SWITCHGEAR

SAFE & SURE

SINGLE PHASE OVER CURRENT OR EARTH FAULT RELAY WITH HIGHSET TYPE MC12A

Relay MC12A is a single phase, non-directional, over current or Earth fault relay with one measuring element. The relay can be used for feeder protection in all low voltage, medium voltage and high voltage sub-stations. The relay has a built in high set facility. DIP switches are provided on the front panel for pick up and time delay settings. User has a choice of 7 trip time characteristics.

50 / 51, 50N/ 51N

Single Phase Over current or Earth Fault
Inverse & Definite time trip Characteristics
Built in high set facility
Micro-controller based design
Draw out facility

TECHNICAL SPECIFICATIONS

1.0	**Rated Current (In)**	1A or 5A
2.0	**Rated Frequency**	50Hz ± 2.5 Hz
3.0	**Auxiliary Power Supply**	24V to 110V AC/DC ± 10% 95V to 240V AC/DC ± 10%
4.0	**Relay Settings**:	
	Current **(Is)**	One of the three ranges (User selectable) 10% to 40% of **In** in steps of 2% or 20% to 80% of **In** in steps of 4 % or 50% to 200% of **In** in steps of 10%
	Highset Current **(Ihs)**	2 **Is** to 16 **Is** in steps of 2 **Is** and disable
	Time Multiplier **TMS**	0.1 to 1.6 in steps of 0.1
5.0	**Operating Characteristics**	Front panel programmable, using push buttons.
	Time /Current characteristics	
	Pick up current	same as set current **Is**
	Reset Current	95% to 90% of set current **Is**
	Operating time :	

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	Inverse time	Four curves, As per IS 3231:1987 a) Normal Inverse 3s b) Normal Inverse 1.3s c) Very Inverse d) Extremely Inverse
	Definite time	Three curves as follows: e) Definite Time 1s f) Definite time 10s g) Definite time 100s
	Accuracy	As per Error class 5 of IS3231: 1987
	Reset time	Less than 50 millisec
	Highset (Instantaneous trip)	
	Accuracy	As per Error class 5 of IS3231: 1987
	Operating time	Less than 50 ms for **Iin** < 1.5 **Ihs** Less than 35 ms for **Iin** > 1.5 **Ihs** (**Iin** = input current)
6.0	**Burden**	Less than 0.25 VA on all settings Less than 5.5 VA at Auxiliary Power supply
7.0	**Operation Indicators**	Separate LED indications for: • Power on • Trip status (LED blinks when input crosses set point and becomes steady on when relay has tripped. LED has to be manually reset) • Time current characteristics selected
8.0	**Output Relay Contacts**	• 2 c/o contacts for trip signal (self reset)
9.0	**Output contact rating**	
	Rated voltage	250 V AC / 30 V DC
	Max. S/W voltage	440 V AC / 300 V DC
	Rated current	8A
	Max. Current	14A
	Rated Breaking Capacity	2000VA / 240 W (Resistive)
10.0	**Over Load capacity**	2 **In** continuously 20 times **In** for 1 sec
11.0	**Electrical performance Specifications**	Please refer separate document " General Electrical Characteristics"
12.0	**Case**	
	Front Bezel	158 x 71 mm
	Panel Cutout	142 x 62 mm
	Depth	224 mm
13.0	**Weight**	0.9 kg approx.

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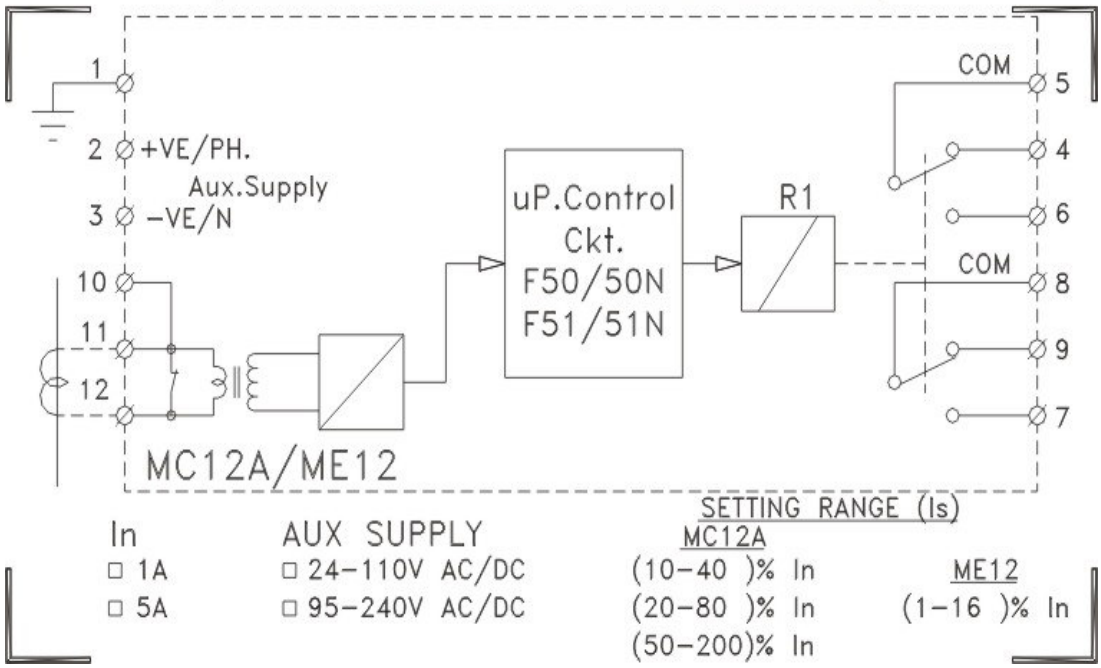
WIRING DIAGRAM - MC12A/ME12



CATALOG NOs.

MC12AA10X00
MC12AA50X00
MC12AB10X00
MC12AB50X00

M	C	1	2	A	A	1	0	X	0	0

Aux. Power supply
A = 24 to 110 V AC/DC ± 10%
B = 110 to 240 V AC/DC ± 10%

CT sec rating
1 = 1 A, 5 = 5A

ORDERING INFORMATION:

1) Auxiliary Power supply
2) CT secondary rating

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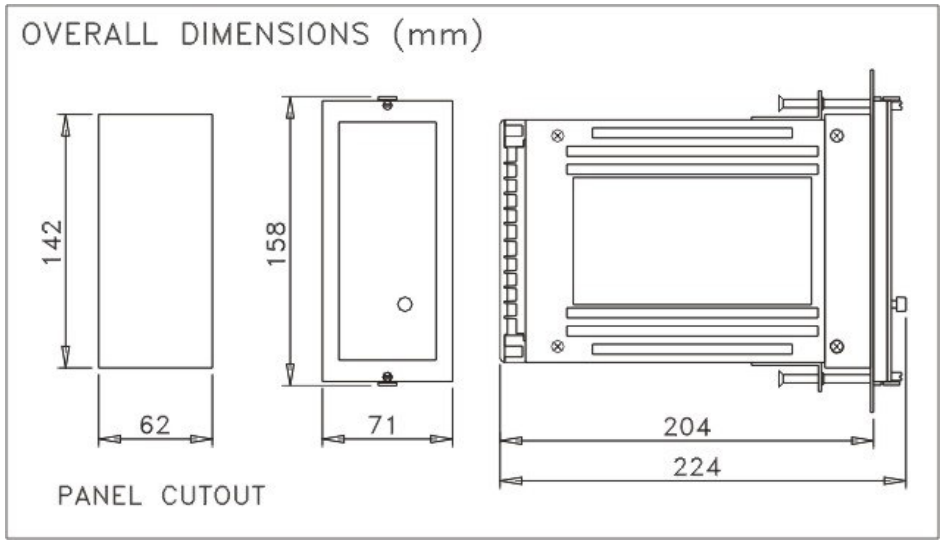
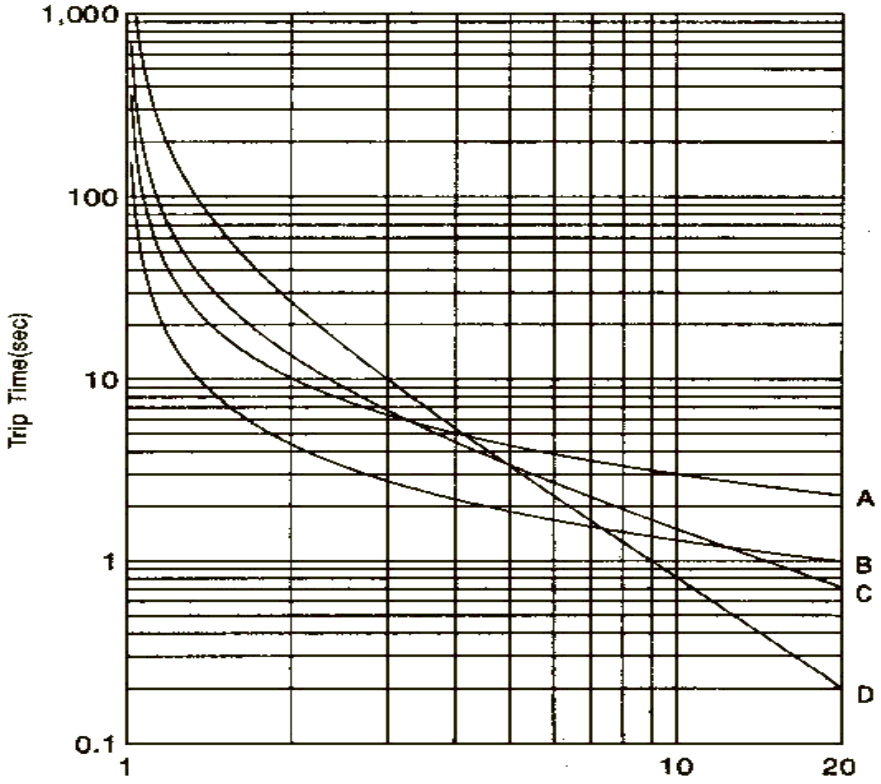


MC12A relay is manufactured by Larsen & Toubro Limited, Mysore works

Time - Current Characteristics (at TMS=1)

For Trip time at TMs other than 1
Trip time = (Trip time at TMS=1) x TMS or 50 ms whichever is more



A = Normal Inverse 3.0 sec
B = Normal Inverse 1.3 sec
C = Very Inverse
D = Extremely Inverse