



Badger Meter

Mechanical Unscaled Transmitters

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

OVERVIEW

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 transmitter 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 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 and is CSA listed for use in hazardous locations. The FT-1 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 which is 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

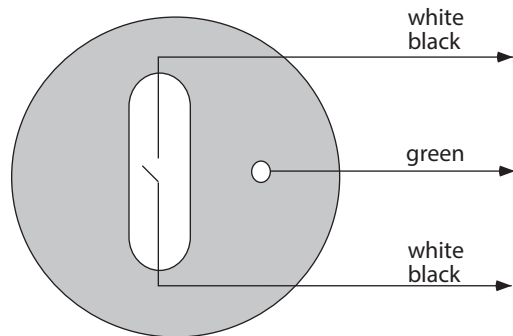
These transmitters are normally connected to metering systems that have scaling capabilities and that can accept a reed switch pulse.

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

- FT-2XP transmitter is CSA listed for Class I, Division 1, Group D
- 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)

WIRING DIAGRAM

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

SPECIFICATIONS

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

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" 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

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

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

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