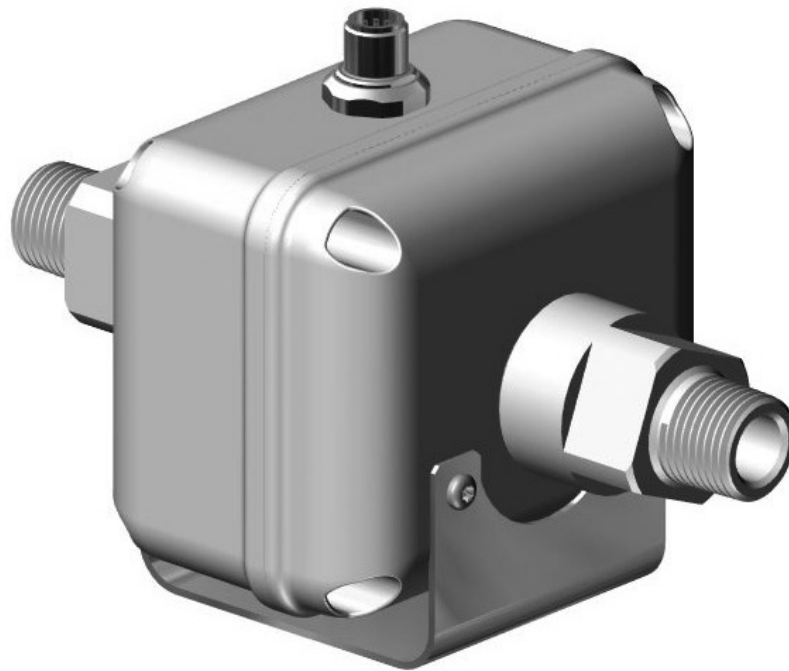


# PE202



## LOW FLOW MAGMETER INSTRUCTIONS



PE202 LOW FLOW MAGMETER INSTRUCTIONS

## GENERAL INFORMATION, FEATURES and SPECIFICATIONS

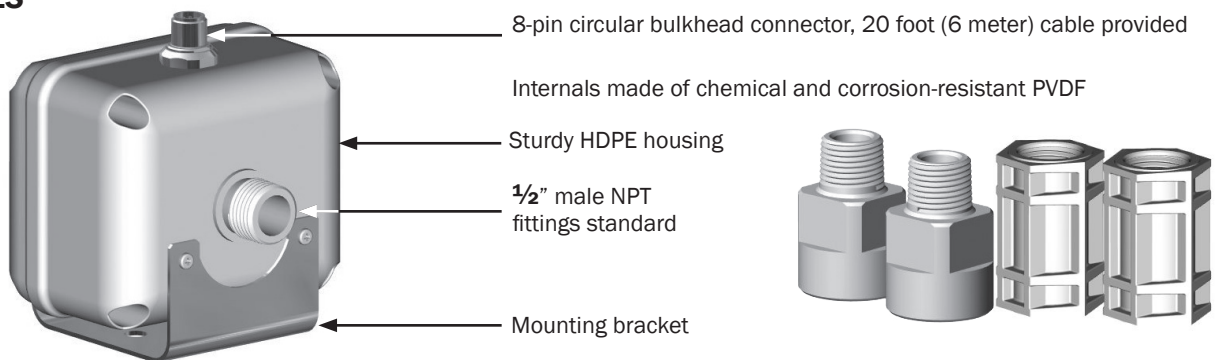
The **PE202 magmeter** is designed for low-flow chemical injection or difficult-to-meter applications with pulsating metering pumps in 3/4" to 1/4" pipe/tube. The housing is made of sturdy splashproof HDPE plastic.

The PE meter is compact enough to fit most pump/injection systems. With zero straight pipe required after an elbow, it can be easily mounted in tight spaces. The mounting bracket adds stability.

With no moving parts, the PE202 can handle fluids containing particulate matter without clogging or jamming, keeping maintenance at a minimum. With no metallic parts (100% PVDF body and PVDF carbon fiber-filled electrodes), the meter is corrosion-resistant and compatible with a wide range of chemicals. Accuracy is maintained with conductive fluids (>20 microSiemens) of varying viscosities and densities.

The PE meter has an optoisolated current sinking pulse output that can be connected to the Seametrics FT420 rate/total display or FT520 batch processor, as well as an optoisolated 4-20 mA current loop for powering analog devices. Outputs and power are provided through a cable with 8-pin female circular connector.

### FEATURES



Threaded male or female NPT adapters can be purchased separately (available in PVDF and PP)

### SPECIFICATIONS\*

<b>Pipe Size</b>		3/4", 1/2", 3/8", 1/4"***
<b>Fittings</b>		1/2" NPT fittings standard in 3/4" or 3/8" flowbody. NPT threaded adaptors available for above pipe sizes.
<b>Materials</b>	<b>Body</b>	PVDF
	<b>Electrodes</b>	PVDF carbon fiber filled
	<b>Ground</b>	PVDF carbon fiber filled
	<b>Housing</b>	HDPE with 25% glass
	<b>Adapters (NPT)</b>	Polypropylene or PVDF
<b>Temperature</b>	<b>Ambient</b>	0° to 130° F (-18° to 54° C)
	<b>Fluid</b>	32° to 200° F (0° to 93° C)
<b>Pressure</b>		150 psi
<b>Flow Range</b>	<b>-075</b>	20 GPM Max. (0.2 GPM cut off)
	<b>-038</b>	3 GPM Max. (0.03 GPM cut off)
<b>Accuracy</b>	<b>-075</b>	+/- 1% plus +/- 0.005 GPM of reading across rated range
	<b>-038</b>	+/- 1% plus +/- 0.002 GPM of reading across rated range
<b>Output Signal</b>		Optoisolated current sinking or current sourcing pulse output: 30 Vdc, 5 mA max Optoisolated 4-20 mA current loop: 7 Vdc plus load voltage drop min; 50 Vdc max
	<b>-075</b>	PE202-075: 500 pulses/liter (1892 pulses/gallon),
	<b>-038</b>	PE202-038: 1,000 pulses/liter (3785 pulses/gallon).
<b>Power</b>		10-15 Vdc, 150 mA (linear power supply recommended)
<b>Conductivity</b>		>20 microSiemens
<b>Empty Pipe Detection</b>		Hardware/software, conductivity-based
<b>Environmental</b>		NEMA 4X standard; IP 66 Splashproof standard

\*Specifications subject to change • Please consult our website for current data ([www.seametrics.com](http://www.seametrics.com)).

\*\*Requires adaptors

NOTE: Consult factory for applications flowing sodium hypochlorite, sodium chlorite, sodium chlorate.

**For applications with the listed chemicals, the following conditions apply:**

Max. Concentration 15% / Max. Temperature 100° F

Flow is greater than 20% of max. for accurate reading

# INSTALLATION and CONNECTIONS

## INSTALLATION

**Positioning.** The PE202 can be mounted vertically or horizontally. It is important to choose a position that will ensure full pipe. (Under certain conditions of empty or partially-full pipe the meter may give a pulse out when there is no flow.) With a zero straight pipe requirement after an elbow, the PE meter can be installed in tight spaces.

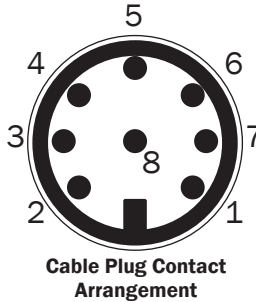
**Mounting.** The PE202 may be supported by its piping connections IF the piping is rigid. The meter and pipe must be perfectly aligned with no flexion at the fittings to prevent damage to the meter and leakage. It is highly recommended to use the mounting bracket provided. The mounting bracket uses two #8 screws on a 1.5" center.

**Piping.** Metal pipe, metal tube, or plastic tubing can be used with the meter. The standard NPT fittings can be used with or without NPT adapters on 3/4" or 3/8" pipe. If used, apply Teflon tape onto the NPT fittings. NPT adapters should be hand tightened onto the fittings. Thoroughly clean the pipe threads and nose and apply Teflon tape to adapter threads. Hold adapters with a wrench while tightening the pipe to prevent damage to the meter.

**Power Supply.** A 12 Vdc linear, regulated power supply with an output current of at least 0.25A is recommended. If a switching power supply must be used, consult Seametrics for approved manufacturer's model numbers.

## CONNECTIONS

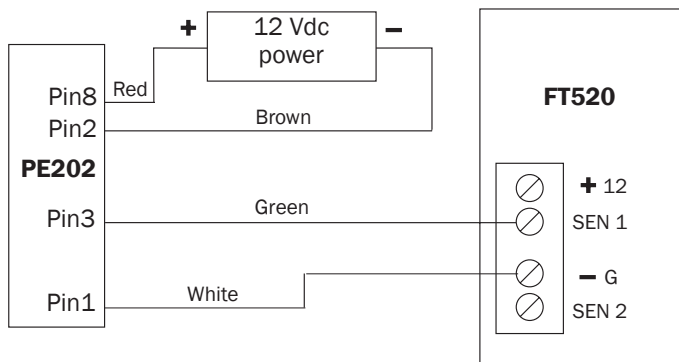
Power and signal connections are provided through the 8-pin male bulkhead connector on the meter housing (20ft (6m) cable provided). See the Pin Assignment and Connections diagrams below.



Pin#	Function	Color
1	Pulse (-)	White
2	Ground	Brown
3	Pulse (+)	Green
4	4-20 (+)	Yellow
5	Not Used	Grey
6	Not Used	Pink
7	4-20 (-)	Blue
8	Power (+)	Red

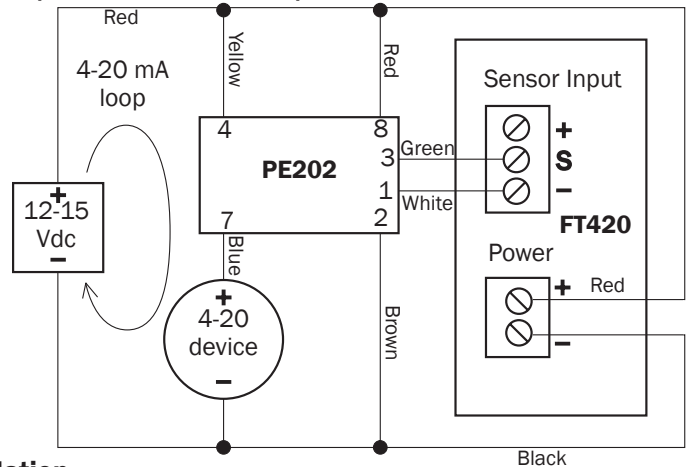
In addition, it is necessary for proper operation to ground the unit to a good quality earth ground. Assure negative power supply is grounded to earth and to the entire electrical/mechanical system. If metal piping is used, jumper inlet and outlet pipes together and connect to ground for best results in metering accuracy. The cable shield drain wire should be left unconnected.

### Pulse Output Only with FT520

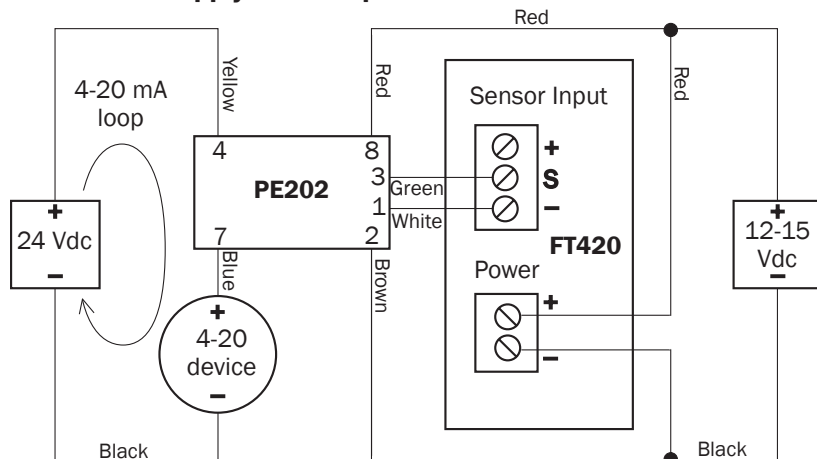


### 4-20 mA Device and FT420 with Single Power Supply

**Important: 4-20mA device input resistance must not exceed 250 Ω**



### Dual Power Supply with Loop Isolation



## OPERATION and TROUBLESHOOTING

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### OPERATION

The meter will output one pulse when powered up. The newly-installed meter takes from a few seconds to a minute for the signal to stabilize at startup, especially if it has been dry. In normal operation, keep the meter filled with fluid and powered on to prevent this delay. When the meter is mounted properly, an empty pipe detection feature will normally detect absence of liquid in the pipe and register zero flow.

20 gallons/minute flow or 3 gallons per minute, depending on model. The pulse signal is a 50% duty cycle pulse set at PE202-075: 500 pulses/liter (1892 pulses/gallon), PE202-038: 1,000 pulses/liter (3785 pulses/gallon).

The 4-20 mA signal outputs 4 mA at zero flow and 20 mA at

### TROUBLESHOOTING

Problem	Probable Causes	Try...
No output	Reversed flow direction	Reverse flow connections
	Empty pipe	Check piping conditions
	Flow rate below minimum	Select a different flowmeter
	Loose or incorrect wiring	Check electrical connections
	Fluid conductivity too low	Select a different flowmeter
	Electrical noise	Relocate meter or reduce noise
Flow rate incorrect	Fluid conductivity too low	Select another flowmeter
	Empty pipe	Check piping conditions
	Electrical noise	Relocate meter or reduce noise

