M-Bus wireless

FX-WMBUS-E-VOC
Wireless M-Bus VOC, Temperature, & Humidity room sensor

❯ Battery powered for wireless installation

❯ AES128 Encrypted Wireless M–Bus communication

❯ Continuous battery level monitoring

❯ Seemless design

Measure to manage

The Fidelix FX-WMBUS-E-VOC room VOC, temperature, and humidity sensor is a plug-and-play room VOC, temperature, and humidity transmitter. Great care has been given to design a sleek, good looking device with high security and performance. The device has 2 antennas for maximum range in both vertical and horizontal directions.

The battery level is continuously monitored and a low-level warning is issued when battery is nearing depletion.

Technical features

Temperature range:	-40..85°C
Dimensions:	80 x 80 x 25 mm
Power supply:	3.6V-battery
Communication:	OMS standard wireless M-Bus interval 90 sec

Firmware:

MODE	T1
INTERVAL	90 seconds
SAMPLE INTERVAL	6 minutes
ENCRYPTIONS	AES128 encryption OMS mode 5, Profile A
M-BUS DATA	Instant, average hour, average 24 hours

Sensors:

TEMPERATURE	RANGE: -40 to +85°C
	ACC: $\pm$0,2 at 5 to +55°C
HUMIDITY	ACC: $\pm$2 %RH at 10-90 %RH
VOC	ACC: $\pm$15..25% of value at 25°C / 50 %RH
	RANGE: 0-60 000 ppm

Warnings:

BATTERY	Low battery

Power / Lifetime:

POWER SUPPLY	2 x ER18505 3.6V Li-SOCl2 battery pack
CAPACITY	8200 mA
VOLTAGE	2.6 to 3.6 V
LIFESPAN	16 years typical, standard operating temperature
RADIO	14 dBM (25mW) output power to antennas

Conformity:

ENVIRONMENT	RoHS (2011/65/EU) / (EU)
	2015/863 RADIO / EMC
	RED (2014/53/EU)

General information:

OP TEMPERATURE	-40° to +85°C (recommended: +5..55°C)
RELATIVE HUMIDITY	Non condensing
MATERIAL	White, ABS
SIZE (W x L x D)	80 x 80 x 25mm
STANDARD	EN13757-3/4 / OMS 4.0.2

VOC Sensor:

The on-board VOC sensor is used for sensing VOC gases (air quality). The sensor is a high-performance sensor with minimum drift and reliable performance also over long time. The VOC sensor uses a gliding average algorithm as well as a baseline compensation algoritm to be able to detect bad air quality. This technique captures changes in air quality but cannot typical be used to indicate a constant air quality problem that exsist for really long periods.
Note that the first accurate reading can typically be expected after 24 hours.

Measurements:

The VOC, temperature, and humidity are sampled every 6 minutes and sent synchronous using the OMS compliant Wireless M-BUS protocol. This makes the sensor ideal for integration in data collecting systems, drive by solutions or for controlling ventilation. The data from the device is also protected using the AES128 encryption compliant with OMS standard.

Installation:

The device is mounted with screws. Always mount on an interior wall, e.g. hallway. The sensor works best 180cm above the floor. Mount the device so the hole at the front is on the right side. Make sure that the UP symbol on the label (located on the side) is pointing upwards. Avoid heating/cooling sources (solar radiation, lamps, pipes, extensive airflow, etc.).

Commissioning:

STEP 1:
• Turn the device upside down

• Remove the mounting piece by pushing the two plastic pieces, marked by red circles, inwards (e.g. with a screwdriver) and then lifting the piece up.
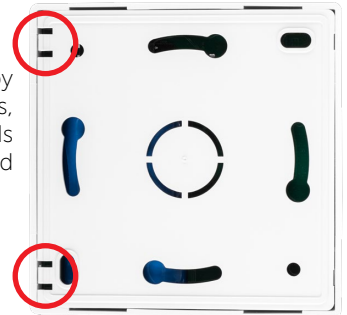
STEP 2:
• Locate the small, black plastic jumper on the left side of the battery.

• Remove the jumper

• Place the jumper so it is connected to the two pins on the board.

• When the jumper connects the two pins, the device is automatically powered on.

• The red LED will start to flash. The start-up sequence is successful when the flashing stops.
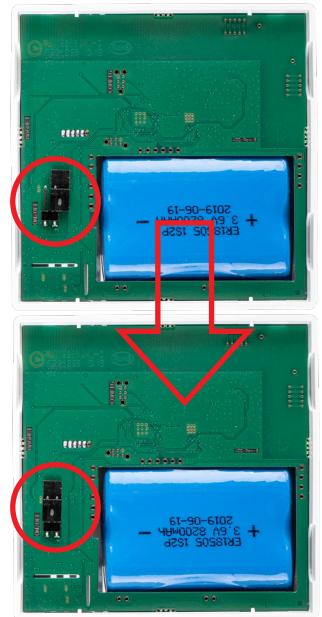
STEP 3:
• Fasten the mounting piece to a wall with the text UP pointing upwards using the recommended mounting instructions.

• Use two screws in the two holes marked with red in the picture.

• Mount the device on the mounting piece. Make sure the UP symbol on the label at the side of the device is pointing upwards.

NOTE: The ventilation slits must be on the right side!