The E-Coder® R450™ combines the high-power, two-way radio frequency (RF) R450™ meter interface unit (MIU) with our E-Coder® solid state absolute encoder into one integrated package to offer utilities the advantages associated with ease and speed of installation. The E-Coder® R450/™ does not have any external wires to be installed. Designed for pit applications, the high-power RF transmission reduces the number of collectors, thereby lowering a utility’s overall deployment cost.

The E-Coder® R450/™ is designed to collect meter usage data and remotely transmit the information to collectors at predetermined intervals. The R450 is a powerful MIU that operates within the 450–470 MHz FCC-licensed band to ensure maximum read success rates as well as reliable RF performance. The standard R450 MIU is programmed to deliver meter usage and 24-hour consumption profile data daily. Hourly consumption profiling helps address such issues as consumption disputes and conservation compliance as well as monitoring large commercial and industrial usage.

The E-Coder® R450/™ can monitor, identify, and notify utilities of alarm states, such as continuous leaks and reverse flow occurrences. The E-Coder® R450/™ can be configured to send priority alarms via email or text message to utility personnel when key system events are identified.

The E-Coder® R450/™ PLUS features are also communicated through the E-Coder protocol, allowing host software platforms to interpret the data and pass the information directly to the billing packages, CIS screens, and operations and maintenance reports. The value-added data received through Neptune’s E-Coder® R450/™ enhances customer service and improves operational efficiencies.
**Electrical Specifications:**
- MIU power: Lithium battery with capacitor

**Transmitter Specifications:**
- Transmit period: Standard configuration is a midnight meter reading and 24-hour usage/consumption data – daily
- Operational frequency: Licensed 450-470 MHz band
- Output power: Meets FCC Part 90

**Environmental Conditions:**
- MIU and E-Coder
  - Operating temperature: +15ºF to +149ºF (-10ºC to +65ºC)
  - Storage temperature: -40ºF to +158ºF (-40ºC to +70ºC)
  - Operating humidity: 100% submersible

**Materials**
- Register housing: Roll-sealed copper shell
- Lens: Glass
- Antennas: Through-the-lid
  - 18” Coax
  - 6’ Coax
  - 20’ Coax

**Compatibility**
- Available for all sizes and makes of current Neptune meters

**Units of measure:**
- U.S. Gallons, Cubic Feet, Imperial Gallons, Cubic Metres

**E-Coder)**R450:
- 20 years (10/10)
- Refer to Warranty Statement

---

**FLOW INDICATOR**
Shows the direction of flow through the meter:
- **ON** Water in use.
- **OFF** Water not in use.
- **Flashing** Water is running slowly.
- **(-)** Reverse flow.
- **(+)** Forward flow.

**LEAK INDICATOR**
Displays a possible leak:
- **OFF** No leak indicated.
- **Flashing** Intermittent leak indicates that water has been used for at least 50 of the 96 15-minute intervals during the previous 24-hour period.
- **On Continuously** Indicates water use for all 96 15-minute intervals during the previous 24-hour period.

**RATE OF FLOW**
Average flow rate is displayed every twelve (12) seconds on LCD display.

**LCD DISPLAY**
Nine-digit LCD displays the meter reading in billing units of measure: U.S. gallons, cubic feet, Imperial gallons, or cubic metres.
- **1** E-Coder Basic Reading/Customary 6-digit remote reading
- **2** Customary sweep hand digits
- **3** E-CoderPLUS Reading (8-digit remote reading)