PRODUCT CATALOGUE

Maxguard®

SAFE AND SAVE Since 1998

LOW VOLTAGE ELECTRICAL SWITCHGEAR

ABOUT *us...*

Established in 1998, **MAXGUARD** is now a major player in the Low Voltage Switchgears Industry in Malaysia, specializing in distribution boards with a comprehensive range of circuit breakers.

Our main objective is to meet the standards of the highly competitive market. Under our ***SAFE*** and ***SAVE*** motto, **MAXGUARD** is the first in the Country to invest in a range of comprehensive testing equipment for greater quality control to ensure the highest quality of products and to meet customer's budget.

MAXGUARD products are fully type tested to IEC Standards, by ETL Semko of Sweden, approved by Suruhanjaya Tenaga, Government Departments and annual Product Certification Audit by SIRIM QAS International Sdn. Bhd, Malaysia.

"If it's not good, we don't sell it, if it's not perfect, we will replace it and if it's not with a guarantee, it's not MAXGUARD"

Please feel free to view our Corporate Video and Product Technical Video at our website.

Being one of the fastest growing companies and with the support of a wide network of distributors and system integrators, we have successfully completed various residential, commercial and light industrial projects for both government and private sector.

We also have the distinction of being the first Malaysian brand to offer a 60 months product warranty for our MCB, RCCB, Isolator, Switchfuse, RCBO, MCCB, and also product liabilities coverage up to RM 2 million.

Under our ***SAFE*** and ***SAVE*** motto, we have sold more than 30 million poles of MCB and 3.0 million pieces of RCCB. A testimonial to our product acceptance and trustworthiness in the local market.

To safeguard our customers interest and confidence, **MAXGUARD** products are incorporated with a permanent laser security marking for authentification.

Test Equipments

TO VIEW VISIT MAXGUARD TECHNICAL VIDEO

GENERAL VIEW OF MCB AND MCCB TESTERS

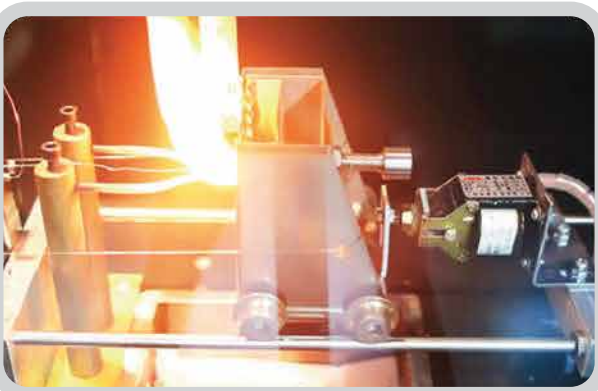
AUTOMATIC RCCB TESTER

OVERLOAD MCB/MCCB/SWITCH FUSES
TEMPERATURE RISE TESTER

MCCB OVERLOAD CALIBRATION TESTER

BALL PRESSURE TESTER

MCB OVERLOAD CALIBRATION TESTER



GLOW WIRE TESTER

PENDULUM IMPACT TESTER

Product Commitment

Maxguard
SAFE AND SAVE

1st Company to Commit

WARRANTY 60 MONTHS WARRANTY
Terms & Conditions Apply

PRODUCT LIABILITY
Terms & Conditions Apply
RM2,000,000.00

Safe with Warranty

Safe with Certification

Save Cost

Safe with Fully Type Tested

MS SIRIM

Intertek

IEC

Suruhanjaya Tenaga

Approved for Government Projects

CONTENTS

Miniature Circuit Breakers (MCB)
General Description

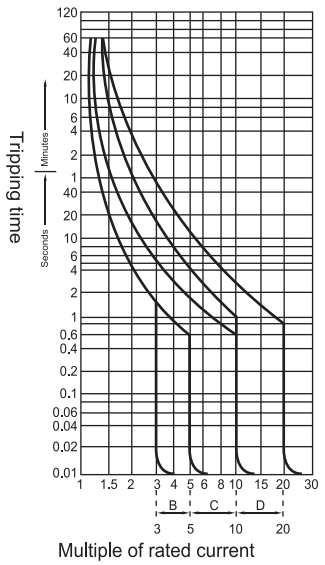
General description
- To protect conductors against overloads and short circuit current in the electrical distribution system.
- Designed for use by unskilled person.
- Suitable for use in eletrical system with rated voltage up to 440V AC, frequency 50/60Hz.
- Use in domestic, commercial and industrial installations.

Selection for suitable triping curve
Choose the appropriate tripping curve for proper installation and better protection.

B curve
- Instantaneous tripping : **5In** [3In ≤ 0.1s < 5In]
- Instantaneous non-tripping : **3In**
- Application : provide protection for circuits with low inductive load.

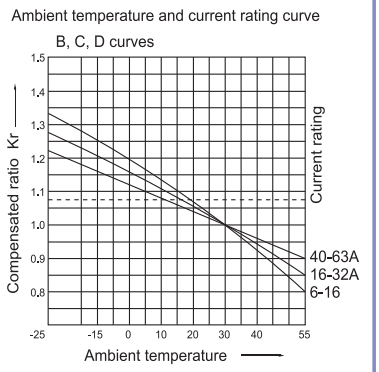
C curve
- Instantaneous tripping : **10In** [5In ≤ 0.1s < 10In]
- Instantaneuos non-tripping : **5In**
- Application : provide protection for circuits with inductive load or highly inductive lighting fittings.

D curve
- Instantaneous tripping : **20In** [10In ≤ 0.1s < 20In]
- Instantaneous non-tripping : **10In**
- Application : provide protection for circuits with high inductive load or electrical system / equipment with high surge current.



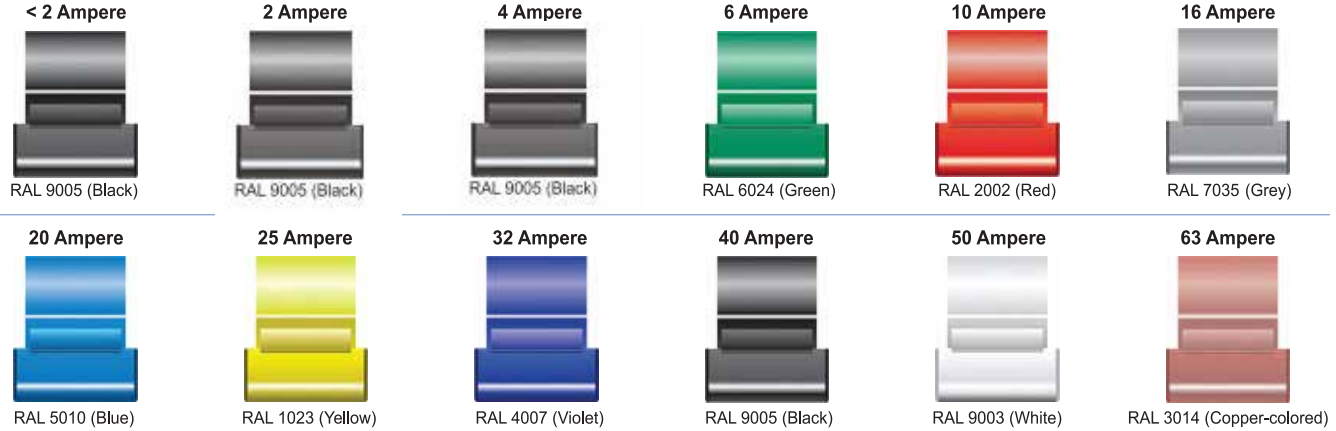
Overcurrent protection characteristics

Test	Rated Current (A)	Initial Status	Test Current	Specified Time	Expected Results	Remarks
1	1 to 63	cold	1.13 In	t ≥ 1h	no tripping	
2	1 to 63	immediately after test no. 1	1.45 In	t < 1h	tripping	current steadly increased within 5s
3	In ≤ 32	cold	2.55 In	1s < t < 60s	tripping	
	In > 32			1s < t < 120s		
4	1 to 63	cold	3 In	t ≤ 0.1s	no tripping	Type B
			5 In	t < 0.1s	tripping	
			5 In	t ≤ 0.1s	no tripping	Type C
			10 In	t < 0.1s	tripping	
			10 In	t ≤ 0.1s	no tripping	Type D
			20 In	t < 0.1s	tripping	



Colours of toggles

Colours of toggles indicate amperage rating of MCBs :



Miniature Circuit Breakers (MCB)

MB63-1 Series (6kA MCB)

(With Intertek Test Report & Certificate)

1 Pole

2 Pole

3 Pole

4 Pole

Type 1P	rating (A)	cat. no. B curve	cat. no. C curve
	1	M101B6	M101C6
Width	2	M102B6	M102C6
1 module	3	M103B6	M103C6
18mm	4	M104B6	M104C6
	6	M106B6	M106C6
Packing	10	M110B6	M110C6
size	16	M116B6	M116C6
box /carton	20	M120B6	M120C6
12 / 120	25	M125B6	M125C6
	32	M132B6	M132C6
	40	M140B6	M140C6
	50	M150B6	M150C6
	63	M163B6	M163C6

Type 2P	rating (A)	cat. no. B curve	cat. no. C curve
	1	M201B6	M201C6
Width	2	M202B6	M202C6
2 module	3	M203B6	M203C6
36mm	4	M204B6	M204C6
	6	M206B6	M206C6
Packing	10	M210B6	M210C6
size	16	M216B6	M216C6
box /carton	20	M220B6	M220C6
6 / 60	25	M225B6	M225C6
	32	M232B6	M232C6
	40	M240B6	M240C6
	50	M250B6	M250C6
	63	M263B6	M263C6

Type 3P	rating (A)	cat. no. B curve	cat. no. C curve
	6	M306B6	M306C6
Width	10	M310B6	M310C6
3 module	16	M316B6	M316C6
54mm	20	M320B6	M320C6
	25	M325B6	M325C6
Packing	32	M332B6	M332C6
size	40	M340B6	M340C6
box /carton	50	M350B6	M350C6
4 / 40	63	M363B6	M363C6

Type 4P	rating (A)	cat. no. B curve	cat. no. C curve
	6	M406B6	M406C6
Width	10	M410B6	M410C6
4 module	16	M416B6	M416C6
72mm	20	M420B6	M420C6
	25	M425B6	M425C6
Packing	32	M432B6	M432C6
size	40	M440B6	M440C6
box /carton	50	M450B6	M450C6
3 / 30	63	M463B6	M463C6

PRODUCT LIABILITY
Terms & Conditions Apply
RM2,000,000.00

60 MONTHS WARRANTY
Terms & Conditions Apply

Technical Data

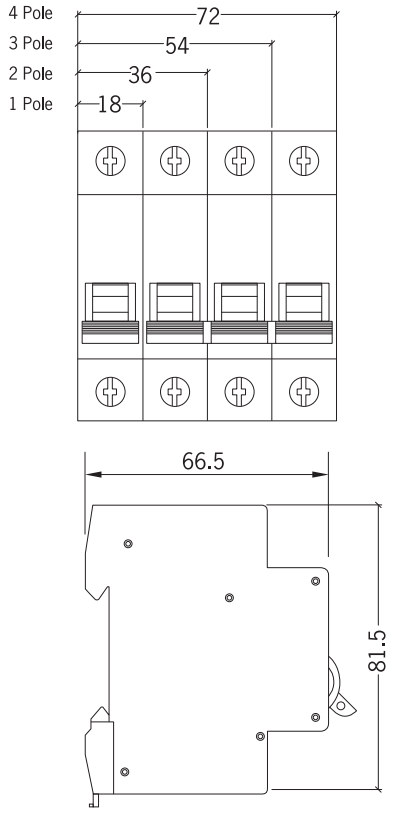
Electrical

Design according to	IEC 60898-1
Rated voltage	230/400V~, 240/415V~
Rated current	1 - 63A
No. of poles	1,2,3,4
Frequency	50/60Hz
Tripping curve	B, C
Energy limiting class	3
Ref. calibration temperature	30°C
Rated breaking capacity (Icn)	6kA
Rated impluse withstand Voltage(1.2/50μs)Uimp	4kV
Degree of protection	IP20
Electrical & mechanical endurance	>4000 operating cycles

Mechanical

Terminal capacity	1 - 25mm^2
Mounting installation	DIN rail EN 50022

Dimension (mm)



Miniature Circuit Breakers (MCB)

F2 series (10kA MCB)

(With Intertek Test Report & Certificate)

1 Pole

Type 1P	rating (A)	cat. no. B curve	cat. no. C curve	cat. no. D curve
	1	M101B10	M101C10	M101D10
Width	2	M102B10	M102C10	M102D10
1 module	3	M103B10	M103C10	M103D10
18mm	4	M104B10	M104C10	M104D10
	6	M106B10	M106C10	M106D10
Packing	10	M110B10	M110C10	M110D10
size	16	M116B10	M116C10	M116D10
box /carton	20	M120B10	M120C10	M120D10
12 / 120	25	M125B10	M125C10	M125D10
	32	M132B10	M132C10	M132D10
	40	M140B10	M140C10	M140D10
	50	M150B10	M150C10	M150D10
	63	M163B10	M163C10	M163D10

2 Pole

Type 2P	rating (A)	cat. no. B curve	cat. no. C curve	cat. no. D curve
	1	M201B10	M201C10	M201D10
Width	2	M202B10	M202C10	M202D10
2 module	3	M203B10	M203C10	M203D10
36mm	4	M204B10	M204C10	M204D10
	6	M206B10	M206C10	M206D10
Packing	10	M210B10	M210C10	M210D10
size	16	M216B10	M216C10	M216D10
box /carton	20	M220B10	M220C10	M220D10
6 / 60	25	M225B10	M225C10	M225D10
	32	M232B10	M232C10	M232D10
	40	M240B10	M240C10	M240D10
	50	M250B10	M250C10	M250D10
	63	M263B10	M263C10	M263D10

3 Pole

Type 3P	rating (A)	cat. no. B curve	cat. no. C curve	cat. no. D curve
	6	M306B10	M306C10	M306D10
Width	10	M310B10	M310C10	M310D10
3 module	16	M316B10	M316C10	M316D10
54mm	20	M320B10	M320C10	M320D10
	25	M325B10	M325C10	M325D10
Packing	32	M332B10	M332C10	M332D10
size	40	M340B10	M340C10	M340D10
box /carton	50	M350B10	M350C10	M350D10
4 / 40	63	M363B10	M363C10	M363D10

4 Pole

Type 4P	rating (A)	cat. no. B curve	cat. no. C curve	cat. no. D curve
	6	M406B10	M406C10	M406D10
Width	10	M410B10	M410C10	M410D10
4 module	16	M416B10	M416C10	M416D10
72mm	20	M420B10	M420C10	M420D10
	25	M425B10	M425C10	M425D10
Packing	32	M432B10	M432C10	M432D10
size	40	M440B10	M440C10	M440D10
box /carton	50	M450B10	M450C10	M450D10
3 / 30	63	M463B10	M463C10	M463D10

Technical Data

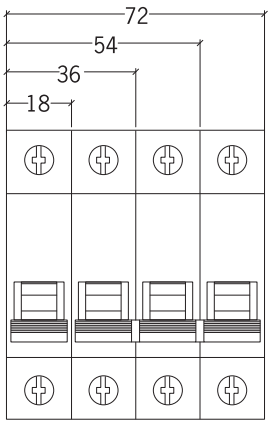
Electrical

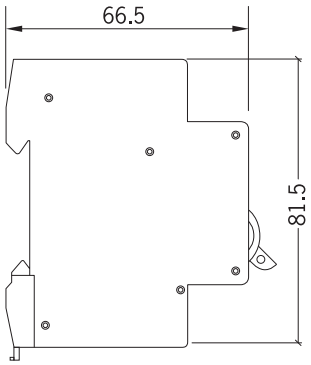
Design according to	IEC 60898-1
Rated voltage	230/400V~, 240/415V~
Rated current	1 - 63A
No. of poles	1,2,3,4
Frequency	50/60Hz
Tripping curve	B, C, D
Energy limiting class	3
Ref. calibration temperature	30°C
Rated breaking capacity (Icn)	10kA
Rated impluse withstand Voltage(1.2/50µs)Uimp	4kV
Degree of protection	IP20
Electrical & mechanical endurance	>4000 operating cycles

Mechanical

Terminal capacity	1 - 25mm²
Mounting installation	DIN rail EN 50022

Dimension (mm)





PRODUCT LIABILITY
Terms & Conditions Apply
RM2,000,000.00

60 MONTHS WARRANTY
Terms & Conditions Apply

Switchfuses

SF series (SF32 & SF63)

(With Intertek Test Report & Certificate)

32A 1 Pole + N

63A 1 Pole

63A 1 Pole + N

32/63A 3 Pole

63A 3 Pole + N

Fuses (IEC 60269-3)

Note:
1. Must use original fuse for replacement to entitle product warranty.
2. Warranty is void once the fuse indicator has operated.

Type	rating	cat. no.
1P+N		
Width 1.5 module 27mm	32A	SF232
Packing size box /carton 6 / 72		

Type	rating	cat. no.
1P		
Width 1.5 module 27mm	63A	SF163
Packing size box /carton 6 / 72		

Type	rating	cat. no.
1P + N		
Width 3 module 54mm	63A	SF263
Packing size box /carton 3 / 36		

Type	rating	cat. no.
3P		
Width 4.5 module 81mm	32A 63A	SF332 SF363
Packing size box /carton 2 / 24		

Type	rating	cat. no.
3P + N		
Width 6 module 108mm	63A	SF463
Packing size box /carton 1 / 12		

Type	rating	cat. no.
D02		
	32A 63A	D0232 D0263

PRODUCT LIABILITY Terms & Conditions Apply RM2,000,000.00

60 MONTHS WARRANTY Terms & Conditions Apply

Technical Data

Description

- To protect and isolate circuit against overload and short circuit.
- Use in domestic, commercial and light industrial installations.

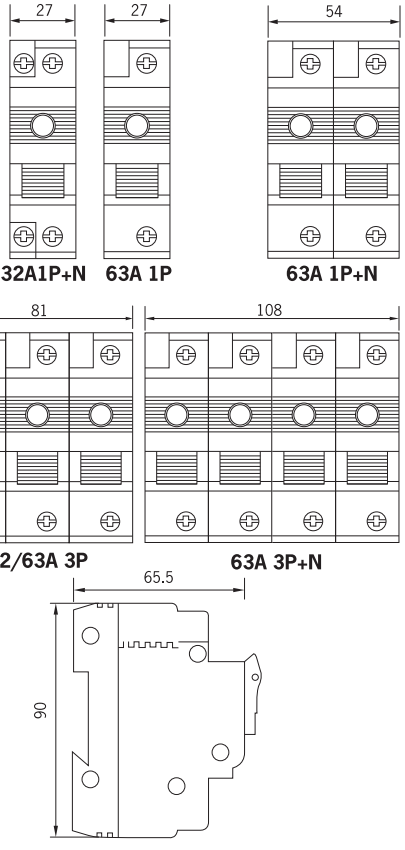
Electrical

Design according to	IEC 60947-3
Rated voltage	230/400V~, 240/415V~
Rated current	32, 63A
Fuse type	DO2, gG
Utilization category	AC22B
Rated short circuit breaking capacity	10kA (switchfuse) 50kA (DO2 fuse)
Frequency	50/60Hz
Short time withstand (Icw)	10 In (Is)
Degree of protection	IP20
Pollution Degree	3
Electrical & mechanical endurance	>2000 operating cycles
Impulse Voltage (Uimp) (1.2/50 µs)	4kV

Mechanical

Terminal capacity	1-16mm² (outgoing) 1-25mm² (incoming) (SF 232 only) 1-16mm² (incoming)
Mounting installation	DIN rail EN 50022

Dimension (mm)



Residual Current Operated Circuit Breakers (RCCB)

Technical Information

General description

- To open a circuit automatically in the event of an earth leakage between phase and earth and/or neutral and earth. With effective protection against human contact to earth points.
- Protection against Direct Contact of persons or livestock with live part.
- Protection against Indirect Contact of persons or livestock with exposed conductive parts which have become live under fault conditions.
- Protection against Electrical Fires caused by high resistance fault arcing but not causing the over current protection device to operate.
- Designed with surge current withstand capability to prevent nuisance tripping during thunderstorms. Conditionally surge current proof (3000A , 8/20us), without time delayed tripping.
- These devices are sometimes called an ELCB or RCCB or RCD.
- Use in domestic, commercial and industrial installations.

Principle of operation

In the event of a short to earth the residual current operating system to prevent shock hazard voltage from remaining on the body of an electrical equipment. For this purpose, the residual current device monitor the difference between the loads flowing through it and ensures that it is aproximately zero. If, as a result of an earth fault, this difference exceeds the circuit breaker's residual operating current rating $I_{\Delta}n$, then the RCCB will trip and disconnect the circuit of faulty equipment. (refer to Chart 1)

Additional protection in the event of direct contact

In order to provide additional protection in the event of a direct contact with (unearthed) live components, extremely sensitive RCCBs with a rated residual operating current of 30mA or less are used in place of more conventional RCCBs with higher residual operating current ratings.
This additional is necessary if :-
- The insulation of shockproof equipment or their leads is defective.
- The earth wire is interrupted.
- The earth and live wires have been transposed accidentally thus rendering live on the body of a device.
- A component which is live in normal operation is touched during repairs.

In the case of installation of equipment in areas with particularly high accident risk such as socket outlet circuits in bathrooms , power and lighting point for aquarium & fish pond. RCCB's with less than 30mA must be provided.

Since, in the event of direct contact, the residual current passes through the human body to earth and this additional protection should under no circumstances be regarded as a basic safety measure but acting merely as an "emergency brake" in the above mentioned electrical fault situations. (refer to Chart 2)

Fire protection

Even relatively insensitive RCCBs ($I_{\Delta}n \leq 300mA$) can effectively safeguard against fires caused by earth leakage faults. In the case of residual currents (≤300mA) the electrical energy converted at the location of the earth fault is insufficient to ignite normal building materials. With higher residual currents, the RCCB will shut down in less than 100ms, thereby restricting the amount of energy released to harmless levels.

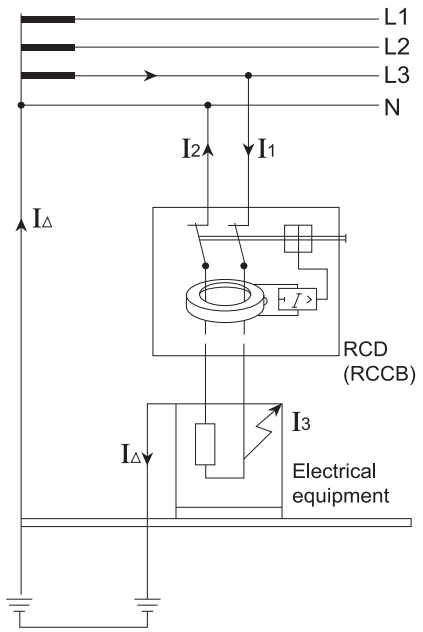
The use of RCCB on 3 phase 3 wires systems

The MAXGUARD range of 4 pole RCCBs can be used to provide residual current protection of 3 phase, 3 wire circuits (no neutral). Use terminal "1-2, "5-6", "N-N", otherwise the RCCB test circuit will not operate.

Selection of Type A RCCB is recommended to ensure compatible safe operation in the presence of pulsating dc components in the circuit. Household products using inverter power conversion technology needs to be protected with Type A RCCB for efficiency.

Charts

Chart 1

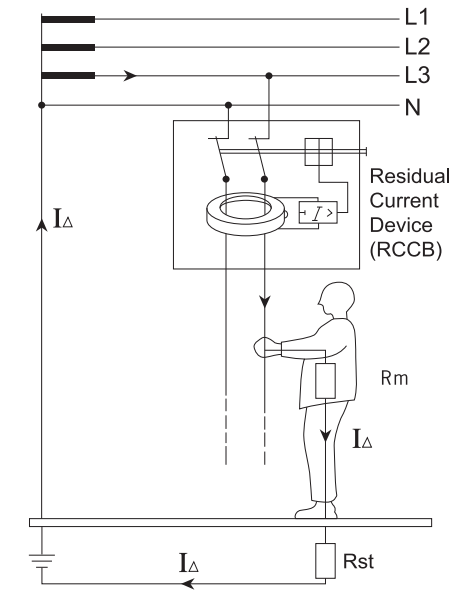


Current flowing through torroid in healthy circuit
$I_{\Delta} = I_1 - I_2 = 0$

Current flowing through torroid with earth fault I_3
$I_{\Delta} = I_1 - I_2 = I_3$

Faulty current circuit with correct earth leakage protection circuit

Chart 2



Residual current circuit with direct contact

Residual Current Operated Circuit Breakers (RCCB)

ML63-1 & ML100-1 (100A) series

(With Intertek Test Report & Certificate)

2 Pole RCCB (ML63-1)

Type AC 2P	rating (A)	cat. no. 30mA	cat. no. 100mA
Width 2 module 36mm	40	E40203N	E40210N
	63	E63203N	E63210N
	(A)	**300mA**	
Packing size box /carton 1 / 40	40	E40230N	
	63	E63230N	
	(A)	**10mA**	
	25	E25201N	

Type A 2P	rating (A)	cat. no. 30mA	cat. no. 100mA
Width 2 module 36mm	40	E40203A	E40210A
	63	E63203A	E63210A
Packing size box /carton 1 / 40			

4 Pole RCCB (ML63-1)

Type AC 4P	rating (A)	cat. no. 30mA	cat. no. 100mA
Width 4 module 72mm	40	E40403N	E40410N
	63	E63403N	E63410N
	(A)	**300mA**	
Packing size box /carton 1 / 20	40	E40430N	
	63	E63430N	

Type A 4P	rating (A)	cat. no. 30mA	cat. no. 100mA
Width 4 module 72mm	40	E40403A	E40410A
	63	E63403A	E63410A
Packing size box /carton 1 / 20			

4 Pole RCCB (ML100-1)

Type AC 4P	rating (A)	sensitivity (I△n)	cat. no.
Width 4 module 72 mm	100	30mA	E100403N
		100mA	E100410N
		300mA	E100430N
Packing size box /carton 1 / 20			

PRODUCT LIABILITY
Terms & Conditions Apply
RM2,000,000.00

60 MONTHS WARRANTY
Terms & Conditions Apply

Technical Data

Electrical

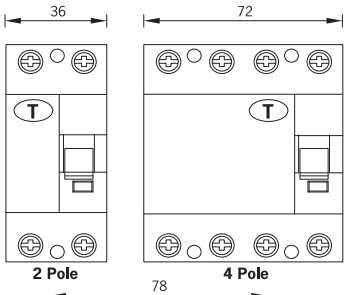
Design according to	IEC 61008-2-1
Tripping Time	undelayed (<100ms)
Rated voltage	230/400V~, 240/415~
Frequency	50/60Hz
Rated tripping current	10, 30, 100, 300mA
Operating characteristics	Type AC ⎓ Ⓖ & TypeA
Conditional surge current proof	3000A 8/20 µs (⎍)
**Anti Nuisance Tripping* (⎍)	
Rated conditional short circuit breaking capacity (Icn)	10kA, with 10kA back-up fuse
Rated making and breaking capacity (Icm)	500A or 10In
Degree of protection	IP20
Polution Degree	3
Electrical & mechanical endurance	>2000 operating cycles

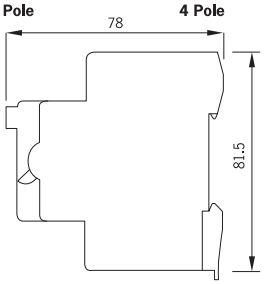
Mechanical

Terminal capacity	1 - 25mm² (ML63-1) 1 - 35mm² (ML100-1)
Mounting installation	DIN rail EN 50022

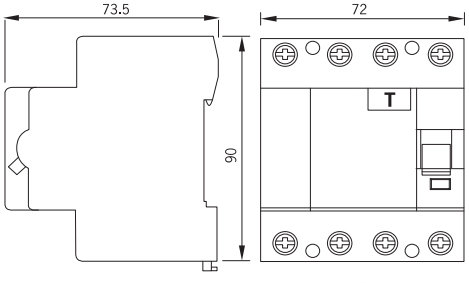
Dimension (mm)

ML63-1





ML100-1



Moulded Case Circuit Breakers (MCCB)

M series

(With Intertek Test Report & Certificate)

M63L
(2P/3P)

rating (A)	cat. no. 2 pole	cat. no. 3 pole	Sym.	r.m.s (kA) Icu / Ics
20	M63L202P	M63L20	690V	8/4
32	M63L322P	M63L32	500V	10/5
40	M63L402P	M63L40	440V	15/8
50	M63L502P	M63L50	415V	25/18
63	M63L632P	M63L63	230V	35/25

Shunt trip 240VAC cat. no. SC63

M100L
(3P)

M100L
(4P)
***N-PROTECTED**

rating (A)	cat. no. 3 pole	cat. no. 4 pole	Sym.	r.m.s (kA) Icu / Ics
20	M100L20	M100L204P	690V	8/4
32	M100L32	M100L324P	500V	20/10
40	M100L40	M100L404P	440V	25/17
50	M100L50	M100L504P	415V	35/26
63	M100L63	M100L634P	230V	50/35
80	M100L80	M100L804P		
100	M100L100	M100L1004P		

Shunt trip 240VAC cat. no. SC100

M225L
(3P)

rating (A)	cat. no. 3 pole	Sym.	r.m.s (kA) Icu / Ics
125	M225L125	690V	8/4
160	M225L160	500V	25/10
200	M225L200	440V	35/20
225	M225L225	415V	50/37
		230V	70/50

Shunt trip 240VAC cat. no. SC225

M400L
(3P)

rating (A)	cat. no. 3 pole	Sym.	r.m.s (kA) Icu / Ics
250	M400L250	690V	10/5
315	M400L315	500V	25/10
350	M400L350	440V	35/25
400	M400L400	415V	50/37
		230V	80/60

Shunt trip 240VAC cat. no. SC400

*** NOTE: TERMINALS BUSBARS ARE PROVIDED FOR M400L FRAME SIZE**

PRODUCT LIABILITY
Terms & Conditions Apply
RM2,000,000.00

60 MONTHS WARRANTY
Terms & Conditions Apply

Moulded Case Circuit Breakers (MCCB)
M series

Technical Data

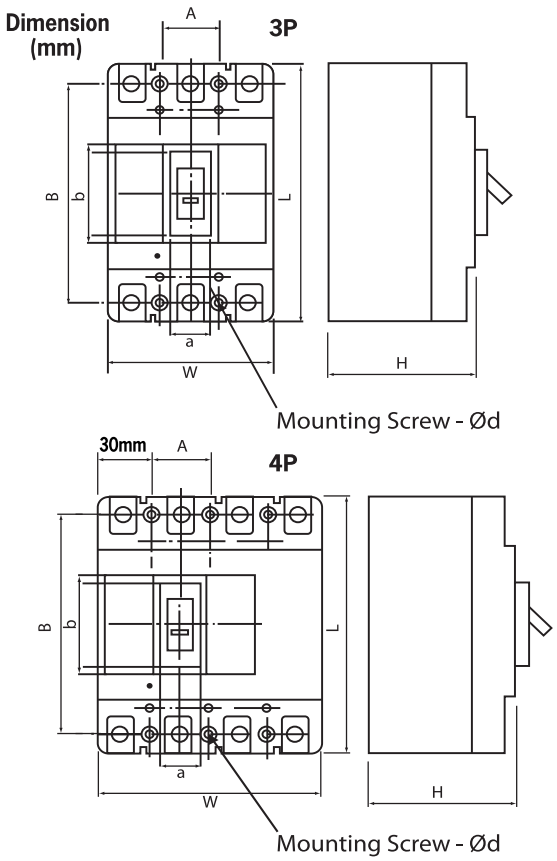
Description

* To protect conductors against overloads and short circuits currents in electrical distribution systems.
* Use in domestic, commercial and industrial installations.

Electrical

Design according to	IEC 60947-2
Rated voltage (Ue)	415V~
Rated current (In)	20 - 400A at 40°C
Utilization category	Cat A
Rated insulation voltage (Ui)	690 V~
Frequency	50/60Hz
Tripping mechanism	Fixed thermal & magnetic
Calibration Temp	40°C
Degree of protection	IP20
Electrical & mechanical endurance	10,000 operating cycles
Polution Degree	3
Rated Impulse Voltage (1-2/50µs) (Uimp)	6kV
Ith	I the =In

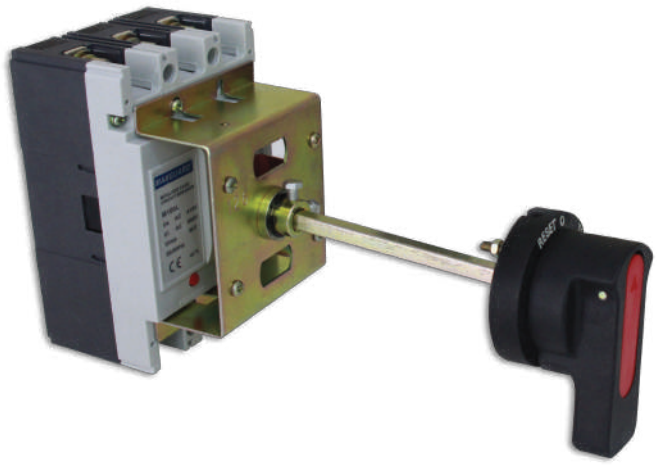
***Note:** 4P MCCB - N is Protected



MCCB Dimension (mm)

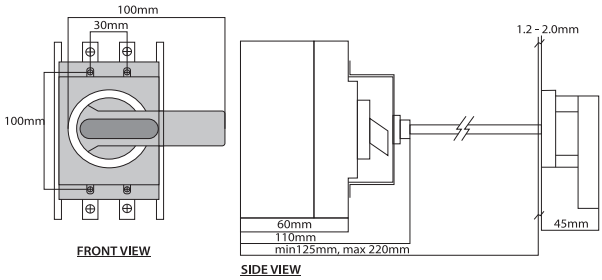
MODEL	POLE	W	L	H	A	B	a	b	ød	WEIGHT(Kg)
M63L	2P / 3P	78	135	74	25	116	22	60	M3	0.8/0.9
M100L	3P	92	150	69	30	128	22	60	M4	1.25
M100L	* 4P	122	150	69	30	128	22	51	M4	1.6
M225L	3P	106	165	88	35	126	25	60	M4	1.9
M400L	3P	140	257	107	44	215	55	102	M5	4.5

*N-PROTECTED

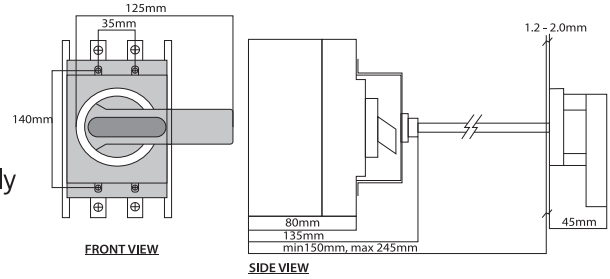


Externally operated handles for MCCBs which can be installed to enclosures of varying depth. Handles are padlockable. Mechanically transfer the position ON-TRIP-OFF of MCCBs.

EXTENDED HANDLE FOR M100L MCCB (EX-100L)

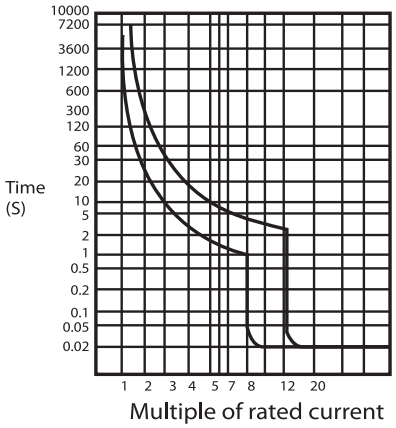


EXTENDED HANDLE FOR M225L MCCB (EX-225L)

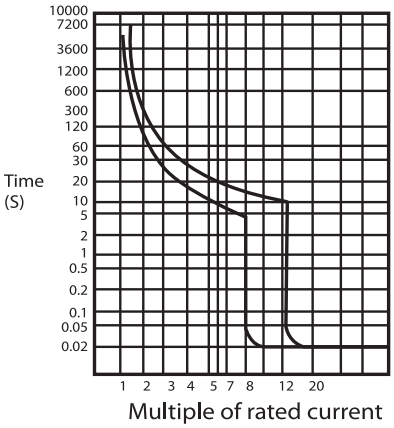


Moulded Case Circuit Breakers (MCCB)
M series

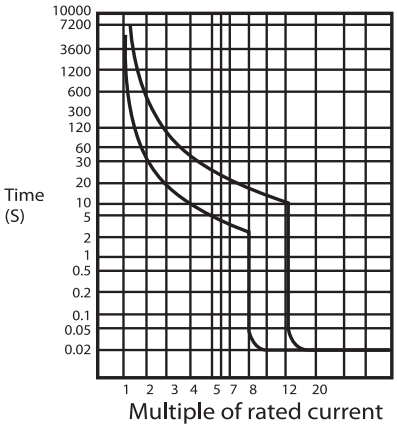
Tripping curve of M63L/M100L (16-32)



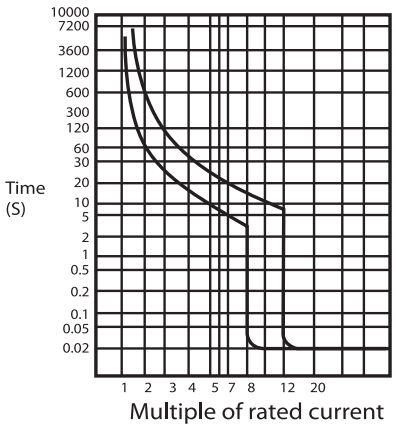
Tripping curve of M63L/M100L (40-100)



Tripping curve of M225L



Tripping curve of M400L



Temperature Compensation Table

Ambient Temperature (˚C)	Rated Current %			
	M63L & M100L (16A - 32A)	M63L & M100L (40A - 100A)	M225L	M400L
0	123	113	113	122
10	117	110	110	117
15	115	108	108	115
20	112	106	106	112
25	110	105	105	110
30	107	103	103	106
35	105	102	102	104
40	100	100	100	100
50	90	92	92	94
55	87	90	90	90

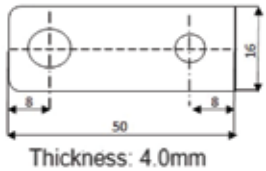
Moulded Case Circuit Breakers Extension Bar

Model	cat. no
M100L	EXTBAR-M110L
M225L	EXTBAR-M225L

Material	Copper

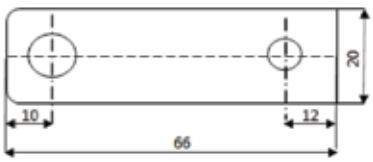
Dimension (mm)

EXTBAR-M100L:



Thickness: 4.0mm

EXTBAR-M125L:



Thickness: 5.0mm

Din Rail Mounted Moulded Case Circuit Breakers (MCCB)

MB 125-1 Series

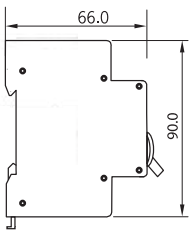
(With Intertek Test Report & Certificate)

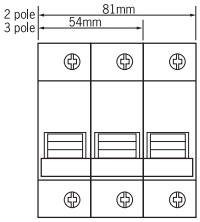
2 Pole

3 Pole

Type 2P	rating (A)	cat. no.
Width 3 module 54 mm	16	MB216N
	20	MB220N
	32	MB232N
	40	MB240N
	50	MB250N
	63	MB263N
	80	MB280N
	100	MB2100N
	125	MB2125N

Type 3P	rating (A)	cat. no.
Width 4.5 module 81 mm	16	MB316N
	20	MB320N
	32	MB332N
	40	MB340N
	50	MB350N
	63	MB363N
	80	MB380N
	100	MB3100N
	125	MB3125N





PRODUCT LIABILITY * Terms & Conditions Apply * RM2,000,000.00

60 MONTHS WARRANTY * Terms & Conditions Apply

Technical Data

Description

- To protect circuit against overload and short circuit in the electrical distribution systems.
- Use in domestic, commercial and light industrial installation.

Electrical

Design according to	IEC 60947-2
Rated voltage (Ue)	240/415V~
Rated current (In)	16,20,25,40,50,63,80,100A
No. of poles	2,3
Utilization category	Cat A
Rated Current (In)	16-63A / 80-125A
Rated Ultimate Short Circuit Breaking Capacity (Icu)	20kA / 10kA
Service Short Circuit Breaking Capacity (Ics) (Ics=75%ICU)	15kA / 7.5kA
Ref. calibration temp.	30 °C
Rated insulation (Ui)	690V~
Frequency	50/60Hz
Tripping mechanism	Fixed thermal & magnetic
Degree of protection	IP20
Polution Degree	3
Rated impulse voltage (Uimp)	6kV
Electrical and machanical endurance	10,000 operating cycles

Mechanical

Terminal capacity	1-35mm²
Mounting installation	DIN rail EN 50022

24 Hour Time Switch (Q24TS)

Type	cat. no.
Analogue	Q24TS
Width 3 module 54mm	
Packing size box /carton 1/30	

PRODUCT LIABILITY * Terms & Conditions Apply * RM2,000,000.00

12 MONTHS WARRANTY * Terms & Conditions Apply

Technical Data

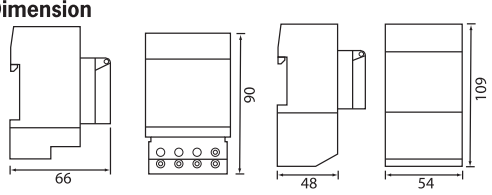
Electrical

Rated voltage	240V~
Rated current (contact)	16A
Power reserve	150h
Frequency	50Hz

Mechanical

Terminal capacity	1-4mm²
Mounting installation	DIN rail EN 50022

Dimension



Dimension without terminal cover Dimension with terminal cover

MF20

Type	rating	cat. no.
2P NO	20A	MF20
4P NO	25A	MF25
2P NO	63A	MF632P
4P NO	63A	MF63
2P NO, 2P NC	63A	MF63S
4PNC	63A	MF63-4C

PRODUCT LIABILITY
Terms & Conditions Apply
RM2,000,000.00

WARRANTY 12 MONTHS WARRANTY
Terms & Conditions Apply

MF63

MF25

MF632P

Technical Data

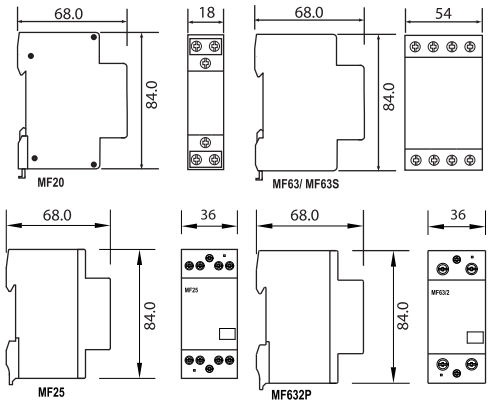
Electrical

Design according to	IEC 60947-4-1 & IEC 61095
Rated voltage (Ue)	230V / 400V~, 240V / 415V~
Coil voltage (Us)	240V~
Coil Insulation	Class E

Mechanical

Terminal capacity	1-6mm² (MF 20, MF25) 1-16mm² (MF40, MF 63)
Mounting installation	DIN rail EN 50022

Dimension (mm)

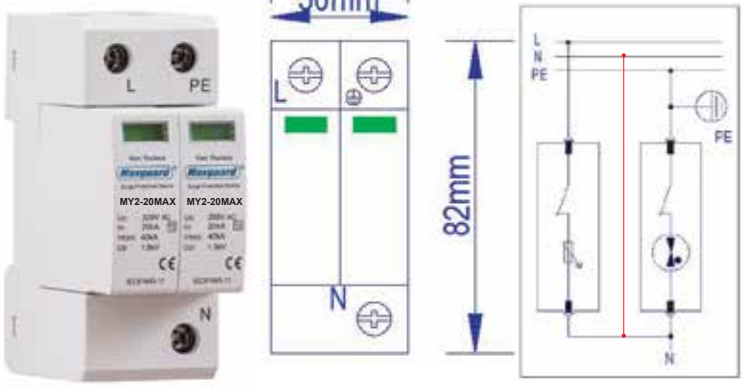


Surge Protection Device (SPD)

1P+N mode Protection - MY2-20MAX

Type / Cat. No		Width
1-Phase	SPDMY2-20MAX(1P+N/A) With Auxiliary	2 modules 36mm

MY2-20MAX(1P+N/A)



Technical Data

Description

- For protection of consumer equipment against transient overvoltages caused by direct or indirect lightning strike and switching operations
- Use in domestic, commercial and light industrial installations

Electrical

Design according to	IEC 61643-11
SPD class	CLASS II, TYPE 2
Uc (~)	320V
Uc (~) [N-PE]	255V
Uoc	<1.5kV
Response time tA	<25ns
State/Fault indication	Green/Red
Structure type	Modular
Degree of protection	IP20
Nominal discharge current, In (8/20µs)	10kA
Max. discharge current, Imax (8/20µs)	20kA

Mechanical

Terminal capacity	2.5 – 25mm²
Mounting installation	DIN rail EN50022

NOTE:
*COMPETENT PERSON NEED TO CHECK FOR DAMAGE OR OPERATED SPD MODULES FOR REPLACEMENT.
*ALL CABLES CONNECTING TO SPD SHALL NOT BE LESS THAN 6MM2.

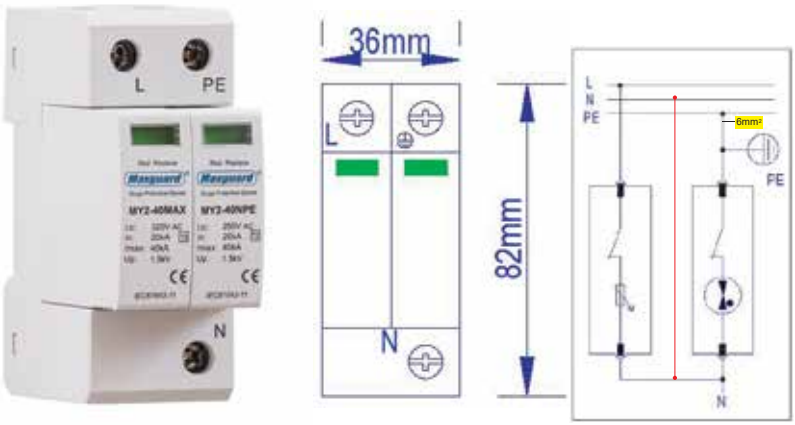
Surge Protection Device (SPD)

3P+N & 1P+N Mode Protection

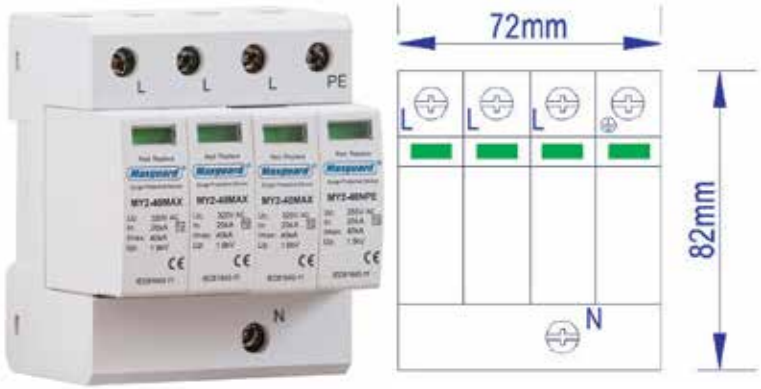
(With TUV Test Report & Certificate And Sirim Test Certificate)

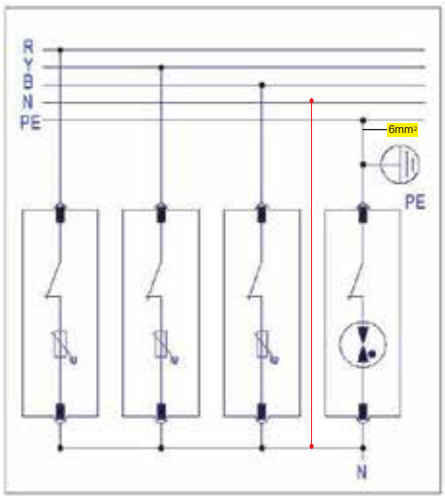
Type / Cat. No		Width
3-Phase	**SPDMY2-40MAX(3P+N)**	4 modules 72mm
1-Phase	**SPDMY2-40MAX(1P+N)**	2 modules 36mm

MY2-40MAX(1P+N)



MY2-40MAX(3P+N)





Technical Data

Description

- For protection of consumer equipment against transient overvoltages caused by direct or indirect lightning strike and switching operations
- Use in domestic, commercial and light industrial installations

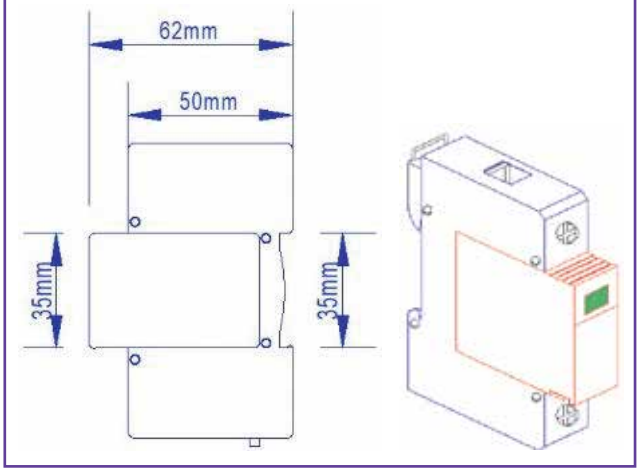
Electrical

Design according to	IEC 61643-11
SPD class	CLASS II, TYPE 2
Uc (~)	320V
Uc (~) [N-PE]	255V
Uoc	<1.5kV
Response time tA	<25ns
State/Fault indication	Green/Red
Structure type	Modular
Degree of protection	IP20
Nominal discharge current, In (8/20µs)	20kA
Max. discharge current, Imax (8/20µs)	40kA

Mechanical

Terminal capacity	2.5 – 25mm²
Mounting installation	DIN rail EN50022

Dimension



NOTE: COMPETENT PERSON NEED TO CHECK FOR DAMAGE OR OPERATED SPD MODULES FOR REPLACEMENT

*ALL CABLES CONNECTING TO SPD SHALL NOT BE LESS THAN 6MM²

*WARRANTY = NOT COVERED FOR OPERATED (INDICATOR CHANGED TO RED COLOUR) SPD

PRODUCT LIABILITY Terms & Conditions Apply RM2,000,000.00

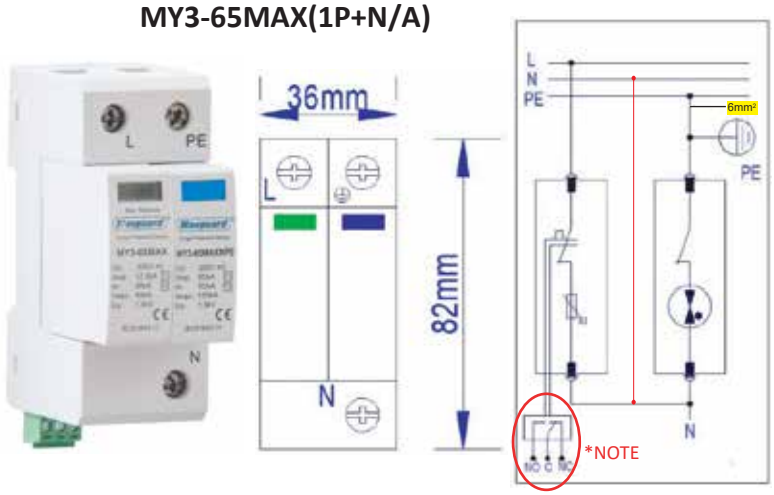
24 MONTHS WARRANTY Terms & Conditions Apply

Surge Protection Device (SPD)

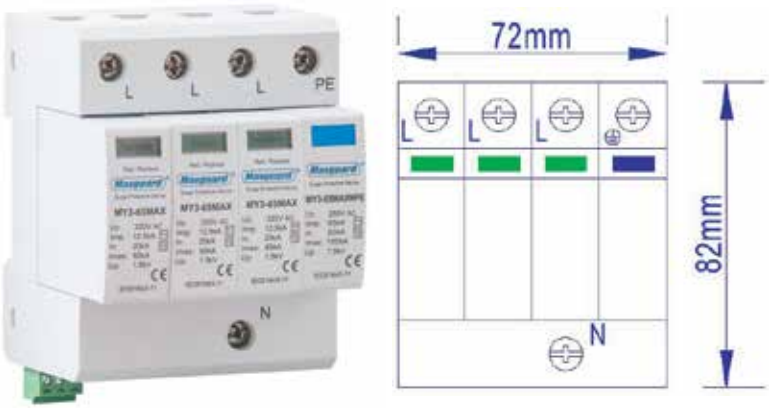
3P+N & 1P+N Mode Protection
(With TUV Test Report & Certificate And Sirim Test Certificate)

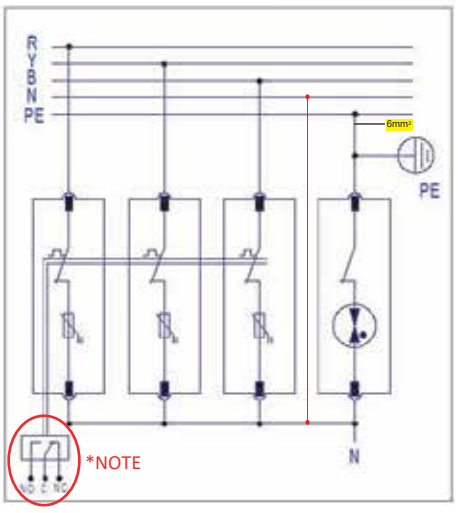
Type / Cat. No		Width
3-Phase	**SPDMY3-65MAX(3P+N/A)** *With auxiliary*	4 modules 72mm
1-Phase	**SPDMY3-65MAX(1P+N/A)** *With auxiliary*	2 modules 36mm

MY3-65MAX(1P+N/A)



MY3-65MAX(3P+N/A)





Technical Data

Description

- For protection of consumer equipment against transient overvoltages caused by direct and indirect lightning strike and switching operations
- Use in domestic, commercial and light industrial installations

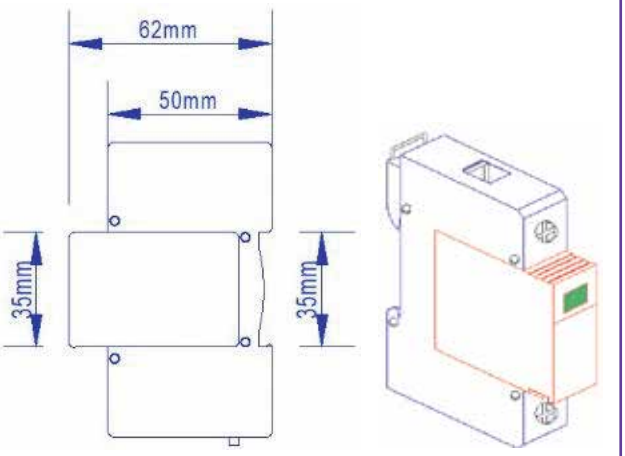
Electrical

Design according to	IEC 61643-11
SPD class	CLASS I+II, TYPE 1+2
Uc (~)	320V
Uc (~) [N-PE]	255V
Uoc	<1.5kV
Response time tA	<25ns
State/Fault indication	Green/Red
Structure type	Modular
Degree of protection	IP20
Nominal discharge current, In (8/20µs)	20kA
Max. discharge current, Imax (8/20µs)	65kA

Mechanical

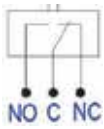
Terminal capacity	2.5 – 25mm²
Mounting installation	DIN rail EN50022

Dimension



NOTE:
COMPETENT PERSON NEED TO CHECK FOR DAMAGE
OR OPERATED SPD MODULES FOR REPLACEMENT
*ALL CABLES CONNECTING TO SPD SHALL NOT BE LESS THAN 6MM²

* NOTE: Wiring of Auxiliary contact



N/O – Connect to indicator/buzzer
C – To power supply
N/C – No connection

***WARRANTY** = NOT COVERED FOR OPERATED (INDICATOR CHANGED TO RED COLOUR) SPD

PRODUCT LIABILITY ★Terms & Conditions Apply★ RM2,000,000.00

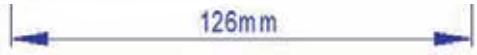
24 MONTHS WARRANTY Terms & Conditions Apply

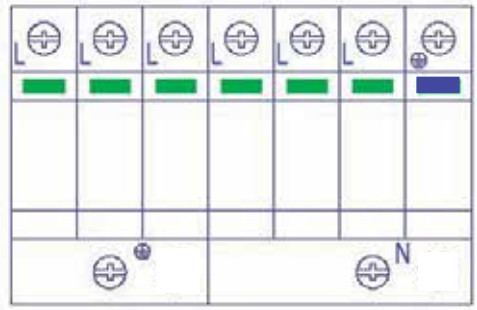
Surge Protection Device (SPD)

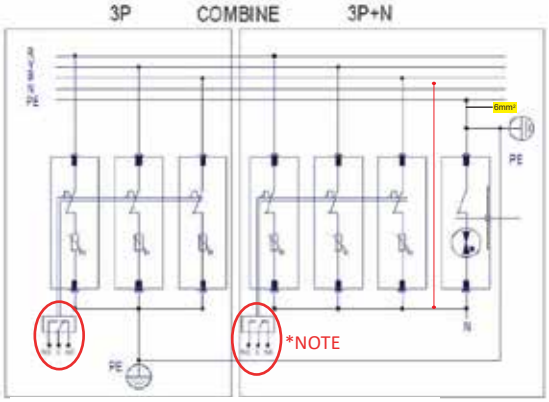
FULL Mode Protection
(With TUV Test Report & Certificate And Sirim Test Certificate)

Type / Cat. No	Width
3-Phase SPDMY3-65MAX(7P/A)	7 modules 126mm
1-Phase SPDMY3-65MAX(3P/A)	3 modules 54mm

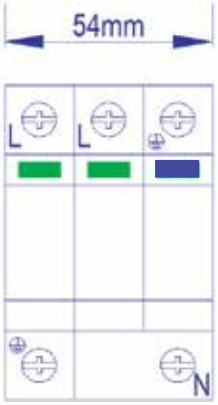
MY3-65MAX(7P/A)

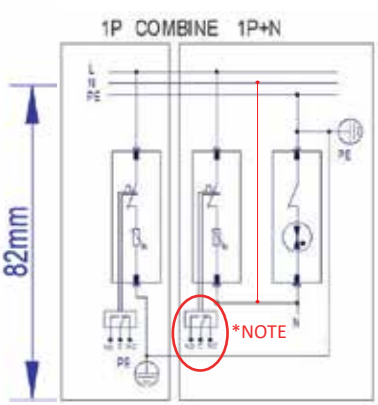






MY3-65MAX(3P/A)





Technical Data

Description

- For protection of consumer equipment against transient overvoltages caused by direct and indirect lightning strikes and switching operations
- Use in domestic, commercial and light industrial installations

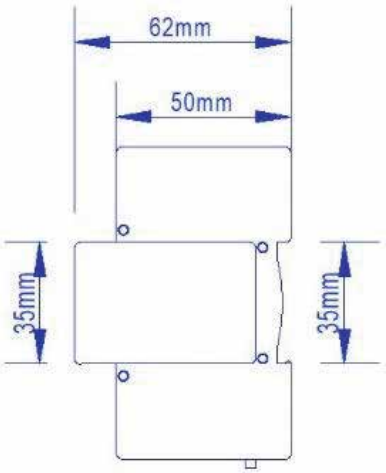
Electrical

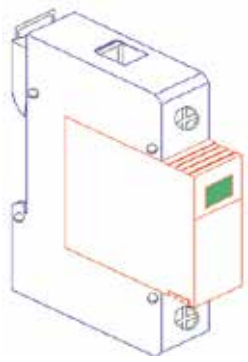
Design according to	IEC 61643-11
SPD class	CLASS I+II, TYPE 1+2
Uc (~)	320V
Uc (~) [N-PE]	255V
Uoc	<1.5kV
Response time tA	<25ns
State/Fault indication	Green/Red
Structure type	Modular
Degree of protection	IP20
Nominal discharge current, In (8/20µs)	20kA
Max. discharge current, Imax (8/20µs)	65kA

Mechanical

Terminal capacity	2.5 – 25mm²
Mounting installation	DIN rail EN50022

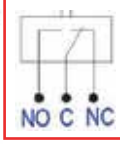
Dimension





NOTE:
COMPETENT PERSON NEED TO CHECK FOR DAMAGE
OR OPERATED SPD MODULES FOR REPLACEMENT
*ALL CABLES CONNECTING TO SPD SHALL NOT BE LESS THAN 6MM²

* NOTE: Wiring of Auxiliary contact



N/O – Connect to indicator/buzzer
C – To power supply
N/C – No connection

PRODUCT LIABILITY Terms & Conditions Apply RM2,000,000.00

24 MONTHS WARRANTY Terms & Conditions Apply

***WARRANTY** = NOT COVERED FOR OPERATED (INDICATOR CHANGED TO RED COLOUR) SPD

Surge Protection Device (SPD)

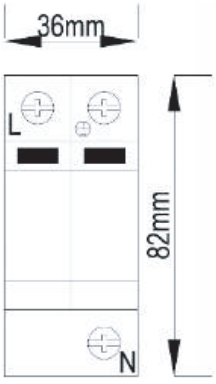
3P+N & 1P+N Mode Protection

(With TUV Test Report & Certificate And Sirim Test Certificate)

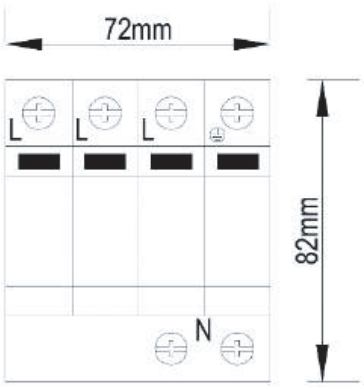
Type / Cat. No	Width
3-Phase EL1C40-3P+N/A	4 modules 72mm
1-Phase EL1C40-1P+N/A	2 modules 36mm

EL1C40-1P+N/A

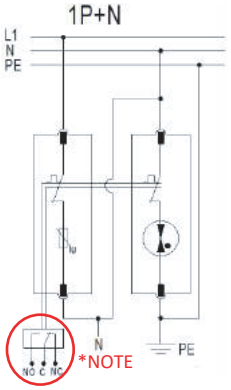
EL1C40-3P+N/A

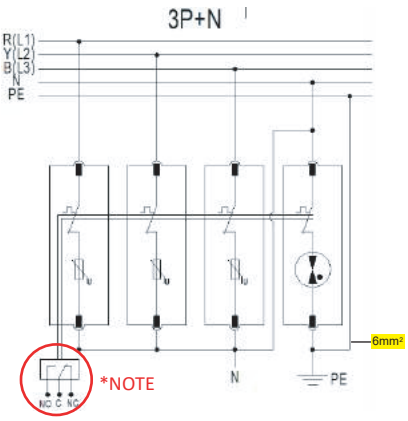


EL1C40-1P+N/A



EL1C40-3P+N/A





Technical Data

Description

- For protection of consumer equipment against transient voltage caused by indirect lightning strike and switching operations
- Use in domestic, commercial and light industrial installations

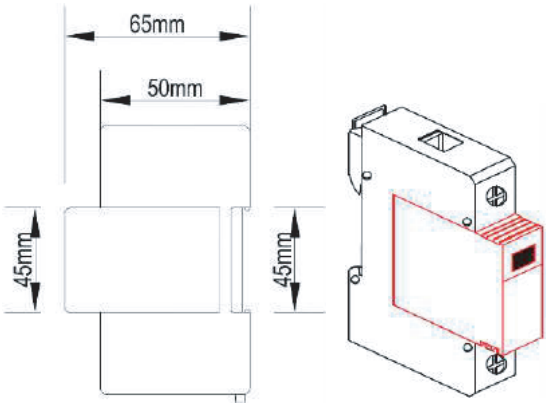
Electrical

Design according to	IEC 61643-11
SPD class	CLASS II, TYPE 2
Uc	320V
Uc [N-PE]	255V
Uoc	<1.5kV
Response time tA	<25ns
State/Fault indication	Green/red
Structure type	Modular
Degree of protection	IP20
Nominal discharge current In (8/20µs)	20kA
Max. discharge current Imax (8/20µs)	40kA

Mechanical

Terminal capacity	2.5 – 25mm²
Mounting installation	DIN rail EN50022

Dimension (mm)

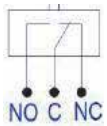


PRODUCT LIABILITY
Terms & Conditions Apply
RM2,000,000.00

24 MONTHS WARRANTY
Terms & Conditions Apply

***WARRANTY** = NOT COVERED FOR OPERATED (INDICATOR CHANGED TO RED COLOUR) SPD

* NOTE: Wiring of Auxiliary contact



N/O – Connect to indicator/buzzer
C – To power supply
N/C – No connection

NOTE:
COMPETENT PERSON NEED TO CHECK FOR DAMAGE OR OPERATED SPD MODULES FOR REPLACEMENT
*ALL CABLES CONNECTING TO SPD SHALL NOT BE LESS THAN 6MM²

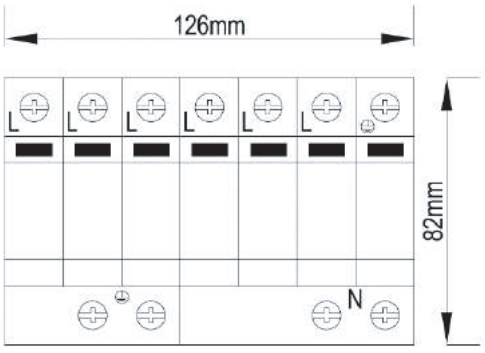
Surge Protection Device (SPD)

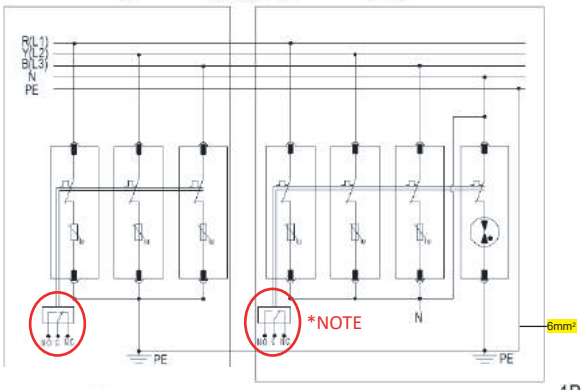
FULL Mode Protection

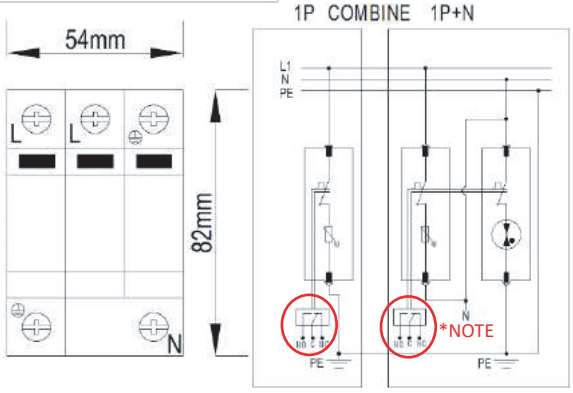
(With TUV Test Report & Certificate And Sirim Test Certificate)

Type / Cat. No	Width
3-Phase EL1C40-7P/A	7 modules 126 mm
1-Phase EL1C40-3P/A	3 modules 54mm

EL1C40-7P/A







EL1C40-3P/A

Technical Data

Description

- For protection of consumer equipment against transient voltage caused by indirect lightning strike and switching operations
- Use in domestic, commercial and light industrial installations

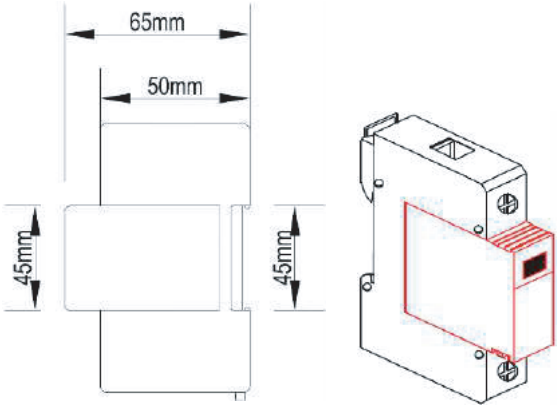
Electrical

Design according to	IEC 61643-11
SPD class	CLASS II, TYPE 2
Uc	275V
Uc [N-PE]	255V
Uoc	<1.5kV
Response time tA	<25ns
State/Fault indication	Green/red
Structure type	Modular
Degree of protection	IP20
Nominal discharge current In (8/20µs)	20kA
Max. discharge current Imax (8/20µs)	40kA

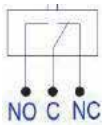
Mechanical

Terminal capacity	2.5 – 25mm²
Mounting installation	DIN rail EN50022

Dimension (mm)



* NOTE: Wiring of Auxiliary contact



N/O – Connect to indicator/buzzer
C – To power supply
N/C – No connection

PRODUCT LIABILITY * Terms & Conditions Apply * RM2,000,000.00

WARRANTY 24 MONTHS WARRANTY * Terms & Conditions Apply

***WARRANTY** = NOT COVERED FOR OPERATED (INDICATOR CHANGED TO RED COLOUR) SPD

NOTE: COMPETENT PERSON NEED TO CHECK FOR DAMAGE OR OPERATED SPD MODULES FOR REPLACEMENT

*ALL CABLES CONNECTING TO SPD SHALL NOT BE LESS THAN 6MM²

Din Rail Analog Type of Energy Meter (kWh)

KWH100A1P & KWH100A3P

1 Phase kWh Meter (KWH100A1P)

3 Phase kWh Meter (KWH100A3P)

NOTE: ONLY COMPETENT PERSON OR PROFESSIONAL TECHNICIAN CAN INSTALL THE METER

Technical Data

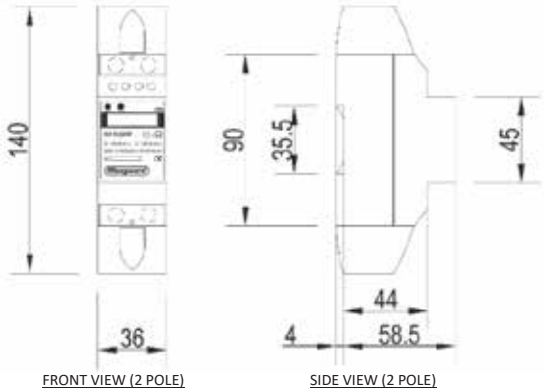
Description

- Use for measuring active energy power consumption in a rated frequency 50Hz or 60Hz single phase or three phases alternating current circuit.
- Good reliability, small volume, light weight and nice appearance
- Installed indoor with ambient temperature +5 to +40°C, relativity humidity not more than 95%
- Use in domestic, commercial and light industrial application

Electrical	KWH1001P	KWH1003P
Design according to	IEC 62053-21	IEC 62053-21
Accuracy class	Class 1	Class 1
Rated Voltage (V)	230	230/400
Operating Temperature (°C)	+5 to 40°C	+5 to 40°C
Current Spec (A)	10(100) A	10(100) A
Frequency (Hz)	50	50
Display	Analog Type	Analog Type
Connection	Direct Connection	Direct Connection

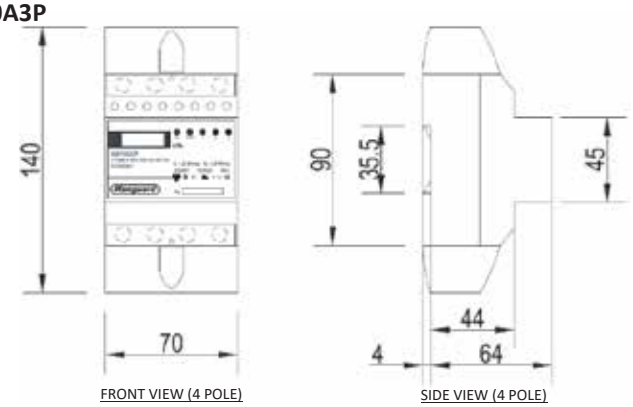
Dimension (mm)

KWH100A1P



FRONT VIEW (2 POLE) SIDE VIEW (2 POLE)

KWH100A3P



FRONT VIEW (4 POLE) SIDE VIEW (4 POLE)

Mechanical

Terminal capacity	1 – 25mm²
Mounting installation	DIN rail EN50022
1-Phase (2 POLE)	2 Modules (36 mm)
3-Phase (4 POLE)	4 Modules (70 mm)

Isolators

MIS63-1 Series

(With SIRIM Test Report)

2 Pole Isolator

Type	rating	cat. no.
2P	63A	MIS263N

Width
2 module
36mm

Packing size box /carton
6 / 60

3 Pole Isolator

Type	rating	cat. no.
3P	63A	MIS363N

Width
3 module
54mm

Packing size box /carton
4 / 40

3 Pole Isolator

Type	rating	cat. no.
3P	100A	MIS3100N

Width
3 module
54mm

Packing size box /carton
4 / 40

60 MONTHS WARRANTY * Terms & Conditions Apply *

PRODUCT LIABILITY * Terms & Conditions Apply * RM2,000,000.00

Technical Data

Description

- Use as an isolating switch for an electrical circuit.
- Use in domestic, commercial and light industrial installations

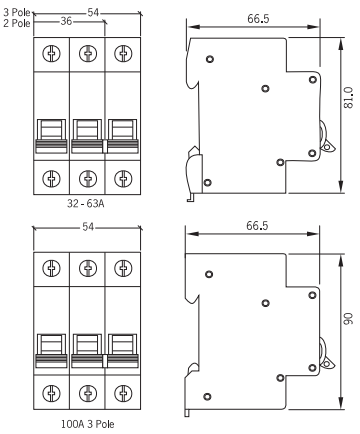
Electrical

Design according to	IEC 60947-3
Rated voltage	230/400V~, 240/415V~
Rated current	63, 100A
No. of poles	2, 3
Utilization category	AC22B
Conditional S.C.Current	6KA
Rated withstand current (Icw)	10In(Is)
Degree of protection	IP20
Electrical & mechanical	>4000 operating cycles

Mechanical

Terminal capacity	1-25mm² (32 to 63A) 1-35mm² (100A)
Mounting installation	DIN rail EN 50022

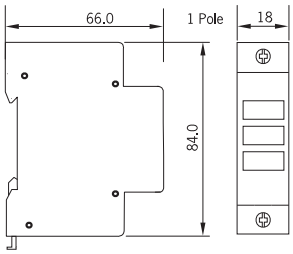
Dimension (mm)



Colour Indicator Lights

12 MONTHS WARRANTY * Terms & Conditions Apply *

Type RYB	cat. no.
Width 1 module 18 mm	MIL



Technical Data

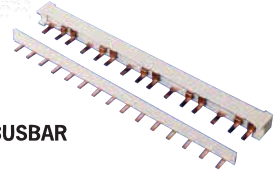
Electrical

Design according to	IEC 60947-5
Rated voltage	240V~
Frequency	50Hz
Degree of protection	IP20

Mechanical

Terminal capacity	1-6 mm²
Mounting installation	DIN rail 50022

Insulated Comb Bar



BUSBAR

Type	rating	cat. no.	no.pin
1p (with insulation)	60A	MB1PS - 60	56
2p (with insulation)	60A	MB2PS - 60	56
3p (with insulation)	60A	MB3PS - 60	54
4p (with insulation)	60A	MB4PS - 60	56
1p (with insulation)	100A	MB1PS - 100	56
3p (with insulation)	100A	MB3PS - 100	33

Residual Current Operated Circuit Breaker With Intergral Overcurrent Protection

(RCBO) ML32-1 Series 6kA

(With Intertek Test Report & Certificate)

ML32-1

Type AC	rating (A)	cat. no. 10mA	cat. no. 30mA	cat. no. 100mA
B Curve	6	R0601B	R0603B	R0610B
	10	R1001B	R1003B	R1010B
	16	R1601B	R1603B	R1610B
	20	R2001B	R2003B	R2010B
	25	R2501B	R2503B	R2510B
	32	R3201B	R3203B	R3210B

Type AC	rating (A)	cat. no. 10mA	cat. no. 30mA	cat. no. 100mA
C Curve	6	R0601C	R0603C	R0610C
	10	R1001C	R1003C	R1010C
	16	R1601C	R1603C	R1610C
	20	R2001C	R2003C	R2010C
	25	R2501C	R2503C	R2510C
	32	R3201C	R3203C	R3210C

Type A	rating (A)	cat. no. 10mA	cat. no. 30mA	cat. no. 100mA
B Curve	6	R0601BA	R0603BA	R0610BA
	10	R1001BA	R1003BA	R1010BA
	16	R1601BA	R1603BA	R1610BA
	20	R2001BA	R2003BA	R2010BA
	25	R2501BA	R2503BA	R2510BA
	32	R3201BA	R3203BA	R3210BA

Type A	rating (A)	cat. no. 10mA	cat. no. 30mA	cat. no. 100mA
C Curve	6	R0601CA	R0603CA	R0610CA
	10	R1001CA	R1003CA	R1010CA
	16	R1601CA	R1603CA	R1610CA
	20	R2001CA	R2003CA	R2010CA
	25	R2501CA	R2503CA	R2510CA
	32	R3201CA	R3203CA	R3210CA

Technical Data

Description

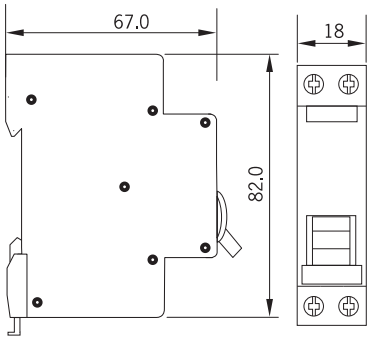
- To protect individual circuit against overload, short circuit and earth leakage faults.
- Use in domestic, commercial and light industrial application.
- Compact and easy installation.

Electrical

Design according to	IEC 61009-1/ IEC 61009-2-2
Rated voltage (Ue)	240V~
Rated current (In)	6-32A
Frequency	50/60Hz
Tripping curve	B, C (IEC60898-1)
Energy limiting class	3
Rated breaking capacity (Icn)	6kA
RCD characteristics	Type A, Type AC (IEC 61008-2-2)
Rated sensitivity current (IΔn)	10, 30, 100mA
Degree of protection	IP20
Electrical and mechanical endurance	⩾2000 operating cycles

Mechanical

Terminal capacity	1-10 mm²
Mounting installation	DIN rail 50022

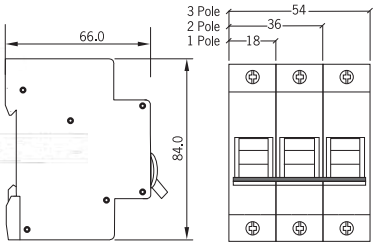


60 MONTHS WARRANTY * Terms & Conditions Apply

PRODUCT LIABILITY * Terms & Conditions Apply * RM2,000,000.00

Change over switch

Type	rating 40A	cat. no.
1P		COS140
2P		COS240
3P		COS340



Technical Data

Electrical

Design according to	IEC 60947-3
Rated voltage (Ue)	240V/415V~
Rated current (In)	40A
No. of poles	1,2,3
Frequency	50/60Hz
Conditional S.C.Current	6KA
Degree of protection	IP20
Utilization category	AC22B
Short time withstand current	10 In (Is)

Mechanical

Terminal capacity	1 -10 mm²
Rated current	40A
Mounting installation	DIN rail 50022

PRODUCT LIABILITY * Terms & Conditions Apply * RM2,000,000.00

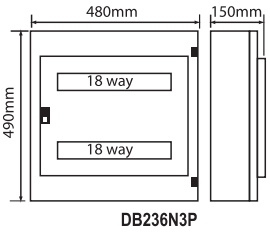
60 MONTHS WARRANTY * Terms & Conditions Apply

Metalclad DB enclosure

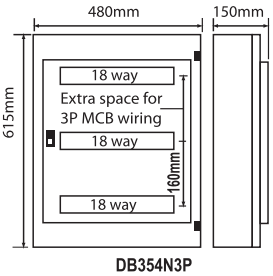
DB designed with extra space and depth for outgoing 3P MCB/MCCB

Type	no. of row	way / row	mod. way	H (mm)	W (mm)	D (mm)	cat. no
36way	2	18	36	490	480	150	DB236N3P
54way	3	18	54	615	480	150	DB354N3P
36way	2	18	36	740	480	160	DB236MN3P*
54way	3	18	54	865	480	160	DB354MN3P*

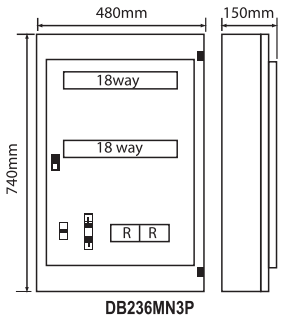
* with space / provision for MCCB & 2nos. RCCB.



DB236N3P



DB354N3P



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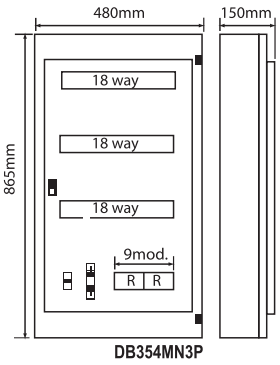


DB354MN3P

R- Space for RCCB

Technical Data

Design according to	IEC 60439-3
Material	1.2mm mild steel
Degree of protection	IP30
Finishing	Light grey colour with oven baked epoxy powder paint (RAL7035)

Fitted with one set neutral and earth link.

Without components, wiring and busbar

*with space provision for MCCB & 2nos RCCB.

Economy Metalclad DB

DB Suitable to fit Isolator,switchfuse,MCB as Incomer (DB-E Series)

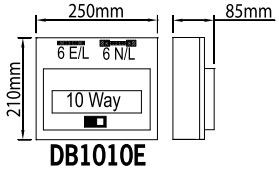
type	no. of row	way / row	mod. way	H (mm)	W (mm)	D (mm)	cat. no
10 way	1	10	10	210	250	85	DB1010E
14 way	1	14	14	210	306	85	DB1014E
18 way	1	18	18	210	394	85	DB1018E
22 way	1	22	22	210	466	85	DB1022E
30 way	2	15	30	350	400	120	DB2030E
36 way	2	18	36	350	460	120	DB2036E
45 way	3	15	45	490	400	120	DB3045E

Technical Data

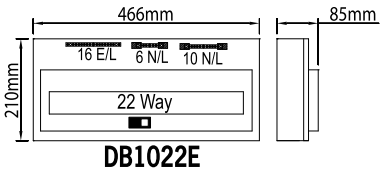
Design according to	IEC 60439-3
Material	1.0mm mild steel
Degree of protection	IP30
Finishing	Light grey colour with oven baked epoxy powder paint (RAL7035)

Fitted with one set neutral and earth link.

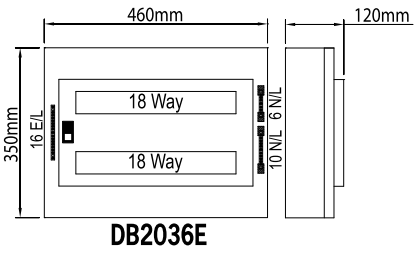
Without components, wiring and busbar



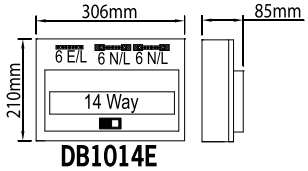
DB1010E



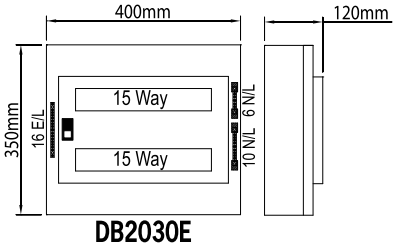
DB1022E



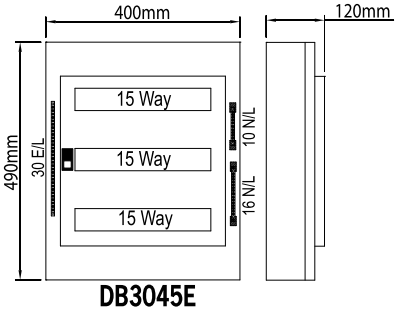
DB2036E



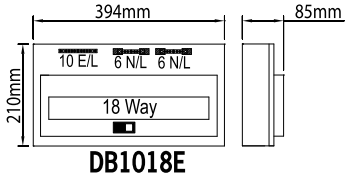
DB1014E



DB2030E



DB3045E

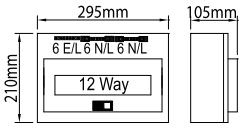


DB1018E

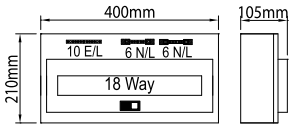
E/L - Earth Link
N/L - Neutral Link

Metalclad DB enclosure (consumer units)

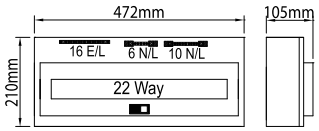
DB Suitable to fit Isolator,switchfuse,MCB as Incomer (DB-N Series)



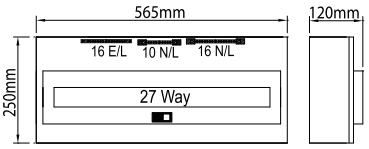
DB112N



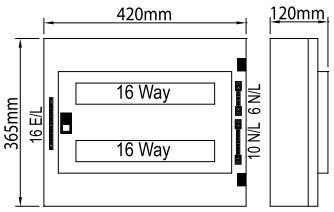
DB118N



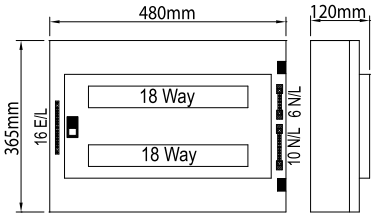
DB122N



DB127N



DB232N



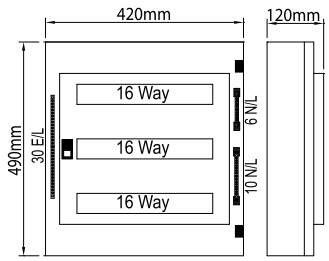
DB236N

type	no. of row	way / row	mod. way	H (mm)	W (mm)	D (mm)	cat. no
12 way	1	12	12	210	295	105	DB112N
18 way	1	18	18	210	400	105	DB118N
22 way	1	22	22	210	472	105	DB122N
27 way	1	27	27	250	565	120	DB127N
32 way	2	16	32	365	420	120	DB232N
36 way	2	18	36	365	480	120	DB236N
48 way	3	16	48	490	420	120	DB348N
54 way	3	18	54	490	480	120	DB354N
64 way	4	16	64	615	420	120	DB464N
72 way	4	18	72	615	480	120	DB472N
90 way	5	18	90	770	480	120	DB590N
108 way	6	18	108	945	480	120	DB6108N
126 way	7	18	126	1070	480	120	DB7126N
154 way	7	22	154	1070	555	120	DB7154N
144 way	8	18	144	1195	480	120	DB8144N
176 way	8	22	176	1195	555	120	DB8176N

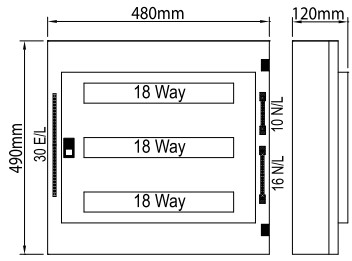
Technical Data

Design according to	IEC 60439-3
Material	1.2mm mild steel (1-6 row type) 1.5mm mild steel (7-8 row type)
Degree of protection	IP30
Finishing	Light grey colour with oven baked epoxy powder paint (RAL7035)

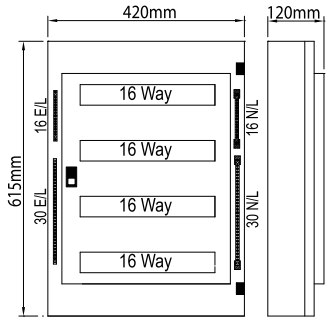
Fitted with one set neutral and earth link.
Without components, wiring and busbar



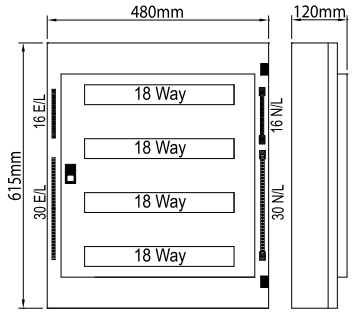
DB348N



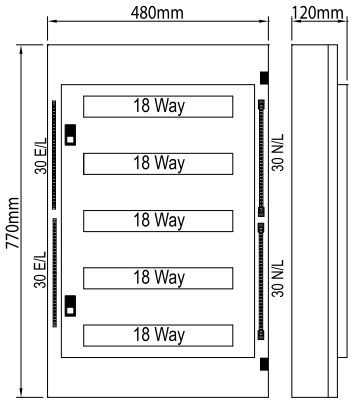
DB354N



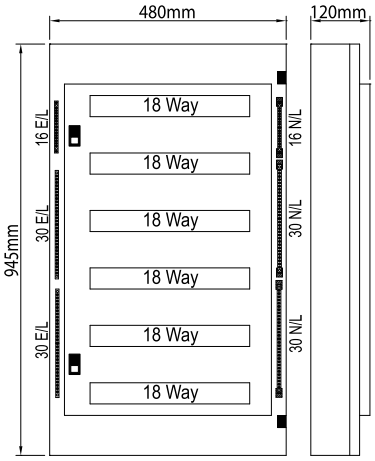
DB464N



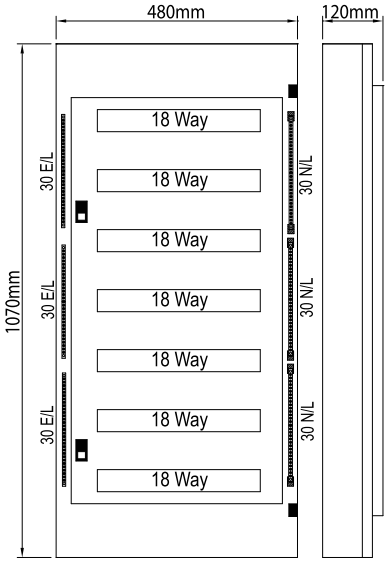
DB472N



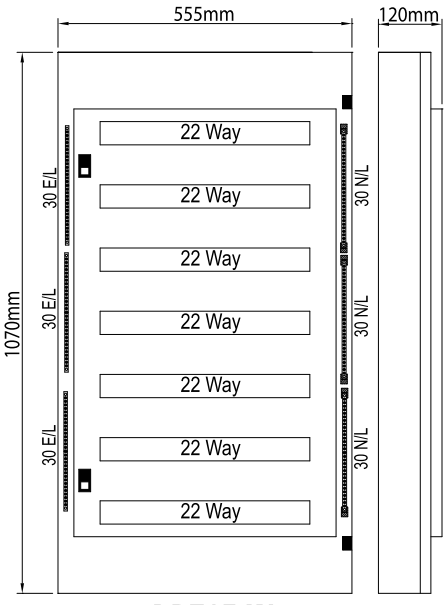
DB590N



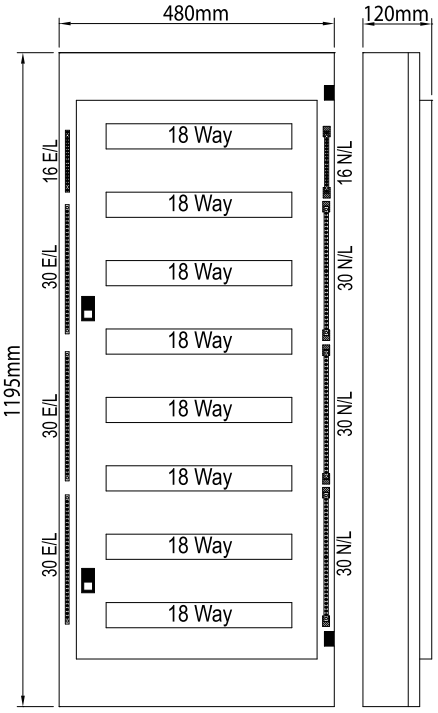
DB6108N



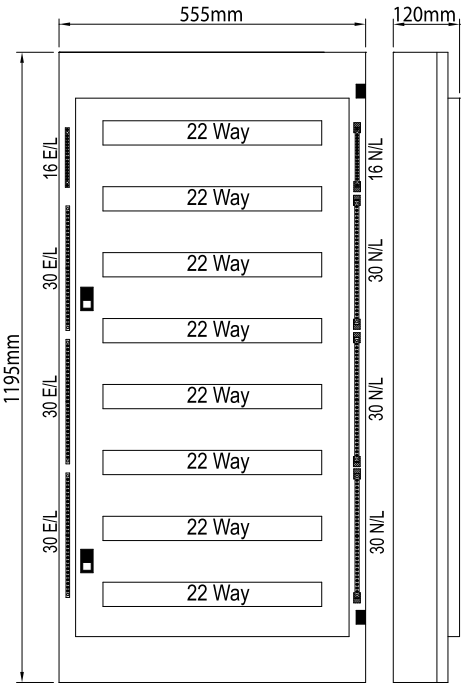
DB7126N



DB7154N



DB8144N

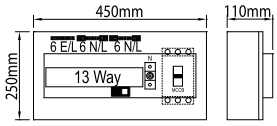


DB8176N

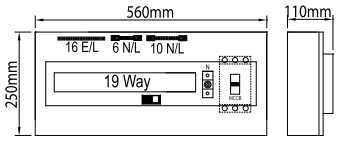
E/L - Earth Link
N/L - Neutral Link

Metalclad DB enclosure (consumer unit)

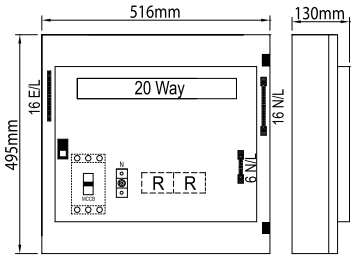
DB suitable to fit MCCB as incomer (DB-MN Series)



DB113MN



DB119MN



DB120MNSP

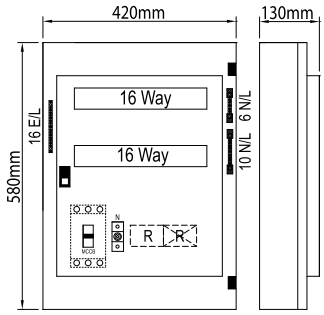
E/L - Earth Link
N/L - Neutral Link
R - space for RCCB

type	no. of row	way / row	mod. way	H (mm)	W (mm)	D (mm)	cat. no
13 way*	1	13	13	250	450	110	DB113MN
19 way*	1	19	19	250	560	110	DB119MN
20 way**	1	20	20	516	495	130	DB120MNSP
32 way**	2	16	32	580	420	130	DB232MN
36 way***	3	12	36	740	350	130	DB336MN
54 way**	3	18	54	740	480	130	DB354MN
72 way**	4	18	72	865	480	130	DB472MN
90 way**	5	18	90	1030	480	130	DB590MN
108 way**	6	18	108	1155	480	130	DB6108MN
126 way**	7	18	126	1280	480	130	DB7126MN
154 way**	7	22	154	1280	555	130	DB7154MN
144 way**	8	18	144	1405	480	130	DB8144MN
176 way**	8	22	176	1405	555	130	DB8176MN

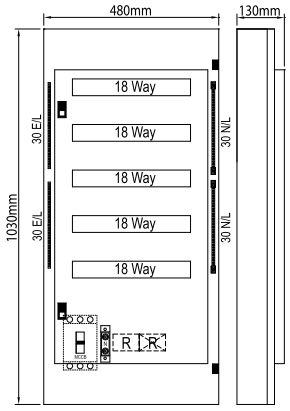
Technical Data

Design according to	IEC 60439-3
Material	1.2mm mild steel (1-6 row type)
	1.5mm mild steel (7&8 row type)
Degree of protection	IP30
Finishing	Light grey colour with oven baked epoxy powder paint (RAL7035)

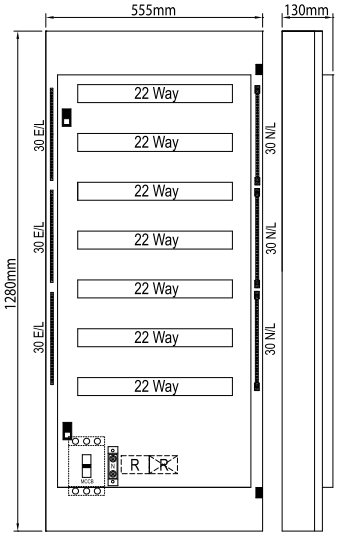
Fitted with one set neutral and earth link.
Without components, wiring and busbar
* with space provision for MCCB only.
** with space provision for MCCB & 2nos. RCCB.
*** with space provision for MCCB & 1no. RCCB.



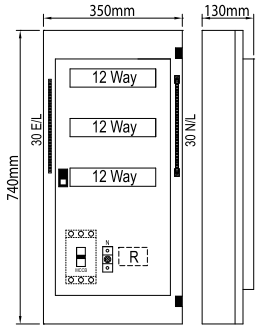
DB232MN



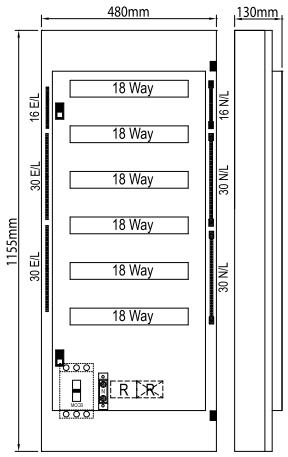
DB590MN



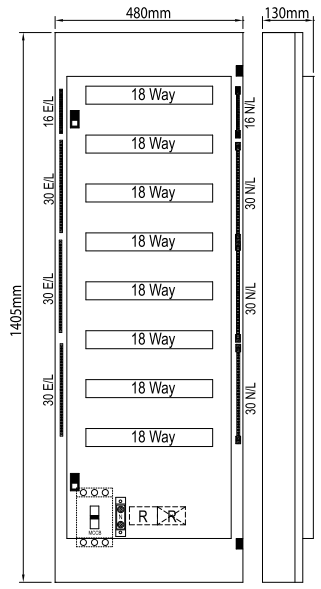
DB7154MN



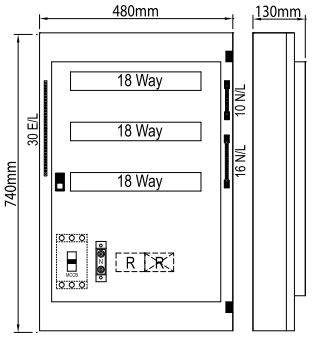
DB336MN



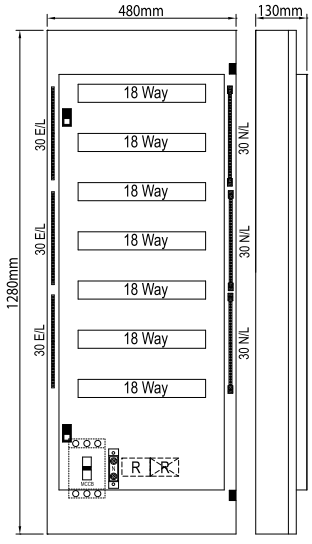
DB6108MN



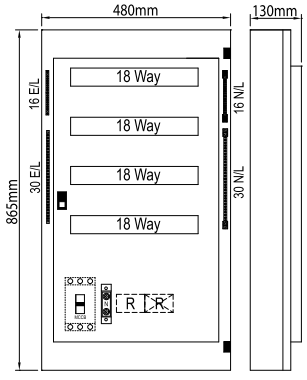
DB8144MN



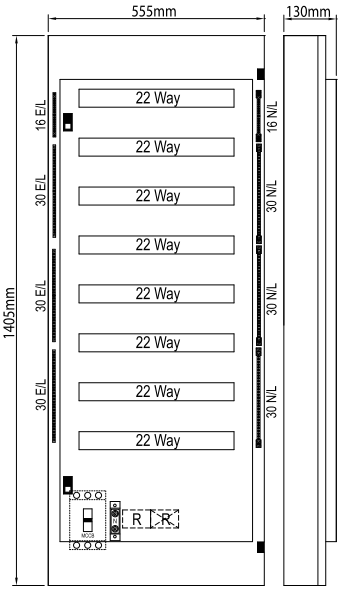
DB354MN



DB7126MN



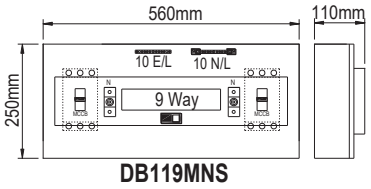
DB472MN



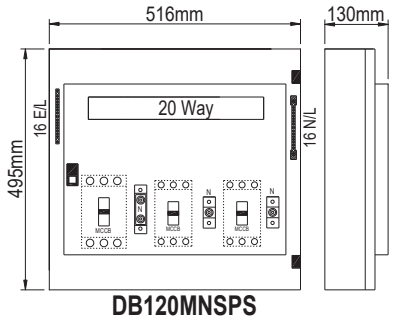
DB8176MN

Metalclad DB enclosure (consumer unit)

DB suitable to fit MCCB as incomer (DB-MNS Series)



DB119MNS



DB120MNSPS

E/L - Earth Link

N/L – Neutral Link

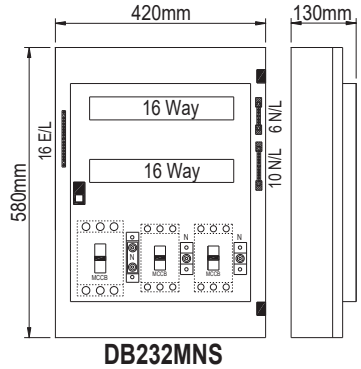
Type	No. of row	way/ row	mod. way	H (mm)	W (mm)	D (mm)	cat. no
13 way	1	13	13	250	450	110	DB113MNS
19 way	1	19	19	250	560	110	DB119MNS
20 way	1	20	20	516	495	130	DB120MNSPS
32 way	2	16	32	580	420	130	DB232MNS
54 way	3	18	54	740	480	130	DB354MNS
72 way	4	18	72	865	480	130	DB472MNS
90 way	5	18	90	1030	480	130	DB590MNS
108 way	6	18	108	1155	480	130	DB6108MNS
126 way	7	18	126	1280	480	130	DB7126MNS
154 way	7	22	154	1280	555	130	DB7154MNS
144 way	8	18	144	1405	480	130	DB8144MNS
176 way	8	22	176	1405	555	130	DB8176MNS

Technical Data

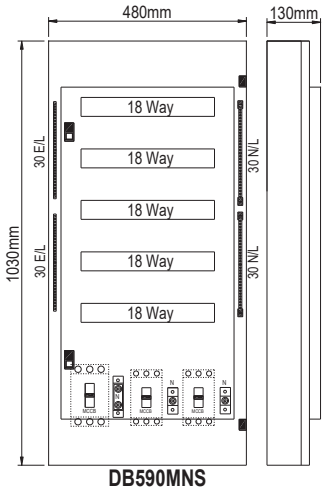
Design according to	IEC 60439-3
Material	1.2mm mild steel (1-6 row type) 1.5mm mild steel (7&8 row type)
Degree of protection	IP30
Finishing	Light grey colour with oven baked epoxy powder paint (RAL7035)

Fitted with one set neutral and earth link.

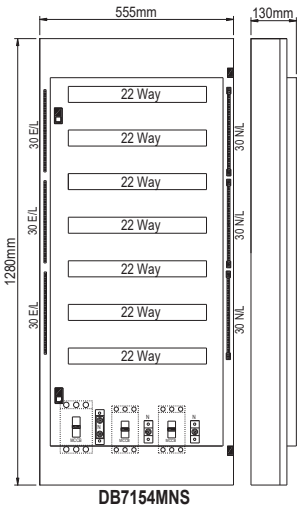
Without components, wiring and busbar



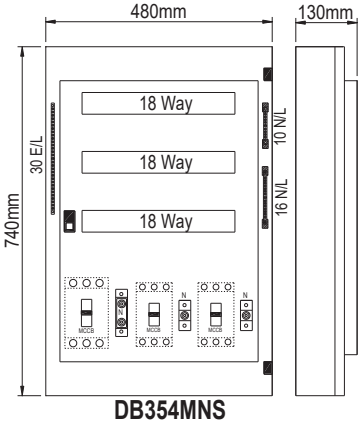
DB232MNS



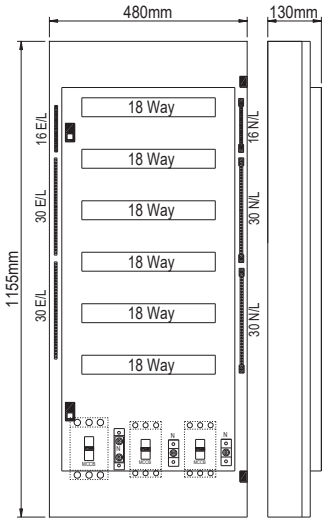
DB590MNS



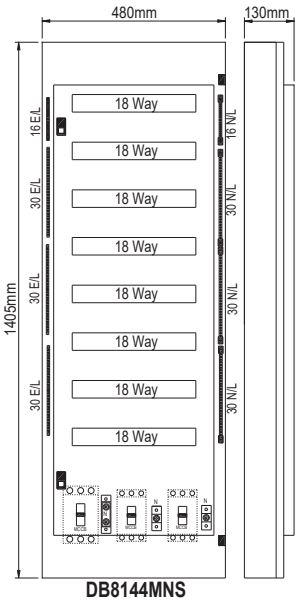
DB7154MNS



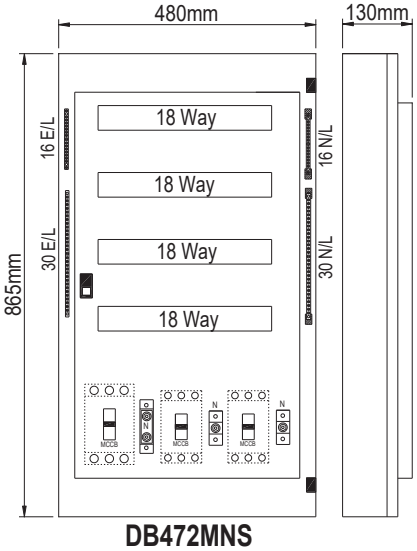
DB354MNS



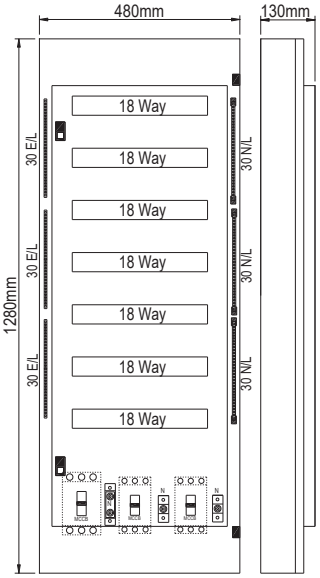
DB6108MNS



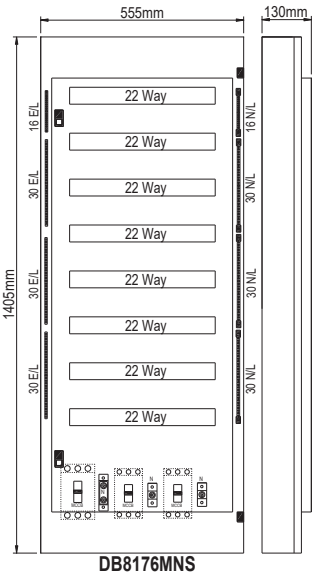
DB8144MNS



DB472MNS



DB7126MNS



DB8176MNS

Standard ready to use Metal DB enclosure (Consumer Unit)

Fitted with Incomer & RCCB

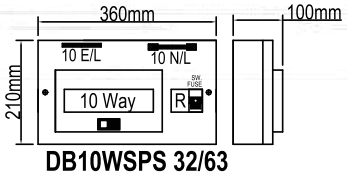
Fitted with SWITCHFUSE Incomer & RCCB (DB-SPS & TPS Series)

Technical Data	
Design according to	IEC 60439-3
Material	1.0mm mild steel
Degree of protecion	IP30
Finishing	Light grey colour with oven baked expoxy powder paint (RAL7035)

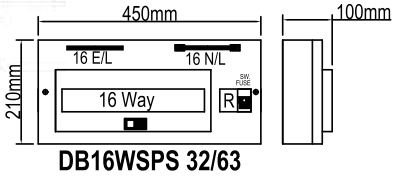
Fitted with one set neutral and earth link
With wiring and busbar
Fitted with Switchfuse incomer & RCCB.

Fitted with Switchfuse Incomer & RCCB

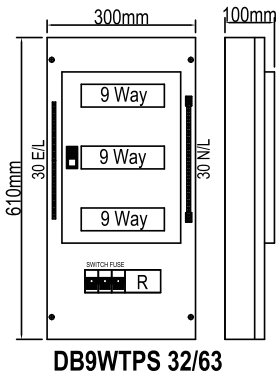
type	no. of row	way / row	mod. way	SW. FUSE	RCCB	cat. no
32A SPN	1	10	10	32A	40/0.1	DB10WSPS32
32A SPN	1	16	16	32A	40/0.1	DB16WSPS32
63A SPN	1	10	10	63A	63/0.1	DB10WSPS63
63A SPN	1	16	16	63A	63/0.1	DB16WSPS63
32A TPN	3	9	27	32A	40/0.3	DB9WTPS32
32A TPN	3	12	36	32A	40/0.3	DB12WTPS32
32A TPN	3	18	54	32A	40/0.3	DB18WTPS32
63A TPN	3	9	27	63A	63/0.3	DB9WTPS63
63A TPN	3	12	36	63A	63/0.3	DB12WTPS63
63A TPN	3	18	54	63A	63/0.3	DB18WTPS63



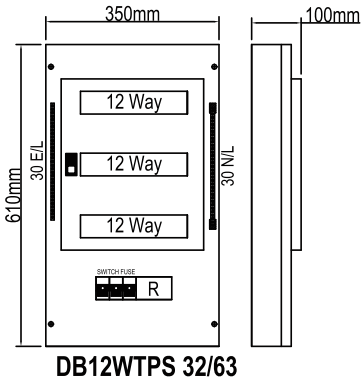
DB10WSPS 32/63



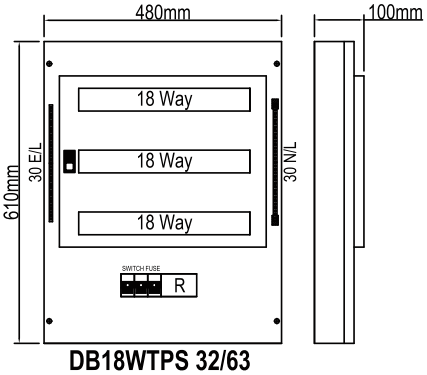
DB16WSPS 32/63



DB9WTPS 32/63



DB12WTPS 32/63



DB18WTPS 32/63

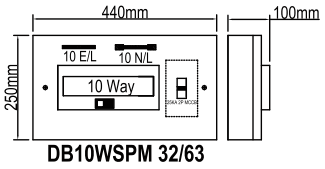
E/L - Earth Link
N/L - Neutral Link
R- space for RCCB

Fitted with MCCB Incomer & RCCB (DB-SPM & TPM Series)

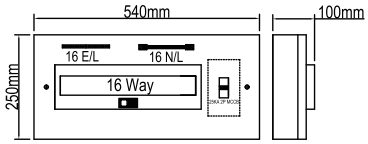
Technical Data

Design according to	IEC 60439-3
Material	1.0mm mild steel
Degree of protecion	IP30
Finishing	Light grey colour with oven baked expoxy powder paint (RAL7035)

Fitted with one set neutral and earth link
With wiring and busbar
Fitted with MCCB incomer & RCCB.



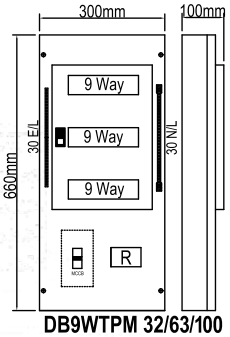
DB10WSPM 32/63



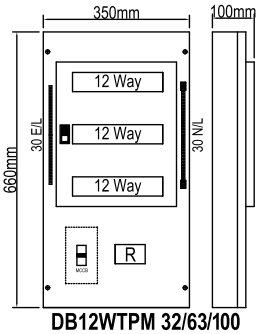
DB16WSPM 32/63

Fitted with MCCB Incomer & RCCB

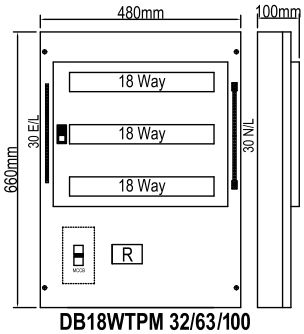
type	no. of row	way / row	mod. way	MCCB 25kA	RCCB	cat. no
32A SPN	1	10	10	32A	40/0.1	DB10WSPM32
32A SPN	1	16	16	32A	40/0.1	DB16WSPM32
63A SPN	1	10	10	63A	63/0.1	DB10WSPM63
63A SPN	1	16	16	63A	63/0.1	DB16WSPM63
32A TPN	3	9	27	32A	40/0.3	DB9WTPM32
32A TPN	3	12	36	32A	40/0.3	DB12WTPM32
32A TPN	3	18	54	32A	40/0.3	DB18WTPM32
63A TPN	3	9	27	63A	63/0.3	DB9WTPM63
63A TPN	3	12	36	63A	63/0.3	DB12WTPM63
63A TPN	3	18	54	63A	63/0.3	DB18WTPM63
100 TPN	3	9	27	100 A	100/0.3	DB9WTPM100
100 TPN	3	12	36	100 A	100/0.3	DB12WTPM100
100 TPN	3	18	54	100 A	100/0.3	DB18WTPM100



DB9WTPM 32/63/100



DB12WTPM 32/63/100



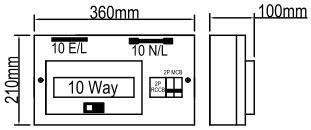
DB18WTPM 32/63/100

Fitted with MCB Incomer & RCCB (DB-SPB & TPB Series)

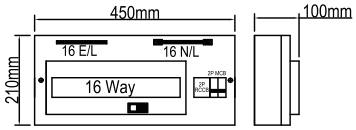
Technical Data

Design according to	IEC 60439-3
Material	1.0mm mild steel
Degree of protecion	IP30
Finishing	Light grey colour with oven baked expoxy powder paint (RAL7035)

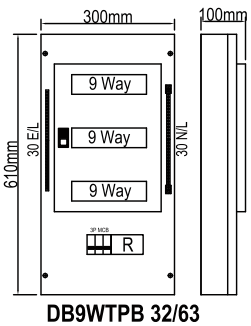
Fitted with one set neutral and earth link
With wiring and busbar
Fitted with MCB incomer & RCCB.



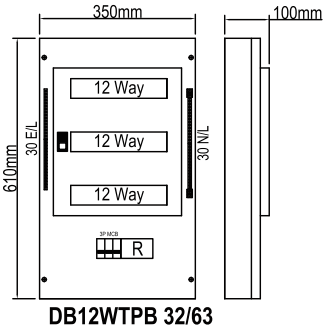
DB10WSPB 32/63



DB16WSPB 32/63



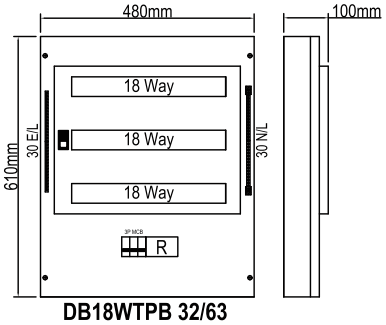
DB9WTPB 32/63



DB12WTPB 32/63

Fitted with MCB Incomer & RCCB

type	no. of row	way / row	mod. way	MCB 6kA	RCCB	cat. no
32A SPN	1	10	10	32A	40/0.1	DB10WSPB32
32A SPN	1	16	16	32A	40/0.1	DB16WSPB32
63A SPN	1	10	10	63A	63/0.1	DB10WSPB63
63A SPN	1	16	16	63A	63/0.1	DB16WSPB63
32A TPN	3	9	27	32A	40/0.3	DB9WTPB32
32A TPN	3	12	36	32A	40/0.3	DB12WTPB32
32A TPN	3	18	54	32A	40/0.3	DB18WTPB32
63A TPN	3	9	27	63A	63/0.3	DB9WTPB63
63A TPN	3	12	36	63A	63/0.3	DB12WTPB63
63A TPN	3	18	54	63A	63/0.3	DB18WTPB63



DB18WTPB 32/63

E/L - Earth Link
N/L - Neutral Link
R- space for RCCB

Consumer Unit
(Insulating Material)

Technical Data

Application

DB enclosure suitable for fitting devices with maximum rating of 63A

Suitable for domestic and commercial installations.

As per IEC Standard requirements, we strongly advise to use consumer units with ABS Fire Retardant (FR) for better protection against hazardous continuous burning in case of fire.

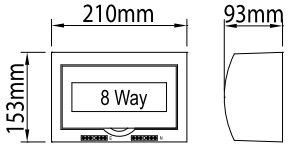
Surface mounting type.
Material : Hight Impact PS

type	no. of row	way / row	mod. way	cat. no
8 way	1	8	8	MG0800N
10.5 way	1	10.5	10.5	MG1050N
15.5way	1	15.5	54	MG1550N
18.5way	1	18.5	17	MG1850N
23 way	1	23	23	MG2300N
*30 way	2	15	30	MG3000N
*45 way	3	15	45	MG4500N
*54 way	3	18	54	MG5400N

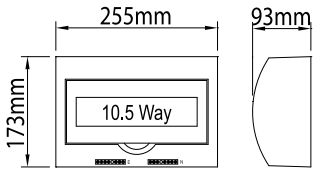
* Non-transparent cover

Surface mounting type. (non-transparent cover)
Material : Hight Impact PS Fire Retardant (FR) to IEC 60695-2-11

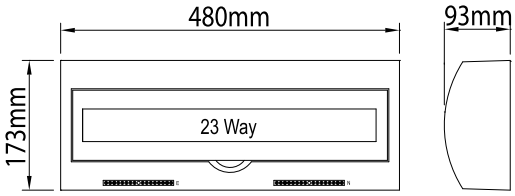
type	no. of row	way / row	mod. way	cat. no
15.5 way	1	15.5	15.5	MG1550FR
18.5 way	1	18.5	18.5	MG1850FR
23 way	1	23	23	MG2300FR
30 way	2	15	30	MG3000FR
45 way	3	15	45	MG4500FR
54 way	3	18	54	MG5400FR



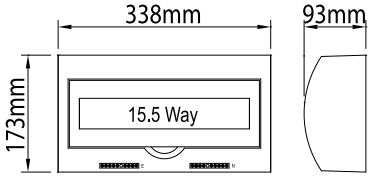
MG0800N



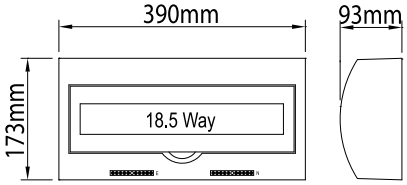
MG1050N



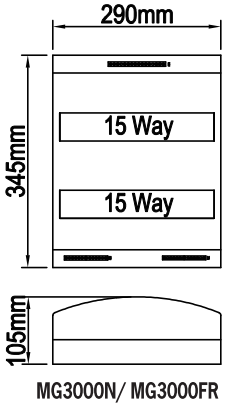
MG2300N/ MG2300FR



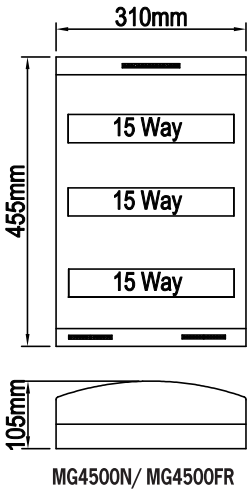
MG1550N/ MG1550FR



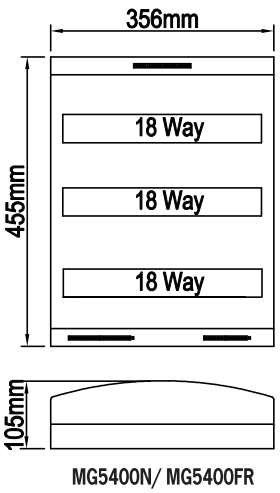
MG1850N/ MG1850FR



MG3000N/ MG3000FR



MG4500N/ MG4500FR



MG5400N/ MG5400FR

Distribution Board/ Consumer Unit

Testing Procedure After Assembly Flow Chart For Final Quality Control

ASSEMBLY & WIRING OF DB / Consumer unit as per approved drawing

EARTH CONTINUITY TEST

Fail

Check & Rework

ISULATION RESISTANCE TEST

Fail

Check & Rework

HIGH VOLTAGE TEST

Fail

Check & Rework

PACKING

STORE AND DELIVERY

HIGHT VOLTAGE TEST

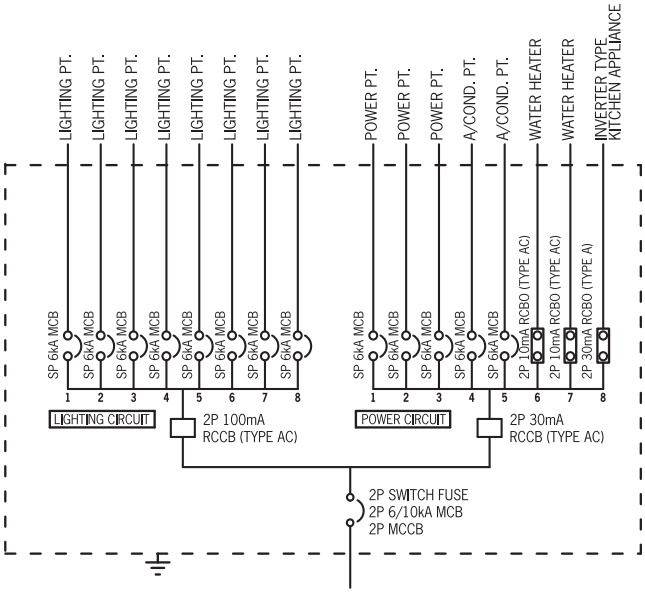
Using CE Multi Tester
(Digital Type)
Brand: Metrel
Model: MI 2094
Calibrated By:
Sendi Mahir Sdn Bhd
ISO-17025-LAB

REGISTERED SWITCHBOARD MANUFACTURER
(≤ 600V)

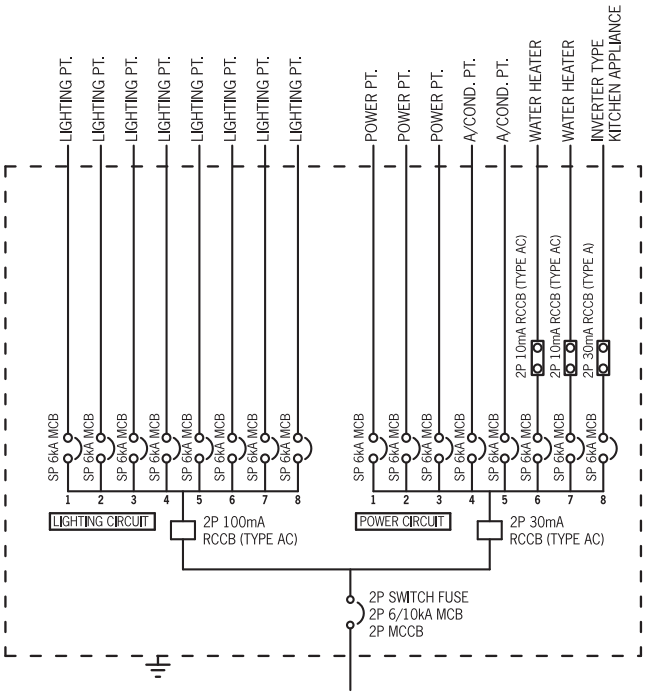
Suruhanjaya Tenaga

Approved for Government Projects

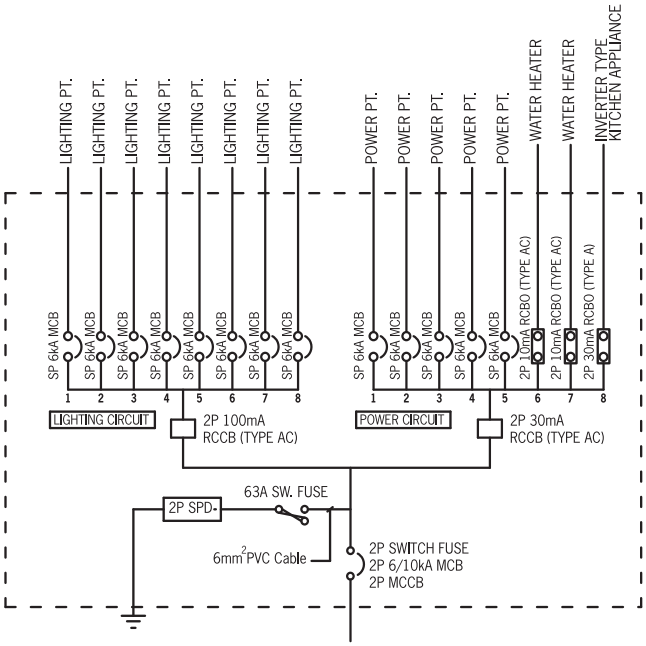
General Single Line Circuit Diagram for Single Phase
Consumer Units (DB) (Insulated or Metalclad Type)



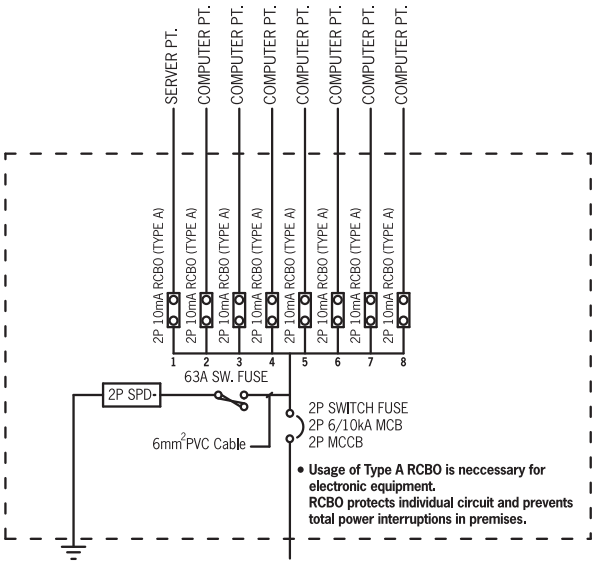
BASIC SPN DISTRIBUTION BOARD (DB)



BASIC SPN DISTRIBUTION BOARD (DB)



SPN DISTRIBUTION BOARD INCORPORATED WITH SURGE PROTECTIVE DEVICE(SPD) FOR PROTECTION AGAINST OVER VOLTAGE CAUSED BY INDIRECT LIGHTNING STRIKE



SPN DISTRIBUTION BOARD FOR COMPUTER CIRCUITS INCORPORATED WITH SURGE PROTECTIVE DEVICE (SPD) FOR LIGHTNING PROTECTION

General Recomendations

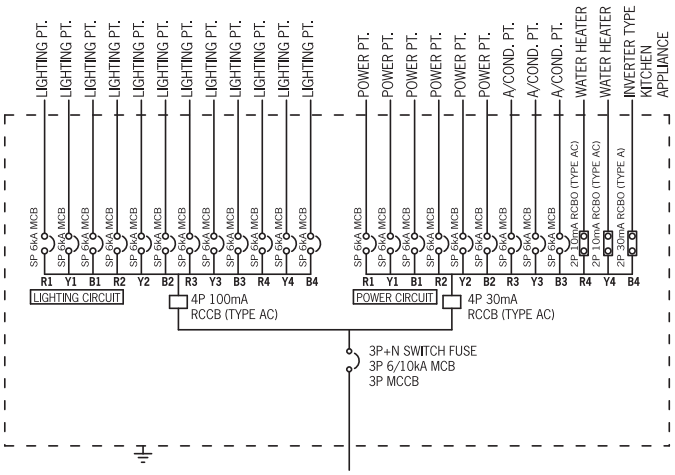
- Usage of 10mA RCCB or RCBO in wet areas gives added protection.
- Type A RCCB or RCBO for general appliances using inverter technology to ensure safe protection.

Notes:

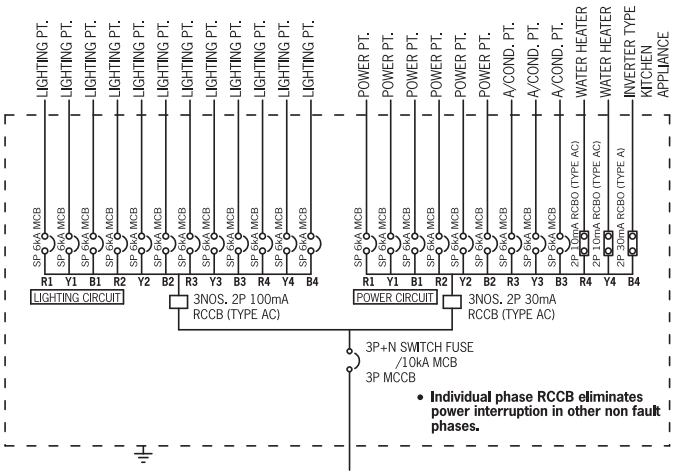
- All the above Single Line Diagrams are examples intended for reference to a comprehensive design configuration.
- Final circuitry diagrams designs are subjected to Consultants recomendations. It may vary or extended to include any additional circuitry.
- Rated currents are not indicated in the drawings. It is subjected to power demands as required in each circuitry.

General Single Line Circuit Diagram for Three Phase

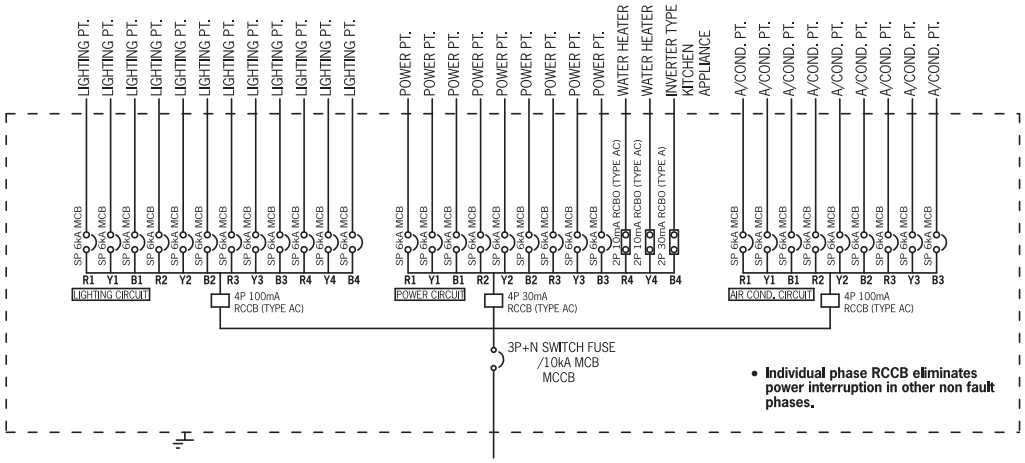
Consumer Units (DB) (Insulated or Metalclad Type)



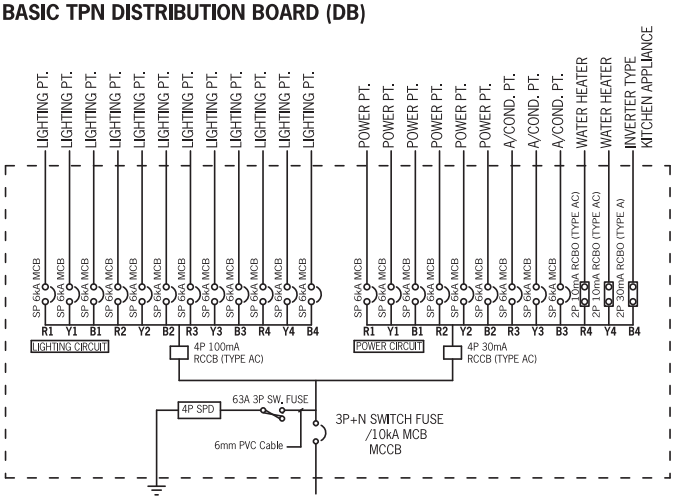
BASIC TPN DISTRIBUTION BOARD (DB)



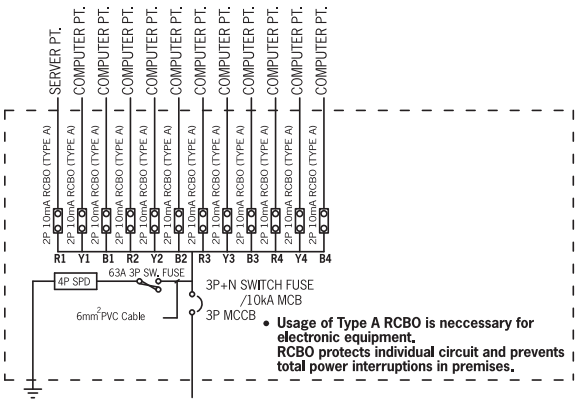
BASIC TPN DISTRIBUTION BOARD (DB)



BASIC TPN DISTRIBUTION BOARD (DB)



TPN DISTRIBUTION BOARD INCORPORATED WITH SURGE PROTECTIVE DEVICE(SPD) FOR PROTECTION AGAINST OVER VOLTAGE CAUSED BY INDIRECT LIGHTNING STRIKE



TPN DISTRIBUTION BOARD FOR COMPUTER CIRCUITS INCORPORATED WITH SURGE PROTECTIVE DEVICE (SPD) FOR LIGHTNING PROTECTION

General Recomendations

- Usage of 10mA RCCB or RCBO in wet areas gives added protection.
- Type A RCCB or RCBO for general appliances using inverter technology to ensure safe protection.

Notes:

- All the above Single Line Diagrams are examples intended for reference to a comprehensive design configuration.
- Final circuitry diagrams designs are subjected to Consultants recomendations. It may vary or extended to include any additional circuitry.
- Rated currents are not indicated in the drawings. It is subjected to power demands as required in each circuitry.

MAXGUARD SWITCHGEAR SDN BHD (467568 W)

No.8, Jalan Anggerik Mokara 31/47, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia
Tel: (603) 5121 2288, 5121 3868, 5122 4868 Fax: (603) 5121 2868 Website : www.maxguard.com.my

WARRANTY LETTER

TERMS & CONDITIONS FOR PRODUCT WARRANTY

1 Unless specified otherwise, Maxguard Switchgear S/B warrants to the customer that MAXGUARD branded products will be free from defects in the materials and workmanship affecting period of normal use as stated under Standard Warranty from the date marked on the product.

2 This warranty is valid only in Peninsular Malaysia, Sabah and Sarawak

3 This Standard Warranty does not cover damage, fault, failure or malfunction due to external causes including accident, abuse, misuse, mishandling, problem with electrical power caused by voltage surge and lightning strike, wrong wiring connection, servicing by not authorized personnel, usage and/or installation not in accordance with the product instruction, normal wear and tear, act of God, fire, flood, war, act of violence, any attempt by any person other then Maxguard Switchgear S/B personnel to adjust or repair the product.

4 During the warranty period, Maxguard Switchgear S/B will repair or replace products returned to our company or authorized distributors. Customer must prepay shipping and transportation charges and insure the shipment or accept the risk or damage or loss during shipment or transportation. Maxguard Switchgear S/B will ship the repaired or replacement products to the customer freight prepaid at no additional cost.

5 The Standard Warranty Period stated below is strictly based from the month marked on the products. If the defective product returned to us after warranty period, we are not liable to repair or replace the product.

Product	Warranty Period
Miniature Circuit Breaker (MCB)	60 months
Switchfuse	60 months
Residual Current Operated Circuit Breaker (RCCB)	60 months
Moulded Case Circuit Breaker (MCCB)	60 months
Isolator	60 months
Residual Current Operated Circuit Breaker with Intergral Overcurrent Protection (RCBO)	60 months
Change Over Switch	60 months
24 Hour Time Switch	12 months
Contactor	12 months
Surge Protection Device (SPD) *Warranty : Not covered for operated (indicator changed to red colour) SPD	24 months
Colour Indicator Light	12 months

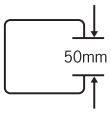
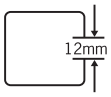
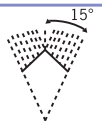
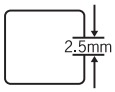
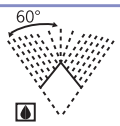
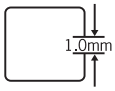
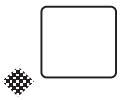
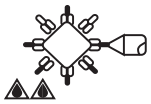
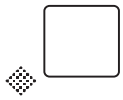
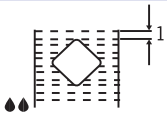
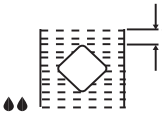
6 All defective products must be returned to Maxguard Switchgear S/B for checking before any replacement will be made. Replacement or repaired products will be shipped back to customer within 3 weeks from the date of receiving the goods. If the products are found defective as stated in Item 3 above, and not due to manufacturing defects, the goods will be returned to the customer and no further claim will be entertained.

Note: This letter of Product Warranty supersede all other previous letter of warranty
Warranty effective date from : 1st January 2022

The IP Code Symbols

The chart at the right illustrates the use of special symbols in the IP classification system. In the "1st digit" column, not the grid-like symbols net to numbers 6 and 6. In the "2nd digit" column numbers 3-8 are symbolised by teardrop shaped symbols, sometimes enclosed in a box or a triangle, sometimes unenclosed (#7 - 8). These symbols can be placed on equipment to illustrate the IP protection provided.

IP52 = IP Letter Code _____ IP
1st Digit _____ 5
2nd Digit _____ 4

1st Digit	Protection from solid objects	2nd Digit	Protection from moisture
0	Non protected	0	Non protected
1	 Protected against solid objects greater than 50mm	1	 Protected against dripping water
2	 Protected against solid objects greater than 12mm	2	 Protected against dripping water when tilted up to 15°
3	 Protected against solid objects greater than 2.5mmØ	3	 Protected against spraying water
4	 Protected against solid objects greater than 1.0mmØ	4	 Protected against splashing water
5	 Dust protected	5	 Protected against water jets
6	 Dust tight	6	 Protected against heavy water jets
Note: EN 60529 does not specify sealing effectiveness against the following: mechanical damage of the equipment; the risk of explosions; certain types of moisture conditions, e.g. those that are produced by condensation; corrosive vapours; funus; vermin		7	 Protected against against the effects of immersion
		8	 Protected against submersion (see note)

DESIGN AND TECHNICAL DETAILS

In accordance with our policy of continuous improvement we reserve the right to change specifications and designs without notice. All illustrations, descriptions, dimensions published are for reference only and cannot be held binding on the Company.

"If it's not good, we don't sell it, if it's not perfect, we will replace it and if it's not with a guarantee, it's not MAXGUARD"

Maxguard®

SAFE AND SAVE Since 1998

MAXGUARD SWITCHGEAR SDN. BHD. (467568-W)

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