

Model 320 Programmable Pulse

OVERVIEW

The Model 320 from Badger Meter is a compact, programmable transmitter designed to accept relatively fast unscaled raw pulses from devices like flow sensors, and then output slow-scaled pulses of programmable width, pulse resolution and units of measure. In addition to our standard flow sensors, the Model 320 can also accept a sine wave signal, making it a versatile transmitter for numerous applications.

With an onboard microcontroller and digital circuitry, the Model 320 is programmed using 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 1.75 x 2.75 x 1 inches (44 x 70 x 25 mm) 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.

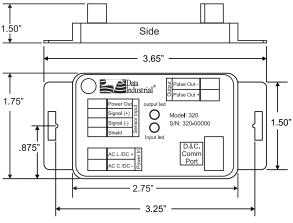


Figure 1: Transmitter dimensions

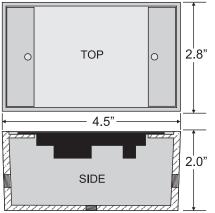


Figure 2: Optional enclosure (Ver. 320-02 and 320-03)





EXAMPLE:	320	-	xx
SERIES			
Programmable Pulse Transmitter	320		
OPTIONS			
Transmitter Only			00
W / NEMA 4X Enclosure			01
W / Metal Enclosure			02
W / Plastic Enclosure			03
W / DIN rail Mounting Clips			04

Figure 3: Model 320 ordering matrix

SPECIFICATIONS

Power	• 1228V AC RMS, 85mA max	
	• 1240V DC, 30mA max	
	Reverse and over voltage protected	
Input Frequency	0.410 kHz	
Transient Suppression	Complies with IEC-801-4 electrical burst, fast transient specification	
Pulse Output	 Isolated solid state switch in any standard or custom flow 	
	 Adjustable 50 mS to 1.0 second pulse output width in 50 mS increments 	
	 Maximum sinking current: 100 mA at 36 V DC 	
Temperature	• Operating: -2970°C (-20158°F)	
	 Storage: -4085°C (-40185°F) 	

Product Data Sheet

CALIBRATION

Units can be pre-set at our facility or easily programmed in the field. Field programming requires an A301-20 programming kit (consisting of a custom cable and software) and a PC running Windows 7, XP or Vista. To program, the Model 320 must be connected to power, and the A301-20 cable must be connected to an available 9-pin port on the computer. Once the software is loaded and communications with the transmitter are established, the following parameters are entered on the setup screens:

- Units of measure
- K and Offset values manually entered from values in sensor operator's manual or automatically entered using the "calculate" button
- Units per output pulse
- Filter setting
- Pulse width

Once the values are set, the "send" command loads the transmitter. A full explanation of all settings is available in the software help file.

WIRING

Per standard wiring practices, the loop power must be off before making any wire connections. The terminal strips have removable plug-in connectors to make wiring easier. Refer to Figure 4 for terminal connections. An example of typical wiring is shown in Figure 5.

Ground

Lug

Sensor

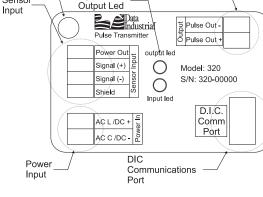
- 1. Connect power supply positive (+) or AC Load to terminal marked AC L/DC (+).
- 2. Connect power supply negative (–) or AC Common to terminal marked AC C /DC (-).
- 3. If wiring a 200 sensor, connect the red wire to the Signal (+) terminal, black wire to Signal (-) terminal, and the shield to the Shield terminal (Disregard shield for the IR sensors).

If wiring a 4000 sensor, connect the red wire to the Power Out terminal, clear wire to Signal (+) terminal, black wire to Signal (-) terminal, and shield wire to the Shield terminal.

If wiring to a sine wave output sensor, consult the factory.

4. Connect Pulse (+) from pulse input device to Pulse Out (+) of the Model 320. Connect Pulse (-) from pulse input device to Pulse Out (-) of the Model 320.

5. For maximum EMI protection, connect the ground lug to panel ground. 6. Make sure all connections are tight, then plug the connector into the header.



Input and

Pulse Output



Rec White(Clear) Red Black Shie**l**d Shield Series 4000 Sensor Pulse Input Series 200 Device Sensor w/ internal 0 Model: 320 pull up S/N: 320-00000 0 12-40VDC + Caution: or 12-30VAC L/DC Maintain electrical Power Supply AC C /DC polarity of output

Figure 5: Example of typical wiring

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