

ZENNER ETR Encoded Type Register Technical Brief

APPLICATION: The Encoded Type Register (ETR) is designed for use with ZENNER PMN, PPD, PMT, PMTB and FHD meter series registers to provide either an encoded or pulse output. **The ZENNER ETR is not designed for systems that require M-Bus or 4-20mA outputs.**

MOUNTING: The ETR mounts onto the meter register housings using two Phillips head screws with tamper seals that are provided. The ETR can be removed from the meter without disrupting water service.

MAGNETIC PICKUP: Magnetic pickup from the register pointer ensures reliable positive readings.

SEALED ETRU: The ETR is completely sealed and approved for pit conditions.

CONSTRUCTION: The housing of the ETR is constructed of an environmentally safe plastic and resin. Internal construction materials are designed for long-life and reliability. The potting compound provides an impenetrable barrier against water and natural contaminants.

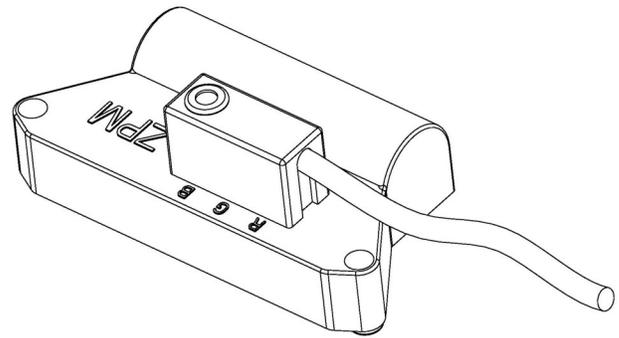
TEMPERATURE: The operating range of the ETR is -20° C to 76° C (-4° F to 169°F). The water meter should not be exposed to temperatures below freezing.

WIRE CONNECTIONS: The ETR is provided as a factory pre-wired assembly or an individual unit that can be wired in the field. Length of the connecting wires is limited by the limitations of the connected AMR device.

TAMPER-PROOF FEATURES: Customer removal of the ETR can be detected by a built in electronic feature of the unit.

ELECTRONICS: The circuit board is completely sealed against moisture and humidity.

OPERATING CHARACTERISTICS: The ETR has an output every revolution of the pointer. The ETRU generates one count for every rotation of the sweep hand. It will not decrement the count with reverse rotation, and will internally count up to 50 consecutive reverse rotations. This feature is provided to ensure that if a forward rotation is followed by a reverse rotation, the reverse flow will not cause the forward flow to be counted twice. A maximum of 50 consecutive reverse rotations is allowed for.



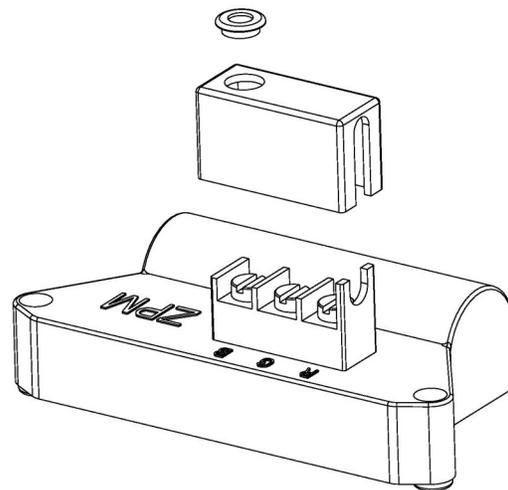
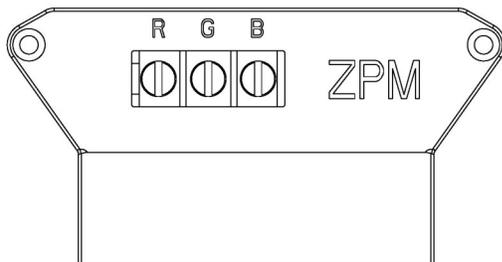
MODE: The ETR can be configured in one of two modes of operation from the factory. AMR/AMI solution uses three wires. The Digital Switch solution uses two wires.

- **Encoded Mode (Using Three Wires) Sensus Compatible.**

Connections for the ETR are clearly marked R = Red (Clock), G = Green (Data) and B = Black (Ground) for Encoded Mode Operation.

- **Digital Switch Output Mode (Using Two Wires)**

The digital output is an 'open-collector' transistor between the Green and Black terminals. The black terminal is to be attached to the ground, or most negative terminal of the switch counter and the Green terminal to the input, or most positive terminal of the switch counter. The maximum current that the ETRU output can switch is 20mA. The active signal is on for 50ms.



Specifications

Terminals	Three
Weight	3 oz.
Temperature	-20° C to 76° C (-4° F to 169°F)
Signal Output	Industry Standard ASCII Format or Digital Output
Signal Type	Two wire asynchronous for touch Solutions Three wire synchronous for AMR Solutions
Power Source	Internal battery with 15 plus years lifetime