NEPTUNE TECHNOLOGY GROUP

E-CODER) R900 *i* ™

INSIDE AND PIT VERSIONS

E-Coder) R900*i*™
Inside Version

E-Coder) R900*i*™
Pit Version

E-Coder)R900*i* combines the field-proven R900™ with our solid state absolute E-Coder.

The E-Coder)R900*i* combines the field-proven R900™ radio frequency meter interface unit (MIU) with our solid state absolute E-Coder™ into one integrated package to offer utilities the advantages of the cost savings associated with the ease and speed of installation. The E-Coder)R900*i* does not have any external wires to be installed or require any special programming for operation. The E-Coder)R900*i* operates within the 902-928 unlicensed RF band width.

The R900 MIU portion of the integrated unit collects meter-usage data and transmits the data for collection by the meter reader. Data transmitted by the R900 MIU is received by the Neptune walk-by, mobile, or targeted fixed-network data collection systems and stored for downloading at the utility office. The R900 MIU is a one-way communication device that transmits data every 14 seconds using frequency hopping spread spectrum technology to ensure data security and improved meter reading accuracy and reliability. The E-Coder portion of the integrated unit 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)R900*i* provides high resolution, 8-digit remote meter reading and value-added features including leak detection, tamper detection, and reverse flow detection. In addition to this data, E-Coder provides a visual read out on rate of flow every six seconds when the LCD is activated. 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 the number of days of zero consumption over the previous 35 days.

The E-Coder)R900*i* PLUS 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 operations and maintenance reports. The E-Coder)R900*i* features enhance customer service and improve operational efficiencies for water utilities.

The E-Coder)R900*i* Inside Version

The inside version features a non-oil-filled plastic enclosure with an integrated antenna. This unit also features a field-replaceable battery.

The E-Coder)R900*i* Pit Version

The pit version features a non-oil-filled roll-sealed copper shell and glass lens housing for superior protection in a flooded pit environment. The standard unit is designed with a whip antenna for installation under a pit lid and can be easily upgraded to a through-the-lid antenna if desired. The unit also features a field replaceable battery.

KEY FEATURES

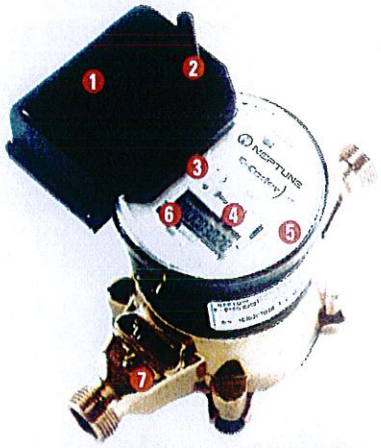
- Ease of installation – no external wiring
- Integral antenna
- "Absolute" 9-digit meter reading on display
- 8-digit remote meter reading
- No FCC license required
- No MIU programming required
- Batteryless encoder metrology
- Long-life lithium battery with HLC capacitor
- Available in both pit and inside versions
- Fully submersible pit version
- Leak, tamper and reverse flow detection
- LCD leak indicators
- Directional flow indicator
- Rate of flow on LCD display

KEY BENEFITS

- Enhanced cost savings and ease of installation
  - No external wires
  - Reduces labor cost
  - Reduces potential wire vandalism
- Enhanced "customer care"
  - Leak history/diagnostics
  - Proactive leak notification
  - Improves meter reading accuracy
  - Eliminates estimated reads
- Increased operational efficiencies
  - Reduces costs
  - Minimizes reading time
  - Improves meter reading safety
  - 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

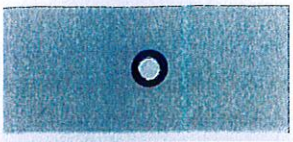
PARTS

- Replaceable Battery ①
- Antenna ②
- Light Sensor ③
- Flow Indicators ④
- Date of Manufacture ⑤
- LCD Display ⑥
- T-10 Meter ⑦

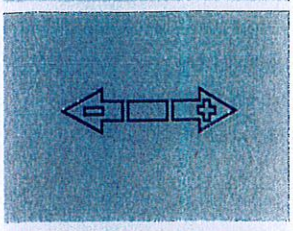


E-Coder R900*i*™

ICONS AND DISPLAYS

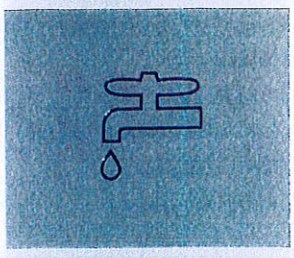


LIGHT SENSOR
Recessed under the small hole near the center of the faceplate of the E-Coder R900*i*, supplies the power for the LCD panel (light activated).



FLOW INDICATOR
Shows the direction of flow through the meter:

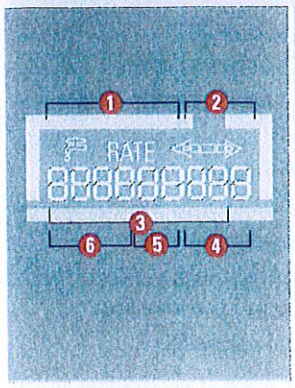
ON	Water in use.
OFF	Water not in use.
FLASHING	Water is running slowly.
◁	Reverse flow.
▷	Forward flow.



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 a 24-hour period.
ON CONTINUOUSLY	Indicates water use for all 96 15-minute intervals during a 24-hour period.

RATE OF FLOW
Average flow rate is displayed every six 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-Coder PLUS Reading (8-digit remote reading)
④ Testing units used for diagnostics
⑤ Extended reading units
⑥ Customary billing units

TECHNICAL SPECIFICATIONS

- Electrical Specifications:
  - MIU Power: Lithium battery with HLC capacitor
- Transmitter Specifications:
  - Transmit period: Every 14 seconds
  - Transmitter channels: 50
  - Channel frequency: 910 to 920 MHz spread spectrum
  - Output Power: Meets FCC Part 15.247
  - FCC Verification: Part 15.247
- Environmental Conditions:
  MIU and E-Coder
  - Operating temperature: -22°F to 149°F (-30°C to 65°C)
  - Storage temperature: -40°F to 158°F (-40°C to 70°C)
  - Operating humidity: 0 to 95% (non-condensing)
- Materials
  Register housing:
  - Inside Set: Plastic Polycarbonate
  - Pit Set: Roll-sealed copper shell
  Lens:
  - Inside Set: Plastic
  - Pit Set: Glass
- Antennas
  - Inside Set: Fixed antenna
  - Pit Set: Standard whip type
    Optional through the lid
    - 18" Coax
    - 6' Coax
    - 20' Coax

OPTIONS

- Sizes
  - Available for all sizes and makes of current Neptune meters
- Data Collection Systems
  - Handhelds - Walk-by RF
  - MRX920/MTX950 - Mobile RF
  - EZNet™ - Fixed-network RF for targeted C&I applications
- Units of Measure: U.S. Gallons, Cubic Feet, Imperial Gallons, Cubic Metres

WARRANTY

- Register: 20 years (10/10)
- R900 MIU: 20 years (10/10)
- R900 Battery: 20 years (10/10)

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NEPTUNE TECHNOLOGY GROUP
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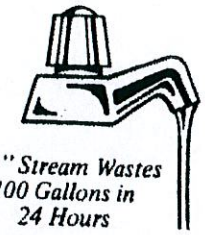
1/32" Stream Wastes
25 Gallons in
24 Hours

750 gallons in one month

1/16" Stream Wastes
100 Gallons in
24 Hours

3,000 gallons in one month



1/8" Stream Wastes
400 Gallons in
24 Hours

12,000 gallons in one month

WATER LEAKS AND CARELESSNESS COST

This picture illustrates one cause of wastage of water in house fixtures. Another source of wastage is leaks in toilets. Inspect these two sources of waste for leaks often, and if leaks are discovered have them repaired at once, as your meter is registering the leakage. See reverse side for instructions on reading your water meter.

Measure To
Conserve With . . .

Canada Valve
DIVISION MUELLER CANADA INC

neptune

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