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

DPM2-P

The ProSense DPM2-P series offers a simple, low cost digital display for counter, tachometer, rate, and frequency applications. The DPM2-P has a 4-digit 14mm character height red LED display, accepts input from AC voltage, magnetic sensors, NPN/PNP sensors, NAMUR sensors, TTL/24V encoders, or switched contacts, and provides selectable sensor excitation voltages. 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 in tachometer, rate, and frequency modes as well as pulsed or latched operation in counter mode. The meter is powered from an external wide range AC or DC power supply. 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-P meters include memory and reset of minimum and maximum display values in tachometer, rate, and frequency modes, and a totalizer display in counter mode. ProSense digital panel meters are backed by a 3 year warranty.

Features:

- 96 x 48mm 1/8 DIN
- 4 digit (0 to 9999) red LED display
- Selectable decimal point
- Counter/Tachometer/Rate(Frequency) modes
  - AC voltage
  - Magnetic sensor
  - NAMUR sensor
  - NPN/PNP sensor
  - TTL/24V encoder
  - Switched contact
- AC or DC powered

- Selectable sensor excitation voltage
- Optional (2) Form C SPDT relays
  - N.O. or N.C. operation
  - Activation on increasing or decreasing input signal
  - Hysteresis or time delay operation (tach and rate modes)
  - Pulsed or latch operation (counter mode)
- Minimum and maximum value memory (tach and rate modes)
- Totalizer display (counter mode)
- Total or selective configuration lock out

DPM2-P Series Panel Meters			
Model	Description	Weight (lbs)	Price
DPM2-P-HL	ProSense digital panel meter, panel mount, 1/8 DIN, 14mm 4-digit red LED, pulse or frequency input, 20-265 VAC/11-265 VDC operating voltage.	0.58	$139.00
DPM2-P-2R-HL	ProSense digital panel meter, panel mount, 1/8 DIN, 14mm 4-digit red LED, pulse or frequency input, (2) 8A SPDT relays output, 20-265 VAC/11-265 VDC operating voltage.	0.66	$152.00

Technical Specifications		
Signal Input	Maximum Frequency	7.5 kHz (counter mode) 25kHz (tachometer rpm or rate modes)
	Minimum Frequency (tachometer rpm or rate modes)	0.01 Hz
AC voltage Input	Range	10 to 600 VAC
Magnetic Sensor Input	Sensitivity	Vin min. ≥ 100mV for f ≥ 1kHz
NAMUR* Sensor	R_C	1kΩ
	I_{ON}	< 1mA DC
	I_{OFF}	> 3mA DC
NPN/PNP Sensors Input	R_C	1kΩ
	Logic level "0"	< 2.4 VDC
	Logic level "1"	> 2.6 VDC
TTL/24V Encoder Input	Logic level "0"	< 2.4 VDC
	Logic level "1"	> 2.6 VDC

For more information about NAMUR sensors see www.namur.net.

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Technical Specifications Continued		
Switched Contact Input	V_C	5V (internal)
	R_C	3.9 kΩ
	Cutoff frequency (Fc)	20Hz
Accuracy at 23ºC ±5ºC (tachometer rpm or rate modes)	Accuracy	± (0.01% of reading +1digit)
	Temperature coefficient	50ppm / ºC
	Warm-up time	5 minutes
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	
Sensor Excitation	8V @ 60mA ; 24V ± 3V @ 30mA	
Display	Range	0 to 9999
	Type	4 digit, 14mm (0.55")
	Totalizer (counter mode)	0 to 999999
	Decimal point	Configurable
	LEDs	Relay 1, Relay 2
	Display refresh rate (tachometer rpm or rate modes)	0.1 s to 9.9 s (configurable)
	Display/frequency overrange indication	"OuE"
	Relays, maximum and minimum value refresh	10 times per second
	OFFSET (counter mode)	Keypad
	RESET (counter and totalizer)	Keypad
	Remote RESET (counter)	Switched contact
	MAX./MIN. and MAX./MIN. RESET functions (tachometer rpm or rate modes)	Keypad
Relay (2R option)	Maximum switching current (resistive load)	8A
	Maximum switching power	2000VA / 192W
	Maximum switching voltage	400VAC / 125VDC
	Contact rating	8A @ 250VAC / 24VDC
	Contact resistance	≤ 100mΩ at 6 VDC @ 1A
	Contact type	SPDT
	Operate time	≤ 10ms
Environmental Conditions	Operating temperature	-10ºC to +60ºC (14ºF to 140ºF)
	Storage temperature	-25ºC to +85ºC (-13ºF to 185ºF)
	Relative humidity (non-condensing)	<95% @ 40ºC (104ºF)
	Maximum altitude	2000m
	Frontal protection degree	IP65
Environmental Air	No corrosive gases permitted	
Agency Certifications	CE	

# ProSense® Digital Panel Meters - DPM2-P Series 1/8 DIN

Wiring

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

Output relay terminals (DPM2-P-2R-HL only)
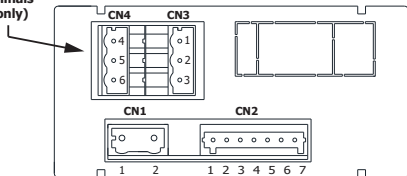
Terminals			
Connector	CN1	CN2	CN3 & CN4
Wire cross section	0.08 to 2.5mm² (28 to 12 AWG)	0.08 to 1.5mm² (28 to 14 AWG)	0.08 to 2.5mm² (28 to 12 AWG)
Strip length	8 to 9mm	6 to 7mm	8 to 9mm
Manufacturer	Wago 231-202/026-000	Wago 734-107	Wago 231-303/026-000
Cage clamp connection	Insertion tool or screwdriver 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

CN2 Terminals
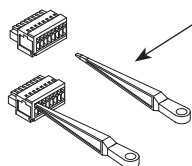
Insertion Tool (included with meter)
Insert wires into the proper terminal while using the insertion tool to open the clip inside the connector. Release the insertion tool to fix wire to the terminal.

CN1, CN3, CN4 Terminals
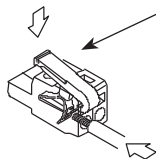
Insertion Tool (included with meter)
Insert wires into the proper terminal while using the inser-tion tool to open the clip inside the connector. Release the insertion tool to fix wire to the terminal.

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

Polarity insensitive for DC power

CN2	
Signal Input	
1	- IN (Common)
2	+ IN
3	+ EXC 8 VDC
4	+ EXC 24 VDC
5	RESET
6	Not used
7	IN HIGH (10-600 VAC)

(DPM2-P-2R-HL only)

CN3	
Relay 1	
1	NO1
2	CM1
3	NC1

CN4	
Relay 2	
4	NO2
5	CM2
6	NC2

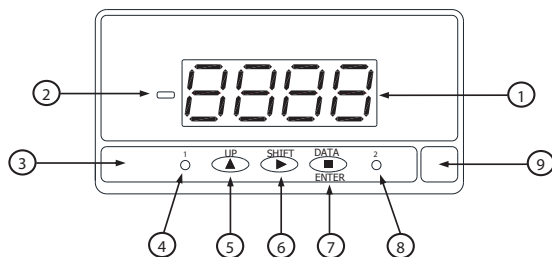NO: Normally open contact.
CM: Common
NC: Normally closed contact.

Input Wiring Diagrams

CN2 Terminals
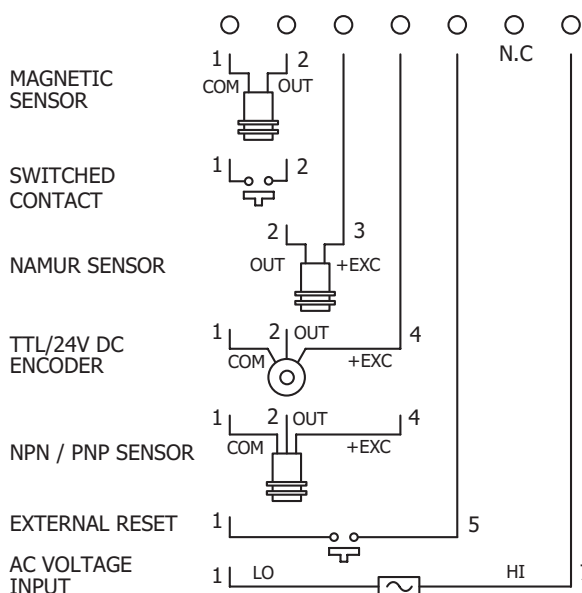
prosense® Digital Panel Meters - DPM2-P Series 1/8 DIN

Programming Panel

#	Description	Run Mode	Programming Mode
	Programming Panel		
1	4 digit display Red	Shows value according to configuration.	Shows steps and data during configuration.
2	Minus sign	Not used	Not used
3	Keyboard	---	---
4	Setpoint 1 LED	Illuminates when setpoint 1 turns active.	Illuminates when setpoint 1 turns active.
5	UP key	Main counter Reset (when pressed >3s)	Shows setpoint value. Increases value of active digit.
6	SHIFT key	Displays maximum and minimum stored values (tachometer mode only). After 3s of pressing, sets maximum and/or minimum memorized value to current display value (tachometer mode only). Shows sequentially totalizer value in two parts, 'H' and 'L' of 3 digits each (counter mode only). Totalizer RESET (when pressing more than 3s)	Shifts active digit to the next right digit. Shows sequential menu options.
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]
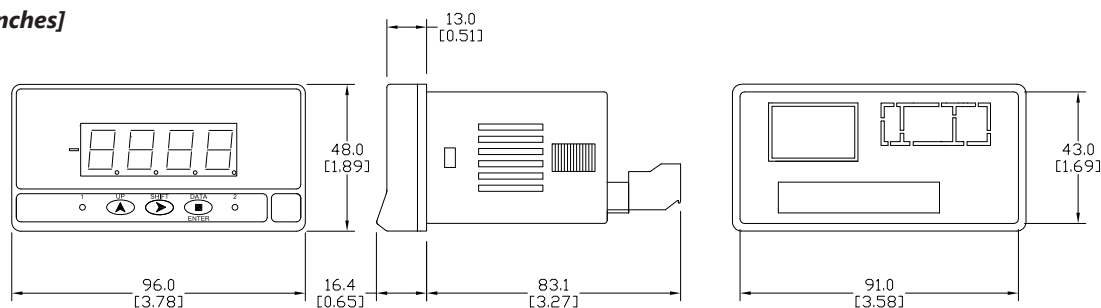
Installation	
Dimensions	96 x 48 x 60mm (1/8 DIN)
Panel Cutout	92 x 45mm (Max. panel thickness 10mm)
Case Material	Polycarbonate UL 94 V-0

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

Insert

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

Manual

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

pro**s**ense® Digital Panel Meters DPM Series

Type DPM1-A-LP *Type DPM1-A-T* *Type DPM1-A-2R*

Type DPM2 *Type DPM2L* *Type DPM3*

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.

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

Model	Size	Display	Inputs	Outputs	Power	Price
DPM Series Digital Panel Meters Process Input Selection Guide						
DPM1-A-LP	1/32 DIN	10mm, Red LED*, -1999 to 9999 Selectable decimal point	4-20mA	None	Loop Powered	$104.00
DPM1-A-H			±20mA, ±100mV ±10V, ±20V ±200V		85-265 VAC, 50/60 Hz 100-300 VDC	$119.00
DPM1-A-L					21-53 VAC, 50/60 Hz 10.5-70 VDC	$119.00
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	$119.00
DPM1-T-L					21-53 VAC, 50/60 Hz 10.5-70 VDC	$119.00
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	$132.00
DPM1-A-2R-L					21-53VAC 50/60 Hz 10.5-70VDC	$132.00
DPM1-A-A2R-H				2 Relays Form A SPST Normally Open 4-20mA	85-265 VAC, 50/60 Hz 100-300 VDC	$145.00
DPM1-A-A2R-L					21-53 VAC, 50/60 Hz 13.5-70 VDC	$145.00
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	$139.00
DPM2L-AT-HL						$149.00
DPM2-AT-2R-HL				2 Relays Form C SPDT		$152.00
DPM2L-AT-2R-HL						$164.00
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	$173.00
DPM3-AT-2R-H				2 Relays Form C SPDT		$195.00
DPM3-AT-4R-H				4 Relays Form A Normally Open with shared common		$210.00
DPM3-AT-A-H				4-20mA		$195.00
DPM3-AT-A2R-H				2 Relays Form C SPDT 4-20mA		$217.00
DPM3-AT-L				None	22-53 VAC, 50/60 Hz 10.5-70 VDC	$173.00
DPM3-AT-2R-L				2 Relays Form C SPDT		$195.00
DPM3-AT-4R-L				4 Relays Form A Normally Open with shared common		$210.00
DPM3-AT-A-L				4-20mA		$195.00
DPM3-AT-A2R-L				2 Relays Form C SPDT 4-20mA		$217.00

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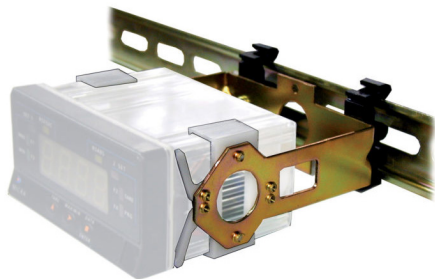
prosense® Digital Panel Meters DPM Series

DPM Series Digital Panel Meters Electrical Input Selection Guide

Model	Size	Display	Inputs	Outputs	Power	Price
DPM1-E-H	1/32 DIN	10mm, Red LED, -1999 to 9999 Selectable decimal point	100 / 600 VAC or VDC 1A / 5A AC or DC	None	85-265 VAC, 50/60 Hz 100-300 VDC	$119.00
DPM1-E-L					21-53 VAC, 50/60Hz 10.5-70 VDC	$119.00
DPM2-E-HL	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	$139.00
DPM2-E-2R-HL				2 Relays Form C SPDT		$152.00
DPM3-E-H		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	$202.00
DPM3-E-A2R-H				2 Relays Form C SPDT 4-20mA		$239.00
DPM3-E-L				None	22-53 VAC 10.5-70 VDC	$202.00
DPM3-E-A2R-L				2 Relays Form C SPDT 4-20mA		$239.00

## DPM Series Digital Panel Meters Pulse, Frequency Input Selection Guide

Model	Size	Display	Inputs	Outputs	Power	Price
DPM1-P-H	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	$119.00
DPM1-P-L					1-53 VAC 10.5-70 VDC	$119.00
DPM1-P-A2R-H		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	$145.00
DPM1-P-A2R-L					21-53 VAC 13.5-70 VDC	$145.00
DPM2-P-HL	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	$139.00
DPM2-P-2R-HL				2 Relays Form C SPDT		$152.00
DPM3-P-H		14mm Red, Green, Amber LED -99999 to 99999, -9999999 to 99999999 Totalizer Programmable decimal point	19kHz (without totalizer) 9.9 kHz (with totalizer)	None	85-265 VAC 100-300 VDC	$173.00
DPM3-P-A2R-H				2 Relays Form C SPDT 4-20mA		$217.00
DPM3-P-L				None	22-53 VAC 10.5-70 VDC	$173.00
DPM3-P-A2R-L				2 Relays Form C SPDT 4-20mA		$217.00

proSense® Digital Panel Meter Accessories

Panel Meter Accessories			
Model	Description	Weight (lbs)	Price
DPM-BKT1	ProSense panel mount bracket, for use with DPM2 and DPM3 series 1/8 DIN digital panel meters. Hardware included.	0.3	$22.50
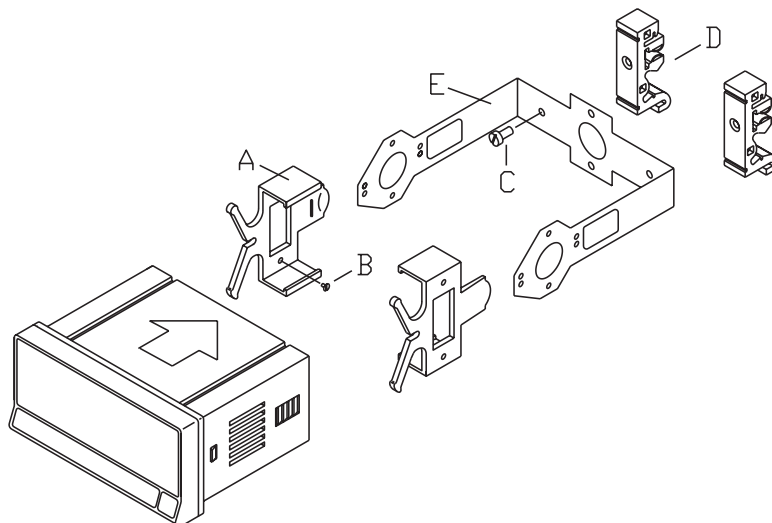
The DPM-BKT1 kit includes:

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.