

Toran'O AtEx zone 1



The **Toran'O AtEx ZONE 1** sensor is used to report status changes, pulse count values and analog measurements of equipment in the AtEx 1 sensitive zone such as water, gas, electricity or thermal energy meters, mechanical pressure switches, pressure transducers. It makes existing equipment communicate on a public or private LoRaWAN® network.

APPLICATIONS

- In explosive atmospheres, read index values from gas, electricity, water or heat meters with pulse output; monitoring the charging curve.
- Detection of leaks, fraud and tearing off.
- Check the condition of the mechanical pressure switches located in sensitive areas.
- Associated with a pressure probe, measurements on a gas network.

BENEFITS & FEATURES

- LoRaWAN®, Class A.
- Easy to install and use.
- 3 pulse inputs or status reports.
- 3 analog inputs: 2x 0-5 V and 1x 4-20 mA.
- 1 stabilised switched power supply output.
- SAFT LS17500 Lithium battery on holder.
- Differential data compression.
- IP55 or IP68.
- Up to 8 years of autonomy.

CERTIFICATION

- RoHS, CE
- AteX Zone 1 certification according to marking:
 - Ex II 2 G
 - Ex ib IIB, IIC T4 Gb
 - $-20 \leq T_{amb} \leq +50^{\circ}\text{C}$

The **TORAN'O AtEx zone 1** sensor allows metering from the pulse output of water, gas, electricity or heat meters to monitor consumptions. The TORAN'O sensor enables all your mechanical pressure switches in AtEx zone 1 explosive atmospheres to communicate with each other and to report state changes. It transforms existing meters into communicating meters via a public or private LoRaWAN® network.

Associated with a pressure probe, the TORAN'O AtEx zone 1 sensor allows the pressure information to be transmitted to the LoRaWAN® network.



Installation and commissioning is quick and easy.

The sensor has:

- a switch allowing its activation and deactivation,
- 2 LEDs to monitor the configuration and association on the network.

Counting data can be stored in local memory and compressed before being transmitted over the public or private LoRaWAN® network. This reporting technique is particularly suitable for transmitting load curves as it considerably reduces the amount of data transmitted while preserving the autonomy of the sensor.

When powered by a SAFT 3.6V/3600 mAh Lithium battery, the sensor's autonomy is 10 years (data compression mode) for a configuration performing one measurement per day and one transmission per day.

Installation, maintenance and use must be carried out exclusively by technician with the skills for the use of electrical equipment in explosive atmospheres as defined in EN 60079-14.

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® member since 2015.

TECHNICAL DATA

RADIO			
Frequency (MHz)	EU: 863-870		
Transmitted power (dBm)	+14		
Sensitivity (dBm)	-140		
FIRMWARE			
Protocol	LoRaWAN®, Class A		
Transmission cycles	Configurable from 10 minutes		
Data compression	yes (differential coding)		
Activation method	ABP or OTAA		
Data encryption	AES128		
INPUTS: S0 and intrinsic safety parameters			
Uo=6.33V; Io=33µA; Po=23uW; Co=650µF [IIB]; Co=28µF[IIC]; Lo=1H [IIB]; Lo=1H [IIC]. Ui=25V; Ii=450mA; Ci=3.3nF, Li=0H			
INPUT: 4-20 mA and intrinsically safe parameters			
U0 = 18.9V; I0 = 91mA; P0 = 430 mW; C0 = 1.6µF [IIB]; C0 = 262nF [IIC]; L0 = 17mH [IIB]; L0 = 4mH [IIC].			
INPUTS: 0-5V and intrinsic safety parameters			
Uo=6.51V; Io=67mA; Po=108mW; Co=500µF [IIB]; Co=22µF[IIC]; Lo=33mH [IIB]; Lo=8mH [IIC].			
POWER SUPPLY		Characteristics	Autonomy in the range +10°C to +25°C
Lithium battery		3.6V / 3600mAh -- AtEx Zone 1 certification: battery replacement, use only SAFT LS17500 batteries.	10 years with SF12, 1 measurement per day and 1 transmission per day
INTERFACE			
LEDs	Configuration and association on the network		
Magnetic switch	Reset, ON/OFF		
Cable connection	IP55 - IP68: connection on 6-pin Amphenol connector; see references		
BOX		Dimension (mm)	IP class
		92x92x55.5 (excluding connectors)	IP55 or IP68
ENVIRONMENT			
Operating temperature (°C)	-20 / +50		Storage temperature (°C) 0 / +30
STANDARDS & REGULATIONS			

EN, 61000-4-2,
IN 300-220-1 V2-4-1,
EN 301,489 V1-6-1,
CE,
RoHS



PRODUCT REFERENCES

REFERENCE	IP class	DESCRIPTION
50-70-124	IP55	TORAN'O ATEx ZONE 1, Outdoor
50-70-150	IP68	TORAN'O ATEx ZONE 1, Outdoor
18-40-263	IP67	6 pins Amphenol connector - overmoulded on the 2 meters cable, free strands end
71-70-115	IP67	6 pins Amphenol connector - overmoulded on the 2m cable, end 6pts BINDER plug; shunt3&4 5&6)
71-70-116	IP67	6 pins Amphenol connector - overmoulded on the 2 metre cable, end JAE plug (for Gazpar)