

MOTOR PROTECTION UNIT/SYSTEM

Compact Economic Design



Introduction

Frequent fluctuation in line voltage or over loading the equipment / motor leads to failure. Mechanical wear and tear causes the motor to work inefficiently or burn.

Elmeasure's Motor Protection System is a multifunction system providing comprehensive and easy to define motor protection, monitoring and control. The system offers a continuous reliable protection of motors / equipment against abnormal voltage, overload, frequency, PF, single phasing, unbalance loading of voltage and current, neutral current, phase reversal, winding short, etc.

Common Features

- User programmable password protection
- Auto-scaling of Kilo, Mega, Giga and decimal point
- Auto scrolling
- Finger touch proof terminals for voltage and current connections
- Clearance & creepage distance meets UL safety standard
- Communication with PCs, PLCs, DCS through optional RS 485/232 serial interface
- Potential free output with programmable trip time for protection
- Displays more than 25 parameters Basic (VLL, VLN, A, Hz); Power (W, VA, PF) and Energy (kW, ON-Hour)
- Displays the reasons for tripping, for future correction
- Programmable start time from sensing safe condition
- Programmable locked rotor current and time

Additional Features for MPS 8000

- Displays ON Time, load hours & number of interruption
- Simultaneous display of 7 parameters
- Intelligent power save mode
- Two field configurable parameter for continuous display
- Continuous Wh display even in Auto-scrolling mode
- Graphical display. Future up-gradation option
- Neutral current display, protection
- Single solutions for protection of motors/equipment against voltage, overload, frequency, PF, single phasing, unbalance loading of voltage and current, neutral current, phase reversal
- Programmable (intelligent inverse time) trip time for Volts/Overload/Hz/PF/Neutral current
- Programmable relay status High or Low for safe; 2 relays for alarm and trip
- Detect winding shorts
- Safe/Alarm/Trip indication for on line view
- Manual re-correction after the trip.
- Measures VLL, VLN, A, Hz, W, VA, PF, Neutral current, Wh, Load hours, ON time, No. of interruption

Parameters can be configured and its range

Parameters	Default Setup MPU 5110	Default Setup MPS 8000	Range
Connection mode(ELEMNT)	STAR	STAR	STAR/ DELTA
PT Primary (PT.Pri)	415.0	415.0	100V- 999kV
PT Secondary (PT SEC)	415.0	415.0	50V - 550V
CT Primary (CT.Pri)	5.000	5.000	1A - 99kA
CT SECondary (CT SEC)	5.000	5.000	1A - 6A
VA selection (UA.SLEC)	Arith (Arithmetic)	Arith (Arithmetic)	Arith (Arithmetic) / Vector/ vec.H (vector harmonics)
Over Voltage Line to Line	550.0	550.0	0.001 999kV
Under Voltage Line to Line	0.001	0.001	0-999kV
Under Current (Dry Run)	0.001	NA	0-99kA
Over Current	6.0	6.0	0.005-99kA
Over Frequency	NA	60.00	35-70Hz
Under Frequency	NA	40.00	35-70Hz
Under PF	NA	0.400	0.001-0.999PF
Percentage Voltage Unbalance	NA	7.000%	0.5-60%
Percentage Current Unbalance	NA	7.000%	0.5-60%
Neutral Current	NA	2.000	0.030-99kA
ON Delay	5.00	10.00	1-60 Sec
OFF Delay	5.00	3.000	1-60 Sec
Motor ON safe status	Rely ON	RELAY ON	REL ON/ OFF
Locked Rotor Current	6 time fixed not programmable	30.00	1-999kA
Locked Rotor Time Delay	5.00	5.00	1-60 Sec
Over Current Digital Output Characteristics	Absolute	INV CURV	INV CURV/Absolute
Poles	NA	4.000	4-28 Poles
Reverse Lock	No	No	NO / YES



ELECON MEASUREMENTS PVT LTD

Empowers You to Manage Power

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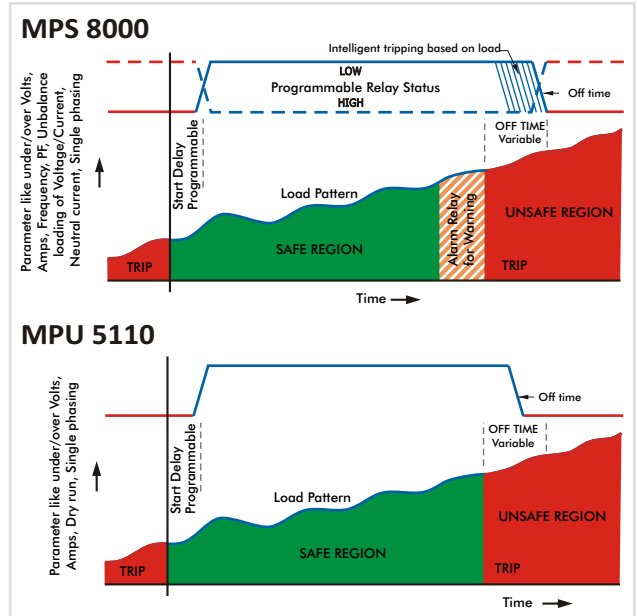
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Range of Products: EMS, Demand Controller, Multi-Function Meters, Load Manager, Electronic Energy Meters, Dual Energy Meter, Digital Panel Meters, Intelligent Earth Leakage Relay, Power Distribution Unit, Power & Energy Transducers, RS485 to RS232/Ethernet/Optic Fiber Converter, RF Modem and GSM Modem.



Technical Specification

Accuracy: Class 1 (Default) IEC 61036, CBIP 88, Class 0.5 (Option).

Sensing/Measurement: True RMS, 1 Sec update time

Input voltage: 4 Voltage inputs (VR, VY, VB, VN); Programmable 110 or 415V LL Nominal (Range 80 to 550V LL)

Primary Programmable up to 999 kV.

Burden: 0.2VA Max. per phase.

Input current: Current inputs (AR, AY, AB) 50mA - 6A (Field configurable 1A or 5A)

Primary Programmable up to 99 kA

Overload: 10A max continuous, 50A max for 3 sec.

Burden: 0.2VA Max. per phase.

Aux-Supply (Control Power)

80 - 300V AC/DC (Default), 48V DC Option

Burden: 4VA Max

CT PT Ratio Max: 2000 MVA Programmable

Communication: RS485 serial interface

Industry standard Modbus RTU protocol (RS232 optional)

Baud rate: 600 bps to 19200 bps. (Preferred 9600 bps)

Isolation: 2000 volts AC isolation for 1 minute between communication and other circuits.

Weight: Unpacked: 300 gms; Packed: 400 gms

Mechanical Specification:

Dimension Bezel: 96 × 96 mm (Depth 50mm behind bezel behind panel mounting), (90 × 90 mm for Din Rail MPS 5110 only). Panel Cutout: 90⁺²₋₀ × 90⁺²₋₀

Note: Additional error of 0.1% of full scale, for meter input current below 500mA

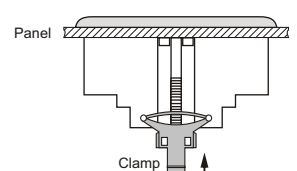
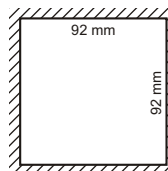
Mechanical Specification

Dimension Bezel:

96 × 96 mm (Depth 50mm behind Bezel)

Panel Cutout:

92⁺⁰₋₂ × 92⁺⁰₋₂ mm



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