Compact Paddle Flow Sensor

- Measuring Ranges: 0.05...0.50 to 0.8...15 GPM
- PTFE or Brass Bodies
- Pulse Output Standard
- Optional Analog Outputs, Digital Displays, Totalizer and Batch Controllers
- No Straight Run Requirements
- Can Be Mounted in Any Orientation
- Compact, Economical Design
Compact Paddle Flow Sensor Model DFT

Description

The DFT compact series of paddle flow sensors embodies the same rugged reliability of the workhorse DF series in a compact, more economical design. The DFT uses an inlet nozzle to re-direct flow onto the paddle thus there are no straight piping requirements as with many other paddle type designs. The DFT series is available in two material combinations to handle a wide variety of liquids. The nickel plated brass version handles water, light chemicals and low viscosity liquids (<10 cSt), while the PTFE version will stand up to aggressive chemicals. An open collector frequency output is standard with optional analog & controller outputs which offer an LCD displays, analog flow transmitters, programmable relays and totalizer & batch controller options.

Specifications

Flow Range: 0.05...0.30 GPM to 0.5...12 GPM
Accuracy: ±2.5% of Full Scale
Media: Water and Other Low Viscosity Liquids

Maximum Pressure
Brass Body: 230 PSIG
PTFE Body: 70 PSIG

Temperature Range: -4...176°F

Wetted Materials
Brass Body: Nickel-plated Brass, POM, NBR, Ceramic or Sapphire
PTFE Body: PTFE, Ceramic or Sapphire

Electrical Data

Pulse Output - Standard OEM
Output Type: NPN Open Collector
Frequency Range: 0-100 Hz Approx.
Power Supply: 5-24 VDC, 15 mA Max. Sink Current
Electrical Connection: DIN 43650 Plug, PG 11
Electrical Protection: IP 65

Pulse Output - F400
Output Type: PNP Open Collector
Frequency Range: 0-100 Hz Approx.
Power Supply: 24 VDC±20%, Max. 20mA
Electrical Connection: DIN 43650 Plug, PG 11
Electrical Protection: IP 65

Analog Output - L443 & L442
Power Supply: 24 VDC ±20%
Output: 4-20 mA 3-wire or 2-wire
Max Load: 500 Ohms
Electrical Connection: DIN 43650 Plug, PG 11
Electrical Protection: IP 65

Analog Output - MA Electronic
Power Supply: 24 VDC, +15% / -10%
110 VAC ±20%
Output: 4-20 mA or 0-10 VDC
Max Load: 500 Ohms
Electrical Connection: 1.5 m Cable Connection or Connector
Electrical Protection: IP 65

Switching Output - WM Electronic
Power Supply: 24 VDC, +15% / -10%
110 VAC ±20%
Output: SPDT Contact
Max. 250V / 5A
Contact Resistance: < 100 mOhms
Electrical Connection: 1.5 m Cable Connection or Connector
Electrical Protection: IP 65
Compact Paddle Flow Sensor Model DFT

Electrical Data (Continued)

Digital Rate Display - K Electronic

Display: LCD, 8-digit Backlit Rate, Unit of Measure Selectable
Power Supply: 24 V\textsubscript{DC}, +15% / -10%
Analog Output: 4-20 mA or 0-10 V\textsubscript{DC}
Max Load: 500 Ohms
Switching Output: Min. and Max. SPDT Contact
Hysteresis: 2.5% of Measured Value
Electrical Connection: 1.5 m Cable Connection
Electrical Protection: IP 65

Batching Display - G Electronic

Display: LCD, 2-line, 8-digit Backlit Rate, Total, & Grand Total
Unit of Measure Selectable
Analog Output: 4-20mA
Load: 0...500 Ohms or 0...10 V\textsubscript{DC}
Load: > 100k Ohms
Relay Outputs: 2x, max. 30V / 1.5A
Functions: Batch (Relay 2), Start, Stop, Reset, Fine Batch, Correction Quantity, Flow Rate Switch, Flow Total Switch, Language
Power Supply: 24 V\textsubscript{DC} ±20%
Max. Sink Current 100 mA
Electrical Connection: 10-pin Cable or 2x M12 (5,8 Pin)
Electrical Protection: IP 65

Totalizer Display - E Electronic

Display: LCD, 2-line, 8-digit Backlit Rate, Total, & Grand Total
Unit of Measure Selectable
Analog Output: 4-20mA
Load: 0...500 Ohms or 0...10 V\textsubscript{DC}
Load: > 100k Ohms
Relay Outputs: 2x, Max. 30V / 1.5A
Functions: Reset, MIN/MAX-memory, Flow Rate Switch-point, Total & Grand Total Switch-point, Language
Power Supply: 24 V\textsubscript{DC} ±20%
Max. Sink Current 100 mA
Electrical Connection: 10-pin Cable or 2x M12 (5,8 Pin)
Electrical Protection: IP 65

Frequency/Pressure-loss Table

<table>
<thead>
<tr>
<th>Measuring Range (gal/min)</th>
<th>Orifice (mm)</th>
<th>Frequency at Max. Flow</th>
<th>Pressure Loss at Max. Flow</th>
<th>Orifice (mm)</th>
<th>Frequency at Max. Flow</th>
<th>Pressure Loss at Max. Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brass Housing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.05...0.50</td>
<td>2.0</td>
<td>approx. 70 Hz</td>
<td>11.6 PSI</td>
<td>2.0</td>
<td>approx. 80 Hz</td>
<td>10.15 PSI</td>
</tr>
<tr>
<td>0.13...1.8</td>
<td>4.3</td>
<td>approx. 85 Hz</td>
<td>8.7 PSI</td>
<td>4.3</td>
<td>approx. 95 Hz</td>
<td>7.25 PSI</td>
</tr>
<tr>
<td>0.26...4.0</td>
<td>5.9</td>
<td>approx. 130 Hz</td>
<td>11.6 PSI</td>
<td>5.9</td>
<td>approx. 140 Hz</td>
<td>10.5 PSI</td>
</tr>
<tr>
<td>0.5...9.5</td>
<td>9.0</td>
<td>approx. 130 Hz</td>
<td>11.6 PSI</td>
<td>9.0</td>
<td>approx. 120 Hz</td>
<td>13.0 PSI</td>
</tr>
<tr>
<td>0.8...15.0</td>
<td>13.5</td>
<td>approx. 85 Hz</td>
<td>11.6 PSI</td>
<td>13.5</td>
<td>approx. 80 Hz</td>
<td>13.0 PSI</td>
</tr>
</tbody>
</table>

PTFE Housing

| Pressure Loss at Max. Flow | 11.6 PSI         |

No responsibility taken for errors; subject to change without prior notice.
## Compact Paddle Flow Sensor Model DFT

### Measuring Range (GPM)

<table>
<thead>
<tr>
<th>Measuring Range (GPM)</th>
<th>Brass Housing Ceramic Axle</th>
<th>PTFE Housing Ceramic Axle</th>
<th>Brass Housing Sapphire Axle</th>
<th>PTFE Housing Sapphire Axle</th>
<th>Connection Female Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05...0.50</td>
<td>DFT-3103..</td>
<td>DFT-3303..</td>
<td>DFT-3603..</td>
<td>DFT-3803..</td>
<td>..N2.. = 1/4&quot; NPT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>..N3.. = 1/4&quot; NPT</td>
</tr>
<tr>
<td>0.13...1.8</td>
<td>DFT-3107..</td>
<td>DFT-3307..</td>
<td>DFT-3607..</td>
<td>DFT-3807..</td>
<td>..G2.. = G 1/4</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>..G3.. = G 1/4</td>
</tr>
<tr>
<td>0.26...4.0</td>
<td>DFT-3116..</td>
<td>DFT-3316..</td>
<td>DFT-3616..</td>
<td>DFT-3816..</td>
<td>..N4.. = 1/2&quot; NPT</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>..N5.. = 1/2&quot; NPT</td>
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<td></td>
<td></td>
<td>..G4.. = G 3/4</td>
</tr>
<tr>
<td>0.5...9.5</td>
<td>DFT-3136..</td>
<td>DFT-3336..</td>
<td>DFT-3636..</td>
<td>DFT-3836..</td>
<td>..N6.. = 3/4&quot; NPT</td>
</tr>
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<td></td>
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<td></td>
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<td></td>
<td>..G5.. = G 3/4</td>
</tr>
<tr>
<td>0.8...15.0</td>
<td>DFT-3160..</td>
<td>DFT-3360..</td>
<td>DFT-3660..</td>
<td>DFT-3860..</td>
<td>..N7.. = 3/4&quot; NPT</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>..G6.. = G 3/4</td>
</tr>
</tbody>
</table>

### Order Details (Example: DFT-3307N4L443)

#### Output/Electronic Option

**OEM Frequency Output**

...0000 = NPN, Connector DIN 43650

**Frequency Output**

...F400 = PNP, Connector DIN 43650

**Analog Output**

...L443 = Connector DIN 43650, 4-20 mA, 3-wire

...L442 = Connector DIN 43650, 4-20 mA, 2-wire

**MA Electronic with Analog Output Option**

..MK.. = 1.5 m Cable Connection

..MG.. = Connector and Mating Connector

..1.. = 110 VAC

..2.. = 24 VDC

..3.. = 4-20 mA

..4.. = 4-20 mA

..1.. = 0-10 V

**WM Electronic with 1 Contact**

..WK.. = 1.5 m Cable Connection

..WG.. = Connector and Mating Connector

..1X = 110 VAC

..3X = 24 VDC

**K Electronic (Display, MIN/MAX-Contact, Analog Output)**

..KK.. = 1.5 m Cable Connection

..3.. = 24 VDC

..4.. = 4-20 mA

..1.. = 0-10 V

**Totalizer Electronic/Batching Electronic**

..E.. = Totalizer Electronic (2x SPDT)

..G.. = Batching Electronic (2x SPDT)

..3.. = Plug 2x M12 / 24 VDC

..1.. = 1.5 m Cable / 24 VDC

..4R = 4-20 mA

..1R = 0-10 V

**Accessories:**

P/N 807.007 = 4-pin Micro-DC Connector with 6-foot Cable for Output Types E34R & G34R

P/N 807.087 = 8-pin Micro-DC Connector with 6-foot Cable for Output Types E34R & G34R
Compact Paddle Flow Sensor Model DFT

Dimensions Brass (mm)

DFT..0000

DFT..F4../DFT..L4..

DFT with MA/WM/K/E/G Electronics
Compact Paddle Flow Sensor Model DFT

Dimensions PTFE (mm)

DFT-.0000

DFT-.F4../DFT-.L4..

DFT with MA/WM/K/E/G Electronics