

LANSEN

Temperature and humidity sensor

LAN-WMBUS-CX-TH

DEVICE

The ambient temperature and humidity device from Lansen is a plug-and-play room temperature and humidity transmitter. Much care has been taken to design a sleek, good looking device with high security and performance. The design allows for discrete integration when mounted in home environment.

PERFORMANCE

The device has a robust design with innovative optical tamper detection function that will alert if the device is opened. A bit in the status message is set if sabotage is detected or restored. The battery level is continuously monitored and a low level warning is issued when battery is nearing depletion. For maximum range, the device has a fine-tuned internal antenna.

TEMPERATURE SENSOR

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

FIRMWARE

MODES	C*, T or S
SEND INTERVAL	60s - 1 hour
SAMPLE INTERVAL	Same as send interval
ENCRYPTION	AES128 encryption OMS mode 5, Profile A. ON/OFF, and custom KEY
<u>STANDARD</u>	T1-mode, 150 seconds, Encryption ON, unique key.

SENSORS

TEMPERATURE	RANGE: -40°C to $+85^{\circ}\text{C}$ TYP ACC: $\pm 0.2^{\circ}\text{C}$ at 0°C to $+65^{\circ}\text{C}$
HUMIDITY	TYP ACC: $\pm 2\%\text{RH}$ at 20-80%RH.

WARNINGS

TAMPER DETECTION	Product opened or removed from the wall
BATTERY	Low battery

POWER/LIFETIME

POWER SUPPLY	ER14505 3.6V Li-SOCI2 battery.
VOLTAGE	2.4 to 3.6V
LIFESPAN	14**** years typical, standard configuration and operating temperature.
RADIO	14 dBm (25 mW) output power to antenna. ERP typical: 9.7 dBm (9.3 mW)
BATTERY	Soldered (standard) or optional battery holder

GENERAL INFORMATION

STANDARDS	2014/53/EU (RED) EN 13757-3/4:2013, OMS 4.0.2**
MATERIAL	White, ABS
SIZE (W x L x D)	32 x 88.5 x 25.5mm

OPERATING CONDITIONS

RADIO TRANSMITTER	$+0^{\circ}\text{C}$ to $+55^{\circ}\text{C}$ ***
RELATIVE HUMIDITY	None condensing

DEVICES

LAN-WMBUS-CX-TH	Ambient Sensor for temperature/humidity
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HUMIDITY SENSOR

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

MEASUREMENTS

Temperature and humidity is sent at a predefined interval and the data is sent 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 also protected using the AES128 encryption compliant with OMS standard.

CONFIGURATION

The device can be ordered with custom M-Bus mode, transmission interval and encryption.

MOUNTING

The device is either mounted with adhesive tape or with screws.

The device is easily activated by using any standard magnet.

* Both C- and T-mode use the same radio settings both compatible with T1-mode in EN13757. Except that C1-mode uses NRZ encoding and T1-mode uses 3outof6 encoding. Deviation 50kHz and bit rate typ. 98-102kbit.

** The pseudo random delay between each packet transmission is longer to make collision more unlikely compared to the OMS specification. Can in volume be ordered with standard delay.

*** Temperature outside this range can affect the possibility to receive data from the device.



**** The expected battery lifetime stated is based on simulations and true measurements at 25°C and is valid to the best of our ability but not a guarantee. The calculations and measurements can be sent upon request for your reference.