



**Badger Meter**

## Mechanical Unscaled Transmitters

Models FT-1, PFT-2, FT-2XP, RST and RST-6P

### DESCRIPTION

The Models FT-1, PFT-2, FT-2XP, RST and RST-6P transmitters are designed for use with Badger Meter® magnetic drive meters. Mounted on the meter, the transmitters can be wired to other pulse-operated instruments that have scaling capabilities and that can receive pulses from a reed switch.

The FT-2XP transmitter is identical to the PFT-2 transmitter except for the housing. The PFT-2 transmitter has a glass-filled plastic housing and a NEMA 4X rating. The FT-2XP transmitter housing is cast bronze. The FT-1 transmitter is offered only on the OP meter and is mounted in the OP housing directly with a stainless steel cover.

These transmitters do not have gear trains. The reed switch is directly coupled to the drive magnet within the meter.

### OPERATION

The flow of liquid through the meter is measured by a disc or piston metering element. The motion of the metering element is transferred to a magnet located within the meter housing.

As the magnet turns, it causes the reed switch to open and close. Contact closures from the switch are transmitted to a remote batch controller or counter.

### APPLICATIONS

These transmitters are normally connected to metering systems that have scaling capabilities and that can accept a reed switch pulse.

Typical applications would be chemical batching systems, chemical additive systems and other applications that require totalizing meter flow and monitoring rate-of-flow of fluid passing through the flow meter.



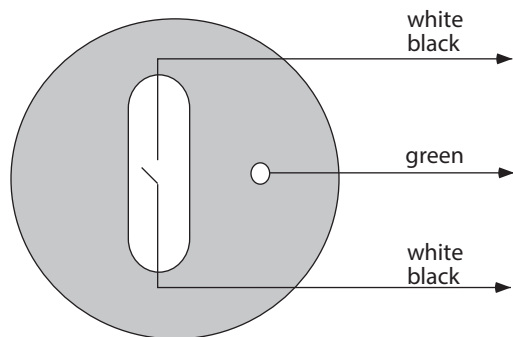
### FEATURES

- Does not require external power
- Rugged, cast bronze housing (FT-2XP only)
- Corrosion resistant plastic enclosure (PFT-2 only)
- High temperature rating is 250° F
- Watertight, NEMA 4 (FT-2XP) or NEMA 4X (PFT-2, RST)
- Watertight, NEMA 6P (RST-6P)
- Hermetically sealed reed switch output
- Compatible with most flow controllers and counters with scaling capabilities
- Stainless steel cover (FT-1 only)

### SPECIFICATIONS

<b>Electrical Rating</b>	10 W max., 200V DC max., 500 mA DC max. or 7 W, 110V AC max., 350 mA AC max. resistive
<b>Duty Cycle</b>	Approximately 50%
<b>Operating Temperature</b>	250° F maximum
<b>Weight</b>	Bronze, 5 lb Plastic, 2 lb

### WIRING DIAGRAM



**NOTE:** The green wire is a ground wire and is found only on the FT-2XP model.

### SCALE FACTOR CALCULATION

$$\text{Scale Factor} = \frac{\text{Pulses per US gallon wanted}}{\text{Transmitter output in pulses per US gallon}}$$

See the chart to the right for the average number of output pulses per US gallon for your particular meter. For more precise calculations, use the information on the transmitter data plate when figuring scale factors.

**Example:**

Compute the scale factor for a 1 inch OP meter. You want to measure the flow to the nearest 0.1 US gallon.

$$\text{Scale Factor} = \frac{10}{76.64} = 0.1305$$

Enter 0.1305 into the controller program to read the meter flow to the nearest 0.1 of a US gallon

### METER K-FACTOR CHART

Meter Size (in.)	Meter Model	Transmitter Output	
		Pulse/US Gallon	Pulse/ Liter
5/8 in.	RCDL 25	198.340	52.396
3/4 in.	RCDL 35	126.671	33.463
1 in.	RCDL 40	89.781	23.718
1 in.	RCDL 70	46.751	12.350
1-1/2 in.	RCDL 120	23.867	6.305
2 in.	RCDL 170	14.565	3.848
1/2 in.	OP/FT-2XP	222.960	58.899
1/2 in.	OP/PFT-2	222.960	58.899
1/2 in.	OP/FT-1	111.500	29.455
1 in.	OP	76.640	20.246
2 in.	OP	20.600	5.4419
1-1/2 in.	160 Turbo Series	1.5366	0.4059
2 in.	200 Turbo Series	1.5366	0.4059
3 in.	450 Turbo Series	1.5982	0.4222
4 in.	1000 Turbo Series	1.6650	0.4399
6 in.	2000 Turbo Series	0.1501	0.0396
8 in.	3500 Turbo Series	0.1514	0.0400
10 in.	5500 Turbo Series	0.1980	0.0523
12 in.	6200 Turbo Series	0.1287	0.0340
16 in.	6600 Turbo Series	0.0155	0.0041
20 in.	10000 Turbo Series	0.0090	0.0024

Industrial Turbo Meter Size	Transmitter Output	
	Pulse/US Gallon	Pulse/Liter
2 in.	17.360	4.586
3 in.	12.400	3.276
4 in.	2.560	0.626
6 in.	1.080	0.285

Meter Type	Bronze	Plastic
RCDL Disc M25, M35, M40, M70	FT-2XP	PFT-2
OP 1/2 in., 1 in., 2 in.	FT-2XP	PFT-2, FT-1
Turbo Series	FT-2XP	PFT-2
RCDL Disc M120, M170	—	RST, RST-6P
Industrial Turbo 2...6 in.	—	RST-6P

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