

# DUAL-LINE SIX-DIGIT PROCESS METER PM SERIES



- 0-20mA, 4-20mA, 0-5V, 1-5V and  $\pm 10V$  inputs
- Dual Scale for Level Applications - Single input
- Sunlight Readable Display Models
- Nema 4X, IP65 Front
- Isolated 24VDC @200mA Transmitter Power Supply
- 32-Point, Square Root, or Exponential Linearization
- Modbus RTU Communication Protocol Standard



The PM is a multipurpose, easy to use digital process meter ideal for level, flow rate, temperature, or pressure transmitter applications. It accepts current and voltage signals (e.g. 4-20mA, 0-10V). Three of the front panel buttons can be custom programmed for a specific operation. The analog input can be scaled to display the process in two different scales; for example the main display could indicate level in feet and the second display could indicate the volume in gallons. The basic model includes an isolated 24VDC transmitter power supply that can be used to power the input transmitter or other devices. An additional isolated 24VDC power supply is included with the 4-20mA output option.

A fully loaded PM meter has the following: four SPDT relays, 4-20mA output, and two 24VDC power supplies. The PM capabilities may be enhanced by adding the following external expansion modules: four SPST relays - creating an eight-relay process meter, two digital I/O modules with four inputs and four outputs each, and USB, RS-232 or RS-485 communication adapters. The eight relays can be used for alarm indication or process control applications, such as pump alternation control. The 4-20mA isolated output, Modbus RTU serial communications, and digital I/O options make the PM an excellent addition to any system.

Non-linear input signals (i.e. weirs & flumes, differential pressure, etc.) can be linearized with the PM's simple to use built-in signal input conditioners, such as: square-root extractor, exponential linearizer, horizontal round tank linearizer, or using the PMC Process Meter Interface.

PMC Engineering adopts a continuous development program which sometimes necessitates specification changes without notice

## Process Measure Control

### Features

- Dual Scale
- NEMA 4X, IP65 Front
- 0-20mA, 4-20mA
- 0-5V, 1-5V, &  $\pm 10V$
- 32-Point, Square Root

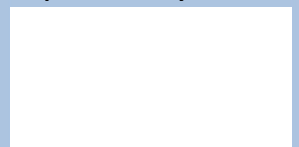
### Applications

- Bore Holes
- Water Level
- Waste Water
- Oceanography
- Ground Water

### Contact

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Represented by:



Your depth and level specialists for Ground, Surface, Sea and Waste Water

## STANDARD SPECIFICATIONS

### General

Display: Upper display: 0.60" (15 mm) high. Lower display: 0.46" (12 mm) high.  
 Displays are 6 digits, red LEDs.  
 Display Intensity: Eight intensity levels  
 Display Update Rate: 5/second (200 ms)  
 Display Assignment: The upper and lower displays may be assigned to PV1, PV2, PCT (percent), max/min, alternate max & min, set points, units (lower display only), or Modbus input. Front Panel: NEMA 4X, IP65  
 Noise filter: Programmable from 2 to 199 (0 will disable filter)  
 Filter Bypass: Programmable from 0.1 to 99.9% of calibrated span  
 Recalibration: Recommended at least every 12 months.  
 Max/Min Display: Max (Peak) / min (Valley) readings reached by the process are stored until reset by the user or until power to the meter is cycled.  
 Power Options: 85-265VAC 50/60Hz, 90-265VDC, 20 W max, or jumper selectable 12/24VDC  $\pm 10\%$ , 15 W max. Weight: 9.5 oz (269 g)

### Environmental

Operating temperature range: -40 to 65°C.  
 Storage temperature range: -40 to 85°C.  
 Relative humidity: 0 to 90% non-condensing.

### Connections & Mounting

Connections: Removable screw terminal blocks accept 12 to 22 AWG wire, RJ45 for external relays, digital I/O, and serial communication adapters.  
 Enclosure: 1/8 DIN, high impact plastic, UL 94V-0, color: black  
 Mounting: 1/8 DIN panel cutout required: 3.622" x 1.772" (92 mm x 45 mm).  
 Overall Dimensions: 4.68" x 2.45" x 5.64"  
 (119 mm x 62 mm x 143 mm) (W x H x D)

### Process Input

Inputs: Field selectable: 0-20, 4-20mA,  $\pm 10$ VDC (0-5, 1-5, 0-10V)  
 Accuracy:  $\pm 0.03\%$  of calibrated span  $\pm 1$  count, square root & programmable exponent accuracy range: 10- 100% of calibrated span  
 Temperature Drift: 0.005% of calibrated span/ $^{\circ}$ C max from 0 to 65°C ambient, 0.01% of calibrated span/ $^{\circ}$ C max from -40 to 0°C ambient

### Relays

Rating: 2 or 4 SPDT (Form C) internal and/or 4 SPST (Form A) external; rated 3 A @ 30VDC and 125/250VAC resistive load; 1/14 HP @ 125/250VAC for inductive loads.

### Isolated 4-20mA Transmitter Output

Output Source: Process variable (PV), max, min, set points 1-8, or manual control mode  
 Scaling Range: 1.000 to 23.000mA for any display range  
 Accuracy:  $\pm 0.1\%$  of span  $\pm 0.004$ mA

### Expansion Modules

Digital I/O module: 4 digital inputs & 4 digital outputs per module.  
 4-relay module: Four Form A (SPST) rated 3 A @ 30VDC and 125/250VAC resistive load; 1/14 HP ( $\approx 50$  watts) @ 125/250VAC for inductive loads.

## ORDERING INFORMATION

Model PM - Standard Displays		
85-265 VAC Model	12/24VDC Model	options installed
PM-AC	PM-DC	None
PM-AC-2R	PM-DC-2R	2 Relays
PM-AC-420	PM-DC-420	4-20mA Output
PM-AC-4R	PM-DC-4R	4 Relays
PM-AC-2R-420	PM-DC-2R-420	2 Relays & 4-20mA Output
PM-AC-4R-420	PM-DC-4R-420	4 Relays & 4-20mA Output

Note: 24V Transmitter power supply standard on all models.

Model PM - Sunlight readable Displays		
85-265VAC Model	12/24VDC Model	options installed
PM-HV-AC	PM-HV-DC	None
PM-HV-AC-2R	PM-HV-DC-2R	2 Relays
PM-HV-AC-420	PM-HV-DC-420	4-20mA Output
PM-HV-AC-4R	PM-HV-DC-4R	4 Relays
PM-HV-AC-2R-420	PM-HV-DC-2R-420	2 Relays & 4-20mA Output
PM-HV-AC-4R-420	PM-HV-DC-4R-420	4 Relays & 4-20mA Output

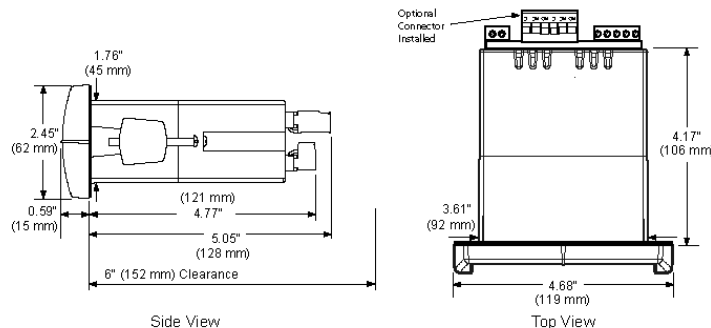
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## ACCESSORIES

PM accessories	
Model	Description
DIN-MTG	DIN-Rail Mounting Kit
4R-EM	4 Relays Expansion Module
4D-IOM	4 Digital I/O Module
MCC	Meter Copy Cable
RS232-ADP	RS-232 Serial Adapter
RS485-ADP	RS-422/485 Serial Adapter
USB-ADP	USB Serial Adapter
SNUB	Snubber

## MECHANICAL DETAILS

Dimensions in inches



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