

LANSEN

Temp/Humidity/Pressure/CO₂

LAN-WMBUS-Q-C

DEVICE

The Q-series sensor from Lansen continuously measures important indoor parameters. It is plug-and-play and can be mounted in any room where there is a need to know the pressure, CO₂, temperature and humidity level. The device has a sleek and discrete design and blend nicely in any office or home environment.

PERFORMANCE

The internal radio antenna is optimized for 868Mhz and is tuned for mounting on concrete, wood or plaster.

MEASUREMENTS

Sensor parameters are sent every 60 seconds using the wireless M-Bus protocol OMS compliant. This makes the sensor ideal for integration in data collecting systems or drive by solutions.

The data from the device is protected using the AES128 encryption compliant with OMS standard. All parameters are updated every 60 seconds.

FIRMWARE

| | |
|-----------------|--|
| MODES | C-, T- or S-mode (selectable on order) |
| SEND INTERVAL | 60s - 1 hour (selectable on order) |
| SAMPLE INTERVAL | Same as send interval |
| ENCRYPTION | AES128 encryption OMS mode 5, Profile A. ON/OFF, unique key (selectable on order) |
| <u>STANDARD</u> | T1-Mode, 60 seconds, Encryption ON, unique key. |

WARNINGS

| | |
|-----------------------|-------------------------------------|
| CO ₂ ERROR | CO ₂ sensor not working. |
| CALIBRATION | Calibration not performed yet. |

POWER/LIFETIME

| | |
|--------------|---|
| POWER SUPPLY | 24 ± 20% VAC or VDC (adapter not included) |
| RADIO | 16 dBm (25 mW) output power ERP typical: 10.7 dBm (11.75 mW) |

GENERAL INFORMATION

| | |
|------------------|--|
| STANDARDS | 2014/53/EU (RED) EN 13757-3/4:2018, OMS 4.0.2 |
| COLOR | Signal white |
| MATERIAL | ABS/PC Front, ABS back. |
| SIZE (W x H x D) | 142 x 142 x 40 mm |

OPERATING CONDITIONS

RADIO TRANSMITTER

| | |
|-------------|-----------------|
| TEMPERATURE | -30°C to + 85°C |
|-------------|-----------------|

TEMPERATURE SENSOR

The on-board temperature sensor is highly accurate with typical accuracy ±0.2°C.

HUMIDITY SENSOR

The on-board humidity sensor is highly accurate in the entire temperature range, with typical accuracy ±2%RH.

CO2 SENSOR

The on-board NDIR CO₂ sensor with diffusion technology is used to measure the absolute CO₂ level. An intelligent calibration routine calibrate the device at startup and during the entire lifetime. The sensor calibrates every 20 days to ensure good readings and the calibration is done using the lowest reading in the interval. This reading is then used as the 415 ppm baseline for the next period. This works on the fact that the CO₂ level moves towards 415 ppm (clean air) when the building is not occupied for a period.

Note that the first accurate readings can typical be expected after 3-9 days after installation.



LANSEN

Temp/Humidity/Radon/Pressure/CO₂

LAN-WMBUS-Q-series

DEVICES

| Name | Temperature | Humidity | Pressure | Radon | CO ₂ | 24 VDC or 24 VAC |
|----------------|-------------|----------|----------|-------|-----------------|------------------|
| LAN-WMBUS-Q-RC | X | X | X | X | X | X |
| LAN-WMBUS-Q-C | X | X | X | | X | X |
| LAN-WMBUS-Q-R | X | X | X | X | | X |

SENSORS

| Type | Range | Typical accuracy | Sample interval | Operating condition |
|-----------------|---|--|-----------------|---|
| TEMPERATURE | -40°C to +85°C | ±0.2°C at +5°C to +60°C ±0.5°C at -20°C to +85°C | 60 sec | Non condensing |
| HUMIDITY | 0 - 100 %RH | ±2 %RH at 20-80 %RH. ±3 %RH at 10-90 %RH ±3,5 %RH at 0-100 %RH | 60 sec | Non condensing |
| CO ₂ | 0-5000 ppm | ±(50 ppm+3%) after calibration | 60 sec | <u>Temperature:</u> 0° to +55° (-20° to +55° on request) <u>Pressure:</u> 950 mbar to 1050 mbar (other range on request) <u>Humidity:</u> %RH < 90% and non condensing |
| Radon | Sensitivity: 0.3cpm/pCi/L (11,1 Bq/m ³) Range: 0.2 ~ 99.9pCi/L (7~3,700Bq/m ³) | < ±15% Min. uncertainty: 26 bq/m ³ | 10 minutes | Temperature: 10°C to +50°C Humidity: %RH < 80 and non condensing |
| Pressure | 300 to 1200 hPa | ± 2 hPA | 60 sec | Temperature: -30° to +85° |