



LDSBus Salinity Sensor Adapter Datasheet



1 Introduction

The LDSBus Salinity Sensor Adapter is designed to work with a Salinity probe to form a complete Salinity sensor. It uses electrical conductivity method for its measurement. This adapter has a BNC connector for attaching the Salinity probe. A 2-point calibration method is used to calibrate the adapter and probe and allows measurements of salinity between 1 ppt and 120ppt with a precision of 1ppt. These adapters and probes are suitable for use in applications such as aquaculture fish ponds, shrimp ponds, sea water applications, nutrient tanks, water treatment plants, and swimming pools.

1.1 Features

- Salinity Sensor Adapter to integrate with cell constant K=10 Salinity probe with BNC connector
- Measures Salinity range of 1ppt to 120ppt with linearized output and 1ppt resolution
- 2 Point calibration
- BRTSys's LDSBus protocol. Wired data/power transmission through LDSBus Quad T-Junction
- High report rate of every 5 seconds
- Low power consumption 5V-91mW
- Operating temperature range: 0°C to +70°C
- Flush Mount and DIN Rail Mount options
- Supported platform application: BRTSys's IoTPortal and LDSBus Python SDK

(Visit <http://bit.ly/ldsbus-resources>)



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2 Part Numbers

Part#	Naming
LS130101A	LDSBus Salinity Sensor Adapter
LA10101A	LDSBus DIN Rail Mount Set

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3 Specifications

Features	Interface	BNC (Connect to Salinity probe), RS485
	LED Indicator (RGB)	System Status Indicator (Please refer to LED section)
Power	Mounting	Flush Mount DIN Rail Mount
	Input Voltage	5V DC Bus Power
	Typical Power	5V 91mW
Salinity Sensor input module	Max. Power	266mW
	Detection Range	1 – 120ppt
	Resolution	0.01ppt
	Response Time	<1Minute
Physical Characteristics	Calibration	2 Point Calibration
	Color	White
	Housing	Polycarbonate
	Dimensions	L117.6mm x W42.9mm x H29.7mm
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 Salinity Sensor Adapter
	Installation (Optional)	1x DIN Rail Bracket set
	Wire Assembly	1X 5m RJ11 Cable

Table 1 - LDSBus Salinity Sensor Adapter Specifications

4 Hardware Features

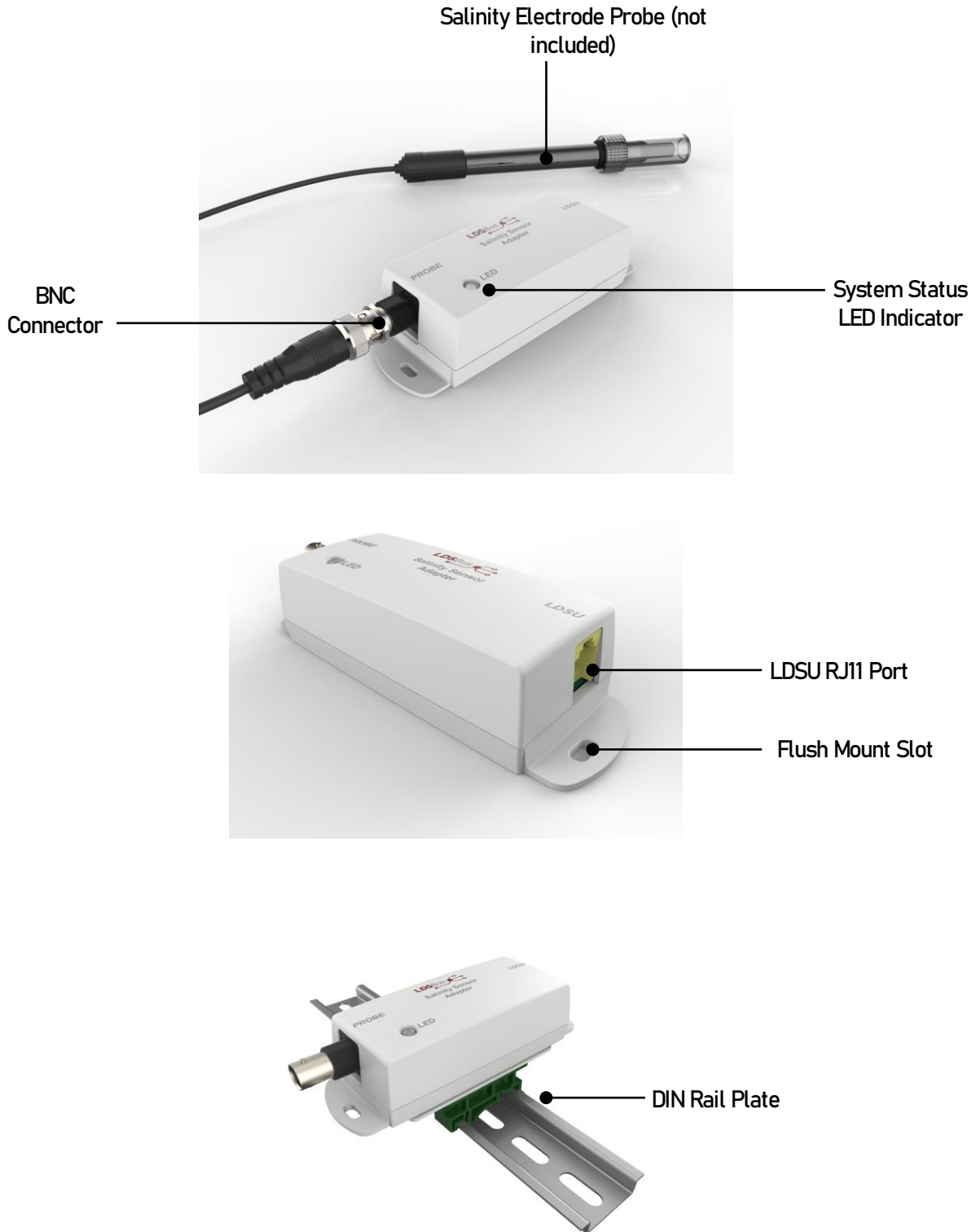


Figure 1 - LDSBus Salinity Sensor Adapter Hardware Features

5 Sensor Adapter Configuration and Installation

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.

5.1 Connection Diagram

Figure 2 illustrates the connection of the LDSBus Salinity Sensor Adapter (LDSBus Device) to the LDSBus. Please visit <https://brtsys.com/resources> to view the full device application, setup, and installation guides.

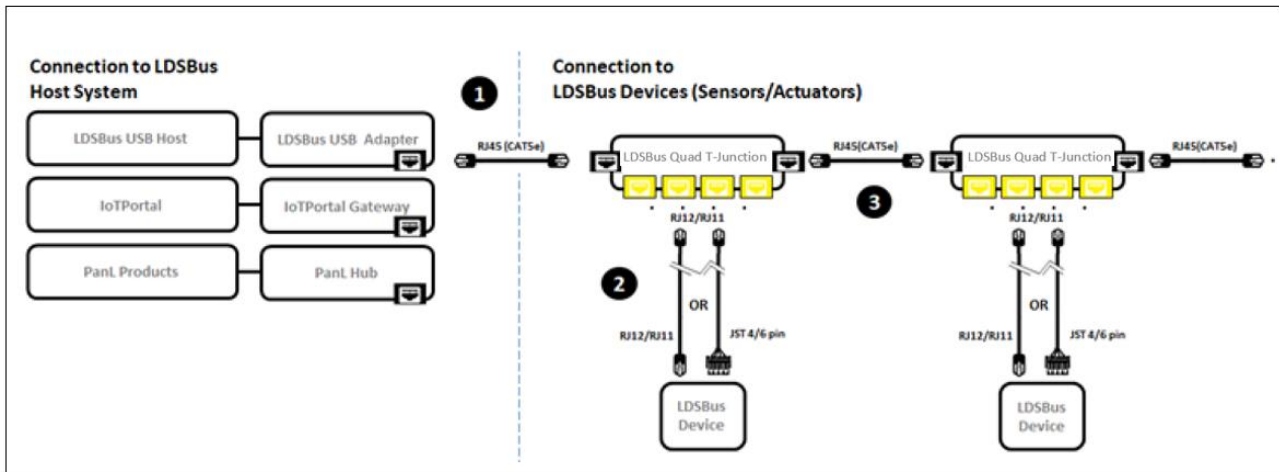


Figure 2 - LDSBus Salinity Sensor Adapter to LDSBus - Connection Diagram

Setup Instructions:

1. Connect the first LDSBus Quad T-Junction to any of the LDSBus Host Systems using the RJ45 (CAT5e) cable.
2. Connect the configured LDSBus Salinity Sensor Adapter 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.

6 Mounting Options

6.1 Flush Mount

The LDSBus Salinity Sensor Adapter can be flush mounted directly on a wall or any flat surface using 2 M3.5*16mm (thread) screws.

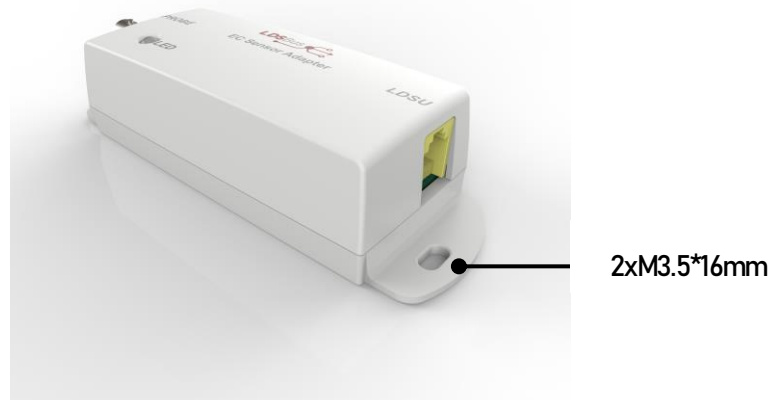


Figure 3 - LDSBus Salinity Sensor Adapter Flush Mount

6.2 DIN Rail Mount

The LDSBus Salinity Sensor adapter can be mounted on a DIN Rail using the LDSBus DIN Rail Mount set. This set is optional and includes the bracket and mounting screws.

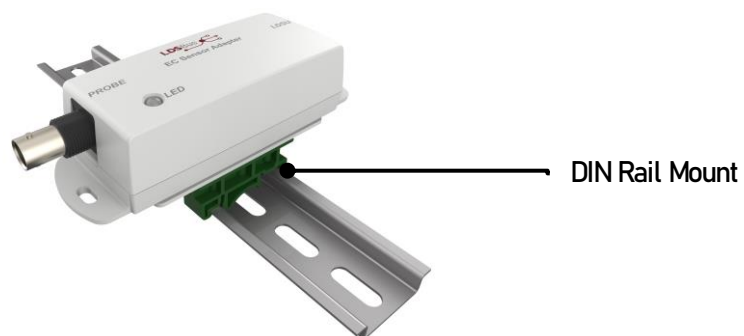


Figure 4 – LDSBus Salinity Sensor Adapter DIN Rail Mount

7 System Status LED Indicators

LDSU devices come with a tri-color LED, and LED status colors are mentioned in the table below.

Status display colors

1. RED - Device in error conditions
2. YELLOW - Un-configured device
3. GREEN - Device in normal state (Device termination is OFF)
4. BLUE - Device in normal state (Device termination is ON)










Device Status	LED Color		Flashing Frequency	Description
Un-configured device	YELLOW		LED flashing @1Hz	Un-configured device with factory default address (126)
Configured device	GREEN		Steady-Non-flashing	Configured device (Device ID 1-125) and device is idle.
	BLUE			
Addressed device	GREEN		LED flashing @5Hz	Device is busy communicating.
	BLUE			
Identified device	GREEN		LED flashing @1Hz	Device in identify state.
	BLUE			
Device error	RED		Steady - Non-flashing	Device error has occurred.
Firmware update	YELLOW		Steady - Non-flashing	Device firmware update.

Table 2 – LDSBus Salinity Sensor Adapter – System Status LED Indicator

7 Probe Selection

The following specifications are recommended for selecting a Probe -

Detection Range	:	1ppt to 120ppt
Cell Constant	:	K=10
Connector	:	BNC

For more information on calibration, please refer to [LDSBus Configuration Utility User Guide](#)

For information related to probes recommendation and selection criteria, please refer to [LDSBus Probe Specifications](#).

8 Mechanical Dimension

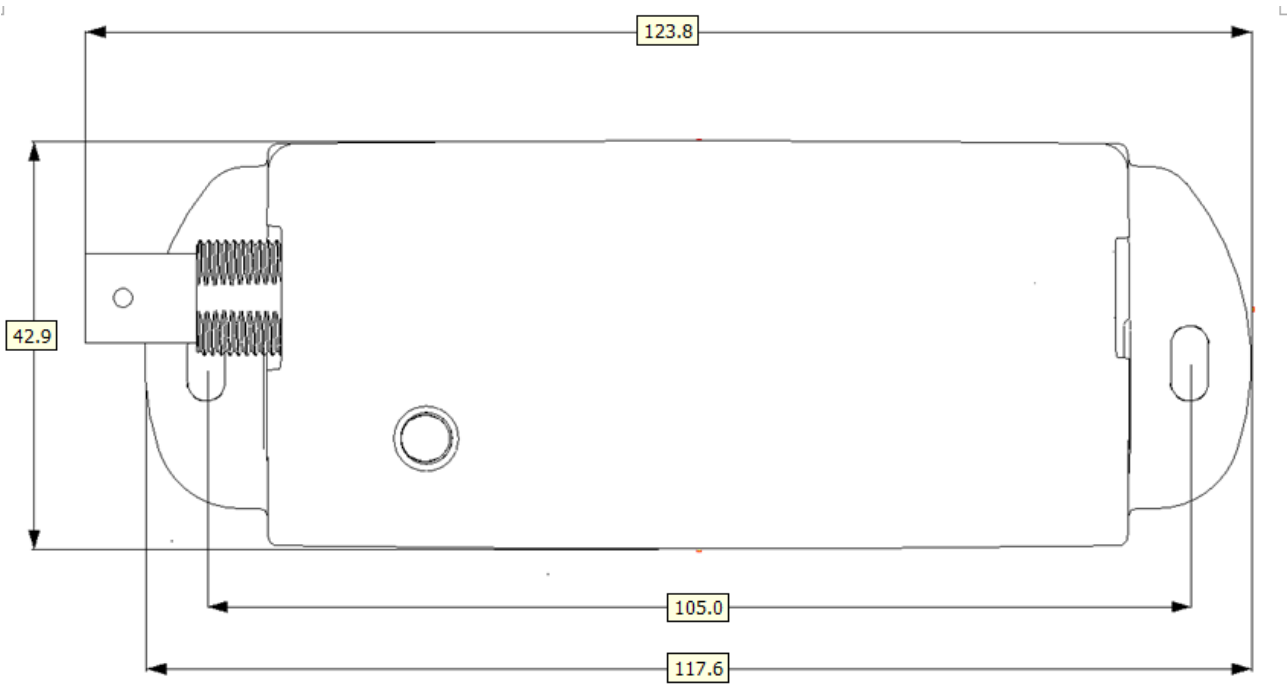


Figure 5 – LDSBus Salinity Sensor Adapter Dimension – Top View

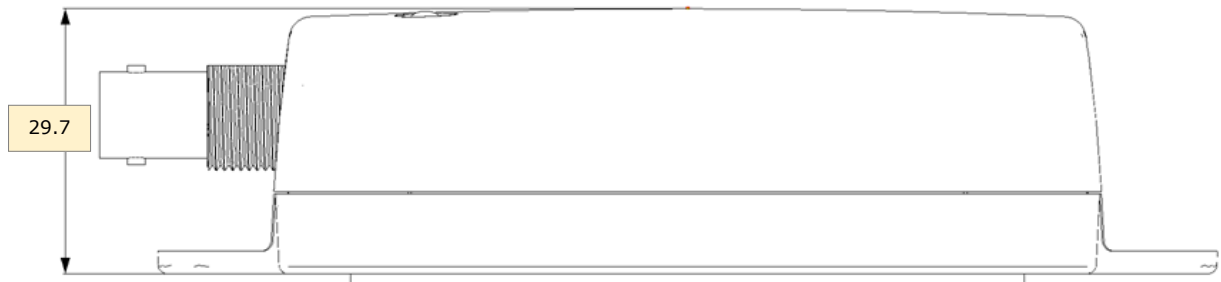


Figure 6 – LDSBus Salinity Sensor Adapter Dimension – Side View

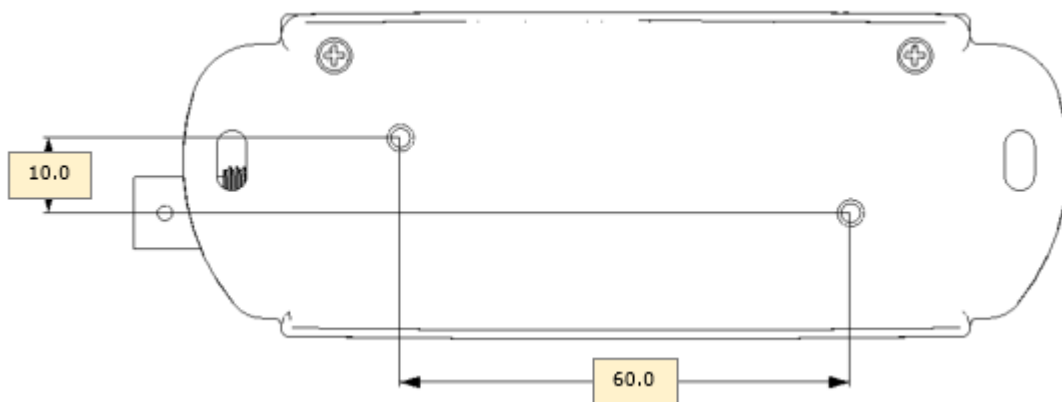


Figure 7 – LDSBus Salinity Sensor Adapter Dimension – Bottom View

Note: All dimensions are in millimetres.

9 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 Guide](#)

[BRTSYS API 001 LDSBus Python SDK Guide](#)

[Sensor Actuator Quick Start Guide](#)

Acronyms and Abbreviations

Terms	Description
DC	Direct Current
LED	Light Emitting Diode
LDSBus	Long Distance Bus Sensor

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Appendix C – Revision History

Document Title: LDSBus Salinity Sensor Adapter Datasheet
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Revision	Changes	Date
Version 1.0	Initial Release	26-01-2023
Version 1.1	Updated the following: HVT references to Quad T-Junction; Singapore address	11-09-2023