Apex 150

Precision metering series







Bulk energy measurement, modular multi comms options, wall mounted, long range site configurable

Apex 150, series of next generation energy meter designed for power transfer points requiring precise measurements and revenue transactions. Flexible and modular communications ensure integration with existing AMR/AMI/SCADA systems and upgrade to future SAS systems. 4 quadrant energy measurement allows monitoring of generation, transmission and bulk power transfer point.



Application

- Metering for availability based tariffs (ABT) and open access systems
- · Energy transfer measurement and reconciliation
- Power plants, feeder monitoring, grid substations, wind turbines
- On-line monitoring of energy exchange at various interface points
- Energy accounting, automation and system integration

Benefits

- Minimal integration cost through multiple communication interfaces
- Suitable for diverse applications through wide-range voltage, current and auxiliary supply inputs
- Support of industry standard DLMS and MODBUS meter reading protocols
- Meter reading and display viewing under power outage
- Field replaceable hot pluggable communication modules

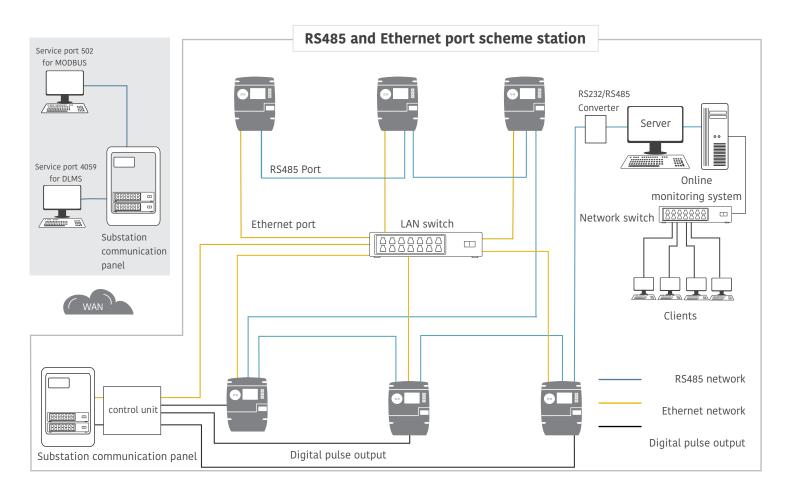
Feature

- · 0.2S accuracy for active and reactive measurement
- Wide-range dual auxiliary supply with options for AC/DC and self-power (VT powered)
- Power quality features including THD, sag, swell, voltage unbalance and interruption recording
- Dynamic error compensation for CT/VT
- Transformer/Line loss adjustment (Copper and Iron losses)
- Intuitive graphical display including vector diagram, wave forms and bar chart for consumption
- Remote configuration of communication ports
- Simultaneous DLMS and MODBUS over Ethernet port
- Support of meter reading/display over field replaceable battery
- Availability of RS232, RS485 and Ethernet ports in a single product and capability of simultaneous communication through all these ports
- Flexible time-of-day tariff, maximum demand support with automatic billing dates
- Meter cover and terminal cover open detection
- RS232 port compatible with meter-powered modem
- Best suitable for Interface Energy Meters with 5 minutes Integration period (field configurable)



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The Apex 150 offers various communication modules such as RS232 with output to power up terminal modem, RS485 for multi-drop connectivity and Ethernet for integrating into communication bus. The communication modules can be hot plugged in field and locally or remotely configured for IDs, IP addresses. Dual socket support on Ethernet allows for simultaneous communication over MODBUS and DLMS through different clients. All communication ports can simultaneously transfer data at high speeds.



Product options*

| Class 0.2S | Power supply 1 Self power 60-240 V AC/DC (±20%) | Power supply 2 60-240 V AC/DC (±20%) 24-48 V DC (±20%) none | Communication port 1 Ethernet |
|--|---|---|-------------------------------|
| Communication port 2 RS232 RS485 | Communication port 3 RS232 RS485 | Pulse input / output No pulse I/O 4 configurable I/O 4 configurable I/O and 7 fixed pulse O/P | |



Technical specifications

Electrical

Connection type HV3/HV4

Measurement voltage range 57.7 V or 63.5 V (L-N) for HV4, 100 or 110 V (L-L) for HV3

Measurement current range Ib: 1A or 5A (configurable)*, Imax up to 10A (configurable)*

Frequency 50 Hz ±5%

Burden with auxiliary/self (VT) powered Current circuit: < 0.1 VA/phase @ 1A, < 0.5 VA/phase @ 5A

Voltage circuit in case of Aux power: < 0.1 VA/phase

Voltage circuit in case of internal/self power: < 6 VA/phase

Accuracy Class 0.2S

Maximum overload Voltage 1.5 times of nominal voltage continuously

2 times of nominal voltage for 0.5 second

Maximum overload current 1.5 times of I_{max} continuously

10 times I_{max} for 1 second 20 times I_{max} for 0.5 second

Compliance

Standards* IS 14697

IS 15959 DLMS Indian companion standard, category B

Mechanical

Dimension 292mm x 201mm x 105mm (H x W x D)

Weight 2 kg (+/- 200 gm)

Environmental

Ingress protection IP54

Operating temperature $-10 \,^{\circ}\text{C}$ to $+60 \,^{\circ}\text{C}$ Limit range of operation $-25 \,^{\circ}\text{C}$ to $+70 \,^{\circ}\text{C}$ Storage temperature $-40 \,^{\circ}\text{C}$ to $+80 \,^{\circ}\text{C}$ Temperature coefficient $<0.1\%/10 \,^{\circ}\text{C}$

Features

Power supply Dual/single auxiliary supply

Range: 60-240 V AC/DC (±20%), burden: <10VA

Optional range: 24-48 V DC (±20%), burden: <10VA

Display Graphical, with green backlight

Extended temperature range -20°C to 70°C Size: 69 x 39 mm (H x W), 128x80 pixels

Pixel size: 0.5 mm²

Max display character size 10 x 5 mm (H x W)

Battery Field-replaceable battery for RTC back up

^{*}For more details, contact your nearest sales office.

Apex 150



Technical specifications

Software

- Data logging:

Maximum 50 parameters configurable

Logging of up to 28 energy channels, with integration period 1 to 60

minutes

80+ parameters available for logging of instantaneous values with

integration period 1 to 60 minutes

~9600 Parameter-days capacity at 30 minute interval

-Configurable parameters:

8 time-of-use tariffs, 16 seasons, 16 day types and 16 time zones, 53 billing

dates

Logging of up to 100 day for daily energy snapshots

7 configurable display sequences along with fixed, auto and sealed button

sequences

40+ events and 10+compartments for event logging

- Logging of up to 15 sets of historical data logging
- Up to 31st individual harmonic component measurement
- Power quality features, including voltage sag, swell, unbalance recording

Inputs and Outputs

7 fixed pulse outputs

4 configurable as pulse inputs/outputs

-Pulse outputs:

Type: Volt-free, 100 mA

Voltage: 48-240 V AC/DC, Option for 24-40 V DC,

Pulse width: 20 - 300 ms

-Configurable as pulse input/output:

Pulse output Type: volt-free, 100mA Pulse input type: optical isolator

Voltage: 24-240 V AC/DC

-Indicator:

Six LEDs: 2 for metrology, 3 LEDS for Pulse out put and 1 LED for Alarm

Communication

Optical 1107 port

Protocol: DLMS, Baud rate: 1200 - 19200 bps, Half duplex

RS232 port

Built-in supply of 4 V @ 550 mA, Protocol: DLMS,

Baud rate: 1200 -57600 bps, Half duplex

RS485 port

Protocol: configurable DLMS/MODBUS RTU, Baud rate: 1200 – 57600 bps, Half duplex

Ethernet port

10/100 Mbps, Protocol: DLMS and MODBUS TCP simultaneous client

Full duplex

Connector type: standard RJ45 for all the ports except optical

Panel mounting kit/RS232 communication module/

RS485 communication module/Terminal modem/Software

Electrical, compliance, mechanical, software, features options depend on variant selected.

Australia

Accessories (optional)

India, SE Asia, Africa

sales_uk@securemeters.com www.securemeters.com/uk Specifications are subject to change without prior notice