

## OEM Pelton Wheel Flow Sensor



measuring  
•  
monitoring  
•  
analyzing

DTK



- Measuring Range: 0.8...9.5 to 16...190 GPH Water
- Measures Clear or Opaque Liquids
- Stainless Steel Body
- Pelton Wheel Design Requires No Inlet or Outlet Straight Run
- $\pm 2\%$  of Full Scale Accuracy
- High Volume OEM Discounts Available



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Description

The DTK series Pelton wheel flow sensor measures and monitors low viscosity liquids. This compact pelton wheel design requires no inlet or outlet straight piping runs, allowing the device to be installed in locations where space is at a premium. The DTK employs a very simple design. A nozzle built into the inlet fitting directs flow into an impeller with embedded permanent magnets. Impeller rotation is detected by a Hall effect sensor as liquid flow causes the paddle to rotate. The sensor generates a pulse each time a magnet passes. The pulse frequency is directly proportional to flowrate. The Pelton wheel design provides a very repeatable and linear output. The DTK is available with a stainless steel body allowing it to be used with a wide variety of aggressive liquids. Common areas of application include: volume dosing with external electronics, laundry machines, PCB manufacturing machines, and agricultural machinery.



Technical Data

<b>Measuring Accuracy:</b>	± 2% of Full Scale ± 5% of Full Scale (OEM-Version)
<b>Linearity:</b>	± 1% of Full Scale
<b>Repeatability:</b>	± 0.25 % of Measured Value
<b>Media Temperature:</b>	5...176 °F 5...284 °F (DTK-..0S00)
<b>Ambient Temperature:</b>	5...140 °F
<b>Max. Pressure:</b>	430 PSIG
<b>Materials</b>	
<b>Housing:</b>	304 Stainless Steel
<b>Orifice:</b>	316L Stainless Steel
<b>Axle:</b>	316L Stainless Steel
<b>Rotating Vane:</b>	PVDF
<b>Gasket:</b>	FKM
<b>Connection:</b>	¼" NPT Female Thread or G¼ Female Thread
<b>Installation Position:</b>	Horizontal
<b>Protection:</b>	IP65

Electrical Data

<b>OEM Frequency Output (DTK-..0x00) without CE-Mark</b>	
<b>Power Supply:</b>	4-24 V <sub>DC</sub>
<b>Current Input:</b>	typ. 5 mA
<b>Pulse Output:</b>	NPN, Max. 20 mA, Open Collector
<b>Electr. Connection:</b>	5 foot PVC Cable 5 foot Silicone Cable Plug Connector DIN 43650

DTK-..F300

<b>Power Supply:</b>	12-28 V <sub>DC</sub>
<b>Current Input:</b>	10 mA
<b>Pulse Output:</b>	PNP, Open Collector, Max. 20 mA
<b>Electr. Connection:</b>	Plug Connector M12x1

DTK-..F390

<b>Power Supply:</b>	24 V <sub>DC</sub> ± 20%
<b>Current Input:</b>	15 mA
<b>Pulse Output:</b>	PNP, Open Collector, Max. 20 mA
<b>Frequency Divider:</b>	1...1/128, Factory Setting
<b>Electrical Connection:</b>	Plug Connector M12x1

DTK-..L343

<b>Power Supply:</b>	24 V <sub>DC</sub> ± 20%
<b>Output:</b>	4-20 mA, 3-wire
<b>Max. Load:</b>	500 Ω
<b>Electrical Connection:</b>	Plug Connector M12x1

Compact Electronics

<b>Display:</b>	3-Segment LED
<b>Analog Output:</b>	4...20 mA Adjustable, Max. 500 Ω
<b>Switching Outputs:</b>	1 (2) Semiconductor PNP or NPN, Factory set
<b>Contact Operation:</b>	N/C / N/O Contact Frequency Programmable
<b>Setting:</b>	Via 2 Buttons
<b>Power Supply:</b>	24 V <sub>DC</sub> ± 20%, 3-wire Technology Approx. 100 mA
<b>Electr. Connection:</b>	Plug Connector M12x1

AUF-4000 (Option for DIN Plug Connector)

(Can only be Calibrated with Factory-Mounted Sensor)	
<b>Display:</b>	4-segment, Red LED
<b>Temperature Range:</b>	-4...176 °F
<b>Power Supply:</b>	24 V <sub>DC</sub> ± 20%
<b>Input:</b>	Pulses from DTK (NPN-Hall Effect Sensor)
<b>Output:</b>	4-20 mA, 3-wire
<b>Load:</b>	250 Ω



Order Details: Measuring Range in LPM (Example: DTK-1210 G2 C34P)

Measuring Range (L/min)	Orifice Ø (mm)	Frequency at Max. Flow	Pressure Loss at Max. Flow	Model	Connection	Evaluating Electronics
0.05...0.6	1.0	21 Hz	1.0 bar	DTK-1210..	..N2..= 1/4" NPT ..G2..=G 1/4	<b>OEM Frequency Output without CE</b> ..0P00 = NPN, 5 foot PVC Cable ..0S00 = NPN, 5 foot Silicone Cable ..0400 = NPN, Plug Connector DIN 43650 <b>Frequency Output</b> ..F300 = Plug Connector M12x1, PNP ..F320 = Plug Connector M12x1, PNP, Divider 1:2 ..F340 = Plug Connector M12x1, PNP, Divider 1:4 ..F390 = Plug conn. M12x1, PNP, Divider 1...1/128 <b>Analog Output</b> ..L343 = Plug Connector M12x1, 4-20 mA, 3-wire <b>Compact Electronics</b> ..C30R = Compact Electronics, 2xPNP, Plug M12x1 ..C30M = Compact Electronics, 2xNPN, Plug M12x1 ..C34P = Compact Electronics, 4-20mA, 1xPNP ..C34N = Compact Electronics, 4-20mA 1xNPN
0.1...1.3	1.5	30 Hz	1.0 bar	DTK-1215..		
0.2...2.0	1.8	36 Hz	1.1 bar	DTK-1218..		
0.3...3.5	2.5	41 Hz	0.9 bar	DTK-1225..		
0.3...5.0	3.0	47 Hz	0.9 bar	DTK-1230..		
0.5...7.0	3.5	51 Hz	1.0 bar	DTK-1235..		
0.5...10	5.0	50 Hz	1.0 bar	DTK-1250..		
1.0...12	6.0	44 Hz	0.9 bar	DTK-1260..		
<b>Accessories</b> 807.037 = Mating 4-Pin Micro-DC plug with 6 Ft. cable for output F300, F320, F340, F390, & L343 807.007 = Mating 5-pin Micro-DC plug with 6 Ft. cable for output C30M, C30R, C34N, & C34P						

Order Details: Measuring Range in GPH (Example: DTK-12U1 N2 C34P)

Measuring Range (GPH)	Orifice Ø (mm)	Frequency at Max. Flow	Pressure Loss at Max. Flow	Model	Connection	Evaluating Electronics
0.8...9.5	1.0	21 Hz	14.5 PSI	DTK-12U1..	..N2..= 1/4" NPT ..G2..=G 1/4	<b>OEM Frequency Output without CE</b> ..0P00 = NPN, 5 foot PVC Cable ..0S00 = NPN, 5 foot Silicone Cable ..0400 = NPN, Plug Connector DIN 43650 <b>Frequency Output</b> ..F300 = Plug Connector M12x1, PNP ..F320 = Plug Connector M12x1, PNP, Divider 1:2 ..F340 = Plug Connector M12x1, PNP, Divider 1:4 ..F390 = Plug conn. M12x1, PNP, Divider 1...1/128 <b>Analog Output</b> ..L343 = Plug Connector M12x1, 4-20 mA, 3-wire <b>Compact Electronics</b> ..C30R = Compact Electronics, 2xPNP, Plug M12x1 ..C30M = Compact Electronics, 2xNPN, Plug M12x1 ..C34P = Compact Electronics, 4-20mA, 1xPNP ..C34N = Compact Electronics, 4-20mA 1xNPN
1.6...21	1.5	30 Hz	14.5 PSI	DTK-12U2..		
3.2...32	1.8	36 Hz	15.6 PSI	DTK-12U3..		
5.0...55	2.5	41 Hz	13.1 PSI	DTK-12U4..		
5.0...80	3.0	47 Hz	13.1 PSI	DTK-12U5..		
8.0...110	3.5	51 Hz	14.5 PSI	DTK-12U6..		
8.0...160	5.0	50 Hz	14.5 PSI	DTK-12U7..		
16...190	6.0	44 Hz	13.1 PSI	DTK-12U8..		
<b>Accessories</b> 807.037 = Mating 4-Pin Micro-DC plug with 6 Ft. cable for output F300, F320, F340, F390, & L343 807.007 = Mating 5-pin Micro-DC plug with 6 Ft. cable for output C30M, C30R, C34N, & C34P						



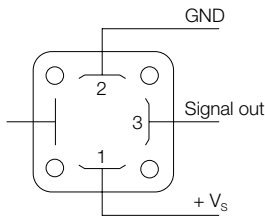
**Plug-On Display:** for Model DTK-..0400 (with DIN Plug Connector)

Description	Order Number
<b>Display:</b> 4-segment, Red LED <b>Input:</b> Pulses of DTK (NPN-Hall Effect Sensor), <b>Power Supply:</b> 24 V <sub>DC</sub> <b>Output:</b> 4-20 mA, 3-wire, (Max. 250 Ω) <b>Plug Connector:</b> DIN 43650 <b>Calibration:</b> Only with Factory-Mounted Sensor	<b>AUF-4000</b>



**Electrical Connection**

**Plug Connection**  
DTK-..0400



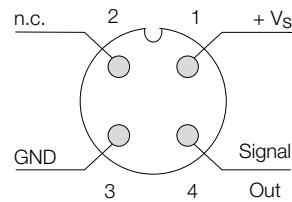
**Cable Connection**

DTK-..0P00; DTK-..0S00

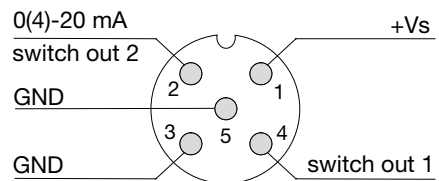
- White: +V<sub>s</sub>
- Brown: GND
- Green: Signal

**Plug Connection**

DTK-..F3; DTK-..L3

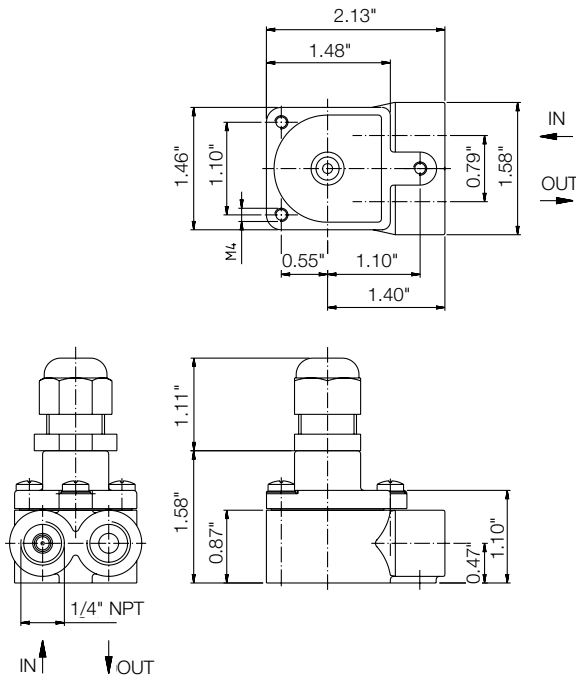


**DTK-..C..**

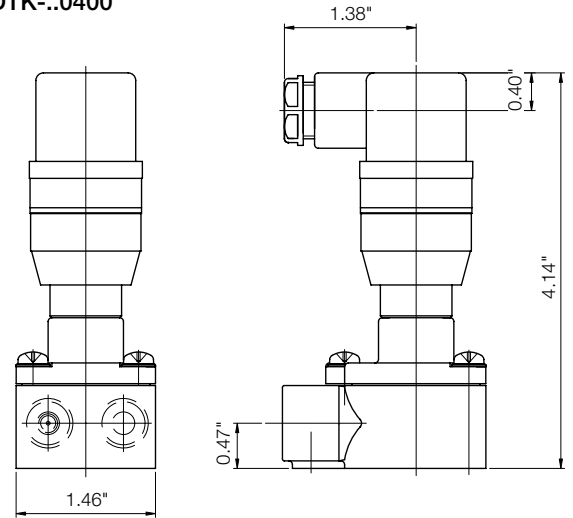


**Dimensions**

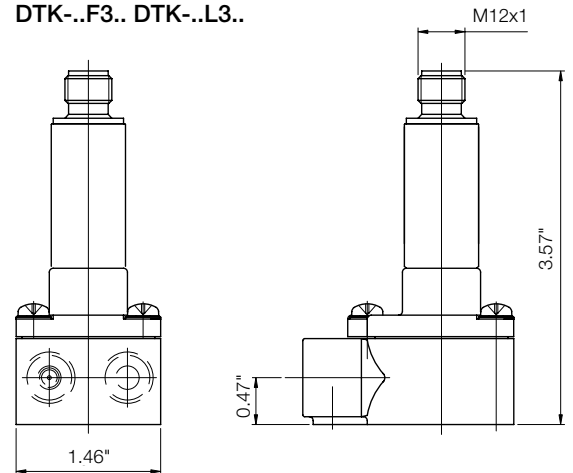
DTK-..0P00; DTK-..0S00



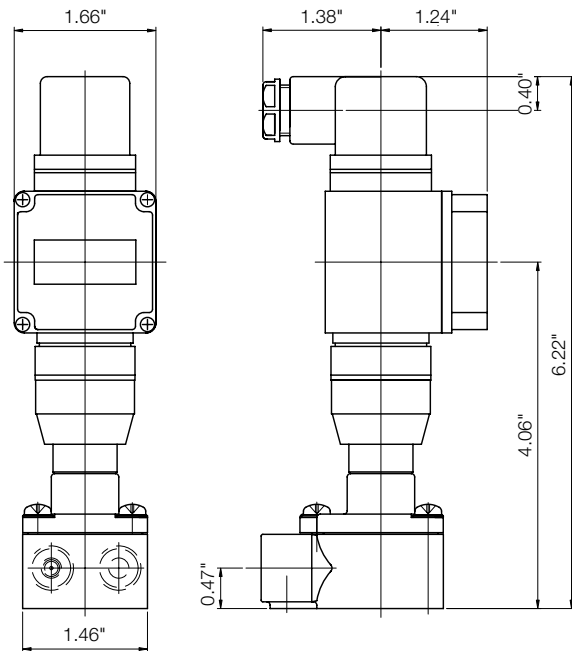
DTK-..0400



DTK-..F3.. DTK-..L3..



DTK-..0400 with AUF-4000



DTK-..with Compact Electronic

