Parametric

PCR2 LoRaWAN™ Radar People Counter Indoor

PCR2 is a camera-less people counting sensor with LoRaWAN connectivity in a slim enclosure which is easy to mount.

The system includes powerful signal processing that enables directional counting of humans.

Counters are transmitted in regular intervals over a public or private LoRaWAN™ network.

All Parametric Sensors are equipped with USB or NFC for easy configuration with our freely available configuration tools.

Features

- Directional counting of persons passing by
- Integrated dual channel Radar transmitter
- 2 LEDs for counting signalisation
- Vertically (wall) or horizontally (ceiling) mountable
- Slim-line design with hidden fixing points
- Integrated Antenna
- Wide range power supply input 5 - 12VDC or USB
- LoRaWAN™ V1.0.2 Class A device
- EU868/US915/AU915/AS923 configurations available
- LoRaWAN Alliance Certification Pending

Applications

- People counting in shops or malls
- People flow measurement for trade shows
- Facility management
- Indoor safety applications

Functions

Counting mode:	Bi-directional counting of persons passing by (left / right counting)
	Number of persons are incremented during a selectable counting interval
Counters:	Left-to-Right incrementing counter (0…65535 persons)
	Right-to-Left incrementing counter (0…65535 persons)
	Counters reset to 0 (zero) after successful transmit and ACK received.
Interval range:	1 min … 1440 min
Temperature sensing:	Internal CPU temperature, -40 … +70°C, precision ±1.5°C

Field of view and optimal placement
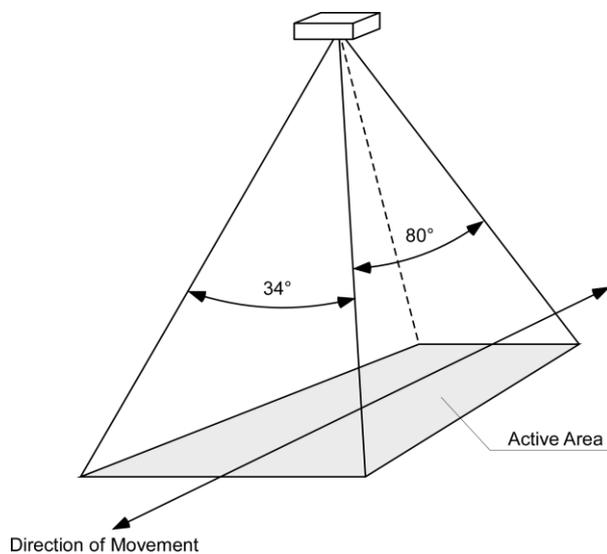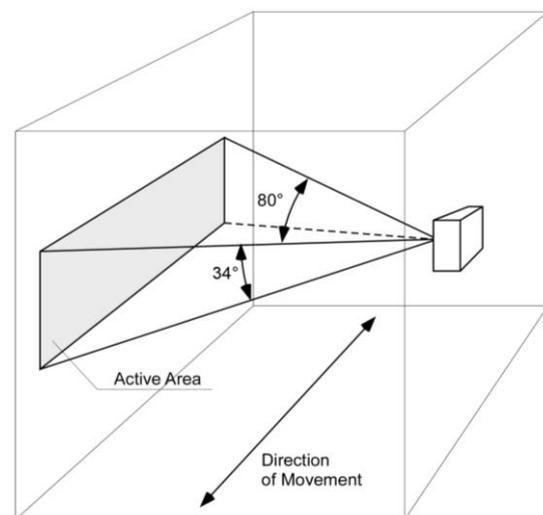

Ceiling mounted   Wall mounted

Field of detection	80°/ 34° beam
Detection range	6m
Distance between persons:	Min. 2m
Detection direction	Parallel to the device' surface

Optimal placement	Ceiling mounted:	50cm distance above persons' head
	Wall mounted:	1.2 … 1.4 m above floor

There should be no constantly moving objects like escalators or revolving doors in the field-of-view!

Specification

Electrical

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Operating Voltage:	5 – 12 VDC or Micro USB Power Supply
Power Consumption:	0.4W
Connector "DC Power"	Dual Push-in CAGE CLAMP for use with 5 – 12 VDC Power Supply Recommended wire diameter is 24 to 18 AWG (0.2 – 0.75 mm2)
Connector "CONFIG"	Micro-USB Socket for use with USB Power-Supply
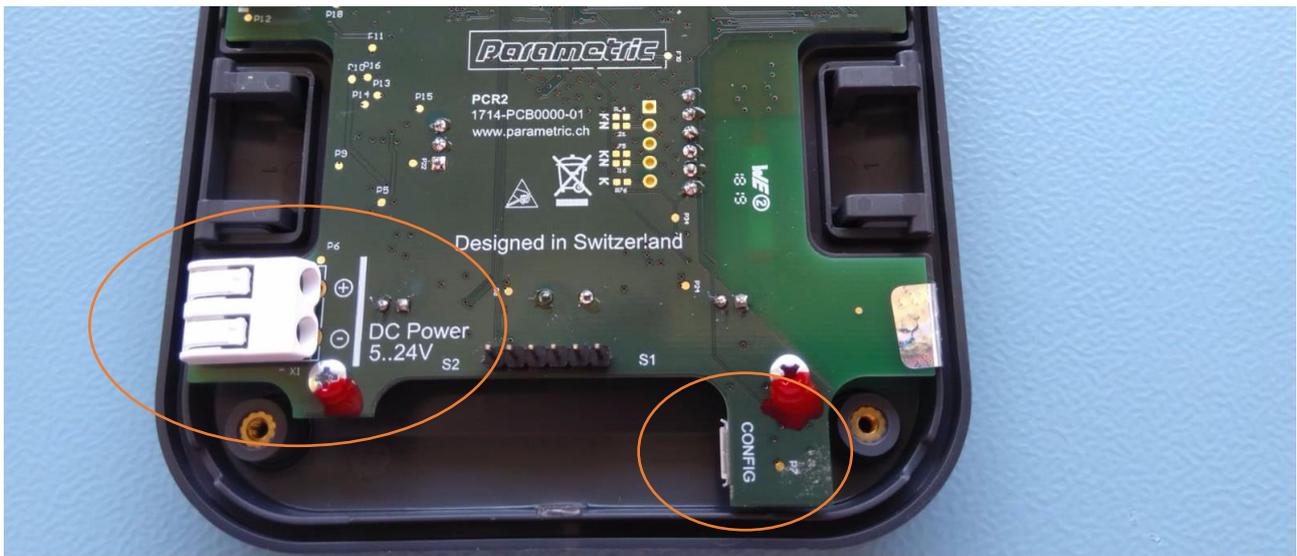
Radar Transceiver

Frequency:	24.125 GHz
Output Power EIRP:	12 dBm

LPWAN

Antenna:	Integrated Dipole 1.4 dBi
Protocol:	LoRaWAN™ V1.0.2 with LoRaWAN Regional Parameters v1.0.2rB
LoRaWAN™ Activation:	OTAA, ABP
LoRaWAN™ Settings:	ADR enabled, Confirmed/Unconfirmed Selectable, LinkCheckReq enabled, LinkStatusAns enabled, FSB selectable on US915 and AU915 devices
LoRaWAN™ Regions:	EU868 (EU 863-870MHz ISM Band) US915 (US 902-928MHz ISM Band) AU915 (Australia 915-928MHz ISM Band) AS923 (Asia 923-925MHt ISM Band)

Mechanical

Main dimensions and fixing points

Bottom View
Fixing Points and Cable Entry
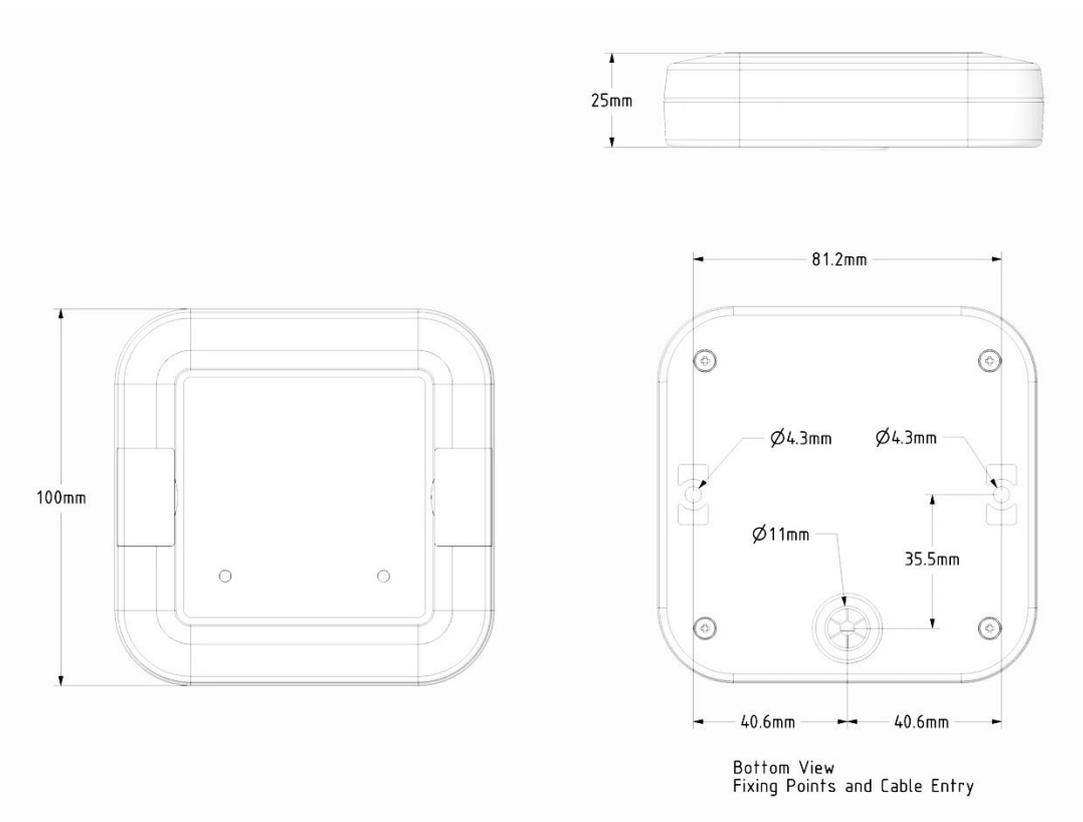
Material:	ABS Plastics UL94V-0 (flame resistant)
Color:	Charcoal grey
Protection Class:	IP30 (IEC 60529)
Cable diameter:	Max. 11 mm
Weight:	145g
Operating temperature:	-20 … 70°C
Storage temperature:	-40 … 85°C

Ordering information

Available Models

PCR2-EU868-IN	Indoor Model for use in European LoRaWAN networks
PCR2-US915-IN	Indoor Model for use in US and Canadian LoRaWAN networks
PCR2-AU915-IN	Indoor Model for use in Australian LoRaWAN networks
PCR2-AS923-IN	Indoor Model for use in Asian LoRaWAN networks

Where to buy

You can find a list of distributors and solution providers on the product website:
www.parametric.ch/product/pcr2-in

Evaluation kits are available for interested integrators or solution providers.

Document revisions

2019-05-09	Revision 6	Detection Range corrected
2018-11-23	Revision 5	Added AS923, PSU 5-12V DC, Additional LoRaWAN Configuration
2018-08-13	Revision 4	LoRaWAN Stack Update, Power Supply, Temperature
2018-07-19	Revision 3	Improved Comprehensibility
2018-07-17	Revision 2	Added Radar Data Spec
2018-07-06	Revision 1	Added FoV Illustrations
2018-07-04	Revision 0	Initial Version

Disclaimer