

ATEX (CE) 8452 (Ex ia) REMOTE PULSE TRANSMITTER

DESCRIPTION

These instructions are for installation of the ATEX (CE) Ex ia 8452 Optical Pulse Transmitter designed and manufactured by Veeder-Root Company, 2709 Route 764, Duncansville, PA 16635-8047. USA. (814) 695-4476.

These Optical pulse transmitters provide fast and accurate signaling for remote indication, totalizing and data monitoring systems. They are ATEX (CE) 8452 certified for applications that require monitoring of output shaft: rotation in hazardous locations. CE compliance per EMC directive 89/336.

The output is dual channel, overlapping, with 100 pulses per revolution per channel typical. The overlapping (quadrature) output permits the detection of direction of rotation and errors on either channel but not both concurrently.

SPECIFICATIONS

Specifications listed are standard unless otherwise noted. Optional features are available at additional cost.

Recommended Operating Conditions (each channel):

Power Requirement: 4.5 to 5.5 VDC; 40 mA (max.) at 5 VDC.

Output Voltage: 4 to 5.5 VDC

Switching Times: Rise Time: 0.25 microseconds maximum.

Fall time: 1.0 microseconds maximum.

Output Current 5.0 mA per channel

Rotation: Bidirectional.

Input Shaft Speed: 1000 rpm maximum.

Torque: 2 oz-in. maximum (144 g-cm).

Output Pulse: Dual channel at 100 ppr, overlapping (quadrature).

Operating Environment: -25° to +70°C (-13° to +158°F)

Storage Environment: -55° to +125°C (-67° to +257°F).

Shaft: Specify length of either 10.4 or 16.5 mm (0.410 or 0.650 inch) Other lengths available on Request.

Shock: Normal shipping.

Mounting: Three 1/4-20 UNC-2B blind tapped holes, spaced equally apart on a 63.5 mm (2.5") diameter bolt circle.



Figure 1. ATEX (CE) (Ex ia) Model 8452 Optical Pulse Transmitter.

Models 84527X-XXX*	Top Mount	Front Mount
Dual Channel (overlap)	845270-XXX	845271-XXX

* Pulser supplied with 1/2"-14 NPT cord grip

ATEX certified per:



Ex ia IIC T4

-25°C ≤ Tamb ≤ 70°C

OUTPUT SIGNAL

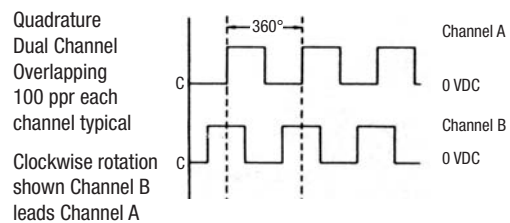


Figure 2. Output Signal

INSTALLATION

General

WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH THE ELECTRICAL CODE AND/OR ANY OTHER APPLICABLE SAFETY CODES. IN ADDITION, DISCONNECT POWER AND TAKE OTHER NECESSARY PRECAUTIONS TO PREVENT PERSONAL INJURY AND EQUIPMENT DAMAGE DURING INSTALLATION AND SERVICE.

Proper installation is necessary if this pulse transmitter is to provide satisfactory operation. Improper installation will result in damage from any of the following conditions:

1. Connecting reverse supply voltage.
2. Connecting pulser signal output to power supply positive.
3. Exceeding temperature range:
-25° to +70° C (-13° to +158° F)
4. Operating the unit in excess of 1000 rpm.

Conditions 1 and 2 above cause irreversible damage almost instantaneously. Excessive heat causes permanent damage whether or not the unit is in use. Excessive cold prevents the unit from functioning, but it will recover when normal temperature is restored.

Mounting

The EMR4 remote pulser consists of a 5 Vdc optical encoder assembled into a stand-alone cast housing. The Remote Pulser can be mounted to either the top or the front of the meter using one of two available kits. The Ex ia model Remote Pulser is intended for use with a Remote Display only. The

remote pulser operates under the same specifications as the existing internal pulse encoder.

- The top mount kit (P/N 845900-552) contains the remote pulser, mounting plate and mounting hardware.
- The front mount kit (P/N 845900-553, 845900-554) contains the remote pulser and limited mounting hardware. The customer or end user will have to supply the mounting scheme to install the remote pulser to the front of the meter.

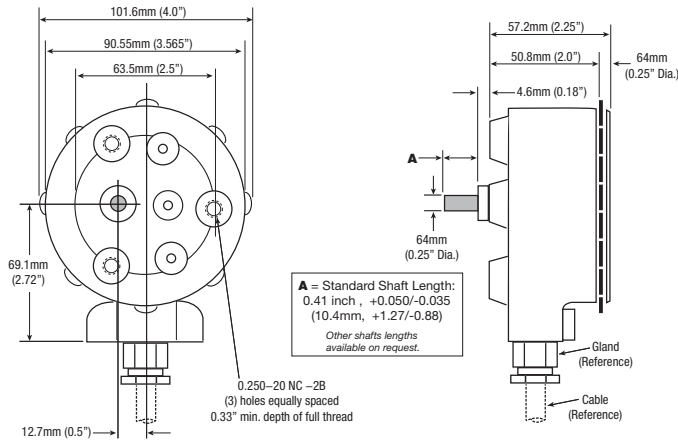


Figure 3. Mounting Dimensions

WIRING

Remote Pulser Cable Connections

Terminal	Signal	Wire Color
+5V	Power	Red
GND	Ground	Black
CH B	CH B	White
CH A	CH A	Green

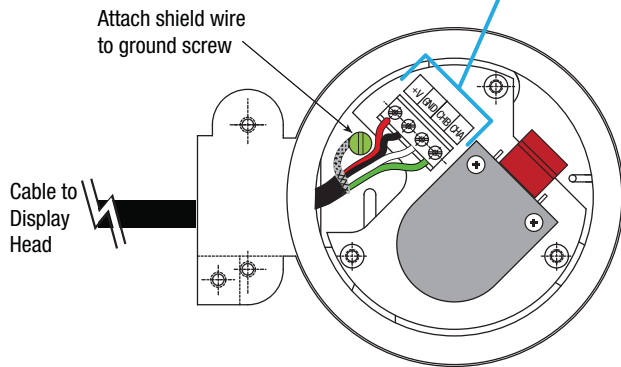


Figure 4. Wiring Connections For The Pulser

OPERATING CHECK

After installation and before normal use, check pulse transmitter and related circuitry for proper installation and operation.

CAUTION: BE SURE ALL WIRES ARE INSTALLED CORRECTLY BEFORE TURNING ON THE POWER SINCE FAULTY INSTALLATION CAN DAMAGE THIS UNIT.

1. Inspect all leads, connections, and ground. Be sure all external circuits are wired correctly.
2. Check for correct pulse transmission:
 - a. Turn on power.
 - b. Rotate shaft a specific number of turns.
 - c. Related equipment must confirm the number of pulses transmitted.
 - d. Turn off power.
3. Reexamine the installation to be certain all safety measures have been met and adequate protection is provided against possible damage. The system may be operated normally only after all the preceding checks have been performed and all corrections made.

EXTERNAL WIRING NOTES (Ex ia MODEL)

1. Customer applied external ground wire is shown in Figure 5.

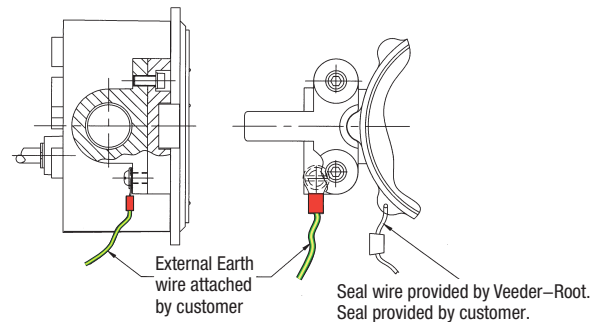


Figure 5. External Ground/Earth

2. Cable Gland (Cord Grip) for I.P. 20 or equivalent rating (supplied by Veeder-Root.).
3. 4 core – maximum recommended wire size to be 18 AWG or (1.00mm²) stranded copper conductors with metallic shield. All enclosed in an outer insulated sheath.
4. Should this device be used with different systems, it must comply with all the requirements indicated for the associated system and their respective EC type certificates.
5. The Ex ia model pulse transmitter is certified to EN standards EN 60079-0:2004 and EN 50020: 2002.
6. **SPECIAL CONDITIONS FOR SAFE USE:**
The enclosure contains light metals and the device must be installed in such a manner as to eliminate the risk of sparks caused by friction or impact from iron /steel.

SERVICE NOTES

REPAIR

It is NOT recommended that attempts to repair the pulse transmitter be made by users or their agents. The compact design of the pulse transmitter, made possible by the use of solid state devices, makes special knowledge and unique test equipment essential if serious damage to the electronic circuits is to be avoided. We therefore recommend that the pulse transmitter be returned to Veeder-Root for repair or adjustment.

SHIPMENT

If the pulse transmitter must be returned to Veeder-Root for repair, perform the following steps:

1. Explain, in writing the nature of the malfunction as accurately as possible. List the persons to be contacted in the event communication is required.
2. Place the letter along with the pulse transmitter and its packing material in its box.
3. Place in an overwrap box. Address to:

Veeder-Root Co.
2709 Route 764
Duncansville, PA 16635-8047

4. All shipments must be Prepaid.

CLAIMS AND WARRANTY

DAMAGE CLAIMS

1. Thoroughly examine all components and units as soon as received. If damaged, write on the face of the freight bill a complete and detailed description of the damage. Have the carrier's agent sign the description.

Note: Insist that the carrier's agent verify the inspection and sign the description.

2. Immediately notify the delivering carrier of damage or loss. This notification may be given in person or by telephone. Written confirmation must be mailed within 48 hours. Railroads and motor carriers are understandably reluctant to make adjustments for damaged merchandise unless inspected and reported promptly.
3. Risk of loss of, or damage to merchandise remains with the Buyer. It is the Buyer's responsibility to file a claim with the carrier involved.
4. Immediately advise your Veeder-Root representative, distributor, or the factory so that we may assist you.

WARRANTY AND CONDITIONS

WARRANTY

1. We warrant that our products shall be free from defects in material and workmanship for a period of one year from the date of shipment thereof. Within the warranty period we shall repair or replace such products which are returned to us with shipping charges prepaid and which are determined by us to be defective. This warranty will not apply to any product which has been subjected to misuse, negligence, or accident; or misapplied; or used in violation of product manuals, instructions, or warnings; or modified or repaired by unauthorized persons; or improperly installed.

INSPECTION

2. You shall inspect the product promptly after receipt and shall notify us at our Altoona/Duncansville office, in writing, of any claims, including claims of breach of warranty, within thirty days after you discover or should have discovered the facts upon which the claim is based. Your

failure to give written notice of a claim within the time period shall be deemed to be a waiver of such claim.

LIMITATION OF REMEDY AND WARRANTY

3. The provisions of paragraph 1 are our sole obligation and exclude all other remedies or warranties, express or implied, including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, whether or not purposes or specifications are described herein. We further disclaim any responsibility whatsoever to you or to any other person for injury to person or damage to or loss of property or value caused by any product which has been subjected to misuse, negligence, or by accident; or misapplied; or used in violation of product manuals, instructions, or warnings; or modified or repaired by unauthorized persons; or improperly installed.

LIMITATIONS OF DAMAGES

4. Under no circumstances shall we be liable for any incidental, consequential or special damages, losses or expenses arising from this contract or its performance or in connection with the use of, or inability to use, our product for any purpose whatsoever.

LIMITATIONS OF ACTIONS

5. No action regardless of form arising out of this contract may be commenced more than one year after the cause of action has accrued, except an action for nonpayment.

COLLATERAL PROMISES

6. There are no representations, warranties, or conditions express or implied, statutory or otherwise except those herein contained, and no agreements or waivers collateral hereto shall be binding on either party unless in writing and signed by you and accepted by us at our Altoona office.

INTERPRETATION

7. Rights and liabilities arising out of any contract with us shall be determined under the Uniform Commercial Code as enacted in Connecticut.

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