



# CENTRON<sup>®</sup> C12.19, C1SD, C1ST, C1SL

The CENTRON meter is a solid-state, single-phase residential electricity meter that provides utilities with unparalleled digital accuracy, reliability, serviceability and cost-effectiveness. The CENTRON meter is one of the most adaptable meters on the residential market, providing an array of communications and application options to meet current and future business needs.

With this solid-state meter, Itron presents a platform for residential metering with the flexibility to adapt as your needs expand and change.

This residential meter is available with interchangeable personality modules that snap into the standard CENTRON metrology base. The three multifunction modules available utilize the ANSI Tables protocol in a demand module (C1SD), a time-of-use (TOU) module with demand (C1ST), and a load profile modules with TOU and demand (C1SL).

## FEATURES

All programming, register, demand, TOU, and load profile data are stored in electrically erasable programmable read-only memory (EEPROM) during a power outage. A battery maintains only the clock circuitry during a power outage.

## Time of Use

This meter with optional I/O capability can be used in TOU residential applications where dual heating systems, such as electricity and a furnace, are present. When temperatures or peak load fall below a given threshold, the heating will automatically switch from an electric to a combustible or a water-heating source.

Typically, utilities offer different electricity rates for energy consumption based on the exterior temperature or peak load in the hopes of decreasing energy demand during cold peak periods. The rate switch in the meter is triggered by an external pulse input.

## Non-Volatile Memory

All programming, register, TOU and load profile data are stored in the EEPROM

during a power outage. A battery maintains only the clock circuitry during a power outage (except C1SD).

## Optical Port Communication

Each module can be programmed to communicate at 28800, 19200, 14400 or 9600 baud through the optical tower.

## Energy RF Transmission

- » Optional R300 RF module available with 2 ERT or 3 ERT
- » 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
- » Compatible with all Itron 900 MHz handheld, mobile and fixed network

data collection solutions, including ChoiceConnect™, Itron's premier automated meter reading (AMR) data collection suite

- » Offers up to +20 dBm of output power

### Self-Read Capability

- » All meters are equipped with two self-read registers
- » The C1ST and C1SL modules can be programmed to automatically store up to 12 additional self-read registers. Billing data can be stored automatically, at programmable times, to be read later

### Load Profile

The C1SL module provides 144K RAM for up to eight channels of load profile data.

### Bidirectional Metering

All three multifunction modules are capable of measuring and displaying delivered, received, net and unidirectional energy (kWh).

### Expansion Capability

An expansion port is available for future I/O or communication functions.

### Real Time Pricing Capability for C1STI/C1SLI

The TOU rate changes from its configured (default) rate to a new configured rate when the pulse state signal is active on the I/O board. When the pulse state signal becomes inactive, the rate will switch back to the default TOU configured rate

- » Rate changes are configurable through PC-PRO+® Advanced software version 9.6 or later. No time synchronization is attempted using the pulse state rate change
- » The rate change caused by the transition of the pulse state input is logged as a TOU rate change event in the event log. The number of transitions will be limited to not overflow the event log

### Standard Features

- » Electronic LCD Display
- » Polycarbonate cover
- » Demand reset
- » Optical tower
- » Test Mode push button
- » Test LED

### Features for C1STI/C1SLI

- » >> 24V Pulse Input Board

### Product Availability Technical Data

Meets applicable standards:

- » ANSI C12.1 – 2008
- » ANSI C12.10 – 2004
- » ANSI C12.20 (Class 0.5) – 2010
- » ANSI C12.1 – 2008
- » ANSI C12.18 – 2006
- » ANSI C12.19 – 2008
- » IEC 61000-4-4 (2004)
- » IEC 61000-4-2 (2001)
- » FCC Part 15 Class B

### Product Approval

- » Measurement Canada Approval: AE-0920

### Reference Information

- » CENTRON Technical Reference Guide
- » CENTRON C1S Specification Sheet
- » Hardware Specification Form

### Product Availability

Meter Version	Class	Volts	Wire	Form	
C1SD	100	120	2	1S	G980850
C1SD	200	240	3	2S	G980852
C1SD	320	240	3	2S	G980854
C1SD	20	120	2	3S	G980855
C1SD	20	240	2	3S	G980856
C1SD	20	240	3	4S	G980860
CN1SD	200	120	3	12S	G980860
C1ST	100	120	2	1S	G980385
C1ST	200	240	3	2S	G980204
C1ST	320	240	3	2S	G980389
C1ST	20	120	2	3S	G980390
C1ST	20	240	2	3S	G980391
C1ST	20	240	3	4S	G980394
CN1ST	200	120	3	12S	G980394
C1SL	100	120	2	1S	G980397
C1SL	200	240	3	2S	G980182
C1SL	320	240	3	2S	G980400
C1SL	20	120	2	3S	G980404
C1SL	20	240	2	3S	G980405
C1SL	20	240	3	4S	G980407
CN1SL	200	120	3	12S	G980408
C1STI	200	240	3	2S	
C1SLI	200	240	3	2S	

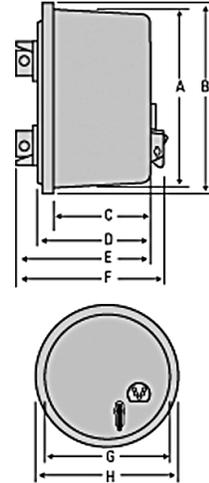
## SPECIFICATIONS

### Dimensions – Polycarbonate

A	B	C	D	E	F	G	H
6.29"	6.95"	2.7"	3.16"	4.53"	4.98"	6.29"	6.95"
16 cm	17.7 cm	6.9 cm	8 cm	11.5 cm	12.7 cm	16 cm	17.7 cm

### Specifications

Power Requirements	Voltage rating:	120 V, 240 V
	Frequency:	60Hz (50Hz) Cell Relay
Operating Environment	Battery Voltage:	3.6V nominal
	Carryover:	10-12 year continuous usage or 15 year shelf-life
	Operating voltage:	±20% (60 Hz); ±10% (50 Hz)
	Operating range:	± 3 Hz Register
	Battery Operating Range:	3.4 V – 3.8 V
Transient / Surge Suppression	External input signal:	24 VAC or ±12 VDC
	Temperature:	-40°C to +85°C
Accuracy	Humidity:	0% to 95% non-condensing
	ANSI C12.20 0.5 Accuracy Class	
General	Demand interval lengths:	Programmable from 1 to 60 minutes
	Demand calculation:	Present, previous, cumulative, continuous cumulative, projected, 5 highest, peak demand
Time	Line sync:	Power line frequency
	Crystal sync:	±0.01% @ 25° C; ±0.025% over full temperature range
	Battery:	±0.003% @ 25° C; ±0.02% over full temperature range
	Display:	Nine-digit liquid crystal display
	Six-digit data height:	0.4"
	Three-digit code number height:	0.24"
Characteristic Data	Annunciator height:	0.088"
	Display duration:	1-15 seconds
Burden Data	Three-segment electronic load indicator	
	Starting watts:	5 watts
Current Coil	Voltage circuit:	1.35 W (Form 1S, 2S)
		1.55 W (Form 3S, 4S, 12S, 25S, 2S CL320)
		<0.5 VA (all forms)



### Dimensions

### Shipping Weights – Polycarbonate

Meter Per Carton	Box Weight (Approx.)
4	10 lbs / 4.54 kg
Meter Per Pallet	Pallet Weight (Approx.)
20	291 lbs / 132 kg



At Itron, we're dedicated to delivering end-to-end smart grid and smart distribution solutions to electric, gas and water utilities around the globe. Our company is the world's leading provider of smart metering, data collection and utility software systems, with over 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water.

To realize your smarter energy and water future, start here: [www.itron.com](http://www.itron.com)

#### **CORPORATE HEADQUARTERS**

2111 N Molter Road  
Liberty Lake, WA 99019  
USA

**Phone:** 1.800.635.5461

**Fax:** 1.509.891.3355