

**DESCRIPTION**

**APPLICATIONS:** The Badger® ORION® Universal 1 Transmitter is factory programmed for connectivity to compatible encoders including: Sensus®/Precision ECR II and ICE™ encoder, Neptune® ProRead® and E-Coder™ registers, Elster AMCo® Scancoder® and Invision, Metron-Farnier Hawkeye™, and Hersey® Translator encoders.

The ORION system was designed as a three-wire AMR system. The ORION system offers connectivity to any of the mechanical/absolute encoder registers listed above, with a manufacture date between 2000 to the present, as long as the encoder is programmed into the three-wire output mode for AMR and has three wires connected to it.

The Badger ORION Universal 1 Transmitter is also compatible with the Badger® Permalog+® AMR acoustic leak logger for water main leak detection applications. All Badger ORION Universal 1 transmitters have intelligence built into the electronics to allow the unit to automatically determine which encoder or leak logger it is connected to without programming.

The Universal 1 Transmitter is designed for water indoor, outdoor or pit installations that are subject to flooding or submergence. The Universal Transmitter is offered in two different configurations to provide maximum performance for each application. The transmitters include pit transmitters designed for metal lid applications and nonmetal/remote applications.

In addition to the bubble up signal for mobile applications, the Badger ORION Universal 1 Transmitter will also transmit a periodic high power signal to support connectivity to network reading systems.

A separate ORION Universal Transmitter is also available for the Neptune ARB® V encoder.

**RESOLUTION:** Badger ORION Universal Transmitters broadcast an electronic reading resolution equal to what is provided by the encoder register connected to it. The Universal 1 Transmitter offers an electronic reading of up to seven digits.

**LEAK DETECTION:** The ORION Universal Transmitter provides optional leak detection notification when the meter is read. The system reports leak detection when a two-hour window of no usage is not found within a 24 hour time period. The system automatically resets when the next two-hour window of no usage is found.

**NO USAGE:** Badger ORION Universal 1 Transmitters provide notification of accounts with no usage when they are read. Transmitters with no usage are any accounts that do not measure consumption of water over a 30-day time period. The no usage notification automatically rests after flow resumes at the account.

**REVERSE FLOW:** Badger ORION Universal 1 Transmitters provide reverse flow notification as part of their standard consumption message. Transmitters report reverse flow notification alarm for 30 days after the occurrence. The reverse flow notification will automatically reset after the reverse flow condition is corrected.

**DATA PROFILING:** Badger ORION Transmitters can be purchased with an optional Data Profiling feature. The ORION Data Profile Transmitter includes all of the same features and functionality of the ORION Transmitter plus a customer programmable data storage option. The Data Profile information provides utilities with an additional customer support tool to determine customer tampering and to help resolve high water usage disputes. With the capability to store over 21,000 consumption readings, based on an hourly time interval, the ORION Data Profile Transmitter can accumulate over two years worth of customer usage for analysis.

**CONSTRUCTION:** The Badger ORION Universal 1 Transmitter is constructed of a threaded plastic housing with a ORION RF board completely encapsulated in a waterproof epoxy.



**Badger® ORION® Universal 1 Transmitter**

**TEMPERATURE:** The operating temperature of the Badger ORION Universal 1 Pit and Remote Transmitter is -40°C to 60°C (-40°F to 140°F). The water meter should not be subject to temperatures below freezing.

**WIRE CONNECTIONS:** The Badger ORION Universal 1 Transmitter can be wired up to any approved encoder register with up to 75 feet of wire.

**ELECTRICAL:** The electronic circuitry of the Badger ORION Universal 1 Transmitter is designed to provide immunity to electrical surges and transients per IEC801-2, IEC801-4 Severity Level 4.

**METER COMPATIBILITY:** The Badger ORION Universal 1 Transmitter is compatible with Sensus/Precision ECR II and ICE encoders, Neptune ProRead and E-Coder registers, Elster AMCo Scancoder and Invision Metron-Farnier Hawkeye™ registers and Hersey Translator encoders. A separate Badger ORION Universal Transmitter is available for the Neptune ARB V encoder.

**⚠ CAUTION**

The Badger ORION Universal Transmitter should only be connected to a Badger Meter approved product. Connection to an unapproved product will void the transmitter warranty.

**⚠ WARNING**

**TRANSPORTATION:** The Federal Aviation Administration prohibits operating transmitters and receivers on all commercial aircraft. When powered, the Badger ORION Universal 1 Transmitter are considered an operating transmitter and receiver and cannot be shipped by air.

**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 user's authority to operate the equipment. No license is required by the utility to operate a Badger ORION meter reading system.



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**BadgerMeter, Inc.**

P.O. Box 245036, Milwaukee, WI 53224-9536  
(800) 876-3837 / Fax: (888) 371-5982

infocentral@badgermeter.com • [www.badgermeter.com](http://www.badgermeter.com)