Aclara

Aclara Power Sensor

First battery-free Smart Grid Sensor measuring voltage with 0.5% accuracy

FEATURES

- No field calibration or sensitive cabling
- Simple line mount sensor
- DNP3 input to Volt/VAR, Historian and DMS
- Direct measurement of feeder voltage and power
- Inductively powered (no batteries)
- Hotstick installation
- Integrated wireless communications options
- Real-time fault detection and location (GPS)
- Interval data logging
- Fault waveform capture
- Up to 48Kv

BENEFITS

- Voltage, Current, Power
- Power Factor, Phase Angle
- Sags, Surges, Harmonics
- Faults, Momentaries, Line Disturbances
- Bi-directional power flow

Your distribution network is the backbone of electricity delivery. Without visibility, how will you handle 21st century distribution challenges? The answer is simple: Aclara Power Sensors.

ACCURATE VOLTAGE AND CURENT MEASUREMENTS; SEAMLESS INTEGRATION INTO YOUR DM

High accuracy voltage and current measurements provide valuable real-time inputs to key planning models and control applications. Interval data logging, remotely configurable alarm thresholds, and waveform capture provide comprehensive visibility of grid conditions and events. Data and alarms can be accessed via reporting and graphing tools in the Aclara Sensor Management System (SMS) software, or can be integrated via DNP3 to other back-end systems such as SCADA, Data Historians, Energy Management Systems (EMS), and Distribution Management Systems (DMS). Power Sensors provide key inputs to a wide range of applications including:

- CVR and Volt/VAR Optimization
- Enhanced Substation Monitoring
- Distributed Generation (DG) and DER Integration
- Enhanced DMS Powerflow Modeling
- Power Quality Monitoring
- Reliability, Fault Notification and Location

HALF THE COST OF A LINE POST SENSOR SOLUTION

Our Power Sensors are designed to be an affordable turnkey solution. A single crew can install a set of sensors within minutes. Sensors are safely installed with a hot stick or insulated gloves, with no field calibration required – ever! Clamp-on line sensors with integrated wireless communications avoid the installation time, pole clutter and recurring field calibration associated with line post sensors, optical sensors and pole-mounted meter cabinets. Sensors are inductively powered to eliminate the costs of expensive battery maintenance. Finally, all sensors are remotely configurable and integrated with our Aclara SMS software with Predictive Grid® Analytics. When you combine all of these benefits, Aclara offers the lowest total cost of ownership.

SAFE AND RELIABLE VOLTAGE AND POWER MEASUREMENTS

The Aclara Power Sensors are easily installed on overhead conductors and directly connected to system neutral, pole ground, or non-loadbreak cutouts via light gauge copper wire. Sensors are tested to meet comparable surge and insulation standards as line post sensors and surge arrestors.

FLEXIBLE, UBIQUITOUS COMMUNICATIONS OPTIONS

Aclara supports a wide range of communications options. Our cellular Power Sensors include 3G or 4G LTE communications for high speed real-time reporting of events and data. Our Wi-Fi Power Sensors support easy integration with public and private IP-based networks via Aclara aggregators, third party communications nodes or Wi-Fi mesh networks.

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LINE VOLTAGE RATING

	27.6kV Models	48kV Models
BIL:	170kV	250kV
Dry Withstand:	>100kV	>120kV
Wet Withstand:	70kV	100kV

GROUND REFERENCE

- Integrated HV resistor connected via direct copper wire to neutral, pole ground, or non-loadbreak cutouts per utility standards
- Optional integrated ground lead disconnector

CONDUCTOR SIZE

- #6 AWG to 795 AAC (approx. 0.162 – 1.026" diameter, or 13.3 – 402 mm^2 cross-sectional area)

MOUNTING METHOD

- Line mounted, clamshell design
- Hotstick or insulated glove installation
- Grounded via hotstick

DIMENSIONS (HXWXL)

- Case: 4.5 x 4.25 x 11 in. (114 x 108 x 279 mm)
- Antenna Height: 5" (Wi-Fi), 8" (3G cellular), 9.4" (4G LTE cellular)
- HV Resistor Height: 12" (2 resistors for 48kV models)

WEIGHT

- Sensor & resistor assembly: 9.55 lbs (4.3 kg)
- 2nd resistor assembly (48kV models only): 2.75 lbs (1.2 kg)

OPERATING TEMPERATURE

- -40°C to +60°C (-40°F to +140°F)
- Complies with IEEE 495 Temperature Cycling Test

STORAGE TEMPERATURE

- -40°C to +85°C (-40°F to +185°F)

INGRESS PROTECTION

- IP66

MATERIALS

- Case: UV stabilized polycarbonate
- HV Resistor: LSR (liquid silicone rubber) overmold, UV stabilized, non-tracking

DEVICE POWERING

- Inductively line powered
- Maintenance free super capacitors (no battery)

CONFIGURATION MANAGEMENT

- Aclara SMS software for configuration, monitoring, and remote firmware upgrade

COMMUNICATIONS OPTIONS

- Integrated 4G LTE cellular, certified for use with Verizon Wireless
- Integrated 3G quad-band GSM/GPRS/EDGE/HSDPA
  - UMTS: 900/2100 MHz
  - UMTS: 850/1900 MHz
  - Certifications: FCC, GCF, PTCRB
- Integrated 802.11b/g Wi-Fi, 2.4 GHz, WPA2-PSK

GPS

- Location, time-stamp reference

VISUAL INDICATION

- Single red LED indicating communication and diagnostic status

CURRENT RANGES

- Operating current: 3 to 600A
- Fault current: up to 17kA

OSCILLOGRAPHY & WAVEFORM CAPTURE

- Fault current and voltage, up to 14 sec.
- COMTRADE export via Aclara SMS

MEASUREMENT & DATA LOGGING

- Load current
  - < 100A: +/- 1A
  - 100-600A: +/- 1%
- Fault current (peak or RMS)
- Voltage (+/- 0.5% accuracy)
- Power (W, VA, VAr)
- Power Factor
- Phase Angle
- Sags, Surges
- Voltage Harmonics (THD and harmonics up to 7th order)
- Configurable logging intervals, down to 5 min

ALARMS

- Voltage Threshold
- Permanent Fault
- Momentary Fault
- Line Disturbance
- Outage / Power Off / Power On
- Power Disturbance
- High Current Threshold
- Loss of Voltage
- Sags/Surges
- Voltage Harmonics Threshold
- Substation Transformer Overload (summer, winter)

ON-DEMAND READ

- Supported for Wi-Fi

Visit us at Aclara.com, phone 800 297 2728 or contact us at info@aclara.com and follow us on Twitter @AclaraSolutions.