THREE-WIRE SPLICING AND SEALING TECHNIQUE
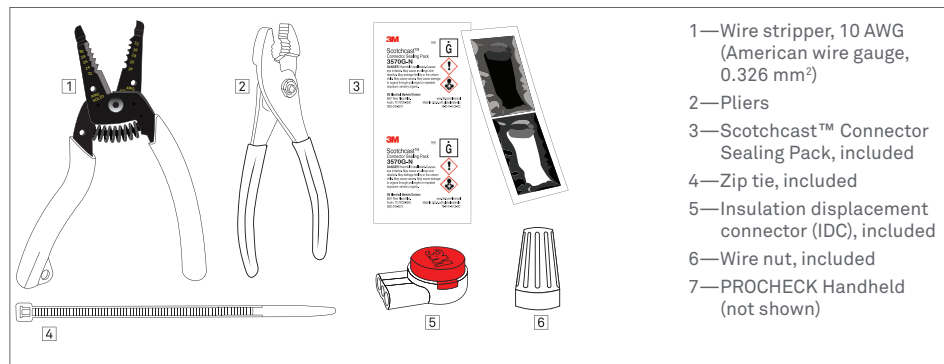
METER

The most common reason for sensor malfunction in the field is cable damage, which can be caused by field operations, rodents, falling limbs, vandals, and other disruptive environmental events. This splice kit can be used to repair cables in the field with minimal disruption to the dataset and without the need for electronic equipment such as a soldering iron. The splice kit can easily repair damaged cable that has sufficient length remaining to connect the two ends. If more cable is required, contact Customer Support.
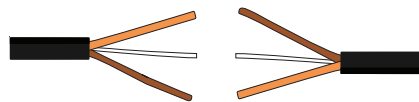
Watch a video demonstration at metergroup.com/environment/articles/wire-splicing-sealing-technique-soil-moisture-sensors.

1—Wire stripper, 10 AWG (American wire gauge, 0.326 mm²)
2—Pliers
3—Scotchcast™ Connector Sealing Pack, included
4—Zip tie, included
5—Insulation displacement connector (IDC), included
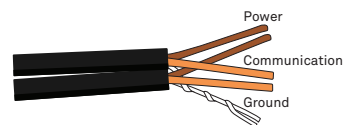6—Wire nut, included
7—PROCHECK Handheld (not shown)

PREPARE AND CONNECT WIRES

Follow the instructions below to repair a damaged cable.

1. Strip the black cable back 3.81 cm (1.5 in) using a 10-AWG wire stripper [1] to reveal the brown, orange, and bare wires. **Do not strip the brown and orange wires.**
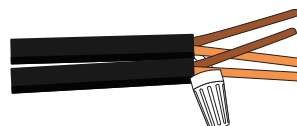

2. Twist ground wires together.

Power
Communication
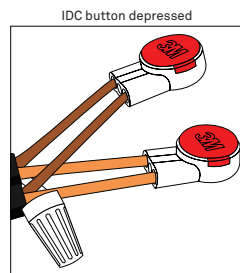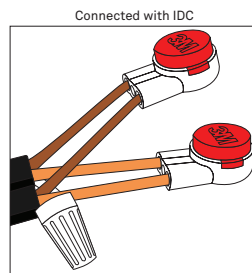Ground

3. Double the ground wires over.

4. Secure ground wires with a grey wire nut [6].

5. Connect each pair of like wires with an IDC [5] (brown to brown and orange to orange).

6. Use pliers to fully depress the red button into connector.

   NOTE: Test the sensor with a PROCHECK or data logger before proceeding. Red buttons must be fully depressed for a proper connection to be achieved.
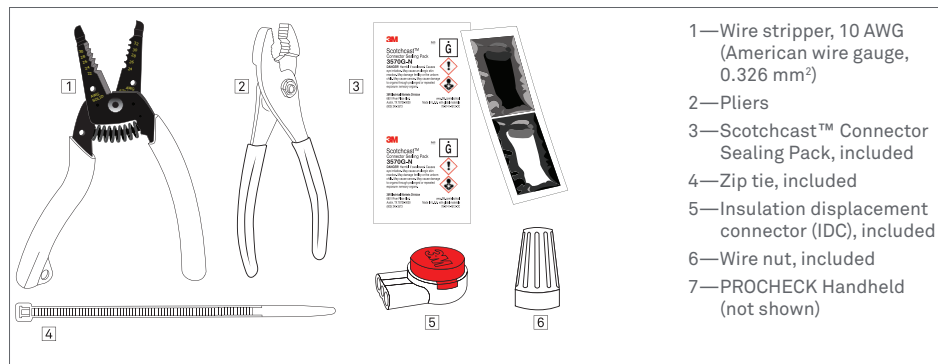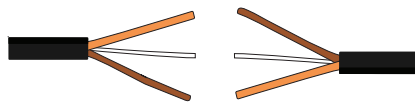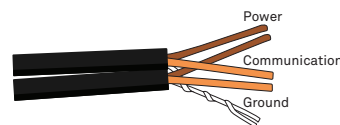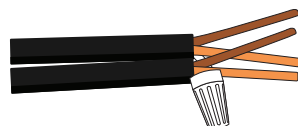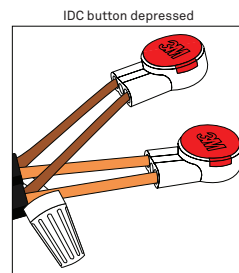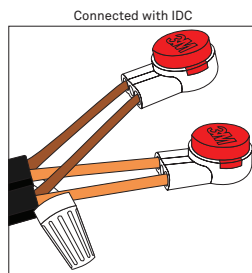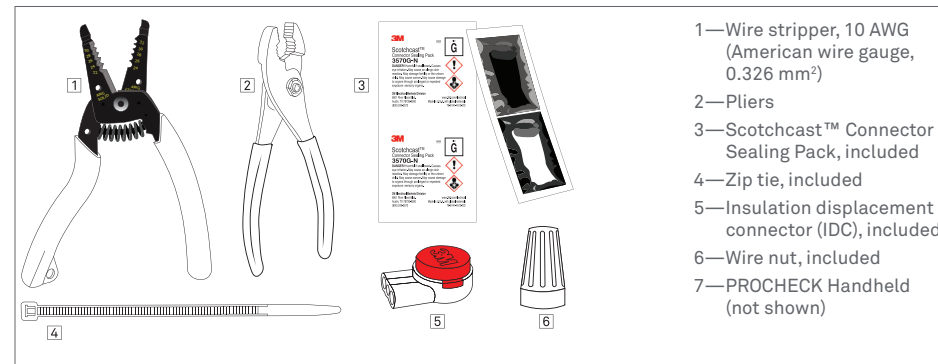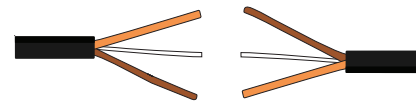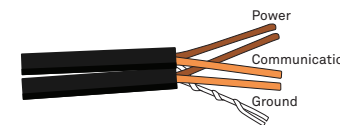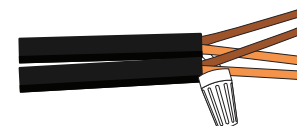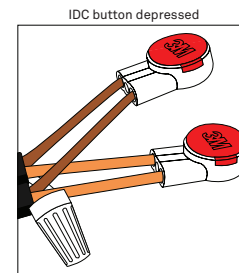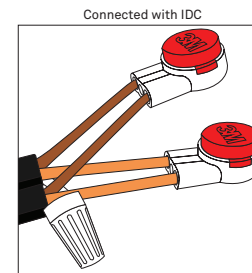

Connected with IDC

IDC button depressed

SEAL WIRE CONNECTION

Seal connection using Scotchcast Connector Sealing Pack [3] as explained below. It is recommended that the user review the Safety Data Sheet before using the sealing pack.
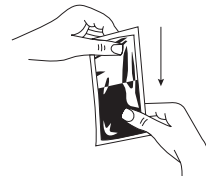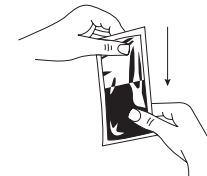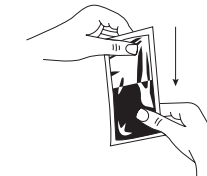
1. Remove guard bag from Scotchcast packaging.

   Be careful to not damage the inner bags.

2. Grip both edges of the bag at the center barrier.

3. Wrinkle and flex the bag to weaken the barrier.

4. Squeeze the red side of the resin, forcing the resin through the barrier to the red side.

   CAUTION: Resin is harmful to skin. Avoid direct contact. Review the Safety Data Sheet.

5. Squeeze contents back and forth 20–25 times to mix the contents thoroughly until it is a uniform color.

6. Squeeze all resin to one end of the guard bag.

7. Cut open the other end of the guard bag.

8. Slowly insert connection into the bag until it fits snugly against the opposite end.

9. Tie a zip tie [4] tightly around the top of the bag to close.

10. Let the bag sit for 8–12 min for epoxy to set.

11. Connect the sensor to a PROCHECK to verify that the splice did not affect the sensor readings.

The sensor can now be connected to a data logger.