



SINGLE PHASE OVER VOLTAGE OR UNDER VOLTAGE RELAY TYPE MV12

Relay MV12 is a single phase, over voltage or Under voltage relay with one measuring element. The relay can be used for feeder protection in all low voltage, medium voltage and high voltage sub-stations. DIP switches are provided on the front panel for pick up and time delay settings. User has a choice of 7 trip time characteristics.

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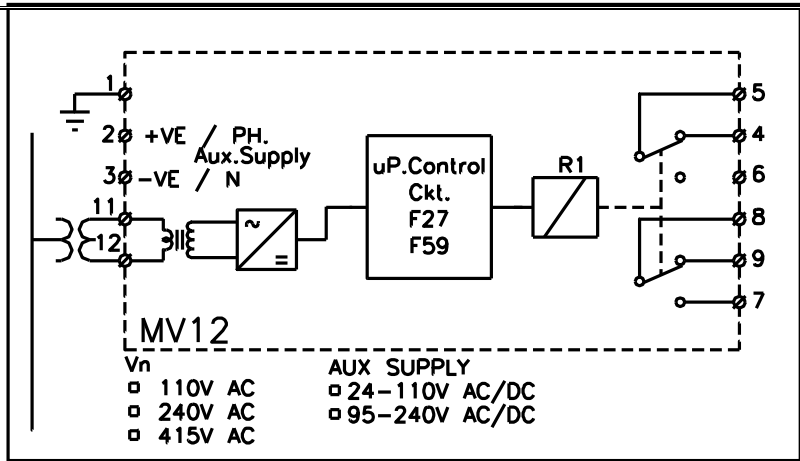
**Single Phase Over voltage or Under voltage
Inverse & Definite time trip Characteristic
Micro-controller based design
Field selectable input ranges**



TECHNICAL SPECIFICATIONS

- | | | |
|-----|----------------------------------|--|
| 1.0 | Rated Voltage (Vn) | 110 / 240 / 415 V AC (Field Selectable) |
| 2.0 | Rated Frequency | 50Hz ± 2.5 Hz |
| 3.0 | Auxiliary Power Supply | 24V to 110V AC/DC
OR
95V to 240V AC/DC |
| 4.0 | Relay Settings : | |
| | Pick up voltage (Vs) | |
| | Over Voltage Mode | 105% to 180% of Vn in steps of 5% |
| | Under Voltage mode | 95% to 20% of Vn in steps of 5 % |
| | Time Multiplier TMS | 0.1 to 1.6 in steps of 0.1 |
| 5.0 | Operating Characteristics | |
| | Time /Current characteristics | Normal Inverse 3.5 sec in O/V mode
Normal Inverse 5.7 sec in U/V mode
Definite time 1, 10, 100 sec |
| | Pick up voltage | Same as set voltage Vs |
| | Reset Voltage | (90% to 95%)of set voltage Vs for Over voltage
(105% to 110%)of set voltage Vs for Under voltage |
| | Accuracy | ± 5% of Vs |

	Operating time :	
	Normal Inverse	As per IS3231:1987. Please refer fig. 2 for details. (The curve is given for $V_n=110V$. For $V_n=240V$ and $V_n=415 V$, it is limited by over load capacity)
	Definite time	Three ranges (1 sec, 10 sec, 100 sec) Time = TMS x Range c) With three ranges as above, user can get a definite time delay from 0.1sec to 160 sec
	Accuracy	As per Error class 5 of IS3231:1987
	Reset time	Less than 50 millisecond
6.0	Burden	Less than 0.25 VA at PT input Less than 8 VA at Auxiliary Power supply
7.0	Operation Indicators	Separate LED indications for : <ul style="list-style-type: none"> • Power on • Over Voltage • Under Voltage • 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 • 2 c/o contacts for trip signal (self reset)
8.0	Output Relay Contacts	
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	14 A
	Rated Breaking Capacity	2000VA / 240 W (Resistive)
10.0	Over Load capacity	800 Volts
11.0	Electrical performance Specifications	Please refer separate document “ General Electrical Characteristics”
12.0	Case	
	Front Bezel	158 x 71 mm
	Panel Cutout	150 x 62 mm
	Depth	224 mm
13.0	Weight	0.9 kg approx.



CATALOG NOs.

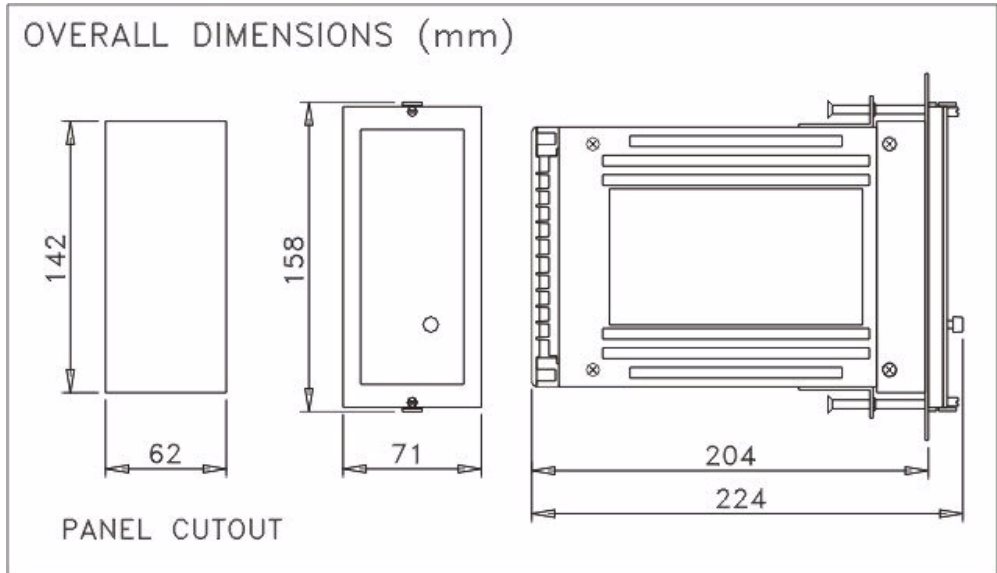
MV12AA00X00
MV12AB00X00



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

ORDERING INFORMATION:

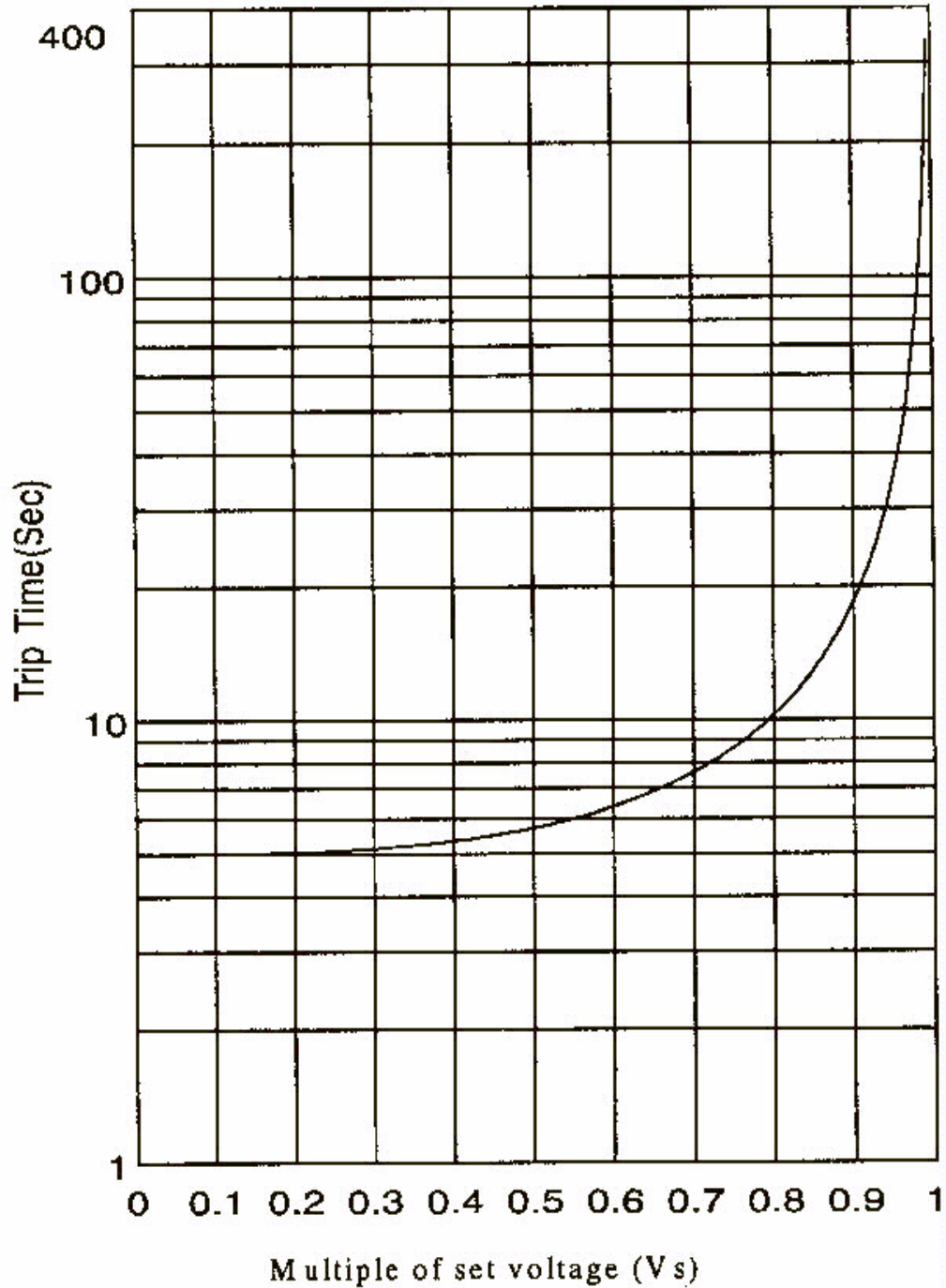
- 1) Auxiliary Power supply



**Time voltage Characteristics (At TMS=1)
Under Voltage**

For Trip time at TMS other than 1

$$\text{Trip time} = (\text{Trip time at TMS=1}) \times \text{TMS}$$

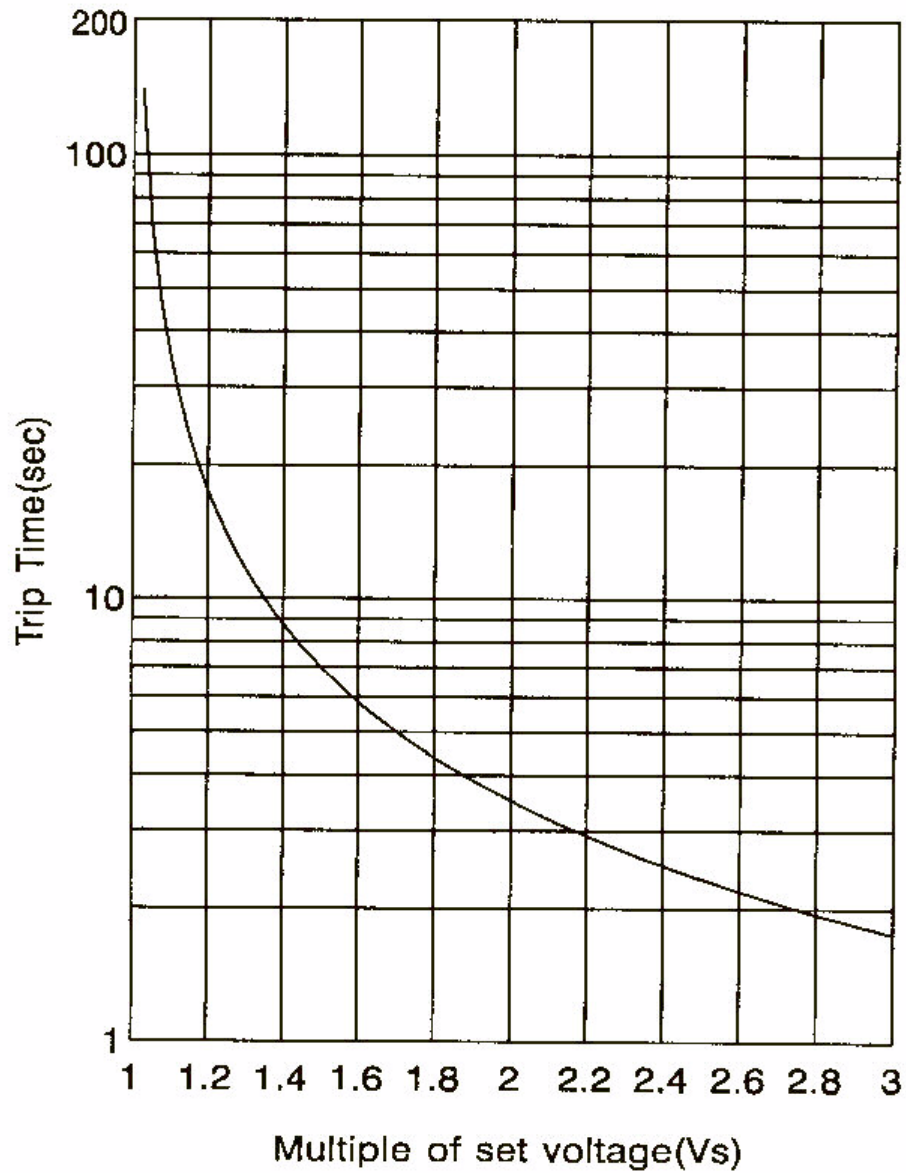


Time Voltage Characteristics (At TMS=1)

Over Voltage

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**MV12A relay is manufactured by Larsen & Toubro Limited,
Mysore works.**