Mikro®

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

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_0	: off, 10 – 60% I_B. Step 1%
Earth fault delay time, t_0	: 0 – 25s. Step 0.1s for 1-10s, step 1s for 10-25s.
Phass loss	: <120ms
Phase sequence	: <120ms
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.

Technical Data

CT RATINGS

Rated current	: 2-10A
Rated frequency	: 50 or 60Hz
Burden	: <0.3VA at rated current
Thermal withstand	: Continuous: 4 x max rated 30s: 12x max rated 1s: 20x 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

CONTACTS

Contact arrangement	: Change-over
Contact rating	: 5A, 250V AC (cosf = 1)
Contact material	: Silver alloy
Operating time	: 15ms max
Expected electrical life	: 100,000 operations at rated current
Expected mechanical life	: 5×10^6 operations

INDICATORS

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

MECHANICAL

Mounting	: Panel mounting
Front panel	: Standard DIN 96 mm x 96mm
Approximate weight	: 0.75kg

ENVIRONMENTAL CONDITIONS

Temperature	: -5˚C to +55˚C
Humidity	: 56 days at 93% RH and 40˚C non-condensing

THERMAL TRIPPING CURVE

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

(b) With prior 50% thermal capacity
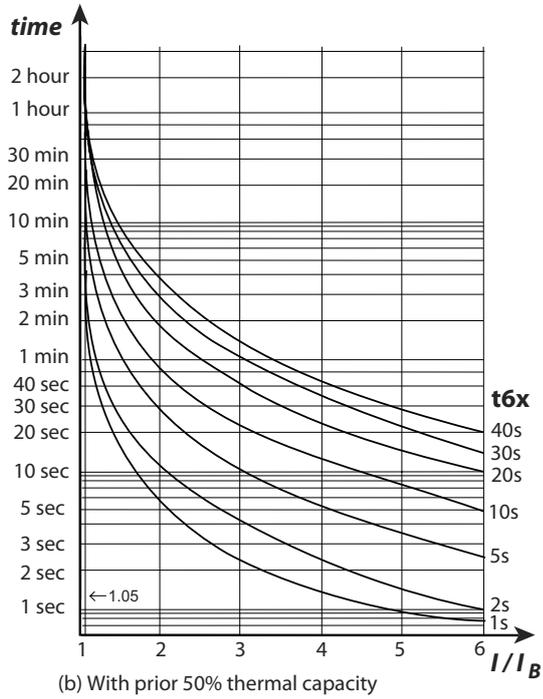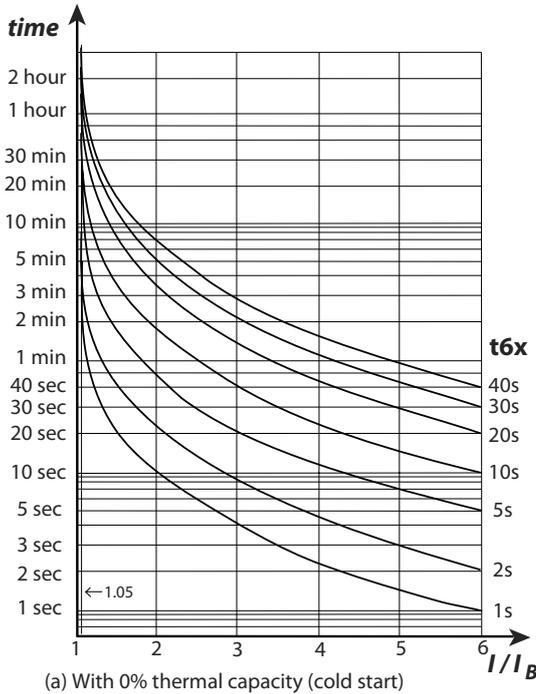
## TYPICAL APPLICATION DIAGRAMS


Motor with full load current of 2A to 10A

Motor with higher full load current using external CT
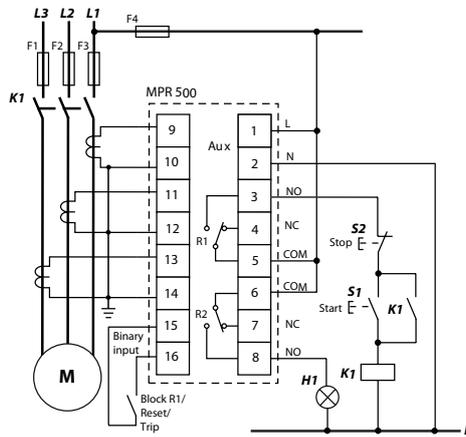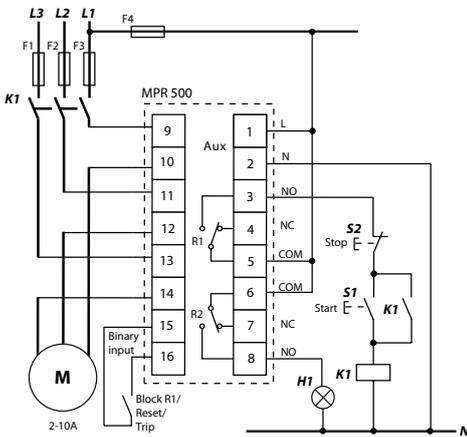
CASE DIMENSIONS
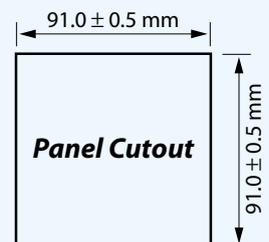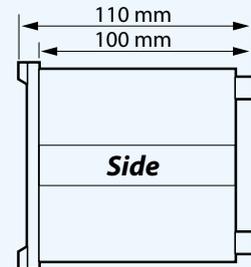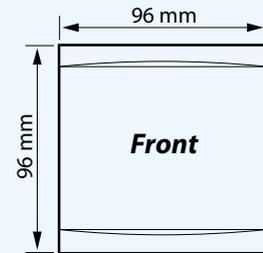
Ordering Information

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