

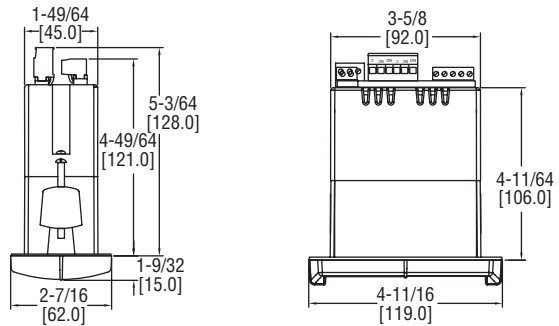


SERIES APM, MPM & PPM



# DUAL LINE CONFIGURABLE PANEL METERS

1/8 DIN Multi-Pump Alternation Control, Open-Channel Flow, Rate and Totalizer



The Series PM's are a series of 1/8 DIN digital panel meters engineered to take in multiple inputs from a variety of instrumentation for the purpose of displaying or controlling a process parameter.

The **SERIES APM** is a panel meter specifically designed for displaying flow rate and total from a flow meter with an analog output such as 4 to 20 mA or 0 to 10 V. The APM is particularly well-suited for flow applications and can display flow rate and total at simultaneously.

The **SERIES MPM** has the ability to obtain non-linear input signals and linearize them with simple to use math functions such square-root extractor, weirs and flumes exponential linearizer, horizontal round tank linearizer or general purpose 32-point linearizer. Unit accepts 0 to 20 mA, 4 to 20 mA, 0 to 5 V, or  $\pm 10$  V inputs and requires 85 to 265 VAC or 12/24 VDC power supply. Choose from RS-232, RS-422/485 serial communication options or any available expansion modules, accessories and enclosures.

The **SERIES PPM** displays flow rate and total simultaneously, with a programmable relay and 4 to 20 mA options for flow rate or flow total. The PPM is designed for displaying flow rate and total from a pulsed input provided by open collector, NPN, PNP, TTL, switch contact, sine wave, or square wave.

### FEATURES/BENEFITS

- Three levels of password protection
- Math functions for flow & round horizontal tanks
- 32-point linearization, square root or programmable exponent
- Multi-pump alternation control
- Rate displayed as units per second, minute, hour, or day
- Total, grand total or non-resettable grand total
- Two or four relays & isolated 4 to 20 mA output options
- External 4-relay & digital I/O expansion modules
- RS-232, RS-422/485 serial communication options

### APPLICATIONS

- Level monitoring
- Pump control
- Flow rate indication
- Flow totalization
- Open channel flow monitoring
- Process control

### SPECIFICATIONS

**Input:** APM: 0 to 20 mA, 4 to 20 mA, 0 to 5 V, or  $\pm 10$  V inputs; MPM: 0 to 20 mA, 4 to 20 mA, 0 to 5 V, or  $\pm 10$  V; PPM: Field selectable: Pulse or square wave 0 to 5 V, 0 to 12 V, or 0 to 24 V @ 30 kHz; TTL; open collector 4.7 k $\Omega$  pull-up to 5 V @ 30 kHz; NPN or PNP transistor, switch contact 4.7 k $\Omega$  pull-up to 5 V @ 40 Hz.

**Input Impedance:** 50 to 100  $\Omega$ .

**Accuracy:**  $\pm 0.03\%$  of calibrated span  $\pm 1$  count, square root & programmable exponent accuracy range: 10-100% of calibrated span.

**Power Requirements:** 85 to 265 VAC 50/60 Hz, 90 to 265 VDC, 20 W max or 12 to 24 VDC  $\pm 10\%$ , 15 W max.

**Display:** Dual-line 6-digit display, 0.60 in and 0.46 in.

**Decimal Points:** Five positions, user selectable.

**Temperature Limits:** Operating: -40 to 149°F (-40 to 65°C); Storage: -40 to 185°F (-40 to 85°C).

**Enclosure Rating:** NEMA 4X, IP65 front.

**Electrical Connections:** Removable screw terminal blocks accept 12 to 22 AWG wire, RJ45 for external relays, digital I/O, and serial communication adapters.

**Output Signal:** 4 to 20 mA.

**Power Consumption:** 85 to 265 VAC models: 200 mA @ 24 VDC; 12 to 24 VDC models: 100 mA @ 24 VDC; Second supply with output 2 models: 40 mA @ 24 VDC.

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

**Time Delay:** 0 to 999.9 seconds, on & off relay time delays; programmable and independent for each relay.

**Shipping Weight:** 9.5 oz (269 g).

**Agency Approvals:** CE, UL.

### OPEN CHANNEL FLOW CAPABILITY

Series APM when utilized with an ultrasonic level transmitter, such as the Mercoid Series ULT, provides an economical way to measure open channel flow.

### DIFFERENTIAL PRESSURE FLOW

The APM can display flow rate and total by extracting the square root from the 4 to 20 mA signal from a differential pressure transmitter, such as the Dwyer 629, that is being used with a flow element such as Dwyer orifice plate Series OP or TE. The user-selectable, low-flow cut-off feature gives a reading of zero when the rate is below a user selectable value.

### PUMP CONTROL

With the two or four contact output option the APM or MPM can be used as a programmable pump controller when used with a Dwyer level transmitter. The APM also has programmable on and off points for up to four pumps, quadruplex pumping systems with alternation capability. When using the 4-relay model with the four external relay accessory, the APM can do 8 contacts for any combination of pump control and 8 programmable alarms.

MODEL CHART								
Model	Price	Model	Price	Model	Price	Power	Output 1	Output 2
APM-100	\$320.00 (N)	MPM-100	\$299.00 (N)	PPM-100	\$329.00 (N)	85 to 265 VAC	None	None
APM-101	383.00 (N)	MPM-101	364.00 (N)	PPM-101	394.00 (N)	85 to 265 VAC	None	4 to 20 mA
APM-120	363.00 (N)	MPM-120	344.00 (N)	PPM-120	374.00 (N)	85 to 265 VAC	2 relays	None
APM-121	421.00 (N)	MPM-121	404.00 (N)	PPM-121	434.00 (N)	85 to 265 VAC	2 relays	4 to 20 mA
APM-140	402.00 (N)	MPM-140	384.00 (N)	PPM-140	414.00 (N)	85 to 265 VAC	4 relays	None
APM-141	465.00 (N)	MPM-141	444.00 (N)	PPM-141	479.00 (N)	85 to 265 VAC	4 relays	4 to 20 mA
APM-200	383.00 (N)	MPM-200	364.00 (N)	PPM-200	394.00 (N)	12 to 24 VDC	None	None
APM-201	441.00 (N)	MPM-201	424.00 (N)	PPM-201	454.00 (N)	12 to 24 VDC	None	4 to 20 mA
APM-220	421.00 (N)	MPM-220	404.00 (N)	PPM-220	434.00 (N)	12 to 24 VDC	2 relays	None
APM-221	485.00 (N)	MPM-221	469.00 (N)	PPM-221	499.00 (N)	12 to 24 VDC	2 relays	4 to 20 mA
APM-240	465.00 (N)	MPM-240	444.00 (N)	PPM-240	479.00 (N)	12 to 24 VDC	4 relays	None
APM-241	523.00 (N)	MPM-241	509.00 (N)	PPM-241	539.00 (N)	12 to 24 VDC	4 relays	4 to 20 mA

(N) Items are net priced and are not subject to any discount.

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