



LDSBus RFID Reader Datasheet



1 Introduction

Designed to operate with access cards, the LDSBus RFID Reader uses RFID technology. This RFID Reader can be programmed for either high frequency (13.56Mhz) or low frequency (125Khz) or dual frequency for both RFID cards. The RGB LED Indicator strips can be programmed with different colors and the reader features a built-in buzzer for alert.

1.1 Features

- Card reader with programmable 13.56Mhz and 125Khz frequencies
- The read card access distance can be up to 4cm.
- A built-in buzzer that can be configured to be silent or beep when an RFID card is detected
- RGB LED indicator with programmable colour
- BRTSys LDSBus protocol. Data/power transmission via the LDSBus Quad T-Junction
- Low power consumption
- Operating temperature range: 0°C to +70°C
- Supported platforms: BRT Systems IoTPortal, PanL Smart Living, PanL Room Manager
Visit <https://brtsys.com/resources/> for more information

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2 Part Numbers

Part#	Naming
LC050101A	LDSBus RFID Reader
LA130101A	LDSBus RFID Reader Mount Bracket
PA001200A	PD100 (PRM) & RFID Reader Metal Mounting Bracket

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3 Product Specifications

Features	Interface	JST4, RS485
	LED Indicator (RGB Strips)	System Status Indicator
	Mounting	Panel Mount
Power	Input Voltage	5V DC Bus Power
	Typical Power	5V / 200mA
RFID Technology	Programmable for high frequency (13.56MHz) Low frequency (125KHz) or Dual frequency for both	
RFID Cards Supported	HID Proximity HID iClass Mifare Ultralight Desfire EM4100 EM4200	
Physical Characteristics	Colour	Black
	Housing	Polycarbonate
	Surface	Glossy Black Glass
	Dimensions	L167.8mm x W48.1mm x H22.6mm
Environmental Limits	Operating Temperature	0 to 70°C
	Storage Temperature	-20 to 85°C
	Ambient Relative Humidity	5 to 95% (non-condensing)
Package Contents	Device	1x LDSBus RFID Reader
	Installation	1x Panel Mount Bracket (P/N:LA130101A)
	Wire Assembly	1X 5m RJ11-JST cable (P/N: LA040101A)
	Glass mount cover sheet	1X L165mm x 45mm (Black color)
	Double sided tape for glass mount	2X 3M VHB Type

Table 1 – LDSBus RFID Reader Specifications

4 Hardware Features

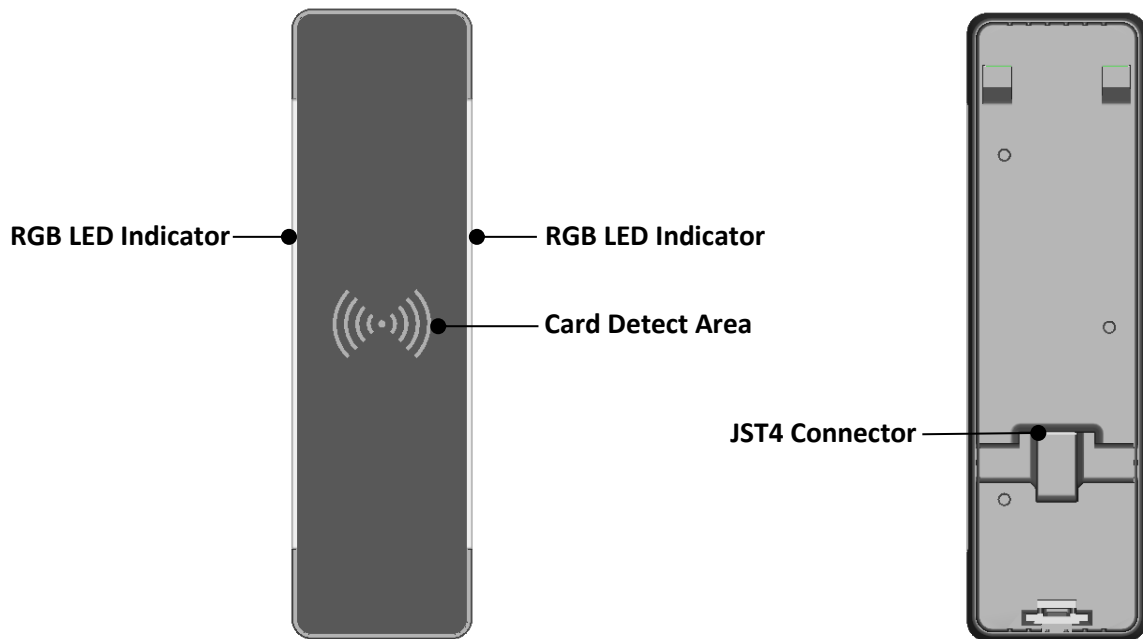


Figure 1 - LDSBus RFID Hardware Feature

4.1 RGB LED Indicators

There are two RGB LED Strips on the LDSBus RFID Reader for indicating the status of the device, including *Idle*, *Card detection*, *Granted* and *Denied*.

The LED Strip configuration is handled by the host, the LED Strip is configured to RED and turned ON for both sides, and it stays in red until the host responds with the configuration.

4.2 Buzzer

There is a built-in buzzer that can be configured to be silent or beep when an RFID card is detected.

4.3 RFID Card Detection Enable

Upon connecting and onboarding the LDSBus RFID Reader device to the system, the card detection function must be enabled. Please visit <https://brtsys.com/resources> to find out more on how to configure the device in the IoTPortal, PanL Room Manager or PanL Smart Living system.

Note: Refer to [PD100 datasheet](#) for product specific information and usage of the RFID.

5 LDSBus RFID Reader Installation and Configuration

Please visit <https://brtsys.com/resources> to access the LDSBus Configuration Utility Guide on how to configure the device name, address, and termination settings before using it for your application.

The LDSBus RFID Reader supports Low Frequency (125Hz), High Frequency (13.56MHz) cards, it can be configured to support either or both of them by using the LDSBus Configuration Utility.

Similar to the card support configuration, the buzzer can be configured to be silent or beep when an RFID card is detected.

5.1 Connection Diagram

The LDSBus RFID Reader can be used as RFID card access input devices with BRT System's IoT Portal, PanL Smart Living or PanL Room Manager. Please visit <https://brtsys.com/resources> to view more details of these 3 systems.

The LDSBus RFID Reader needs to be configured for all the setups:

- a. IoT Portal Gateway/ PSL: The RFID device needs to be configured with the device ID (range from 1 to 126) and termination settings. (Please refer to [LDSBus Configuration Utility Guide](#))
- b. PD100-PRM: The RFID device ID should be configured to 126, and termination should be turned ON.

Interconnection of LDSBus RFID Reader with IoT Portal System

Figure 2 illustrates the connection of the LDSBus RFID Reader to IoT Portal.

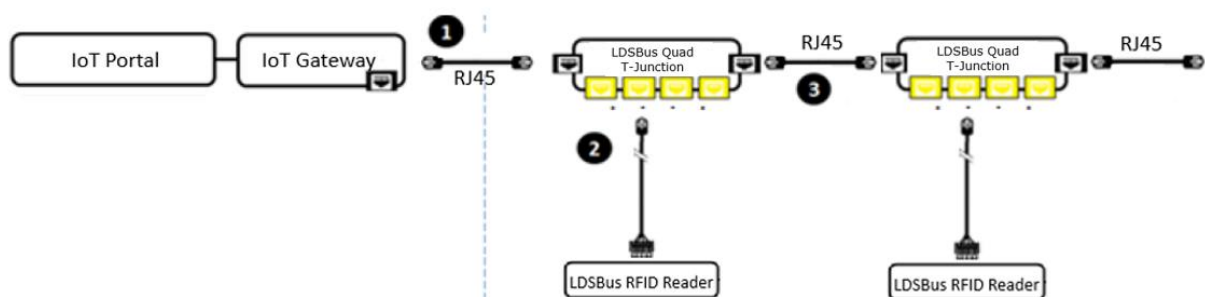


Figure 2 - LDSBus RFID Reader to IoT Portal - Connection Diagram

Setup Instructions:

1. Connect the first LDSBus Quad T-Junction to IoT Gateway using the RJ45 (8P8C) cable as shown in Figure 2
2. Connect the configured LDSBus RFID Reader to the LDSBus Quad T-Junction as shown in Figure 2.
3. If there is more than one LDSBus Quad T-Junction, chain them together as shown in Figure 2.

Interconnection of LDSBus RFID Reader with PanL Smart Living System

Figure 3 illustrates the connection of the LDSBus RFID Reader to PanL Smart Living System.

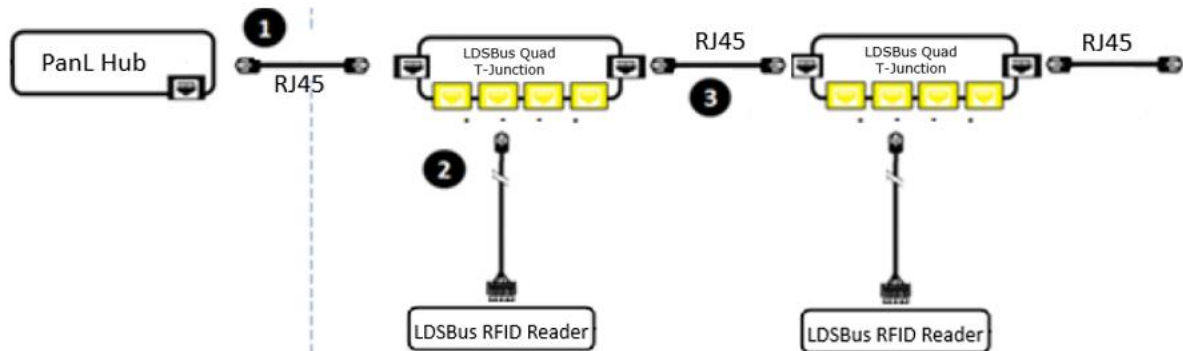


Figure 3 - LDSBus RFID Reader to PanL Smart Living System - Connection Diagram

Setup Instructions:

1. Connect the first LDSBus Quad T-Junction to PanL Smart Living Hub using the RJ45 (8P8C) cable as shown in Figure 3.
2. Connect the configured LDSBus RFID Reader to the LDSBus Quad T-Junction as shown in Figure 3.
3. If there is more than one LDSBus Quad T-Junction, chain them together as shown in Figure 3.

Interconnection of LDSBus RFID Reader with PanL Room Manager System

Figure 4 illustrates the connection of the LDSBus RFID Reader to PanL Room Manager.



Figure 4 - LDSBus RFID Reader to PanL Room Manager System - Connection Diagram

Setup Instructions:

Connect the LDSBus RFID Reader to the PanL PD100 Display (PRM, P/N: PD100001A) using the JST4-JST4 cable as shown in Figure 4.

6 Mounting Options

By using the metal mounting bracket, the LDSBus RFID Reader can be mounted on a wall or glass.

6.1 Wall Mount

Mount the metal mounting bracket to the wall using the flat head tapping screw (2 pieces, M3 or M3.5, header outer diameter less than 6.5mm). Then attach the device.

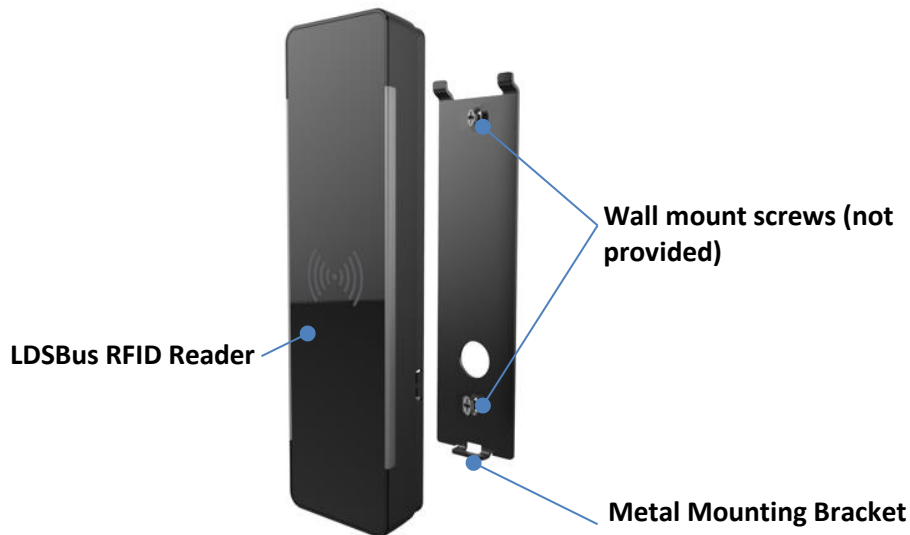


Figure 5 - LDSBus RFID Reader Wall Mount

6.2 Glass Mount

Stick the metal mounting bracket to the glass using the 2pcs double-sided tape (found in the product package) then install the device. If necessary, stick the glass mount cover sheet on the other side of the glass.

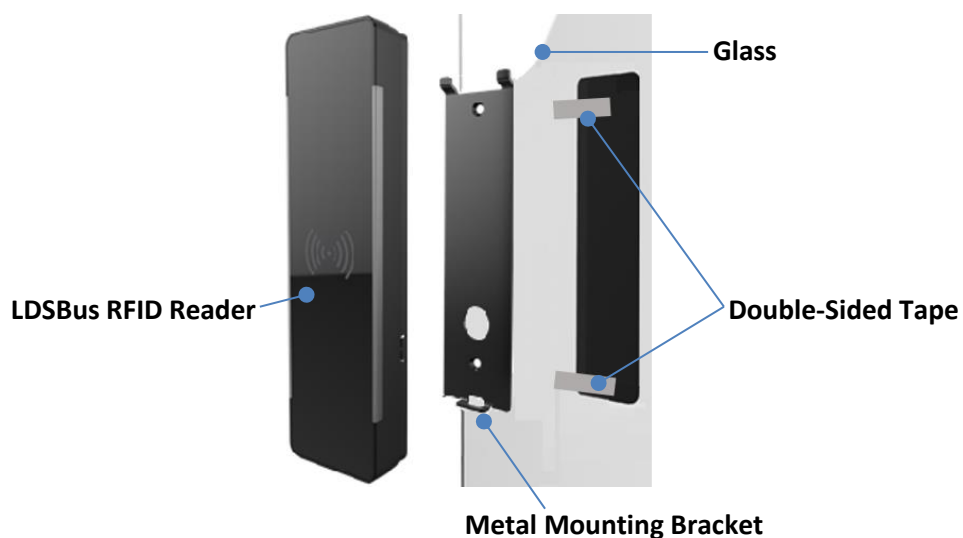


Figure 6 - LDSBus RFID Reader Glass Mount

6.3 Install the device to the mounting bracket

Step 1: Place the device in the mounting bracket and slot it in.

Step 2: Ensure that the bottom part of the device is pushed against the bracket, a 'click' sound indicates the device is locked and correctly installed.

Please refer to Figure 7.



Figure 7 - LDSBus RFID Reader Installation Steps

6.4 Installation with PanL PD100 Display

The LDSBus RFID Reader can be mounted to the left or right sides of the PanL PD100 Display using the designated metal plate (which comes with the PD100 PanL Room Manager (PRM) & RFID Reader Metal Mounting Bracket PA001200A).

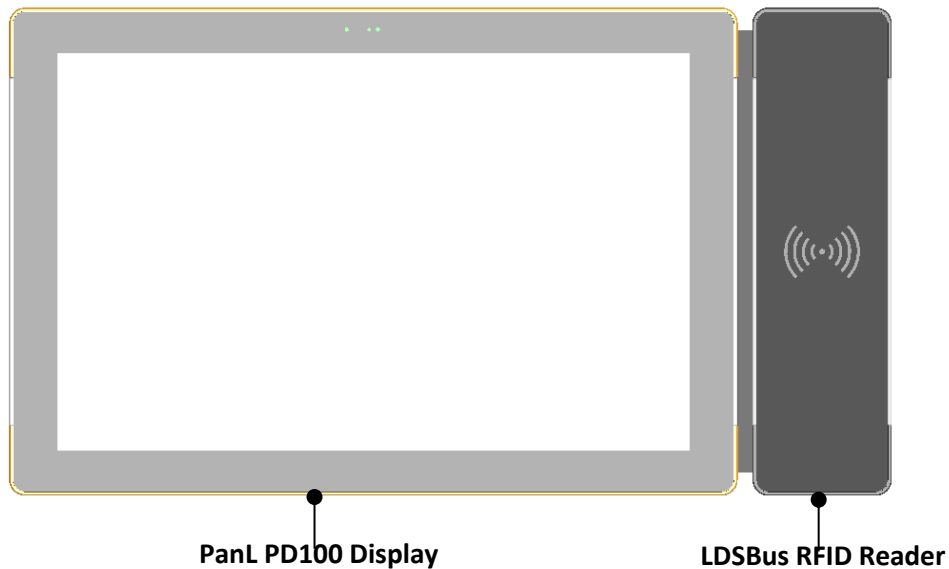


Figure 8 – LDSBus RFID Reader Installation with PanL PD100 Display Front view

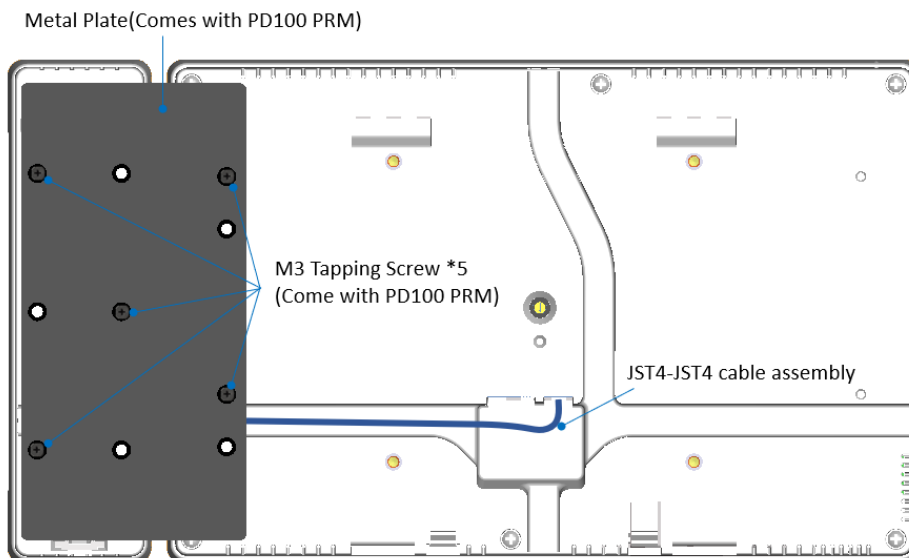


Figure 9 – LDSBus RFID Reader Installation with PanL PD100 Display Rear View

Note: For the PanL PD100 installation, please refer to [PD100 Datasheet](#).

7 Mechanical Dimensions

7.1 LDSBus RFID Reader Device Dimension

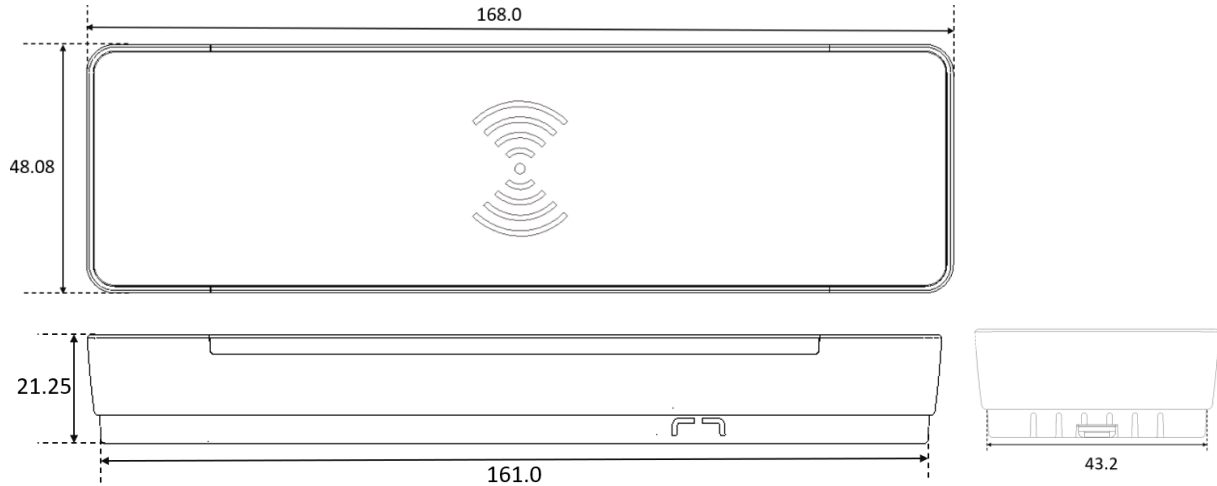
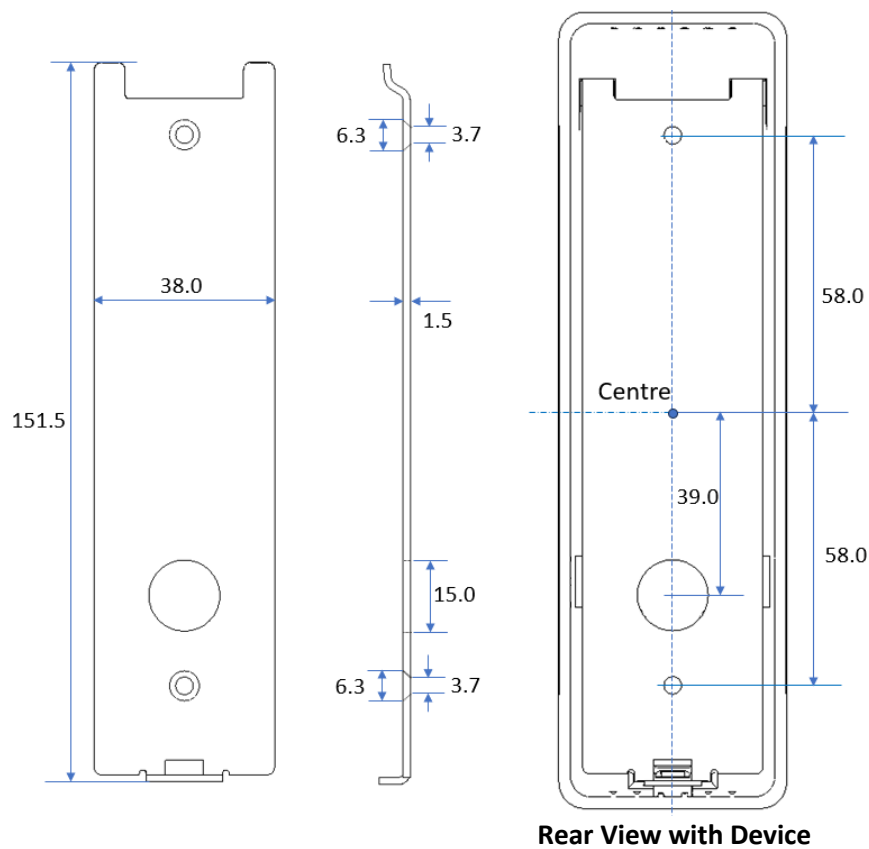


Figure 10 – LDSBus RFID Reader Dimension

7.2 Mounting Bracket Dimension



Rear View with Device

Figure 11 – Mounting Bracket Dimension

7.3 PanL PD100 Display Dimension

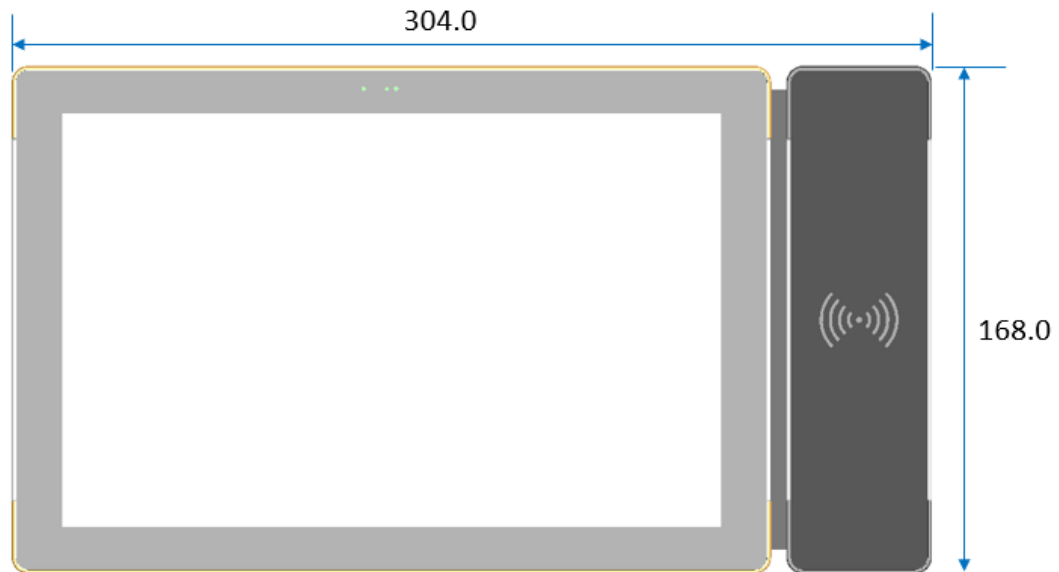


Figure 12 – LDSBus RFID Reader + PD100 Dimension

Note: All dimensions are in millimeters.

8 Contact Information

Refer to <https://brtsys.com/contact-us/> for contact information.

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Appendix A – References

Document References

[BRTSYS_AN_001_LDSBus Configuration Utility User Guide](#)

[IoTPortal](#)

[PanL Smart Living \(PSL\)](#)

[PanL Room Manager \(PRM\)](#)

[PD100 Datasheet](#)

Acronyms and Abbreviations

Terms	Description
DC	Direct Current
LED	Light Emitting Diode
LDSBus	Long Distance Sensor Bus
PSL	PanL Smarting Living
PRM	PanL Room Manager
RFID	Radio Frequency Identification

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Appendix C – Revision History

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Product Page: <https://brtsys.com/ldsbus/>
Document Feedback: [Send Feedback](#)

Revision	Changes	Date
Version 1.0	Initial Release	24-08-2023