BF-IDU03
RFID-Reader

BALLUFF

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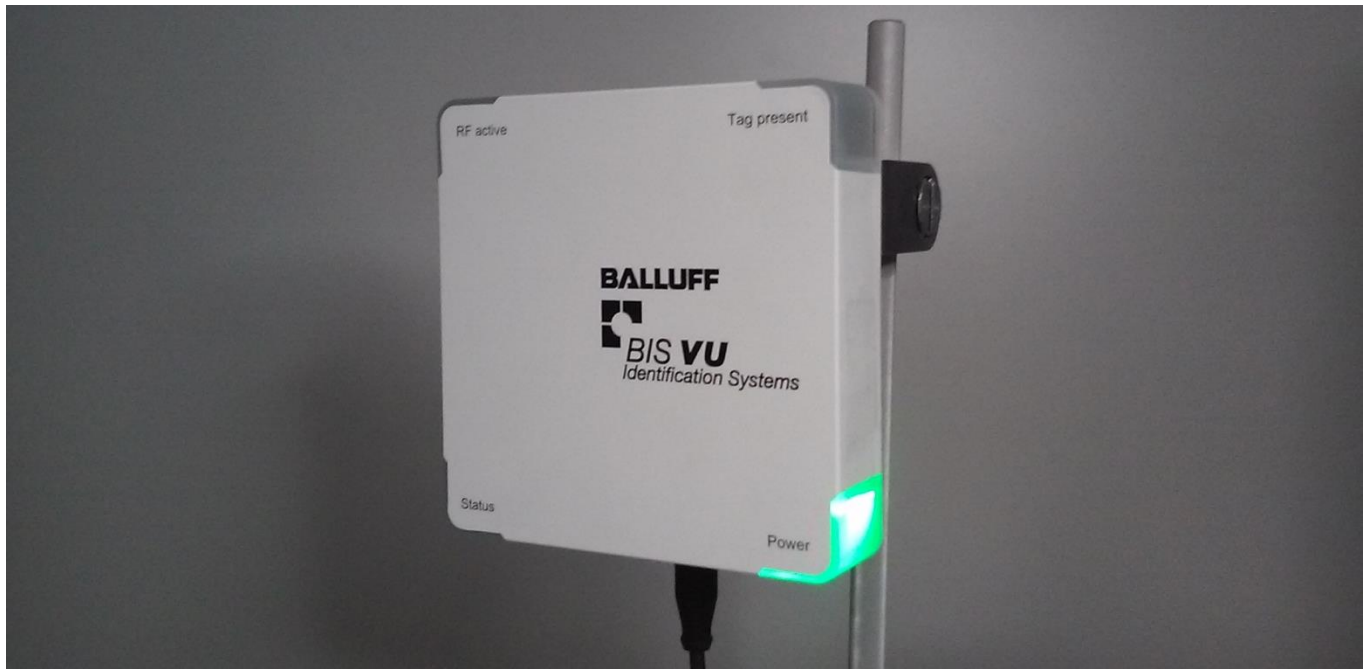CP 76232 Delegación Epigmenio González, Querétaro

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Operating Guide

Purpose of the Device

The BF-IDU03 device is intended to read and write "EPC Global Class 1 Gen2" compliant data carriers (so called tags) via country dependent UHF radio frequencies.

Check that you have the right device variant

This UHF system consists of a radio frequency unit and an integrated antenna according to specifications and may only be operated within the specified countries subject to all applicable national legal regulations and standards.
Check that the type label contains the correct type approval symbol for your country.

► When using the UHF system in the European Community, the provisions in ETSI standard 302 208 apply.
► When using the UHF system in the USA, the directives of the FCC, Part 15 B and 15 C, apply.
► When using the UHF system in Canada, the directives of the IC, RSS-210 apply.
► When using the UHF system in Mexico, the directives of the SCT, NOM-121-SCT1-2009 apply.
► When using the UHF system in Argentina, the directives of Resolución SC 729/80 and SC 784/87 apply.
► When using the UHF system in Brazil, the directives of the ANATEL, 506/2008 and 442/2006 apply.
► When using the UHF system in China, the directives of the RFID National Standard and GB 9254 apply.
► When using the UHF system in Japan, the directives of "Radio Law" and ARIB T106 apply.
► When using the UHF system in Australia, the directives of the Radiocommunications Class License 2000 (Item 32A) apply.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

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Connecting the Device

The device has to be connected to one of the head connectors "H1" .. "H4" of a Balluff BIS V control unit via standard 4-wire cable with M12 industry connectors. The control unit delivers power supply and controls the device over this connection.

Make an additional ground connection to the Functional Ground terminal (Symbol ⏚) either directly or using an RC combination to ground.

BF-IDU03   BIS V-6xxx
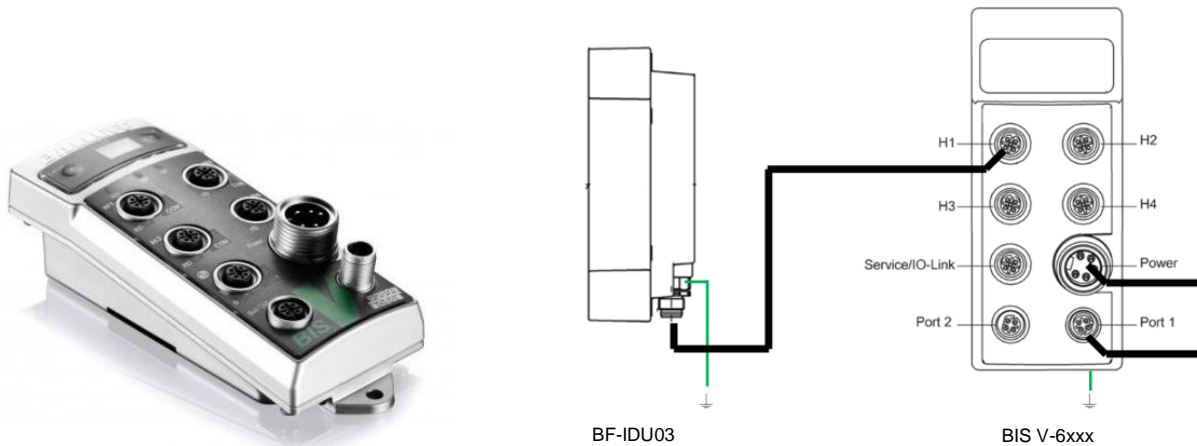
The control unit itself needs to be connected to a power supply and the customer's PLC unit. See the BIS V manual for details.

Mounting

Before operating, the device has to be fixed mounted with at least 2 screws of M4 or M5 size in mounting holes at back side (see image).
The BF-IDU03 device may be mounted in any direction, the operating direction of the integrated antenna is towards the front containing the "BIS VU Identification Systems" label.
Optional mounting plates are available for installing the device.
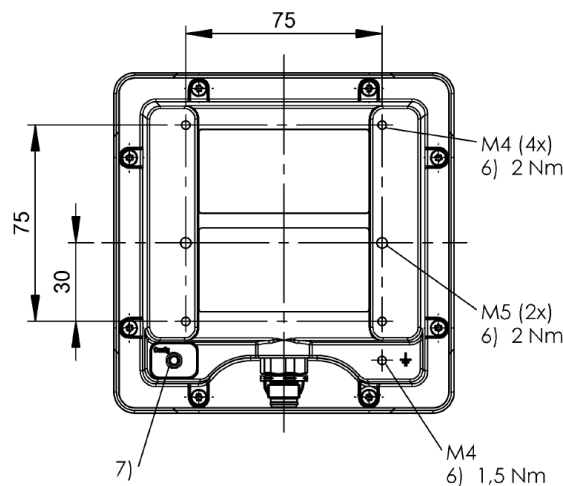
The antennas of the identification system BIS U transmit ultra-high frequency electromagnetic waves. People should not remain within close range of the UHF antenna for long periods (several hours). When selecting the installation position for the BF-IDU03 device, make sure that the minimum distance between the UHF antenna and the workplace is 25 cm.

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Setup and Operation

The BF-IDU03 device will operate when the BIS V control unit receives read or write commands from the connected PLC. See the manual of BIS V control units for how to send commands to the control unit.
The transmission power may be set up with Service Software e.g. "Balluff UHF Manager" up to the specified maximum to control the read and write range of the device.

Status Indicators

The device will show its status using the 4 LEDs at the corners of the housing. In normal operation state the meaning of these lights are as follows:

► Green light "Power" indicates that the device is connected to the control unit and ready to operate.
► Red light "Status" (permanent) indicates that the device's temperature is outside limits, probably because the ambient temperature is too high or the device is defective.
► Red light "Status" (flashing) indicates that the devices settings are not initialized correctly. Please contact Service.
► Blue light "RF active" indicates that the device has turned radio frequency transmission on and tries to scan for tags or write or read data over the air.
► Orange light "Tag present" indicates that at least one UHF EPC Global tag could be found by the device. The light will stay on for at least 3 seconds after a successful scan.

Electrical Data

Operating voltage Vs	19.2…28.8 V DC
Current draw (at 24 V DC)	≤ 200 mA
USA / Canada / Mexico Version:	
Operating Frequency	902 .. 928 MHz
Maximum Transmit Power	< 30 dBm (1 W) EIRP
Republic of Korea Version:	
Operating Frequency	917 .. 921 MHz
Maximum Transmit Power	27 dBm (0,5 W) EIRP
China Version:	
Operating Frequency	920.5 .. 924.5 MHz
Maximum Transmit Power	25 dBm (0,32 W) ERP
Japan Version:	
Operating Frequency	916.7 .. 920.5 MHz
Maximum Transmit Power	27 dBm (0,5 W) EIRP
Australia Version:	
Operating Frequency	920 .. 926 MHz
Maximum Transmit Power	27 dBm (0,5 W) EIRP
Maximum Read Range	1000 mm
Antenna Beam Opening Angle	90° (horizontal/vertical)
Antenna Polarization	Circular LH

Mechanical Data

Housing material: Metal / ABS / PC, weight: 850 g, ambient temperature range: -20°C .. +55°C, device size: width x height x depth = 130 mm x 130 mm x 50.5 mm