



CENTRON[®]

C1SR R400

Itron has shipped over 88 million metering devices with ERT technologies since 1988 allowing meter data to be collected automatically, helping to save time, improve reliability, increase accuracy and ensure data security. The CENTRON R400 takes this success to new levels allowing the ability to carry Itron's very popular technology into the future.

The R400 IDM High Power is a radio frequency (RF) personality module based on the CENTRON solid-state metering platform. Kilowatt-hours and tamper data are reported through RF transmissions. The R400 IDM High Power module provides both baseline and advanced data collection functionality, including interval data recording and enhanced tamper reporting capability. The R400 IDM High Power delivers the ERT standard consumption messages (SCM) to any of Itron's radio-based data collection technologies, including handheld computer, a vehicle-based mobile automated meter reading

(AMR) unit such as the Mobile Collector, or a network data solution such as the Itron Fixed Network or MicroNetwork. In addition, the R400 IDM High Power is also capable of delivering interval data messages (IDM) to the Itron fixed Network AMR system to calculate ANSI standard demand, time-of-use (TOU), and load profiling information. The higher-powered R400 is designed for particularly hard-to-read installations such as basements and below-grade locations, as well as gated communities, airports, and military installations. An additional benefit of the higher-powered R400 is a lower

infrastructure cost; greater transmission distance equates to fewer repeaters and collectors.

The meter can be reset by using the ZRO-C2A device, which resets both the kWh register and tamper status counters. Itron provides all applications, related hardware and complete support to automate and ensure maximum efficiency in the installation process. Itron also provides easy-to-use file interfaces to support the upload and download of information to and from utility billing systems.

Energy RF Transmission

- » Each RF transmission contains the unit ID number, unit type, energy usage, and tamper status, as well as the cyclic redundancy check (CRC) to ensure message integrity
- » Transmit frequency: spread spectrum 910-920 Mhz
- » Capacity for 8, 9 and 10 digit ERT IDs. Compatible with all Itron 900 MHz handheld, mobile and fixed network data collection solutions, including Itron's premier AMR data collection suite

Tamper Detection

The Itron patented method of tamper detection identifies:

- » Power removal tamper (SCM/IDM)
- » Meter inversion tamper (SCM/IDM)
- » Reverse disk rotation (IDM)
- » Power outage count (IDM)

Technical Data

Meets applicable standards:

- » ANSI C12.1 - 2001
- » ANSI C12.10 - 2004
- » ANSI C12.20 (Class 0.5) - 2002
- » ANSI C62.45 - 1992
- » IEC 61000-4-4
- » IEC 61000-4-2
- » FCC Part 15, Subclass C

Reference Information

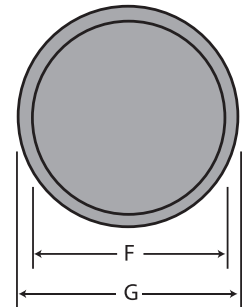
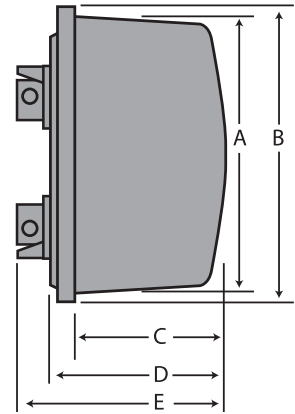
- » CENTRON Technical Reference Guide
- » CENTRON C1S Specification Sheet
- » CENTRON C1SC Specification Sheet
- » CENTRON C12.19 C1SD, T, L Specification Sheet
- » Hardware Specification Form
- » ZRO-C2A Handheld Resetter Operating Instructions

Product Availability

Meter Version	Class	Volts	Wire	Form	Digits/Mult	Energy Setting	Catalog Number
C1SR	100	120	2	1S	5x1	Undetented	G981176
C1SR	200	240	3	2S	5x1	Undetented	G981178
C1SR	320	240	3	2S	5x1	Undetented	G981256
C1SR	20	120	2	3S	5x1	Undetented	G981257
C1SR	20	240	2	3S	5x1	Undetented	G981258
C1SR	20	240	3	4S	5x1	Undetented	G981259
CN1SR	200	120	3	12S	5x1	Undetented	G981260

Dimensions

Polycarbonate						
A	B	C	D	E	F	G
6.29"	6.95"	2.7"	3.16"	4.53"	6.29"	6.95
16 cm	17.7 cm	6.9 cm	8 cm	11.5 cm	16 cm	17.7 cm
Glass						
A	B	C	D	E	F	G
6.42"	6.95"	3.03"	3.55"	4.9"	6.42"	6.95"
16.3 cm	17.7 cm	7.7 cm	9 cm	12.5 cm	16.3 cm	17.7 cm



Shipping Weights

Polycarbonate		
4 meter cartons	Approx. 8.9 lbs.	4.04 kg
120 meter pallets	Approx. 260-265 lbs.	117.936 kg
Glass		
4 meter cartons	Approx. 13.96 lbs.	6.35 kg
120 meter pallets	Approx. 335 lbs.	151.956 kg

Specifications

Power Requirements	Voltage rating: 120 V, 240 V Frequency: 60 Hz	Operating voltage: $\pm 20\%$ Operating range: $\pm 3\text{Hz}$
Transmitter Frequency	910-920 MHz frequency hopping	
Operating Environment	Temperature: -40° to $+85^{\circ}\text{C}$ Humidity: 0% to 95% non-condensing	
Transient/Surge Suppression	ANSI C37.90.1 - 1989 IEC 61000-4-4 ANSI C62.45-1992	
Accuracy	ANSI C12.20 0.5 accuracy class	
General LCD Display	Five-digit liquid crystal display Data digit height: 0.4"	Annunciator height: 0.088" Electronic load indicator
Characteristic Data	Starting watts: 5 watts	
Temperature Rise Specifications	Meets ANSI C12.1 section 4.7, 2.9	
Burden Data	Voltage Circuit: Voltage: 240	Watts: 1.823 VA: 7.294
	Current coil-self contained: Service: 3-wire	Test Current (amps): 30 VA: < 0.50



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