



# SENTINEL®

## Solid State Meter

The Itron SENTINEL Meter is a solid-state, electronic, multimeasurement, polyphase meter of exceptional accuracy. This self-contained or transformer-rated meter is designed for use in commercial and industrial C&I locations, including large industrial sites and substations. The SENTINEL Meter has the flexibility to match any utility needs ranging from a basic C&I meter applications all the way into sophisticated substation system installations.

The processes of deregulation, privatization, and globalization are forcing fundamental changes to the way utilities do business. As competition increases, so does the demand for excellence in customer service and operations efficiency. Leading utilities are looking for ways to increase efficiency and add value to their offering with innovative marketing techniques and an extensive use of quality technology.

At Itron our experience and global presence mean that we have encountered many of these challenges before. As an integrated information services provider, we use state-of-the-art tools, techniques, and experts to help clients discover the potential for total network optimization. Through our solutions approach, your company will benefit from increased operating efficiency, automated billing, and a host of other services to successfully compete in today's utility services market.

The Itron SENTINEL meter is part of the solution. This solid-state, polyphase meter provides the platform for advanced communications and services in the commercial and industrial market to meet your changing business needs.

### The Competitive Advantage

The utility industry is evolving with an increasing demand from customers for more information, including voltage quality, power quality, and load profiling. The SENTINEL meter enables you to gather and deliver that information, whenever and however it is needed.

### PLATFORM FLEXIBILITY

#### Information Management

Demands for more information, faster information, and better information continue to increase and the future of your business depends on how well you can adapt. The SENTINEL meter lets you effectively manage the information requirements of

today, while providing the flexibility to meet the challenges of tomorrow.

### Key Features

The SENTINEL meter keeps your cost down and your options open for a better bottom line.

- » Class 0.2 accuracy
- » ANSI C12.18, C12.19 and C12.21 compliant
- » 5 measurement levels
- » Voltage Quality:
  - 4-Quadrant metering
  - Voltage Imbalance
  - Phase-to-Phase or Phase-to-Ground VQ event detection
  - Sags
  - Swells
  - Current Imbalance
- » 255 VQ events
- » 3 levels of severity

- » Harmonic Detection and Triggering for % THDVoltage and % TDD Current
- » Wide variety of singlephase and polyphase meter forms
- » 20A, 200A, and 320A options
- » Totalized registers
- » Bidirectional measurement
- » Socket-base, A-base & Switchboard base
- » MeterKey™ options:
  - measurement level
  - TOU
  - totalization
  - load profile
  - power quality
  - bidirectional measurement
  - per phase voltage
  - per phase current
- » Maximum, present, projected, previous, cumulative, continuous cumulative, and coincident demands
- » Upgradable firmware
- » Error and event logging
- » Real-Time SiteScan™ onsite monitoring system
- » SiteScan diagnostic snapshots for troubleshooting
- » Flexible configuration for various metering applications
- » Pulse outputs and inputs
- » Up to 8 channels of load profile
- » Up to 7 independent TOU rates
- » PF (avg., min., inst.)
- » (NEED TITLE VERIFICATION HERE)
  - ERT Communication Boards, RF communications
  - R300S (energy only)
  - R300SD (energy and demand)
  - R300SD3 (3 quantities) option board
  - RS-232/RS-485 option board, serial communication
- » Internal modem option board, phone line communication
- » Ethernet board; network communication requires meter
- » OEM development options for many communication technologies
- » Upgrade Kits Available:
  - R300 Board Kits
  - Modem Kit
  - Switchboard Ready™ Kit
  - Ethernet Board Kit
  - 5 Main I/O Board Kits
  - 5 Supplemental I/O Board Kits

## THE COST OF OWNERSHIP

### Unmatched Value

The best measure of value is total cost of ownership over a

measurement system's lifetime. The SENTINEL meter's value pays off during installation—its flexible design integrates easily into your existing monitoring systems - and continues through a long life of low maintenance, efficient operation, and extremely flexible upgrade capabilities. The adaptable architecture enables fast upgrading and enhancement to meet the world's changing needs.

### SENTINEL Meter Compliance

Accuracy Tests in conformance with the ANSI C12.20 standard for class 0.2 meters.

Conforms to:

- » ANSI C12.1: 1995
- » ANSI C12.18: 1996
- » ANSI C12.19: 1997
- » ANSI C12.20: 1997
- » ANSI C12.21: 1999

### Surge, Impulse and RF Interference

Conforms to:

- » ANSI C37.90.1: 1989
- » ANSI C62.41: 1991
- » FCC Part 15 (Class B)

## THE COST OF OWNERSHIP NEW FEATURES

Whether your needs are basic or complex, the Itron SENTINEL polyphase meter offers any utility an electric meter solution with meter data management software that is easy to use. As the industry leader in software tools for metering applications, Itron is setting the standard for advanced metering. Our PC-PRO+® Advanced software package offers every utility the knowledge necessary for expert program creation with new innovative back-up capabilities and critical time savings features.

## PC-PRO+ ADVANCED

### Standard Features

#### » Programming Tools

Using the Program Editor, the user can easily navigate through the program file components to configure metering features such as TOU schedules, meter display, load profile, communication parameters, self read schedules, and power quality. It also allows users to import and export program files, create meter image files, and change numerous metering options at the time you program the meter.

#### » Diagnostics

The SiteScan™ diagnostic toolbox lets you analyze phase diagrams of the voltage and current on site.

Features such as verifying that the meter is correctly programmed and viewing current billing data and display mode quantities online also provide valuable field tools.

#### » MeterKey™

Using Itron's MeterKey Card and the software, you can enable or disable the capabilities of your SENTINEL meter as needed. Features like VQ and Harmonics can be added to a meter in the field for site monitoring and testing. Later, these features can be

removed and installed on another meter, saving the utility money.

» [Microsoft® Windows® User Interface](#)

The easy-to-use interface shortens employees training time. Once the software and drivers are installed on your PC, you are ready to program.

## **ADAPTABLE ARCHITECTURE**

The SENTINEL Meter's adaptable architecture enables fast upgrading and enhancement to meet the world's changing needs.

You can respond quickly to change in the market by upgrading the SENTINEL meter to meet your changing needs. Its platform flexibility allows for ease of upgrading and downgrading, all without returning the meter to the factory. When your requirements change, count on the SENTINEL meter with firmware upgradability and MeterKey upgrades (using Smart Card technology) for enhancements to measurement levels and meter functionality via optical port or remote communication.

The SENTINEL meter is a highly adaptable business tool for today's competitive market. Flexible data communications, input and output capabilities, and a wide range of software options let you view data in the form you need. It provides the platform for advanced services in the commercial and industrial market.

» [R300S \(energy only\) / R300SD \(energy and demand\) / R300SD3 \(3 quantities\) Communication Board](#)

One-way radio for drive-by, walk-by, or fixed network meter reading solutions.

» [Modem Communication Board](#)

Automatic meter reading (AMR) capabilities, remote programming and remote retrieval of register and load profile data.

» [Input/Output \(I/O\) Communication Boards](#)

Load profiling and data storage for multiple electricity meters, water meters, gas meters, thresholds, EOI, diagnostics, and more. Expand for KYZ energy communication to energy management. Load SENTINEL data into other monitoring systems.

» [RS-232 or RS-485 Communication Board](#)

Creates either a point-to-point communication for a variety of communications equipment, including various wireless modem technologies supporting GPRS, 1xRTT or other public network communications technology.

» [MFMM Communication Board](#)

Provides an endpoint within the Cellnet fixed network solution to

transmit both load profile and register data.

» [OEM Communication Boards](#)

Allow further flexibility for wired and wireless remote applications.

## **ADAPTABLE ARCHITECTURE OEM OPTIONS AVAILABLE**

» [Aclara® \(PLC\) Modem](#)

» [Cannon \(PLC\) Modem \(in development\)](#)

» [Metrum Utiliwise® Wireless Modem \(in development\)](#)

» [SmartSynch® GPRS](#)

» [Trilliant® NCGR801 \(GSM/GPRS\) CellReader Modem](#)

» [Trilliant NCXR801 \(CDMA/1xRTT\) CellReader Modem](#)

» [Trilliant \(Mesh Reader\)](#)

## **Switchboard Ready Meters**

The SENTINEL Switchboard Ready Meter is a one-of-a-kind solution for all switchboard meter types. Itron, Inc. and SUSI have partnered to provide the electric industry with a first-of-its-kind solution combining Itron's SENTINEL Switchboard Ready Meters with SUSI's Narrow Socket Panel Adapters®.

» 13 different switchboard case model numbers all available in Forms 5F(45F), 6F(46F), and 9F

» Supports replacement of over 131 different switchboard equipment types



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)

**ITRON ELECTRIC METERING**

313-B North Highway 11  
West Union, SC 29696  
USA

**Phone:** 1.877.487.6602  
**Fax:** 1.864.638.4950

**CORPORATE HEADQUARTERS**

2111 N Molter Road  
Liberty Lake, WA 99019  
USA

**Phone:** 1.800.635.5461  
**Fax:** 1.509.891.3355