CoolPoint™

UNIVERSAL® Flow Monitors

Vortex Shedding Flowmeter

Description

This flowmeter is made for water, water/glycol coolant of low viscosity fluids. There are no moving parts to clog or wear. They are certified CSA and CE. They have a 4-20 mA output. There are two versions. The three wire version (power supplied separate from the 4-20) has a solid state relay that can be configured as an alarm or as a pulse out. It has a bright LED digital display of flow rate.

The two wire version (option E14) has no display, pulse out or alarm point. It can be operated in an intrinsically safe mode only when used in conjunction with an approved intrinsic safety barrier meeting required entity parameters.

Electrical Specifications

- Input Power: 10 - 30 VDC @ 80 mA standard, 25 mA for the 2 wire option
- Output: 4-20 mA for flow rate
- 100 pulses per gallon from the solid state relay for 3 wire (standard) option
- Electrical Connection
  - Pin Connector (standard)
  - Pigtails (optional)
  - Junction Box with terminal strip (optional)

Material Specifications

Flow bodies of brass or 316 Stainless Steel with PVDF sensors and Viton® seals standard. PEEK sensors used for high temp for fluids above 150° F.

User-Configurable Options

Features that are selectable on the 3 wire standard 4-20 mA units include:
- Selectable alarm state (N.O. or N.C.)
- Set point or pulse output
- Engineering units (GPM, LPM)

Instrument Specifications

- Flow
  - Visual readout: 3 digit LED, 0.3" digit height (3 wire units only)
  - Response time: 450 ms.
  - Deadband for Alarm: 5% of full scale (maximum flow) (3 wire units only)
  - Accuracy: ±2% of full scale
  - Repeatability: ±.25% of indicated flow
- Turndown (ratio of max to minimum flow rates): 10:1 at all temperatures and 20:1 available optionally for standard temperatures.
- Pressure
  - 300 PSIG (20 Bar) operating pressure
- General
  - Fluid temperature limits: 35-150° F (2-66° C) standard, 150-210° F (66-99° C) optional for standard 3 wire transmitter only.
  - Enclosure rating: IP 65, Type 1, 3, 4, 12 and 13
  - Pipe Connections:
    - Female NPT, BSPP & BSPT
  - Back pressure of 10 PSIG required

Viton® is a registered trademark for DuPont Performance Elastomers.
**How To Order**  Select the appropriate symbols to build a model code:

### MODEL CODES

<table>
<thead>
<tr>
<th>Flow maximum GPM (LPM)</th>
<th>Pipe size in inches</th>
<th>Model code</th>
<th>Material</th>
<th>Thread options available</th>
<th>Connector or conduit box options available</th>
<th>Special options</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (15)</td>
<td>1/4</td>
<td>CP2**</td>
<td>-M1*NPT</td>
<td>T1*NPT</td>
<td>C1*Pin connector</td>
<td>W1=20:1 extended turndown***</td>
</tr>
<tr>
<td>6 (22.7)</td>
<td>3/8</td>
<td>CP3</td>
<td>-M2*316 Stainless Steel</td>
<td>T2*BSPT</td>
<td>C2=Pig tails</td>
<td>E20=High temp (150-210° F)****</td>
</tr>
<tr>
<td>12 (45)</td>
<td>1/2</td>
<td>CP4</td>
<td></td>
<td>T3*BSPP</td>
<td>C3=Conduit box, terminal strip</td>
<td>E14 = 2wire 4-20 mA loop-powered transmitter. No alarms, display or high temp available with this option. <strong>NOTE</strong>: E14 option can be operated in an intrinsically safe mode only when used in conjunction with an approved intrinsically safety barrier meeting required entity parameters. 8140R-ASSY = Optional approved barrier</td>
</tr>
</tbody>
</table>

* Indicates default selection. If no selection is made, this option is assumed.

** Example: CP2 is the same as CP2-M1T1C1

### PRESSURE DROP

![Pressure Drop Graph](image-url)

**NOTE:**
- E14 option can be operated in an intrinsically safe mode only when used in conjunction with an approved intrinsically safety barrier meeting required entity parameters.
- 8140R-ASSY = Optional approved barrier

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* Use schedule 40 pipe only
* *** Not available on CP2
* ** Needs grounding, standard temp units only.
* **** Available standard 3 wire units only
**INSTALLATION DRAWING – BASIC METERS**

![Diagram of basic meters with dimensions and connector options.](image1)

**INSTALLATION DRAWING – METERS WITH OPTIONAL JUNCTION BOX**

![Diagram of meters with junction box options.](image2)

**Size** | **A** | **B** | **C** | **D** | **E** | **F**
---|---|---|---|---|---|---
CP2, CP3, and CP4 | 3.25 [83mm] | 1.62 [41mm] | 3.25 [83mm] | 4.07 [103mm] | 2.34 [60mm] | 2.77 [70mm]

**Flow maximum** | **Pipe size** | **Model code** | **Material** | **Thread options** | **Connector or conduit** | **Special options**
---|---|---|---|---|---|---
4 [15] | 1/4 | **-M1** | *Brass* | **T1** | C1 | *=Pin connector*
6 [22.7] | 3/8 | **-M2** | 316 Stainless Steel | **T2** | C2 | *=Pig tails*
12 [45] | 1/2 | CP4 | BSPP | **T3** | C3 | *=Conduit box, terminal strip*

**Additional details:**
- 3.58 [91mm] distance
- NPT Female Connection
- .500-14 NPT conduit connection

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CPSmall091412 3
ACCESSORY CABLES AVAILABLE FOR PIN CONNECTOR METERS

<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
<th>Length in Meters</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>5 pin female</td>
<td>1</td>
<td>6241-1M</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>6241-3M</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>6241-10M</td>
</tr>
<tr>
<td>CP</td>
<td>3 pin female</td>
<td>1</td>
<td>MDCM-3FP-1M</td>
</tr>
<tr>
<td>2wire</td>
<td></td>
<td>3</td>
<td>MDCM-3FP-3M</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>MDCM-3FP-10M</td>
</tr>
</tbody>
</table>

Barrier used for 2 wire option where Intrinsic Safety is required. Part number: 8140-ASSY.

PIN CONNECTOR PINOUTS

CP 3 WIRE STANDARD

**Configuration:**
- 1: +24 VDC power supply
- 2: 4-20 mA flow signal out
- 3: supply ground
- 4: flow relay contact
- 5: flow relay contact

To turn flow relay contact from a switch to a pulse out by externally connecting a 2K - 10K Ohm pull up resistor from power supply to one flow relay contact and connecting the other flow relay contact to supply ground.

CP STANDARD 3 WIRE WITH W1 OPTION (GROUNDED)

**Configuration:**
- 1: +24 VDC power supply
- 2: 4-20 mA flow signal out
- 3: supply & chassis ground
- 4: flow relay contact
- 5: flow relay contact

CP 2 WIRE TRANSMITTER

**Configuration:**
- BROWN = +24 VDC LOOP POWER
- NOT USED
- BLUE = DC LOOP GROUND