A PRODUCT SHEET OF NEPTUNE TECHNOLOGY GROUP

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® R900®, R450™, or cellular MIU (CMIU™), 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.

Warranty

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

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 displays unaffected by meter position or in-line piping stresses

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.

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1-800-921-2228
www.accuflo.com

Options

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
- Cellular Wall and Pit 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

Technical Specifications

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 (91 m) 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

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

⬅◻◻⮕	**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.
(faucet icon)	**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	**RATE OF FLOW** Average flow rate is displayed every twelve (12) seconds on LCD display.
(LCD display icon)	**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)

Accu-Flo
1-800-921-2228
www.accuflo.com

neptunetg.com

Neptune Technology Group
1600 Alabama Highway 229
Tallassee, AL 36078
800-633-8754 f 334-283-7293