



**Badger Meter**

## Model RTR®

Recordall® Transmitter Register

### IDENTIFICATION

The Badger Meter RECORDALL® Transmitter Register (RTR) is available for all remote and pit settings where a Badger Meter water meter can be located. The RTR is permanently sealed to eliminate moisture, dirt, and other contaminants to insure reliable operation in submerged or indoor applications. As the foundation for Badger Meter's MRT products, including TRACE®, Itron® ERT®, ORION® and other Badger® approved AMR solutions, the RTR provides a digital output for superior electronic resolution.

Available for all RECORDALL Disc, Turbo, Compound and Fire Service Meters, each RTR is clearly identified on the face of the dial with an assembly number, unit of measure, and meter model (see figure 1.)

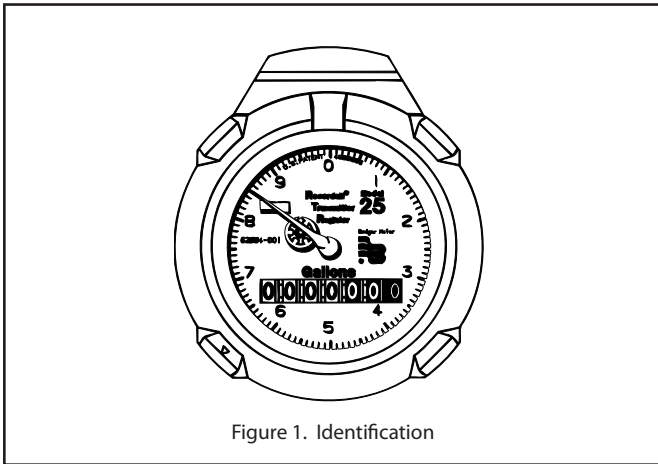


Figure 1. Identification

### REQUIRED MATERIAL

62084-001 RTR Splice Kit

- Contents:
- (3) 59761-001 Gel-Connectors
  - (2) 34776-001 Cable Ties
  - (1) 62085-001 Splice Enclosure

### OPTIONAL MATERIAL

- 62440-001 Reel of Belden #8451 2-conductor wire (2000')
- 64153-001 Reel of Belden #9770 3-conductor wire (1000')

### SUGGESTED TOOLS

- 59983-001 Gel-Splice Crimping Tool
- 59989-001 Coax Stripper
- 59991-001 Wire Cutting Pliers
- 59993-001 Wire Stripper
- TORX® Driver
- 59987-001 VOM Multimeter (Analog) (OPTIONAL)

Before proceeding with installation, be certain that the meter type and size correspond, and that the proper RTR configuration has been supplied for the application.

### CONNECTING RTR



The RTR should only be connected to a Badger Meter approved product. Connection to an unapproved product will void the RTR warranty.

Your RTR will either have a factory installed two-conductor cable (black) or a factory installed three-conductor cable (brown) for connection to an AMR module.

If the wire is cut or broken on either a 2 or 3 wire RTR and requires a field splice after initial installation, connect like color wires to maintain proper installation.

To connect to an AMR module, strip approximately 1½" of outer insulation sheath from the RTR and AMR module cables using the 59989-001 Coax Stripping Tool. Use caution in removing the outer sheath so that the inner signal wire insulation is not damaged.

Unwind the outer foil shield from the RTR cable and cut it off even with the outer sheath using the wire cutting pliers. For two conductor cables, do not cut the uninsulated shield drain wire.

#### RTR with two wires (black cable)

Connect the RTR cable conductors to the AMR module wires using gel-filled connectors, P/N 59761-001, provided in the installation kit. Crimp the cables completely using a parallel jaw crimper such as Badger Meter P/N 59983-001. Polarity must be observed when connecting the RTR to the remote module. Badger Meter, Inc. wiring standards use the black conductor as the negative (-) conductor and the red as the positive (+) conductor.

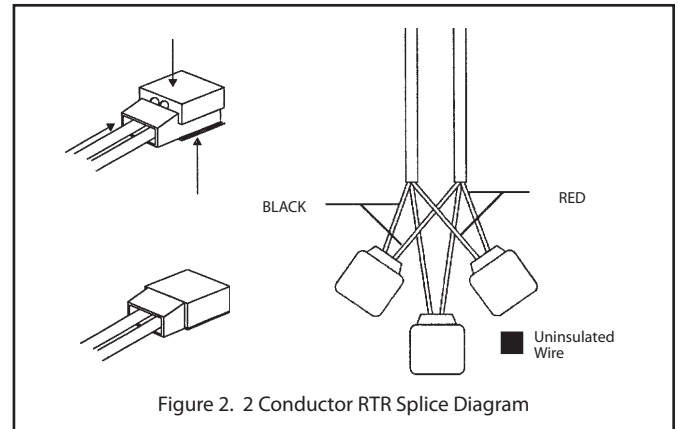


Figure 2. 2 Conductor RTR Splice Diagram

RTR	TRACE Pit/Remote	DIALOG Pit/Remote	ACCESSplus	Itron® Pit*
Red	Red	Red	Red	Red
Black	Black	Black	Black	Black
Uninsulated wire	Uninsulated wire	Don't connect	Uninsulated wire	Uninsulated wire

\*For field splice information please refer to Itron Pit ERT® Modules 40W-1 and 50W-1.

Place the two plastic cable ties P/N 34776-001 on wires and tighten securely for strain relief. Remove excess cable tie with wire cutting device.

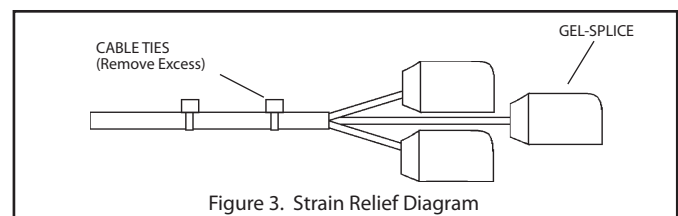


Figure 3. Strain Relief Diagram

RTR® with three wires (brown cable)

For connection to ORION® Transmitter, Hexagram® Star Module or RAMAR® V4 Transpondit, verify the RTR has a brown cable and contains a label with either an 'HE' for connectivity to Hexagram or an 'RA' for connectivity to RAMAR. Using the chart below, connect the RTR conductors to the AMR module conductors using insulation displacement gel-filled splices, P/N 59761-001 provided in the installation kit. Crimp the cables completely using a parallel jaw crimper, P/N 59983-001.

For connection to an Itron® remote ERT®, verify that the RTR has a brown cable and contains an 'IT' on the label. For more information on the installation instructions for the Itron remote ERT, please refer to Itron's Installation Remote ERT Modules 40W-1 and 50W-1.

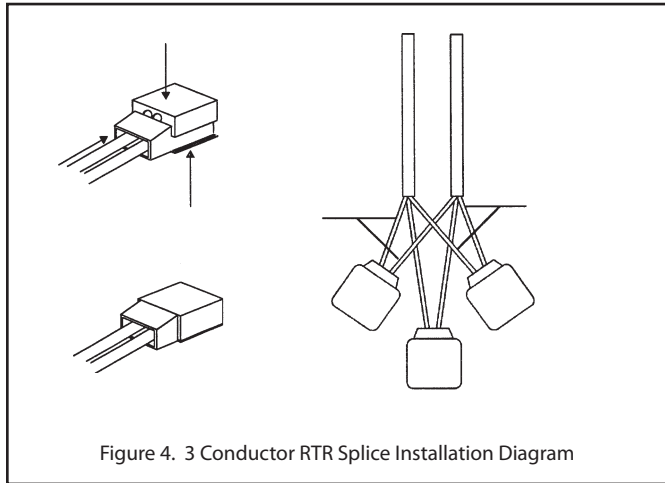


Figure 4. 3 Conductor RTR Splice Installation Diagram

RTR	ORION	Ramar V4	Hexagram Pit/Remote	Itron Remote
Red	Red	Wire #2	Red	Red
Black	Black	Wire #3	Black	Black
Green	Green	Wire #1	White	Green

If the wire is cut or broken and requires a field splice after initial installation, connect like colors to maintain proper installation.

Place the two plastic cable ties P/N 34776-001 on wires and tighten securely for strain relief. Remove excess cable tie with wire cutting device.

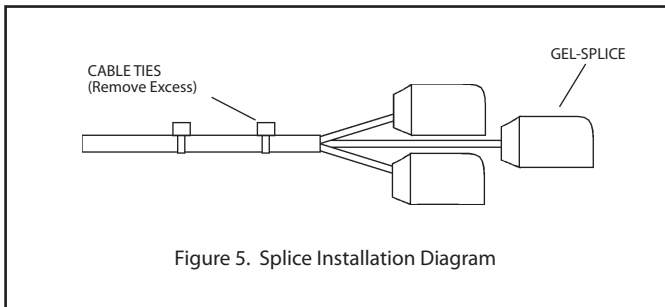


Figure 5. Splice Installation Diagram

#### PIT INSTALLATIONS

Insert the entire splice assembly into the filled splice tube P/N 62085-001 as indicated in Figure 6. Close the cover with leads exiting alternate sides as indicated in the drawing.

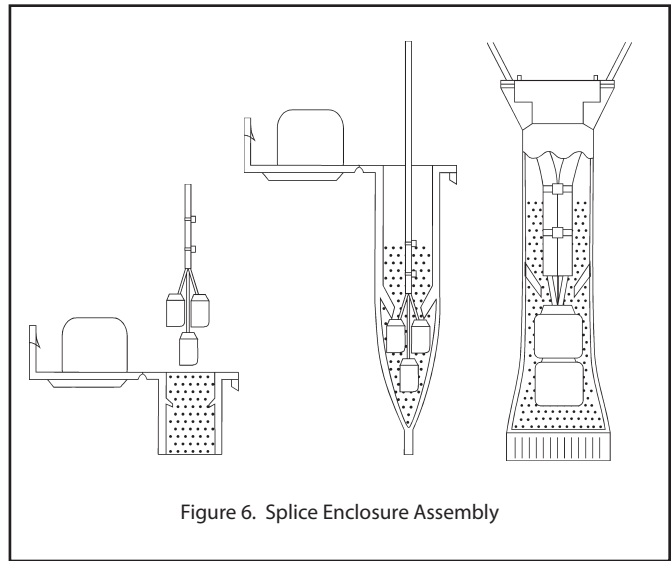


Figure 6. Splice Enclosure Assembly

#### TESTING

After connections are complete, test the entire installation including the RTR, wiring, and remote or pit module for proper operation in accordance with the instructions supplied with the module.

Install the RTR on the water meter and secure it using the TORX® screw provided.

#### TROUBLE SHOOTING

An analog ohm meter will show an "open" reading when connected across the OUTPUT leads of the RTR. When operating the RTR, the ohm meter should show a momentary deflection toward zero when the RTR sends a signal.

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