

DP WORLD Antwerp



**LeghornGroup**

# **JANUS-GATE: RFID UHF GATE**

**PROTECTION - CONTROL - IDENTIFICATION - TRACKING**

### *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.*

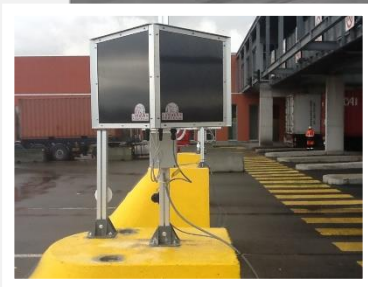


LeghornGroup's real time GPS tracking devices allow users to monitor location, status and movements of vehicles and people.

# JANUS GATE

*RFID CONTAINER TERMINAL  
FAST – SECURE - PROFITABLE*

**JANUS-GATE: RFID UHF GATE** is an «all-in-one» automatic identification RFID UHF ISO/IEC 18000-6 compliant system specifically designed and manufactured to monitor and manage the movement of trucks and containers and their access to terminals, hubs, ports.



This system, built on smart UHF RFID reading units and passive (battery-free) RFID UHF seals - named e-SEALS, is able to identify and monitor in a reliable and secure way trucks, trailers, and containers.

# JANUS GATE

**RFID CONTAINER TERMINAL  
FAST – SECURE - PROFITABLE**

## **JANUS-GATE:**

### **RFID UHF GATE**

is made up of a top performing reader and two antennas that are capable of **reading the RFID e-seals applied on truck/container regardless of their position or condition, distinguishing even between two containers that pass simultaneously in adjacent lanes.**



<b>1</b>	<b>RFID e-SEALS</b> applied on the upper handles of the container;
<b>2</b>	<b>RFID e-SEALS</b> applied on the lower handles of the container;
<b>3</b>	<b>RFID e-SEALS</b> applied on the left or right hand side of the container;
<b>4</b>	<b>RFID e-SEALS</b> applied to containers positioned with the doors towards the lorry's cab;
<b>5</b>	<b>RFID e-SEALS</b> applied with the doors facing the opposite end of the lorry's cab.



**RFID CONTAINER TERMINAL  
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# JANUS GATE



## JANUS-GATE: RFID UHF GATE

It is a UHF RFID compliant with ISO 18000-6 (EPC Global) standard and as such it can read any UHF RFID seal by various manufactures, assuming that they are compliant with the same standard.

For every lane **JANUS GATE** can read **up to two RFID e-seals** on the container that passes through it..

Every lane that must be checked is managed by one **JANUS GATE** reading station.

A dedicated embedded software is needed (option) to read **up to four RFID e-seals**.

**RFID CONTAINER TERMINAL  
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# JANUS

## JANUS-GATE: RFID UHF GATE – Main technical features

- **Advanced Detection Algorithm**, for the accurate and efficient reading of the seals that pass through the gate.
- **Lane Detection Firmware**, for identifying and reading of seals in adjacent lanes.
- **Autosetting capability**, for improving the readings regardless of the environmental conditions.
- **Fast Mounting**, for easy servicing, set up and installation..
- **Fault Tolerance Management System**, for 24 hour service operations (option).



**Performance in reading distances is typically 6 m / 8 m**

Additional Optional Kits:

- Kit TEMP: kit designed for operating from - 40 °C to + 75 °C
- Kit LED Alert: for local alerts using high intensity LED and a loud buzzer

**JANUS-GATE: RFID UHF GATE** can support even some special conditions, like for instance the reading of UHF RFID E-SEALS of two containers transported by the same lorry.

It is recommended that the two containers are placed with doors at the two extreme ends; in case that the two containers are positioned door-to-door, between the one and the other you must have a free area of approximately 1 m.

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# JANUS

## GATE

**JANUS GATE is composed by three elements:**



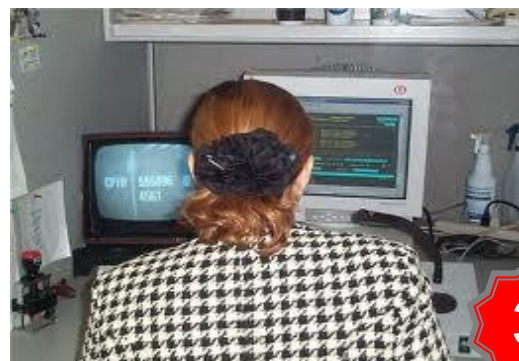
**1**

**1) READING UNIT  
EPR FAST LANE**



**2**

**2) E-SEAL FOR  
CONTAINER  
RFID NEPTUNE SEAL**



**3**

**3) MANAGEMENT  
SOFTWARE**

**RFID CONTAINER TERMINAL  
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# JANUS

**JANUS GATE is composed by three elements:**



**1) READING UNIT  
EPR FAST LANE**

<b>RF protocol</b>	<b>EPC Class 1 Gen2 – ISO/IEC 18000-6C</b>
<b>Operating frequency:</b>	865-869 MHz, ETSI EN 302-208
<b>Communication protocols:</b>	ISO 18000-6C; EPC Class1 Gen2;
<b>Antennas:</b>	Special integrated system of 2 antennas
<b>RF Power:</b>	Software programmable up to +32.5 dBm (+30dBm if used in POE mode)
<b>Reader power supply:</b>	POE IEEE802.3 or 24 Vdc, 0,8A with external power supply
<b>Main:</b>	100-240 Vac, 50/60Hz
<b>Communication ports:</b>	Ethernet 10/100 Base-T Ethernet (RJ45);
<b>Ext Sensors / Photocells</b>	To trigger reading signals
<b>Address configuration:</b>	DHCP, Static, LLA + mDNS
<b>Environmental conditions:</b>	Operative temperature: -20°C +50°C Stock Temperature: -20°C +60°C
<b>Base module size</b>	560 x 270 mm +/- 5%
<b>Weight:</b>	4000 g
<b>Certification:</b>	CE (FCC also available)
<b>Housing:</b>	Anodised aluminum & Polyethylene
<b>IP protection</b>	IP55



**RFID CONTAINER TERMINAL  
FAST – SECURE - PROFITABLE**

# JANUS

## GATE

**JANUS GATE is composed by three elements:**



**2**

**2) ) E-SEAL FOR CONTAINER  
RFID NEPTUNE SEAL**

RF protocol	EPC Class 1 Gen2 – ISO/IEC 18000-6C
Integrated Circuit( IC)	NXP G2IM+
Memory	128 bit EPC
Operating Frequency	860 – 960 MHz - UHF EPC Global
Protection	IP66
Operating temperature	-30°C to +80°C
Storage temperature	-30°C to +80°C
Tag dimension	30x100 mm
Reading distance	Typical reading distance with handheld reader : 0.5 – 1.50 m Typical automatic reading with gate: 6 m

**JANUS GATE supports the following LeghornGroup RFID e-seals:**

**NEPTUNE SEAL RFID Logistic - NEPTUNE SEAL RFID Anti-tamper - TITANSEAL  
RFID – CABLE LOCK SEAL RFID Logistic - CABLE SEAL RFID Anti-tamper**

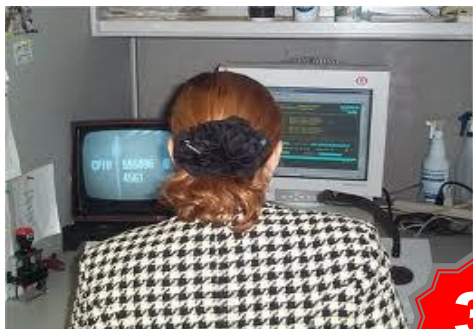
**JANUS GATE and ALL RFID E-SEAL are designed and manufactured by  
LeghornGroup Srl**

**RFID CONTAINER TERMINAL  
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# JANUS

## GATE

**JANUS GATE is composed by three elements:**



**3**

### 3) MANAGEMENT SOFTWARE

The Management Software allows the RFID gates to be monitored and operated easily by the control staff. The main pieces of data that the system can manage are:

- Serial number of the RFID e-seals
- Gate identification
- Lane identification
- Date and time of the reading
- Number and reading of each individual RFID e-seals
- Sequential reading where a container is sealed with two e-seals or where there are two containers on the same trailer
- The state of the security seal (e.g. TAMPERED/NOT TAMPERED) – option available only for the containers fitted with the RFID NEPTUNE SEAL, tamper evidence version
- Generation of log file

The Management Software for **JANUS GATE** can be installed on any PC or SERVER that uses WINDOWS®.

To connect the PC hosting the Management Software and the **JANUS GATE** a LAN network with Ethernet TCP/IP connection is required.

**JANUS GATE** can also be easily integrated with existing IT systems and structures (NAVIS®-ready).

**RFID CONTAINER TERMINAL  
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# JANUS

## GATE

### Benefits



- For terminals.
- Savings on labor costs; integrated into the OCR system eliminates the need for human control.
  - Eliminates the need for physical inspection / human intervention.
  - Eliminate error related to the registration of the seal.
  - Innovative and easy to use system.
  - Fast access-fast lanes = time saving.
  - Fast and easy to install / SW compatible with all major Terminal Operating Systems (TOSs).
  - Very affordable price with fast return of investment (ROI).



- For transporters:
- Time saving - use of dedicated "fast lanes".
  - Very affordable price for e-seal when compared to the mechanical seal.
  - Gives added value to customers (shippers) in terms of security for the goods.
  - Uninterrupted service : automatic operations are on duty also during lunch break, shift changes or night shifts.

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# JANUS GATE

## Benefits



➤ **For international forwarders:**

- Improvement of logistic operations.
- RFID e-seals have superior performance when compared to those with barcodes.
- Automatic registration of the number on the seal = elimination of human error.
- Possibility to insert additional information (back office and on-the-go) directly on the RFID e-seal.
- Possibility of cheaper negotiation of contracts with transporters, thanks to the time gained at "fast lanes".



➤ **For Container Companies and Shippings:**

- Constant control of the seal along the entire journey of the container.
- Clear attribution of responsibility.



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# JANUS GATE

- **Janus Gate** is 100% compatible with all existing IT management systems.
- If necessary, the management software is supplied free of charge with the first supply of RFID seals of our production.
- The existing RFID reading systems are immediately usable with all our RFID seals.
- **Janus Gate** – RFID gate solution for the worldwide terminals - can be installed with little financial commitment and guarantees an immediate return of investment.
- The use of E-Seals (RFID NEPTUNESEAL) has a low cost and at the same time improves the commercial operations with each involved player.






To conclude, a quote from Mr. Rachid Baho, Director Container Operations, DP World Antwerp at time of JANUS GATE installation:

*"Probably RFID seals are the definitive solution to many problems regarding the control of seals and the improvement of terminal operations.*

*RFID will have a real world success only if all the terminals will introduce this technology in close cooperation with the shipping world "*

For more info:

<http://leghorngroup.it/product/terminal-rfid-per-container-janus-gate/>

	TYPE OF SEAL	RELIABILITY
1	 <p><b>LEAD SEALS WITH NUMBERING</b> : easy to open and close. They are used in many parts of the world.</p>	<b>ANY</b>
2	 <p><b>STRAP SEAL WITH NUMBERING</b>: are better than the previous because they have the numbering but are easy to tamper with.</p>	<b>LACKING</b>
3	 <p><b>BOLT AND CABLE SEAL WITH NUMBERING</b> : high security SEALS. Hard to tamper with. (tamper possibility on the doors of the container)</p>	<b>GOOD</b> <b>ISO 17712:2013</b>
4	 <p><b>BARRIER SEALS WITH TRIPLE NUMBERING</b>: really high security barrier seals. Low possibility of tamper both the seals and the doors of the container.</p>	<b>REALLY GOOD</b> <b>ISO 17712:2013</b>
5	 <p><b>RFID ANTITAMPER BOLT SEAL</b>. Are able to declare the status of the seal.</p>	<b>EXCELLENT</b> <b>ISO 17712:2013</b>

In order that your company is sure of having purchased **High Security Seals** compliant with the requirements set by the standard **ISO 17712:2013**, and may consequently be considered released from any liability in case that any unexpected problem arise in the future, **please make sure that your supplier will release all of the following certificates:**

1

**Product certificate attesting its compliance to the specification of the standard ISO 17712:2013.**

This certificate applies only to the product and is issued by laboratories qualified ISO 17025.

2

**Declaration of an International Certification Body (e.g. SGS) certifying that the seal manufacturer has adopted best practices that ensure the compliance of the seal itself to the conditions set in Clause 6 of the standard ISO 17712:2013.**

This certificate covers the seal manufacturer and is an integral part of the product certificate referred to in point 1. Without this additional certificate the requirements of High Security Seals cannot be considered fully met.

3

**Certification of the seal manufacturer's Quality System in compliance with UNI EN ISO 9001:2015.**

This certificate covers the seal manufacturer and is guarantee that the internal processes of the manufacturer meets a series of good practices related to security outlined in the ISO 17712: 2013 "Annex A".

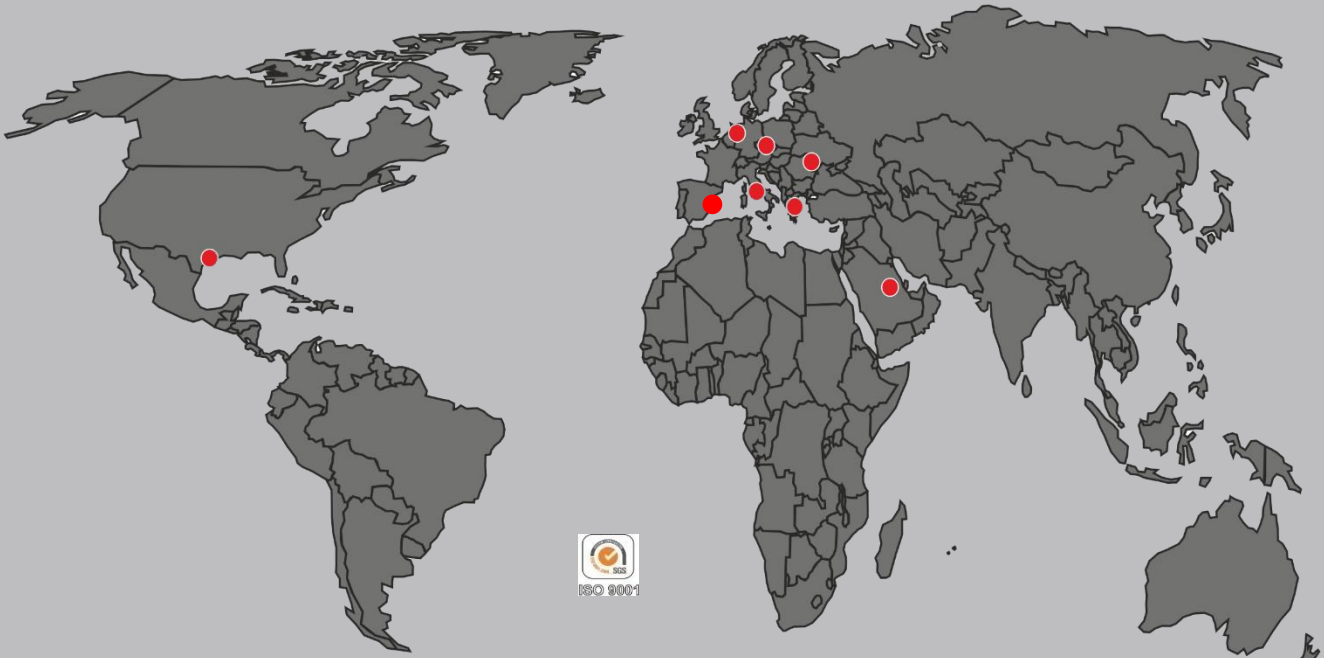
**LeghornGroup**, in its constant attention to ensure the end customer, not only provides the necessary certificates for ISO 17712:2013 compliance as described above, but anticipates the customer's needs by providing the following **additional voluntary certification**:

- **Uniqueness** of the High Security Seal.
- The statement which attests that **any** high security seal is sold without a unique numbering, name and identification number.
- The statement which attests that the **company keeps regularly a database** that enables the **traceability of any High Security Seal** and where the following information are recorded :

*Type of the seal - Colour - Numbering - Customisation - Quantity placed on the market - Customer name*

**For more:** <http://leghorngroup.com/pen/products/01-security-seals/01-high-security-seals-iso-177122013/>

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