

Universal Panel Display

Large or Small Digit Ratemeter



measuring
•
monitoring
•
analyzing

MPT



- Accepts Current, Voltage, TC, & RTD Inputs
- 4-Digit Display, 1.20" (30.5 mm) or 0.56" (14.2 mm)
- Linear or Square Root with Low-Flow Cutoff
- Maximum/Minimum Display
- Type 4X, NEMA 4X, IP65 Front
- Universal Power Supply 85-265 VAC
- 12-36 VDC Power Option
- Two Relays and 4-20 mA Output Option
- 24 VDC Transmitter Power Supply Options
- USB Serial Communication Adapter Option
- Free Modbus® RTU Protocol



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Description

KOBOLD's MPT is a versatile, easy to use, compact display built for a wide range of applications. Programming is exceptionally easy and can be done directly in the field through a variety of options. It can be done via buttons on the front as there are no switches or jumpers, nor is there a need to open the case. It also includes a convenient 'copy' function that comes standard. The MPT display intensity is adjustable to allow for various lighting conditions, including direct sunlight. It also offers current overload protection that resets itself once the fault is removed. Installation is quick and easy thanks to locked mounting brackets and removeable screw terminal connectors.



Specifications*

Display: 1.20" (30.5 mm) or 0.56" (14.2 mm)
Red LED, 4 Digits (-1999 to 9999)

Display Intensity: Eight User Selectable Levels

Front Panel: NEMA 4X, IP65; Panel Gasket Provided

Programming Methods: Four Front Panel Buttons, Cloning with 'Copy' Feature, PC with MeterView or LabVIEW Software, and Modbus® Registers. Certified LabVIEW Driver Available

Noise Filter: Programmable 2 to 199 (0 will Disable Filter)

Display Update Rate: Process/RTD: 3.7-5/sec; TC: 1.8-2.5/sec

Max/Min Display: Stored until Reset by User or Meter is Turned Off

Password: Restricts Modification of Programmed Settings

Non-Volatile Memory: Settings Stored for a Minimum of 10 Years

Power Options: 85-265 VAC, 50/60 Hz; 90-265 VDC, 20 W Max. or 12-36 VDC; 12-24 VAC, 6 W Max.

Required Fuse: UL Recognized, 5 A Max., Slow-blow; up to 6 Meters May Share One Fuse

Normal Mode Rejection: 64 dB at 50/60 Hz

Isolation: 4 kV Input/Output-to-power Line; 500 V Input-to-output or Output-to-24 VDC Supplies

Operating Temperature: 32...149 °F

Storage Temperature: -40...185 °F

Relative Humidity: 0 to 90% Non-condensing

Connections: Power & Signal: Removable Screw Terminal Blocks accept 12 to 22 AWG. Serial: RJ11 Header, Standard on all Meters

Enclosure: 1/8 DIN, High Impact Plastic, 94V-0, Color; Gray

Weight: 9.5 oz (269 g) (Including Options)

UL File Number: E513096; 508 Industrial Control Equipment

Warranty: 3 years Parts & Labor

Process Inputs

Inputs: Field Selectable, 4-20 mA, 1-5 V, 0-10 V

Accuracy: ± 0.05% FS ± 1 Count; Square Root: ± 0.1% FS ± 2 Counts

Function: Linear or Square Root

Low-Flow Cutoff: 0 to 9999 (Disables Cutoff Function)

Decimal Point: Up to 3 Decimals, (x.xxx, xx.xx, xxx.x, or xxxx)

Calibration: Scale without Signal or Calibrate with Signal Source

Calibration Range: User Programmable over Entire Range of Meter

Input Impedance: Voltage Range: Greater than 1 MΩ

Current Range: 50-100 Ω, Varies with Resettable Fuse Impedance

Input Overload: Protected by Automatic Reset Fuse

Temperature Drift: ± 50 PPM/°C

Transmitter Supply: Isolated, One or Two Transmitter Supplies

P1: 24 VDC ± 10% @ 200 mA Max.

P1 & P2: 24 VDC ± 10% @ 200 mA & 40 mA Max.

*Except where noted all specifications apply to operation at 77 °F.



Temperature Inputs

Inputs: Factory Calibrated, Field Selectable: Type J, K, T, or E Thermocouples and 100 Ω Platinum RTD (0.00385 or 0.00392 Curve)
Resolution: 1°; Type T: 1° or 0.1°
Cold Junction Reference: Automatic
Temperature Drift: ± 2 °C Maximum
Offset Adjustment: Programmable to ± 19.9°. This Parameter Allows the User to Apply an Offset Value to the Temperature being Displayed

Input

Impedance: Greater than 100 kΩ
Sensor Break: All Relays and Alarm Status LEDs go to Alarm State

| Type | Range | Acc. | Range | Acc. |
|------|-----------------|--------|----------------|--------|
| J | -58...1,382 °F | ± 2 °F | -50...750 °C | ± 1 °C |
| K | -58...2,300 °F | ± 2 °F | -50...1,260 °C | ± 1 °C |
| T | -292...700 °F | ± 2 °F | -180...371 °C | ± 1 °C |
| E | -58...1,700 °F | ± 2 °F | -50...927 °C | ± 1 °C |
| RTD | -328...1,382 °F | ± 1 °F | -200...750 °C | ± 1 °C |

Relays

Rating: 2 Form C (SPDT); Rated 3 A @ 30 V_{DC} or 3 A @ 250 V_{AC} Resistive Load; 1/14 HP @ 125/250 V_{AC} for Inductive Loads
Deadband: 0-100% FS, User Selectable
High or Low Alarm: User May Program any Alarm for High or Low
Relay Operation: 1. Automatic (Non-latching) 2. Latching 3. Pump Alternation Control
Relay Reset: User Selectable via Front Panel Buttons or PC
 1) Automatic Reset Only (Non-latching)
 2) Automatic Plus Manual Reset at any Time (Non-latching)
 3) Manual Reset Only, at any Time (Latching)
 4) Manual Reset Only After Alarm Condition has Cleared (Latching)
Automatic Reset: Relays Reset when Input Passes the Reset Point
Manual Reset: Front Panel Button, MeterView, Modbus® Registers
Time Delay: 0 to 199 Seconds, On and Off Delays; Programmable

Relays Continued

Time Delay: 0 to 199 Seconds, On and Off Delays; Programmable
Fail-Safe Operation: Programmable, Independent for Each Relay. Relay Coils are Energized in Non-alarm Condition. In Case of Power Failure, Relays will go to Alarm State
Auto Initialization: When Power is Applied to the Meter, Relays will Reflect the State of the Input to the Meter

Isolated 4-20 mA Transmitter Output

Scaling Range: 1.00 to 23.00 mA; Reverse Scaling Allowed
Calibration: Factory Calibrated 4.00 to 20.00 mA
Accuracy: ± 0.1% FS ± 0.004 mA
Temperature Drift: 50 PPM/°C
Note: Analog Output Drift is Separate from Input Drift
Isolation: 500 V Input-to-output or Output-to-24 VDC Supplies; 4 kV Output-to-power Line
External Power: 35 VDC Maximum
Output Loop Resistance: Loop Resistance

| Power Supply | Minimum | Maximum |
|--------------------|---------|---------|
| 24 V _{DC} | 10 Ω | 700 Ω |
| 35 V _{DC} | 100 Ω | 1200 Ω |

Serial Communications

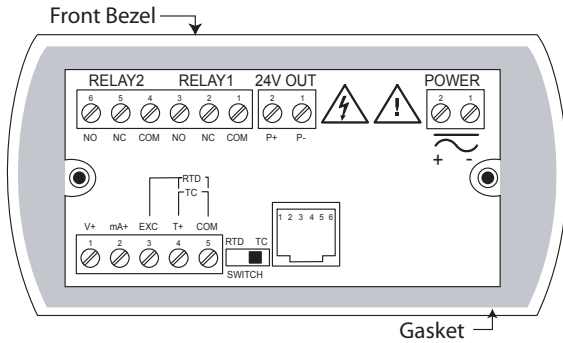
Compatibility: EIA-232, and EIA-485 with Adapters
Protocol: PDC and Modbus® RTU
Meter Address: PDC Protocol: 0 to 99, Modbus® Protocol: 1 to 247
Baud Rate: 300 to 19,200 bps
Transmit Time Delay: Programmable 0 to 199 ms, Transmitter Always on for RS-422
Data: 8 Bit (1 Start Bit, 1 Stop Bit)
Parity: None (2 Stop Bits), Even, or Odd (Modbus® Only; PDC Protocol does not Use Parity)
Byte-to-Byte Timeout: 0.01 to 2.54 Seconds (Modbus® Only)
Turn Around Delay: Less than 2 ms (Fixed)

Order Details (Example: **MPT-12512E**)

| Model | Function | Display Size | Operating Voltage | Sensor Supply | Output | Options |
|--------|--------------|--------------------------------|--------------------------------|-----------------------------------|---|---|
| MPT-.. | ..1.. = Rate | ..1.. = 0.56" | ..3.. = 12-36 V _{DC} | ..0.. = without | ..0 = None ..2 = 2x SPDT Relays | ..B = RS-422/485 Serial Adapter ..E = Custom Set-up* ..F = USB to Software Adapter ..G = Meter Copy Cable ..X = NEMA 4X Enclosure |
| | | ..2.. = 1.2" | ..5.. = 85-265 V _{AC} | ..0.. = without ..1.. = 24 VDC | ..3 = 4-20 mA ..4 = 2x SPDT Relays & 4-20 mA | |
| | | ..5.. = 85-265 V _{AC} | ..2.. = Dual 24 VDC | ..3 = 4-20 mA | | |

*Please specify input/output vs display parameters as a note on your order (i.e. 4 mA input = display 0, 20 mA input = display 100)

Connections



Dimensions: inches (mm)

