

# Panoramic Power™ wireless sensors and power meters



## Overview and technical specifications

Centrica Business Solutions offers a comprehensive portfolio of cost-effective and easy-to-install monitoring and metering tools that provide organisations with the real-time intelligence they need to improve energy and operational efficiency. Our energy insights solutions consist of our Panoramic Power wireless sensors and power meters, which are industry leaders in cost and ease of installation, enabling organisations to quickly and cost-effectively collect real-time energy data and analyse performance in PowerRadar™ – our cloud-based energy management platform – or software of choice. A selection of hardware is available for different current ranges, wire sizes, and measurement requirements.

### PAN-10 and PAN-12 Wireless Sensor specifications

	PAN-10 Wireless Sensor	PAN-12 Wireless 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 Wireless Sensor



#### PAN-12 Wireless Sensor



#### 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 sensors and power meters



## PAN-10 and PAN-12 Wireless Sensor specifications

Certification <sup>1</sup>	<b>USA and Canada</b> 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	<b>Australia</b> ACMA compliant
	<b>Europe</b> 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	<b>Russia</b> EAC compliant
		<b>Japan</b> 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
Ingress protection (IP) rating	IP5X
Operating temperature	-25 – 60°C / -13 – 140°F <sup>2</sup>
Operating humidity range	5% – 95% non-condensing
Storage temperature	-25 – 65°C / -13 – 149°F

## PAN-14 Wireless 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 Wireless Sensor attaches to any size standard 0 – 5 A current transformer, allowing measurements at any current range or wire gauge.

**PAN-14 Wireless Sensor**



# Panoramic Power wireless sensors and power meters



## PAN-14 Wireless Sensor specifications

### Certification<sup>1</sup>

#### 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

### 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

Flammability rating of external enclosure      UL94 V-0

Ingress protection (IP) rating                      IP5X

Operating temperature                                -25 – 60°C / -13 – 140°F

Operating humidity range                            5% – 95% non-condensing

Storage temperature                                 -25 – 65°C / -13 – 149°F

## PAN-42 Power Meter 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 Power Meter 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, the PAN-42 Power Meter enables the metering of power, voltage, current, power factor and power quality measurement data.

# Panoramic Power wireless sensors and power meters



## PAN-42 Power Meter specifications

Accuracy (for voltage, current and active energy) According to ANSI C12.1 (Class 1)<sup>3</sup>

Transmission frequency 434 MHz (EU version)  
915 MHz (US version)

Transmission power (ERP) 0 dBm (max)

Transmission interval 10 seconds

### Certification<sup>1</sup>

#### 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

Ingress protection (IP) rating IP5X

Operating temperature -25 – 60°C / -13 – 140°F

Operating humidity range 5% – 95% non-condensing

Storage temperature -25 – 65°C / -13 – 149°F

## PAN-42 Power Meter



### 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

# Panoramic Power wireless sensors and power meters



For granular monitoring of individual circuits and devices:

PAN-10 Wireless Sensor



PAN-12 Wireless Sensor



PAN-14 Wireless Sensor



For sub-metering and monitoring of main powerlines and large devices:

PAN-42 Power Meter



## Part numbers of the different versions of our hardware

### PAN-10 Wireless Sensor

US: PAN-10-063-US

EU: PAN-10-063-EU

JP East: PAN-10-063-JPE

JP West: PAN-10-063-JPW

### PAN-12 Wireless Sensor

US: PAN-12-225-US

EU: PAN-12-225-EU

JP East: PAN-12-225-JPE

JP West: PAN-12-225-JPW

### PAN-14 Wireless Sensor

US: PAN-14-US

EU: PAN-14-EU

JP East: PAN-14-JPE

JP West: PAN-14-JPW

### PAN-42 Power Meter

US: PAN-42-US

EU: PAN-42-EU