ID LRU4000X

UHF LONG RANGE READER FOR INDUSTRIAL APPLICATIONS

- Robust housing with M12 connectors
- Designed for applications in harsh environments (indoor & outdoor) (IP65/IP67)
- 2 Watt Output Power
- 4 Antenna Ports (internal Multiplexer)
- 2 Inputs / 4 Outputs
- Edge Computing Device
- Extended Conformity for Rail Applications



Industrial UHF Long Range Reader for Various Applications

With a reading range of more than 10 m, 4 antenna connections and 4 circular connectors several long range applications in industrial and railway environment can be realized.

Railway applications

The LRU4000X meets the relevant requirements for use in railway applications and is particularly suitable for use on-board. These include, for example, reading position markers, updating passenger information systems or selective door opening.

Applications in industry and logistics

For applications in harsh environment the reader offers robust M12 connectors and is therefore the first choice for use with machines, in forklift trucks or conveyor systems.

Various mounting options

The reader can be mounted directly on a flat surface, via a VESA on a post, via an adapter on a DIN rail or plastic insulation plate on a vehicle chassis (e.g. carriage or locomotive bodies) – you have the choice!

Features:

- High receiver sensitivity cares for an enlarged and at the same time homogeneous tag detection range
- Support of Transponders according to EPC Class1 Gen2 and ISO 18000-63
- Allows the realization of secure UHF systems by full support of transponder chips according to EPC Class1 Gen2 specification and ISO 29167 (e. g. NXP UCODE DNA)
- Secure storage of application keys in a secure memory (Secure Element)
- 2 Inputs, 2 Outputs and 2 Relay Outputs suit industrial needs and allow control of external components and signalization of different events
- Edge-Computing Platform with Linux OS for installation and operation of custom specific applications directly on the reader
- Different software applications available e.g. for EPCglobal™ LLRP support
- Reader protection against fault conditions like antenna shortcut, antenna mismatching and electrostatic discharge

UHF LONG RANGE READER FOR VARIOUS APPLICATIONS

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Technical data

Dimensions (w x h x d)	
Without Connectors	approx. 225 mm x 140 mm x 55 mm
With Connectors	approx. 225 mm x 175 mm x 55 mm
Weight	approx. 1200 g
Housing	Aluminium housing, plastic cover
Color	Aluminium, anthracite (cover)
Protection Class	IP65, IP67
Power Supply	12 V – 24 V DC ± 10 %, Power-over Ethernet (PoE+)
Power Consumption	max. 18 W*
Output Power	100 mW to max. 2 W configurable in steps of 100 mW
Antenna Connector	4 x R-TNC-Jack (50 Ohm), integrated Multiplexer, support of external Multiplexer ID ANT.UMUX
RF Diagnosis	RF-channel monitoring, Antenna SWR control, internal overheating control
Connections	I/O M12 A-coded (8-pin), RS485 / Relay M12 A-coded (8-pin), Ethernet M12 D-coded, Power Supply M12 A-coded (4-pin)
Outputs	
2 Optocoupler	max. 24 V DC / 20 mA
2 Relays	max. 24 V DC / 1 A switching current, 2 A permanent current
Inputs	
2 Optocoupler	max. 24 V DC / 20 mA
Interfaces	RS485, Ethernet (IPv4/IPv6), USB (On-the-Go)
Computing Platform (Linux OS)	ARM single Cortex-A7 800 MHz + Cortex-M4 (RFID), 1 GB Flash, 512 MB RAM
Reader Modes	Host Mode, Buffered Read Mode, Notification Mode
Supported Transponders	EPC Class1 Gen2, ISO 18000-63, ISO/IEC 29167
Indicator	Highly visible status display (green/red/blue; customizable indication)
Others	Anti-Collision, Output of RSSI values and phase angle, Battery assisted Real-Time-Clock, Secure Key Storage, "Config Cloning" function, Action-on-EPC, Web-Interface
Temperature Range	
Operation	-40 °C – +70 °C**
Storage	-40 °C – +85 °C
Relative Air Humidity	5 % up to 95 % (non-condensing)
Vibration	EN 60068-2-6 10 Hz up to 150 Hz: 0.075 mm / 1 g

Versions

EU	865 MHz to 868 MHz
FCC	902 MHz to 928 MHz

* not including power consumption due to external Multiplexer
** additional measures may be required

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Automating Identification

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Standard Conformity

Radio License	
Europe, UK	EN 302 208
USA	FCC 47 CFR Part 15
Canada	IC RSS-247
EMC	EN 301 489
Safety & Health	EN 62368-1, EN 50364
Cyber Security	EN 18031-1

Railway (Rolling Stock / Rail Environment)

Isolation, Power Supply	EN 50 155
EMC	EN 50 121-3-2, EN 50 121-4
Vibration, Shock	EN 61 373 Cat 1B
Fire Protection	EN 45 545-2
Wet Heat (cyclic)	EN 50 155, EN 60 068-2-30
Salt Mist	EN 50 155



ID LRU4000X, Front view



ID LRU4000X, antenna connections



ID LRU4000X, Connectors for VCC, interfaces, I/Os

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