TECHNICAL BULLETIN NO. 20150204 Feb. 4, 2015

SUBJECT Use of Multiple SMEC 300 Sensors

PRODUCT FAMILY Soil Moisture, Temperature and EC Measurement
(Item #'s 6470-6 and 6470-20)

**Concern**

When using multiple SMEC 300 Soil Moisture Sensors plugged into a single logger, EC values for the sensors may read lower than actual.

**Cause**

All Spectrum loggers (1000 Series Micro Stations, 2000 Series Mini Stations, 2000 Series Full Stations, and Sensor Pups) utilize a common ground for sensor readings. The SMEC 300 sensor measures EC by passing a small current across the sensor from one conductive pad to another. When other SMEC 300 sensors are in close proximity to each other and within the same body of soil, a small amount of current can leak to the grounded pad on another sensor, resulting in a slightly lower EC reading.

**Corrective Actions**

EC values are the only readings impacted by the proximity of SMEC 300 sensors to each other, volumetric water content and soil temperature are not affected. SMEC 300 sensors connected to separate loggers in close proximity to each other are not impacted. SMEC 300 sensors placed in separate soil vessels (such as separate containers or pots) are also not impacted.

To minimize the impact of SMEC 300 sensors interfering with each other, the sensors should be placed at least 10 feet (~3 meters) apart. Even with the sensors spaced accordingly, EC values of up to 0.1 mS/cm lower have been observed.

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