



**E-CODER®**  
SOLID STATE ABSOLUTE ENCODER



The E-Coder® is Neptune’s high-resolution solid state absolute encoder register. The E-Coder features a custom integrated-circuit design that digitally encodes the rotation of the measuring chamber, providing “absolute” registration with no internal battery requirement. The E-Coder functions in two modes: E-Coder BASIC and E-CoderPLUS. The E-Coder BASIC mode functionality is the same as ProRead™ (ARB® VI), featuring programmability up to a 10-digit ID number, three user characters, and 3-6 digit meter reading. In addition to the meter reading, the E-Coder provides a visual readout on rate of flow every twelve seconds when the LCD display is activated. When connected to Neptune’s R900® or R450™ radio frequency MIUs, the E-Coder automatically operates in E-CoderPLUS mode, providing a high-resolution, 8-digit remote meter reading, and value-added features including leak, tamper, and reverse flow detection. True point-of-use leak detection is provided by monitoring a 24-hour period in fifteen-minute intervals. Tamper detection is provided by reverse flow detection and monitoring the number of days of zero flow over the previous 35 days.

The E-CoderPLUS features are communicated through the E-Coder protocol, allowing host software platforms to interpret the data and pass the information directly to billing packages, CIS screens, and operational and maintenance reports. The E-CoderPLUS features enhance customer service and improve operational efficiencies for water utilities.

The E-Coder is available in two different configurations – inside set meters and pit set meters. For inside set applications, the E-Coder is housed in our plastic encoder register housing with terminal screws. For pit set applications, the E-Coder is housed in a glass lens and copper can enclosure with factory-potted wire connections.

**KEY FEATURES**

- “Absolute” 9-digit meter reading on display
- Up to 8-digit remote meter reading
- Battery-free functionality
- Pit set version: roll-sealed copper shell and glass lens
- Inside set version: plastic enclosure
- True point-of-use leak detection\*
- Tamper detection\*
- Reverse flow detection\*
- LCD leak indicators
- Directional flow indicator
- Rate of flow on LCD display

**KEY BENEFITS**

- Enhanced “customer care”
  - Leak history/diagnostics
  - Proactive leak notification
- Increased operational efficiencies
  - Work order reduction for high water bill inquiries
  - Prioritization of meter maintenance
  - Drought management
  - Reduction of water loss through proactive notification of water leaks
- Tamper management
  - Identification and prioritization of potential tamper situations

*\* When connected to Neptune R900 or R450 RF MIUs.*

**WARRANTY**

Neptune provides a 10-year limited warranty with respect to its E-Coder solid state absolute encoder register for performance, materials, and workmanship.



- Solar Panel 1
- Date of Manufacture 2
- LCD Display 3

	<p><b>FLOW INDICATOR</b> Shows the direction of flow through the meter:</p> <p><b>ON</b> Water in use. <b>OFF</b> Water not in use. <b>Flashing</b> Water is running slowly. <b>(-)</b> Reverse flow. <b>(+)</b> Forward flow.</p>
	<p><b>LEAK INDICATOR</b> Displays a possible leak:</p> <p><b>OFF</b> No leak indicated. <b>Flashing</b> Intermittent leak indicates that water has been used for at least 50 of the 96 15-minute intervals during the previous 24-hour period. <b>On Continuously</b> Indicates water use for all 96 15-minute intervals during the previous 24-hour period.</p>
<p><b>RATE</b></p>	<p><b>RATE OF FLOW</b> Average flow rate is displayed every twelve (12) seconds on LCD display.</p>
	<p><b>LCD DISPLAY</b> Nine-digit LCD displays the meter reading in billing units of measure: U.S. gallons, cubic feet, Imperial gallons, or cubic metres.</p> <ul style="list-style-type: none"> <li>1 E-Coder Basic Reading/Customary 6-digit remote reading</li> <li>2 Customary sweep hand digits</li> <li>3 E-CoderPLUS Reading (8-digit remote reading)</li> </ul>

- Materials
  - Inside Set Housing: polycarbonate
  - Pit Set Housing: copper shell and glass lens
  - Connecting wire: 3-lead #22 AWG
  - Remote receptacles: ABS, nylon, and polycarbonate
- Distance
  - A single register may be located with up to 500 feet (152 m) of wire from receptacle or MIU.
  - Two networked registers can be located with up to 300 feet (91m) of wire from receptacle or MIU.
- Environmental Conditions
  - Operating temperature: 15°F to 149°F (-10°C to 65°C)
  - Storage temperature: -40°F to 158°F (-40°C to 70°C)
  - Operating humidity: 0 to 100% (pit version)
- Register
  - Warranty: 10 years

- Sizes
  - Available for all sizes and makes of current Neptune meters
- Electronic Accessory Equipment
  - R900 Wall and Pit RF MIUs
  - R450 Wall and Pit RF MIUs
- Data Collection Systems
  - Pocket ProReader
  - Advantage
  - CE5320
  - MRX920™
  - R900® Gateways
- Units of Measure
  - US Gallons, Cubic Feet, Imperial Gallons, Cubic Metres
- 9-digit local registration
- 8-digit remote registration
- 4-8 digits can be communicated for billing

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