ID MRU400iX

UHF MID RANGE READER FOR INDUSTRIAL APPLICATIONS

- Robust housing with M12 connectors
- Designed for applications in harsh environments (indoor & outdoor) (IP65/IP67)
- 1 Watt Output Power
- Internal circularly polarized antenna for any orientation of the transponders
- 1 Inputs / 2 Outputs
- Edge Computing Device



Industrial UHF Mid Range Reader with integrated antenna for a wide range of applications

With a reading range more than 4 m, an internal antenna, an external antenna and four M12 connectors, numerous Mid Range applications in industrial and railway environments can be realized.

Railway applications

The MRU400X meets the relevant requirements for use in railway applications and is particularly suitable for use in vehicles. These include, for example, reading position markings, updating passenger information systems or selective door opening.

Applications in industry and logistics

For applications in harsh environments, the reader offers robust M12 connections and is therefore the first choice for use on machines, in forklifts or conveyor systems.

Diverse mounting options

The reader can be mounted directly on a flat surface, on a post using a VESA mount, on a DIN rail using an adapter or on a chassis using a plastic insulation plate - the choice is yours!

Features:

- Integrated antenna results in an "all-in-one" reading point, so no additional external antenna is needed
- Support of Transponders according to EPC Class1 Gen2 and ISO 18000-63
- Realization of secure UHF systems through 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)
- 1 Input, 1 Output and 1 Relay Output enable the 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

D60221-2e-ID-A

INDUSTRIAL UHF MID-RANGE READER

ID MRU400iX

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 190 mm x 55 mm
Weight	approx. 1200 g
Housing	Aluminium housing, plastic cover
Color	Aluminium, anthracite (cover)
Protection Class	IP65, IP67
Power Supply	10,8 V – 30,0 V DC, Power-over-Ethernet (PoE+)
Power Consumption	max. 12 W
Output Power	
intern	max. 1 W ERP
extern	max. 1 W, adjustable in 100 mW steps
Antenna Connector	1 x R-TNC socket (50 Ohm), multiplexer integrated
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	
1 Optocoupler	max. 24 V DC / 20 mA
1 Relays	max. 24 V DC / 1 A switching current, 2 A permanent current
Inputs	
1 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, Secure Key Storage, Web-Interface
Temperature Range	
Operation	-40 °C to +55 °C
Extended temperature range	-40 °C to +70 °C*
Temperature Range	
Storage	-40 °C to +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

* At operating temperatures above 55°C, the configured transmit power must not exceed 1.0W, and power supply via PoE is not permitted in this case.

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INDUSTRIAL UHF MID-RANGE READER

ID MRU400iX

Versions

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

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 (Interruption: Class C2; U_N = +24 V DC)
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 MRU400iX,front view



ID MRU400iX, antenna connections



ID MRU400iX, connections for VCC, interfaces, I/Os

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