Model ADE®

Absolute Digital Encoder

IDENTIFICATION

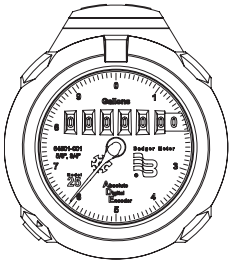
The Badger Meter Absolute Digital Encoder (ADE®) register is available in two versions:

- With a potted three-wire flying lead
- With three terminal screws

The ADE with glass lense is available factory pre-wired to Badger Meter AMR products, or may be spliced to other devices following the instructions below. This version is permanently sealed to eliminate the intrusion of moisture, dirt or other contaminants, and is suitable for installation in all environments, including meter pits subject to continuous submergence.

The ADE with terminal screws features the same permanent sealing of the register internals, but does not provide a moisture resistant enclosure. Therefore it is suitable for indoor installation in a dry environment only, and is marked as such on the terminal screw cover.

Available for all Recordall® Disc, Turbo, Compound and Fire Service Meters, each ADE is clearly identified on the face of the dial with an assembly number, unit of measure and meter model.



REQUIRED MATERIAL - FLYING LEAD VERSIONS

62084-001 Field Splice Kit

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

SUGGESTED TOOLS

Screw Driver

59983-001 Gel-Splice Crimping Tool (Flying lead versions only)
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 ADE configuration has been supplied for the application.

⚠CAUTION

THE ADE SHOULD ONLY BE CONNECTED TO A BADGER METER APPROVED PRODUCT. CONNECTION TO AN UNAPPROVED PRODUCT WILL VOID THE ADE WARRANTY.

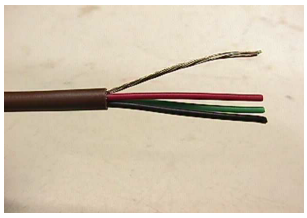
CONNECTING AN ADE

Your ADE will have a factory installed three-conductor cable (brown) for connection to an AMR module.

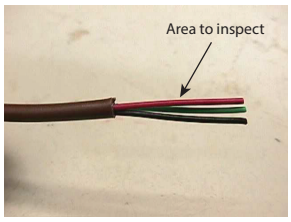
If the wire is cut or broken and requires a field splice after initial installation, connect like color wires to maintain proper installation.

To connect to an AMR module, strip approximately 1½ inch of outer insulation sheath from the ADE 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.

- If the outer foil shield is in place after removing the insulation sheath, unwind the outer foil shield on the cable ends and cut it off even with the outer sheath. Then cut the un-insulated shield drain wire even with the outer sheath. Inspect the inner signal wire insulation to insure it was not damaged. A 'slice' in the insulation of the signal wires could result in a short between conductors resulting in a 'tamper' condition on the AMR product.

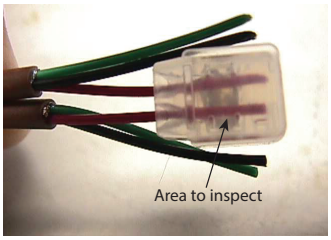


Sheath and outer foil removed

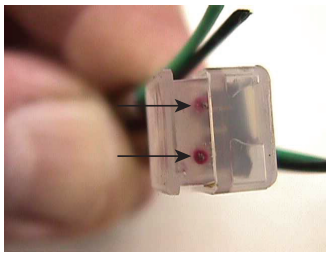


Drain wire cut off

- Next insert the like color conductors from each cable end into a Gel-Connector. Ensure that the conductors are through the crimp bar and all the way to the end of the Gel-Connector.



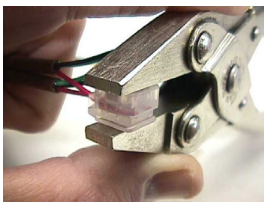
Wires to end of Gel-Connector



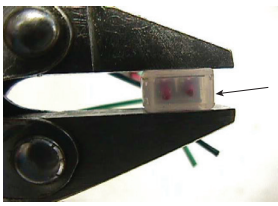
Wires should be visible through the end

Installation Manual

- Crimp the Gel-Connector using the Crimping Tool making sure the "plunger" is fully seated (i.e. no visual gap between the "cap" on the plunger and the shell of the Gel-Connector).

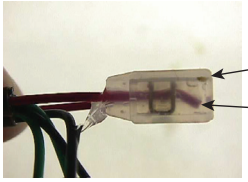


Gel-Connector in the Crimping Tool



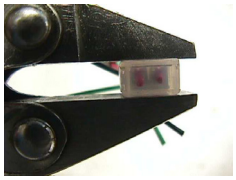
Proper crimp, "plunger" is fully seated

- Inspect the Gel-Connector to ensure that the conductors did not back out during crimping and that the Gel-Connector "plunger" is fully seated.



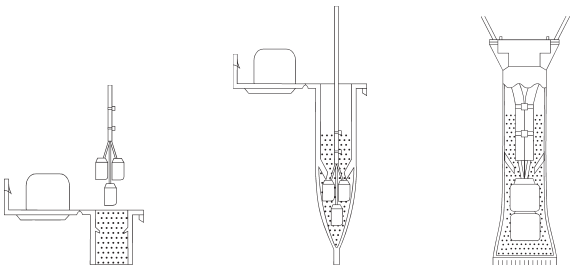
Conductors are still all the way through to the end of the Gel-Connector and the "plunger" is fully seated.

- Repeat this procedure for the remaining like color conductors.



PIT INSTALLATIONS

Insert the entire splice assembly into the filled splice tube 62085-001, as indicated in the figure below. Close the cover with leads exiting alternate sides as indicated in the drawing.



Splice enclosure assembly

ADE WITH TERMINAL SCREWS

NOTE: The ADE with optional terminal screws is suitable for indoor installation only.

The terminal screws are identified by the letters "R", "B" and "G" (standing for Red, Black and Green) molded into the screw cavity.

Strip approximately 1.5 inch of outer insulation sheath using the 59989-001 coax stripping tool. Use caution in removing the outer sheath so that the inner wire insulation is not damaged.

Unwind the outer foil shield from the cable and cut it off even with the outer sheath using the wire cutting pliers. Cut the un-insulated shield drain wire even with the outer sheath using the wire cutting pliers.

Strip approximately 0.5 inch of insulation from the inner wires using the 59993-001 Wire Stripper. Use a screwdriver to loosen the terminal screws sufficiently to allow the bare wire ends to fit below the screw heads. Bend the bare wire ends into hook shapes that will closely fit around the shafts of the terminal screws, and hold the hooks around the screw shafts while tightening the screws with the screwdriver. Do not overtighten screws. The hooks should be oriented with the openings to the right, so that tightening the screws (by turning to the right) will tend to draw the wire closer to the screw.

Place plastic cable tie, 34776-001, approximately 0.25 inch from the end of the outer insulation sheath. Tighten securely for strain relief. Remove excess cable tie. Ensure that the cable exits the terminal screw cavity via the opening on the right side of the cavity wall and that the cable tie resides on the interior of terminal cover. Place the cover over the terminal screw cavity and secure by tightening the Torx screw.

TESTING

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

Install the ADE on the water meter and secure it using the Torx screw provided.

LICENSE REQUIREMENTS

This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes made by the user not approved by Badger Meter can void the user's authority to operate the equipment. No license is required by the utility to operate an ADE meter reading system.

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