12	CB-18	CB-25	CB-32	CB-40	CB-50	CB-65	CB-80	CB-95
Coil consumption Pick-up (VA)	70	70	70	100	100	245	245	245	245	245
Holding (VA)	50Hz/60Hz	9.0	9.0	9.0	10	10	30	30	30	30
	50/60Hz	10	10	10	11	11	32	32	32	32
Power (W)	1.8-2.8	1.8-2.8	1.8-2.8	3-4	3-4	6-10	6-10	6-10	6-10	6-10






**Coil voltage of contactor 3SC8**

Coil voltage Us(V)	24	36	48	110	127	220	230	240	300	415	440	480	500	600	690
50Hz	B5	C5	E5	F5	G5	M5	P5	U5	Q5	N5	R5	T5	S5	-	Y5
60Hz	B6	-	E6	F6	G6	M6	P6	U6	Q6	N6	R6	T6	-	S6	-
50/60Hz	B7	C7	E7	F7	G7	M7	P7	U7	Q7	N7	R7	T7	-	-	-

**Technical specifications for assembled thermal relay of type 3SR8**

Type	R8-D13	R8-D23	R8-D33
Standard		IEC60947-4-1	
Approvals		CE,SEMKO,CB	
Tripping class		10A	
Rated working current Ie (A)	25	36	93
Setting range (A)	0.1-25	23-36	23-93
Rated insulation voltage Ui (V)		690	
Rated impulse withstand voltage Uimp (kV)		6	
Signalling		Trip indicator	
Tightening torque(N·m)		0.8	
Degree of protection		IP20	
Ambient air temperature(°C)		Directly under the contactor	
Storage temperature(°C)		-40~+75	
Maximum operating altitude (meters)		2000	
Flame resistance		V1	
Mounting		-5 to +40,max. 95 % humidity	

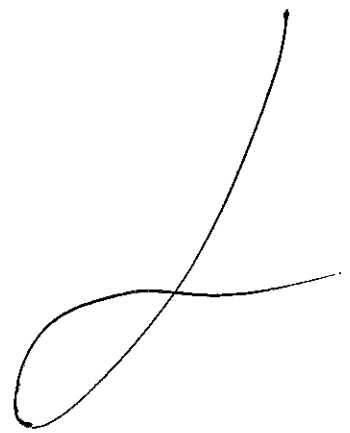
Selection and ordering data

Rated operational current in category AC-3 400V (A)	Number of poles		Instantaneous auxiliary contacts		Standard control circuit voltages(VAC)	Rated frequency (Hz)	Type code	Order code
								
	3	-	1	-	230	50/60	C8 0910P7	21621
	3	-	-	1	230	50/60	C8 0901P7	21618
	3	-	1	1	230	50/60	C8 0911P7	38880
	4	-	-	-	230	50/60	C8 09004P7	15528
	2	2	-	-	230	50/60	C8 09008P7	10038
12	3	-	1	-	230	50/60	C8 1210P7	21711
	3	-	-	1	230	50/60	C8 1201P7	21708
	3	-	1	1	230	50/60	C8 1211P7	38881
	4	-	-	-	230	50/60	C8 12004P7	22269
	2	2	-	-	230	50/60	C8 12008P7	22314
18	3	-	1	-	230	50/60	C8 1810P7	21801
	3	-	-	1	230	50/60	C8 1801P7	21798
	3	-	1	1	230	50/60	C8 1811P7	38882
40	3	-	1	-	230	50/60	C8 2510P7	21891
	3	-	-	1	230	50/60	C8 2501P7	21888
	3	-	1	1	230	50/60	C8 2511P7	38883
	4	-	-	-	230	50/60	C8 25004P7	22359
	2	2	-	-	230	50/60	C8 25008P7	22404
32	3	-	1	-	230	50/60	C8 3210P7	21981
	3	-	-	1	230	50/60	C8 3201P7	21978
	3	-	1	1	230	50/60	C8 3211P7	38884
50	3	-	1	1	230	50/60	C8 4011P7	22044
	4	-	-	-	230	50/60	C8 40004P7	22449
	2	2	-	-	230	50/60	C8 40008P7	22494
65	3	-	1	1	230	50/60	C8 5011P7	22089
	4	-	-	-	230	50/60	C8 50004P7	22539
	2	2	-	-	230	50/60	C8 50008P7	22584
80	3	-	1	1	230	50/60	C8 6511P7	22134
	4	-	-	-	230	50/60	C8 65004P7	22629
	2	2	-	-	230	50/60	C8 65008P7	22674
95	3	-	1	1	230	50/60	C8 8011P7	22179
	4	-	-	-	230	50/60	C8 80004P7	22719
	2	2	-	1	230	50/60	C8 80008P7	22764
25	3	-	1	1	230	50/60	C8 9511P7	22224
	4	-	-	-	230	50/60	C8 95004P7	22809
	2	2	-	-	230	50/60	C8 95008P7	22854

Please contact us for other coil voltage and frequency listed in "coil voltage of contactor" on page No: P8



# EO ДЕКЛАРАЦИИ ЗА СЪОТВЕТСТВИЕ



**DECLARATION OF CONFORMITY**



**CTS**

CTS (NINGBO) Testing Service Technology  
OPERATE ACCORDING TO ISO/IEC 17025

**EC DECLARATION OF CONFORMITY**

EU - ELECTROMAGNETIC COMPATIBILITY DIRECTIVE -

This declares that the following designated product

**MINI CIRCUIT BREAKER**

**MODEL NO: MEB1-125 1P/ 2P /3P/ 4P; 63A 80A 100A 125A**

(Product identification)

Complies with the essential protection requirements of the European Parliament and of the Council Directive 2014/30/EU on the approximation of the laws of the Member States relating to electromagnetic compatibility.

This declaration applies to all specimens manufactured in accordance with the attached manufacturing drawings which form part of this declaration.

Assessment of compliance of the product with the requirements relating to electromagnetic compatibility was based on the following standards:

**EN 55014-1: 2006      EN 55014-2: 1997+AI: 2001**  
**EN 61000-3-2: 2001      EN 61000-3-3: 1995**

(Identification of regulations / standards)

This declaration is the responsibility of the Applicant / importer  
**ZHEJIANG MICHAEL ELECTRIC CO.,LTD**  
**NO.166#LINGYUN ROAD DONGFENG INDUSTRIAL ZONE**  
**LIUSHI TOWN,WENZHOU,ZHEJIANG,325604 CHINA**

(Name / Address)



THIS DOC IS ONLY VALID IN CONNECTION WITH TEST REPORT NUMBER: CNB3170232-00123-E

**MANUFACTURER / IMPORTER**

**TEST LABORATORY**

This is the result of test, that was carried out from the submitted type-samples of a product in conformity with the specification of the respective standards.

The declaration holder has the right to fix the CE-mark for EMC on the product complying with the inspection sample

(Date)

(Surname, forename)

(Company stamp)

28 February 2017

(Date)

(Company stamp)

**ВЯРНО С  
ОРИГИНАЛА**



CTS (Ningbo) Testing Service Technology Co., Ltd.  
NB test site: Fl.1 & 8 West, Bldg. B, No. 61, Lingyun Road, Dongfeng Industrial Zone, Ningbo, Zhejiang, China  
GZ test site: A101, No.65, Zhuji Road, Tianhe District, Guangzhou, Guangdong, China



СиТиЕс (НИНГБО) Тестинг Сървис Технолъджи  
ДЕЙСТВАЩА В СЪОТВЕТСТВИЕ ISO/IEC 17025  
ЕО ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ

ЕС – ДИРЕКТИВА ЗА ЕЛЕКТРОМАГНИТНА СЪВМЕСТИМОСТ -  
Това декларира, че посоченият по-долу продукт

МИНИАТЮРЕН АВТОМАТИЧЕН ПРЕКЪСВАЧ  
МОДЕЛ №: МЕВ1-125 1P/ 2P/ 3P/ 4P; 63А 80А 100А 125А

(Продуктова идентификация)

Съответства на съществените изисквания за защита от Директива 2014/30 / ЕС на Европейския парламент и на Съвета за синхронизиране на законодателствата на държавите-членки относно електромагнитната съвместимост.

Тази декларация се прилага за всички образци, произведени в съответствие с приложените производствени чертежи, които са част от тази декларация.

Оценката на съответствието на продукта с изискванията, свързани с електромагнитната съвместимост, се основаваше на следните стандарти:

EN 55014-1:2006 EN 55014-2: 1997+A1: 2001  
EN 61000-3-2:2001 EN 61000-3-3: 1995  
(Идентификация на регулации/стандарти)

Тази декларация е отговорност на Заявителя / вносителя  
**ЖЕДЖИАНГ МАЙКЪЛ ЕЛЕКТРИК КО., ЛТД**  
№166 ЛИНГЮН РОУД ДОНГФЕНГ ИНДУСТРИАНА ЗОНА  
ЛИУШИ ТАУН, ВЕНЖУ, ЖЕДЖИАНГ, 325604 КИТАЙ  
(Име/ Адрес)

**CE**

ТОЗИ ДОКУМЕНТ Е ВАЛИДЕН САМО ВЪВ ВРЪЗКА С ДОКЛАД ОТ ИЗПИТВАНЕ НОМЕР: CNB3170232-00123-E

ПРОИЗВОДИТЕЛ /ВНОСИТЕЛ

ЛАБОРАТОРИЯ ЗА ИЗПИТВАНЕ

Това е резултат от теста, който е извършен от подадените типови образци на продукт в съответствие със спецификацията на съответните стандарти. Притежателят на декларацията има право да фиксира маркировката "CE" за EMC върху продукта, съответстващ на пробата за инспекция

(Дата)

28 Февруари 2017

(Дата)

Подпис /не се чете/

Печат /не се чете/

(Фамилия, име)

(Фирмен печат)

(Фирмен печат)

СиТиЕс (Нингбо) Тестинг Сървис Технолъджи Ко., Лтд.  
NB място за тестване: Fl.1 & 8 Уест, Сгр. В, No. 66, Кингди Роуд,  
Хай Тех Зоун, Нингбо, Жеджианг, Китай  
GZ място за тестване: A101, No.65, Джуи Роуд, Тианхе Дистрикт,  
Гуанджоу, Гуандонг, Китай

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ



# CTS

CTS (NINGBO) Testing Service Technology  
OPERATE ACCORDING TO ISO/IEC 17025

## EC DECLARATION OF CONFORMITY

EU - ELECTROMAGNETIC COMPATIBILITY DIRECTIVE -

This declares that the following designated product

**MINI CIRCUIT BREAKER**

**MODEL NO: MEB2 1P/ 2P /3P/ 4P;**

**2A 4A 6A 10A 16A 20A 25A 32A 40A 50A 63A**

(Product identification)

Complies with the essential protection requirements of the European Parliament and of the Council Directive 2014/30/EU on the approximation of the laws of the Member States relating to electromagnetic compatibility.

This declaration applies to all specimens manufactured in accordance with the attached manufacturing drawings which form part of this declaration.

Assessment of compliance of the product with the requirements relating to electromagnetic compatibility was based on the following standards:

**EN 55014-1: 2006      EN 55014-2: 1997+AI: 2001**  
**EN 61000-3-2: 2001      EN 61000-3-3: 1995**

(Identification of regulations / standards)

This declaration is the responsibility of the Applicant / importer  
**ZHEJIANG MICHAEL ELECTRIC CO.,LTD**  
**NO.166#LINGYUN ROAD DONGFENG INDUSTRIAL ZONE**  
**LIUSHI TOWN,WENZHOU,ZHEJIANG,325604 CHINA**

(Name / Address)



THIS DOC IS ONLY VALID IN CONNECTION WITH TEST REPORT NUMBER: CNB3170232-00123-E

MANUFACTURER / IMPORTER

TEST LABORATORY

This is the result of test, that was carried out from the submitted type-samples of a product in conformity with the specification of the respective standards.  
The declaration holder has the right to fix the CE-mark for EMC on the product complying with the inspection sample

(Date)

28 February 2017

(Date)

(Surname, forename)

**ВЯРНО С  
ОРИГИНАЛА**

(Company stamp)

(Company stamp)



CTS (Ningbo) Testing Service Technology Co., Ltd.  
NB test site: Fl.1 & 8 West, Bldg. B, No. 66, Qingyuan Hi-Tech Zone, Ningbo, Zhejiang, China  
GZ test site: A101, No.65, Zhujl Road, Tianhe District, Guangzhou, Guangdong, China



**DECLARATION OF CONFORMITY**

СиТиЕс (НИНГБО) Тестинг Сървис Технолъджи  
ДЕЙСТВАЩА В СЪОТВЕТСТВИЕ ISO/IEC 17025  
ЕО ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ

ЕС – ДИРЕКТИВА ЗА ЕЛЕКТРОМАГНИТНА СЪВМЕСТИМОСТ -  
Това декларира, че посоченият по-долу продукт

МИНИАТЮРЕН АВТОМАТИЧЕН ПРЕКЪСВАЧ

МОДЕЛ №: МЕВ2 1P/ 2P/ 3P/ 4P;  
2А 4А 6А 10А 16А 20А 25А 32А 40А 50А 63А

(Продуктова идентификация)

Съответства на съществените изисквания за защита от Директива 2014/30 / ЕС на Европейския парламент и на Съвета за синхронизиране на законодателствата на държавите-членки относно електромагнитната съвместимост.

Тази декларация се прилага за всички образци, произведени в съответствие с приложените производствени чертежи, които са част от тази декларация.

Оценката на съответствието на продукта с изискванията, свързани с електромагнитната съвместимост, се основаваше на следните стандарти:

EN 55014-1:2006 EN 55014-2: 1997+A1: 2001  
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(Идентификация на регулации/стандарти)

Тази декларация е отговорност на Заявителя / вносителя  
ЖЕДЖИАНГ МАЙКЪЛ ЕЛЕКТРИК КО., ЛТД  
№166 ЛИНГЮН РОУД ДОНГФЕНГ ИНДУСТРИАНА ЗОНА  
ЛИУШИ ТАУН, ВЕНЖУ, ЖЕДЖИАНГ, 325604 КИТАЙ  
(Име/ Адрес)

**С Е**

ТОЗИ ДОКУМЕНТ Е ВАЛИДЕН САМО ВЪВ ВРЪЗКА С ДОКЛАД ОТ ИЗПИТВАНЕ НОМЕР: CNB3170232-00123-E

ПРОИЗВОДИТЕЛ /ВНОСИТЕЛ

ЛАБОРАТОРИЯ ЗА ИЗПИТВАНЕ

Това е резултат от теста, който е извършен от подадените типови образци на продукт в съответствие със спецификацията на съответните стандарти.  
Притежателят на декларацията има право да фиксира маркировката "СЕ" за EMC върху продукта, съответстващ на пробата за инспекция

(Дата)

28 Февруари 2017  
(Дата)

Подпис /не се чете/

Печат /не се чете/

(Фамилия, име)

(Фирмен печат)

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СиТиЕс (Нингбо) Тестинг Сървис Технолъджи Ко., Лтд.  
NB място за тестване: Fl.1 & 8 Уест, Стр. В, No. 66, Кингуи Роуд.,  
Хай Тех Зоун, Нингбо, Жеджианг, Китай  
GZ място за тестване: A101, No.65, Джун Роуд, Тианхе Дистрикт,  
Гуанджоу, Гуандонг, Китай

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ



# **ПРОТОКОЛИ ОТ ТИПОВИ ИЗПИТВАНИЯ**

## **СЕРТИФИКАТ НА ИЗПИТВАЩИТЕ ЛАБОРАТОРИИ**





Test Report issued under the responsibility of:



*Handwritten signature*

**TEST REPORT  
IEC/EN 60898-1  
Circuit-breakers for over current protection for  
household and similar installations**

Report Reference No. ....: (2015)FQIIDQCE-0085  
Date of issue .....: 2015-11-28  
Total number of pages .....: 170

CB/CCA Testing Laboratory .....: Fujian Inspection and Research Institute for Product Quality (FQII)  
Address .....: No. 121, Shan Tou West Street, Qiao Road, Fuzhou, Fujian,  
P.R.China



Applicant's name .....: ZHEJIANG MICHAEL ELECTRIC CO.,LTD  
Address .....: NO.166# LINGYUN ROAD DONGFENG INDUSTRIAL ZONE  
LIUSHI TOWN,WENZHOU,ZHEJIANG,325604 CHINA

**Test specification:**

Standard .....:  IEC 60 898-1:2002 (1st Edition) + A1:2002 + A2:2003 and/or  
 EN 60 898-1:2003 + A1:2004 + A11:2006 + A12:2008+ A13:2012  
Test procedure .....: CCA  
Non-standard test method .....: N/A

Test Report Form No. ....: IECEN60898\_1C  
Test Report Form(s) Originator .....: OVE  
Master TRF .....: Dated 2007-12

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

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

If this Test Report Form is used by non-CCA members, the CIG logo and the reference to the CCA Procedure shall be removed.

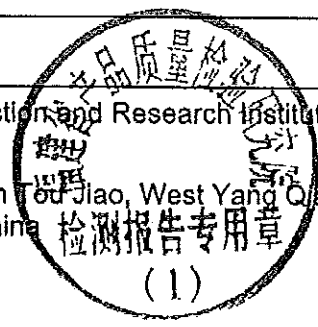
This report is not valid as a CCA Test Report unless signed by an approved CCA Testing Laboratory and appended to a CCA Test Certificate issued by an NCB in accordance with CCA

Test item description .....: MCB  
Trade Mark .....: Michael Electric  
Manufacturer .....: ZHEJIANG MICHAEL ELECTRIC CO.,LTD  
Model/Type reference .....: MEB2-63  
Ratings .....: Ue:AC230/400V(1P),400V(2P,3P,4P);

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*Handwritten signature*  
102

*[Handwritten mark]*

<b>Testing procedure and testing location:</b>	
<input checked="" type="checkbox"/> <b>CB Testing Laboratory:</b>	Fujian Inspection and Research Institute for Product Quality(FQII)
Testing location/ address .....	No. 121, Shan Tou Jiao, West Yang Qiao Road, Fuzhou, Fujian,P.R.China
<input type="checkbox"/> <b>Associated CB Laboratory:</b>	
Testing location/ address .....	
Tested by (name + signature).....:	Wei Yunming <i>[Signature]</i>
Approved by (+ signature).....:	Zheng lixin <i>[Signature]</i>
<input type="checkbox"/> Testing procedure: TMP	
Tested by (name + signature).....:	
Approved by (+ signature).....:	
Testing location/ address .....	
<input type="checkbox"/> Testing procedure: WMT	
Tested by (name + signature).....:	
Witnessed by (+ signature).....:	
Approved by (+ signature).....:	
Testing location/ address .....	
<input type="checkbox"/> Testing procedure: SMT	
Tested by (name + signature).....:	
Approved by (+ signature).....:	
Supervised by (+ signature).....:	
Testing location/ address .....	
<input type="checkbox"/> Testing procedure: RMT	
Tested by (name + signature).....:	
Approved by (+ signature).....:	
Supervised by (+ signature).....:	
Testing location/ address .....	



**Summary of testing:**

**Tests performed (name of test and test clause):**

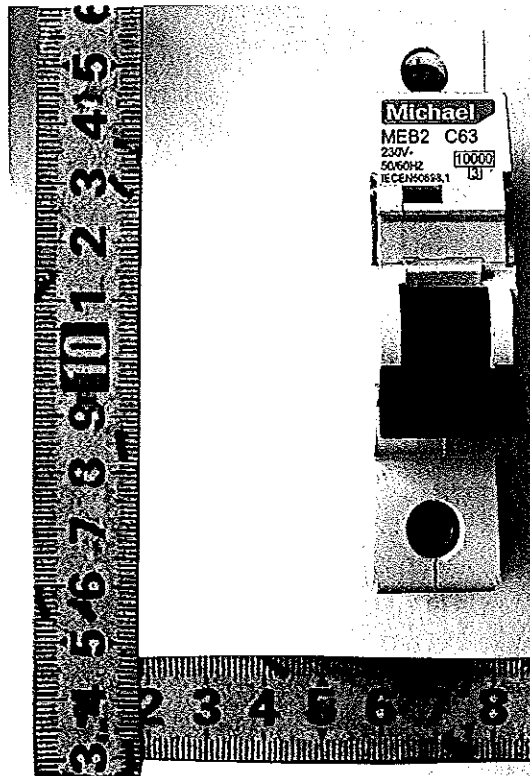
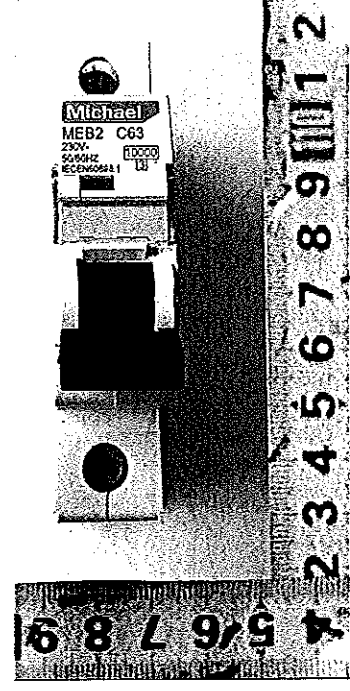
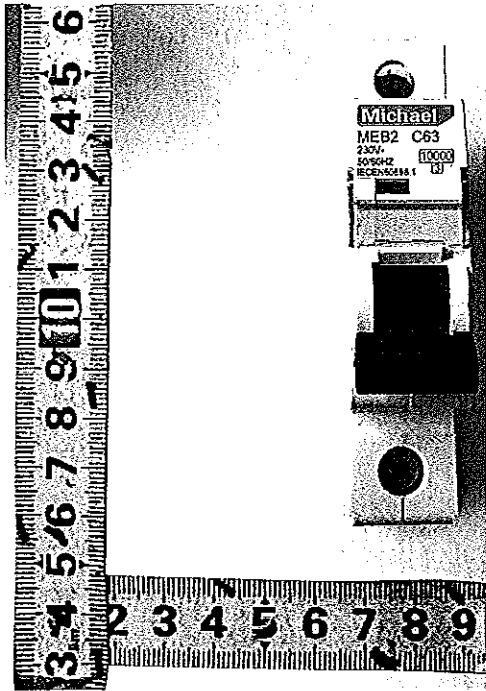
Type	Characteristics	Rated current	Number of poles	Test sequence
MEB2-63	C	63A	1P	A,B, C1, C2,D0+D1, E1
	C	50A	1P	D0
	C	40A	1P	D0, E1
	C	32A	1P	D0
	C	25A	1P	D0
	C	20A	1P	D0
	C	16A	1P	D0
	C	10A	1P	D0
	C	6A	1P	D0, E1
	B	63A	1P	B,
	B	50A	1P	D0
	B	40A	1P	D0
	B	32A	1P	D0
	B	25A	1P	D0
	B	20A	1P	D0
	B	16A	1P	D0
	B	10A	1P	D0
	B	6A	1P	D0
	D	63A	1P	D0+D1, E1
	D	40A	1P	E1
	D	6A	1P	E1
	C	63A	2P	C2, E1
	C	40A	2P	E1
	C	6A	2P	E1
	D	63A	2P	E1
	D	40A	2P	E1
	D	6A	2P	E1
	C	63A	4P	A,B, C1, C2,D0+D1, E1
	C	40A	4P	E1
	C	6A	4P	E1
	B	63A	4P	B
	D	63A	4P	D0+D1, E1
D	40A	4P	E1	
D	6A	4P	E1	

**Summary of compliance with National Differences:**

None

SPP

Copy of marking plate

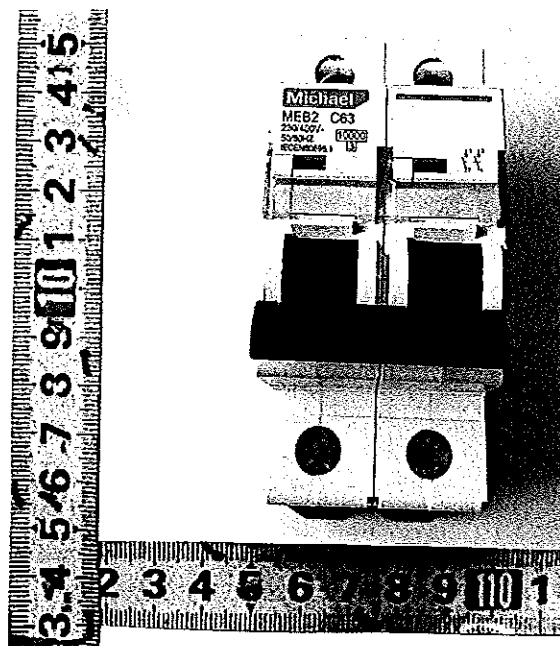
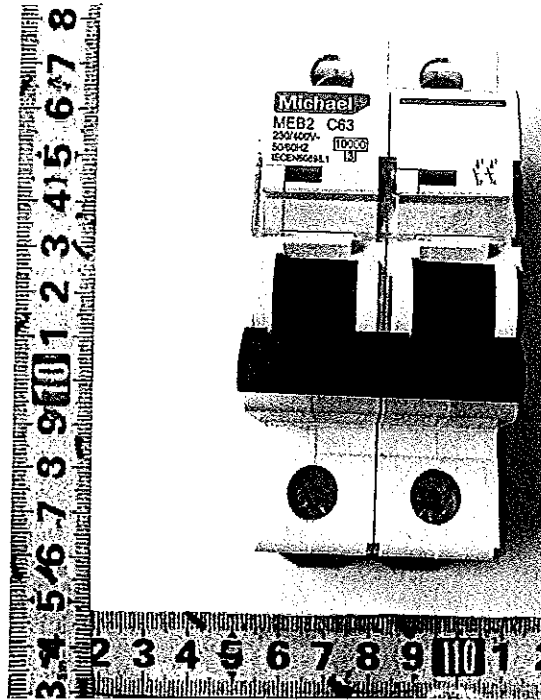


Handwritten scribbles and lines, including a large loop and several smaller marks.



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Copy of marking plate



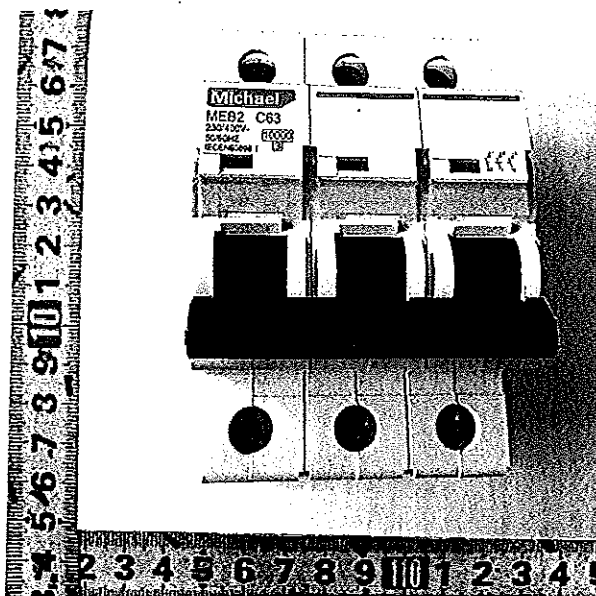
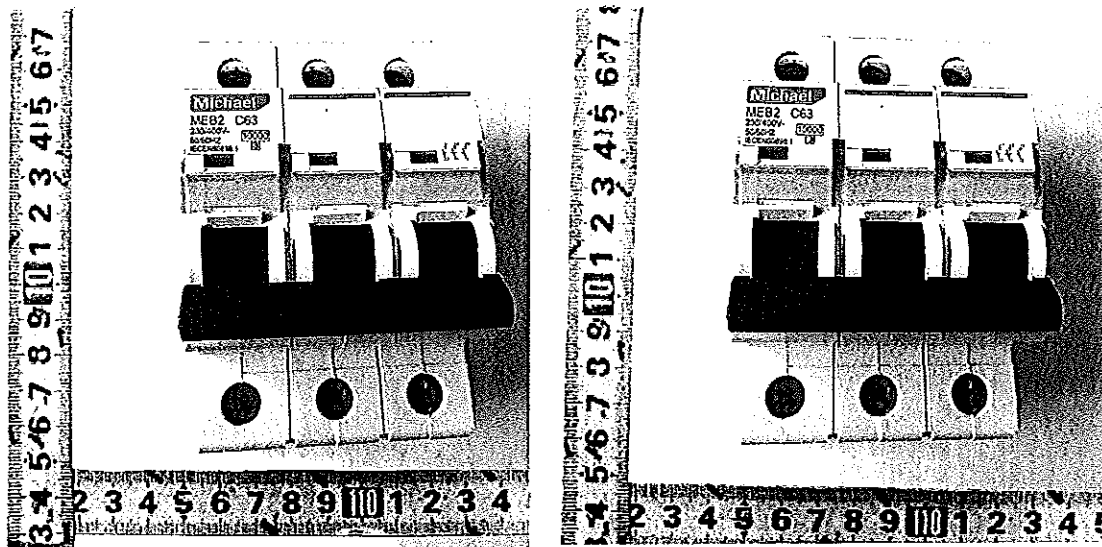
*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*

Copy of marking plate



*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*

Copy of marking plate

**Michael**

MEB2 C6  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**

**Michael**

MEB2 C10  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**

**Michael**

MEB2 C16  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**

**Michael**

MEB2 C20  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**

**Michael**

MEB2 C25  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**

**Michael**

MEB2 C32  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**

**Michael**

MEB2 C40  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**

**Michael**

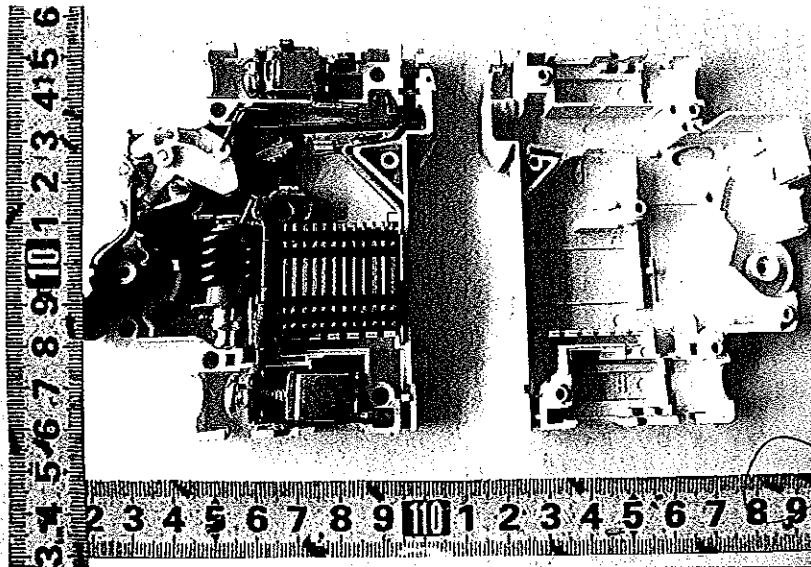
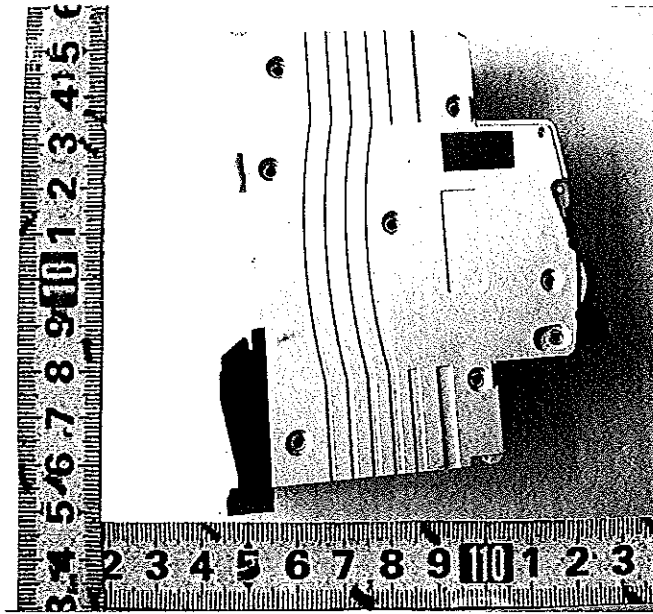
MEB2 C50  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**

**Michael**

MEB2 C63  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**

*[Handwritten mark]*

Copy of marking plate



*[Handwritten signature]*

*[Handwritten signature]*

109

*MM*

Copy of marking plate

**Michael**

MEB2 B6  
230/400V-  
50/60HZ  
IECEN60898.1

10000

3

**Michael**

MEB2 B10  
230/400V-  
50/60HZ  
IECEN60898.1

10000

3

**Michael**

MEB2 B16  
230/400V-  
50/60HZ  
IECEN60898.1

10000

3

**Michael**

MEB2 B20  
230/400V-  
50/60HZ  
IECEN60898.1

10000

3

**Michael**

MEB2 B25  
230/400V-  
50/60HZ  
IECEN60898.1

10000

3

**Michael**

MEB2 B32  
230/400V-  
50/60HZ  
IECEN60898.1

10000

3

**Michael**

MEB2 B40  
230/400V-  
50/60HZ  
IECEN60898.1

10000

3

**Michael**

MEB2 B50  
230/400V-  
50/60HZ  
IECEN60898.1

10000

3

**Michael**

MEB2 B63  
230/400V-  
50/60HZ  
IECEN60898.1

10000

3

*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*

*gm*

Copy of marking plate

**Michael**

**MEB2 D63**  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**



**Michael**

**MEB2 D40**  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**



**Michael**

**MEB2 D6**  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**



**Michael**

**MEB2 D63**  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**



**Michael**

**MEB2 D40**  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**



**Michael**

**MEB2 D6**  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**



**Michael**

**MEB2 D63**  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**



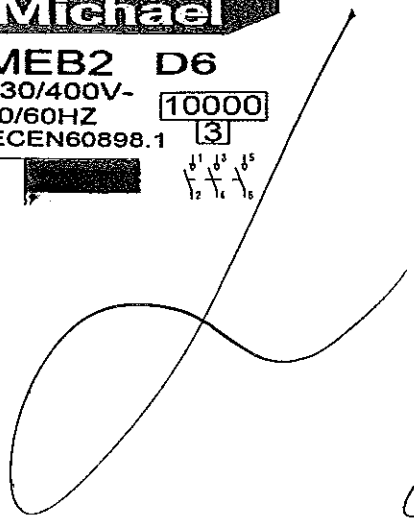
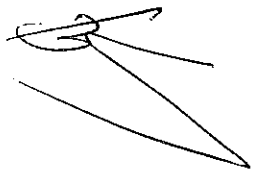
**Michael**

**MEB2 D40**  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**



**Michael**

**MEB2 D6**  
230/400V-  
50/60HZ **10000**  
IECEN60898.1 **3**



*Handwritten mark*

Test item particulars .....	
Type of circuit-breaker .....	
Number of poles .....	<input checked="" type="checkbox"/> 1-P <input type="checkbox"/> 1-P+N <input checked="" type="checkbox"/> 2-P <input checked="" type="checkbox"/> 3-P <input type="checkbox"/> 3-P+N <input checked="" type="checkbox"/> 4-P <input type="checkbox"/> Other.....
Protection against external influences .....	<input checked="" type="checkbox"/> enclosed <input type="checkbox"/> unenclosed
Method of mounting .....	<input type="checkbox"/> surface <input checked="" type="checkbox"/> flush <input type="checkbox"/> panel board / distribution board
Method of connection .....	<input type="checkbox"/> .not associated with the mechanical mounting <input checked="" type="checkbox"/> associated with the mechanical mounting
Instantaneous tripping current .....	<input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D
Ambient air temperature (°C) .....	<input type="checkbox"/> 30°C <input checked="" type="checkbox"/> 40°C <input type="checkbox"/> Other _____°C
Energy limiting class .....	<input type="checkbox"/> Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3
Rated short-circuit capacity (A) .....	<input type="checkbox"/> 1,5 kA <input type="checkbox"/> 3 kA <input type="checkbox"/> 4.5 kA <input checked="" type="checkbox"/> 6 kA <input checked="" type="checkbox"/> 10 kA <input type="checkbox"/> 15 kA <input type="checkbox"/> 20 kA <input type="checkbox"/> 25 kA
Type of terminal .....	<input type="checkbox"/> screw <sup>a) b)</sup> <input checked="" type="checkbox"/> pillar <sup>a) b)</sup> <input type="checkbox"/> cage <sup>a) b)</sup> <input type="checkbox"/> lug <input type="checkbox"/> screw less <sup>a)</sup> <input type="checkbox"/> flat quick connect <sup>a)</sup> <input type="checkbox"/> plug-in <input type="checkbox"/> screw-in <sup>a)</sup> copper conductors <sup>b)</sup> aluminium conductors***
Value of rated operational voltage .....	<input type="checkbox"/> 120 V ** <input type="checkbox"/> 230 V <input type="checkbox"/> 240 V ** <input type="checkbox"/> 120/240 V ** <input checked="" type="checkbox"/> 230/400 V <input checked="" type="checkbox"/> 400 V <input type="checkbox"/> 240/415 V <input type="checkbox"/> 415 V
Value of rated current .....	6A,10A,16A,20A,25A,32A,40A,50A,63A
Value of rated frequency .....	<input checked="" type="checkbox"/> 50 Hz <input type="checkbox"/> 60 Hz
Rated impulse withstand voltage (Uimp)	<input type="checkbox"/> 2,5 kV** <input type="checkbox"/> 4 kV <input checked="" type="checkbox"/> declared <u>6</u> kV
Material group and CTI declared by manufacturer	<input type="checkbox"/> Group I, (600 V ≤ CTI) <input type="checkbox"/> Group II, (400 V ≤ CTI < 600 V) <input checked="" type="checkbox"/> Group IIIa, (175 V ≤ CTI < 400 V)
Remark:	** delete for EN and *** only for EN

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

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

The basic part of this test report covers the evaluation of the IEC requirements.

Annex 1 of this test report covers the evaluation of the CENELEC common modifications.

**General product information:**

The description of the series :

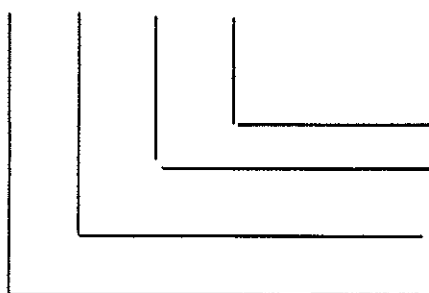
The frame size rated current of the MEB2-63 series miniature circuit-breakers is 63A. It has 9 types which is 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, and 63A according to the rated current . The inner units of the different kinds of rated currents breakers are the same in dimension, shape and material expect the thermal element and release coil . The same current type of this kind miniature circuit breakers are only different in the core elastic spring, which is divided into B, C and D type according to the instantaneous tripping. It has 4 types which is 1P, 2P, 3P and 4P according the poles. The different poles breakers are different in the outer joint between the pole and pole , multipole connecting handle but are the same in the other structure.

Type:

Number of poles:	1P,2P,3P,4P
Rated operational voltage:	AC230/400V(1P),400V(2P,3P,4P)
Rated current:	6A,10A,16A,20A,25A,32A,40A,50A,63A
Instantaneous tripping currunt:	"B", "C", "D"
Rated short-circuit capacity:	ICN=10KA
Energy limiting class1	

The explanation for type:

ME B 2 — 63



Rated range current for frame: 63A

Design symbol

Miniature circuit- breakers

Corporate name



IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict

1P

	TESTS „A“ 1 SAMPLE (C63, 1P)	A-1	
6 *)	MARKING AND OTHER INFORMATION		
*see Annex 1	Circuit-breaker marked with:		
	a) Manufacturer's name or trade mark..... :	Michael Electric	P
	b) Type designation, catalogue number or other identification number..... :	MEB2-63	P
	c) Rated voltage (V)..... :	~230/400	P
	d) Rated current (A)..... :	63A	P
	e) Rated frequency (Hz)..... :	50	P
	f) Rated short circuit capacity (A)..... :	10000	P
	g) Wiring diagram		P
	h) Ambient air temperature, if different from 30°C		N/A
	i) Degree of protection, if different from IP20		N/A
	j) For D-type circuit-breakers: the maximum instantaneous tripping current, if higher than 20 I <sub>n</sub> (see table 2)		N/A
	k) Rated impulse withstand voltage U <sub>imp</sub> if it is 2,5 kV		N/A
	Symbol for instantaneous tripping current	C	P
	Symbol for nature of supply	AC	P
	Marking for rated current and for instantaneous tripping shall be readily visible when CB is installed		P
	Other marking shall be easily discernible		P
	The suitability for isolation, which is provided by all circuit-breakers of this standard, may be indicated by the symbol on the device		P
	Energy limiting class	1	P
	I <sup>2</sup> t characteristic (documentation)		N/A
	Symbols on supply and load terminal	"1", "2"	P
	Terminal for neutral conductor N		N/A
	Earthing terminal if any (IEC 60417-5019)		N/A
	On - off position shall be clearly indicated - I 0 -	"I -ON" , "0-OFF"	P
	For push-button CB the off push-button shall either be red or be marked with the symbol '0'		N/A
	Red not used for other push-button		N/A
	This symbol shall be easily discernible		N/A

**IEC/EN 60 898-1**

Clause	Requirement + Test	Result - Remark	Verdict
	For CB with multiple current ratings, the maximum value is marked, the adjusted value indicated without ambiguity		N/A
	Marking shall be indelible and easily legible (not on removable parts), 15 s with water, 15 s with hexane (see cl. 8.3)		P

**8. REQUIREMENTS FOR CONSTRUCTION AND OPERATION**

<b>8.1.1</b>	<b>General</b>		P
<b>8.1.2</b>	<b>Mechanism</b>		P
	The moving contact shall be mechanically coupled so that all poles make and break together, whether operated manually or automatically, even if an overload occurs on one pole only		N/A
	The switched neutral shall close before and open after the protected pole (s)		N/A
	Neutral pole having adequate making and breaking capacity and CB with independent manual operation: all poles operate together including neutral pole		N/A
	CB shall have a trip free mechanism		P
	It shall be possible to switch the CB on and off by hand		P
	No intermediate position of the contacts		P
	Position of contacts shall be indicated		P
	Indication visible from the outside		P
	If the indication is on the actuating means, it shall, when released, automatically take up or stay in the position corresponding to that of the moving contacts; operating means shall have two different rest positions, except that, for automatic operation, a third distinct rest position may be provided		P
	If a separate mechanical indicator is used to indicate the position of the main contacts, colour red shall be used for the on position and green for the off position.		N/A
	The action of the mechanism shall not be influenced by the position of enclosures		P
	If the cover is used as a guiding means for push-button, it shall not be possible to remove this button from the outside		N/A
	Operating means securely fixed, not possible to remove them without a tool		P

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Clause	Requirement + Test	Result - Remark	Verdict
	For the up-down operating means the contacts shall be closed by the up movement.		P
8.1.3	<b>Clearances and creepage distances</b>		P
8.1.3	<b>Clearances [mm] see table 4</b>		
	1.between live parts (of the main circuits) which are separated when the CB is in off position ..... :	5.60mm	P
	2.between live parts of different polarity ..... :		N/A
	3.between circuits supplied from different sources, one of which being PELV or SELV ..... :		N/A
	4. between live parts and		
	- accessible surfaces of operating means ..... :	5.20 mm	P
	- screws or other means for fixing covers ..... :		N/A
	- surface on which the base is mounted ..... :	7.80mm	P
	- screws or other means for fixing the circuit breaker ..... :		N/A
	- metal covers or boxes..... :		N/A
	- other accessible metal parts..... :		N/A
	- metal frames supporting the base (flush-type) . :		N/A
	5.between metal parts of mechanism and:		
	- accessible metal parts ..... :		N/A
	- screws or other means for fixing the circuit breaker ..... :		N/A
	- metal frames supporting the base (flush type) . :		N/A

IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict

8.1.3	Creepage distances [mm] (see table 4)		P
	Material group	<input checked="" type="checkbox"/> IIIa <input type="checkbox"/> II <input type="checkbox"/> I	
	1.between live parts (of the main circuits) which are separated when the CB is in off position..... :	10.8mm	P
	2.between live parts of different polarity..... :		N/A
	3.between circuits supplied from different sources, one of which being PELV or SELV..... :		N/A
	4. between live parts and		
	- accessible surfaces of operating means..... :	9.10 mm	P
	- screws or other means for fixing covers..... :		N/A
	- surface on which the base is mounted..... :	7.80mm	P
	- screws or other means for fixing the circuit breaker..... :		N/A
	- metal covers or boxes..... :		N/A
	- other accessible metal parts..... :		N/A
	- metal frames supporting the base (flush-type) . :		N/A
	5.between metal parts of mechanism and:		
	- accessible metal parts..... :		N/A
	- screws or other means for fixing the circuit breaker..... :		N/A
	- metal frames supporting the base (flush type) . :		N/A
8.1.4	Screws, current-carrying parts and connections		R
8.1.4.1	Connections, withstand mechanical stresses occurring in normal use		--
	Screws for mounting of the CB not of the thread-cutting type		--
	Test according to cl. 9.4:		
	- 10 times (screw Ø / torque Nm)	Ø ___mm___Nm (see table 10) Ø ___mm___Nm	N/A
	- 5 times (screw Ø / torque Nm)	Ø4.7~5.3mm2.0Nm (see table 10) Ø4.8mm2.0Nm	P
	Plug in connections tested by plugging in and pulling out five times		--
	After test connections have not become loose nor electrical function impaired		P

IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.1.4.2	Screws with a thread of insulating material ensured correct introduction		N/A
8.1.4.3	Electrical connection: contact pressure not transmitted through insulating material, unless there is sufficient resilience in the metallic parts		P
	- copper		P
	- alloy 58% copper for worked cold parts		N/A
	- alloy 50% copper for other parts		P
	- other metal		N/A
8.1.5	<b>Terminals for external conductors</b>		P
8.1.5.1	Terminals ensure correct connection of conductors (Test acc. to cl. 9.5 or annex J or K)		--
9.5	Torque Ø4.7~5.3mm 2.0Nm Ø ___mm ___Nm Ø ___mm ___Nm max. sect. _____ mm <sup>2</sup>	Ø4.8mm 2.0Nm _____ _____	--
9.5.1	Pull test: min sect. 1.0 mm <sup>2</sup> max sect. 25 mm <sup>2</sup> Pull 50/100N for 1 min  During the test conductor does not move noticeably		P
9.5.2	min sect. 1.0 mm <sup>2</sup> Torque (2/3)= 1.33 Nm max sect. 25 mm <sup>2</sup>  The conductor shows no damage		P
9.5.3	Nominal cross-section from 1.0 to 25 mm <sup>2</sup>  No of wires 7 Ø of wires 2.14/0.67 mm  Torque (2/3) = 1.33 Nm  After the test no wire escaped outside		P

IEC/EN 60 898-1																														
Clause	Requirement + Test	Result - Remark	Verdict																											
8.1.5.2	Terminals allow the connection of conductors of the following cross-sectional areas: (table 5)																													
	<table border="1"> <thead> <tr> <th>Rated current (A)</th> <th colspan="2">Range of nominal cross sections to be clamped (mm<sup>2</sup>)</th> </tr> </thead> <tbody> <tr> <td>≤ 13</td> <td>1</td> <td>to 2,5</td> </tr> <tr> <td>&gt; 13 ≤ 16</td> <td>1</td> <td>to 4</td> </tr> <tr> <td>&gt; 16 ≤ 25</td> <td>1,5</td> <td>to 6</td> </tr> <tr> <td>&gt; 25 ≤ 32</td> <td>2,5</td> <td>to 10</td> </tr> <tr> <td>&gt; 32 ≤ 50</td> <td>4</td> <td>to 16</td> </tr> <tr> <td>&gt; 50 ≤ 80</td> <td>10</td> <td>to 25</td> </tr> <tr> <td>&gt; 80 ≤ 100</td> <td>16</td> <td>to 35</td> </tr> <tr> <td>&gt; 100 ≤ 125</td> <td>25</td> <td>to 50</td> </tr> </tbody> </table>	Rated current (A)	Range of nominal cross sections to be clamped (mm <sup>2</sup> )		≤ 13	1	to 2,5	> 13 ≤ 16	1	to 4	> 16 ≤ 25	1,5	to 6	> 25 ≤ 32	2,5	to 10	> 32 ≤ 50	4	to 16	> 50 ≤ 80	10	to 25	> 80 ≤ 100	16	to 35	> 100 ≤ 125	25	to 50		
Rated current (A)	Range of nominal cross sections to be clamped (mm <sup>2</sup> )																													
≤ 13	1	to 2,5																												
> 13 ≤ 16	1	to 4																												
> 16 ≤ 25	1,5	to 6																												
> 25 ≤ 32	2,5	to 10																												
> 32 ≤ 50	4	to 16																												
> 50 ≤ 80	10	to 25																												
> 80 ≤ 100	16	to 35																												
> 100 ≤ 125	25	to 50																												
	It is required that, for current ratings up to and including 50 A terminals are designed to clamp solid conductors as well as rigid stranded conductors; the use of flexible conductors is permitted		P																											
	Nevertheless, it is permitted that terminals for conductors having cross-sections from 1 mm <sup>2</sup> up to 6 mm <sup>2</sup> are designed to clamp solid conductors only.	<u>1</u> to <u>16</u> mm <sup>2</sup>	P																											
8.1.5.3	Means for clamping the conductors in the terminals not serve to fix any other component (See test sub-clause 9.5)		P																											
8.1.5.4	Terminals for I <sub>N</sub> ≤ 32 A allow the connection of conductors without special preparation		N/A																											
8.1.5.5	Terminals shall have adequate mechanical strength; ISO thread or equivalent (See tests of sub-clause 9.4 and 9.5.1)		P																											
8.1.5.6	Clamping of conductor without damage to the conductor (See test of sub-clause 9.5.2)		P																											
8.1.5.7	Clamping of conductor between metal surfaces (See tests of sub-clause 9.4 and 9.5.1)		P																											
8.1.5.8	Conductor shall not slip-out when the clamping screw or nuts are tightened (See test of sub-clause 9.5.3)		P																											
8.1.5.9	Terminals shall be properly fixed. No work loose when the clamping screws or nuts are tightened or loosened (See test of sub-clause 9.4)		P																											
8.1.5.10	Clamping screws or nuts of terminals for protective conductors adequately secured against accidental loosening		N/A																											

IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.1.5.12	Screws and nuts of terminals for external conductors shall be in engagement with a metal thread, and the screws shall not be of tapping screw type		P
8.1.6	<b>Non Interchangeability</b>		N/A
	For circuit-breakers intended to be mounted on bases forming a unit therewith (plug-in or screw-in type) it shall not be possible, without the aid of a tool, to replace a circuit-breaker when mounted as for normal use by another of the same make having a higher rated current, compliance is checked by inspection		
8.1.7	Plug-in type circuit-breakers, the holding in position of which does not depend solely on their plug-in connection(s), shall be reliable and have adequate stability		N/A
8.1.7.1	Plug-in type circuit-breakers, the holding in position of which does not depend solely on their plug-in connection(s)  Compliance of the mechanical mounting is checked by the relevant test 9.13		N/A
8.1.7.2	Plug-in type circuit-breakers, the holding in position of which does depend solely on their plug-in connection(s)  Compliance of the mechanical mounting is checked by the relevant test 9.13		N/A
8.2	<b>Protection against electric shock</b>		P
	Live parts not accessible in normal use		P
	For CB, other than plug-in type, external parts, other than screws and other means for fixing covers, which are accessible shall be of insulating material		P
	Unless the live parts are within an internal enclosure of insulating material: Lining - reliable fixed, - adequate thickness and - mechanical strength		N/A
	Inlet openings for cables shall be in insulating material or be provided with bushings or similar devices in insulating material Such device - shall be reliable fixed - shall have adequate mechanical strength		N/A
	For plug-in CB, external parts, other than screws and other means for fixing covers, which are accessible shall be in insulating material		N/A

IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Metallic operating means insulated from live parts		N/A
	Metal parts of the mechanism not accessible and insulated from accessible metal parts, metal frames (for flush-type), screws or other means for fixing the base		P
	Replacement of plug-in CB possible without touching live parts		N/A
	Lacquer or enamel not considered		N/A
<b>9.6</b>	<b>Test of protection against electric shock</b>		P
	Use of test finger so designed that each jointed can be turned through an angle of 90° with respect to the finger		P
	Circuit-breaker with enclosures of thermoplastic material are additional tested at 35 °C for 1 min with a force of 75 N		P
<b>8.10</b>	<b>Resistance to heat</b>		P
	CB sufficiently resistant to heat		P
<b>9.14</b>	<b>Test of resistance to heat</b>		P
9.14.1	Test:		
	- without removable covers ..... 1 h (100 ± 2) °C	100	--
	- removable covers ..... 1 h (70 ± 2) °C		N/A
	After the test no access to live parts, marking still legible		P
9.14.2	Ball pressure test for external parts of insulating material (parts retaining current-carrying parts and parts of the protective circuit in position) T = 125°C Ø of impression ≤ 2 mm	Impression: 0.80 mm	P
9.14.3	Ball pressure test for external parts of insulating material (parts not retaining current-carrying parts and parts of the protective circuit in position) T = (70 ± 2)°C or T = ___ °C = (40 ± 2)°C + max. temperature rise of sub-clause 8.8 Ø of impression ≤ 2 mm	Impression: .... mm	N/A
<b>8.11</b>	<b>Resistance to abnormal heat and to fire</b>		P
	External parts of insulating material shall not ignite or spread fire under fault or overload conditions		P



IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict

9.15	<b>Resistance to abnormal heat and to fire</b>		P
	Glow wire test: No visible flame, no sustained glowing or flames and glowing extinguish within 30 s		P
	external parts retaining current-carrying parts and parts of the protective circuit In position.....(960 ± 15)°C	T=961°C	P
	all other external parts .....(650 ± 10)°C	T=652°C	P
8.12	<b>Resistance to rusting</b>		P
	Ferrous parts adequately protected against rusting		P
9.16	<b>Test of resistance to rusting:</b>		P
	- 10 min immersed in a cold chemical degreaser such as methyl-chloroform or refined petrol		--
	- 10 min immersed in a 10% solution of chloride in water at 20°C	+23°C, 10min	--
	- 10 min at 95% humidity at 20°C	+23°C, 10min	--
	- 10 min at 100°C	+100°C, 10min	--
	No sign of rust		P

IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „B“ 3 SAMPLES (C63, 1P)	B-1	B-2	B-3	
8.3	<b>Dielectric properties and isolating capability</b>				P
	CB shall have adequate dielectric properties and shall ensure isolation:				P
8.3.1	<b>Dielectric strength at power frequency</b>				P
	Compliance is checked by the tests 9.7.1, 9.7.2 and 9.7.3 on circuit-breaker in new condition				P
8.3.2	<b>Isolating capability</b>				P
	Circuit-breakers shall be suitable for isolation. Compliance is checked by the verification of compliance with the minimum clearances and creepage distances of Item 1 of table 4 and by tests of 9.7.6.1 and 9.7.6.3.				P
8.3.3	<b>Dielectric strength at rated impulse withstand voltage (U<sub>imp</sub>)</b>				P
	Circuit-breakers shall adequately withstand impulse voltages. Compliance is checked by the tests of 9.7.6.2.				P
9.7	<b>Test of dielectric properties and isolating capability</b>				P
9.7.1	<b>Resistance to humidity</b>				P
9.7.1.1	<b>Preparation of the circuit-breaker for test</b>				
	Inlet openings, if any, are left open; if knock-outs are provided, one of them is opened.				
9.7.1.2	<b>Test conditions</b>				
	The humidity treatment is carried out in humidity cabinet 91% to 95% and the temperature of the air between 20 °C and 30 °C	Rf = 91~95 % T = 28 °C			--
9.7.1.3	<b>Test procedure:</b>				
	The sample is kept in the cabinet for 48 h.	48			--
9.7.1.4	<b>Condition of the circuit-breaker after the test</b>				
	After this treat, the sample show no damage within the meaning of this standard and shall withstand the tests of 9.7.2 and 9.7.3				P

IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict
9.7.2	Insulation resistance of the main circuit		P
9.7.2	After an interval between 30 min and 60 min flowing this treatment, the insulation resistance is measured 5 s after application of a d.c. voltage of approximately 500 V, consecutively as follows:	[MΩ] [MΩ] [MΩ]	
	a) In off-position, between the terminals which are electrically connected together when the circuit-breaker is in the closed position $\geq 2 \text{ M}\Omega$	>20 >20 >20	P
	b) In off-position, between each pole in turn and the others connected together $\geq 2 \text{ M}\Omega$		N/A
	c) In on-position, between all poles connected together and the frame $\geq 5 \text{ M}\Omega$	>20 >20 >20	P
	d) between metal parts of mechanism and the frame $\geq 5 \text{ M}\Omega$		N/A
	e) between the frame and metal foil in contact with the inner surface of the internal enclosure or lining of insulating material $\geq 5 \text{ M}\Omega$		N/A
9.7.3	Dielectric strength of the main circuit		P
	After the circuit-breakers have passed the tests of 9.7.2 the test voltage specified in 9.7.5 is applied for 1 min between the parts indicated in 9.7.2		P
	a) 2000 V		P
	b) 2000 V		N/A
	c) 2000 V		P
	d) 2000 V		N/A
	e) 2500 V		N/A
9.7.4	Dielectric strength of the auxiliary and control circuits		N/A
	For these tests, the main circuit shall be connected to the frame. The test voltage specified in 9.7.5 shall be applied for 1 min as follows:		N/A
	1) Between all the auxiliary or control circuits and the frame $U = \text{---} \text{ V}$	$U = \text{---} \text{ V}$	N/A
	2) Between each part of the auxiliary or control circuits which may be isolated from the other parts of the auxiliary or control circuits and these other parts connected together $U = [1000 \text{ V if } U_i \leq 60 \text{ V or } 2U_i + 1000 \text{ V if } U_i > 60 \text{ V}]$	$U = \text{---} \text{ V}$	N/A

IEC/EN 60 898-1

Clause	Requirement + Test	Result - Remark	Verdict
9.7.6	Verification of the impulse withstand voltage (across clearances and across solid insulation) and leakage current across open contacts		P
9.7.6.1	Verification of the impulse withstand voltage across open contacts (suitability for isolation)		P
	The 1,2/50µs impulse voltage shall be applied three times for each polarity at intervals of 1s minimum		
	- rated impulse withstand voltage (kV) :	4kV	--
	- sea level of the laboratory:	88.4m	--
	- test Uimp on open main contacts (equipment suitable for isolating) (see table 13).....	Utest = 6.2 kV	--
	- no unintentional disruptive discharge during the test's		P
9.7.6.2	Verification of impulse withstand voltage for the parts not test in 9.7.6.1		
	The 1,2/50µs impulse voltage shall be applied three times for each polarity at intervals of 1s minimum		
	- rated impulse withstand voltage (kV) :	4kV	--
	- sea level of the laboratory:	88.4m	--
	- test Uimp main circuits (see table 14) :	Utest = 4.9 kV	--
	Application of test voltage		
	i) Between all the phase pole(s) connected together and to the neutral pole (or path) of the circuit-breaker		N/A
	ii) Between all the phase pole(s) and the neutral pole (or path) connected together and the metal support connected to the terminals intended for the protective conductor(s)		P
	- no unintentional disruptive discharge during the test's		P
9.7.6.3	Verification of leakage currents across open contacts (suitability for isolation)		P
	For circuit-breakers suitable for isolation, the leakage current shall be measured. Each pole having been submitted to the test of 9.12.11.2, or 9.12.11.3, or 9.12.11.4.2 or 9.12.11.4.3 is supplied at a test voltage of 1,1 times its rated operational voltage, the circuit-breaker being in the open position		P
	The leakage current flowing across the open contacts is measured and shall not exceed 2 mA		P

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IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict

8.4	Temperature rise				
	Temperature rise does not exceed the limiting values stated in table V:	sect.16 mm <sup>2</sup>			--
9.8.2	Test current: I <sub>N</sub> = (reach the steady-state value) Four-pole CB's: <input type="checkbox"/> 1) Three poles loaded 2) One pole and neutral pole loaded <input type="checkbox"/> 1) Four-poles loaded	I <sub>N</sub> = 63A			--
	Ambient air temperature .....	T <sub>amb</sub> = 21 °C			--
	Parts..... Temperature rise [K]	[K]	[K]	[K]	
	L1	47	48	48	--
	L2	--	--	--	
	L3	--	--	--	
	L4(N)	--	--	--	
	L3	--	--	--	
	N	--	--	--	
	Terminals for external connections..... 60				P
	External parts liable to be touched during manual operation of the circuit-breaker, including operating means of insulating material and metallic means for coupling of insulating operating means of several poles..... 40	11	11	12	P
	External metallic parts of operating means ..... 25	--	--	--	N/A
	Other external parts, including that face of the circuit-breaker is in direct contact with the mounting surface ..... 60	39	41	37	P

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IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict

9.8.5	Measurement of power losses	B-1	B-2	B-3	P
	Power loss do not exceed the values stated in table 15				P
	Test current: $I_N = 63A$ (reach the steady state value)				--
	Loaded one pole after the other				
	Max. power loss : <u>13</u> W	W	W	W	--
	L1	6.43	7.05	6.55	P
	L2	--	--	--	
	L3	--	--	--	
	L4(N)	--	--	--	
	L3	--	--	--	
	N	--	--	--	
8.5	Uninterrupted duty				P
	Circuit-breakers operate reliable even after long service				P
9.9	28 day test				P
	28 cycles - 21 h with current - 3 h without current cross sectional area. <u>16</u> mm <sup>2</sup>	$I_N = 63A$			--
	During the test no tripping during the last period, temperature rise shall be measured				P
	Ambient air temperature .....	21°C			--
	Parts..... Temperature rise [K]	[K]	[K]	[K]	--
	Terminals for external connections..... 60				
	The temperature rise does not exceed the value measured during the temperature rise test (subclause 8.8) by more than 15 K	56	56	58	P
	Test current 1,45 $I_N = 91.4A$		92.0A		--
	- Tripping within	[s]	[s]	[s]	
	- 1h ( $\leq 63 A$ )	172	161	191	P
	- 2h ( $> 63 A$ )				N/A

IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „B“ 3 SAMPLES (B63, 1P)	B-7	B-8	B-9	
8.4	Temperature rise				
	Temperature rise does not exceed the limiting values stated in table V:	sect. <u>16</u> mm <sup>2</sup>			--
9.8.2	Test current: I <sub>N</sub> = (reach the steady-state value) Four-pole CB's: <input type="checkbox"/> 1) Three poles loaded 2) One pole and neutral pole loaded <input type="checkbox"/> 1) Four-poles loaded	I <sub>N</sub> = <u>63A</u>			--
	Ambient air temperature .....	T <sub>amb</sub> = <u>21</u> °C			--
	Parts .....	Temperature rise [K]	[K]	[K]	[K]
	L1	45	46	47	--
	L2	--	--	--	
	L3	--	--	--	
	L4(N)	--	--	--	
	L3	--	--	--	
	N	--	--	--	
	Terminals for external connections..... 60				P
	External parts liable to be touched during manual operation of the circuit-breaker, including operating means of insulating material and metallic means for coupling of insulating operating means of several poles..... 40	12	13	14	P
	External metallic parts of operating means..... 25	--	--	--	N/A
	Other external parts, including that face of the circuit-breaker is in direct contact with the mounting surface .....	37	39	40	P
	60				
9.8.5	Measurement of power losses				P
	Power loss do not exceed the values stated in table 15				P
	Test current: I <sub>N</sub> = <u>63A</u> (reach the steady state value)				--
	Loaded one pole after the other				
	Max. power loss : <u>13</u> W	W	W	W	--
	L1	6.36	6.17	7.06	P
	L2	--	--	--	

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IEC/EN 60 898-1					
Clause	Requirement + Test	Result - Remark			Verdict
	L3	--	--	--	
	L4(N)	--	--	--	
	L3	--	--	--	
	N	--	--	--	

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IEC/EN 60 898-1			
Clause	Requirement + Test	Result - Remark	Verdict

TESTS „C“ 3 +3 samples (C63,1P)			
8.7	Test C <sub>1</sub> ..... Mechanical and electrical endurance	C <sub>1</sub> -1    C <sub>1</sub> -2    C <sub>1</sub> -3	P
	Circuit-breaker shall be capable to perform an adequate number of cycles with rated current		P
9.11.1	General test conditions		
	Test: Test Voltage <u>230</u> V (rated voltage) Test Current <u>63</u> A (rated current) Power factor _____ (0,85-0,9) Par. resistor _____ Ohm Cross sect. area _____ mm <sup>2</sup>	230 63.0 0.85 100 16	--
9.11.2	Test procedure		
	The circuit-breaker is submitted to 4000 operating cycles with rated current.		
	- I <sub>N</sub> ≤ 32 A: 2 s on - 13 s off		N/A
	- I <sub>N</sub> > 32 A: 2 s on - 28 s off		--
	During the test the circuit-breaker shall be operated as in normal use.		P
9.11.3	Condition of the circuit-breaker after the test		P
	Following the test 9.11.2 the sample shall not show:		
	- undue wear		P
	- discrepancy between the position of the moving contacts and corresponding position of the Indicating device		P
	- damage to the enclosure permitting access to live parts by test finger (see 9.6		P
	- loosening of electrical or mechanical connections		P
	- seepage of sealing compound		N/A
	Moreover test current.....2,55 I <sub>N</sub> = <u>161</u> A	162A	
	Opening time not less 1 s or more than	[s]    [s]    [s]	
	- 60 s ( ≤ 32 A)		N/A
	- 120 s ( > 32 A)	51    61    71	P
	Dielectric strength reduced to 1500 V *)see Annex 1		P

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## IEC/EN 60 898-1

Clause	Requirement + Test	Result - Remark	Verdict
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Clause	Requirement + Test	Result - Remark	Verdict			
9.12.11.2	<b>Test at reduced short-circuit currents</b>		P			
9.12.11.2.1	Test on all circuit-breakers					
9.12.11.2.1	Test at reduced short-circuit currents: Fig. 3					
	Test current:	Obtained				
	- 500 A or 10 In	I test= <u>630</u> A				
	Test voltage 1,05 Un	Un = <u>247</u> V				
	Power factor 0,93-0,98	<u>0.97</u>	--			
9.12.9.1	Test in free air copper wire F': <input type="checkbox"/> 0,12 mm / <input checked="" type="checkbox"/> 0,16 mm resistor R' : <input type="checkbox"/> 0,75 Ohm / <input checked="" type="checkbox"/> 1,5 Ohm	"a" = 35 mm 0,16 mm 1,5 Ohm				
9.12.9.2	Test in enclosures copper wire F': <input type="checkbox"/> 0,12 mm / <input type="checkbox"/> 0,16 mm resistor R' : <input type="checkbox"/> 0,75 Ohm / <input type="checkbox"/> 1,5 Ohm	dimension of enclosure: _____ x _____ x _____ mm	N/A			
	I <sub>Peak</sub> (A) max. value	895	886	891	--	
	Sequence: 6 x "0" and 3 x "CO"	[kA <sup>2</sup> s]	[kA <sup>2</sup> s]	[kA <sup>2</sup> s]	--	
	Max. I <sup>2</sup> t ≤ _____ kA <sup>2</sup> s	3.71	3.75	3.82	P	
	- No permanent arcing				P	
	- No flash-over between poles or between poles and frame				P	
	- No blowing of the fuses F and F'				P	
	- Polyethylene foil shows no holes				P	
	After the test:				--	
9.12.12	<b>Verification of the circuit-breaker after short-circuit tests</b>				P	
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.					
	a) leakage current across open contacts, according to 9.7.6.3, each pole is supplied at a voltage 1,1 times Un.= <u>440</u> V. The circuit - breaker is in the open position	C <sub>1-1</sub> [mA]	C <sub>1-2</sub> [mA]	C <sub>1-3</sub> [mA]		
	The leakage current shall not exceed 2 mA	L1	L2	L3	L4(N)	
		0.02	0.02	0.01		P
		---	---	---		N/A
		---	---	---		N/A
		---	---	---		N/A



# CERTIFICATE OF ACCEPTANCE

TO PARTICIPATE IN THE IECEE CB-SCHEME

## Fujian Inspection and Research Institute for Product Quality(FQII)

No. 121, Shan Tou Jiao, West Yang Qiao Road, Fuzhou, Fujian, P.R. China 350002  
& No.101 Baozhen Road, Mawei Economic Development Zone, Fuzhou, Fujian, P.R. China 350015

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.

## Fujian Inspection and Research Institute for Product Quality(FQII)

is therefore entitled to operate as a Chinese CB Testing Laboratory under the responsibility of CQC 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 21<sup>st</sup> 2019 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: 2017-04-25  
TL172

ВЯРНО С  
ОРИГИНАЛА



Международна електротехническа  
комисия (IEC)

(превод от английски)

лого (не се чете)

Система за оценка на съответствието  
на схеми за електрическо оборудване и  
компоненти на IEC (IECEE)

## СЕРТИФИКАТ ЗА ПРИЕМАНЕ

ЗА УЧАСТИЕ В СХЕМАТА СВ НА IECEE

### Инспекторски и изследователски институт за качество на продуктите Фудзиен (FQII)

Шан Тоу Джао 121, Уест Янг Кияо роуд, Фуджоу, Фудзиен, КНР 350002  
и Бошан роуд 101, Зона за икономическо развитие Мауей, Фуджоу, Фудзиен, КНР 350015

е оценен и определен, че напълно отговаря на изискванията на ISO/IEC 17025: 2005-05, Основни правила, IECEE 01: 2014-11 и Правилник за дейността IECEE 02: 2015-06, и съответните оперативни документи на Схемата СВ на IECEE.

### Инспекторски и изследователски институт за качество на продуктите Фудзиен (FQII)

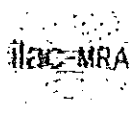
следователно има право да работи като Китайска СВ тестова лаборатория под отговорността на CQC като национален орган за сертифициране и да изпълнява тестове в рамките на Схемата СВ на IECEE за обхвата (продуктова(и) категория(и) и стандарт(и)), както са изброени в съответната част на уеб сайта на IECEE на адрес [www.iecee.org](http://www.iecee.org), и се подчинява на всички други условия, посочени в Основните правила и Правилника за дейността на IECEE

Този сертификат остава валиден до 21-ви октомври 2019 г., когато ще бъде преиздаден от изпълнителния секретар на IECEE след успешно завършване на нормално планираната 3-годишна програма за преоценка, администрирана от Схемата СВ на IECEE.

Подписано от:  
подпис (не се чете)

Дата на издаване: 2017-04-25  
TL172

Кери МакНамара  
Изпълнителен секретар и Главен  
оперативен директор на IECEE



中国认可  
国际互认  
检测  
TESTING  
CNAS L3253



**TEST REPORT**  
**IEC 60898-1:2003**

**Low voltage switchgear and controlgear**  
**Part 2: Circuit - breakers**

Report Reference No.	Y130554E
Tested by (name + signature)	Lechen mu
Approved by (name + signature)	Xuejun Ye
Date of issue	Jun 30, 2017
Standard	Partial clause of IEC 60898-1:2003
Test conclusion	Refer to the content of the report
Testing Laboratory	Technical Center of Wenzhou Entry Inspection and Quarantine Bureau
Address	Inspection and Quarantine Main Building, Wenzhou Zhejiang, China
Post code	325004
Tel/Fax	+86 577 8118495 / +86 577 8118419
E-mail	cdsyzs@wzciq.gov.cn
Applicant's Name	Zhejiang Michael Eveready Co., Ltd.
Address	
<b>Test item description</b>	
Trademark	
Manufacturer	
Model and/or type reference	MEB1-125
Value of rated operational voltage (V)	230/400V~
Value of rated current (A)	125A
<b>General remarks</b>	
This report is not valid without official seal and signatures	
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	



Particulars: test item vs. test requirements	
1. Classification	
1.1 Utilization category (A or B)	A
1.2 Interruption medium (air, vacuum, gas Break)	Air
1.3 Design (open construction, moulded case)	moulded case
1.4 Method of controlling the operation mechanism (dependent manual, independent manual, dependent power, independent power)	independent manual
2.5 Suitability for insulation (suitable, not-suitable)	suitable
2.6 Provision for maintenance (maintainable, non-maintainable)	non-maintainable
2.7 Method of installation (fixed, plug-in, withdrawably)	fixed
3.8 Degree of protection (IP Code)	IP20
4.8 Integral fuses (integrally fused circuit-breakers) Type and characteristics of SCPD	N/A
4.9 Switching overvoltages (when U <sub>imp</sub> is declared)	N/A
7.3 Electromagnetic compatibility (EMC) Environment A or B	N/A
Circuit-breaker for use on phase earthed systems	N/A
Circuit-breaker for use in IT systems	suitable
Rated and limiting values, main circuit	
rated operational voltage U <sub>e</sub> (V)	230V~
rated insulation voltage U <sub>i</sub> (V)	500V
rated impulse withstand voltage U <sub>imp</sub> (kV)	4kV
rated operational current I <sub>e</sub> (A)	63A
kind of current	AC
conventional free air thermal current I <sub>th</sub> (A)	N/A
conventional enclosed thermal current I <sub>pe</sub> (A)	N/A
current rating for four pole circuit-breakers (A)	N/A
number of poles	1P
rated frequency (Hz)	50/60Hz
integral fuses (rated values)	N/A
Rated duty:	
continuous duty	N/A
interrupted duty I <sub>u</sub> (A)	N/A
Short-circuit characteristic:	
rated short-time making capacity I <sub>cm</sub> (kA)	N/A
rated ultimate short-circuit breaking capacity I <sub>cu</sub> (kA)	N/A
rated service short-circuit breaking capacity I <sub>cs</sub> (kA)	3kA/4.5kA

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Rated short-circuit withstand current (kA/s)	N/A
<b>Control circuits</b>	
<b>Electrical control circuits:</b>	
Kind of current (AC/DC)	N/A
rated frequency (Hz)	N/A
rated normal circuit voltage $U_c$ (nature, frequency $V_f$ )	N/A
rated control supply voltage $U_s$ (nature, frequency $V_f$ )	N/A
Air supply control circuits (pneumatic or electro-pneumatic)	
rated pressure and its limit	N/A
volumes of air at atmospheric pressure required for each closing and each opening operation	N/A
<b>Auxiliary circuits</b>	
Rated and limiting values auxiliary circuits	
rated operational voltage (U <sub>o</sub> )	N/A
rated insulation voltage (U <sub>i</sub> )	N/A
rated operational current (I <sub>o</sub> )	N/A
kind of current	N/A
rated frequency (Hz)	N/A
number of contacts	N/A
number and kind of contact elements	N/A
rated uninterrupted current (I <sub>u</sub> )	N/A
pollution category (AC/DC current and voltage)	N/A
Short-circuit characteristic	N/A
Rated conditional short-circuit current (I <sub>sc</sub> )	N/A
Coordination of short-circuit protective devices	N/A
Kind of protective device	N/A

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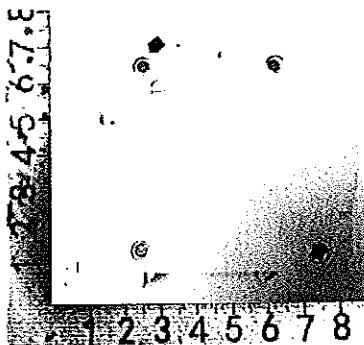
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Releases	
1) Shunt release	N/A
2) Over-current release	N/A
a) instantaneous	N/A
c) definite time delay	N/A
inrush time delay	N/A
independent of previous load	N/A
dependent on previous load (for example thermal type release)	N/A
3) Undervoltage release (for opening)	N/A
4) Other releases	N/A
Characteristics	
1) Shunt release and undervoltage release (for opening) ...	N/A
rated control circuit voltage (U <sub>c</sub> ) (nature, frequency, V) ...	N/A
kind of current	N/A
rated frequency (if AC)	N/A
2) Over-current release	
rated current	N/A
kind of current	N/A
rated frequency (if AC)	N/A
current setting (or range of settings)	N/A
time settings (or range of settings)	N/A



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Photos:



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Test item particulars	
Classification of installation and use	Installed by rad
Supply Connection	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	Jun 14 2017
Date(s) of performance of tests	Jun 23 2017
General product information:	

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Clause	Requirement / Test	Result	Remarks	Verdict
		#1		
6.3.3.1	Tripping limits and characteristics			
6.3.3.1.2	Opening under short-circuit conditions			
	Ambient temperature 10-40 °C		30°C	P
	Value of the tripping current declared by the manufacturer for a single pole, at which value they shall operate			P
	Range of adjustable setting current (A)		125A	
	Time delay stated by the manufacturer in the case of definite time delay releases			N/A
	Test current 8 times rated current (A)		1000A	P
	Operating time >0.2s in case of instantaneous releases L1-L2 L1-L3 L2-L3		>0.2s	P
	Test current 12 times rated current (A)		750A	P
	Operating time <0.2s in case of instantaneous releases L1-L2 L1-L3 L2-L3		17ms	P
	Test current tripping current declared for single pole operation (A)			N/A
	Operating time <0.2 s in case of instantaneous release L1 L2 L3 N			N/A
6.3.3.1.3	Opening under overload conditions			
b)	Inverse time delay releases			
	For releases dependent of ambient air temperature Reference temperature (°C)		30°C	
	Test ambient temperature (°C)		30°C	P
	If test made at a difference ambient temperature Acc. manufacturer's correction temperature/current data			N/A
	Range of adjustable setting current (A)			
	For releases independent of ambient temperature Test made at 30°C and/or at 20/40°C			N/A
	Test ambient air temperature			N/A
	Releases independent of ambient air temperature, at 30°C			N/A

ILC 60888-1				
Clause	Requirement + Test	Result	Remark	Verdict
	Test current 105% of the rated, or minimum adjustable setting current (A)	131,25A		P
	Conventional non-tripping time 1h when In < 63A 2h when In > 63A	>1h		P
	Test current 130% of the rated, or minimum adjustable setting current (A)	162.5A		P
	For circuit breakers having an identified neutral pole provided with an overload release (see 8.3.3.1.1), the test current of the conventional tripping current shall be multiplied by the factor 1.2.			N/A
	Conventional tripping time 1h when In < 63A >2h when In > 125A	84s		P
8.3.3.2	Test of dielectric properties: impulse withstand voltage (Uimp indicated).			
8.3.3.4 part 1	The 1.2/50µs impulse voltage shall be applied five times for each polarity at intervals of 15 minimum			
	rated impulse withstand voltage (kV)	6kV		P
	sea level of the laboratory	Sea level		P
	test Uimp main circuits (kV)	7.2kV		P
	test Uimp auxiliary circuits (kV)			N/A
	test Uimp control circuits (kV)			N/A
	test Uimp on open main contacts (equipment suitable for isolation) (kV)	6.2kV		P
a:	Application of test voltage			
	i) Between all terminals of the main circuit connected together (and control and auxiliary circuits connected to the main circuit) and the enclosure or mounting plate with the contacts in all normal positions of operation			P
	ii) Between all terminals of the main circuit and the other poles connected together and to the enclosure or mounting plate with the contacts in all normal positions of operation			N/A
	iii) Between each control and auxiliary circuit not normally connected to the main circuit and the main circuit			N/A
	other circuits			N/A
	exposed conductive parts			N/A
	enclosure of mounting plate			N/A
	iv) equipment suitable for isolation			P
	equipment not suitable for isolation			P
	no unintentional disruptive discharge during the test's			P

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IEC 60898-1

Clause	Requirement + Test	Result - Remark	Verdict
	Test of dielectric properties, dielectric withstand voltage (Uimp not indicated)		
	rated insulation voltage (V)	500V	P
	main circuits, test voltage for 6 s (V)	1890V	P
	auxiliary circuits, test voltage for 5 s (V)		N/A
	control circuits, test voltage for 6 s (V)		N/A
8.2.2.2	Application of test voltage		
1)	with circuit-breaker in the closed position		
	- between all live parts of all poles connected together and the frame of the circuit-breaker		P
	- between each pole and all the other poles connected to the frame of the circuit-breaker		N/A
2)	with the circuit-breaker in the open position and, additionally, in the tripped position, if any		
	- between all live parts of all poles connected together and the frame of the circuit-breaker		P
	- between the terminals of one side connected together and the terminals of the other side connected together		P
3)	Control and auxiliary circuits		
1)	between all the control and auxiliary circuits which are not normally connected to the main circuit, connected together, and the frame of the circuit-breaker.		N/A
2)	where appropriate, between each part of the control or auxiliary circuits which may be isolated from the other parts during normal operation and all the other parts connected together		N/A
	No unintentional disruptive discharge during the tests		P
8.3.3.2	If circuit-breaker suitable for isolation, the leakage current shall be measured through each pole with the contacts in the open position, at a test voltage of 1.1 U <sub>ie</sub> and shall not exceed 0.5 mA	253V 0.002mA	P
8.3.3.3	Mechanical operation and operational performance capability		
8.3.3.3.2	Operational performance capability without current		
	Ambient temperature 10-40 °C	23 °C	P
	Number of operating cycles per hour	120	P
	Number of cycles without current (total) (closing mechanism energized at the rated U <sub>ie</sub> )	8500	P
	Number of cycles without current (without releases)		N/A
	Applied voltage closing mechanism (V)		N/A

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IEC 60898-1		Result	Remark	Verdict
Clause	Requirement + Test			
	10% of total cycles for circuit-breaker with fitted shunt releases (50% at the beginning- and 50% at the end of the test) Energized at the rated Uc			N/A
	Applied voltage: shunt releases (V)			N/A
	10% of total cycles for circuit-breaker with undervoltage releases (50% at the beginning- and 50% at the end of the test) Energized at the minimum rated Uc			N/A
	10 cycles without applied voltage at the undervoltage releases (Shall not possible to close the circuit-breaker.)			N/A
	Applied voltage: undervoltage releases (V)			N/A
	Electrical components do not exceed the value indicated in tab. 7			N/A
8.3.3.4	Operational performance capability with current			
	Rated current, In (A)	125A		
	Maximum rated operational voltage: Ue (V)	230V		
	Conductor cross-sectional area (mm <sup>2</sup> )	25mm <sup>2</sup>		P
	Number of operating cycles per hour	120		P
	Number of cycles with current (total) closing mechanism energized at the rated Uc	1500		P
	Applied voltage: closing mechanism (V)			N/A
	For circuit-breaker fitted with adjustable releases, test shall be made with the overload setting at maximum and short-circuit setting at minimum			N/A
	Conditions: make/break operations			
	test voltage U <sub>Te</sub> = 1.0 (V)	L1 L2 L3	237V	P
	test current I <sub>Te</sub> = 1.0 (A)	L1 L2 L3	63.7A	P
	power factor/time constant: 0.80 ± 0.05		0.83	P
	frequency (Hz)		50Hz	P
	on-time (ms)		1700	P
	off-time (s)		28.3	P
	Electrical components do not exceed the value indicated in tab. 7			P
8.3.3.5	Additional test of operational performance capability without current for withdrawable circuit-breaker			

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IEC 60898-1

Clausa	Requirement + Test	Result	Remark	Verdict
	Number of operations cycles: 100			N/A
	After test, the isolating contacts, withdrawable mechanism and interlocks shall be suitable for further service			N/A
8.2.3.4	Overload performance			
	this test applies to circuit-breaker of rated current up to and including 630 A			
	Ambient temperature 10-40 °C		23 °C	P
	Maximum rated operational voltage $U_n$ (V)		230V	P
	Number of operating cycles per hour		120	P
	Number of cycles with current (total) closing mechanism energized at the rated $U_c$		12	P
	Applied voltage closing mechanism (V)			N/A
	For circuit-breaker fitted with adjustable releases, test shall be made with the overload/short-circuit settings at maximum			N/A
	Conditions, overload operations			
	- test voltage $U_{tje} = 1.05 U_n$	L1 L2 L3	248V	P
	- test current AC/DC: $I_{tje} = 6.0/2.5$ (A)	L1 L2 L3	380A	P
	power factor/time constant 0.50 : 0.05		0.49	P
	Number of cycles manually opened: 9		9	P
	Number of cycles automatically opened by an overload release: 3		1	P
	- frequency (Hz)		50 Hz	P
	on time max 2s		<2s	P
8.3.3.5	Verification of dielectric withstand			
	equal to twice the rated operational voltage with a minimum of 1000 V		1000V	P
	- no breakdown or flashover			P

IEC 60848-1		Result	Remark	Verdict
			R, #2	
8.3.4.1	Test of rated service short-circuit breaking capacity			
	Test sequence of operation O - I - CO - I - CO			
	Rated service short-circuit breaking capacity (kA)	10000A		
	Rated control supply voltage of closing mechanism U <sub>c</sub> (V)			
	Rated control supply voltage of shunt release U <sub>c</sub> (V)			
	For circuit-breaker fitted with adjustable releases, test shall be made with the current and time settings at maximum			N/A
	Closing mechanism energized with 85% of the rated U <sub>c</sub> (V)			N/A
	The circuit-breaker is mounted complete on its own support or an equivalent support			P
	Test made in free air			P
	Distances of the metallic screen's (all sides)	45mm		P
	The characteristics of the metallic screen			
	- woven wire mesh			N/A
	- perforated metal			P
	- expanded metal			N/A
	ratio hole area/total area 0.45-0.65	0.5		P
	size of hole <35mm <sup>2</sup>	26mm <sup>2</sup>		P
	finish bare or conductive plating	bare		P
	Test made in specified individual enclosure Details of these tests, including the dimensions of the enclosure			N/A
	Fuse 'F' copper wire diameter 0.8 mm 50 mm long	0.8mm/50mm		P
	Circuit is earthed at (load-star or supply-star point)	supply-star point		P
	Conductor cross-sectional area (mm <sup>2</sup> )	16mm <sup>2</sup>		P
	If terminals unmarked line connected at (underside/upside)	upside		P
	Test sequence of operation O - I - CO - I - CO	O - I - CO - I - CO		P
	test voltage U/U <sub>c</sub> = 1.05 (V)	252V		P
		L1		
		L2		
		L3		



IEC 60898-1

Clause	Requirement + Test	Result - Remark	Verdict
	- rms test current AC/DC (kA) L1 L2 L3	4.59kA	P
	power factor/time constant	0.75	P
	Factor 'n'		N/A
	peak test current (kA)	6.75kA	P
	- max let through current (kApeak) L1 L2 L3	4.05kA	P
	- Joule integral I <sup>2</sup> t (kA <sup>2</sup> s) L1 L2 L3	4.76kA <sup>2</sup> s	P
	Pause t (min)	3 min	P
	Melting of the fusible element	Not melt	P
	Holes in the PF-sheet for test sequence 'O'	No holes	P
	Cracks observed	No cracks	P

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IEC 60888-1

Clause	Requirement / Test	Result - Remark	Verdict
		R <sub>1</sub> -#3	
R 341	Test of rated service short-circuit breaking capacity		
	Test sequence of operation O - I - CO - I - CO		
	Rated service short-circuit breaking capacity (kA)	10000A	
	Rated control supply voltage of closing mechanism U <sub>c</sub> (V)		
	Rated control supply voltage of shunt release U <sub>r</sub> (V)		
	For circuit breaker fitted with adjustable releases, test shall be made with the current and time settings at maximum		N/A
	Closing mechanism energized with 85% at the rated U <sub>c</sub> (V)		N/A
	The circuit breaker is mounted complete on its own support or an equivalent support		P
	Test made in free air		P
	Distances of the metallic screen's (all sides)	45mm	P
	The characteristics of the metallic screen		
	- woven wire mesh		N/A
	- perforated metal		P
	- expanded metal		N/A
	- ratio hole area/total area 0.45-0.65	0.5	P
	- size of hole < 35mm <sup>2</sup>	25mm <sup>2</sup>	P
	finish: bare or conductive plating	bare	P
	Test made in specified individual enclosure Details of these tests, including the dimensions of the enclosure		N/A
	Fuse "F" copper wire diameter 0.8 mm, 50 mm long	0.8mm/50mm	P
	Circuit is earthed at (load-star- or supply-star point)	supply-star point	P
	Conductor cross-sectional area (mm <sup>2</sup> )	16mm <sup>2</sup>	P
	If terminals unmarked line connected at (underside/upside)	upside	P
	Test sequence of operation O - I - CO - I - CO	O - I - CO - I - CO	P
	test voltage U <sub>t</sub> /U <sub>e</sub> = 1.05 (V)	252V	P
	L1		
	L2		
	L3		

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IEC 60893-1

Clausa	Requirement + Test	Result	Remark	Verdict
	r.m.s. test current AC/DC (kA) L1 L2 L3	9.59kA		P
	power factor/cosine constant	0.76		P
	Factor 'n'			N/A
	peak test current (kA)	10.76kA		P
	max. let-through current (kApeak) L1 L2 L3	9.17kA		P
	Joule integral (dt) (kA <sup>2</sup> s) L1 L2 L3	50.4kA <sup>2</sup> s		P
	Pause t (min)	3 min		P
	Melting of the fusible element	Not melt		P
	Holes in the PE-sheet for test sequence 'O'	No holes		P
	Cracks observed	No cracks		P

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IEC 60898-1			
Clause	Requirement / Test	Result - Remark	Verdict
		R1-#4	
8.3.4.1	Test of rated service short-circuit breaking capacity		
	Test sequence of operation: O - t - CO - t - CO		
	Rated service short-circuit breaking capacity (kA)	10000A	
	Rated control supply voltage of closing mechanism (Uc (V))		
	Rated control supply voltage of shunt release (Uk (V))		
	For circuit breaker fitted with adjustable releases, test shall be made with the current and time settings at maximum		N/A
	Closing mechanism energized with 85% at the rated U <sub>c</sub> (V)		N/A
	The circuit breaker is mounted complete on its own support or an equivalent support		P
	Test made in free air		P
	Distances of the metallic screen's (all sides)	45mm	P
	The characteristics of the metallic screen		
	- woven wire mesh		N/A
	- perforated metal		P
	- expanded metal		N/A
	- ratio hole area/total area: 0.45-0.65	0.5	P
	- size of hole: <35mm <sup>2</sup>	25mm <sup>2</sup>	P
	finish: bare or conductive plating	bare	P
	Test made in specified individual enclosure Data is of these tests, including the dimensions of the enclosure		N/A
	Fuse 'I' copper wire diameter 0.8 mm, 50 mm long	0.8mm/50mm	P
	Circuit is earthed at (load star- or supply star point)	supply star point	P
	Conductor cross-sectional area (mm <sup>2</sup> )	16mm <sup>2</sup>	P
	If terminals unmarked line connected at (underside/upside)	upside	P
	Test sequence of operation: O - t - CO - t - CO	O - t - CO - t - CO	P
	test voltage U <sub>t</sub> /U <sub>e</sub> = 1.05 (V)	262V	P
	L1		
	L2		
	L3		

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IEC 60308-1

Clause	Requirement - Test	Result	Remark	Verdict
	min test current AC/DC (kA) L1 L2 L3	9.59kA		P
	power factor/time constant	0.76		P
	Factor "h"			NA
	peak test current (kA)	10.70kA		P
	max let-through current (kApsak) L1 L2 L3	9.17kA		P
	Joule integral I <sup>2</sup> t (kA <sup>2</sup> s) L1 L2 L3	53.2kA <sup>2</sup> s		P
	Pause T (min)	3 min		P
	Melting of the fusible element	Not melt		P
	Holes in the PE sheet for test sequence 'O'	No holes		P
	Cracks observed	No cracks		P

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IEC 60853-1

Clause	Requirement - Test	Result - Remark	Verdict
		<b>R2#5</b>	
8.3.4.1	Test of rated service short-circuit breaking capacity		
	Test sequence of operation: O-t-CO-t-CO		
	Rated service short-circuit breaking capacity (kA)	6000A	
	Rated control supply voltage of closing mechanism (Uc (V))		
	Rated control supply voltage of shunt release (Us (V))		
	For circuit-breakers fitted with adjustable releases, test shall be made with the current and time settings at maximum		N/A
	Closing mechanism energized with 85% at the rated Uc (V)		N/A
	The circuit breaker is mounted complete on its own support or an equivalent support		P
	Test made in free air		P
	Distances of the metallic screen's (all sides)	45mm	P
	The characteristics of the metallic screen:		
	- woven wire mesh		N/A
	- perforated metal		P
	- expanded metal		N/A
	ratio hole area/total area: 0.45-0.65	0.5	P
	- size of hole <math>< 30\text{mm}^2</math>	25mm <sup>2</sup>	P
	- finish: bare or conductive plating	bare	P
	Test made in specified individual enclosure Details of these tests, including the dimensions of the enclosure		N/A
	Fuse F copper wire diameter 0.8 mm, 50 mm long	0.6mm/50mm	P
	Circuit is earthed at (load-star- or supply-star point)	supply-star point	P
	Conductor cross-sectional area (mm <sup>2</sup> )	16mm <sup>2</sup>	P
	If terminals unmarked (line connected) at (underside/upside)	upside	P
	Test sequence of operation: O-t-CO-t-CO	O-t-CO-t-CO	P
	test voltage U <sub>Te</sub> = 1.05 (V) ...	251V	P
	... L1		
	... L2		
	... L3		

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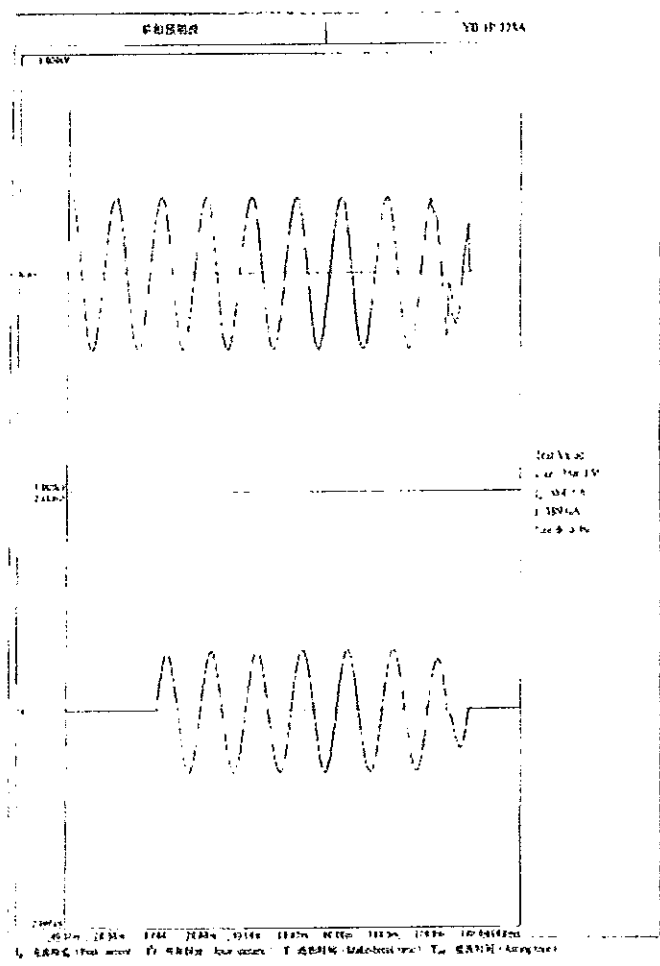
IEC 60384-1		Result - Remark	Verdict
Clause	Requirement + Test		
	r.m.s. test current AC/DC (kA) ..... L1 ..... L2 ..... L3	6,10kA	P
	power factor/min constant:	0,88	P
	Factor 'n'		N/A
	peak test current (kA)	7,44kA	P
	max. let-through current (kApeak) ..... L1 ..... L2 ..... L3	6,16kA	P
	Joule integral I <sup>2</sup> t (kA <sup>2</sup> s) ..... L1 ..... L2 ..... L3	36,6kA <sup>2</sup> s	P
	Pause t (min)	3 min	P
	Melting of the fusible element	Not melt	P
	Holes in the PE-sheet for test sequence 'O'	No holes	P
	Cracks observed	No cracks	P

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TABLE 1

TABLE 2

TABLE 3

TABLE 4

TABLE 5

TABLE 6

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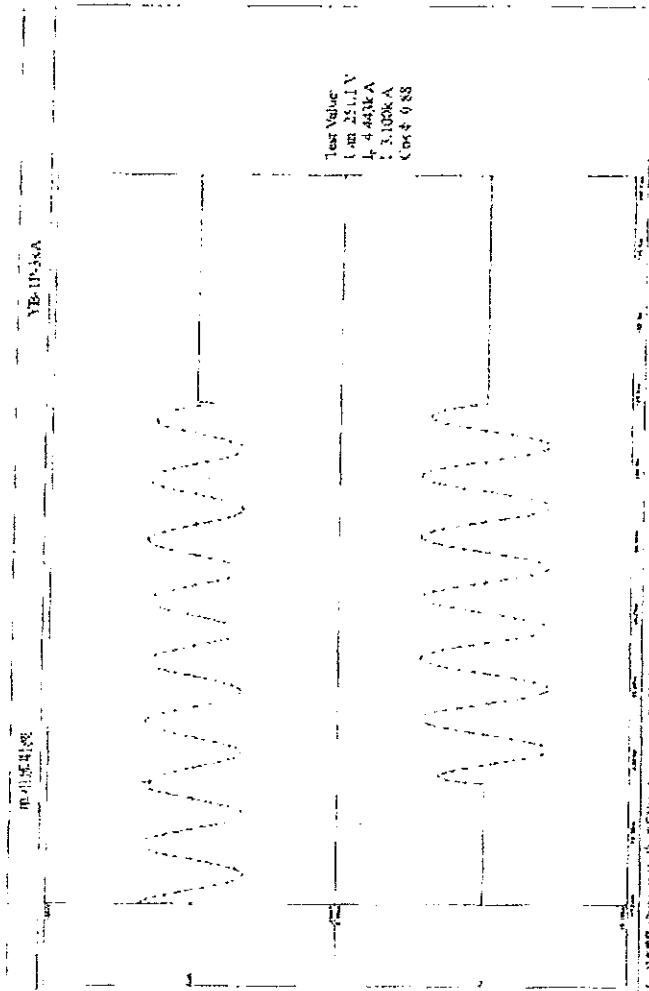
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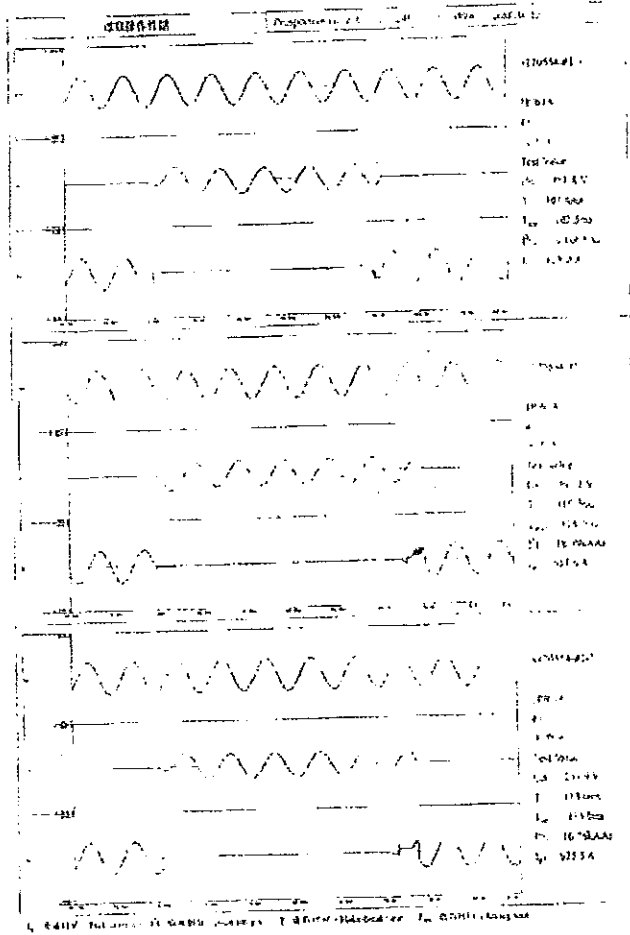


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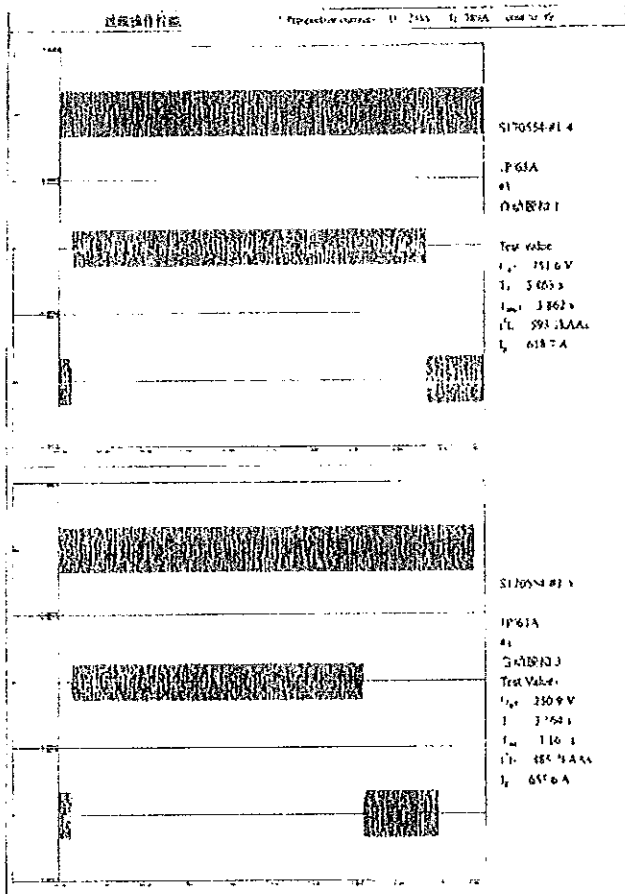


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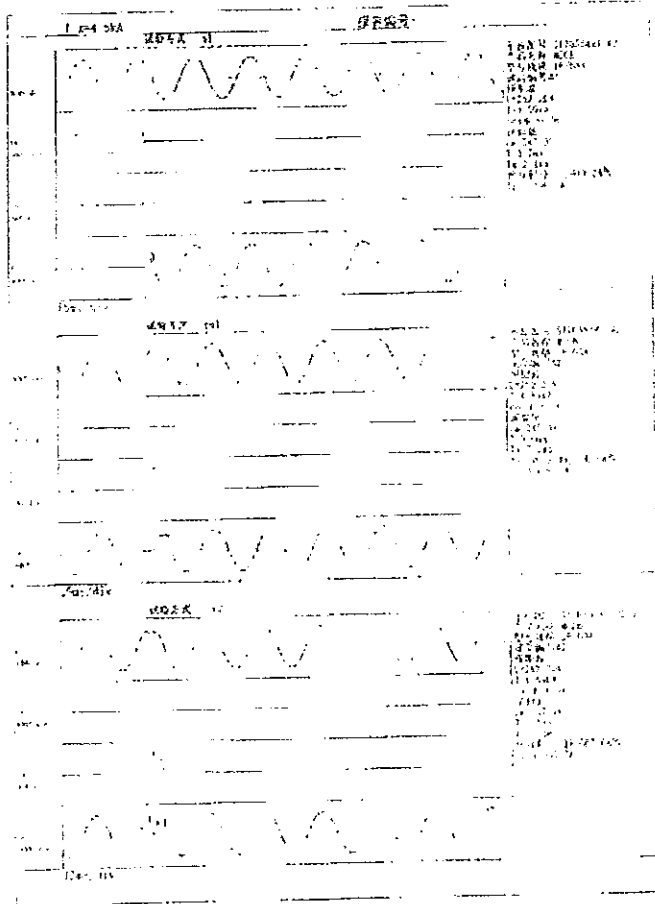
V: VARI (Volts) I: SAMP (Amps) T: ABM (Microsec) Tm: BMM (Amps)

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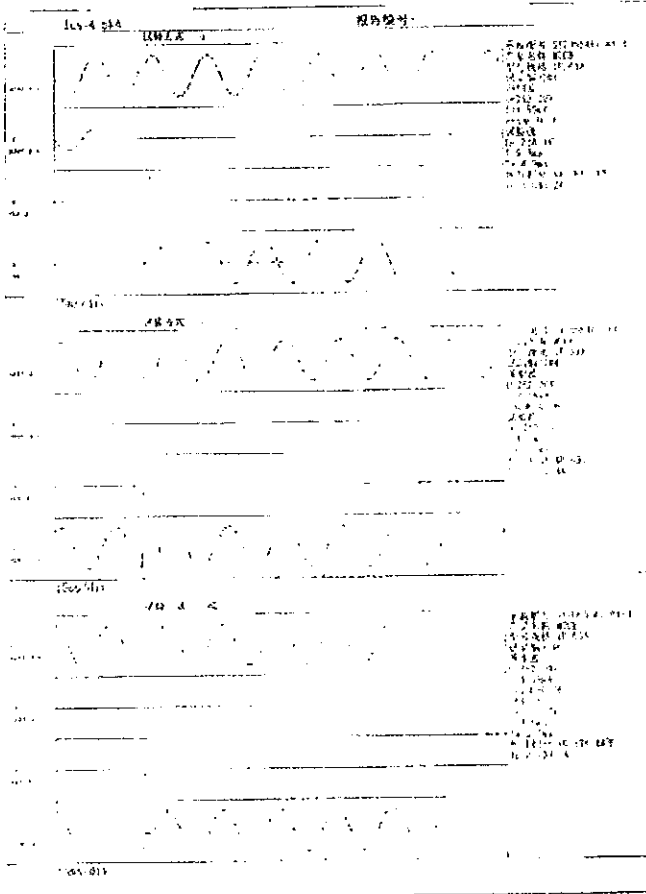
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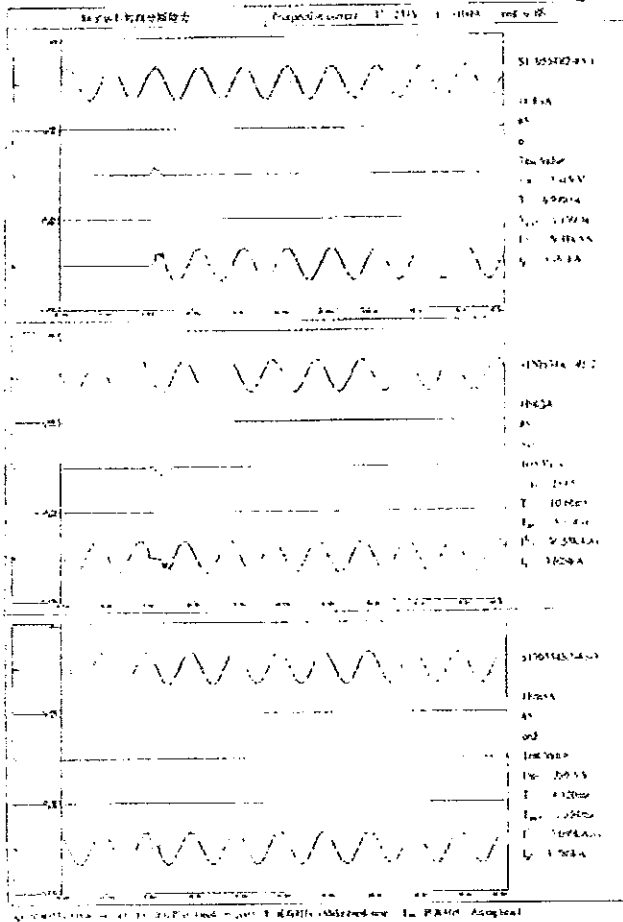


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# CERTIFICATE OF ACCEPTANCE

TO PARTICIPATE IN THE IECEE CB-SCHEME

## Technical center of Wenzhou Entry-Exit Inspection and Quarantine Bureau

Inspection and Quarantine Mansion, Jingang Avenue, Liushi, Yueqing, Wenzhou, Zhejiang, 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.

## Technical center of Wenzhou Entry-Exit Inspection and Quarantine Bureau

is therefore entitled to operate as a CB Testing Laboratory under the responsibility of LCIE 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 March 30<sup>th</sup> 2019 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.

Date of Issue: 2017-05-18  
TL344

Signed by:

Kerry McMANAMA  
IECEE EXECUTIVE SECRETARY AND COO

ВЯРНО С  
ОРИГИНАЛА



162

Международна електротехническа  
комисия (IEC)

(превод от английски)

лого (не се чете)

Система за оценка на съответствието  
на схеми за електрическо оборудване и  
компоненти на IEC (IECEE)

## СЕРТИФИКАТ ЗА ПРИЕМАНЕ

ЗА УЧАСТИЕ В СХЕМАТА СВ НА IECEE

**Технически център за входно-изходна инспекция и карантинна служба\_Уенджоу**  
Предприятие за инспекция и карантин, Джинганг Авеню, Лиуши, Уейкинг, Уенджоу, Жейяннг, Н.Р. Китай

е оценен и определен, че напълно отговаря на изискванията на ISO/IEC 17025: 2005-05, Основни правила, IECEE 01: 2014-11 и Правилник за дейността IECEE 02: 2015-06, и съответните оперативни документи на Схемата СВ на IECEE.

**Технически център за входно-изходна инспекция и карантинна служба\_Уенджоу**  
следователно има право да работи като Китайска СВ тестова лаборатория под отговорността на CQC като национален орган за сертифициране и да изпълнява тестове в рамките на Схемата СВ на IECEE за обхвата (продуктова(и) категория(и) и стандарт(и)), както са изброени в съответната част на уеб сайта на IECEE на адрес [www.iecee.org](http://www.iecee.org), и се подчинява на всички други условия, посочени в Основните правила и Правилника за дейността на IECEE

Този сертификат остава валиден до 30-ти Март 2019 г., когато ще бъде преиздаден от изпълнителния секретар на IECEE след успешно завършване на нормално планираната 3-годишна програма за преценка, администрирана от Схемата СВ на IECEE.

Подписано от:  
подпис (не се чете)

Дата на издаване: 2017-05-18  
TL344

Кери МакНамара  
Изпълнителен секретар и Главен  
оперативен директор на IECEE

**СПИСЪК С  
ПРОВЕДЕНИТЕ ТИПОВИ  
ИЗПИТАНИЯ**

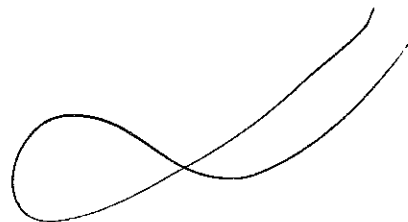
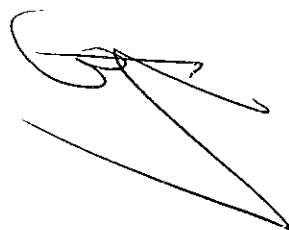
## СПИСЪК НА ПРОВЕДЕНИТЕ ИЗПИТВАНИЯ ЗА МИНИАТЮРЕН АВТОМАТИЧЕН ПРЕКЪСВАЧ МЕВ2

1. Общ преглед
  - 1.1. Проверка на маркировката
    - 1.1.1. Незаличимост на маркировката
  - 1.2. Проверка на механизмите
  - 1.3. Проверка на просвети и разстояния на повърхностен пробив
  - 1.4. Проверка на винтове, тоководещи части и връзки
  - 1.5. Проверка за външни проводници
  - 1.6. Проверка за защита от електрически удар
  - 1.7. Проверка на топлинна устойчивост
  - 1.8. Проверка на устойчивостта при повишена топлина и огън
  - 1.9. Проверка на диелектричните свойства и изолационните възможности
  - 1.10. Проверка при повишена температура
  - 1.11. Измерване на енергийните загуби
  - 1.12. Провеждане на 28-дневни изпитвания
  - 1.13. Изпитване на механичната и електрическата издръжливост
  - 1.14. Проверка при намалени стойности на късо съединение
  - 1.15. Проверка на прекъсвача след изпитване на късо съединение

27.09.2017  
гр. София

ПОДПИС И ПЕЧАТ:

Ангел Ангелов  
Управител



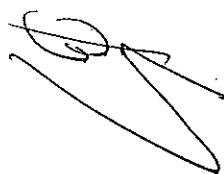
## СПИСЪК НА ПРОВЕДЕНИТЕ ИЗПИТВАНИЯ ЗА МИНИАТЮРЕН АВТОМАТИЧЕН ПРЕКЪСВАЧ МЕВ1.

1. Общ преглед
  - 1.1. Проверка на маркировката
    - 1.1.1. Незаличимост на маркировката
  - 1.2. Проверка на механизмите
  - 1.3. Проверка на винтовете, тоководещи части и проводници
  - 1.4. Проверка на диелектрични характеристики, импулсно напрежение
  - 1.5. Изпитване на механичната и електрическата издръжливост
  - 1.6. Изпитване издръжливостта при претоварване
  - 1.7. Проверка на диелектричната устойчивост
  - 1.8. Проверка на номиналната изключвателна способност при късо съединение

27.09.2017  
гр. София

ПОДПИС и ПЕЧАТ:

Ангел Ангелов  
Управител



# ИНСТРУКЦИИ ЗА ТРАНСПОРТИРАНЕ, СКЛАДИРАНЕ И МОНТИРАНЕ

ОТ:

**АМ ЕЛЕКТРИК**



1000 София, ул. "Стефан Караджа" №7, вх. Б, ет. 1, ап. 14, тел.: 02/9874960, 9874970, факс: 02/9874980, E-mail: office@acm-bg.com  
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## ИНСТРУКЦИЯ ЗА ТРАНСПОРТИРАНЕ

1. Продуктите, производство на компанията Michael Electric следва да бъдат транспортирани в оригиналните опаковки на производителя, небрежното опаковане може да доведе до повреда по време на транспортирането.

2. Стоката се транспортира с обикновен сухопътен транспорт на европалета и трябва да бъде правилно позиционирана и добре укрепена в транспортното средство.

3. Върху стоката да не се товарят други стоки.

Транспортната компания, осъществяваща транспорта на стоките, следва да има грижата на добър стопанин до предаване на продуктите до крайната точка на транспортиране.

**Забележка:** Пренасяйте прекъсвачите внимателно. Не изпускайте или хвърляйте прекъсвачите. Това може да доведе до повреда.

гр. София  
28.09.2017

Ангел Ангелов  
Управител





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## ИНСТРУКЦИЯ ЗА СЪХРАНЕНИЕ И СКЛАДИРАНЕ

При складиране и съхранение на предложената комутационна апаратура е необходимо да се спазват следните изисквания:

1. Да се спазват температурните граници за съхранение на продукта, отбелязани върху етикета на всяко изделие.
2. Изделията да се съхраняват в оригиналната опаковка на производителя.
3. Изделията да се съхраняват в закрити складови помещения.
4. Да се предпазват от механични и химически увреждания.
5. Монтажът да се извършва в съответствие с инструкциите и указанията на производителя.
6. Повредите, причинени не по вина на доставчика, като лош транспорт, лошо съхранение, неправилна експлоатация, природни стихии, неспазване на указанията за правилен монтаж се отстраняват за сметка на клиента.
7. Гаранцията не се отнася за повреди, причинени от други средства, лица и вещи.

гр. София  
28.09.2017

Ангел Ангелов  
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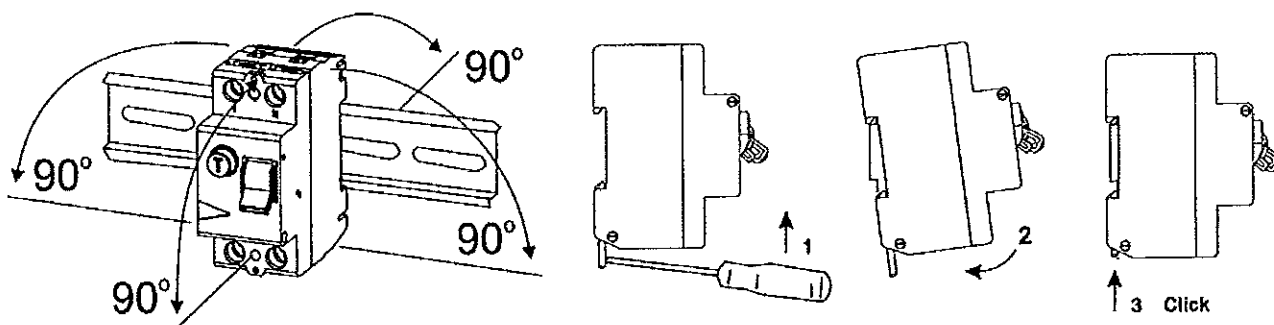
## ИНСТРУКЦИЯ ЗА МОНТАЖ

### Начин на монтаж:

- ▶ Бързо захващане със заключваща се позиция на DIN шина съгласно EN 50022
- ▶ Хоризонтален или вертикален монтаж
- ▶ Монтажът на изделията се извършва само от обучени електроспециалисти.

Комутационната апаратура, производство на фирма Michael Electric се монтира съгласно приложената по-долу схема:


### Схема за монтаж



**Забележка:** Въртящият момент на затягане на клемовите съоръжения е 2,5Nm.

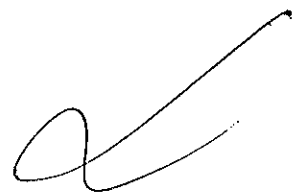
гр. София  
28.09.2017

Ангел Ангелов  
Управител





# **СРОКОВЕ ЗА ДОСТАВКА**



Приложение 3 към Техническо предложение

За Обособена позиция 1

СРОКОВЕ ЗА ДОСТАВКА

№ по ред	Наименование на материала	Мярка	Количества със срок на доставка до 7 (седем) календарни дни, бр.	Количества със срок на доставка до 30 (тридесет) календарни дни, бр.
1	2	3	4	5
1.	Мин.авт.прек.до 63А, шир. 18,1Р 4А	бр.	7	25
2.	Мин.авт.прек.до 63А, шир. 18,1Р 6А	бр.	300	500
3.	Мин.авт.прек.до 63А, шир. 18,1Р 10А	бр.	100	250
4.	Мин.авт.прек.до 63А, шир. 18,1Р 16А	бр.	120	220
5.	Мин.авт.прек.до 63А, шир. 18,1Р 20А	бр.	30	90
6.	Мин.авт.прек.до 63А, шир. 18,1Р 25А	бр.	250	420
7.	Мин.авт.прек.до 63А, шир. 18,1Р 32А	бр.	1 000	3 000
8.	Мин.авт.прек.до 63А, шир. 18,1Р 40А	бр.	750	1 550
9.	Мин.авт.прек.до 63А, шир. 18,1Р 50А	бр.	1 500	4 000
10.	Мин.авт.прек.до 63А, шир. 18,1Р 63А	бр.	1 600	4 100
11.	Мин.авт.прек.до 63А, шир. 18,3Р 4А	бр.	7	25
12.	Мин.авт.прек.до 63А, шир. 18,3Р 6А	бр.	150	250
13.	Мин.авт.прек.до 63А, шир. 18,3Р 10А	бр.	50	150
14.	Мин.авт.прек.до 63А, шир. 18,3Р 16А	бр.	200	350
15.	Мин.авт.прек.до 63А, шир. 18,3Р 20А	бр.	40	110
16.	Мин.авт.прек.до 63А, шир. 18,3Р 25А	бр.	350	700
17.	Мин.авт.прек.до 63А, шир. 18,3Р 32А	бр.	600	1 000
18.	Мин.авт.прек.до 63А, шир. 18,3Р 40А	бр.	200	320
19.	Мин.авт.прек.до 63А, шир. 18,3Р 50А	бр.	250	420
20.	Мин.авт.прек.до 63А, шир. 18,3Р 63А	бр.	400	800
21.	Мин.авт.прек.до 125А, шир. 27,1Р 40А	бр.	120	220
22.	Мин.авт.прек.до 125А, шир. 27,1Р 50А	бр.	100	200
23.	Мин.авт.прек.до 125А, шир. 27,1Р 63А	бр.	200	350
24.	Мин.авт.прек.до 125А, шир. 27,1Р 80А	бр.	50	150
25.	Мин.авт.прек.до 125А, шир. 27,1Р 100А	бр.	40	120
26.	Мин.авт.прек.до 125А, шир. 27,1Р 125А	бр.	30	90
27.	Мин.авт.прек.до 125А, шир. 27,3Р 40А	бр.	120	220
28.	Мин.авт.прек.до 125А, шир. 27,3Р 50А	бр.	100	200
29.	Мин.авт.прек.до 125А, шир. 27,3Р 63А	бр.	150	250
30.	Мин.авт.прек.до 125А, шир. 27,3Р 80А	бр.	100	250



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31.	Мин.авт.прек.до 125А, шир. 27,3Р 100А	бр.	100	200
32.	Мин.авт.прек.до 125А, шир. 27,3Р 125А	бр.	60	150

### 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 потвърдението 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 27.09.2017 г.

ПОДПИС и ПЕЧАТ:

Ангел Ангелов  
(име и фамилия)  
Управител  
(длъжност на представителния участък)



# ДЕКЛАРАЦИИ

ОТ:

**АМ ЕЛЕКТРИК**



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**Приложение № 4****ДЕКЛАРАЦИЯ**

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

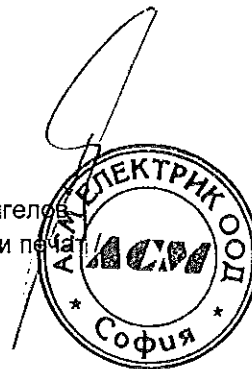
Долуподписаният Ангел Янков Ангелов, в качеството ми на представляващ АСМ ЕЛЕКТРИК ООД,  
участник в процедура за възлагане на обществена поръчка с реф. № PPD 17-109 и предмет:  
"Доставка на миниатюрни прекъсвачи", обособена/и позиция/и № 1 " Доставка на еднополюсни и  
триполюсни миниатюрни автоматични 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 27.09.2017 г.

Декларатор: Ангел Ангелов  
/ име, подпис и печат /





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Приложение № 5

### ДЕКЛАРАЦИЯ

за срока на валидност на офертата

Долуподписаният Ангел Янков Ангелов  
притежаващ лична карта № 640271580, издадена на 14.06.2010 г. от МВР – гр. Стара Загора,  
адрес: гр. Стара Загора, ул. Света Троица 170, ет.3, ап.2, в качеството ми на Управител на АСМ  
**ЕЛЕКТРИК ООД**, участник в процедура за възлагане на обществена поръчка с реф. № РРД 17-109  
и предмет: „Доставка на миниатюрни прекъсвачи“, обособена/и позиция/и № 1 " Доставка на  
еднополюсни и триполюсни миниатюрни автоматични прекъсвачи"

### ДЕКЛАРИРАМ, ЧЕ:

С подаване на настоящата оферта, направените от нас предложения и поети ангажименти за обособена позиция № 1, са валидни за срока, посочен в обявлението, считано от крайния срок за подаване на офертите.

Дата 27.09.2017 г.

Декларатор: Ангел Ангелов  
/ име, подпис и печат

