Meter-Master

Model 20 Flow Sensor

DESCRIPTION

The submersible METER-MASTER MODEL 20 Flow Sensor uses a magnetic sensor to digitize a meter's magnetic drive signal. The square wave output is available for input into data logging, SCADA, telemetry, and other utility management systems. No electrical or mechanical connection to the meter is required. It is compatible with large and small water meters worldwide. The Model 20 is externally powered and suitable for permanent or portable applications.

Meter-Master set-up in the field is simple, requiring only a velcro strap to secure the sensor in position. Typically, the sensor is placed on the side of the water meter's register with the sensor cable going straight up or down. A small number of USA meters have different sensor locations (described in detail in the operating instructions). There are two built-in signal output options (external or internal voltage pull-up); external power can be any voltage between 6 and 40 volts. An AC power plug is available as an accessory.

An LED may be factory installed which flashes in unison with the square wave output. If needed, the pulse output frequency may be divided. Pulse factors for specific meters are available on request.

FEATURES

- *Quick/Easy Setup*
- *Digital Output*
- *Low Power*
- *6-40 Volt Input*
- *High Resolution*
- *Submersible*
- *Rugged*
- *Portable*
- *Universal Compatibility*

APPLICATIONS

- *SCADA*
- *Telemetry*
- *Resource Management*
- *Demand Monitoring*
- *Flow Profiling*
- *Hydraulic Modeling*
- *Cost of Service Studies*
- *Water Audits*

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WIRING INSTRUCTIONS

The Meter-Master Model 20 connection cable has five color coded leads for connections to external equipment. This section describes the function of each of these leads to assist with installation. Refer to the diagram below.

GREEN and BLUE. Both of these leads are common (ground) leads and are interchangeable. The two leads are provided as a convenience when connecting a power source that is separate from the external equipment to which the Model 20 output is to be connected. If the Model 20 receives power from the equipment to which the Model 20 output is connected, then either one of these leads can be connected to the external device's common (or ground) and the other can be left unconnected. If desired, both leads can be connected to the external equipment's common (or ground) terminal.

RED. This lead provides the power to the Model 20. A positive voltage between 6 VDC and 40 VDC should be connected to this lead. This can be from a separate power source or from the external pulse collection equipment.

RED/WHITE. This is the signal output lead from the Model 20. It connects to an open drain of a MOSFET transistor internal to the Model 20. This can be considered the same as an open contact switch for equipment that has a positive voltage pull-up resistor. This output will handle any standard industrial pull-up circuit. Voltages as low as one volt and as high as 60 volts can be handled. It can sink up to 100 milliamps.

WHITE. This is an optional low source current pull-up internal to the Model 20 for situations (rare) where the external equipment does not provide signal pull-up. It is compatible with 5 Volt CMOS and LS logic inputs. It has been set at a low current level for situations where the Model 20 is operated from its own battery source.

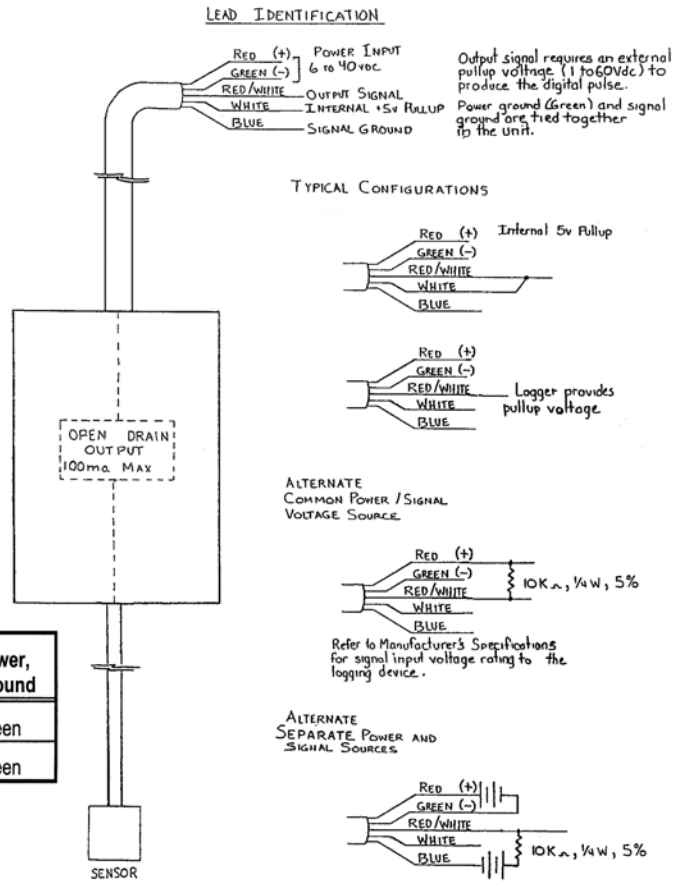
When the Model 20 is powered separately by its own battery source, use the external logging equipment for signal pull-up in order to conserve the Model 20's battery charge. In exceptional situations when the external equipment does not provide signal pull-up but there is a DC voltage source available (the logger itself or some other source), conserve the Model 20's external battery charge by using the DC source for external pull-up. Use a 10K ohm pull-up resistor (1/4 watt, 5%) between the DC source and the Red/White signal wire, as indicated in the diagram.

Signal Options	Signal, Positive	Signal, Ground	Power, Positive	Power, Ground
Internal 5 volt pull-up	Red/White + White	Blue	Red	Green
External 1 thru 60 volt pull-up	Red/White	Blue	Red	Green

Wait 3 minutes for the signal to begin after applying power.

MODEL 20 SPECIFICATIONS

- **Size:** 4.4" x 3.2" x 1.2" (111mm x 71mm x 21mm).
- **Weight:** 1.25 lbs. (.8 kg).
- **Case:** Submersible, ABS/polycarbonate blend.
- **Integral Sensor And Signal/Power Cables.**
- **Square Wave Output:** Square wave with approximately 50% duty cycle. One digital pulse output for each magnetic pulse input. (Each North-South pole combination generates one pulse.)
- **2 Built-In Output Signal Configuration Options:** Internal 5 volt pull-up and external 1 through 60 volt pull-up. Internal 5 volt pull-up draws 0.5 mA; external pull-up draws 0.4 mA.
- **External Power:** Anything between 6 and 40 volts DC. An AC power plug is available as an accessory.
- **Logger/Power Connection:** Flying wire with tinned leads.
- **Strap-On Magnetic Sensor:** Fastens to outside of water meter with velcro straps provided.
- **Pulse Output Frequency Reduction:** Pulse output frequency can be divided by 2, 4, 8, 16, 32, 64,128, or 256 when required for compatibility with external hardware. Must be specified at time of order placement.
- **Two Year Warranty**.



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