Wireless electricity sensor family overview

Technical specifications

Our electricity sensor series is comprised of non-invasive, self-powered, miniature wireless current sensors. The sensors clamp onto 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 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 versions)	
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-10

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

Wireless electricity sensor family overview

PAN-10 and PAN-12 wireless current sensors specifications

Certification[1]	**USA and 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 301 489-1, 301 489-3, 613 326-1 Radio: EN ETSI 300 220-1, 300 220-2	**Australia** ACMA compliant **Russia** EAC compliant **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 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

Wireless electricity sensor family overview

PAN-14 wireless high current sensor specifications

Certification[1]	**USA and 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 301 489-1, 301 489-3, 613 326-1 Radio: EN ETSI 300 220-1, 300 220-2 **Australia** ACMA compliant **Russia** EAC compliant **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

Key features

- Connects to any standard 5 A current transformer
- No maintenance; self-powered
- High accuracy
- Wireless sensor and 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: 0.025W at device inputs (per phase)
Outputs	• Active energy (kWh) – accumulated, per phase • True RMS voltage and current – per phase • Active and 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.

Wireless electricity sensor family overview

PAN-42 wireless power sensor specifications

Accuracy (for voltage, current and active energy)	According to ANSI C12.1 (Class 1)[2]
Transmission frequency	434 MHz (EU version) 915 MHz (US version)
Transmission power (ERP)	0 dBm (max)
Transmission interval	10 seconds
Certification[1]	**USA and 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 301 489-1, 301 489-3, 613 326-1 Radio: EN ETSI 300 220-1, 300 220-2 **Australia** ACMA compliant **Russia** EAC compliant 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
- Easily integrated with PowerRadar®, our cloud-based energy management platform
- Fast and easy installation

Wireless electricity sensor family overview

The full portfolio of wireless sensors

We provide a comprehensive range of cost-effective and easy-to-install metering and monitoring tools that deliver real-time energy data to PowerRadar®, our cloud-based energy management platform, or to the software of choice.

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

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[1]Please check local regulations for using the hardware outside the countries listed here

[2]Assuming CT of class 0.2 or better

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