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 Linear Configurable Panel Meter** is 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 Dual Linear Configurable Panel Meter** has the ability to obtain non-linear input signals and linearize them with simple to use math functions such as 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 0-10 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 Dual Linear Configurable Panel Meter** 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 ±10 V inputs; MPM: 0 to 20 mA, 4 to 20 mA, 0 to 5 V, or ±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 kΩ pull-up to 5 V @ 30 kHz; NPN or PNP transistor, switch contract 4.7 kΩ pull-up to 5 V @ 40 Hz.
- Input Impedance: 50 to 100 Ω.
- Accuracy: ±0.03% of calibrated span ±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 ±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°F to 149°F (-40 to 65°C); Storage: -40 to 185°F (-40 to 85°C).
- Electrical Connections: Removable screw terminal blocks accept 12 to 22 AWG wire, RJ45 for external relays, digital I/O, and serial communication adapters.
- 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 s, on & off delay 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 Mercoind 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, 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, quadruple 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**

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