CLOS'O

LoRaWAN

CLOS'O is a LoRaWAN® sensor that determines if a gateway is properly closed. Installed on the frame (or on the fixed part), it detects the position of a magnet fixed on the gate's moving part.

The sensor reports over a public or private LoRaWAN® radio network the open or closed state of the gate. An alert is transmitted if the sensor is pulled out.

APPLICATIONS

- Leaf closure verification: barrier, gate, garage door, etc ...
- Continuous monitoring of fences, along free surfaces on grounds, around highways, railways, industrial sites.

BENEFITS & FEATURES

- LoRaWAN®, Class A
- Autonomous sensor
- Detection of gate opening and closing
- Large detection distance: up to 35mm
- Sensor pullout alert
- Very simple installation
- More than 5 years of autonomy
- Set intended for outdoor use

QUALITY & RELIABIITY

- RED, RoHS, LoRa Alliance®

Sensors delivered without WATTECO marking

The **CLOS'O** sensor incorporates a high sensitivity magnetic sensor. Fixed on a frame, it detects the gate openness or closure. A magnet housing is fixed on the moving part in front of the sensor. This sensor transmits the leaf's change of state after the position is confirmed.

The **CLOS'O** sensor is designed to trigger an alert in case it is pulled out. An alert is also transmitted in case of disassembly of the support and after confirmation.

The sensor regularly transmits a feedback with the battery voltage and the timestamp of openings and closures (after filtering).

The **CLOS'O** sensor is connected to a LoRaWAN® public or private communication network. The remote server is then able to monitor the gate condition to prevent any risk of intrusion.

Totally waterproof and protected to withstand outdoor constraints (rain, snow, sun, etc. ..), the sensor can be used in industrial environments in dusty areas or tertiary premises without special precautions.

Installation is quick. **CLOS'O** is supplied with an attachment plate that facilitates installation on most of the profiles used that make up the gate.

The sensor can be fixed to a wall or any other plane support.

The colour of the housing ensures discreet integration in most fence elements. Commissioning is simple:

- A magnetic switch and a buzzer allow the installer to enable / disable the sensor on the network.

- An NFC tag and a QR code tag identify the sensor on the network (product code, serial number, batch number).

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.

TECHNICAL DATA

RADIOFREQUENCY	Frequency (MHz)	Transmit Power (dBm)	Receiver Sensitivity (dBm)
	EU: 863-870	+14	-140

FIRMWARE	
Protocol	LoRaWAN®, Class A.
Activation method	Activation by Personalization (ABP) or Over-The-Air Activation (OTAA)
Data encryption	AES128
Application layer	ZCL (ZigBee Cluster Library) – to be interpreted by the remote server
Measurements & Transmission cycles	Configurable from 10 minutes to 24 hours
Data compression	Yes (differential coding)

DETECTION ALERT	
Leaf detection	Hall effect magnetic sensor associated with neodymium magnet Detection in a range of 5mm to 35mm spacing between fixed and opening part. Misalignment possible: up to 30mm
Pullout	Button inaccessible after mounting the sensor on a stand.
Status	Open / close detection of static part after confirmation Tamper alert Status: battery voltage and timestamping of the last open / closed state changes (after filtering)

FASTENINGS
On a width of 27 to 110mm using metal clamps provided On the wall or on any flat support with screws and dowels (not included)

POWER SUPPLY	
Voltage	3,6V / 3600mAh – Lithium battery
Autonomy in a range of +10°C to +25°C	Estimated autonomy > 5 years with 1 transmission / day

INTERFACE	
NFC Tag	Product code, serial number, batch number
Buzzer	Configuration, Network pairing / unpairing
Magnetic switch	Reset, ON/OFF

ENCLOSURE	Size (mm)	Weight (g)	IP rating	Fire resistance
	Sensor: 100 x 100 x 40 Magnet: 52 x 65 x 27	Sensor: 250 Magnet: 100	IP65	UL94-V0HB UV resistant

ENVIRONMENT	Operating temperature	Storage conditions
	-20°C to +50°C	+10°C to +30°C +20%rH to +60%rH

DIRECTIVES & STANDARD
Radio Equipment Directive 2014/53/EU, RoHS

PRODUCT NUMBER

REFERENCE	DESCRIPTION
50-70-108	LᴏRᴀWAN® CLOS'O