

15kV / 25kV / 35kV CLASSES

CLASS 0.5S WITH PM174 OR PM175

600A:10V CURRENT OUTPUT

NO LINE CUTTING

SEALED AGAINST MOISTURE

-40°C TO +65°C

[View the Pole-Top Sensor Monitoring page on satec-global.com.au](https://www.satec-global.com.au)

Pole-Top Sensors

Pole-Top MV Voltage and Current Sensors for Smart Grid Monitoring

SATEC **Pole-Top Sensors (PTS)** are line post insulators with built-in voltage and current sensing for medium voltage distribution networks. They replace existing pole insulators and install without cutting the line. Utilities gain real-time visibility of overhead feeders for distribution automation and Smart Grid programmes.

Each sensor produces a low-level, non-hazardous signal instead of conventional CT and VT secondaries. Paired with the SATEC **PM174 or PM175** power quality analyser and calibrated as a system, the sensors deliver Class 0.5S measurements along with waveforms, harmonics and phasors from remote pole locations.



PTS 15

Pole-top sensor for 15kV networks. 110kV impulse (BIL) rating.

PTS 25

Pole-top sensor for 25kV networks. 150kV impulse (BIL) rating.

PTS 35

Pole-top sensor for 35kV networks. 200kV impulse (BIL) rating.

Main Features

- Voltage and current sensing in one line post insulator
- Replaces existing pole insulators
- Installs with no line cutting
- 15kV, 25kV and 35kV insulation classes
- Linear outputs up to fault levels
- Non-hazardous voltage on the signal output
- 600A:10V current signal output ratio
- Class 0.5S system accuracy with PM174 or PM175 calibration
- Completely sealed against moisture
- Anti-tracking polymer concrete construction
- Operating range of -40°C to +65°C
- Suits aluminium and copper conductors

Feature Capabilities

Sensor Design

- Compact, economical power line sensing
- Voltage (PT) and current (CT) sensing combined in the insulator
- Linear outputs up to fault levels
- Native sensor accuracy of 2% for current and 1% for voltage
- Low-level, non-hazardous voltage on the output
- Completely sealed against moisture

System Accuracy and Monitoring

WITH SATEC PM174 OR PM175

- Analyser inputs designed to interface with low-level sensor outputs
- Calibrated as a system to Class 0.5S accuracy
- Precise real-time measurements
- Waveform capture and power quality features
- Phasors and phase rotation
- Directional harmonics and neutral currents
- Local display and on-board memory for data redundancy

Distribution Network Management

- Line losses and load balance
- Capacitor controls and voltage regulation
- Outage detection and fault location
- Harmonics monitoring
- Power theft detection
- Demand reduction during peak load times

Complete Cabinet Package



- Custom SATEC enclosure for the PM174 or PM175 input connections
- Communications modem for real-time data to SCADA
- Supplied as a complete pole-mounted package
- Expandable as monitoring needs grow

Communications and Integration

- DNP3 protocol for utility SCADA integration
- Real-time data from remote pole locations
- Monitor, coordinate and operate distribution systems in real time
- Waveform, harmonic and power quality data delivered to the control room

Software Support

- **Power Analysis Software (PAS)** to program and monitor the PM174 or PM175
- **Expertpower** web platform for energy management and power quality analysis

Specifications

RATINGS BY MODEL			
Parameter	PTS 15	PTS 25	PTS 35
Insulation class	15kV	25kV	35kV
Impulse (BIL)	110kV	150kV	200kV
Leakage distance	41.6 cm (16.4 in)	62.2 cm (24.5 in)	89.6 cm (35.3 in)
Dry arc distance	22.3 cm (8.8 in)	32 cm (12.6 in)	41.4 cm (16.3 in)
Corona (extinction)	11kV	19kV	26kV
Low frequency dry flashover	80kV	110kV	125kV
Low frequency wet flashover	60kV	85kV	100kV
Overall height	33.5 cm (13.2 in)	42.4 cm (16.7 in)	52.8 cm (20.8 in)
Cantilever strength (ultimate)	1270 kg (2800 lb)	1270 kg (2800 lb)	1270 kg (2800 lb)
Weight	17.6 kg (39 lb)	22.2 kg (49 lb)	26.7 kg (59 lb)
Shipping weight	20 kg (44 lb)	24.5 kg (54 lb)	29 kg (64 lb)

CURRENT SIGNAL OUTPUT	
Ratio	600A:10V
Output burden/load	Calibrated for a 10 kΩ or greater load
Open circuit voltage	10V at 600A line current

VOLTAGE SIGNAL OUTPUT	
Divider ratio	Depends on network
Output impedance	Calibrated for a 1 MΩ load

ACCURACY	
Sensor native accuracy	2% for current, 1% for voltage
With SATEC PM174 or PM175 calibration	Class 0.5S

OPERATING TEMPERATURE	
Temperature range	-40°C to +65°C (-40°F to +149°F)

CONDUCTOR DIAMETER RANGE	
Conductor diameter	6.35 mm to 31.75 mm (0.25 in to 1.25 in)
Keeper	Two-sided keeper in aluminium (for aluminium conductor) or galvanised ductile iron (for copper conductor)

CONSTRUCTION AND INSTALLATION	
Body material	Moulded from Polysil, a high dielectric strength, anti-tracking polymer concrete developed under an EPRI contract
Mounting	Vertical mounting only
Application limit	Not for dead-end use
Installation	Replaces an existing pole insulator with no line cutting

Ordering Information

MODEL		NETWORK VOLTAGE CLASS	
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Pole-Top Sensor, line post voltage and current sensor	PTS	For 15kV networks	15
		For 25kV networks	25
		For 35kV networks	35

Example: PTS 25 is a Pole-Top Sensor for a 25kV network. Talk to SATEC about a complete monitoring system, including the PM174 or PM175 analyser, SATEC enclosure and communications package.



Place an Order or Get Support

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