Quick Setup Guide

Connecting Load Cells to an **RS-485 Network**

REV0

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1. GUIDE OVERVIEW

This quick setup guide provides a high-level overview of how to connect multiple load cells to an RS-485 bus. It is intended to help users understand the basic network topology and initial connection concept.

This document does not cover the full command set or advanced configuration options. For detailed communication commands, parameters, and advanced features, please refer to the SPD Manual.

In addition, this guide demonstrates how to connect load cells to a PC using DOP4 software. It covers only the basic steps, functions, and windows required to connect up to four load cells in DOP4. Detailed instructions on DOP4 software features and advanced functions are available in the DOP4 User's Manual

2. RS485 Wiring Diagram

2.1 Load cell color code & pin configuration

Four wire RS485

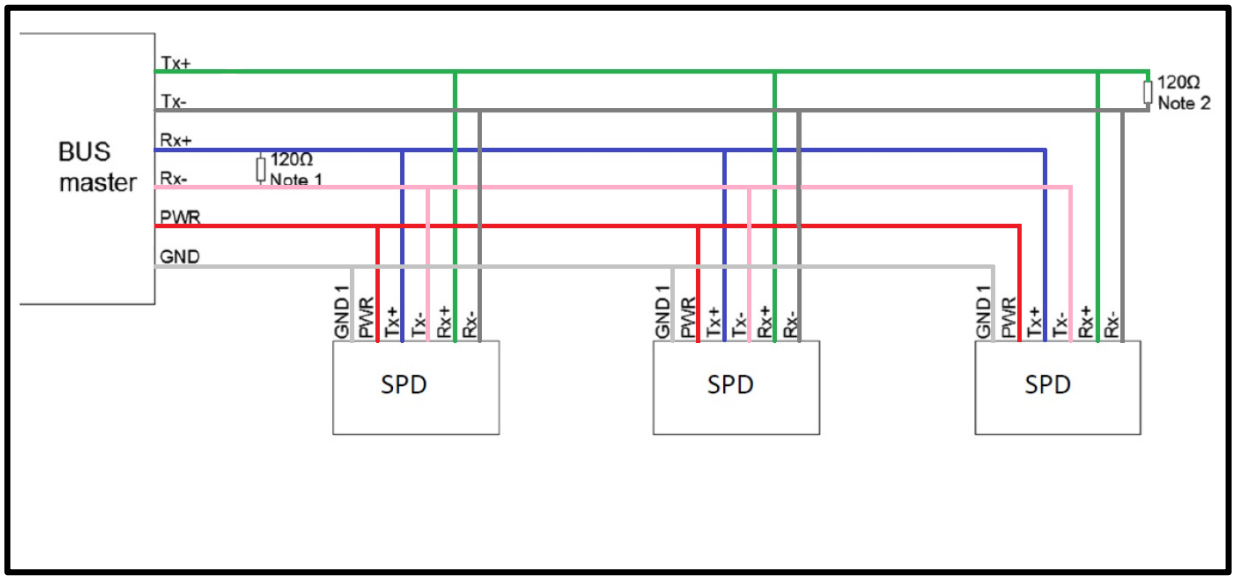

Figure 1

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2.2 2-Wire Configuration

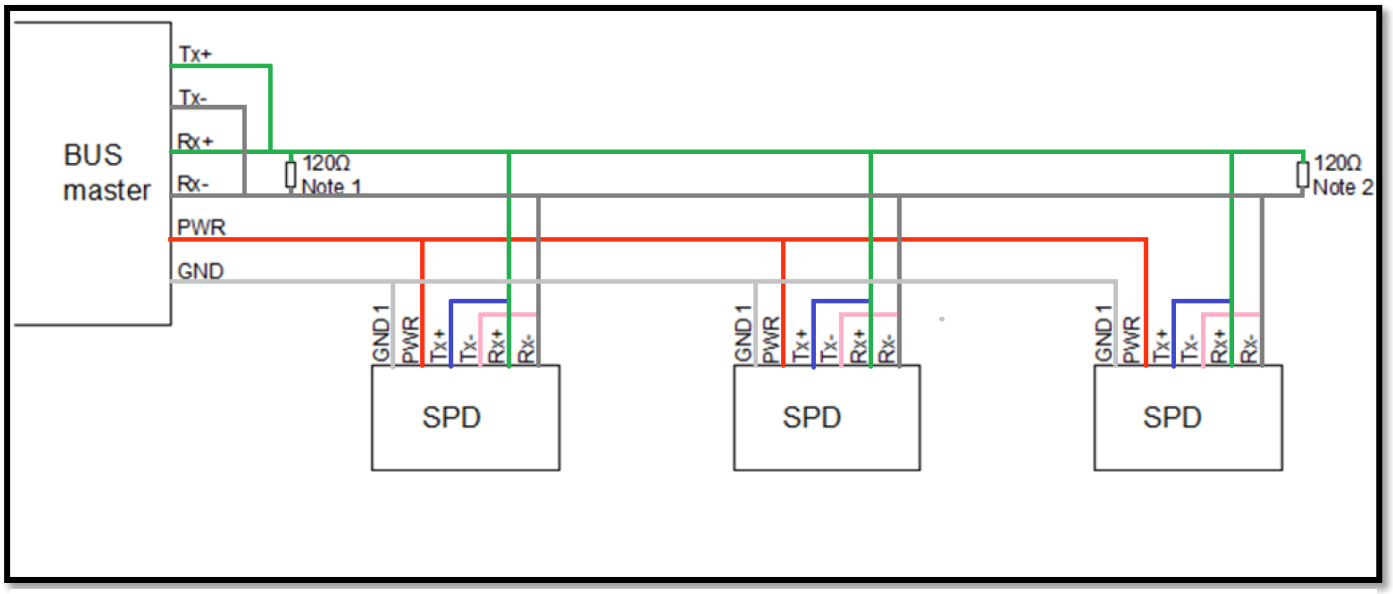

Figure 2

STANDARD PIN CONFIGURATION

Pin No.	RS485 & RS422	Color
1	GND1	White
2	PROGRAM	Brown
3	Rx+	Green
4	TRIGGER INPUT (IN0)	Yellow
5	RX-	Gray
6	TX-	Pink
7	TX+	Blue
8	PWR+ (+12 to 24 VDC)	Red
shell	Shield	Clear

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3. Setup Guideline

Before Connecting to the Bus

- Ensure that each load cell is assigned a unique sub-address.
  (The factory-assigned load cell sub-address is indicated on the load cell label under the AD field.)

Communication Parameter Setup

- All load cells connected to the same RS485 bus must use the same baud rate.
- Load cells must be configured in Half-Duplex mode.
- Transmit delay should be configured based on trial results, typically 5–50 ms.
  This setting is especially important when communicating with a PLC or HMI.

Note: The Streaming command is not available in Half-Duplex mode.

Configuration Using DOP4 Software

To view readings from all load cells simultaneously in DOP4:

1. Establish working RS485 Serial connection between PC & load cell network
2. Open DOP4 software
3. Navigate to the Device selection window
4. Select the Hardware as Serial COM, Port, Baud rate, Sub address and set to channel and then Exit.
5. DOP4 Overview Window
6. Open the Connection Dialog window.
7. Navigate to the Channel Sum window.
8. Disable the Stream option.

This configuration allows all load cell readings to be displayed simultaneously in the DOP4 software.

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3.1 Device Selection

From the “Device Selector” dialog, Load cells to be used in DOP 4 software are selected.

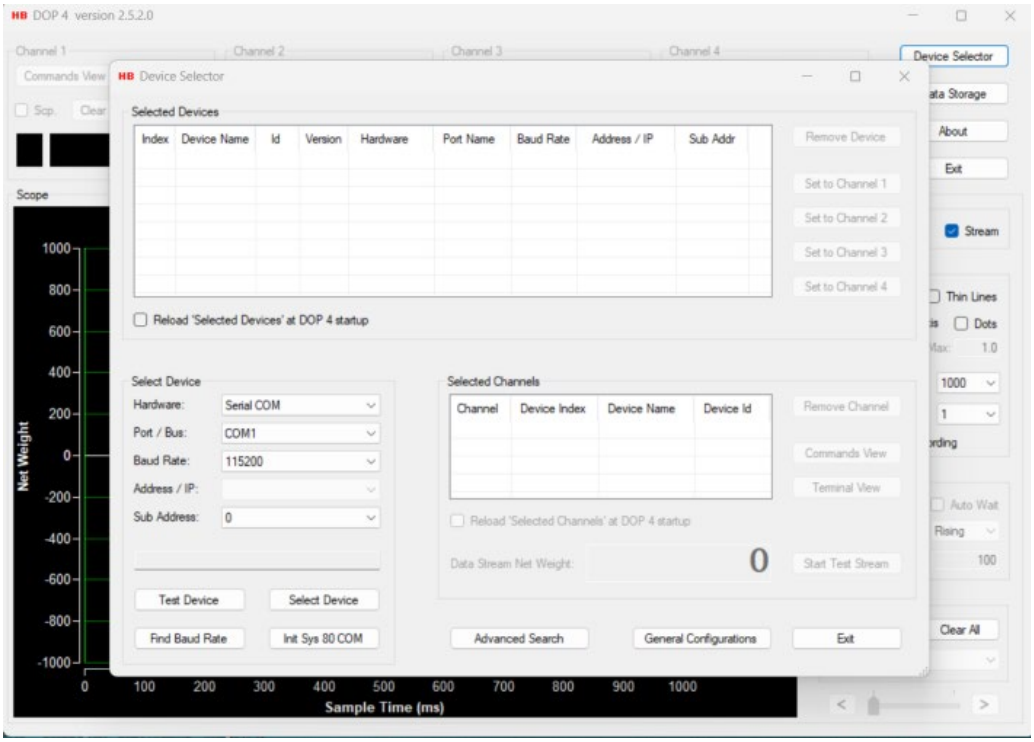

Figure 3

Select load cells and assign them to channels to be used in the main
Window, calibration, and measurement dialogs.
Up to 4 channels are available for assignment from up to four load cells.
Functionality for testing cell connections, such as:

- Button “Test Device”: to use in case the COM port setup / speed is known.
- Button “Find Baud Rate”: to use in case the baud rate of COM port is unknown.

An Advanced Search dialog to search for connected devices by setting up different search criteria for different device interfaces are available.
A General Configurations dialog is available for setting up Tool Tips functionality and behaviors for the application in general.

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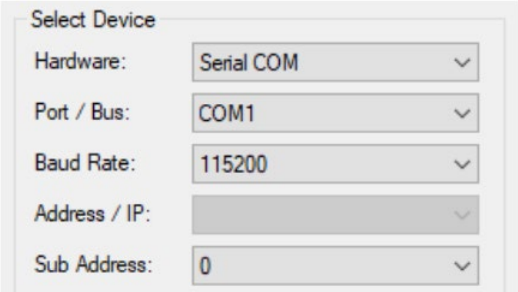
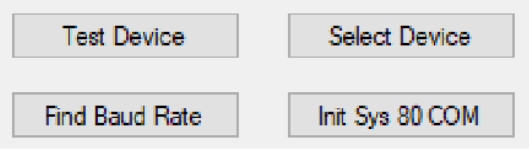
3.2 Selecting & assigning G4 Digital load cell

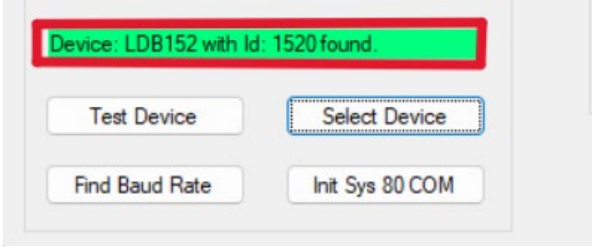
From the “Select Device” group box, select the Communication parameters for communicating With an G4 load cell.



Select the G4 load cell by selecting the “Select Device” Button



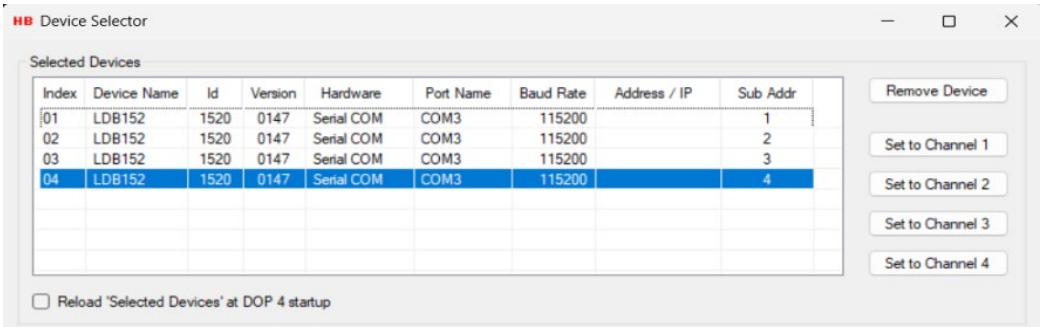
If the load cell is found, the digital board name & ID will be displayed in the device status text field.



When checking the “Reload ‘Selected Devices’ at DOP 4 Startup” check box, the selected loadcell will be Remembered for the next DOP 4 application startup.

At next startup, just select a channel for the device if not already done and the “Device Selector” dialog can be exited.

From the “Selected Devices” group box, select one or more of the four “Set to” buttons.



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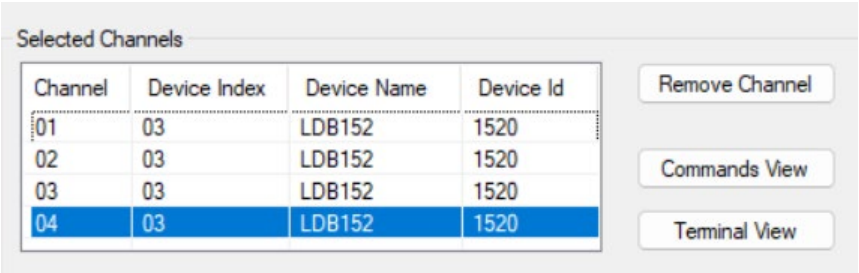
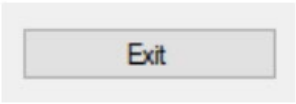
The selected load cell
And the associated
Channel can now be seen
In the “Selected
Channels” group box.





Select the “Exit” button to leave the “Device Selector dialog and enter the Main menu

3.3 Main Overview Window in DOP4 Software

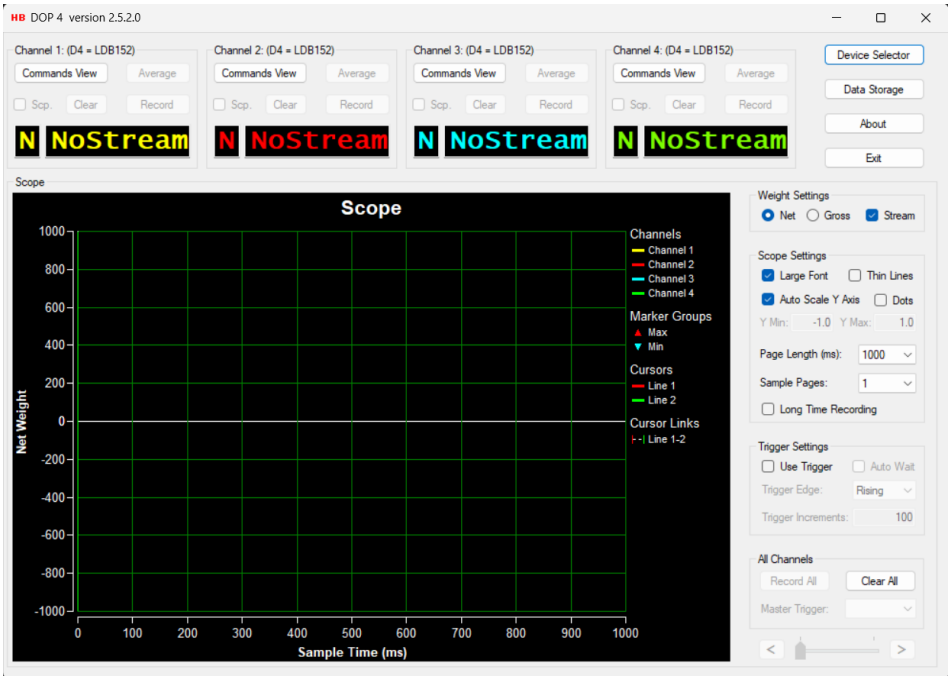


Figure 4

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3.4 Navigate to the Channel Sum Window

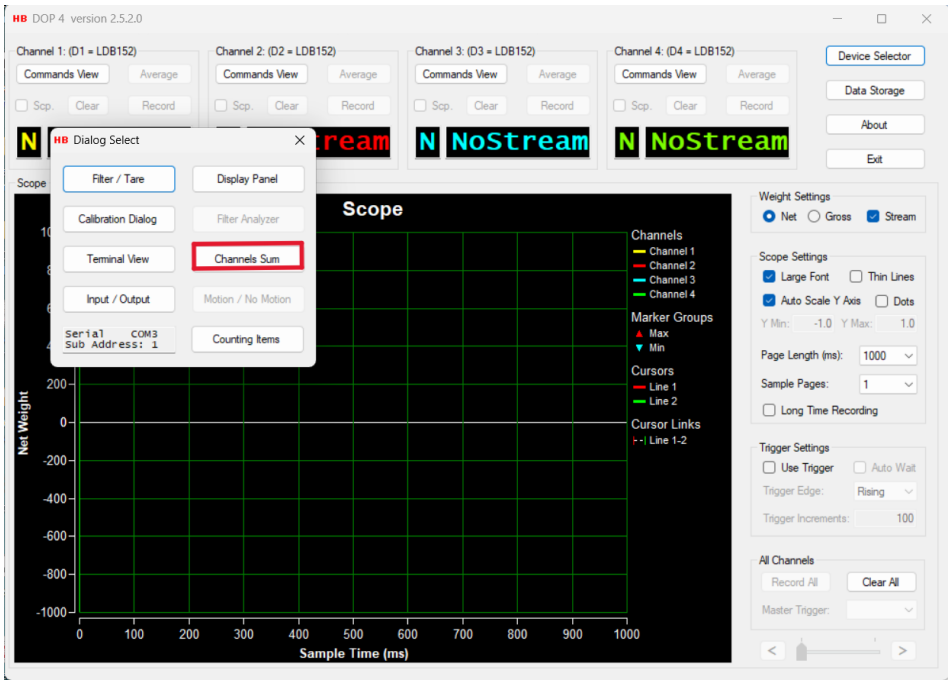

Figure 5

3.5 Disable the Stream option.

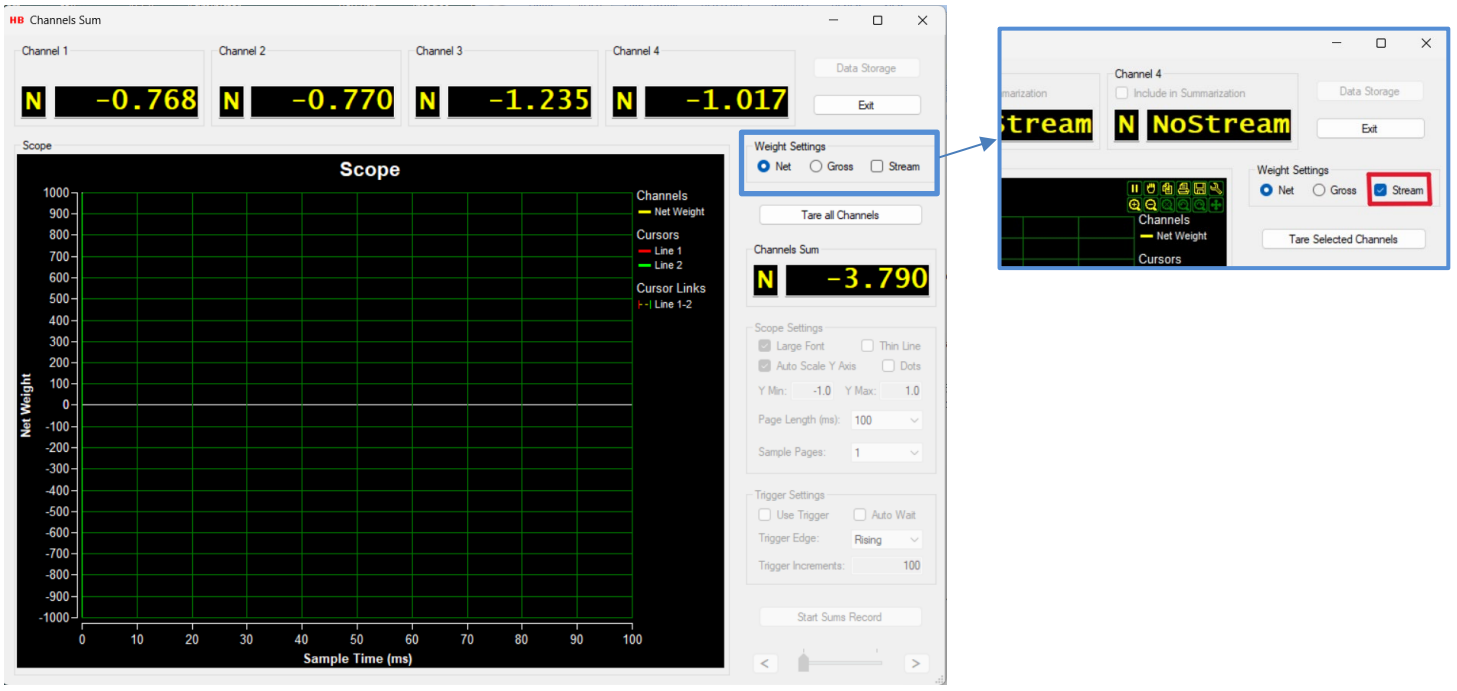

Figure 6

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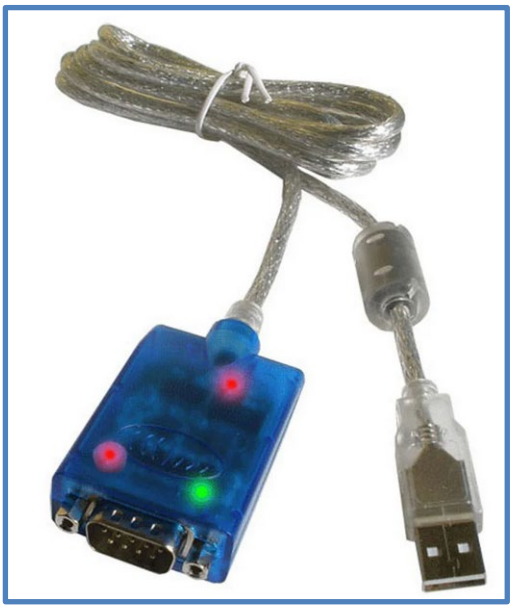
4. Annex

4.1 RS485 to USB converters

RS485/422 to USB converter cable

G4 P/N :- 159.2-M12

XS-890



https://www.usconverters.com/usb-rs485-converter-xs890

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