TORAN'O ATEX zone 1

LoRaWAN®

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

APPLICATIONS

- In explosive atmospheres, read index values from gas, electricity, water or energy meters with pulse output; load curve monitoring.
- Detection of leaks, fraud and tear off.
- Check the condition of 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 analogue inputs: 2x 0-5V and 1x 4-20mA
- 2 power supply outputs: ~5Vdc and ~16Vdc
- SAFT LS17500 Lithium battery on holder (IP55 version)
- Differential data compression
- IP55 or IP68
- Up to 10 years of autonomy

CERTIFICATION

- RED, UKCA, RoHS
- AtEx Zone 1 certification according to marking:
    - Ex II 2 G
    - Ex ib IIC T4 Gb
    - -20 ≤ Tamb ≤ +50°C

ATEX

Sensors delivered without WATTECO marking

CONCEPTION ET FABRICATION · MADE IN FRANCE

The **TORAN'O ATEX zone 1** sensor allows metering from the pulse output of water, gas, electricity or energy meters to monitor consumptions. The TORAN'O sensor enables all your mechanical pressure switches in AtEx zone 1 explosive atmospheres to communicate with one another 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 are quick and easy.

The sensor has:
- a switch used for its activation and deactivation,
- 2 LEDs to monitor the configuration and pairing to the network.

Counting data can be stored in the 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/3600mAh Lithium battery, the autonomy of the sensor is 10 years (data compression mode) with a configuration that performs one measurement per day and one transmission per day.

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

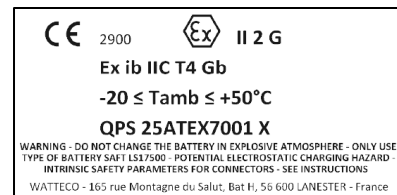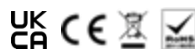## THE LARGEST IOT PRODUCTS RANGE FOR YOUR PROJECT

WATTECO is a European leader in the design and manufacture of smart IoT devices to suit all remote reading and data collection solutions.
WATTECO is a LoRa Alliance® member since 2015.

TECHNICAL DATA

RADIOFREQUENCY	Frequency (MHz)	Transmit Power (dBm)	Receiver Sensitivity (dBm)
	EU: 868 - 870	+14	-140

FIRMWARE	
Protocol	LoRaWAN®, Class A
Measurement periodicity	From 10 minutes to 24 hours (configurable)
Transmission interval	Immediate following measurement or batch at 30min to 48hrs (configurable)
Data compression	By differential coding (configurable)
Activation method	Activation by Personalization (ABP) ou Over-The-Air Activation (OTAA)
Data encryption	AES128

Pulse and Status Report INPUTS: intrinsic safety parameters

U_o=6.33V; I_o=33µA; P_o=23uW; C_o=650µF [IIB]; C_o=28µF|IIC]; L_o=1H [IIB]; L_o=1H [IIC].

U_i=25V; I_i=450mA; C_i=3.3nF, L_i=0H

4-20 mA INPUT: intrinsic safety parameters

U_0 = 18.9V; I_0 = 91mA; P_0 = 430mW; C_0 = 1.6µF [IIB]; C_0 = 262nF [IIC]; L_0 = 17mH [IIB]; L_0 = 4mH [IIC].

0-5 V INPUTS: intrinsic safety parameters

U_o=6.51V; I_o=67mA; P_o=108mW; C_o=500µF [IIB]; C_o=22µF|IIC]; L_o=33mH [IIB]; L_o=8mH [IIC].

POWER SUPPLY	
Voltage	3.6V / 3600mAh - AtEx Zone 1 certification: battery replacement (only with IP55 version), use only SAFT LS17500 batteries. Transmitted battery voltage level (configurable in 0.1V steps).
Autonomy (in a range of +10°C to +25°C)	> 10 years with SF12, 1 measurement per day and 1 transmission per day

USER INTERFACE	
Magnetic switch + LEDs	Network pairing; signalling of sensor states; visible through the openings
NFC tag	Product code, serial number, batch number
Cable connection	IP55 – IP68: connection on 6 (pulse and 0-5 V) or 4 (4-20 mA) pins Amphenol connector; see references

ENCLOSURE	Size (mm)	Weight (g)	Fastenings	IP rating	Material	Fire resistance
	91 x 142 x 56	240	Wall mounting thanks to screws or adhesive tape (not supplied)	IP55 or IP68	Box : ASA200FR Cover : PC943A	UL94V2

ENVIRONMENT	Operation	Storage
	-20°C / +50°C ; +0%rH / +95%rH (non-condensing)	10°C / +30°C ; +0%rH / +60%rH

STANDARDS & REGULATIONS

Radio Equipment Directive 2014/53/EU, RoHS

UK CA CE 🚮 ✅

CE 2900 ⟨Ex⟩ II 2 G

Ex ib IIC T4 Gb

-20 ≤ Tamb ≤ +50°C

QPS 25ATEX7001 X

WARNING - DO NOT CHANGE THE BATTERY IN EXPLOSIVE ATMOSPHERE - ONLY USE
TYPE OF BATTERY SAFT LS17500 - POTENTIAL ELECTROSTATIC CHARGING HAZARD -
INTRINSIC SAFETY PARAMETERS FOR CONNECTORS - SEE INSTRUCTIONS
WATTECO - 165 rue Montagne du Salut, Bat H, 56 600 LANESTER - France

PRODUCT REFERENCES

REFERENCE	HS Code	Designation
50-70-124	85 17 62	TORAN'O ATEX ZONE 1, IP55 - LoRaWAN® EU868
50-70-150	85 17 62	TORAN'O ATEX ZONE 1, IP68 - LoRaWAN® EU868
71-70-115	85 44 42	Cable - 2 meters with 6-pins Amphenol connector and 6 pins BINDER plug (shunt 3&4 5&6)
71-70-116	85 44 42	Cable - 2 meters with 6-pins Amphenol connector and JAE plug (for Gazpar meter)
18-40-262	85 44 42	Cable - 2 meters with Amphenol connector to 4 free wires
18-40-263	85 44 42	Cable - 2 meters with Amphenol connector to 6 free wires
18-40-298	85 36 69	Amphenol connector - 6 pins
18-40-299	85 36 69	Amphenol connector - 4 pins