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

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

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 923-925MHz ISM Band)
Mechanical

Main dimensions and fixing points

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

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