

Panoramic Power Wireless Sensor Family

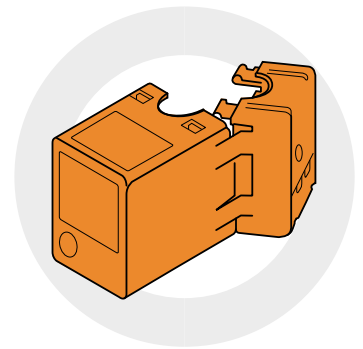


Overview



The Panoramic Power sensor series is made up of non-invasive, self-powered, miniature wireless current sensors. The sensors clamp on the electrical outgoing wire from the circuit breaker and are self-powered by the circuit's magnetic field. Hundreds of sensors can be installed in a few hours with no disturbance to daily operations. Once installed, the sensors become part of the building infrastructure, never requiring maintenance, service or battery replacement

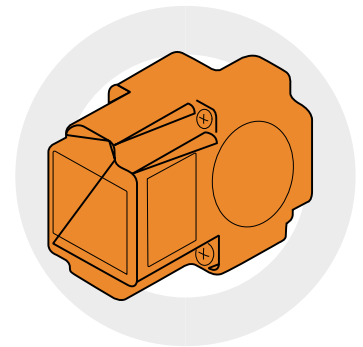
PAN-10



PAN-10 And PAN-12 Wireless Current Sensors Specifications

	PAN-10 sensor	PAN-12 sensor
Physical Dimensions	17 x 20 x 32 mm 0.67 x 0.79 x 1.26 inch	46.2 x 22.8 x 32.6 mm 1.82 x 0.90 x 1.28 inch
Max Hot-wire Outer Diameter (including insulation)	7 mm 0.28 inch	18.8 mm 0.74 inch
Current Measurement Range	0 – 63 A	0 – 225 A
Current Measurement Accuracy	Typically <2% at I > 3 A	Typically <2% at I > 10 A
Minimum Operating Current	0.5 – 1 A (typical)	0.7 – 1.2 A (typical)
AC Frequency Supported	50 Hz (EU, JPE versions) 60 Hz (US, JPW version)	
Transmission Frequency	434 MHz (EU version) 915 MHz (US version) 923 MHz (JPE, JPW versions)	
Transmission Power (ERP)	0 dBm (max – EU, US versions) -4 dBm (max – JPE, JPW versions)	
Transmission Interval	10 seconds	

PAN-12



Key Features

- Non-invasive - snaps and fits without disconnection
- No maintenance; self-powered
- High accuracy
- Wireless – no wiring, unlike standard CT-based monitoring systems
- Real-time current data transmitted every 10 seconds

Panoramic Power Wireless sensor family



PAN-10 And PAN-12 Wireless Current Sensors Specifications

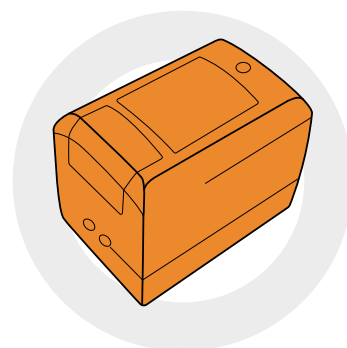
Certification	USA & Canada
	Safety: UL-61010-1, UL 61010-2-030, CAN/CSA-C22.2 No. 61010-1 (ETL listed); EMC: FCC Part 15 subpart B, ICES-003; Radio: FCC Part 15 subpart C, RSS-210, RSS-Gen
	Europe
	Safety: EN-61010-1, EN 61010-2-030 (CE); EMC: EN-ETSI 301489-1, 301489-3, 61326-1; Radio: EN-ETSI 300220-1, 300220-2
	Japan
Flammability Rating of External Enclosure	Radio: ARIB STD-T108
	CB Certification IEC 61010-1, IEC 61010-2-030 by Intertek Testing Services
	UL94 V-0
Operating Temperature	0 – 50°C / 32 – 122°F
Storage Temperature	-20 – 65°C / -4 – 149°F

PAN-14 Wireless High Current Sensor Specifications

Physical Dimensions	33.8 × 29 × 42.5 mm 1.33 × 1.14 × 1.67 inch
Current Input Range	0 – 5 A (up to 10 A peak) (from external current transformer)
Current Measurement Range	Determined by external current transformer
Current Measurement Accuracy	Typically <2% at I > 0.1 A (at input from external CT)
Minimum Operating Current	0.03 – 0.05 A (at input from external CT)
Ac Frequency Supported	50 Hz (EU, JPE versions) 60 Hz (US, JPW versions)
Transmission Frequency	434 MHz (EU version) 915 MHz (US version) 923 MHz (JPE, JPW versions)
Transmission Power (ERP)	0 dBm (max) -4 dBm (max – JPE, JPW versions)
Transmission Interval	10 seconds

The PAN-14 high-current sensor attaches to any size standard 0-5 A current transformer, allowing measurements at any current range or wire gauge.

PAN-14



Panoramic Power Wireless sensor family



PAN-14 Wireless High Current Sensor Specifications

Certification

USA & Canada

Safety: UL-61010-1, UL 61010-2-030, CAN/CSA-C22.2 No. 61010-1 (ETL listed); EMC: FCC Part 15 subpart B, ICES-003; Radio: FCC Part 15 subpart C, RSS-210, RSS-Gen

Europe

Safety: EN-61010-1, EN 61010-2-030 (CE); EMC: EN-ETSI 301489-1, 301489-3, 61326-1; Radio: EN-ETSI 300220-1, 300220-2

Japan

Radio: ARIB STD-T108

CB Certification IEC 61010-1, IEC 61010-2-030 by Intertek Testing Services

Flammability Rating of External Enclosure

UL94 V-0

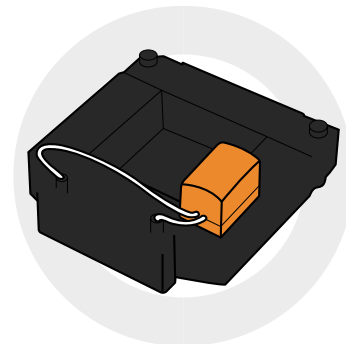
Operating Temperature

0 – 50°C / 32 – 122°F

Storage Temperature

-20 – 65°C / -4 – 149°F

PAN-14



Key features

- Connects to any standard 5 A current transformer
- No maintenance; self-powered
- High accuracy
- Wireless sensor & CT are closed around the hot wire with no additional wiring
- Real-time current data transmitted every 10 seconds

PAN-42 Wireless Power Sensor Specifications

Description

4-wire Wye, 3-wire Delta, single-phase 3-wire, single phase 2-wire, or dual-phase 3-wire

- Voltage: [120/208 V], [240/416 V], or [277/480 V]
- Frequency: 48 – 62Hz
- Current input range: 0 – 5 A (up to 10 A peak)
- Current measurement range: determined by external CT

Minimum measurable power: 0.025 W at device inputs (per phase)

Outputs

- Active Energy (kWh) – accumulated, per phase
- True RMS Voltage & Current – per phase
- Active & Reactive Power – per phase
- Power Factor – per phase
- Line frequency

The PAN-42 wireless power sensor provides high-accuracy real-time power measurements and advanced power quality measurements for main power monitoring, sub-metering and for the metering of large devices.

Designed for demanding electrical applications, supporting industry accuracy standards, PAN-42 enables the metering of power, voltage, current, power factor and power quality measurement data.

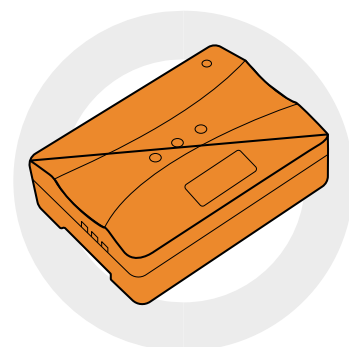
Panoramic Power Wireless sensor family



PAN-42 Wireless Power Sensor Specifications

Accuracy (for Voltage, Current and Active Energy)	According to ANSI C12.1 (Class 1)*
Transmission Frequency	434 MHz (EU version) 915 MHz (US version)
Transmission Power (ERP)	0 dBm (max)
Transmission Interval	10 seconds
Certification	USA & Canada Safety: UL-61010-1, UL 61010-2-030, CAN/CSA-C22.2 No. 61010-1 (ETL listed); EMC: FCC Part 15 subpart B, ICES-003; Radio: FCC Part 15 subpart C, RSS-210, RSS-Gen Europe Safety: EN-61010-1, EN 61010-2-030 (CE); EMC: EN-ETSI 301489-1, 301489-3, 61326-1; Radio: EN-ETSI 300220-1, 300220-2 CB Certification IEC 61010-1, IEC 61010-2-030 by Intertek Testing Services
Flammability Rating of External Enclosure	UL94 V-0
Operating Temperature	0 – 50°C / 32 – 122°F
Storage Temperature	-20 – 65°C / -4 – 149°F

PAN-42



Key features

- Single, dual or 3-phase metering
- Accurate measurement of active and reactive power
- Real time monitoring of current, voltage, power and power quality
- Integrated within the Panoramic Power cloud-based energy management platform
- Fast and easy installation

* Assuming CT of class 0.2 or better

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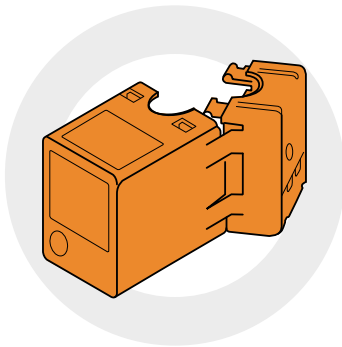


The full portfolio of wireless sensors

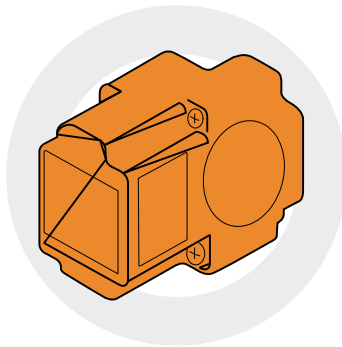
Panoramic Power provides a comprehensive range of cost-effective and easy-to-install metering and monitoring tools that transmit real-time energy data to its advanced cloud-based analytics platform

Granular monitoring of individual circuits and devices

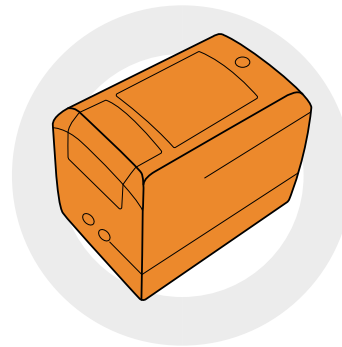
PAN-10



PAN-12

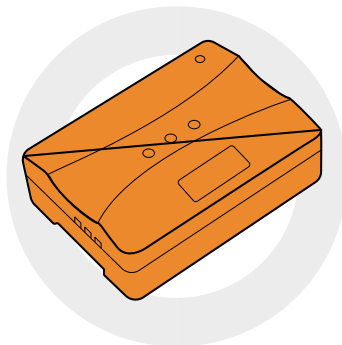


PAN-14



Sub-metering and monitoring of main powerlines and large devices

PAN-42



Part numbers of the different versions of our sensors:

PAN-10

US: PAN-10-063-US

EU: PAN-10-063-EU

JP East: PAN-10-063-JPE

JP West: PAN-10-063-JPW

PAN-12

US: PAN-12-225-US

EU: PAN-12-225-EU

JP East: PAN-12-225-JPE

JP West: PAN-12-225-JPW

PAN-14

US: PAN-14-US

EU: PAN-14-EU

JP East: PAN-14-JPE

JP West: PAN-14-JPW

PAN-42

US: PAN-42-US

EU: PAN-42-EU