

ID LRU1002X

## INDUSTRIAL UHF LONG RANGE READER

- Robust metal housing with M12 and M8 connectors
- 2 Watt Output Power
- High Receive Sensitivity
- 4 Antenna ports (internal Multiplexer)
- 6 Inputs / Outputs
- Output of RSSI values and phase angle
- Full support of new transponder chips with encryption (e. g. NXP UCODE DNA)
- Secure Key Storage (Secure Element)
- Support of LLRP
- Extended conformity for rail applications



### Applications in the industrial environment

For applications in harsh industrial and railway environment FEIG's UHF Long Range Reader LRU1002 now also offers robust M12 and M8 connectors.

### Applications in logistics

In logistics applications, too, there are often harsh environmental conditions. The LRU1002X is therefore the first choice for use in forklifts or conveyor systems.

# INDUSTRIAL UHF LONG RANGE READER FOR VARIOUS APPLICATIONS

With a reading range of up to 12 m, 4 antenna connections and 4 circular connectors several long range applications in industrial environment can be realized.

## Technical data

<b>Dimensions (w x h x d)</b>	260 mm x 157 mm x 65 mm
<b>Weight</b>	approx. 1,800 g
<b>Housing</b>	Aluminum, powder coated
<b>Color</b>	anthracite
<b>Protection class</b>	IP53 (IP64 with protection cap*)
<b>Power supply</b>	24 V DC $\pm$ 20 %
<b>Power consumption</b>	max. 24 VA**
<b>Operating frequencies</b>	
Version EU	865 MHz up to 868 MHz
Version FCC	902 MHz up to 928 MHz
<b>Output power</b>	100 mW to max. 2 W configurable in steps of 100 mW
<b>Antenna connector</b>	4x SMA-Female (50 Ohm), integrated Multiplexer, support of external Multiplexer ID ISC.ANT.UMUX
<b>RF-diagnosis</b>	RF-channel monitoring, Antenna SWR control, internal overheating control
<b>Connections</b>	I/O M8 (8-pin), RS232 / relay M8 (8-pin), Ethernet M12, power supply M8 (4-pin)
<b>Outputs</b>	
2 Optocoupler	max. 24 V DC / 20 mA
2 Relays	max. 24 V DC / 1 A switching current, 2 A permanent current
<b>Inputs</b>	
2 Optocoupler	max. 24 V DC / 20 mA
<b>Interfaces</b>	RS232, Ethernet, USB (On-The-Go), Wiegand (Scan Mode Interface)
<b>Reader modes</b>	ISO Host Mode, Scan Mode (HID), Notification Mode, Buffered Read Mode
<b>Supported transponders</b>	EPC Class1 Gen2, EPC Class1 Gen2 V2, ISO 18000-6C
<b>Indicator</b>	16 LEDs for diagnosis of reader operation and antenna status
<b>Others</b>	Anti-Collision, Output of RSSI values and phase angle, Battery assisted Real Time Clock, Supports encrypted transponder communication, Secure Key Storage, "Config Cloning" function
<b>Temperature range</b>	
Operation	-25 °C up to +55 °C
Storage	-25 °C up to +85 °C
<b>Relative air humidity</b>	5 % up to 95 % (non-condensing)
<b>Vibration</b>	EN 60068-2-6 10 Hz up to 150 Hz: 0.075 mm / 1 g
<b>Shock resistance</b>	EN 60068-2-27 Acceleration: 30 g

\* Optionally a connector sealing cap is available which covers the connectors, offers a pull relief for the connected cables and guarantees enclosure rate IP64.

\*\*Not including power consumption due to external Multiplexer



Connections and circular connectors of ID LRU1002X

## Standard conformity

### Radio license

Europe	EN 302 208
USA	FCC 47 CFR Part 15
Canada	IC RSS-GEN, RSS-210
<b>EMC</b>	EN 301 489
<b>Safety &amp; Health</b>	EN 62368-1
	EN 50364

## Railway (rolling stock)

<b>Isolation</b>	EN 50 155
<b>EMC</b>	EN 50 121-3-2
<b>EMC</b>	EN 50 121-4
<b>Vibration</b>	EN 61 373 Cat 1B
<b>Shock</b>	EN 61 373 Cat 1B
<b>Wet heat (cyclic)</b>	EN 50 155 /
	EN 60 068-2-30
<b>Fire protection</b>	EN 45 545
<b>Upper and lower voltage</b>	EN 50 155
<b>Power supply interruption</b>	EN 50 155,
	classes S1 and C1
<b>Power supply overvoltage</b>	EN 50 155
<b>Voltage fluctuation</b>	EN 50 155
<b>Salt mist</b>	EN 50 155

# INDUSTRIAL UHF LONG RANGE READER FOR VARIOUS APPLICATIONS

With a reading range of up to 12 m, 4 antenna connections and 4 circular connectors several long range applications in industrial environment can be realized.

ID LRU1002X is a powerful UHF RFID reader with 4 antenna ports. With the robust M12 (Ethernet) and M8 (power supply, I/Os and RS232) connectors the reader is designed for the harsh industrial and railway environment. Even in time critical applications multiple antennas could be used due to its internal high speed multiplexer. The reader is characterized by the following features:

- › High receiver sensitivity cares for an enlarged and at the same time homogeneous tag detection range
- › Possible secure read range of up to 12 m (40 ft) \*
- › Constant high receive sensitivity and high read range also in disturbed environments and applications with a large number of readers operating at the same time
- › Support of Transponders according to EPC Class1 Gen2 and ISO 18000-6-C
- › Allows the realization of secure UHF systems by full support of new transponder chips according to EPC Class1 Gen2 V2 specification and ISO 29167 (e.g. NXP UCODE DNA)
- › Secure storage of application keys in a secure memory (Secure Element)
- › Support of EPCglobal™ Low Level Reader Protocol with special software library
- › Readout of RSSI data and phase angle of identified transponders (e.g. for localization of transponders)
- › Various configuration options for software and hardware
- › Support of 4 hardware interface ports: Ethernet, RS232, USB and Wiegand
- › Reader protection against fault conditions like antenna shortcut, antenna mismatching and electrostatic discharge
- › Robust aluminum die case housing for usage in rough and industrial environments
- › Increase of enclosure rating to IP64 due to optional available connector sealing cap for the connector block
- › Quick installation due to easy access to interfaces and antenna ports
- › 2 Inputs, 2 outputs and 2 relay outputs suit industrial needs and allow control of external components and signalization of different events
- › Antenna Port Indication: Display of active antennas (green), read events (blue) and possible antenna mismatching (red) via 4 separate LEDs

\* The maximum Read Range is depending on the used antenna, the antenna cable, the used transponder and environmental conditions.

## Applications



Logistics



Railway applications



Industry