ACS-Padlock

Smart container security Seal

Based on INEO·SENSE Clover-Core technologies, this advanced electronic seal ensures that ever-increasing trailer loads will also have a greater protection. as-ACS-Padlock offers a triple function: secure by lock, identification and localization, and moreover records any events (opening, locations, motions…)

This reusable seal permits to monitor containers in real time, both in transit and storage, from dispatch to final delivery. It makes every trailer load responsive throughout its journey. At close range, it sends and receives data to readers via NFC transmissions. During transportation, it uses short range frequencies to send periodic keep alive beats and device status towards truck tracking systems. At long range, LoRa capability provides remote event from any place to verify whether seals have remained uncompromised or not.

This connected object is designed to obtain the best possible profitability and offers a smart combination of multiples communication technologies (LoRa, NFC, Clover-Net) to simply realize the various interventions during the operating process.

Lock & Go

Designed for quick and easy implementation, locking is done automatically in seconds. The operator secures the container by inserting the cbale into the sealing points and the seal goes into action. Without any specific tools, ACS-Padlock immediately inform by radio of its implementation and begins its surveillance.

Intended to be robust

Designed to be hostile environment proof, ACS-Padlock is equipped with a rugged casing and uses complex materials insuring resistance against water, salt spray, UV ray, hydrocarbons and abrasion. It supports any climatic environment around the world.

Real-time monitoring

ACS-Padlock embeds features dedicated to containers surveillance that make like easier of operators. The periodic status reports, real-time information on events, automatic check-in at arrival on the port, indoor/outdoor localization by zone, location facilities by high brightness LED are the service you will prefer.

Secure

As critical in the communication chain, this device insures its security by using AES 128 mechanism. Moreover, ACS-Padlock generates immediate alarms in case of cable cut, tampering, grabbing, device opening, motion detection and so on.

Sensors

- Cable cut detection
- Cable short cut detection
- Battery trap opening detection
- Motion detection
- Casing anti tampering detection
- Bi-color LED
- Cable presence detection
- Locking detection
- Zoning detection

Power supply

- Removable size A battery 3.6V Li-SOCl2 3.6Ah, 250mA pulse
- Typical life time: 3-5 years
- Energy saving Storage mode
- Usage counters

Main features

- Locking/Unlocking through RF or NFC
- Spontaneous alarms (Cable cut, Tampering, End of battery life…)
- Presence frames
- LED status indications
- Device identification by LED blinking
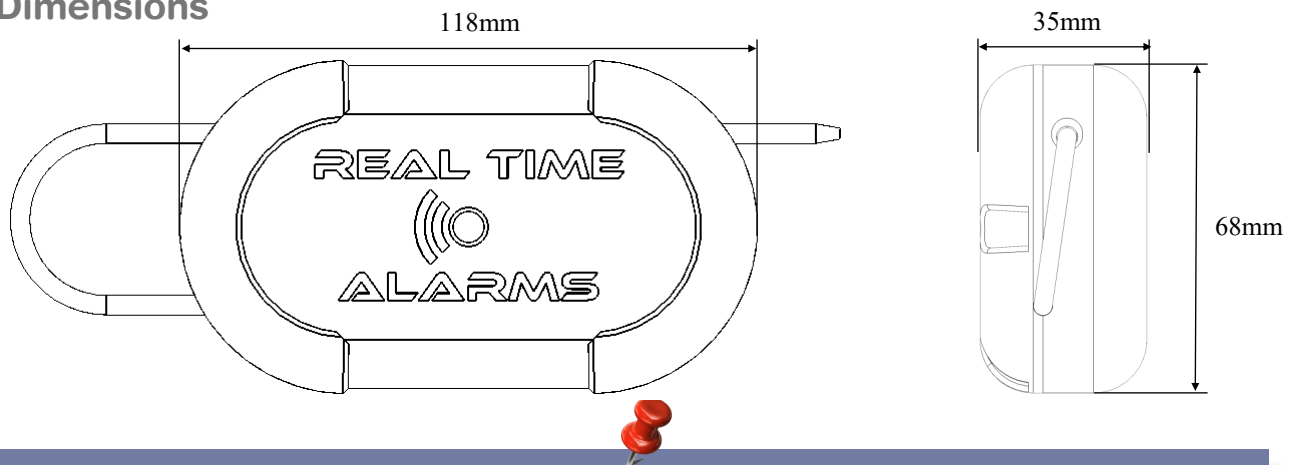- 10 000 timestamped event logging

Hardware features

- Protection IPx7
- Drop Protection IK8
- Temperature range: -20°C / +70°C
- Cycle number : over 3,000
- Clamping resistance: 50kg
- Cable length (inox): 30cm (up to 1m option)
- Labelling: Custom identification label (typically QR Code an SN)

Clover-Net LoRaWAN™ NFC

Order references

Order #	Description
ACS-PAD-ST-X8X-001	868MHz IPx7 Standard version

Dimensions

118mm

REAL TIME ((( ))) ALARMS

35mm

68mm

Clover-Net generic features

- Transmission range up to 5,000m line of sight, up 500m indoor.
- Real-time 2-way communications: Scheduled transmission, automatic alarms and on-demand reading.
- Robust against physical and electronic interferences.
- Fast event reactivity, huge coexistence ability.
- Low cost for mass deployment
- Auto RTC propagation

- Native Three bands compatibilities (433, 868 and 915Mhz)
- CE & EN 300-220 & FCC 15-247 compliant
- LoRaWAN compatible
- Use Multi-channel frequencies and FHSS to avoid collision.
- Dedicated alarm frequency channel.
- Data Encryption by AES 128 with dynamic key mixt
- Include Full networks services (Broadcast, Repeater, Mesh, …)