



Badger Meter Europa

## Model 320 Pulse transmitter

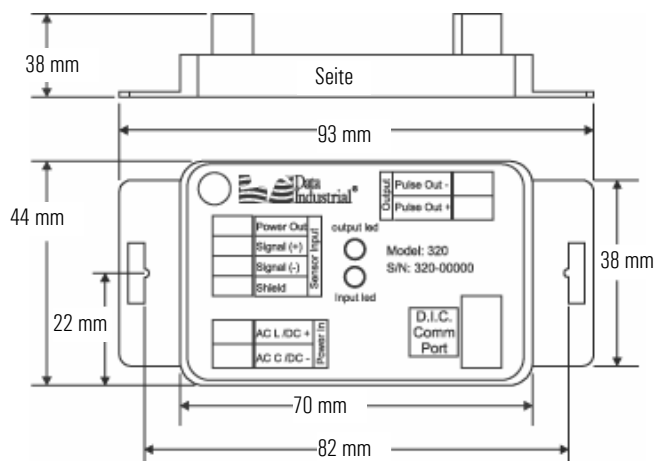
The model 320 is a compact, programmable transmitter capable of converting the signal from flow sensors to a scaled units/pulse signal. In addition to our standard square wave signal, it can also accept a sine wave making it a versatile transmitter for numerous applications.

With an onboard microcontroller and digital circuitry, the 320 is programmed from a Windows based computer program. This eliminates the need to set dip switches and produces precise, accurate and drift free signals of high resolution.

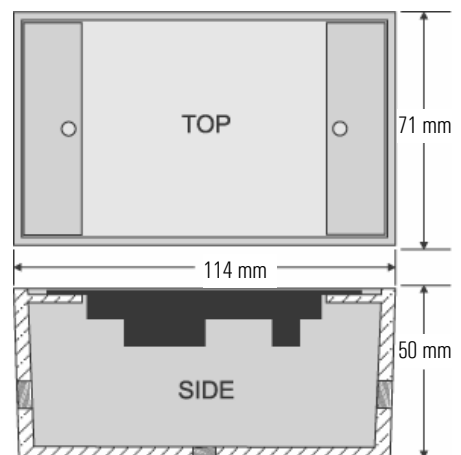
The compact cast epoxy body measures 44 mm (1.75") x 70 mm (2.75") x 25 mm (1") and can easily be mounted to panels, DIN rails or enclosures. With multiple inputs, ease of use and a variety of enclosures, the model 320 is a powerful and competitive transmitter for many of today's demanding applications.



Transmitter only



Optional enclosure (ver. 320-02 & 320-03)



### 320 ordering matrix

	Example:	320	---	xx
<b>Series</b>	Programmable pulse transmitter	320		
<b>Options</b>	Transmitter only			00
	W/ NEMA 4X enclosure			01
	W/ metal enclosure			02
	W/ plastic enclosure			03
	W/ DIN rail mounting clips			04

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## Specifications

Power	<ul style="list-style-type: none"> <li>• 12-30 VAC, 85 mA max.</li> <li>• 12-40 VDC, 30 mA max.</li> <li>• Reverse and overvoltage protected to 40 VDC</li> </ul>
Input frequency	<ul style="list-style-type: none"> <li>• 0.4 to 10 kHz</li> </ul>
Transient suppression	<ul style="list-style-type: none"> <li>• Complies with IEC-801-4 electrical burst, fast transient specification</li> </ul>
Pulse output	<ul style="list-style-type: none"> <li>• Isolated solid state switch in any standard or custom flow total units</li> <li>• Adjustable 50 mS to 1.0 second pulse output width in 50 mS increments</li> </ul>
Temperature	<ul style="list-style-type: none"> <li>• Operating: 29°C to 70°C (-20°F to 158°F)</li> <li>• Storage: -40°C to 85°C (-40°F to 185°F)</li> </ul>

## Calibration

Units can be calibrated at our facility or easily programmed in the field. Field calibration requires A320 programming kit (consisting of a custom cable and software) and an IBM compatible computer running a Windows based operating system. In order to calibrate, the model 320 must be connected to power and the A301 cable must be connected to an available 9-pin COM port on the computer.

Once the software is loaded and communications with the transmitter are established, the following parameters are entered in the setup screens:

1. Units of measure
2. "K" and offset values – manually entered from values in sensor operators manual or automatically entered using the auto button
3. Units per output pulse
4. Filter setting
5. Pulse width

Once the values are set, the "send" command loads the transmitter. All programming can be saved with a file name for later reference. A full explanation of all settings is available through the software help file.

## Wiring

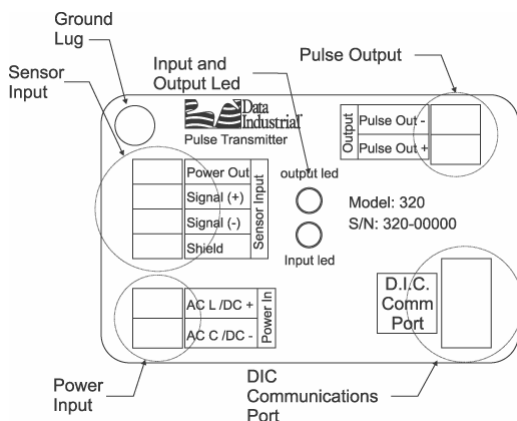


Figure 1: Model 320

Per standard wiring practices, the power must be off before making any wire connections. The terminal strips have removable plug-in connectors to make wiring easier.

1. Refer to figure 1 for terminal connections.
2. Connect power supply positive (+) or AC load to terminal marked AC L/DC +
3. Connect power supply negative (-) or AC common to terminal marked AC C /DC -
4. Series 200 sensor, connect the red wire to signal (+) terminal, black wire to signal (-) terminal and the shield to shield terminal (disregard shield for the IR sensors)
5. Series 4000 sensor, connect the red wire to power out terminal, clear wire to signal (+) terminal, black wire to signal (-) terminal and shield wire to shield terminal
6. If wiring to a sine wave output sensor, consult factory
7. Connect pulse (+) from pulse input device to pulse out (+) of 320, connect pulse (-) from pulse input device to pulse out (-) of 320
8. For maximum EMI protection, connect model 320 ground lug to panel ground
9. Ensure that all connections are tight, then plug connector into header

Figure 2: Wiring 320 to series 200 or 4000 to a generic pulse input device

