

Modular Junction Box MJB5 Plus with Gateway

Data Sheet



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Introduction

The modular junction box MJB5 Plus is designed for use together with OpenBus™ control boxes.

The MJB5 Plus makes it possible to connect multiple hand controls and attendant controls. It can even be used for charging or to connect the Under Bed Light and 3rd party products.

The compact design and in-line cable management makes it easy to integrate in a wide range of healthcare applications like hospital beds, surgery tables and treatment chairs.

The MJB5 Plus offers IPX6 Washable DURA™ and is the perfect match for the OpenBus control box platform. IPX6 Washable DURA helps prolong the lifetime and makes the system ready for wash tunnels and high-pressure wash down.

MJB5 Plus versions 504-010 and 504-020

The MJB5 Plus is a simple gateway interface which can connect switch input notifications from the hospital or nursing home infrastructure such as service/nurse call systems.

Please note that notifications are only to be used as service information and not for emergency issues.



Features and options

2 connections:	Port 1, OpenBus connection / Port 5, Gateway
Colour:	Light Grey RAL 7035
Protection class:	IPX6, IPX6 Washable DURA™

Usage

Compatibility:	All OpenBus products
Operation temperature:	+5 °C to +40 °C
Storage temperature:	-10 °C to +50 °C
Relative humidity:	20% to 80% – non-condensing
Atmospheric pressure:	700 to 1060 hPa
Meters above sea level:	Max. 3000 meters
Latex free:	Yes
Approvals:	IEC60601-1 ANSI/AAMI ES60601-1 CAN/CSA-22.2 No 60601-1

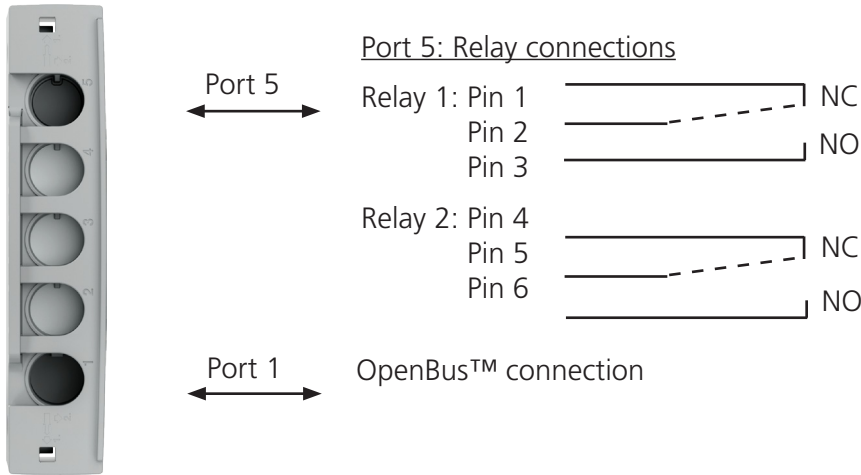
MJB5 Plus Gateway usage

Contact rating:	Maximum continuous current: 1A Maximum switching voltage: 48VDC Maximum switching capacity: 24VA Contact resistance: <100 mΩ
Current consumption:	V bus 8V: 9 mA V permanent 40V: 14 mA

Ordering example

MJB		
Special/Standard code no.	000	000 = Port repeater box (without functionality) 502 = SMPS 4W (Switch Mode Power Supply) 504 = Gateway 505 = UBL (Internal) / Switch input (S1 + S2) 506 = UBL (External) / Switch input (S1 + S2) 509 = Analogue to OPENBUS™ Converter
No. of OPENBUS™ connections	4	1 = For standard code: 502 (Ports: 1=OB, 2=third party) For standard code: 504 (Ports: 1=OB, 5=Third party) 3 = For standard code 000: 3 ports 4 = For standard code 000: 4 ports For standard code: 505, 506 & 509 5 = For standard code 000: 5 ports
Configuration Number	000	000 = Port repeater box (without functionality) 001-099 = Standard configuration 100-999 = Special configuration
Not used	-	- = Not used
Colour	1	1 = Light grey (RAL 7035)
HardWare version	0	0 = No Power request 1 = HW-variant with power request on all ports where it is possible 2 = HW-variant with power request on port 2 (Only for MJB509) 3 = HW-variant with power request on port 4 & 5 (Only for MJB509)
IP Degree	2	2 = IPX6 9 = IPX6 Washable DURA™
Cable	3	3 = No cable
Chosen item number: MJB0004000-1023		

Modular plug cable for connection of OpenBus™ control box to MJB5 Plus has to be ordered separately. Please remember to order DURA cable and blind plug if IP degree IPX6 Washable DURA™ is required.



Standard functionality

The MJB5 Plus Gateway consists of two relays, which are connected through port 5 on the MJB5 Plus. This can be done with the special cable 0964140 (modular plug - open end).

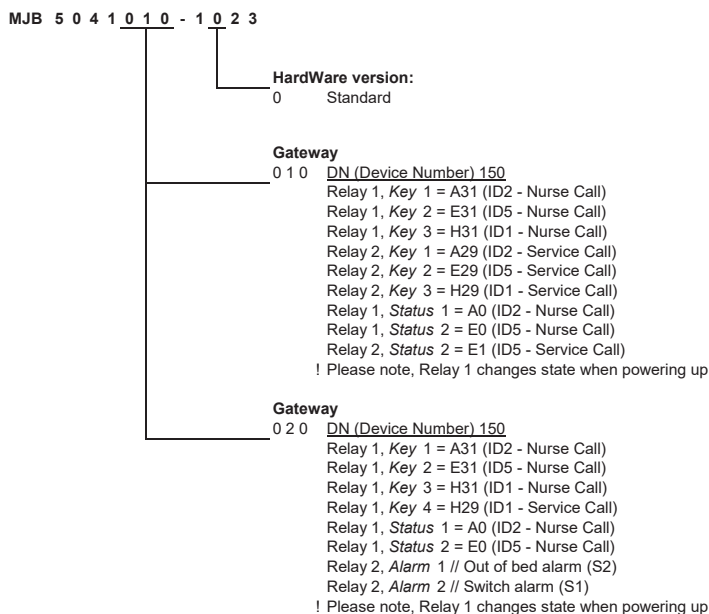
There are as standard 2 configurations, 504-010 and 504-020, see description on the next pages.

Relay 1: NC (normally closed) = Pin 2 + Pin 1/NO (normally open) = Pin 2 + Pin 3

Relay 2: NC (normally closed) = Pin 5 + Pin 4/NO (normally open) = Pin 5 + Pin 6

OpenBus™ standard configuration

Versions 504-010 and 504-020



* Service Data Tool 2, can read out the special/standard code no. and configuration.

Relay 1

Relay 1 is NO when connected to mains and NC when no mains, this means the relay is “active”, when connected to mains (closed loop). The closed loop principal is to ensure that a notification is sent if power is missing on the bed. When mains is disconnected (power is missing), the relay will go from NO to NC which will automatically result in a notification (status indicator) on the OpenBus.

Relay 1 can be activated via the patient control (Key1/Key4) or the attendant control (Key2 / Key3). When a key is activated, the relay will switch state from NO to NC for 2 seconds. After 2 seconds the relay will automatically change state from NC to NO.

The status of the relay is indicated on the OpenBus and can be used for switching on an LED.

Relay 1		
OpenBus control box power mode	Notification level	Relay state
Mains unplugged, <i>the control box</i> is in power-down or the OpenBus is not running (Clock/data is missing)	Notification	NC*
On mains or battery at “wake up”	Bed notification**	NC
	No notification	NO

Relay 2

Relay 2 is by default NC, with or without mains, (open loop).

Relay 2 can be activated via the patient control (Key 1) or the attendant control (Key 2 / Key 3).

When the relay is activated, it will switch from NC to NO for 2 seconds. After 2 seconds the relay will automatically change state from NO to NC.

The status of the relay is indicated on the OpenBus™ and can be used for switching on an LED.

By using the variant 504-020 will relay 2 be controlled by the MJB5 Plus variant 505/506 with switch input.

Notification 1 = Switch input S2 / notification 2 = Switch input S1

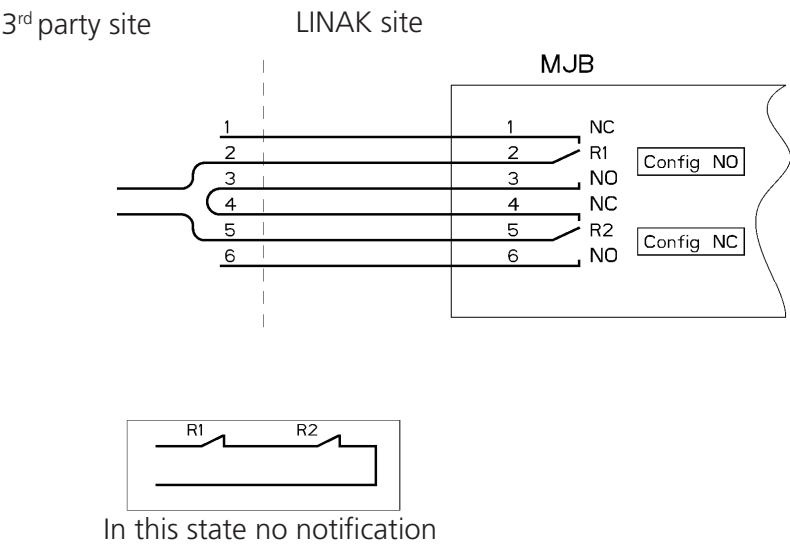
When using this combination, is it important to have the MJB5 Plus 505/506 connected to the system all the time. If it is not connected, the Gateway MJB5 Plus will see it as a notification and the relay will be activated. The Gateway MJB5 Plus is “scanning” the OpenBus system. every minute for a notification.

Relay 2		
CB or OpenBus control box power mode	Notification level	Relay state
Mains unplugged or <i>the control box</i> is in power-down	No notification	NC
On mains or battery at “wake up”	Bed notification**	NO
	No notification	NC

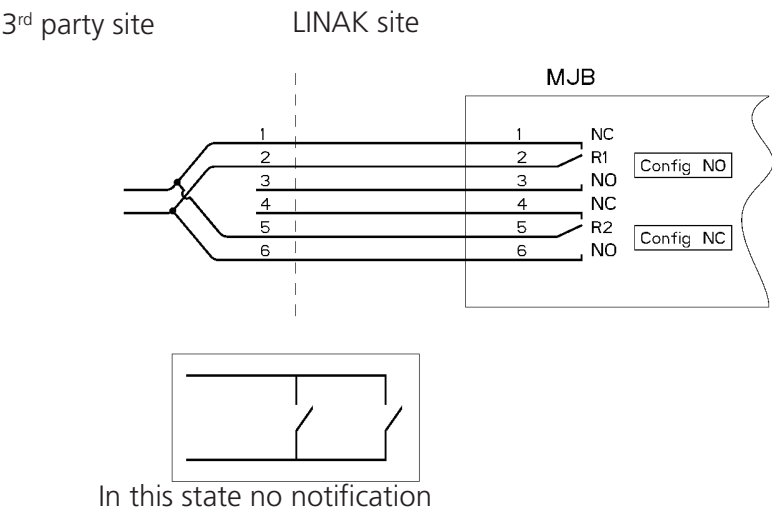
* When mains is unplugged or CB or the OpenBus control box is in power-down, the relay will shift to NC state and generate a notification.

** Notification generated by nurse call or bed notifications.

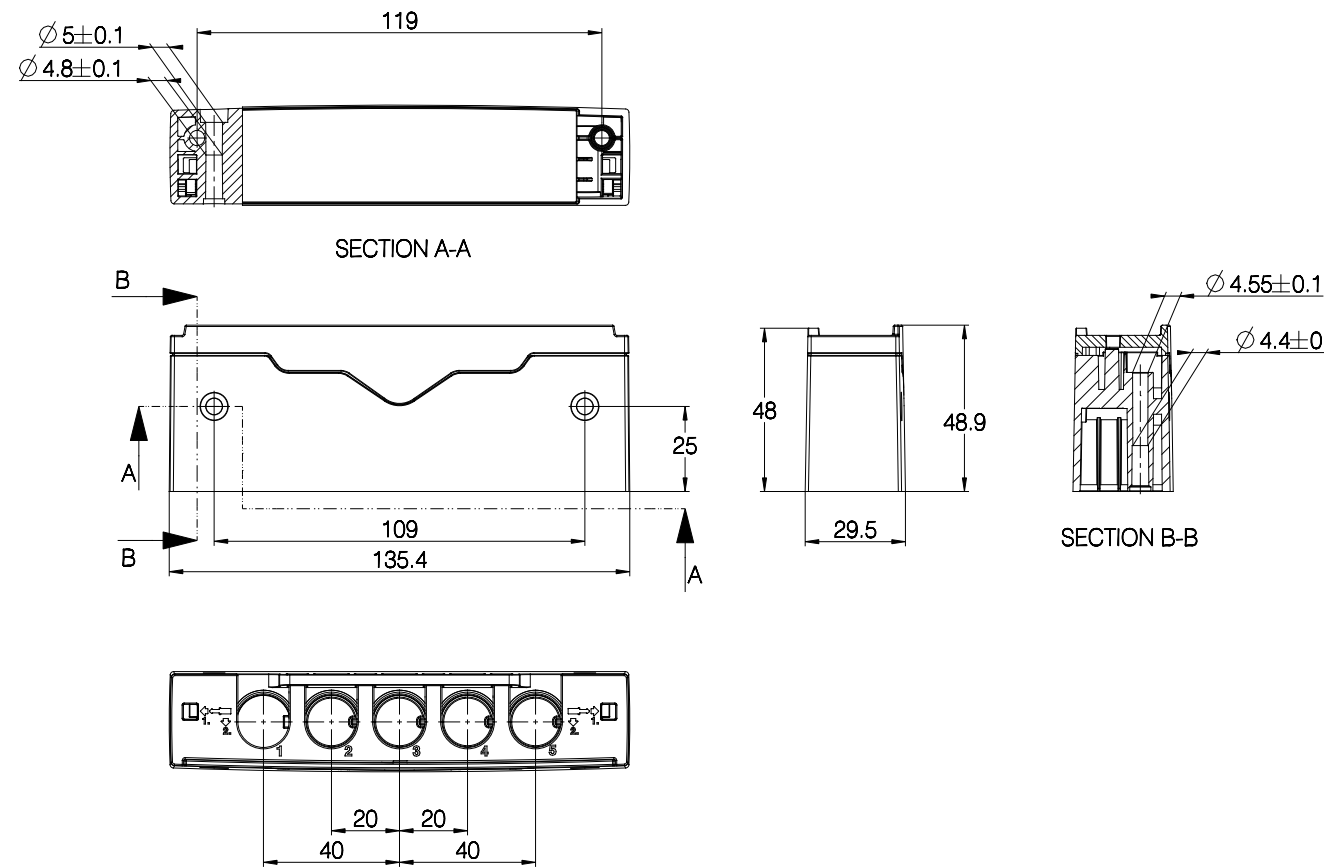
Example of closed loop



Example of open loop



Dimensions



Drawing no.: 0835101

Cable and accessory overview

Ordering number	Description	MJB5 Plus version					
		000	502	504	505	506	509
		Port repeater	SMPS	Gateway	UBL (Int.)	UBL (Ext.)	AOC
0821147	MJB5 Plus locking mechanism	X	X	X	X	X	X
1015W1010-A	Mounting bracket exclusive screws	X	X	X	X	X	X
SA0002645	Special screws type WN1423 K60x16	X	X	X	X	X	X
0821008	Blind plug, RAL 7035 Light Grey, IPX6	X	X	X	X	X	X
0821120	Blind plug, RAL 7035 Light Grey, IPX6 Washable DURA™	X	X	X	X	X	X
0834000	USB cable, length 1000 mm (USB cable is not medically approved)		X				
0964399	Modular plug cable with open end, length 1500 mm				X	X	
0964461-xxxx	Modular plug to modular plug, 6-wire extension cable	X	X	X	X	X	X
0964140-1375	Gateway cable, xxxx mm, modular plug, open end			X			
0964135	Under Bed Light Cable, 2500 mm					X	
0965347	Modular plug cable with 10 open-end wires						X

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