

Protection Relays and Controls

MOTOR AND PUMP PROTECTION - SINGLE AND 3-PHASE

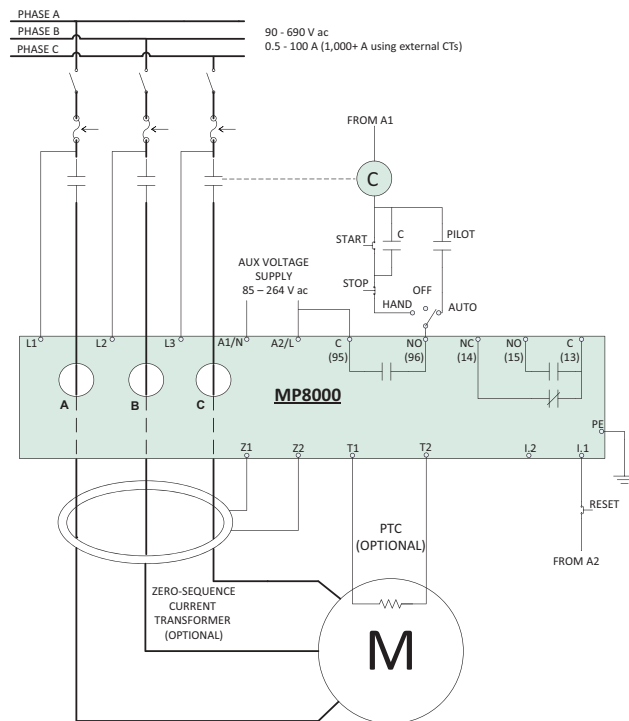
Bluetooth Overload Relay



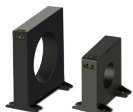
Patented

Wiring Diagram

TYPICAL WIRING DIAGRAM FOR 3-PHASE



Accessories



ZSCT Series Current Transformer

Used with Littelfuse relays to detect low levels of earth-leakage current.

Ordering Information

MODEL	LINE VOLTAGE	MOTOR FULL AMP RANGE	DESCRIPTION
MP8000	90-690 V ac (use of external potential transformers can extend upper voltage range above 690 V ac)	0.5-1,000+ A (external CTs required above 100 A)	Provides remote wired communication via Ethernet Modbus TCP/IP or Ethernet/IP

Description

The MP8000 is an electronic overload relay that provides advanced motor protection and is fully programmable via Bluetooth* using the Littelfuse app on an Android* or iOS* mobile device. It is easy to use and shock hazard is reduced, because the app allows settings to be modified and real-time operational information to be viewed without requiring the user to open the control panel.

The MP8000 protects any motor drawing 0.5-1,000 full load amperes (external CTs are required above 100 amperes). It is designed for single or 3-phase systems with operating voltages of 90-690 V ac (use of external potential transformers can extend upper voltage range above 690 V ac). For retrofit applications above 690 V ac where PTs cannot be added, the MP8000 can be set to current-only mode. Common applications include conveyor systems, HVAC equipment, saws and grinders, fan motors, and almost any pumping application.

Protection is unsurpassed by combining overload, over and undervoltage, phase loss and reversal, voltage and current unbalance, power monitoring, and underload protection in one package. For standalone applications, the Bluetooth interface can be used when paired with a smartphone or tablet. The units also feature an Ethernet communications port that can be used to connect to a Modbus TCP/IP or Ethernet/IP network. Unit can be remotely monitored and controlled from a PC or SCADA system, and data logging is available through a PC with the MP8000 software or other software using the MP8000 memory map. This capability allows for a simple cost-effective way to further reduce shock hazards.

Features & Benefits

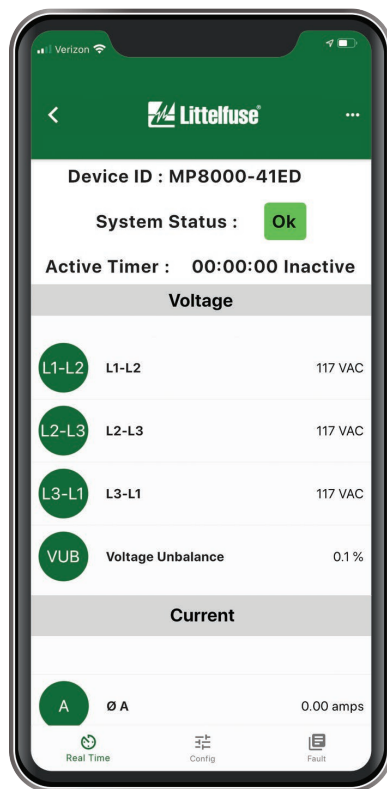
FEATURES	BENEFITS
Bluetooth interface	Visual indication for programming, viewing real-time voltage or current, and last fault information (date and time stamped)
Programmable voltage and current settings	Allows usage on wide range of systems
3 selectable restart options	Choose from automatic, semi-automatic, or manual to best meet individual application needs
4 programmable delay timers	Program separate delay times for power up, rapid cycle protection, motor cool down, and underload restarting
Programmable auxiliary relay output	From C output can be programmed to ground fault, trip indication, or network control
Flexible reset	Reset can be done through pushbutton on panel, remotely via the network
Network communications capability	Compatible with Ethernet Modbus TCP/IP and Ethernet/IP

Protection Relays and Controls

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Protection Functions

- Overload/Overpower (49)
- Underload/Underpower (37P)
- Overcurrent (51)/Jam
- Undercurrent (37)
- Current Unbalance/Phase Loss (46)
- Phase Reversal (47)
- Overvoltage (59)
- Undervoltage (27)
- Voltage Unbalance (47)
- Rapid Cycling/Jog
- Contactor Failure
- Zero-Sequence Ground Fault (50G/N, 51G/N)
- PTC Motor Overtemperature (49)



MP8000
Littelfuse App icon



Specifications

Functional Characteristics

Frequency 50/60 Hz
TC- Overcurrent Trip Class Trip class 02-60 or linear

Output Characteristics

Output Contact Rating

Control relay SPST - Form A
Auxiliary relay SPDT - Form C
Pilot Duty Rating B300
General Purpose 5 A @ 240 V ac

General Characteristics

Ambient Temperature Range

Operating -40 °C to 70 °C (-40 °F to 158 °F)
Storage -40 °C to 85 °C (-40 °F to 185 °F)

Accuracy

Voltage ±1 % of reading ±0.5 V
Current ±2 % (2 to 100 amperes direct)
Timing +/-0.5 % of setting +/- 1second
GF Current ±5 %

Repeatability

Voltage ±0.5 %
Current ±1 % (2 to 100 A direct)

Power Consumption

Pollution Degree 3 (conformal coating standard)

Class of Protection

Relative Humidity 10-95 %, non-condensing per IEC 68-2-3

Terminal Torque (depluggable terminal blocks)

5.5 in.-lbs.

Terminal Torque (Earth Ground)

7.9 in.-lbs.

Standards Passed

Electrostatic Discharge (ESD) IEC 61000-4-2, Level 3, 6 kV contact, 8 kV air

Radio Frequency Immunity (RFI), Conducted

IEC 61000-4-6, Level 3 10 V/m

Radio Frequency Immunity (RFI), Radiated

IEC 61000-4-3, Level 3 10 V/m

Fast Transient Burst

IEC 61000-4-4, Level 3, 3.5 kV input power

Surge

IEC 61000-4-5, Level 3, 2 kV line-to-line;

Level 4, 4 kV line-to-ground

Part 15.107 for emissions,

Part 15.247 for intentional radiators

FCC Rating

Short Circuit Withstand Rating

100 kA symmetrical at 690 V ac

Hi-Potential Test

Meets UL 508 (2 x rated V +1000 V for 1 minute)

Safety Marks

cULus

UL 60947, UL 1053, C22.2 (File #E68520)

CE

IEC 60947 Edition 5.2, IEC 60947-8

Maximum Conductor Size (with insulation)

0.63"

Dimensions

H 74.42 mm (2.93"); **W** 103.63 mm (4.08");

D 121.67 mm (4.79")

Weight

0.85 lbs (13.6 oz, 385.6 g)

Mounting Method

Surface mount (4 - #8 screws)

or DIN-rail mount

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