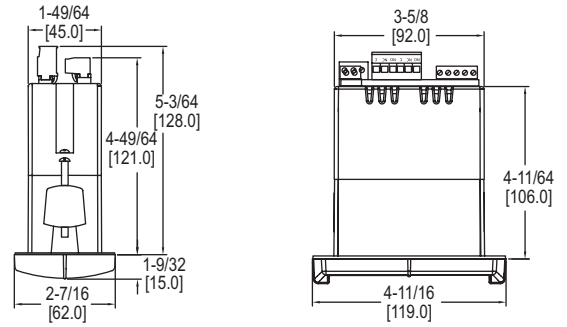




SERIES APM, MPM & PPM

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

The **Series MPM Dual Line Configurable Panel Meter** 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 0-20 mA, 4-20 mA, 0-5 V, or ± 10 V inputs and requires 85-265 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 Dual Line Configurable Panel Meter** displays flow rate and total simultaneously, with a programmable relay and 4-20 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 4-20 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

MODEL CHART					
Model	Model	Model	Power	Output 1	Output 2
APM-100	MPM-100	PPM-100	85-265 VAC	None	None
APM-101	MPM-101	PPM-101	85-265 VAC	None	4-20 mA
APM-120	MPM-120	PPM-120	85-265 VAC	2 relays	None
APM-121	MPM-121	PPM-121	85-265 VAC	2 relays	4-20 mA
APM-140	MPM-140	PPM-140	85-265 VAC	4 relays	None
APM-141	MPM-141	PPM-141	85-265 VAC	4 relays	4-20 mA
APM-200	MPM-200	PPM-200	12-24 VDC	None	None
APM-201	MPM-201	PPM-201	12-24 VDC	None	4-20 mA
APM-220	MPM-220	PPM-220	12-24 VDC	2 relays	None
APM-221	MPM-221	PPM-221	12-24 VDC	2 relays	4-20 mA
APM-240	MPM-240	PPM-240	12-24 VDC	4 relays	None
APM-241	MPM-241	PPM-241	12-24 VDC	4 relays	4-20 mA

SPECIFICATIONS

Input: APM: 0-20 mA, 4-20 mA, 0-5 V, or ± 10 V inputs; MPM: 0-20 mA, 4-20 mA, 0-5 V, or ± 10 V; PPM: Field selectable: Pulse or square wave 0-5 V, 0-12 V, or 0-24 V @ 30 kHz; TTL; open collector 4.7 k Ω pull-up to 5 V @ 30 kHz; NPN or PNP transistor, switch contact 4.7 k Ω pull-up to 5 V @ 40 Hz.
Input Impedance: 50 to 100 Ω .
Accuracy: $\pm 0.03\%$ of calibrated span ± 1 count, square root & programmable exponent accuracy range: 10-100% of calibrated span.
Power Requirements: 85-265 VAC 50/60 Hz, 90-265 VDC, 20 W max or 12-24 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: 4-20 mA.
Power Consumption: 85-265 VAC models: 200 mA @ 24 VDC; 12-24 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 s, 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 4-20 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.

ACCESSORIES

Model	Description
PMA-01	RS-232 serial adapter
PMA-02	Meter copy cable
PMA-03	RS-422/485 serial adapter
PMA-04	RS-232 to RS-422/485 isolated converter
PMA-05	RS-232 to RS-422/485 non-isolated converter
PMA-06	USB to RS-232 non-isolated converter
PMA-07	USB to RS-422/485 isolated converter
PMA-08	USB to RS-422/485 non-isolated converter
PMA-09	Snubber
PMA-10	DIN rail mounting kit for two modules
PMA-11	4 relay expansion module
PMA-12	4 digital inputs and 4 digital outputs module