

With J1939 or CANopen interfaces

The Cylindrical Reader M30 UHF from Idtronic is a read and write device from the company's Bluebox line. It utilizes J1939 or CANopen to enhance the existing EIA-232 and EIA-485 interfaces.

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The Cylindrical Reader M30 UHF (Photo: Idtronic)

The reader has a variety of interface solutions for integration into existing systems. The EIA-232 COM interface is a serial port suited for connection to monitors, point of sale terminals, measuring instruments, or printers. The EIA-485 interface is an asynchronous serial connection for data communication over long distances. It is a bidirectional bus system that may be operated with up to 128 devices on one network.

The product is now available with the additional CAN (J1939 or CANopen) interface option. The serial CAN system enables data exchange between several control units. This has applications in motor vehicles, shipping, or air freight. This interface eliminates the need for long cables. The J1939 network protocol is used for the transmission of diagnostic data and control information. The CANopen connection is a communication protocol which is mainly used in automation processes. Complex devices may be networked with it.

The reader has a 10 V to 36 V power supply. The output line supports up to 27 (dBm) decibel milliwatt / 500 milliwatt. The power can be regulated from 10 dBm in 1 dBm steps. The reader is, therefore, suited for high-performance devices within various applications. It is equipped with an internal, circular antenna. The antenna has a strength of -8 dBi (decibel isotrop), achieving a reading range of up to 50 cm.

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The reader is suited for the identification and automatic configuration of attachments in agricultural machinery, construction machinery, or municipal multifunction vehicles (Photo: Idtronic)

The product is equipped with the UHF frequency 865 MHz to 868 MHz. Optionally, the reader may also be operated with a frequency of 902 MHz to 928 MHz. Both frequencies support the ISO 18000-6C standard (EPC Class 1 Generation 2) with Alien Higgs 2/3/4, Impinj Monza, NXP Ucode tags, as well as others.

A software development kit (SDK) and configuration tool, for Windows operating systems, are provided as well as an operating system-independent command protocol. Further adjustments to the firmware and hardware are possible on request and project basis.

Application examples

The Bluebox Cylindrical Reader M30 UHF is suited for the identification and automatic configuration of attachments in agricultural machinery, construction machinery, or municipal multifunction vehicles. The RFID (radio-frequency identification) reader is mounted close to the holding points of the vehicle's attachments and identifies various external attachments. These may include excavator shovels, sweepers, ice sliders, or drills, which are all equipped with an RFID transponder. The attached transponders contain all necessary configuration data about the attachment part. After the readout process, the corresponding data is forwarded to the central control system via the CAN interface.

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The reader can be used in construction vehicles (Photo: Idtronic)

Example 1

Construction site vehicles require a variety of additional equipment to meet the requirements of the modern construction industry. Due to the cylindrical design of the reader and the IP67 protection class, the reader is suited for the requirements of such harsh environments. In addition to its resistance to environmental influences, the integration of the existing CAN interface was also considered during development. Thanks to the standardized interface and ultra high frequency technology, the attachments may be identified and adjusted immediately.

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The reader can also be used in agriculture machines (Photo: Idtronic)

Example 2

The demands of a fast harvest with high yields increase from year to year in the agricultural industry. Due to modern technology, today's agricultural vehicles can take on a variety of tasks and thus meet these ever-demanding requirements. However, due to the multitude of possibilities, the systems are also becoming more and more complex. Automated identification systems should take over the configuration of the various attachments so that users do not require extensive training to operate the vehicles. A component for this is the reader. Due to the standardized UHF RFID transmission standard and a reading range of up to 50 cm, the various tools can be identified.

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