3 STATES RFID SEALS

PROTECTION - CONTROL - IDENTIFICATION - TRACKING
In the shipping and freight flow management field, security is a turning point.

LeghornGroup, manufacturer of high security seals for international trades, is the first security seals company to put RFID three states passive seal on the market. The seal provides its status information - unlocked, locked and tampered – once it is read. These three information are ESSENTIAL to know if the container has been sealed in the correct way.

Digitalising operations in terminal, ports and dry ports and increasing security and sustainability along the entire supply chain are the new requirements that the three states seals of LeghornGroup satisfy. They provide operators with an innovative and high-tech tools with a currently top level of security.

The new UHF RFID three states seals are the following:

**SOTER SEAL:** UHF RFID 3 states security seal (BOLT LOCK SEAL)

**MYRMIDON SEAL:** UHF RFID 3 states security seal (CABLE LOCK SEAL)

Names meaning: SOTER SEAL and MYRMIDON SEAL

In the Greek mythology, Soter (Σωτήρ “Saviour, Deliverer”) was the personification or daemon of safety, preservation and deliverance from harm.

The Myrmidons (or Myrmidones Μυρμιδόνες) were an ancient nation of Greek mythology. In Homer’s Iliad, the Myrmidons are the soldiers commanded by Achilles and they were known for their courage and loyalty.
LEGHORNGROUP SOTER SEAL is a sturdy UHF RFID bolt-lock seal that combines high mechanical security with the electronic security offered by RFID, automatic radio frequency identification technology.

It’s the first RFID bolt seal – compliant with ISO17712 technical standards – available on the market that is able to provide its status information, UNLOCKED, LOCKED OR TAMPERED, which is stored in the RFID chip

The outer polypropylene plastic housing of the seal – customizable with mark and numbering on request - embeds an unique and latest generation of electronic chip, that has its own univocal coding, which cannot be replicated. This allows for secure and reliable automatic identification of the seal applied to the container or vehicle.

SOTER SEAL

- Has univocal ID code and read/write user memory capabilities.
- It offers at the same time the immediate and accurate seal identification and the status of the seal i.e. unlocked/locked and evidence of tamper occurred, if any.
- It is an ideal solution for guaranteeing cargo security and tamper evidence along the shipping and supply chain.

Unsurpassed security level built-in:

Any event that occurs to the seal (unlocked, locked and tampered) is permanently stored in its chip’s memory. Security is based on HW system– thanks to the technical specification of innovative chip RFID deployed - and it isn’t transferred to external SW systems and algorithms, as for competing products.
Radio Frequency specification

- Frequency: 860 – 960 MHz
- Reference RF Standard: EPC Class 1 Gen2 / ISO/IEC 18000-6C
- Technology: Passive
- RFID IC: NXP G2iM+
- User read / write memory: up to 640 bit
- Memory size: from 128 bit up to 448 bit of EPC memory
- TID (Tag IDentifier): 96 bit, including 48-bit of univocal progressive numbering \textit{factory locked}; 112 bit user TID memory
- Password protected: yes
- Tamper detection: yes – \textbf{THREE STATES DETECTION}
- Read/Write cycle: 10000
- Data retention: 20 years

Performance

- Reading distance by handheld reader: 2 m (6’6”47/64”) (depending on reader)
- Reading distance at gate reader: 5 m (16’ 4” 27/32”) (depending on reader)
- Quality: 100% performance tested

Mechanical specification

- IP Protection: IP65
- Operating temperature: – 20°C / + 55 °C
- Storage temperature: – 30°C / + 80 °C
- ISO 17712:2013 Clauses 4, 5 and 6: yes
- Material: carbonitrued steel + polypropylene in accordance with Restriction of Hazardous Substances (RoHS), European Directive 2002/EC.
SOTER SEAL
UHF RFID BOLT-LOCK “THREE STATES” SEAL
UNLOCKED-LOCKED-TAMPER EVIDENCE

Size

- Electronic flag: mm 48x117x4 (1"x7/8"x4"19/32"x5/32")
- Metallic pin length: mm 67 (2"5/8")
- Metallic pin diameter: mm 8 (3/16")
- Bolt size: mm 56x63x26 (2"13/64x 2"31/64"x 1"1/32")
- Weight: 114 g

Available colours

[Images of various colours and logos]
LEGHORNGROUP MYRMIDON SEAL is a sturdy UHF RFID cable-lock seal that combines high mechanical security with the electronic security offered by RFID, automatic radio frequency identification technology. It’s the first RFID cable seal – compliant with ISO17712 technical standards – available on the market that is able to provide its status information, UNLOCKED, LOCKED OR TAMPERED, which is stored in the RFID chip.

The outer polypropylene plastic housing of the seal – customizable with mark and numbering on request - embeds an unique and latest generation of electronic chip, that has its own univocal coding, which cannot be replicated. This allows for secure and reliable automatic identification of the seal applied to the container or vehicle.

**MYRMIDON SEAL**

- Has univocal ID code and read/write user memory capabilities.
- It offers at the same time the immediate and accurate seal identification and the status of the seal i.e. unlocked/locked and evidence of tamper occurred, if any.
- It is an ideal solution for guaranteeing cargo security and tamper evidence along the shipping and supply chain.
- The cable lock system makes its use easy in a variety of different applications.
MYRMIDON SEAL
UHF RFID CABLE-LOCK “THREE STATES” SEAL
UNLOCKED-LOCKED-TAMPER EVIDENCE

Radio Frequency specification
- Frequency: 860 – 960 MHz
- Reference RF Standard: EPC Class 1 Gen2 / ISO/IEC 18000-6C
- Technology: Passive
- RFID IC: NXP G2iM+
- User read / write memory: up to 640 bit
- Memory size: from 128 bit up to 448 bit of EPC memory
- TID (Tag IDentifier): 96 bit, including 48-bit of univocal progressive numbering factory locked; 112 bit user TID memory
- Password protected: yes
- Tamper detection: yes – THREE STATES DETECTION
- Read/Write cycle: 10000
- Data retention: 20 years

Performance
- Reading distance by handheld reader: 2 m (6’6”47/64”) (depending on reader)
- Reading distance at gate reader: 5 m (16’ 4” 27/32”) (depending on reader)
- Quality: 100% performance tested

Mechanical specification
- IP Protection: IP65
- Operating temperature: – 20°C / + 55 °C
- Storage temperature: – 30°C / + 80 °C
- ISO 17712:2013 Clauses 5 and 6: yes
MYRMIDON SEAL
UHF RFID CABLE-LOCK “THREE STATES” SEAL
UNLOCKED-LOCKED-TAMPER EVIDENCE

Size

- Size: mm 51x93x38 (2"x1"1/12"x3'/16")
- Cable standard length: mm 337 (1' 1" 17/64")
- Cable diameter: mm 5,0 (3/16")
- Weight: 160 g
- Material: carbonitrured steel + polypropylene in accordance with Restriction of Hazardous Substances (RoHS), European Directive 2002/EC.

Available colours

[Image of available colours]

3060 g

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3060 g

SECURITY SEAS
UHF RFID BOLT-LOCK SEAL and CABLE-LOCK SEAL
“THREE STATES”

Ultimate cargo security solution

- High Security Seals compliant with ISO17712 to seal the doors of containers, trucks and trailers.
- RFID provides automatic identification of the vehicle and/or container.
- They can be read quickly and accurately by static gateway reading systems or by handheld devices operated by check point personnel.
- The RFID chip can also be used to store further information. The chip can be easily written by using RFID reader/writer device. Further information added and the chip itself can be password protected.

Unsurpassed security level built-in:
Any event that occurs to the seal (unlocked, locked and tampered) is permanently stored in its chip’s memory. Security is based on HW system—thanks to the technical specification of innovative chip RFID deployed—and it isn’t transferred to external SW systems and algorithms, as for competing products.

Any event - unlocked, locked or tampered - is permanently stored in the chip’s memory
To achieve this goal LeghornGroup delivers:

**Protection.** LeghornGroup can protect your goods and assets with security seals and various products for tamper protection. The company can create bespoke, technical solutions to meet client’s requirements.

**Control.** LeghornGroup ensures goods and people can be monitored using security products and integrated complete hardware and software solutions that allow the operator to monitor and intervene in real time, even remotely.

**Identification.** LeghornGroup’s understanding of authentication along with their innovative technical products and solutions allow users to uniquely and securely identify, goods, vehicles, containers, animals and people.

**Tracking.** LeghornGroup’s real time GPS tracking devices allow users to monitor location, status and movements of vehicles and people.

**CONCLUSION**

*Being equal to the questions raised is our ambition. Explaining to customers that their problems IMMEDIATELY become ours, is part of our natural way of being.*

*This is the key of our success*

Luciano Grapsa
LeghornGroup President
Container security seals and identification products

By LeghornGroup

... And from 17th September 2020 we will bring to the world market also the UHF RFID 3 States seals: Soter Seal and Myrmidon Seal
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LeghornGroup – Italy
www.leghorngroup.it

LeghornGroup – U.S.A.
www.leghorngroup.com

LeghornGroup – Belgium
www.leghorngroup.be
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