BALLUFF

BIS M-623-071-A01-03-ST30

High Frequency Passive Radio Frequency, Identification Processor

INSTALLATION GUIDE

This document provides instructions and information designed to assist users in the hardware setup of the BIS M-623-071-A01-03-ST30 RFID Processor. For configuration details see the the BIS M-62_ processor Manual.

PACKAGE CONTENTS	
Qty	Description
1	BIS M-623-071-A01-03-ST30 Processor
1	BIS M Series Configuration Tag
1	This Installation Guide
2	M5 x 20 mm Antenna Mounting Screws
2	M5 Antenna Mounting Washers
1	Hex Wrench for Antenna Mounting

TECHNICAL DATA

ELECTRICAL FEATURES	
Power Supply	19.2 to 28.8 VDC
DC Input Current	500 mA
Communication Interface	DeviceNet
Baud Rate (kbps)	125 (default), 250, 500
RADIO FEATURES	
Frequency	13.56 MHz
Air Protocols	ISO 14443A, ISO 15693
Conducted Output Power	1 W
ENVIRONMENTAL FEATURES	
Operating Temperature	-20° to +50 °C (-4° to +122 °F)
Storage Temperature	-20° to +70 °C (-4° to +158 °F)
Humidity max.	90% non condensing
Protection Class EN 60529	IP65*
PHYSICAL FEATURES	
Dimensions	164 x 112 x 48 mm (6.48 x 4.41 x 1.88 in)
Weight	560 g (19.8 oz)
Enclosure	Powder Coated Aluminum
USER INTERFACE	
LED Indicators	READY, RF, COM, DEVICENET

* When all connectors, sealing caps, and antenna are correctly installed.

The BIS M-623-071-A01-03-ST30 Processor and its antenna are intended for indoor use only.
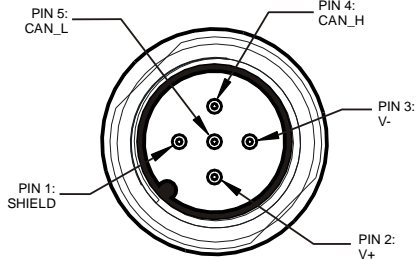
Minimum Mounting Distance Between Adjacent Antennas.

BIS M	-371	-372	-373	-370
-371	60 cm	75 cm	90 cm	50 cm
-372	75 cm	90 cm	1.2 m	65 cm
-373	90 cm	1.2 m	2 m	90 cm
-370	50 cm	65 cm	90 cm	50 cm

GENERAL VIEW

CONNECTIVITY

M12 5-pin Male Connector (DeviceNet and Power Supply)

PIN 5: CAN_L
PIN 4: CAN_H
PIN 3: V-
PIN 1: SHIELD
PIN 2: V+

M12 8-pin Male Connector (RS232)

PIN 7: TX
PIN 6: RX
PIN 5: N/C
PIN 8: SIGNAL GND
PIN 4: N/C
PIN 1: N/C
PIN 2: N/C
PIN 3: N/C

N/C = Not Connected
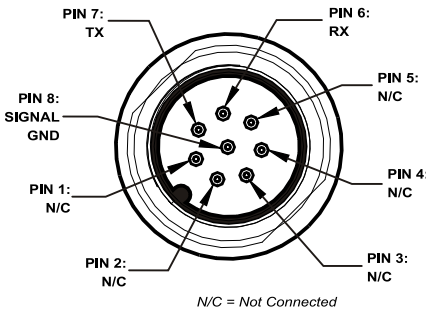
LED INDICATORS

🟢 green	READY	The READY LED is ON after the power up sequence has completed.
🟡 amber	RF	The RF LED illuminates when RF power is being transmitted by the antenna.
🟡 amber	COM	The COM (communications) LED flashes ON and OFF when data is being transmitted between the antenna and a tag. When in Continuous Read mode, the COM LED will remain ON and will turn OFF briefly only while data is being read from or written to a tag.
🟢🔴 green/red	DEVICENET	SOLID GREEN: on-line and connection established. FLASHING GREEN: on-line, but no connections established, or needs commissioning. FLASHING RED: connection timed out, or recoverable fault detected SOLID RED: unrecoverable fault detected (i.e., duplicate node address).

Typical Layout

See the BIS M-623-071-A01-03-ST30 Manual for a complete list of accessories including alternative cables and connectors.

DIMENSIONS

mm
in

INSTALLATION GUIDELINES

- RF performance and read/write range can be negatively impacted by the proximity of metallic objects and liquids. Avoid mounting the BIS M-37_ antenna within 15 cm (6 inches) of any metallic object or wet surface.
- Do not route cables near other unshielded cables or near wiring carrying high voltage or high current. Cross cables at perpendicular intersections and avoid routing cables near motors and solenoids.
- Avoid mounting the Processor near sources of EMI (electro-magnetic interference) or near devices that generate high ESD (electro-static discharge) levels. Always use adequate ESD prevention measures to dissipate potentially high voltages.
- If electrical interference is encountered (as indicated by a significant reduction in read/write performance), relocate the Processor to an area free from potential sources of interference.

INSTALLATION

The BIS M-623-071-A01-03-ST30 Processor is designed for DeviceNet RFID applications, where the Processor is connected as a slave node in a DeviceNet network via compatible cables directly to a DeviceNet Master/Scanner (host). The default Node ID is 63.

1. Select a suitable location for the BISM-623-071-A01-Processor/Antenna.
2. Mount the BIS M-37_ Antenna to the BIS M-623-Processor, either Directly or Remotely, as described in the B Guide included with the antenna.
3. Mount the Processor and antenna to your mounting fixture using *M5 (or #10)* diameter screws (*not included*) and secure them with appropriate washers and nuts. Tighten screws to *1.7 Nm or 15 lbs per inch ± 10%*.
4. Attach a DeviceNet-compatible cable to the 5-pin, male M12 interface connector on the Cobalt. Connect the other end of this cable to your DeviceNet network.
5. Turn your DeviceNet power supply ON. After a while the Devicenet LED will briefly flash alternatively Red and Green. The READY LED will be ON when the Processor's startup procedure has completed.

To configure and control the BIS M-623-071-A01-03-ST30 Processor and send RFID commands for testing purposes, download and install the Dashboard Configuration Tool from www.balluff.com. The Dashboard Configuration Tool uses the PC RS232 serial port to communicate to the Processor's RS232 serial port. To enable communication:

1. To connect the Processor's RS232 serial port to the PC you have two choices; the first one is the quickest: a) Connect the CBL-1478 M12 8-pin female connector to the M12 8-pin male interface connector on the BIS M-623-071-A01-03-ST30 . Connect the CBL-1478 9-pin female D-sub connector to an RS232 COM port on the host computer, or, b) Build your own communication cable using the CBL-1493 connector M12 8-pin female connector and follow the schematic shown in the Reference Manual.
2. On the host computer, set COM port parameters to: 9600 baud, 8 data bits, 1 stop bit, no parity and no handshaking.
3. Run the Dashboard™ Configuration Tool.
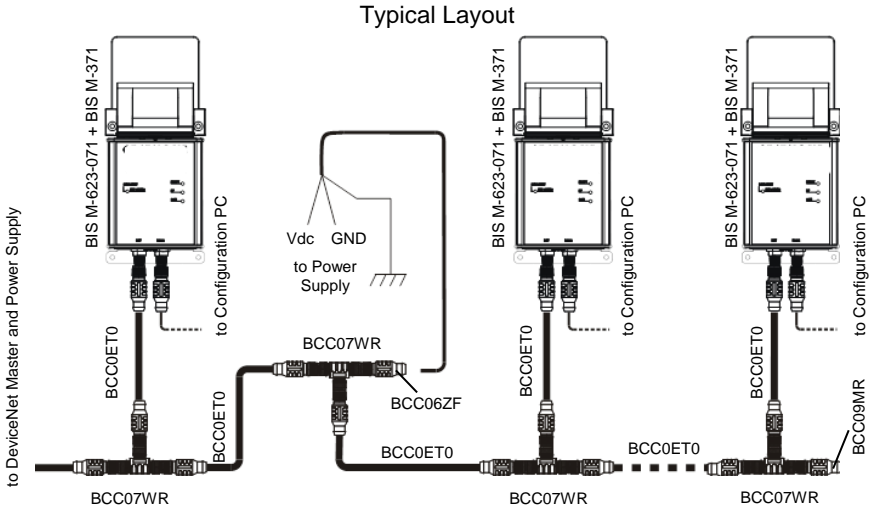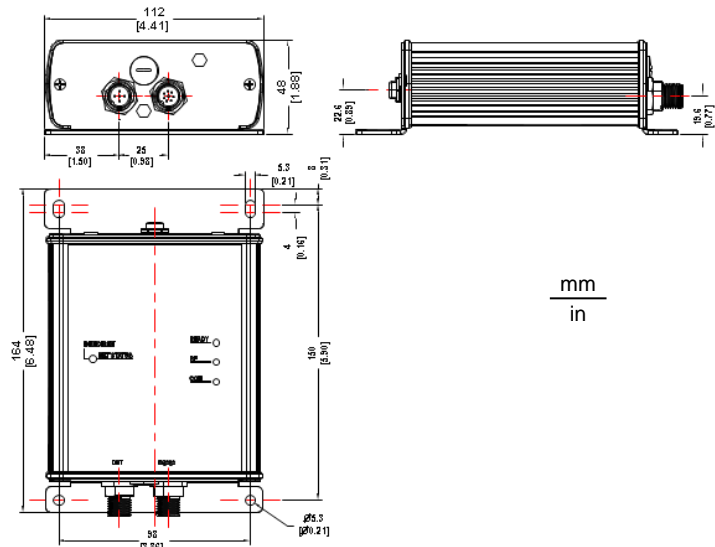
COMPLIANCE

Only BIS M-37X antennas are certified for use with the BIS M-623-071-A01-03-ST30 Processors.

This product is intended to be installed by Qualified Personnel only.

This product must not be used in explosive environments.

Power Supply

This device is intended to be supplied by a UL Listed or CSA Certified Power Unit with «Class 2» or LPS power source.

CE