

LANSEN

Temp/Humidity/Radon/Pressure/CO₂

LAN-WMBUS-Q-RC

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 radon, 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 except the radon level which is updated every 10 minutes.

FIRMWARE

MODES	C-, T- or S-mode (selectable on order)
SEND INTERVAL	60s - 1 hour (selectable on order)
SAMPLE INTERVAL	
Radon	10 minutes (not changeable)
All other parameters	Same as send interval
ENCRYPTION	AES128 encryption OMS mode 5, Profile A. ON/OFF, unique key (selectable on order)
STANDARD	T1-Mode, 60 seconds, Encryption ON, unique key.

WARNINGS

CO ₂ ERROR	CO ₂ sensor not working.
RADON ERROR	Radon sensor not working.
CALIBRATION	Calibration not performed yet.

POWER/LIFETIME

POWER SUPPLY	24 VAC or 24 VDC (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
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RADON SENSOR

The radon sensor is a high performance radon sensor that measures the decay of radon particles. The radon value is updated as often as every 10 minutes and this fast response time allows the device to be used even in HVAC system.

TEMPERATURE SENSOR

The on-board temperature sensor is highly accurate with typical accuracy $\pm 0.2^{\circ}\text{C}$.

HUMIDITY SENSOR

The on-board humidity sensor is highly accurate in the entire temperature range, with typical accuracy $\pm 2\% \text{RH}$.

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.



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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°