![Badger Meter logo] **Badger Meter** | # Data Industrial® Series 320
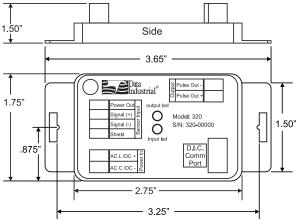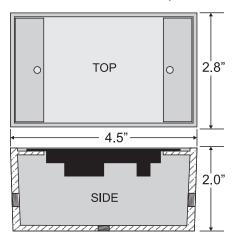## Pulse Transmitter

OVERVIEW

The Data Industrial Series 320 from Badger Meter is a compact, programmable transmitter designed to accept relatively fast un-scaled 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 Data Industrial flow sensors, the Series 320 can also accept a sine wave signal making it a versatile transmitter for numerous applications.

With an onboard microcontroller and digital circuitry, the Series 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 1.75x2.75x1 in. (44x70x25 mm) and can easily be mounted to panels, DIN rails or enclosures. With multiple inputs, ease of use and a variety of enclosures, the Series 320 is a powerful and competitive transmitter for many of today's demanding applications.

Transmitter Only

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

Series 320 Ordering Matrix

SPECIFICATIONS

Power

12-30 VAC, 85mA max

12-40 VDC, 30mA max

Reverse and over voltage protected to 40 VDC

Input Frequency

0.4 to 10 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 total units

Adjustable 50 mS to 1.0 second pulse output width in 50 mS increments

Maximum sinking current: 100 mA at 36 VDC

Temperature

Operating: -20⁰F to 158⁰F (-29⁰C to 70⁰C)

Storage: -40⁰F to 185⁰F (-40⁰C to 85⁰C)

Technical Brief

CALIBRATION

Units can be pre-set at our facility or easily programmed in the field. Field programming requires a Badger Meter Data Industrial A301-20 Programming Kit (consisting of a custom cable and software) and a PC running Windows®. In order to program, the Series 320 must be connected to power, and the Data Industrial A301-20 cable must be connected to a 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 automaticlaly entered using the "calculate" button
3. Units per output pulse
4. Filter setting
5. Pulse width
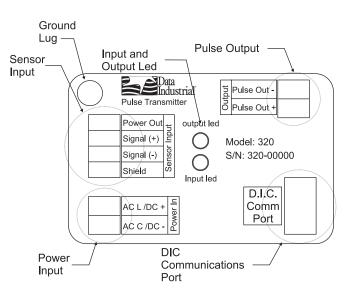
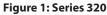Once the values are set, the "send" command loads the transmitter.

A full explanation of all setting is available though 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.

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. Wiring a Badger Meter Data Industrial 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. Wiring a Badger Meter Data Industrial 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 Series 320, connect Pulse (-) from pulse input device to Pulse Out (-) of Series 320.
8. For maximum EMI Protection, connect Series 320 ground lug to panel ground.
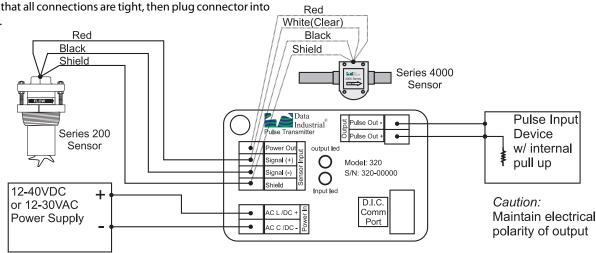9. Ensure that all connections are tight, then plug connector into header.

Figure 1: Series 320

Figure 2: Typical Wiring Example

Please see our website at www.badgermeter.com for specific contacts.