

# RadioRead® AMR

## Meter Transceiver Unit (MXU)

### Model 510R Non-Pit Set Unit

#### DESCRIPTION

**Application:** Sensus RadioRead Meter Transceiver Unit (MXU) Model 510R is a non-pit set radio signal device which permits off site meter reading via radio signals. The MXU interfaces with any compatible absolute encoder-equipped utility meter with a Sensus RadioRead interrogator device. The Sensus MXU eliminates a number of meter reading problems such as lockouts, curbside reading estimates, estimated bills and errors associated with manual meter reading methods.

The Sensus MXU is available in one and two port models. In addition to the two-port design, the MXU is compatible with the Sensus MultiRead™ Module that permits two, four, or eight meter connections per MXU port. This feature provides enhanced cost effective AMR where multiple meter installations exist.

**TouchCoupler Design:** TouchCoupler utilizes the patented Sensus inductive coupling meter reading system (TouchRead) to communicate with its encoder. This allows for easy upgrade from Sensus TouchRead to RadioRead. And since the TouchRead system only requires two wires to communicate, the TouchCoupler unit enables customers who have only two-wire connections to their meters the ability to utilize that same wire instead of reinstalling new three wire cable. The TouchCoupler design provides a fast, efficient and reliable connection – the best available in the marketplace today. The TouchCoupler design minimizes installation time, which results in a cost-effective solution.

**RadioRead Operation:** When used with a Sensus hand-held or vehicle interrogation unit, the Sensus RadioRead system provides two-way communications between the reading unit and system equipped utility meters. The MXU connected to the meter receives an activation wake up signal from the interrogation unit. The MXU then obtains and transmits all of the meter's absolute encoder information which includes the identification number and meter reading. Low battery indicator is also transmitted. After the interrogation unit receives valid data, it transmits an acknowledgment signal back to the MXU which returns it to the power down mode. This helps maintain battery life and also optimizes the efficiency of the system by eliminating unnecessary radio transmissions.

**RadioRead Integrity:** When interfaced with an absolute encoder, RadioRead system meter reading is virtually error free. The meter read is taken from the actual positions of the encoder's odometer wheels to ensure valid up-to-date readings. Any errors or nonreads are immediately indicated on the meter reading equipment. This information can also be generated on management reports when the data is downloaded at the end of the reading cycle. In addition, high/low reading parameters can also be verified during the meter reading process.

**RadioRead Features:** The RadioRead MXU can identify leaks / continuous consumption as well as offer a tool for examining hourly readings of encoders. The leak detection MXU monitors the encoder at regular intervals. If continuous usage occurs over a period of time, during the next



#### SPECIFICATIONS

|                                 |                                                                                                                                                                                                                                                       |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SERVICE</b>                  | Wall mounted (non-pit, non-submersible) installation interfacing the utility meter to Sensus RadioRead System.                                                                                                                                        |
| <b>PHYSICAL CHARACTERISTICS</b> | Width: 5 9/16" x Height: 5 1/2" x Depth: 3"                                                                                                                                                                                                           |
| <b>WEIGHT</b>                   | 1.13 lbs/18.08 oz                                                                                                                                                                                                                                     |
| <b>COLOR</b>                    | Tan                                                                                                                                                                                                                                                   |
| <b>POWER</b>                    | 3.6 Volt Lithium Chloride battery with hybrid layer capacitor (HLC)                                                                                                                                                                                   |
| <b>RF TRANSMITTER</b>           | Direct Sequence Spread Spectrum with synthesized channels, crystals controlled                                                                                                                                                                        |
| <b>RF RECEIVER</b>              | Amplifier – Sequenced Hybrid                                                                                                                                                                                                                          |
| <b>APPROVALS</b>                |                                                                                                                                                                                                                                                       |
| <b>US:</b>                      | FCC Part 15                                                                                                                                                                                                                                           |
| <b>Canada:</b>                  | Industry Canada                                                                                                                                                                                                                                       |
| <b>OPERATING TEMPERATURE</b>    | - 30° F to +165° F<br>- 34° C to + 74° C                                                                                                                                                                                                              |
| <b>OPTIONS</b>                  | Dual or single port availability; Touchcoupler only, wired only, TouchCoupler and wired combination options available, integral Touch pad also available for TouchRead back-up capability (TouchCoupler connection available only with Sensus meters) |
| <b>INSTALLATION ENVIRONMENT</b> | The Model 510R is designed for non-pit, non-submersible applications. The Model 510R can be mounted indoors or outdoors where it is not subjected to submergence. The model 510R is not intended for outdoor meter pits or vaults.                    |
| <b>COMPATIBILITY</b>            | <b>TouchCoupler and Wired Version:</b> Sensus ECR11 and ICE water registers<br><b>Wired Version Only:</b> Neptune ARB VI (ProRead); Badger ADE; Elster (Sensus Protocol). MultiRead modules for two, four or eight meters per port (Sensus only).     |
| <b>WARRANTY</b>                 | 20 years – Refer to Sensus G-500 for warranty.                                                                                                                                                                                                        |

interrogation of the MXU a message is sent identifying that a possible leak may exist. The MXU also allows for hourly readings to be taken and stored internally. This feature enables the MXU to store 45 days worth of hourly readings that can be extracted via the Sensus AutoGun and AR5000 handheld or "over the air" with RadioRead equipment.

**Programmability:** For special meter reading applications such as commercial routes and multi-utility installations, the MXU can be programmed to respond only to certain meters through the use of class and password codes.

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