WATTECO

SMART BUILDING

VMC Gas & Sanitary Sensor

sigfox

The VMC Gas & Sanitary sensor measures the depression established by the external ventilation boxes. Regularly the Sensor uploads its data on the SIGFOX® radio network, a secure, ultra narrow band, long range and low power consumption network.

APPLICATIONS

- Supervision of gas ventilation installations
- Energy optimization of buildings (residential tertiary)

BENEFITS & FEATURES

- SIGFOX®
- Easy to install and use
- Autonomy > 8 years
- Measurements in the VMC air flow :
  - Depression: 0 to + 500 Pa; -/+ 10 Pa
  - Temperature: 0°C to 50°C; -/+ 1°C
- IP65
- Optional input for mechanical depressostat

CERTIFICATION

- RoHS, CE

The SIGFOX® GAS & SANITARY VMC sensor is a battery-powered, on-board system that monitors centralized ventilation boxes by periodically measuring the vacuum.

The data transmission on the SIGFOX® network is done periodically (configurable):

- Calculated average of measured depressions,
- Minimum and maximum vacuum measured,
- Battery voltage level
- Trigger pressure switch (if optional)

The transmission is immediately, as a measure, in the event of an alert exceeding a threshold.

Powered by a battery, the autonomy of the sensor is more than 8 years for a configuration with one vacuum measurement per hour and one transmission per day.

The sensor is installed outdoors near the housing. It must be fixed under cover (in a Plexo case for example) so as not to be subject to too quick temperature variations (sunlight, rainfall, etc.) which can affect the quality of the measurement.

The Sensor must be kept away from any metal parts that could strongly attenuate the radio frequency transmission (the Sensor must be placed more than 0.5 meter from the Housing for example).

Installation and commissioning is quick and easy. The Sensor is equipped with :

- 2 tubes 200cm and 2 pipettes for connection to the box or duct on either side of the ventilation system
- a magnetic switch to activate or deactivate the Sensor,
- an NFC identification tag (product number, serial number, production batch)

The Sensor is delivered with a default configuration; it can be reconfigured on site using an SDcard (not supplied) :

- interval between two measurements,
- radio frequency transmission periodicity,
- minimum / maximum vacuum warning thresholds; configurable hysteresis,
- battery voltage level,
- other internal operating parameters

The configuration of the SDcard can be modified by a simple text editor (Notepad on Windows PC for example) available online.

When the sensor is associated with an external depressostat (option), the triggering of the depressostat forces an additional measurement which allows to have a postponement of the alert.

THE LARGEST IOT PRODUCTS RANGE FOR YOUR PROJECT

nke WATTECO is a European leader in the design and manufacture of intelligent IoT devices to fit to all remote reading and data collection solutions.

nke WATTECO is a LoRa Alliance®.

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VMC Gas & Sanitary Sensor

TECHNICAL CHARACTERISTICS

RADIO FREQUENCY		
Frequency (MHz)	EU: 868-870	
Transmitted power(dBm)	+14	
Sensitivity(dBm)	-126	
CONFIGURATION FIRMWARE		
Radio Frequency Protocol	SIGFOX® 0U approval	
Application layer	Owner uncompressed; no encryption	
Measuring interval	from 1mn to 59mn in steps of 1mn or from 1h to 48h in steps of 1h (default 1h)	
Transmission period : - of the data - in the news	from 1mn to 59mn in steps of 1mn or from 1h to 48h in steps of 1h (by default 24h) from 1h to 23h in steps of 1h or from 1d to 30d in steps of 1d (default 7d)	
Data	Minimum, maximum and average vacuum and air flow temperature vmc Battery voltage: range 0.1V to 3.6V; 0.1V steps	
MEASURE	**Pressure**	**Temperature**
Range	0 to 500 Pa	+0°C to +50°C
Accuracy	+/-10 Pa from 0 to 200Pa +/-5% from 200 to 500Pa	+/-1 °C
Resolution	1Pa	0,1°C
POWER SUPPLY		
Voltage	3.6V / 3600mAh - lithium battery	
Autonomy in a range of +10°C to +25°C	> to 8 years on the basis of one measurement / 60 minutes - one transmission / 24 hours	
INTERFACE		
NFC Tag	Product number, serial number, batch number	
Buzzer	Commissioning follow-up; consideration of the SD card (not supplied)	
Magnetic switch (ILS)	Switching the Sensor on / off; configuration / software update.	
ALERTS		
Crossing of thresholds	Transmission after measurement after confirmation : - minimum threshold: start alert 90Pa / end alert 110Pa (default) - maximum threshold: start alert 390Pa / end alert 410Pa (default)	
Depressostat on/off status (if option present)	Transmission less than 20s after the change of state (on/off) of the external depressostat. The value of the instantaneous depression is transmitted. The pressure relief switch is connected with a 3 to 6.5mm cable via the cable gland.	
BOITIER		
Dimension (mm)	92x92x56	
IP Class	IP65	
Flammability	UL94-V0 HB	
ENVIRONMENT		
Operating temperature	-20°C / +50°C (excluding direct solar radiation)	
Storage temperature	-10°C / +30°C; <75%rH	
STANDARDS & REGULATIONS		
EN, 61000-4-2 EN 300-220-1 V2-4-1, EN 301 489 V1-6-1 CE, RoHS		

PRODUCT NUMBER

REFERENCE	DESCRIPTION
50-09-080	SIGFOX® VMC GAS SENSOR (without external pressure switch input)
50-09-074	SIGFOX® VMC GAS SENSOR (with external pressure switch input)

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