

# Electronic Register

## Data Sheet

### APPLICATION AND FEATURES

The Sensus Electronic Register is a straight reading register that provides accurate and error-free meter reading via an LCD display. It provides greater reading resolution, reliability, end-user options, and other benefits. It is compatible with the Sensus AMR/AMI System and is fully compliant with ANSI/AWWA Encoder Standard C707-5. There are nine digits on the display, the ninth being a low flow indicator. Other features include removability with a unique locking system, rate of flow gauge, forward and reverse flow indicator, field programmability, and a 20 year warranty.

### OPERATION

The Electronic Register utilizes “magnetic-field position sensing” technology to determine the orientation of the water meter shaft. Through electronics, it is able to count the number of rotations, and display the measurements on the LCD. The register can show both volume and flow rate on the display as well. The Sensus Electronic Register can be used with Sensus positive displacement meters because no torque is developed beyond that in a standard, visual read register.

### AMR/AMI SYSTEM COMPATIBILITY

The Sensus Electronic Register is adaptable and configured for installation and interrogation in a two-wire TouchRead mode, three-wire AMR mode, or terminal block option, making it totally compatible with existing systems that use each mode. The meter reading data, which consists of up to 8 digits of the odometer reading and the register ID number, are transmitted in ASCII standard code that is used by most of the data communications industry.

### ASCII PROTOCOL

The register output data format is 7-bit ASCII (American Standard Code for Information Interchange) digital, plus an even parity bit. Upon interrogation with a TouchPad or AMR/AMI product, the register will transmit an odometer reading containing from 4 to 8 digits (field programmable) and a user defined alphanumeric identification of up to 12 characters (field programmable). The register can also be programmed to output a factory set, nonprogrammable identification number, Customer Text of up to 20 alphanumeric characters (field programmable), a reading multiplier ranging from 10-99 to 1099 (field programmable), and/or a reading measurement unit indicator (for example, US Gallons – field programmable). The register’s ASCII digital output is capable of interfacing directly to an AMR/AMI transponder to transmit data via radio signal or wired connections to an AMR/AMI system.



### SENSUS AMR/AMI SYSTEM MIGRATION

All Sensus AMR registers, past and present, provide three connection posts, two of which are needed for TouchRead applications and three for RadioRead and FlexNet systems with three wire systems. This enables a utility to easily and economically upgrade from a TouchRead System to a more-advanced AMR/AMI system without having to replace the registers on its meters.

### UNIQUE REGISTER IDENTIFICATION NUMBER

As with their predecessor ECR registers, Electronic Registers incorporate a unique, never-duplicated identification number that is factory-set into the register’s non-volatile electronic memory. The ID number thereby identifies a particular meter, and links the customer it serves to a utility’s billing computer.

### HIGHER RESOLUTION READINGS

With its nine functioning register digits, greatly enhanced reading resolutions are provided. For example, on a register that records consumption in gallons, the right-most digit displays usage in hundredths of a gallon. The digit to its left displays usage in tenths of gallon units.

Similar highly-definitive reading resolutions are also provided when the register is configured for volume usage in cubic feet and cubic meters.

### WATERPROOF PACKAGING

To ensure meter reading integrity and accuracy, the register’s components are protected from moisture, dirt, ultra-violet rays and mechanical damage. All components are contained in a hermetically sealed, tamperproof enclosure made of a corrosion resistant material, covered with a plastic or heat-tempered glass lens.

### WIRING CONNECTIONS

To ensure reading-integrity, the Sensus Electronic Register’s pit set wiring connections are protected from moisture through the encapsulation (potting) of wiring components with a special epoxy material during the manufacturing process.

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### ASSURANCE TESTING

Throughout their development, Sensus Electronic Registers passed an exhaustive series of tests conducted to ensure compliance with specifications for reliable, long-term performance. In addition to testing to assure reading validity in a multitude of applications, registers were exposed to and passed test-conditions simulating harsh environmental conditions.

### INSTALLATION AND USE CONSIDERATIONS

Strict adherence to proper installation procedures and reading methods are required to achieve reliable readings from an electronic register.

### WIRE CONNECTION

Sensus Electronic registers provide three terminals for connecting wires to it, labeled R for red, B for black and G for green. For TouchRead System use, wiring from the R and B terminals are connected to a TouchPad remote-reading module.

In Sensus AMR/AMI System applications such as TouchRead, RadioRead and FlexNet, a three-wire connection or two-wire “TouchCouple” allow you to properly link the register to its AMR interface device.

When the interrogation device cannot communicate with the register, it will provide an alert signal, which can be viewed immediately in Logic.

<b>Service</b>	For use on Sensus positive displacement meters for the purpose of obtaining electronic meter readings with compatible automatic meter reading equipment.
<b>Meter Compatibility</b>	Sensus SR11 and accuSTREAM positive displacement meters.
<b>AMR/AMI Compatibility</b>	Sensus TouchRead, RadioRead and FlexNet AMR/AMI Systems, and virtually all other brands of AMR/AMI reading equipment. (ECR specifications available upon request.)
<b>Temperature Specifications</b>	-20°F to 150°F
<b>Registration Unit Indications for Meters Listed</b>	
<b>Compliances</b>	AWWA/ANSI Encoder Standard C707-5
<b>Register Types</b>	<p><b>ECR:</b> For indoor installations only. All components are contained in a permanently hermetically sealed, tamperproof enclosure made of a corrosion resistant material, covered with a plastic lens.</p> <p><b>TouchRead PitLid (TR/PL):</b> For outdoor installations only. All components are contained in a permanently hermetically sealed, tamperproof enclosure made of a corrosion resistant material, covered with a heat tempered glass lens.</p>

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