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Load-Unload Sensor
Product Datasheet LU19-Ex

WIRELESS DATA

The LU19-Ex detects the loading state of rail wagons by measuring the displacement of a magnet in relation to a sensor. The magnet is installed on the T-Piece of the wheelset. The LU19-Ex is installed on the bogie side frame. With the loading state of the wagon changing, the distance between the sensor and the magnet and therefore the magnetic field measurements also change.

The LU19-Ex sends the measured values wirelessly to an IMT communication terminal (CLT/HCT), which in turn transmits the data to the IMT back-end. The IMT platform applies an algorithm to the measurements to provide loading state information that can be accessed remotely via our web application.

The LU19-Ex can be updated with new firmware wirelessly (OTA) via the IMT communication terminal, no matter where the wagon is, at any time of day.

The LU19-Ex is ATEX IIC certified and can therefore be used in the transportation of hazardous and non-hazardous liquids in all sectors: (Petro) Chemical, Pharmaceutical, Food, etc.

The LU19-Ex can detect if a rail wagon is loaded or unloaded. The measurements of two magnetic sensors and an accelerometer are being used for calculations for the loading state in an algorithm that runs on the IMT back-end. The LU19-Ex saves the data to an internal memory with a capacity of 2 years.

The loading statuses are displayed in the IMT web application and can also be accessed via IMT's open and free API, so it's easy to integrate the IMT solution into any pre-existing TMS (transportation management system). Status changes, e.g. from loaded to overloaded are events and as such can serve as a trigger for alert notifications.

Telematics to the next level

Load-Unload Sensor LU19-Ex

INPUT AND DISPLAY

- **Magnetic field strength:** Detects the location of a magnet placed in close proximity to the sensor. Maximum magnetic field of 100 mT, nominal 1 mT. Two built in magnetic sensors
- **Accuracy:** 10 mm accuracy on Z axis
- **Sample frequency:** 1 minute
- **Battery life:** 10 years
- **RF Transceiver:** 2.4 GHz RF transceiver for connection to CLT or HCT. Firmware is over-the air reprogrammable via the CLT or HCT. ITSS IF2 ready.

LOGGING DATA

- **Memory:** 8 MByte memory chip
- **Log capacity:** 2 years of data
- **Logging interval:** 10 minutes
- **Uploading data:** logged data can be uploaded remotely via the CLT or HCT

MECHANICAL DATA

- **Dimensions:** Sensor: 195 x 55 x 30 mm. Including mounting bracket: 254 x 58 x 53.
- **Working temperature:** -40 °C to +60 °C
- **Protection class:** IP69K
- **Weight:** 300 g
- **Enclosure:** durable glass-filled nylon housing Fitted on custom backplate (Backplate attached with bolts or rivets)

APPROVALS

- ATEX Z1 T4 certification
- Intrinsic safety explosion protection II 2G Ex ib IIC T4 Gb
- Compliant with EN 60079-0: 2018
- Compliant with EN 60079-11: 2012

IMT IS THE WORLD LEADING INDEPENDENT TELEMATICS SOLUTION PARTNER FOR THE TANK CONTAINER AND RAIL WAGON INDUSTRY

Intermodal Telematics offers a full range of smart sensors and a web-based application with extensive functionality, for all involved parties like fleet owners, lessors and shippers. We provide a complete solution for asset management and product monitoring to increase control, efficiency, product quality and safety.

IMT is by far the biggest supplier of telematics technology for the tank container sector and a major player in the railway business. With our team of 50 hardware, firmware and software engineers and our own in-house assembly line, IMT assures you the best cutting edge telematics solutions with the highest quality. We set the standard in smart sensor technology.

IMT's sensors and platform:
- ✔ Improve operating efficiencies
- ✔ Secure quality of cargo
- ✔ Provide track history of all relevant data of each container / wagon;
    location, temperature, pressure, full-empty, heating, load-unload, ...

GET IN TOUCH, WE WOULD LOVE TO HAVE AN OPEN DISCUSSION ABOUT WHAT WE CAN DO FOR YOU.

Intermodal Telematics BV

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