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MPR500

Features

- Microprocessor based numerical relay
- Thermal overload
- Overcurrent
- Undercurrent
- Unbalance
- Phase loss
- Phase sequence
- Earth fault
- Prolonged starting/stall rotor
- 2 voltage-free output contacts
- ANSI Code : 37, 46, 47, 49, 50P, 50G

Technical Data

CT RATINGS

Rated current, IB : 2-10A
Rated frequency : 50 Hz or 60 Hz
Burden : <0.3 VA at rated current
Thermal withstand : Continuous : 2x max rated
45s : 6x max rated
1s : 10x max rated

BINARY INPUT

Rated input voltage : 12V (Supplied internally)

AUXILIARY SUPPLY

Model MPR 500-240AD : 85 ~ 265 V AC
110 ~ 370 V DC
Supply frequency : 50 or 60 Hz
Maximum power consumption : 3 VA typical

OUTPUT CONTACTS

Rated voltage : 250V AC
Contact rating : 5 A
Expected electrical life : 100,000 operations at rated current
Expected mechanical life : 5 x 10^6 operations

SETTING RANGES

Thermal Overload time constant, t_{6X} : 1 – 40s. Step 0.1s for 1-10s, step 1s for 10-40s.
Short circuit, I>> : off, 2-12 x I_B. Step 1 x I_B
Short circuit delay time, t>> : 0 – 25s. Step 0.1s for 1-10s, step 1s for 10-25s.
Undercurrent, I<< : off, 20-90% I_B. Step 1%
Undercurrent delay time, t<< : 0 – 60s. Step 0.1s for 1-10s, step 1s for 10-60s.
Unbalance, : off, 10-50%. Step 1%
Unbalance delay time, t : 0 – 25s. Step 0.1s for 1-10s, Step 1s for 10-25s.
Earth fault, I_θ : off, 10-60% I_B. Step 1%
Earth fault delay time, t_θ : 0 – 25s. Step 0.1s for 1-10s, step 1s for 10-25s.
Phass loss : < 500ms
Phase sequence : < 200ms
Prolonged starting/ stalled rotor, I_S : off, 2-12 x I_B. Step 0.1 x I_B
Prolonged starting time delay, t_{Start} : 0 – 60s. Step 0.1s for 1-10s, step 1s for 10-60s.
Stalled rotor delay time, t_{Stall} : 0 – 60s. Step 0.1s for 1-10s, step 1s for 10-60s.

INDICATORS

Run : Green indicator
Trip/Pickup : 7-segment display and red indicator
Thermal : Yellow indicator

ENVIRONMENTAL CONDITIONS

Temperature : -10°C to 55°C
Humidity : 5% to 95%, non-condensing

ACCURACY

Current accuracy : ± 5% (When I_L = 2A, I_o > 0.2A)
Timing accuracy : ± 5% or ± 50 ms

MECHANICAL

Mounting : Panel mounting
Dimension (mm) : 96(w) x 96(h) x 110(d)
Approximate weight : 0.8 kg

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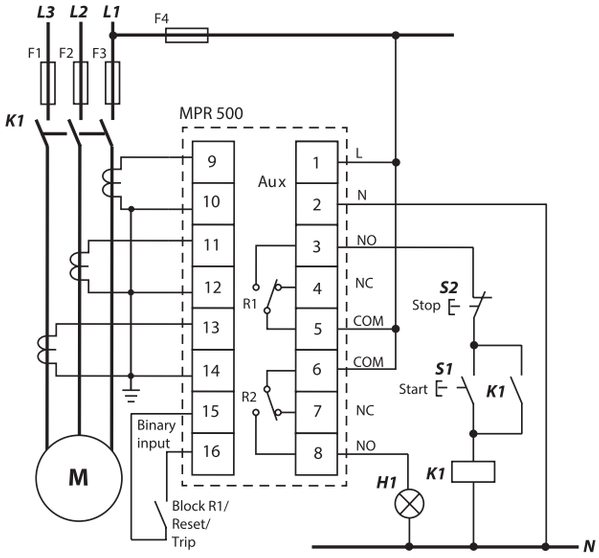
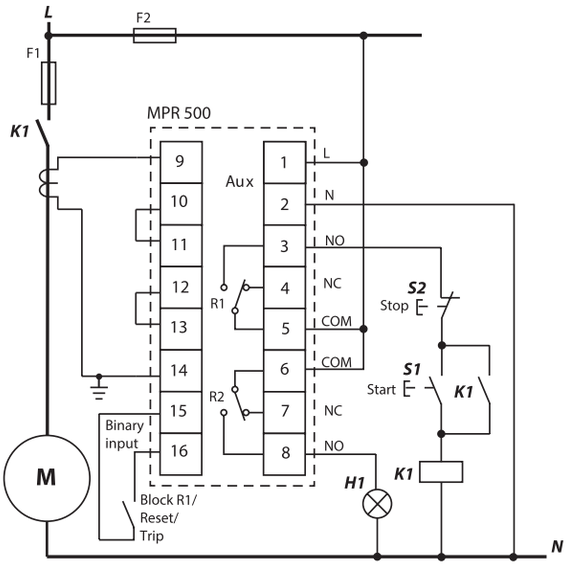
Typical Application Diagrams

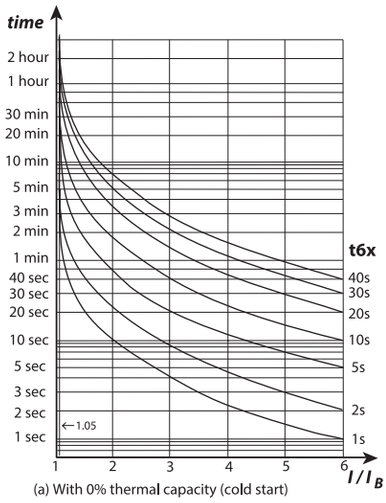


Motor with higher full load current using external CT

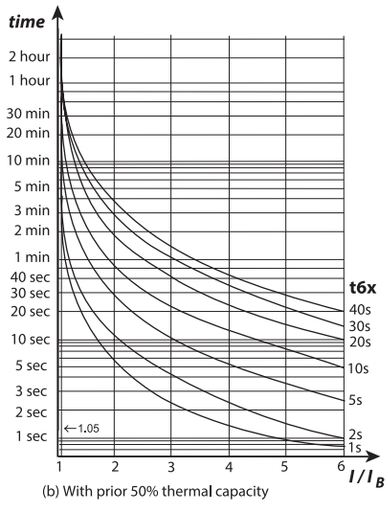


Single-Phase Motor
(Earth fault, phase sequence and phase loss detection off)

Thermal Tripping Curve

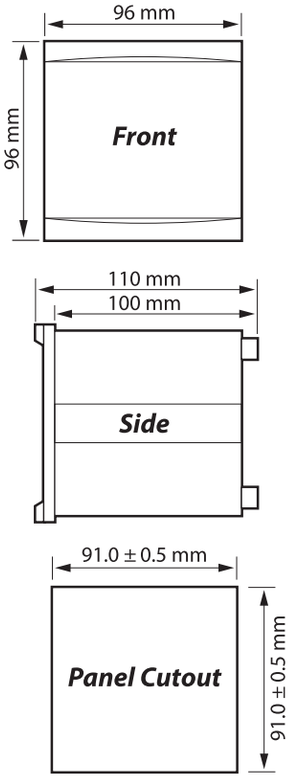


(a) With 0% thermal capacity (cold start)



(b) With prior 50% thermal capacity

Case Dimensions



Ordering Information

MODEL	DESCRIPTION
MPR500-240AD	For 50 / 60 Hz system, auxiliary voltage 85 ~ 265 V AC or 110 ~ 370 V DC