

ROOTS[®] Solid State Transmitter Solid State Transmitter for Mechanical Drive Meters - Rotary, Diaphragm, or Turbine



IDX without Index Part N# 049440-001

SPECIFICATIONS:

| | |
|------------------------------|--|
| Supply Voltage | +10 to +15 Vdc |
| Output | Dependent on Load Resistance |
| Switching Times | |
| Rise Time: | 2 microseconds max w/10 mA Resistive Load |
| Fall Time: | 4 microseconds max. |
| Rotation | Bi-directional |
| Input Shaft Speed | 600 RPM Maximum |
| Output Pulse | 100 Pulses per Input Shaft Revolution |
| Duty Cycle | 50% ±10% On/OFF Ratio |
| Operating Environment | -40°F to +180°F (-40°C to +82°C) |
| Housing | Explosion Proof, Class I, Group D, U.L. Listed |
| Leads | 48" Gas and Oil resistant #18 AWG Wire |

For requirements outside these specifications, please contact factory.

Applications:

The Solid State ROOTS[®] Transmitter Model RA-100, is designed for mounting on any gas meter with mechanical drive to provide a medium frequency series of pulses. The Solid State Transmitter can be used with proper customer supplied interface circuitry or directly in conjunction with the ROOTS[®] DM-2 (Data Module), ROOTS[®] EC-2 (Electronic Corrector), or other compatible electronic devices.

This transmitter is used for volume or flow rate indication. For process control requiring better than ±12% flow indication or control, use non-ID transmitters as the mechanical drive can cause flow rate to change due to mechanical alignment.

The Model RA-100 is also available mounted directly on a mechanical Instrument Drive Meter (IDX), or Counter (CX) or Temperature Compensated (TX) mag-coupled meter, or as a field conversion kit for existing mag-coupled Counter and Temperature Compensated ROOTS[®] Meters. For this application request CX or TX Conversion Kit.

The CX and IDX (with or without index) versions are capable of supplying medium resolution for flow rate indication or recording, as well as volume totalization. The TX and IDX, mounted on a Temperature Compensated meter with Instrument Drive, are suitable for volume totalization only.

Mounting:

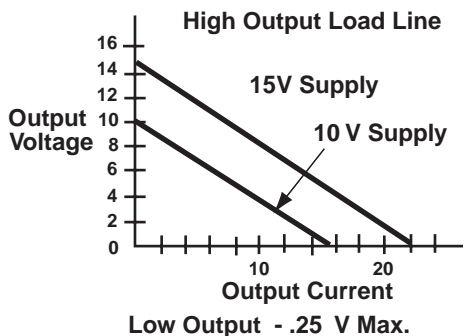
The Solid State ROOTS® Transmitter IDX (with or without index) accepts clockwise or counterclockwise input rotation from the Meter. Mounting on Instrument Drive meters is accomplished by replacing the meter drive dog, lining up the “Instrument Face” decal on the transmitter with the adapter plate supplied with the meter, engaging the drive dog into the slotted coupling, and installing the four (4) cap screws supplied. See view below.

No mounting is required on CX or TX meters shipped from the factory with a transmitter. When the transmitter is supplied as a conversion kit to existing counter or TC version meters, separate mounting instructions are supplied.

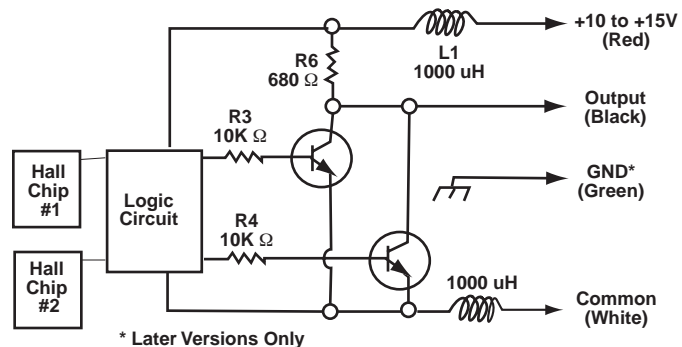
Output Pulse Rates

| METER SIZE | Volume per Pulse | | | | | Pulses per ft ³ or Pulses per m ³ | | | | |
|--------------|------------------|----------------|-----------------|-----------------|----------------|---|--------------------|---------------------|---------------------|--------------------|
| | CX | | TX | IDX | | CX | | TX | IDX | |
| | ft ³ | m ³ | ft ³ | ft ³ | m ³ | pls/ft ³ | pls/m ³ | pls/ft ³ | pls/ft ³ | pls/m ³ |
| 1.5M, 3M, 5M | 0.1 | 0.001 | 0.5 | 0.1 | 0.001 | 10 | 1000 | 2.0 | 10 | 1000 |
| 7M, 11M | 0.1 | 0.01 | 0.5 | 0.1 | 0.01 | 10 | 100 | 2.0 | 10 | 100 |
| 16M | 1 | 0.01 | 5.0 | 1 | 0.01 | 1 | 100 | 0.2 | 1 | 100 |
| 23M, 38M | 1 | 0.01 | N/A | 1 | 0.01 | 1 | 100 | N/A | 1 | 100 |
| 56M, 102M | 1 | 0.1 | N/A | 1 | 0.1 | 1 | 10 | N/A | 1 | 10 |

OUTPUT CURRENT VOLTAGE/CURRENT



SCHEMATIC



Ordering Information

To order for mounting on Instrument Drive ROOTS® Meter, specify, “ROOTS® Transmitter (XMTR), Model RA-100, type IDX”, with or without counter.

Note: Typically, “No Counter” is ordered for mounting on ROOTS® Meters that already have a mechanical counter. With counter, all mechanical drive meters.

To order with new ROOTS® Meter, specify “ROOTS Meter No., CX” or “ROOTS Meter No., TX.”

To order for mounting on existing mag-coupled CTR or TC version ROOTS® Meters, specify, “CTR to CX Conversion Kit” or “TC to TX Conversion Kit.”



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