



# Distribution Box System User's Guide



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Mailing address:

Spectrum Digital, Inc  
PO Box 1559  
Sugar Land, TX. 77487-1559

Web site: [www.spectrumdigital.com](http://www.spectrumdigital.com)  
Sales: [sales@spectrumdigital.com](mailto:sales@spectrumdigital.com)  
Support: [support@spectrumdigital.com](mailto:support@spectrumdigital.com)

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## 1.0 Introduction

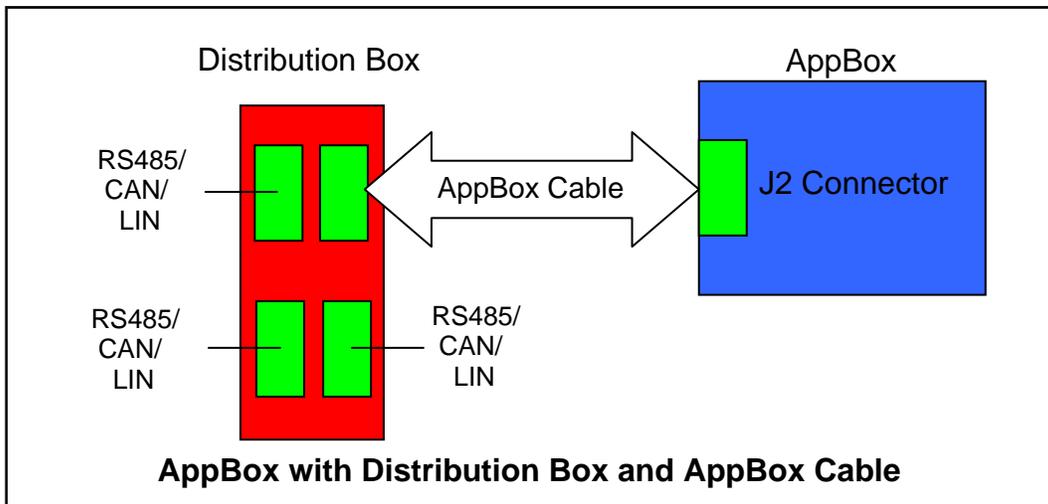
This document describes the features of the Distribution Box. The Distribution Box is designed to expand the communication interfaces on the AppBox. This is a standalone enclosure that requires no power. The AppBox cable (Part/SKU #: 703923-0001) is **required** for expansion from an AppBox to the Distribution Box.

### 1.1 Distribution Box Features

This Distribution Box has the following features:

- Provides four (4) AppBox J2 signal images (at least one image used for expansion)
- Compatible with all AppBox cables
- Ability to split off signals
- No power required
- Six mounting holes for convenient mounting
- Operates 0 - +70C

A system configuration with the AppBox and Distribution box is shown below:



### 1.2 Distribution Box Product Contents

The following items are contained in the Distribution Box (Part/SKU #: 703924-0001) product:

- Distribution Box in bag
- Product information card

### 1.3 Distribution Box Accessories

The following items can be used with the Distribution Box and can be ordered from Spectrum Digital or authorized resellers:

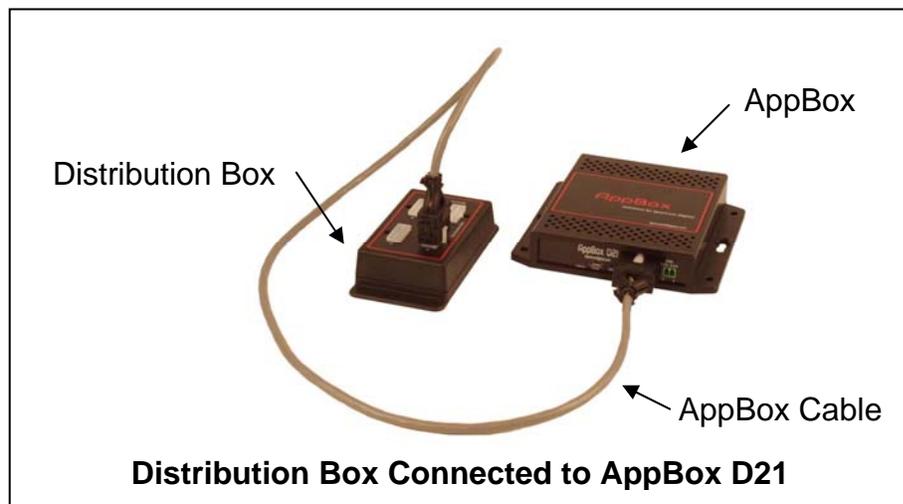
Accessory Description	Part/SKU Number
AppBox Cable *	703923-0001
CAN Cable	703912-0001
USB-RS485 Cable	703914-0001
RS485 Cable	703917-0001
NEMA2K – CAN Cable	703918-0001
LIN Cable	703922-0001

\* Required to connect to AppBox or Distribution Box

## 2.0 Installation of the Distribution Box

Listed below are the steps to install the Distribution Box to be used with an AppBox:

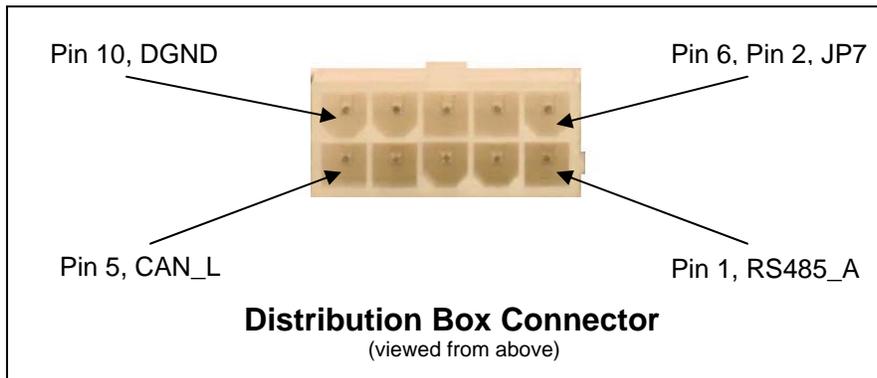
1. Remove **ALL** power from the AppBox
2. Remove any communications cable attached to the J2 connector on the AppBox
3. The user should enable all interfaces they want to use with the Distribution Box by setting the appropriate switch positions inside the AppBox. Refer to the user's guide for the AppBox you have.
4. Attach either end of the AppBox Cable (part#: 703923-0001) to the J2 connector on the AppBox.
5. Attach the other end of the AppBox Cable to one of the connectors on the Distribution box. You can use any of the 4 connectors on the Distribution Box. All four connectors present the same signal image. The diagram below show the Distribution Box connected to the AppBox D21



6. Attach any communications cables (CAN/RS385/LIN) to the Distribution Box
7. Apply power to the AppBox

### 3.0 Distribution Box Connectors

The Distribution Box has 4 four connectors. Each of these connectors is an signal image of the J2 connector on an AppBox. The diagram below shows the pin locations on each of the four connectors.



The following table shows the signals present on the Distribution Box connectors.

Distribution Box Connector	
Pin number	Signal name
1	RS485_A
2	RS485_B
3	DGND
4	CAN_H
5	CAN_L
6	VDD_5V if JP7 shorted
7	DGND
8	LIN_PWR In
9	LIN
10	DGND

## 4.0 Distribution Box Jumpers

The Distribution Box has 4 four connectors. These 4 connectors can be configured with jumpers to split or isolate the 4 connectors into 2 different banks. The requirement to split or isolate signals depends on the user's application. The two banks are defined as J1-J2 (A bank), and J3-J4 (B bank). The connection of signals from A bank to B bank is done through a jumper header inside the box, J5.

To split or isolate the two banks the specific jumpers will have to be removed. This is done by opening the enclosure and removing the jumpers. This jumper header is enclosed to prevent inadvertent contact or shorting.

The "factory ship" configuration is all jumpers are shorted or installed. In this configuration all signals are on all connectors.

The table below shows the signals on the jumper header.

J5, Distribution Box Jumpers			
Pin number	Signal name	Pin number	Signal name
2	A_POWER	1	B_POWER
4	A_LIN_PWR	3	B_LIN_PWR
6	A_LIN	5	B_LIN
8	A_RS485_A	7	B_RS485_A
10	A_RS485_B	9	B_RS485_B
12	A_CAN_H	11	B_CAN_H
14	A_CAN_L	13	B_CAN_L

## 5.0 Distribution Box Physical Characteristics

The physical characteristics of the Distribution Box are described below:

Distribution Box (without mounting flange): L: 4.13 in. (10.5 cm.) x W: 2.65 in. (6.8 cm.)

Distribution Box (with mounting flange): L: 5.0 in. (12.0 cm.)

Distribution Box (maximum height): H: 1.2 in. (3.0 cm.)

Weight of Distribution Board: 0.191 lb / 3.056 oz / 0.087 kg

Operating Temperature: -0C to +70C

Storage Temperature: -40C to +85 C

Relative Humidity: 0 to 90% (non-condensing)

Maximum power consumption of controller board: No power required

RoHS Compliant: Yes

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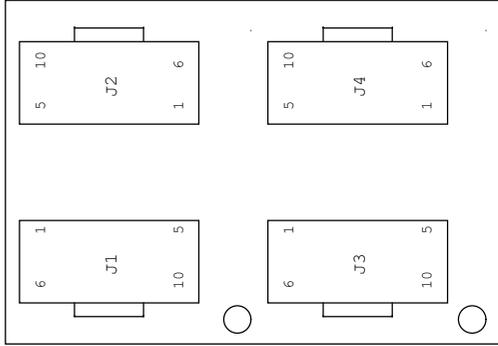
## 6.0 Distribution Box Mechanical Information

Mechanical information for the Distribution Box can be found at the following web page:

<https://www.serpac.com/wm-series/wm021i.aspx>

## 7.0 Distribution Box Schematics

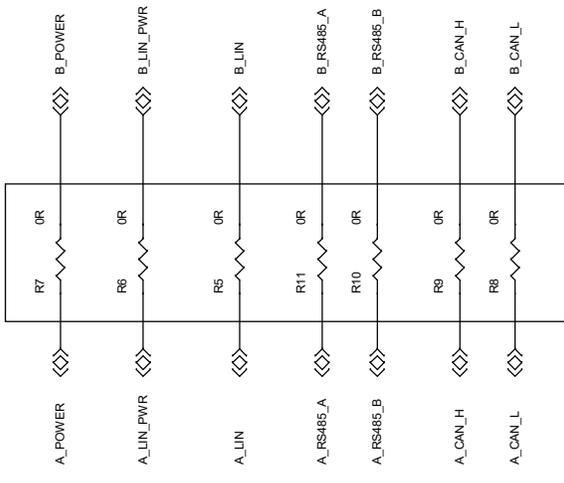
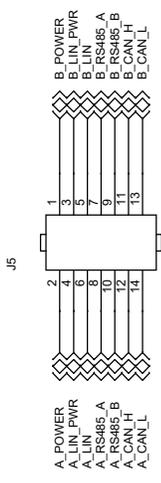
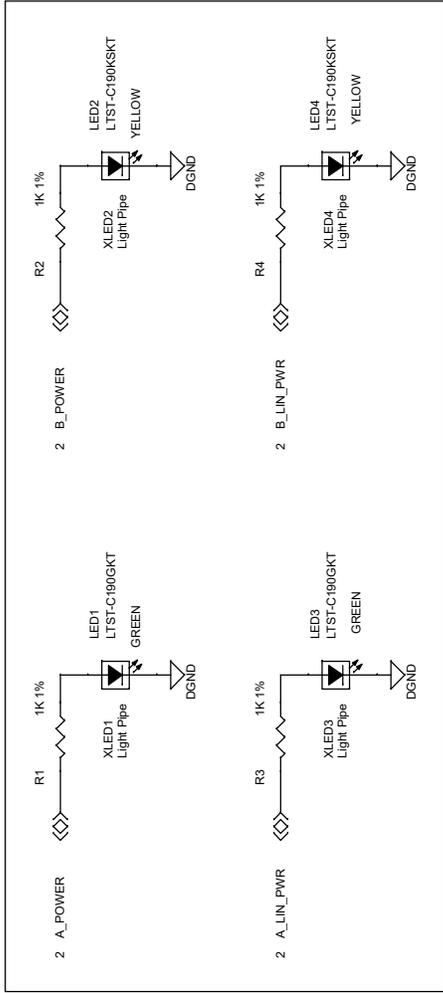
The following pages contain the schematic for the Distribution Box.



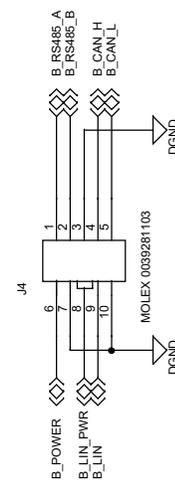
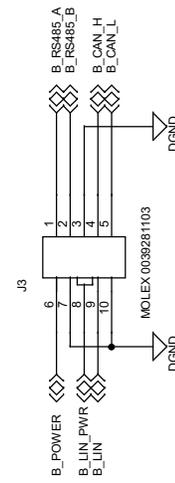
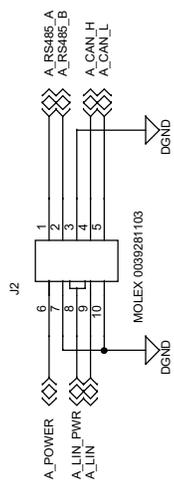
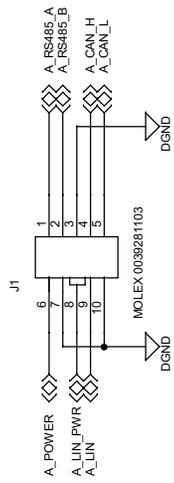
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Spectrum Digital, Inc  
PO Box 1559  
Sugar Land, TX. 77487-1559

Web site: [www.spectrumdigital.com](http://www.spectrumdigital.com)  
Sales: [sales@spectrumdigital.com](mailto:sales@spectrumdigital.com)  
Support: [support@spectrumdigital.com](mailto:support@spectrumdigital.com)

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