R900®v5

Does the R900®v5 MIU have a field replaceable battery?
No. The R900v5 is fully-potted for field reliability and does not include an option to replace a battery in the field.

Does the R900v5 MIU require any programming for connecting to a register?
No. The R900v5 provides auto-detect capability to detect the register it is connected to and begin reading the register.

Does the R900v5 MIU require any programming to change from walk-by/mobile to fixed network mode?
No. The R900v5 simultaneously transmits both the mobile and fixed network message, so that customers can easily migrate from walk-by/mobile to fixed network at their convenience with no site visits to reprogram.

Are the meter readings time synchronized?
Yes. When operating on a LoRa® network, the LoRa® network provides time synchronization via two-way communication with the MIU. This allows the MIU to accurately timestamp the individual hourly meter readings.

What information is sent in the LoRa® fixed network packet?
The LoRaWAN™ fixed network packet is transmitted every three hours and includes up to 12 time-synchronized, top-of-the-hour meter readings.

How often is the R900v5 mobile message transmitted?
The R900v5 mobile message is transmitted every 20 seconds.

Does the R900v5 support RF activated data logging?
Yes. The R900v5 supports RF activated data logging using either a Belt Clip or MRX®.

What version of software is compatible with the R900v5 MIUs?
The R900v5 MIU is compatible with N_SIGHT™ v5.6+ for walk-by and mobile reading. For fixed network reading, the R900v5 MIU is compatible with N_SIGHT™ PLUS v5.6+ and Neptune® 360™.

What are LoRa®, LoRaWAN™, and the LoRa Alliance™?
LoRa® is short for Long Range and is a spread-spectrum modulation technology focused on long range communication for battery powered devices. LoRaWAN is an open-standard, Low Power, Wide Area (LPWA) networking protocol that leverages the LoRa® modulation that targets battery operated devices and supports bi-directional, end-to-end communications between endpoints and a LoRa® network. The LoRa Alliance™ is a non-profit association consisting of industry-leading companies that develop the LoRaWAN open-standard to promote adoption of LoRa® LPWA networks across the globe.

What security practices are employed in the LoRa network?
The LoRaWAN protocol defines an end-to-end AES128 bit encryption which is derived from the IEEE 802.15.4 industry standard. This provides mutual authentication between the R900v5 MIU and the LoRa® network as well as network integrity protection.

What are the key benefits of LoRa® for Smart Water AMI?

- Long range communications reducing the number of Gateways required for coverage
- Low power requirements to support 10+ year battery life for remote meters
- Low bandwidth throughput to effectively support sensors transmitting small amounts of data
- Competitive module pricing reducing the costs of remote sensor hardware
- Open-standard architecture to provide multi-vendor device interoperability on a common network

What compatible sensors are available for a LoRa® network? Are there any devices for smart city initiatives?

Since the LoRaWAN protocol is an open-architecture standard, there are a variety of devices that can operate on a LoRa® network. Please see the LoRa® Certified Product website (https://lora-alliance.org/lorawan-certified-products) for a directory of available products.

Do the E-CODER®)R900*i*™, ProCoder™)R900*i*™, MACH 10®)R900*i*™ and standalone R900v5 Pit require an external, through-the-lid pit antenna?

Yes. The R900v5 MIU does not contain an internal antenna and requires an external, through-the-lid antenna to function. Both the standard R900 antenna and the high-gain R900v5 pit antenna are compatible.

How does a R900v5 connect to a LoRa® network?

The R900v5 completes a join process which is either initiated via magnet swipe or on a scheduled 30-day basis. If the MIU successfully joins the network, the MIU will begin transmitting its readings via the LoRa® network in addition to transmitting the R900 mobile message.

Can a R900v5 be connected to two (2) separate encoder registers?

No. The R900v5 can only be connected to a single register.

What happens if the LoRa® network is down, can I still receive a reading?

Yes. The R900v5 MIU always transmits the R900v5 mobile message, so that you have a secondary reading method in the event of a network outage.

What encoder registers are compatible with the R900v5?

The R900v5 is compatible with the following encoder registers:

- Neptune ARB® III, IV, V; ProRead™, E-CODER®, ProCoder™, and MACH 10®
- Sensus (Invensys) ECR II, ECR III, ICE, iPerl (3 wire), Electronic Register, and OMNY
- Hersey/Mueller Translator
- Badger ADE and HR E|LCD
- Elster/AMCO InVision (Sensor protocol version)

NEPTUNE TECHNOLOGY GROUP

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