

DESCRIPTION

APPLICATIONS: The Badger® GALAXY Pit Transmitter is designed for water meter pit or vault installations that are subject to flooding or submergence. The Pit Transmitter is offered in a through the pit lid mounting configuration for maximum performance.

The Badger GALAXY pit transmitter is suitable for use with all Badger Recordall® Transmitter Register (RTR®) registers, Badger Absolute Digital Encoder (ADE®) or the following competitive encoders: Hersey®, AMCO®, Neptune® and Sensus®.



Figure 1 - Badger GALAXY Pit Transmitter

OPERATION: The Badger GALAXY Pit Transmitter continuously monitors the register circuit. At predetermined intervals the Badger GALAXY transmitter broadcasts the counter or encoder value as well as other meter data to the network receivers.

TAMPER INDICATION: The Badger GALAXY Pit Transmitter sends a tamper indication flag to the network receivers when a tamper condition (cut wire) is sensed. A tamper condition is defined as either a short or open circuit in the transmitter's three-wire system. (Failed encoder reading is also a tamper.)

LEAK DETECTION: The Badger GALAXY Pit Transmitter reports detection of a possible leak when a one-hour (RTR®) or two-hour (absolute encoder) window of no usage is not found within a 24 hour time period. The system automatically resets as soon as an appropriate window of no usage is found.

BROADCAST FREQUENCY: The Badger GALAXY Pit Transmitter broadcasts on a licensed FCC-assigned frequency in the range of 450-470 MHz.

BROADCAST INTERVAL: The Badger GALAXY Pit Transmitter has a broadcast interval that is factory programmed. Typically the interval is every six hours but can be as often as every hour. However, battery life is reduced at intervals shorter than every six hours.

BROADCAST POWER: The Badger GALAXY Pit Transmitter has a RF conducted power output of one watt.

CONSTRUCTION: The Badger GALAXY Pit Transmitter is constructed in a plastic enclosure with a Badger GALAXY RF board, battery and antenna. To assure long-term performance, the enclosure is fully potted for use in flooding or submerging applications.

BATTERY: The transmitter is powered by one "C" size Lithium Thionyl Chloride battery in parallel with a Hybrid Layer Capacitor. The battery assembly is not replaceable. The battery has a calculated life of twenty years based on transmissions every six hours at an ambient temperature of 21° C.



Bronze M35 with a
Badger® GALAXY® Pit Transmitter

SPECIFICATIONS

Power Output:	One watt
Transmission Interval:	Typically every six hours
Broadcast frequency:	A licensed frequency in 450-470 MHz band
Operating Temperature Range:	-20° C to +60° C (-4° F to 140° F)
Battery:	Lithium Thionyl Chloride C cell
Battery Life:	20 years (calculated)
Compatibility:	Any Badger meter with an RTR, ADE, Magnetoflow® Mag meter, or any of the following competitive encoders: Hersey®, AMCO®, Neptune®, and Sensus®.

TEMPERATURE: The operating range of the Badger GALAXY pit transmitter is -20° C to +60° C (-4° F to +140° F). The water meter should not be subjected to temperatures below freezing.

RANGE: Reception of the transmitted signal is dependent on a number of external factors, including the location of the receiver or repeater. Other factors include topographical features, materials used in the construction of buildings, obstacles such as buildings, trees, vegetation, fences, and temporary conditions such as vehicles parked near the transmitter and weather conditions such as rain or snow. Badger Meter systems engineers will consider these factors when designing a system layout.

INSTALLATION: The Badger GALAXY Pit Transmitter is suitable for a submerged environment. The transmitter is to be mounted through the lid of a non-metal pit lid.

METER COMPATIBILITY: When assembled to the Badger RTR or ADE® the Badger GALAXY Pit Transmitter is compatible with Badger Meter's Recordall Disc, Turbo, Compound, and Fire Series meters and assemblies and Magnetoflow® Mag meters. Compatibility is also available to competitive meters when using the proper encoder.



If the Badger® GALAXY® Pit Transmitter is installed on an existing RTR® register, the current meter reading can be entered into the internal counter of the transmitter using the Badger® handheld installation tool in conjunction with the infrared port in the transmitter module (see Figure 2).



Figure 2 - Location of infrared ports

WIRING: The Badger GALAXY Pit Transmitter may be factory wired to the Badger encoder with a wire harness of up to 75 feet (3' or 10' standard). However, the transmitter module and the encoder may be supplied separately and connected by an installer. The three wires of the encoder and the three wires of the transmitter are color coded for easy matching and connecting of the pairs. (Wiring to competitive encoders may differ.)

ACTIVATION: The Badger GALAXY Pit Transmitter is shipped in a dormant, non-transmitting state. To activate the transmitter, hold it so that the infrared ports are in the 12 o'clock position (Figure 2). Hold the magnet to the right (3 o'clock position) of the infrared ports for three seconds.



Figure 3 - Activation of Badger GALAXY® Pit Transmitter

FORCING A TRANSMISSION: After activation, a transmitter can be forced to send a transmission. To do so, hold it so that the infrared ports are in the 12 o'clock position (Figure 3). Hold the magnet to the right (3 o'clock position) of the infrared ports for three seconds.

DISABLING: A properly operating transmitter should not be turned off once it is activated. A transmitter can be disabled for special circumstances, such as return shipment of a defective unit for warranty purposes. To disable a transmitter, use the Badger handheld tool in conjunction with the infrared port in the transmitter module.

TRANSPORTATION: The Federal Aviation Administration prohibits operating transmitters and receivers on all commercial aircraft. When powered, the Badger GALAXY Transmitter is considered an operating transmitter and cannot be shipped by air.

FCC COMPLIANCE: This product complies with Part 90 of the Federal Communications Commission Rules. An FCC license is required for operation of the Badger GALAXY system.

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