

# Pelton Wheel Flow Sensor



measuring  
•  
monitoring  
•  
analyzing

DPM



- Flow Range: 0.24...4.8 GPH to 0.8...80 GPH
- Brass or Stainless Steel Bodies
- Frequency Pulse or 4-20 mA Outputs
- Long-Life Sapphire Axle/Bearing Assembly
- Compact Design



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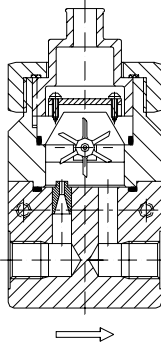
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## Pelton Wheel Flow Sensor Model DPM

### Description

The DPM Series flow sensor uses the pelton wheel principle to measure the flow of water and water-based, low-viscosity liquids that are optically transparent. Liquid passes through a nozzle at the inlet of the flow body and is precisely directed onto a flat-blade pelton turbine. The flow sensor's pelton turbine wheel rotates at a speed proportional to flow rate. The movement of the pelton wheel is detected optically, and the signal from the optical sensor is processed as an amplified pulse or 4-20 mA signal, both of which are proportional to flow rate. In addition to the DPM Series pelton wheel flow sensor's compact design, the inlet flow is redirected via a nozzle; therefore, no inlet or outlet straight piping is required and allows the unit to be mounted in any orientation with the axle remaining in the horizontal plane. These features make the DPM Series flow sensor ideal for mounting in locations where space is tight.



### Specifications

#### Accuracy

DPM..K000 & DPM..F300:  $\pm 2.5\%$  of f. s.  
 DPM..L, DPM..C & DPM..Z:  $\pm 1.5\%$  of f. s.

Maximum Pressure: 230 PSIG

Operating Temperature:  $-10 \dots 176$  °F

Electrical Protection: IP 65

#### Materials of Construction

Housing: 316L SS or Ni-Plated Brass depending on model number

Nozzle: 316L SS

Axle/Bearing: Sapphire

Pelton Wheel: Polypropylene

Receiver: Polysulfone

O-ring: NBR for Brass housings, FKM for 316L SS housings

### Electrical Specifications

#### Frequency Output

Output Type  
 DPM..K000: NPN, open collector, 10 mA max.

DPM..F300: PNP, open collector, 25 mA max.

#### Input Power

DPM..F300:  $24 V_{DC} \pm 20\%$

DPM..K000:  $4.5-12 V_{DC}$

Frequency Range: Based on model number

#### Electrical Connection

DPM..K000:

DPM..F300:

5 ft. PVC cable  
 Micro-DC plug,  
 4-pin male

#### 4-20 mA Output

Output Type:

Max. Loop Load:

Power Requirement:

Electrical Protection:

Electrical Connection:

4-20 mA, 3-wire  
 500 ohms  
 $\pm 24 V_{DC} 20\%$   
 IP 65  
 Micro-DC plug,  
 4-pin male or  
 DIN 43650  
 (Hirschmann) plug

#### Compact Electronics

Output Types:

Analog Output:

Switch Type:

Switch Rating:

Power Requirement:

Display Type:

User Programmable

Functions:

Housing:

Electrical Connection:

Analog output with  
 1 open collector  
 switch or 2 open  
 collector switches  
 4-20 mA, 3-wire  
 $RL < 500$  ohms  
 PNP open  
 collector based on  
 ordering code  
 $300$  mA Max. short  
 circuit protected  
 $24 V_{DC} \pm 20\%$   
 3 digit LED

Transmitter span,  
 switch setpoint,  
 lockout code  
 304 SS  
 M-12 Micro-DC plug,  
 5-pin male

**Order Details** (Example: **DPM-1170 N1 K000**)

Range Water [GPH]	Approx Frequency [Hz] at Max Flow	DP at Max. Flow [PSI]	Housing Material		Fitting Size	Output/Electronics
			Brass	316L SS		
0.24...4.8	165	13.5	DPM-1153..	DPM-1553..	..N1.. = 1/8" NPT ..N2.. = 1/4" NPT ..G1.. = G 1/8 ..G2.. = G 1/4	..K000 = OEM Frequency Output with 5 ft. PVC Cable ..F300 = Frequency Output Micro-DC Plug ..L343 = 4-20 mA, 3-Wire Output with Micro-DC Plug ..L443 = 4-20 mA, 3-Wire Output with DIN 43650 Plug ..C34P* = Compact Electronics, 4-20 mA , 1 PNP Switch ..C30R* = Compact Electronics, 2 PNP Switches ..Z340* = Analog Indicator + 4-20 mA, 3-Wire
0.8...11.1	228	16.8	DPM-1157..	DPM-1557..		
0.8...15	217	17.7	DPM-1160..	DPM-1560..		
0.8...30	344	13.2	DPM-1170..	DPM-1570..		
0.8...48	372	8.8	DPM-1180..	DPM-1580..		
0.8...60	415	8.3	DPM-1190..	DPM-1590..		
0.8...80	439	8.3	DPM-1195..	DPM-1595..		

Accessories: Part Number **807.037** = Mating 4 pin Micro-DC connector with 6 ft. cable for output ..F300 & ..L343  
 Part Number **807.007** = Mating 5 pin Micro-DC connector with 6 ft. cable for output ..C34P, ..C30R & ..Z340

\* Please specify flow direction when ordering

**Plug-On Display:** for Model DPM-..L443 (4-20 mA Output, DIN Plug Connector)

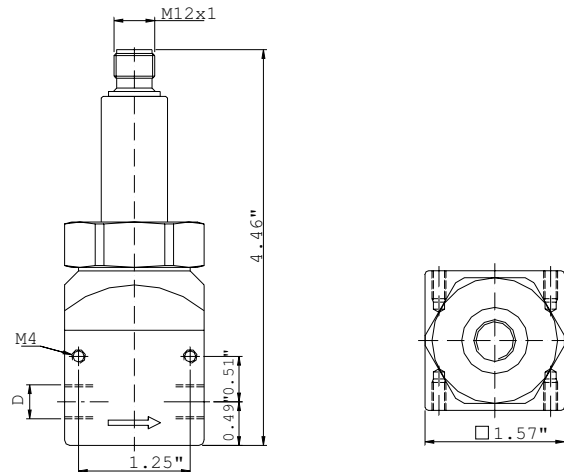
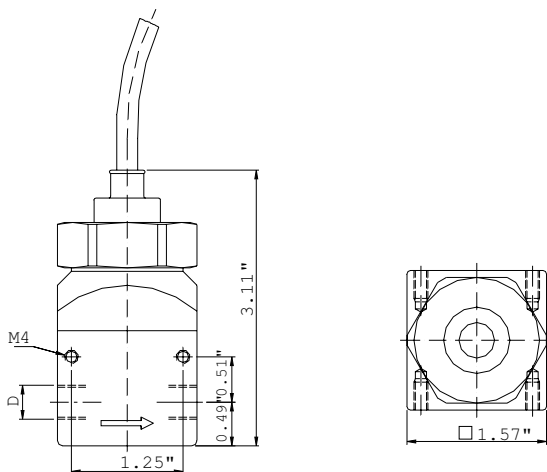
Description	Model Number
4-Digit LED, Plug Connector DIN 43 650, 3-wire, Power Supply Via Analog Output	<b>AUF-3000</b>



**Dimensions**

**DPM with Frequency Output (..K000)**

**DPM with Micro-DC Plug (..F300, ..L343)**

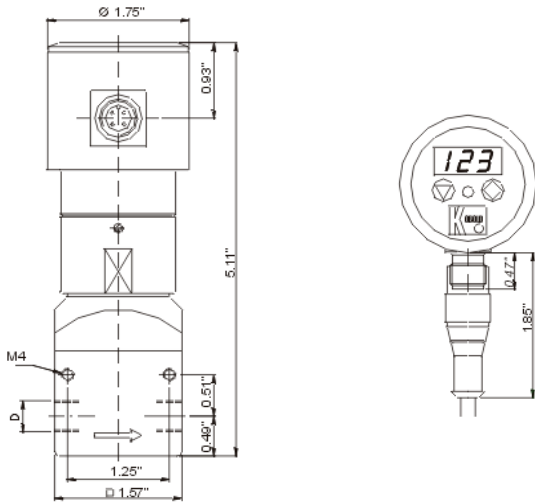




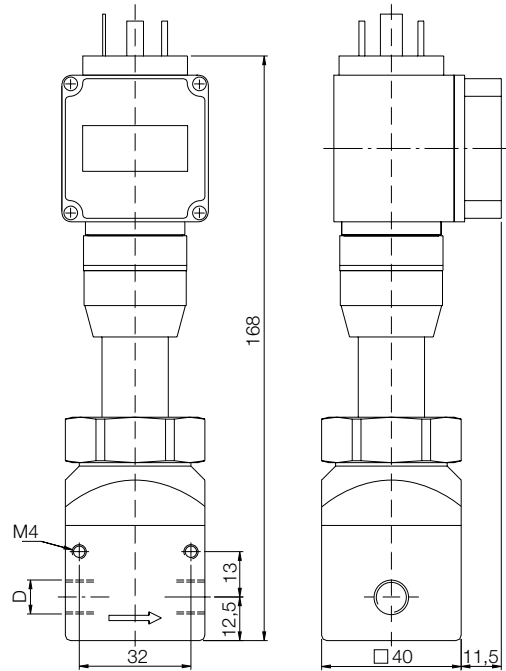
# Pelton Wheel Flow Sensor Model DPM

## Dimensions

### DPM with Compact Electronic (..C30R, ..C34P)



### DPM with ..L443 Output (Shown with AUF-3000 Display)



### DPM with Analog Output and Pointer Indicator (..Z340)

