



HOISTNET GATEWAY

Model HNG100, Version 1+



Installation and User Manual

Revision 04 – July 2022

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1 OVERVIEW

The HoistNet GateWay makes HoistNet data available to other equipment by 4-20mA 0-10V or RS485 interfaces. It can connect to up to two HoistNet sources and is most commonly used to display the load on a remote control handset..

2 SPECIFICATIONS

2.1 Physical Specifications

Overall length (mm):	115
Overall width (mm):	100
Overall height (mm):	23
Weight (kg):	0.12
Mounting:	30mm DIN Rail

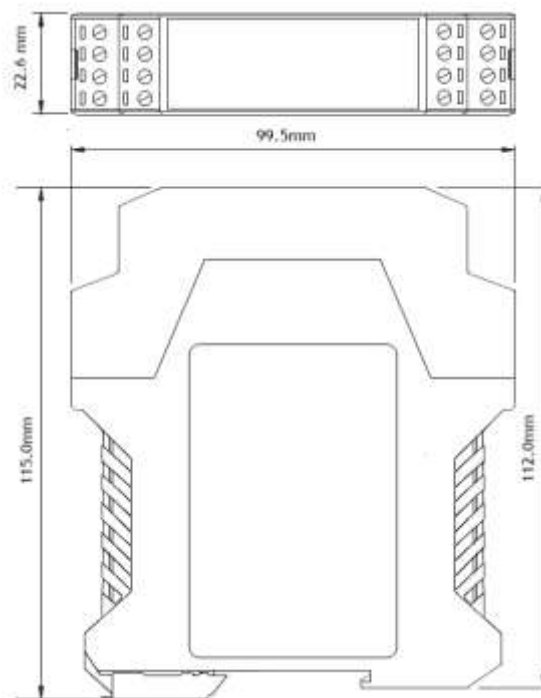


Figure 1: Case Dimensions



2.2 Electrical Specifications

Parameter	Description	Min	Typ	Max	Units
V_{in}	Supply voltage	24		250	VAC
I_{in}	Supply current	7	8	12	mA
A_{imin}	Analogue channel minimum output current	3	3.5	4	mA
A_{imax}	Analogue channel maximum output current	22	25	28	mA
$V_{isolate}$	Isolation on analog and digital outputs		2000		V
$V_{headroom}$	Voltage drop across analog output	3	5	8	VDC
	Allowable operating temperature	-25		85 ^{Note1}	°C

Note1: Extended operation at maximum temperature will reduce the life the device.

2.3 Communication Specifications

Communications between the device and a host is usually via a Bluetooth radio link. The Bluetooth device name will be set to the Crane ID, the ***PIN is 0000***.

For more details on the communication protocol used to communicate with the HoistNet GateWay, contact support@caswa.com.



3 INSTALLATION DETAILS

3.1 Prior to Installation

Before installing your HoistNet GateWay unit visually inspect the device and check that:

- (a) the type of input marked on the front of the device is appropriate for your application;
- (b) the case is not damaged and fits together securely;
- (c) the terminals are secure;
- (d) the terminal numbering is as per the following diagram.



Figure 2: Terminal Positions

NB: As each block of 4 terminals can be removed (for installation) it is important that they be reinstalled in the positions shown.

Terminal	Function	Notes
1	0V	
2	24-240V AC/DC	
3	Tare 1	Connect to 0V to tare
4	Tare 2	
5	4-20mA - (Chan 2)	
6	No Connection	
7	4-20mA + (Chan 2)	
8	No Connection	
9	4-20mA - (Chan 1)	
10	4-2mA + (Chan 1)	
11	RS485 Gnd	Isolated from other terminals
12	No Connection	
13	A	
14	B	
15	Z	
16	Y	



3.2 Wiring Diagrams

3.2.1 Using Analog Outputs

The Analog Outputs are fully isolated and can be wired up as either sourcing (See **Figure 3**) or sinking outputs (See **Figure 4**).

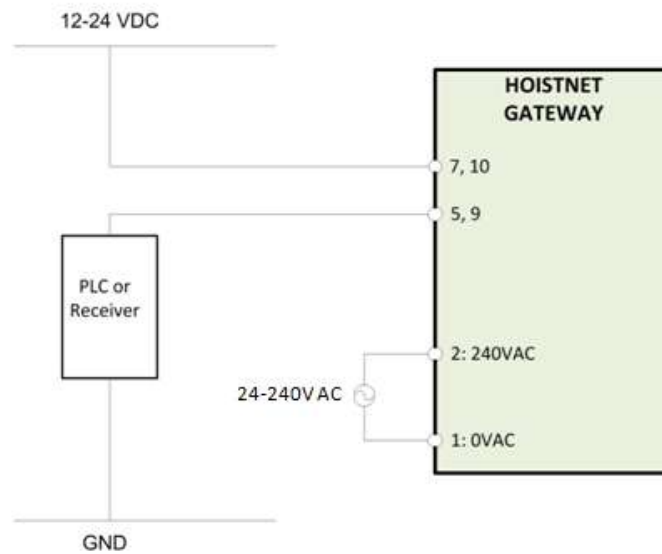


Figure 3: Connecting the Analog Outputs as Sourcing Outputs

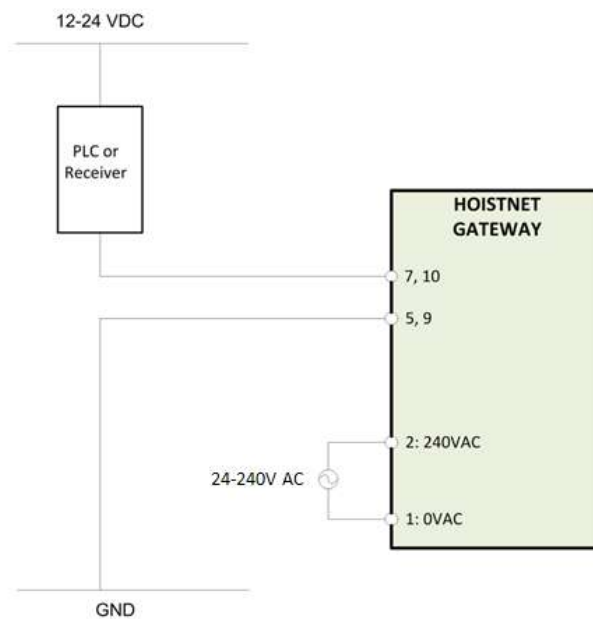


Figure 4: Connecting the Analog Outputs as Sinking Outputs



3.2.2 Connecting RS485 Outputs

Connect output RS485 terminals, marked Y and Z, on the HoistNet Gateway (terminals 16 and 15 respectively) to inputs A and B on the receiving device.

Note: Terminals 13 and 14 marked as A and B on the HoistNet GateWay are RS485 inputs.

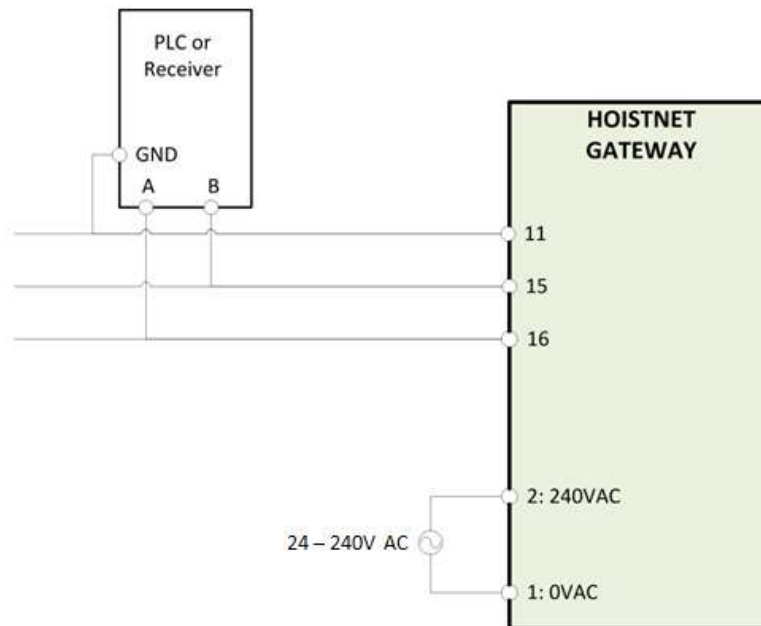


Figure 5: Example of connecting the HoistNet GateWay to a RS485 receiver.

4 COMMISSIONING DETAILS

HoistNet GateWay is designed to be commissioned using a laptop computer. You will need a CASWA LINK-2 Bluetooth Modem and the Field Service Utility (FSU) software application loaded on a laptop.



Link-2 Bluetooth Modem



4.1 Installing and Launching the FSU Application

4.1.1 FSU Program Installation

Ensure that your computer is switched on, connected to the internet and that the minimum required software versions are installed (see Appendix A for minimum system requirements). Ensure that the LINK-2 modem is installed and that the drivers have loaded.

4.1.2 Installing the FSU application

The latest FSU software can be downloaded from the product page <https://www.soledigital.com.au/HoistNetGateway.html> and should be checked periodically for updates.

4.1.3 Launching the application

Double click on the FSU program icon:




4.2 Connecting to the Device

The FSU will scan for Soledigital devices. This process takes approximately 10 seconds, when complete a list of all devices within range will be displayed.





The HoistNet GateWay icon looks like this:

If the desired HoistNet GateWay unit is not found, ensure it is powered up and press  to repeat the search.

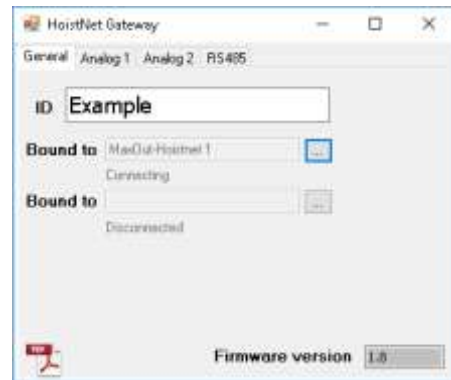
NB: The Bluetooth link between the Laptop using a Link-2 and a HoistNet GateWay has a range of approximately 90m.

Double click the HoistNet GateWay you wish to configure to establish a connection.

4.3 HoistNet GateWay Configuration Screen

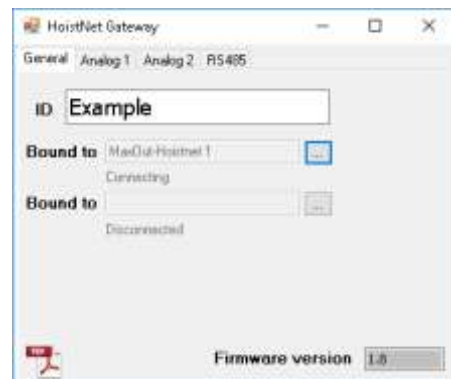
This screen shows the:

- Device ID
- Names of HoistNet devices whose loads are being transmitted and their connection status;
- Current firmware version operating on the device.
- A link to this user document.



4.3.1 Setting the ID

Type in a name that will be used to identify this device in the FSU. This must be 18 characters or less.

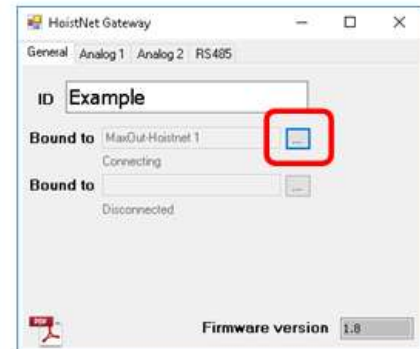




4.3.2 Setting/Changing the HoistNet Sources

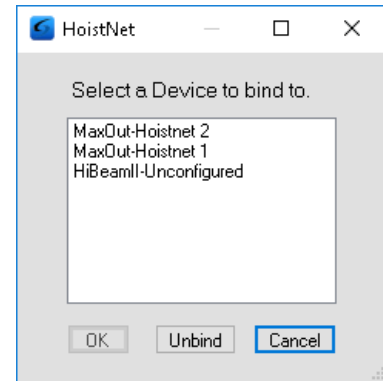
HoistNet GateWay devices obtain their load signals wirelessly from other HoistNet enabled devices.

To select/change a HoistNet load for the first input press the top <...> button:



A box will appear asking you which HoistNet enabled device you want to connect to:

Select the device that has the load signal to be used and press <OK>.

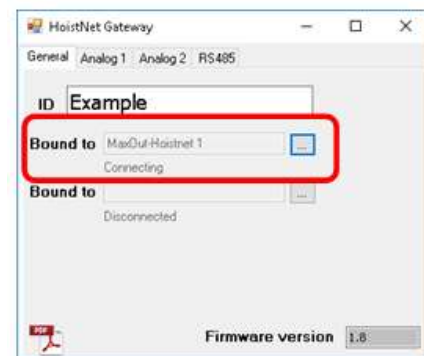


If you select a LiftlogXL, another window will popup asking you which hook to connect to (Main, Aux or Combined Load). Select the desired option and press <OK>.

The popup window(s) will close and you will be returned to the General Configuration Screen.

The bound device will now be shown in the first 'Bound to' field and will indicate that its status has changed to **Online**.

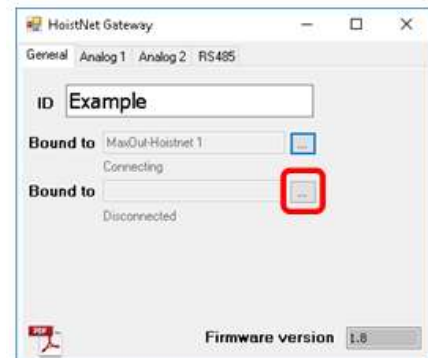
NB: You will need to ensure that the originating HoistNet load signal has been calibrated correctly and is powered on.





If you want to bind the second input, repeat the process by pressing the lower <...> button:

To unbind a HoistNet GateWay input from a HoistNet device, or to change the bound device, press the <Bind> button on the Load screen and then select <Unbind> on the popup box. Nb, you must unbind the second source before unbinding the first.



4.4 Configuring Analog Outputs

A HoistNet GateWay can convert the HoistNet load sources into analog 4-20mA outputs. The behaviour of each output needs to be configured using the 'Analog 1' and 'Analog 2' tabs for the first and second source respectively.

To configure the 4-20mA output signal, two parameters are required:

- (a) The required mA output value corresponding to a 0kg load; and
- (b) The increase in mA signal output per tonne of load.

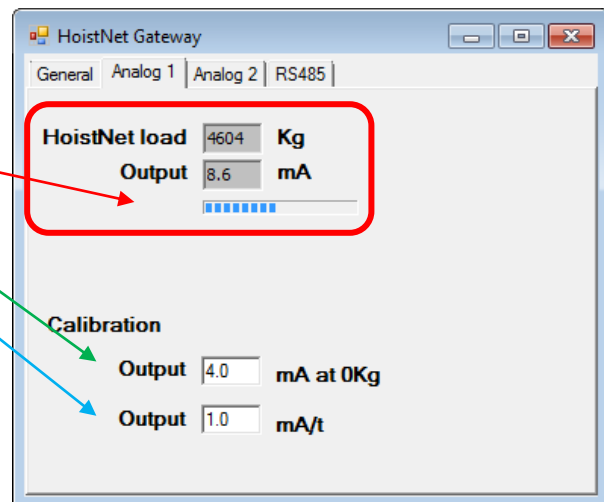
To calibrate the first 4-20mA output, press the 'Analog 1' tab to bring up the following screen:

The Hoistnet load in kg and respective mA output is shown at the top of the screen. The percentage of the 4-20mA output range being utilised is shown in the signal bar.

To configure the 0kg signal level, enter the expected mA level in the top Output field.

Enter the mA/tonne in the lower Output field.

If you are using a second HoistNet input, press the Analog 2 tab and repeat the process for the second output.





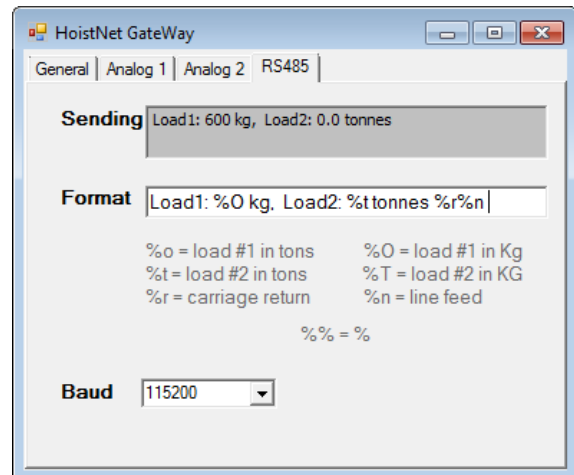
4.5 Configuring RS485 Outputs

One or both load signals can also be output via a RS485 connection. To enable this, select the 'RS485' tab to bring up the following screen:

This screen allows you to enter the string to be output via RS485 and shows the actual text being sent..

Define the required RS485 serial format in the '**Format**' field incorporating the required loads using the following codes:

%o = first load in tonnes	%O = first load in kilograms
%t = second load in tonnes	%T = second load in tonnes
%r = carriage return	%n = line feed



Preceding or succeeding text can also be added. Note that to incorporate a percentage character, you need to enter two %% characters.

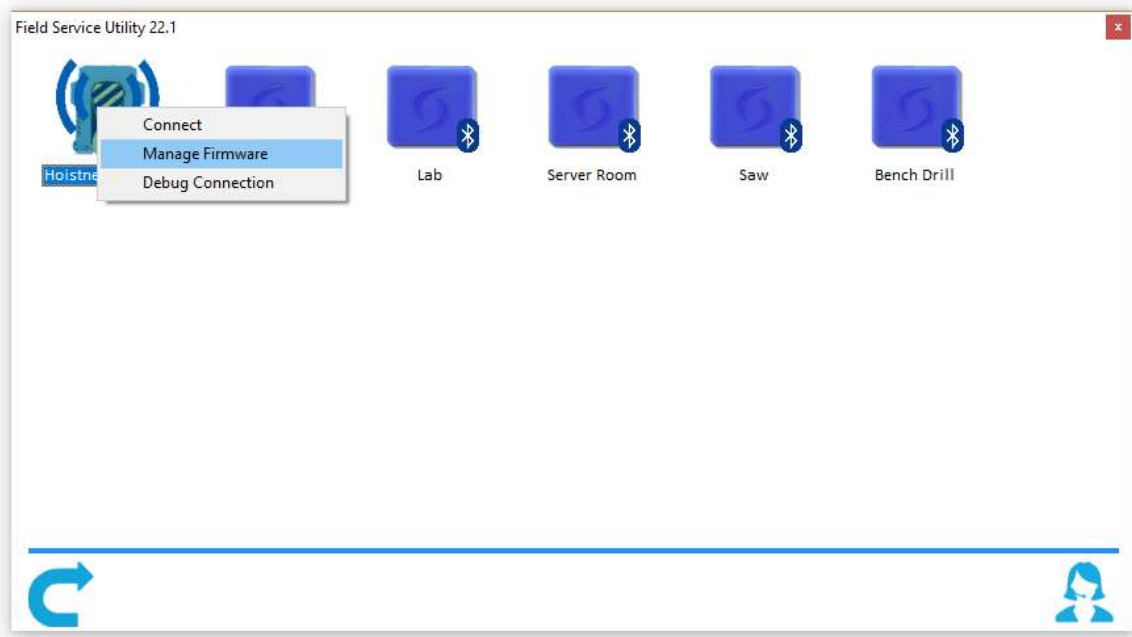
The resulting string is visible in the 'Sending' field.

It is also important to define the communication speed by selecting the speed from the 'Baud' selection box. This must match the speed set on the device that will be using the RS485 information.



5 Updating Firmware

To check and update the firmware of a Hoistnet Gateway, right click on the Hoistnet Gateway Icon within the FSU discovery screen and choose <manage firmware>.



A new window will open. The FSU will establish a connection, report the current firmware version of the device, and list all available updates. If there are no new firmware versions available there will be no selections available to pick.





Selecting an available update will cause the <Apply Firmware> button to show. Click the <Apply Firmware> button to begin the firmware update.



A progress bar will indicate the firmware update progress.

DO NOT switch off the computer or remove the LINK2 modem until this is complete – doing so may leave the HoistNet GateWay in an unrecoverable state.

6 ROUTINE MAINTENANCE

There is no routine maintenance for this device.



7 TROUBLESHOOTING

Fault	Cause	Fix
Unable to connect to GateWay unit from FSU	GateWay or FSU are busy	Power cycle the crane.
	Incorrect wiring	Check that wiring is as per section 3.2. Check that removable terminals have been reinserted into their correct positions as shown in Figure 2.
	Pluggable terminals not seating correctly.	Replace pluggable terminal and rewire the associated terminals.
The GateWay is reporting no load from a remote device	Remote Device is not communicating	Power cycle remote device then power cycle the HoistNet Gateway
GateWay not connecting to remote device	Remote device not responding to connection request	Power cycle both devices
Analog Output current "Maxing out"	Insufficient excitation voltage.	Ensure at least 8V Headroom for Gateway in current loop
No current in analog output loop	Reverse polarity	Check the wiring to the Gateway

APPENDIX A: FSU SYSTEM REQUIREMENTS

The minimum requirements for operating CASWA's Field Service Utility (FSU) and Link-2 Bluetooth modem are:

- Laptop computer running Windows 7 or later;
- One Spare USB port;
- Microsoft .NET framework 4.2 or later.