Neptune R900® System Endpoint

What is the R900 endpoint?

Neptune's R900 System endpoint is an AMR and AMI meter interface unit that transmits both Neptune's proprietary mobile and fixed radio frequency network messages for efficient meter data collection and delivery.

Does the R900® endpoint require any programming?

No, the R900® endpoint auto-detects the type of encoder register it is connected to and shifts automatically to the appropriate mode.

Why is Frequency-Hopping, Spread-Spectrum (FHSS) better than Direct Sequence Spread Spectrum?

FHSS offers less chance for signal saturation/collision and improves the read rate and overall performance of the RF AMR system.

Do the R900 transmission intervals or connecting the endpoint to two (2) registers negatively affect its battery life and/or read success rate?

No, the legacy R900 transmits the meter reading data continuously at a predetermined transmission interval for a single encoder register configuration and alternate transmission for two (2) networked Neptune® encoder registers, which maximizes both battery life and read success rate. Networking of registers is no longer an option with the R900 endpoint.

The pit endpoint is said to be fully potted. Can I still replace the battery?

Yes, the legacy R900 box is divided into two (2) compartments. The battery and HLC are fully potted in a separate package and compartment independent from the circuit board. With the R900 endpoint, both the battery and the circuit board are fully potted in a single enclosure; thus, it is not possible to replace the battery.

With what encoder registers will the endpoint function?

The R900 endoint is compatible with these following encoder registers:

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

Please refer to the latest R900 endpoint product sheet for any updates to the compatibility list.

What is the color code when you attach a Neptune or an Invensys encoder register to an R900 endpoint?

Encoder Type	MIU Wire Color/Encoder Terminal		
ARB V	Black/**B**	Green/**G**	Red/**R**
ProRead & E-CODER	Black/**B**	Green/**G**	Red/**R**
Invensys ECR II & ECR III	Black/**R**	Green/**B**	Red/**G**

If I change the register attached to the endpoint, do I need to wait up to an hour to get an updated reading?

No, reactivating the endpoint by swiping it with a magnet will force an immediate transmission of the endpoint number and meter reading.

Does the R900 wake up periodically to see if it is attached to an encoder register?

Yes, the legacy R900 wakes up every eight (8) hours to check to see if it is connected to an encoder register while newer R900 endpoints interrogate the register every 15 minutes. This is a safeguard in case the meter installer failed to activate the endpoint with a magnet during installation.

What are the meter reading intervals for the endpoint?

If the R900 is connected to a Neptune ARB, ProRead, ProCoder, or Invensys ECR II or ECR III encoder, the endpoint will read the encoder once an hour. If the second generation R900 endpoint or later is connected to a Neptune E-CODER, the endpoint will read the E-CODER once every 15 minutes. With the R900 v4 models, the endpoint interrogates all types of registers every 15 minutes.

Can an R900 endpoint be connected to two (2) separate encoder registers?

Yes, the legacy R900 endpoint can connect up to two encoder registers and must be programmed to "network" mode. However, the current R900 endpoint does not support networking and can only be connected to one encoder register.

The R90 endpoint has two (2) ID numbers, bar codes, and pull tags. Which one do I use for a single meter application?

Always use the endpoint ID number identified by the "HI side" label and larger bold-faced font. This is the primary ID number and will always end in an even decimal. The "LO side" endpoint ID number is the secondary number and is intended for use with dual meter or compound meter configurations where two (2) registers in network mode are wired to a single endpoint. Please note that with the R900 v4 endpoints, networking mode is no longer supported.

Can the R900 pit or wall endpoint be installed under the lid?

The pit endpoint has been designed to give consistent range as long as the antenna is above the lid. Mounting below the lid will dramatically decrease range. The wall endpoint is not potted and should not be mounted in a pit setting where possible submersion could occur.

If I cannot drill a 1¾" hole in the pit lid of a commercial vault, what can I do to install the antenna above the pit lid?

You can install a small valve box next to the meter vault, position the endpoint in the valve box with the antenna mounted in the valve box lid, and feed the three (3) wire cable through the vault to the register.

Why is my R900 endpoint transmitting all colons (:::::::)?

The endpoint is not detecting an encoder register. Check all wiring connections, reactivate the endpoint with a magnet, and check for a transmission using a handheld reading device in RF test mode.

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