UHF Industrial Reader

Cylindrical Reader M30

DESCRIPTION

The BLUEBOX M30 UHF reader/writer is a fixed and compact all-in-one UHF RFID reader for industrial automation processes.

It has a power output of up to +24 dBm / 250 mW. The power setting can be set in 1 dBm steps starting from 10 dBm. In combination with the integrated circular antenna and a gain of -8 dBi, M30 UHF Cylindrical Reader can achieve reading distances of up to 40 centimeters within industrial environments.

Typically this device will be used within the industrial automation at production lines and conveyor belt systems. Another wide spread application is the identification of tool attachment at construction, municipal and farming vehicles.

The device comes with a RS232, RS485, CANbus (SAE J1939 or CANopen) interface and a power supply of 10 to 36 V. This RFID device allows a flexible and fast integration into many existing applications with its easy to install cylindrical M30 housing and standardized M12 connectors.

iDTRONIC’s BLUEBOX M30 UHF Reader/Writer supports the well known BLUEBOX SDK with demo and setup tools. The Windows based tools support all operating systems starting from XP up to Windows 10. Combined with C++, C# and a ASCII command protocol the software development kit offers an easy option to integrate this UHF reader into any environment.

Further customization of firmware and hardware is possible on request and on a project basis.

Applications
- Industrial Automation
- Material Handling
- Tracking & Tracing
- Attachment Identification
- Production Control

Features
- RS232, RS485, CANbus (SAE J1939 or CANopen)
- 10 to 36 V Power Supply
- Up to 40 cm Reading Distance
- Compact Cylindrical Housing
- IP65 rated

RFID Option
- UHF (EPC C1 GEN2 / ISO18000-63)
APPLICATION EXAMPLE - IDENTIFICATION OF FITTINGS & TOOLS

► Construction Site

This cylindrical reader is applicable for construction site machines. The different materials on a construction site require a variety of additional equipment.

Thanks to the cylindrical reader, the additional excavator buckets or drills are immediately ready for use. The specific user data are stored on the transponder on the excavator bucket.

The cylindrical reader is very robust and durable thanks to the IP 65 protection class. Therefore it is well suited for the construction site.

► Agriculture

The cylindrical antenna is well suitable for agriculture applications on corn fields or acres.

The device with reading distances of up to 40 cm can detect various attachments such as harvester or drills. The automatic identification allows the vehicle control system to detect and set all necessary controls within a blink of a second. Therefore an automated setup can ease the use of various machines for different users.

Weather-related ground wetness or heat will not harm the antenna. The operating temperature for the use is from –20 to +55 °C.

► Installation Example on a Tractor

The cylindrical reader M30 is perfectly for the identification of attachments in agricultural machines. The antenna is mounted on the gripping arm of the vehicle. It identifies various external parts with attached transponder such as excavator bucket or drills. Next to the steering wheel is mounted a control system controller. The transponder contains data on the attached part and transports it with the antenna on the gripper arm to the control system.
## Technical Data

### Electrical Specifications
- **Power Supply**: 10…36 Vdc
- **Power Consumption**: +24 dBm / 250 mW
- **Operating Frequencies**: 865 – 868 MHz (ETSI) 902 – 928 MHz (FCC on request)
- **RF Output Power**: max. 0.5 W (+27 dBm), software configurable
- **RF Input Sensitivity**: –87…–51 dBm, software configurable
- **Antenna**: Integrated
- **Operating Distance**: up to 40 cm*
- **Communication Interfaces**: RS232 (R-IN-UHF-5224U) RS485 (R-IN-UHF-5225U) CANbus (SAE J1939 or CANopen)
- **Status Display**: 1 bicolor LED
- **Connector**: 5 pin M12 A-coded male connector

### Antenna Specifications
- **Antenna Gain**: -8 dBiC
- **Beam Width**: 100° / 170°
- **Axial Ratio**: < 1.5 dB
- **Polarization**: circular

### Mechanical Specifications
- **Housing Material**: Nickelled brass + PC
- **Overall Dimensions**: M30 × 1.5 × 90.65 mm
- **Weight**: 115 g
- **Protection Class**: IP65

### Environmental Conditions
- **Operating Temperature**: –20 to +55 °C
- **Storage Temperature**: –40 to +65 °C
- **Humidity**: up to 95 %, non-condensing

### Supported Standards / Tags
- Standard ISO 18000-63 (EPC Class 1 Generation 2)
  - E.g.: Alien Higgs 2/3/4, Impinj Monza, NXP UCODE, etc.

### Applicable Standards
- **EMC**: EN 301489-1:2012-04 (v1.9.21) EN 301489-3:2013-12 (V1.6.1)
- **Radio Regulation**: EN 300330-1:2015-08 (V1.8.1) EN 300330-2:2015-08 (V1.6.1)
- **Safety**: EN 60950-1:2014-08 EN 62369-1:2010-03 EN 50364:2010-11
- **RoHS**: EC Guideline 2011/65/EU
- **Certificate**: CE

### SDK Information
- **Supported OS**: Windows 7, 8
- **Supported Languages**: C#, C++, serial command protocol

*Reading distance depends on tag, antenna and environmental conditions

### ORDER CODES

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<th>Version</th>
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