



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

CIRCUIT RATINGS

Rated current, I_B : 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 10⁶ 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.
 Phase loss : < 500ms
 Phase sequence : < 200ms

Prolonged starting/stalled rotor, I_{θ} : 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

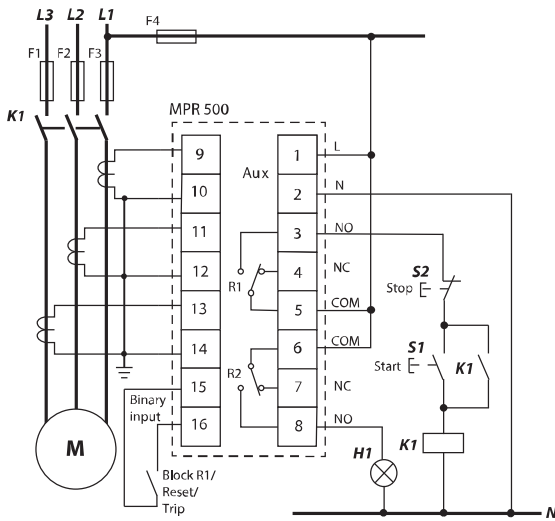
ACCURACY

Current accuracy : ± 5% (When $I_L = 2A$, $I_{\theta} > 0.2A$)
 Timing accuracy : ± 5% or ± 50 ms

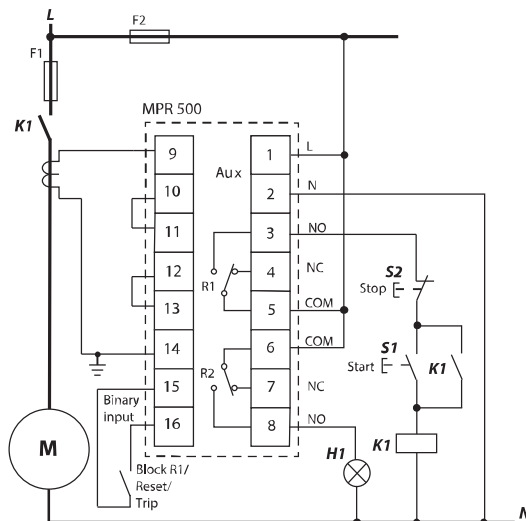
MECHANICAL

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

Typical Application Diagrams

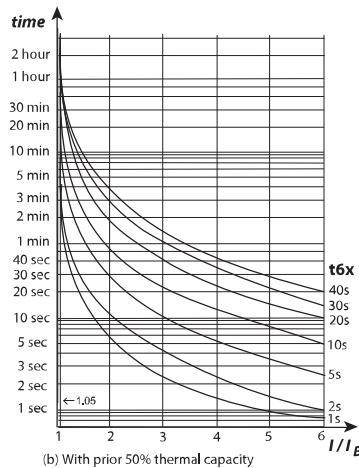
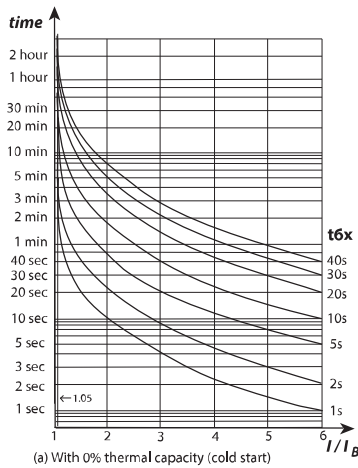


Motor with higher full load current using external CT

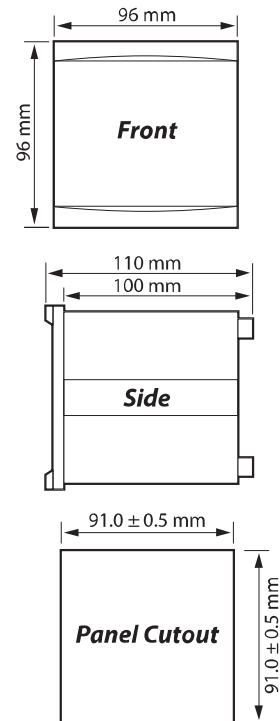


Single-Phase Motor
(Earth fault, phase sequence and phase loss detection off)

Thermal Tripping Curve



Case Dimensions



Ordering Information

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