

prosense® Digital Panel Meters - DPM2 Series 1/8 DIN



DPM2
14mm Display



DPM2L
20mm Display

The ProSense DPM2 series offers a simple, low cost digital display of analog process signals, temperature in either Fahrenheit or Celsius from RTD or thermocouple temperature sensors, or potentiometer inputs. The 4-digit 14mm character height red LED display is easily scaled into any engineering units from -9999 to 9999 with a selectable decimal point location. The DPM2L offers a larger 20mm character height scaled from -1999 to 9999. Two point direct or reverse acting linear scaling values can be entered manually or by introducing actual sensed process values in Teach mode. Temperature inputs are pre-configured for fixed temperature ranges based on the type of temperature sensor and can be displayed with 1 or 0.1 degree of resolution. One model

includes two SPDT relay outputs that can be set to activate on an increasing or decreasing input signal with hysteresis or time delay operation. The meter is powered from an external wide range AC or DC power supply and provides 24VDC for external sensor excitation. The 1/8 DIN housing is easy to install in a panel and the meter face has an IP65 rating. Configuration parameters can be totally or selectively locked out to prevent unauthorized or accidental changes to the meter's operation. Additionally, the DPM2 meters include memory and reset of minimum and maximum display values. ProSense digital panel meters are backed by a 3 year warranty.

Features:

- 96 x 48mm 1/8 DIN
- Simple menu driven pushbutton configuration
- 14mm 4-digit (-9999 to 9999) or 20mm (-1999 to 9999) red LED display
- Selectable decimal point
- Process input ($\pm 10V$, $\pm 200V$ and $\pm 20mA$)
- Temperature input (RTD: Pt100, Pt1000, TC: J, K, T, N, Resolution: 1°F, 0.1°F, 1°C, 0.1°C)
- Potentiometer input (100 Ω to 100k Ω)
- Resistance input (999.9 Ω , 9999 Ω and 50k Ω)
- AC or DC powered
- Sensor excitation voltage 24V
- Optional (2) Form C SPDT relays
- N.O. or N.C. operation
- Activation on increasing or decreasing input signal
- Hysteresis or time delay operation
- Display scaling or process teaching modes
- Configuration for direct or reverse acting linear processes
- Minimum and maximum value memory
- Total or selective configuration lock out
- 3 year warranty



| DPM2 Series Panel Meters | | | |
|--------------------------------|---|--------------|----------|
| Model | Description | Weight (lbs) | Price |
| DPM2-AT-HL | ProSense digital panel meter, panel mount, 1/8 DIN, 14mm 4-digit red LED, analog, RTD, thermocouple or potentiometer input, 20-265 VAC/11-265 VDC operating voltage. | 0.6 | \$153.00 |
| DPM2L-AT-HL | ProSense digital panel meter, panel mount, 1/8 DIN, 20mm 4-digit red LED, analog, RTD, thermocouple or potentiometer input, 20-265 VAC/11-265 VDC operating voltage. | 0.6 | \$164.00 |
| DPM2-AT-2R-HL | ProSense digital panel meter, panel mount, 1/8 DIN, 14mm 4-digit red LED, analog, RTD, thermocouple or potentiometer input, (2) 8A SPDT relays output, 20-265 VAC/11-265 VDC operating voltage. | 0.65 | \$167.00 |
| DPM2L-AT-2R-HL | ProSense digital panel meter, panel mount, 1/8 DIN, 20mm 4-digit red LED, analog, RTD, thermocouple or potentiometer input, (2) 8A SPDT relays output, 20-265 VAC/11-265 VDC operating voltage. | 0.69 | \$180.00 |

| Technical Specifications | | | | |
|--------------------------|-------------------|-----------------------------|--------------|--|
| Process Input | Range | Input Impedance | Resolution | Accuracy |
| | $\pm 20mA$ | $<20\Omega$ | 2 μA | $\pm(0.1\% \text{ rdg} + 15\mu A)$ |
| | $\pm 10V$ | 2M Ω | 1mV | $\pm(0.1\% \text{ rdg} + 6mV)$ |
| | $\pm 200V$ | 2M Ω | 20mV | $\pm(0.1\% \text{ rdg} + 0.1V)$ |
| Sensor Excitation | | 24V $\pm 3V$ @ 30mA | | |
| Potentiometer | Range | Maximum Measurement Current | Resolution | Accuracy |
| | 100-100k Ω | $<0.4mA$ | 0.01% F.S. | $\pm(0.1\% \text{ rdg} + 0.05\% \text{ F.S.})$ |
| Resistance | 999.9 Ω | 2.3mA | 0.1 Ω | $\pm(0.1\% \text{ rdg} + 0.7\Omega)$ |
| | 9999 Ω | 230 μA | 1 Ω | $\pm(0.1\% \text{ rdg} + 6\Omega)$ |
| | 50k Ω | 23 μA | 10 Ω | $\pm(0.1\% \text{ rdg} + 35\Omega)$ |

prosense® Digital Panel Meters - DPM2

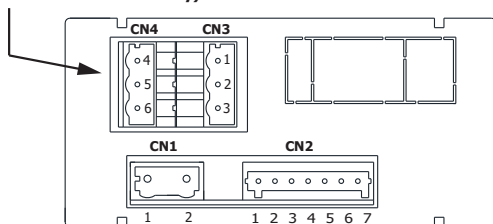
Series 1/8 DIN

| Technical Specifications Continued | | | | | |
|------------------------------------|---|---|--|--|--|
| Temperature | RTD | Pt100 (3 wire) | Pt1000 (2 wire) | | |
| | Fixed Display Range / Resolution | -200.0°C to 800.0°C / 0.1°C -200°C to 800°C / 1°C -328.0°F to 999.9°F / 0.1°F -328°F to 1472°F / 1°F | | | |
| | Measurement current | 1mA | 100µA | | |
| | Maximum resistance per wire | 40Ω (balanced) | - | | |
| | Linearization | IEC 60751 | | | |
| | Coefficient | 0.00385 | | | |
| | Accuracy | ±(0.15% rdg+0.5°C), t<-50°C ±(1% rdg+0.5°C) ±(0.15% rdg+0.9°F), t<-58°F ±(1% rdg+0.9°F) | | | |
| | Thermocouple | J | K | T | N |
| | Fixed Display Range / Resolution | -150.0°C to 999.9°C / 0.1°C -150°C to 1100°C / 1°C -238.0°F to 999.9°F / 0.1°F -238°F to 2012°F / 1°F | -150.0°C to 999.9°C / 0.1°C -150°C to 1200°C / 1°C -238.0°F to 999.9°F / 0.1°F -238°F to 2192°F / 1°F | -150.0°C to 400.0°C / 0.1°C -150°C to 400°C / 1°C -238.0°F to 752.0°F / 0.1°F -238°F to 752°F / 1°F | -150.0°C to 999.9°C / 0.1°C -150°C to 1300°C / 1°C -238.0°F to 999.9°F / 0.1°F -238°F to 2372°F / 1°F |
| | Cold junction compensation range | -10°C to 60°C (14°F to 140°F) | | | |
| | Accuracy | ±(0.1% rdg+0.6°C) ±(0.1% rdg+1.1°F) | | ±(0.2% rdg+0.8°C) ±(0.2% rdg+1.5°F) | ±(0.1% rdg+0.6°C) ±(0.1% rdg+1.1°F) |
| Conversion | Technique | Sigma-Delta | | | |
| | Resolution | ±16 bits | | | |
| | Conversion rate | 20 times per second | | | |
| Display | Range | -9999 to +9999 (-1999 to +9999 for large display models), selectable decimal point position | | | |
| | Type | 4 digit, 14mm (0.55") or 20mm (0.79"), red | | | |
| | LEDs | Relay 1, Relay 2 | | | |
| | Display refresh rate | 20 times per second | | | |
| | Display / Input overrange indication | "- DUE", "DUE" | | | |
| Accuracy Conditions | Temperature coefficient | 100 ppm/°C | | | |
| | Warm-up time | 5 minutes | | | |
| | Temperature | 23°C±5°C | | | |
| Relays (DPM2-AT-2R-HL only) | 2 Relays SPDT | Nominal contact rating.....8A at 250VAC / 24VDC Maximum switching current (resistive load).....8A Maximum switching power.....2000VA / 192W Maximum switching voltage.....400VAC / 125VDC Contact resistance.....≤100mΩ at 6VDC @ 1A Contact type.....SPDT Operate time.....≤10ms | | | |
| Power Supply and Fuses | 20-265VAC 50/60 Hz or 11-265VDC (Recommended fusing 3A/250V, 5mm x 20mm glass miniature or DIN 41661 equivalent) | | | | |
| Power Consumption | 3W | | | | |
| Filter | Cutoff frequency (-3dB) | 7.3Hz to 0.2Hz | | | |
| | Slope | -20dB/Dec. | | | |
| Environmental Conditions | Operating temperature | -10°C to +60°C (14°F to 140°F) | | | |
| | Storage temperature | -25°C to +85°C (-13°F to 185°F) | | | |
| | Relative humidity (non-condensing) | <95% @ 40°C (104°F) | | | |
| | Maximum altitude | 2000m | | | |
| | Frontal protection degree | IP65 | | | |
| Environmental Air | No corrosive gases permitted | | | | |
| Agency Approval | CE | | | | |

prosense® Digital Panel Meters - DPM2 Series 1/8 DIN

Wiring

Output relay terminals
(DPM2-AT-2R-HL & DPM2L-AT-2R-HL only)



| CN1 | |
|-----------|-----------|
| AC Supply | DC Supply |
| 1 Line | 1 VDC |
| 2 Neutral | 2 VDC |

Polarity insensitive for DC power

| CN2 | |
|-----|---------------------------------------|
| 1 | Common / RTD B / -TC / Pot. Term. 1 |
| 2 | RTD A / +TC / 10kΩ res. / Pot. center |
| 3 | 50kΩ res. / Pot. Term. 2 |
| 4 | RTD B Pt100 |
| 5 | +20mA |
| 6 | Excitation +24V |
| 7 | +10/200VDC |

Note: For additional wiring information download complete manual from www.AutomationDirect.com

(DPM2-AT-2R-HL & DPM2L-AT-2R-HL only)

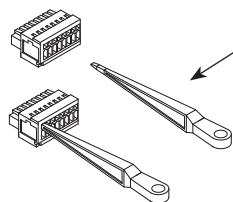
| Terminals | | | |
|-----------------------|--|--|--|
| Connector | CN1 | CN2 | CN3 & CN4 |
| Wire cross section | 0.08 to 2.5mm ² (28 to 12 AWG) | 0.08 to 1.5mm ² (28 to 14 AWG) | 0.08 to 2.5mm ² (28 to 12 AWG) |
| Strip length | 8 to 9mm | 6 to 7mm | 8 to 9mm |
| Manufacturer | Wago 231-202/026-000 | Wago 734-107 | Wago 231-303/026-000 |
| Cage clamp connection | Insertion tool or screwdriver with 0.5 mm x 3.0 mm blade | Insertion tool or screwdriver with 0.3 mm x 1.8 mm blade | Insertion tool or screwdriver with 0.5 mm x 3.0 mm blade |

| CN4 (Relay 2) | |
|---------------|-----|
| 4 | NO2 |
| 5 | CM2 |
| 6 | NC2 |

| CN3 (Relay 1) | |
|---------------|-----|
| 1 | NO1 |
| 2 | CM1 |
| 3 | NC1 |

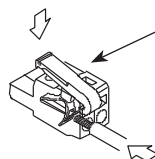
NO: Normally open contact.
CM: Common
NC: Normally closed contact.

CN2 Terminals



Insertion Tool (included with meter)
Insert wires into the proper terminal while using the insertion tool to open the clip inside the connector. Release the insertion tool to fix wire to the terminal.

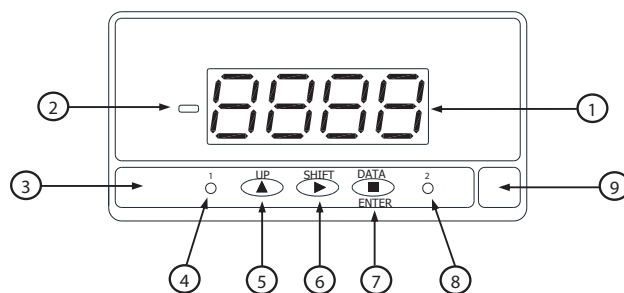
CN1, CN3, CN4 Terminals



Insertion Tool (included with meter)
Insert wires into the proper terminal while using the insertion tool to open the clip inside the connector. Release the insertion tool to fix wire to the terminal.

prosense® Digital Panel Meters - DPM2 Series 1/8 DIN

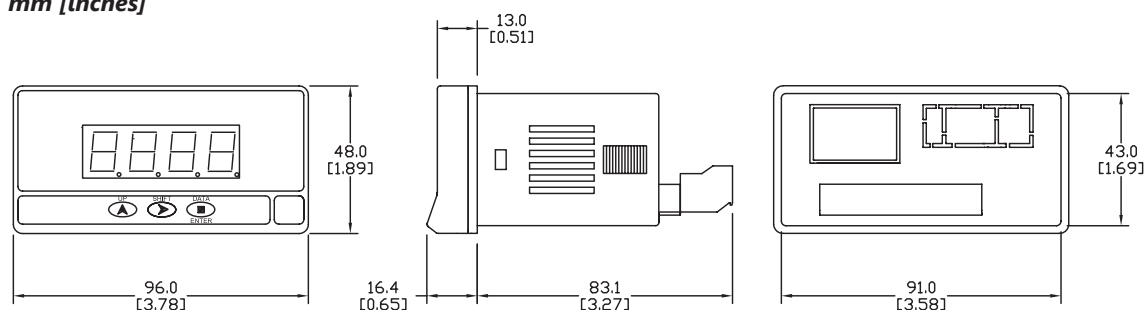
Programming Panel



| Programming Panel | | | |
|-------------------|----------------------------|---|--|
| # | Description | Run Mode | Programming Mode |
| 1 | 4-digit display Red | Shows value according to configuration. | Shows steps and data during configuration. |
| 2 | Minus sign | Illuminates for negative readings. | Illuminates for negative values. |
| 3 | Keyboard | --- | --- |
| 4 | Setpoint 1 LED | Illuminates when setpoint 1 turns active. | Illuminates when setpoint 1 turns active. |
| 5 | UP key | No application | Shows setpoint value. Increases value of active digit. |
| 6 | SHIFT key | Displays maximum and minimum stored values. After 3s of pressing, sets maximum and/or minimum memorized value to current display value. | Shifts active digit to the next right digit. |
| 7 | DATA/ENTER key | Changes to PRO mode. | Validates selected data and parameters. Moves one step forward in configuration menu. Changes to RUN mode. |
| 8 | Setpoint 2 LED | Illuminates when Setpoint 2 turns active. | Illuminates when Setpoint 2 turns active. |
| 9 | Free space for units label | --- | --- |

Dimensions

mm [inches]



| Installation | |
|----------------------|---------------------------------------|
| Dimensions | 96 x 48 x 83.1mm (1/8 DIN) |
| Panel Cutout | 92 x 45mm (Max. panel thickness 10mm) |
| Case Material | Polycarbonate UL 94 V-0 |

See our website www.AutomationDirect.com for complete Engineering drawings.

Insert



Scan or click the above QR code to be taken to the DPM2 Series Quick Start Guide

Manual



Scan or click the above QR code to be taken to the DPM2 Series Manual

prosense® Digital Panel Meters DPM Series

Description

The ProSense DPM family of digital panel meters includes both 1/32 DIN and 1/8 DIN meter sizes with simple menu-driven pushbutton configuration. A wide variety of input signals can be accepted for process, temperature, load cell, voltage, current, pulse, frequency, and other applications. Available output options include alarm relays, analog signal retransmission, and sensor excitation voltage. Backed by a 3-year warranty, ProSense digital panel meters offer outstanding features and performance at an incredible price point.



Type DPM1-A-LP



Type DPM1-A-T



Type DPM1-A-2R



Type DPM2



Type DPM2L



Type DPM3

Click on the thumbnail or go to
<https://www.automationdirect.com/VID-PS-0007> for a
 short video on Digital Panel Meters



DPM Series Digital Panel Meters Process Input Selection Guide

| Model | Size | Display | Inputs | Outputs | Power | Price |
|--------------------------------|--|---|---|---|-------------------------------------|------------------------------------|
| DPM1-A-LP | 1/32 DIN | 10mm, Red LED*, -1999 to 9999 Selectable decimal point | 4-20mA | None | Loop Powered | \$114.00 |
| DPM1-A-H | | | ±20mA, ±100mV ±10V, ±20V ±200V | | 85-265 VAC, 50/60 Hz 100-300 VDC | \$131.00 |
| DPM1-A-L | | | | | 21-53 VAC, 50/60 Hz 10.5-70 VDC | \$131.00 |
| DPM1-T-H | | 10mm, Red LED, -1999 to 9999 | RTD Pt100 (3-wire) TC Type J, K, T or N | | 85-265 VAC, 50/60 Hz 100-300 VDC | \$131.00 |
| DPM1-T-L | | | | | 21-53 VAC, 50/60 Hz 10.5-70 VDC | \$131.00 |
| DPM1-A-2R-H | | 8mm, Red LED, -1999 to 9999 Selectable decimal point | ±20mA, ±100mV ±10V, ±60V | 2 Relays Form A SPST Normally Open | 85-265 VAC, 50/60 Hz 100-300 VDC | \$145.00 |
| DPM1-A-2R-L | | | | | 21-53VAC 50/60 Hz 10.5-70VDC | \$145.00 |
| DPM1-A-A2R-H | | | | 2 Relays Form A SPST Normally Open 4-20mA | 85-265 VAC, 50/60 Hz 100-300 VDC | \$160.00 |
| DPM1-A-A2R-L | | | | | 21-53 VAC, 50/60 Hz 13.5-70 VDC | \$160.00 |
| DPM2-AT-HL | | 1/8 DIN | DPM2: 14mm, Red LED, -9999 to 9999 DPM2L: 20mm, Red LED, -1999 to 9999 Selectable decimal point | ±20mA, ±10V ±200V, 100-100k Ohm potentiometer, 1k-50k Ohm resistance, RTD Pt100 (3-wire) RTD Pt1000 (4-wire) TC Type J, K, T or N | None | 20-265 VAC, 50/60 Hz 11-265 VDC |
| DPM2L-AT-HL | \$164.00 | | | | | |
| DPM2-AT-2R-HL | 2 Relays Form C SPDT | | | | \$167.00 | |
| DPM2L-AT-2R-HL | | | | | \$180.00 | |
| DPM3-AT-H | 14mm, Red, Green, Amber LED -19999 to 39999 Selectable decimal point | | ±20mA, ±10V RTD Pt100 (3-wire) TC Type J, K, T or N Load Cell ±15mV, ±30mV, ±150mV Potentiometer | None | 85-265 VAC, 50/60Hz 100-300 VDC | \$190.00 |
| DPM3-AT-2R-H | | | | 2 Relays Form C SPDT | | \$215.00 |
| DPM3-AT-4R-H | | | | 4 Relays Form A Normally Open with shared common | | \$231.00 |
| DPM3-AT-A-H | | | | 4-20mA | | \$215.00 |
| DPM3-AT-A2R-H | | | | 2 Relays Form C SPDT 4-20mA | | \$239.00 |
| DPM3-AT-L | | | | None | \$190.00 | |
| DPM3-AT-2R-L | | | | 2 Relays Form C SPDT | \$215.00 | |
| DPM3-AT-4R-L | | | | 4 Relays Form A Normally Open with shared common | 22-53 VAC, 50/60 Hz 10.5-70 VDC | \$231.00 |
| DPM3-AT-A-L | | | | 4-20mA | \$215.00 | |
| DPM3-AT-A2R-L | | | | 2 Relays Form C SPDT 4-20mA | \$239.00 | |

* Illumination based on available loop current and will not be as bright as the powered Digital Panel Meters

prosense® Digital Panel Meters DPM Series

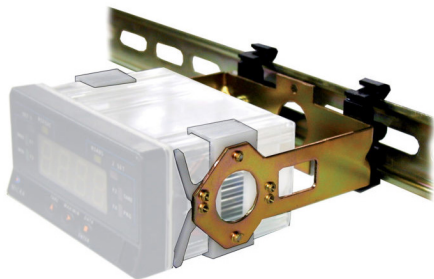
DPM Series Digital Panel Meters Electrical Input Selection Guide

| Model | Size | Display | Inputs | Outputs | Power | Price |
|-------------------------------------|----------|--|---|-----------------------------------|-------------------------------------|----------|
| <u>DPM1-E-H</u> | 1/32 DIN | 10mm, Red LED, -1999 to 9999 Selectable decimal point | 100 / 600 VAC or VDC 1A / 5AAC or DC | None | 85-265 VAC, 50/60 Hz 100-300 VDC | \$131.00 |
| <u>DPM1-E-L</u> | | | | | 21-53 VAC, 50/60Hz 10.5-70 VDC | \$131.00 |
| <u>DPM2-E-HL</u> | 1/8 DIN | 14mm, Red LED, -9999 to 9999 | 600 / 200 / 20 VAC or VDC 1A / 5A / shunt 60mV / shunt 100mV AC or DC | None | 20-265 VAC, 50/60 Hz 11-265 VDC | \$153.00 |
| <u>DPM2-E-2R-HL</u> | | | | 2 Relays Form C SPDT | | \$167.00 |
| <u>DPM3-E-H</u> | | 14mm, Red, Green, Amber LED -19999 to 19999 Selectable decimal point | 600 / 200 / 20 / 2 VAC True RMS or VDC 1A / 5A / shunt 50mV / shunt 60mV / shunt 100mV AC True RMS or DC | None | 85-265 VAC 100-300 VDC | \$222.00 |
| <u>DPM3-E-A2R-H</u> | | | | 2 Relays Form C SPDT 4-20mA | | \$263.00 |
| <u>DPM3-E-L</u> | | | | None | 22-53 VAC 10.5-70 VDC | \$222.00 |
| <u>DPM3-E-A2R-L</u> | | | | 2 Relays Form C SPDT 4-20mA | | \$263.00 |

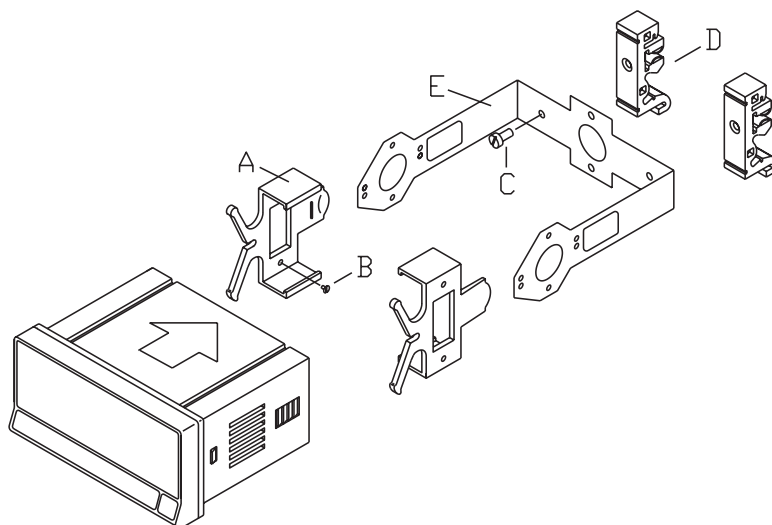
DPM Series Digital Panel Meters Pulse, Frequency Input Selection Guide

| Model | Size | Display | Inputs | Outputs | Power | Price |
|-------------------------------------|----------|---|---|--|---------------------------|----------|
| <u>DPM1-P-H</u> | 1/32 DIN | 10mm, Red LED, 0 to 9999 Selectable decimal point | 7kHz (tachometer rpm or rate modes) 9999Hz (frequency meter mode) | None | 85-265 VAC 100-300 VDC | \$131.00 |
| <u>DPM1-P-L</u> | | | | | 1-53 VAC 10.5-70 VDC | \$131.00 |
| <u>DPM1-P-A2R-H</u> | | 8mm, Red LED, 0 to 9999 Selectable decimal point | 12kHz (tachometer rpm or rate modes) 9999Hz (frequency mode) 100Hz (duty/PWM mode) | 2 Relays Form A SPST Normally Open 4-20mA | 85-265 VAC 100-300 VDC | \$160.00 |
| <u>DPM1-P-A2R-L</u> | | | | | 21-53 VAC 13.5-70 VDC | \$160.00 |
| <u>DPM2-P-HL</u> | 1/8 DIN | 14mm, Red LED, 0 to 9999, 0 to 999999 Totalizer Selectable decimal point | 7.5 kHz (counter mode) 25kHz (tachometer rpm or rate modes) | None | 20-265 VAC 11-265 VDC | \$153.00 |
| <u>DPM2-P-2R-HL</u> | | | | 2 Relays Form C SPDT | | \$167.00 |
| <u>DPM3-P-H</u> | | 14mm Red, Green, Amber LED -99999 to 99999, -9999999 to 9999999 Totalizer Programmable decimal point | 19kHz (without totalizer) 9.9 kHz (with totalizer) | None | 85-265 VAC 100-300 VDC | \$190.00 |
| <u>DPM3-P-A2R-H</u> | | | | 2 Relays Form C SPDT 4-20mA | | \$239.00 |
| <u>DPM3-P-L</u> | | | | None | 22-53 VAC 10.5-70 VDC | \$190.00 |
| <u>DPM3-P-A2R-L</u> | | | | 2 Relays Form C SPDT 4-20mA | | \$239.00 |

prosense® Digital Panel Meter Accessories



| Panel Meter Accessories | | | | |
|---------------------------------|--|--------------|----------------------------|---------|
| Model | Description | Weight (lbs) | Drawing Link | Price |
| <u>DPM-BKT1</u> | ProSense panel mount bracket, for use with DPM2 and DPM3 series 1/8 DIN digital panel meters. Hardware included. | 0.3 | <u>PDF</u> | \$25.00 |



The DPM-BKT1 kit includes:

- A. 2 mounting clips.
 - B. 4 screws M3 x 6 DIN 963 to attach the clips to the inside of the arms of part E.
 - C. 2 screws M4 x 8 DIN 84 to attach DIN rail clips to part E.
 - D. 2 DIN rail clips (DIN rail EN50022 or EN50035).
 - E. 1 metal bracket.
- (Panel Meter not included)

Insert



Scan or click the above QR code to be taken to the [DPM-BKT1](#) Insert

See our website www.AutomationDirect.com for complete Engineering drawings.