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 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 Line 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 ±10 V inputs and requires 85 to 265 VAC or 12/24 VDC power supply. Choose or general purpose 32-point linearizer. Unit accepts 0 to 20 mA, 4 to 20 mA, 0 to 5 V, or ±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 Line 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 linearity, 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

### MODEL CHART

<table>
<thead>
<tr>
<th>Model</th>
<th>Model</th>
<th>Power</th>
<th>Output 1</th>
<th>Output 2</th>
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<tbody>
<tr>
<td>APM-100</td>
<td>MPM-100</td>
<td>PPM-100</td>
<td>85 to 265 VAC</td>
<td>None</td>
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<tr>
<td>APM-101</td>
<td>MPM-101</td>
<td>PPM-101</td>
<td>85 to 265 VAC</td>
<td>None</td>
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<tr>
<td>APM-120</td>
<td>MPM-120</td>
<td>PPM-120</td>
<td>85 to 265 VAC</td>
<td>2 relays</td>
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<td>APM-121</td>
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<td>APM-140</td>
<td>MPM-140</td>
<td>PPM-140</td>
<td>85 to 265 VAC</td>
<td>4 relays</td>
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<tr>
<td>APM-141</td>
<td>MPM-141</td>
<td>PPM-141</td>
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<td>APM-200</td>
<td>MPM-200</td>
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<td>12 to 24 VDC</td>
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<td>MPM-201</td>
<td>PPM-201</td>
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<td>APM-220</td>
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<td>12 to 24 VDC</td>
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<td>MPM-221</td>
<td>PPM-221</td>
<td>12 to 24 VDC</td>
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<td>APM-240</td>
<td>MPM-240</td>
<td>PPM-240</td>
<td>12 to 24 VDC</td>
<td>4 relays</td>
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<tr>
<td>APM-241</td>
<td>MPM-241</td>
<td>PPM-241</td>
<td>12 to 24 VDC</td>
<td>4 relays</td>
</tr>
</tbody>
</table>

### 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 at 30 kHz; TTL: open collector 4.7 kΩ pull-up to 5 V @ 40 Hz, NPN or PNP transistor, switch output 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 to 85°C. Storage: -40 to 149°F (-40 to 65°C).
- **Temperature Stability:** ±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.
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**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.