



# LIFTLOG™DX CRANE DATA LOGGER



## Installation and User Manual

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## 1 OVERVIEW

Liftlog™DX is a remaining life and load limiting data-logger for cranes that logs all hoisting motions as well as longitudinal and transverse travel. Accompanying software takes the wirelessly downloaded data and applies AS2550.1-2011 to calculate the remaining life of the crane.

Liftlog™DX is a drop in replacement for a traditional Liftlog™ unit and is wired identically.

You can identify Liftlog™DX either by (a) its Liftlog™DX stickers (first batches do not have these) or (b) Liftlog™DX units with serial numbers greater than 16-2xxx (e.g. 16-2001, 16-3024, 17-1001 etc).

It is important to note that Liftlog™DX units require version 17.1 or higher of the FSU software. This was released on 30/03/2016. Earlier versions of the FSU will not be able to communicate with Liftlog™DX units.

***For a full instruction and tutorial video on how to install your Liftlog and Load Cell please click here: [https://youtu.be/O\\_43WD2UiY8](https://youtu.be/O_43WD2UiY8)***





## 2 SPECIFICATIONS

### 2.1 Operational Specifications

Parameter	Description	Min	Typ	Max	Units
$L_{count}$	Maximum number of logged events			13,000,000	
$F_{log}$	Frequency of logged events			4	Hz
$T_{log}$	Duration of a logged event	1		30000	Sec

### 2.2 Physical Specifications

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

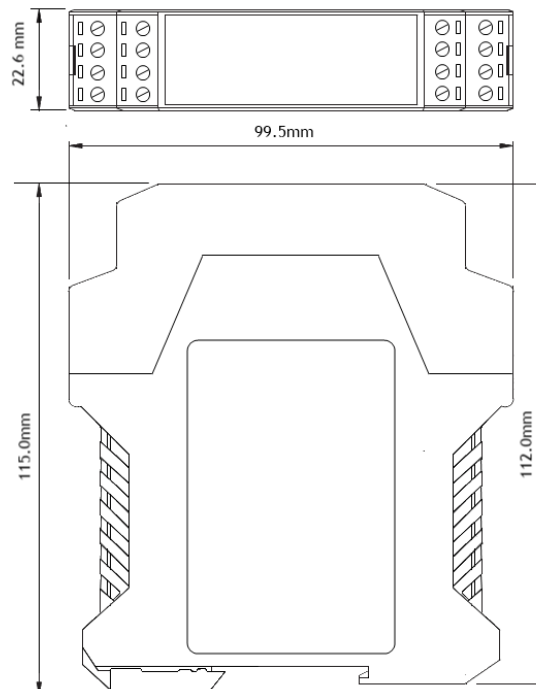


Figure 1: Case Dimensions



## 2.3 Electrical Specifications

Parameter	Description	Min	Typ	Max	Units
$V_{in}$	Supply voltage	24		250	VAC/DC
$I_{in}$	Supply current	10	15	30	mA
$V_{batt}$	Backup battery voltage	2	3	3.5	V
$I_{batt}$	Backup battery current		300	500	nA
$L_{max}$	Maximum voltage on a load sensing pin with respect to device gnd			3.3	V
$L_{fs}$	Load pin differential input for full scale reading	20	23	25	mV
$I_{input}$	Input current draw (up, down, north, south, east, west pins)	0.5	1	10	mA
$V_{motion}$	Max voltage for motion inputs	24		250	AC/DC
$V_{fault}$	Max voltage for fault output			250	V AC
$I_{fault}$	Max current sink by fault output			3	A
$P_{fault}$	Max contactor inrush rating at 48V			200	W
	Allowable operating temperature	-40		85 <sup>Note1</sup>	°C

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

## 2.4 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 Liftlog™DX, see Appendix A.





### 3.2.2 Installation with a D-Cell Digital Load Cell

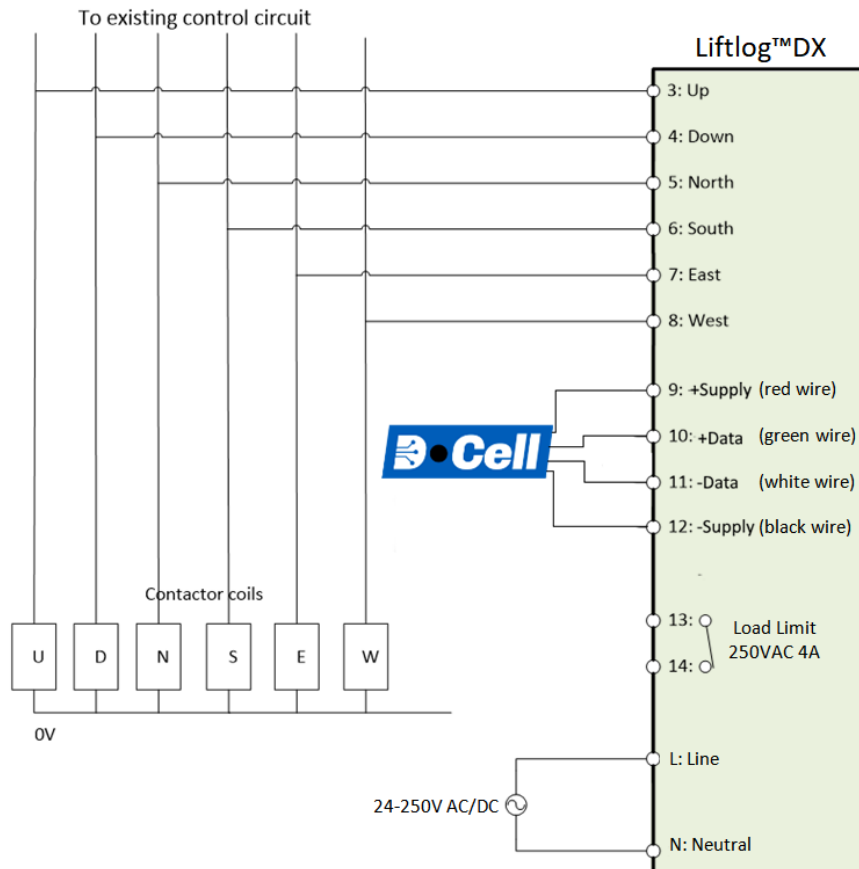


Figure 3: Connecting a DCell Digital Load Cell

NB: Output pins (13-14) are Normally Closed and rated for 250VAC 4A. They can be reconfigured to Normally Open using the FSU software. Inputs 15 and 16 are only used when connecting our TrafficLite product.

IMPORTANT, if you are changing a unit supplied as a DCell input to another input type, or vice versa then you may need to change the jumpers on the back of the PCB.



### 3.2.3 Installation with Strain Gauge Load Cell

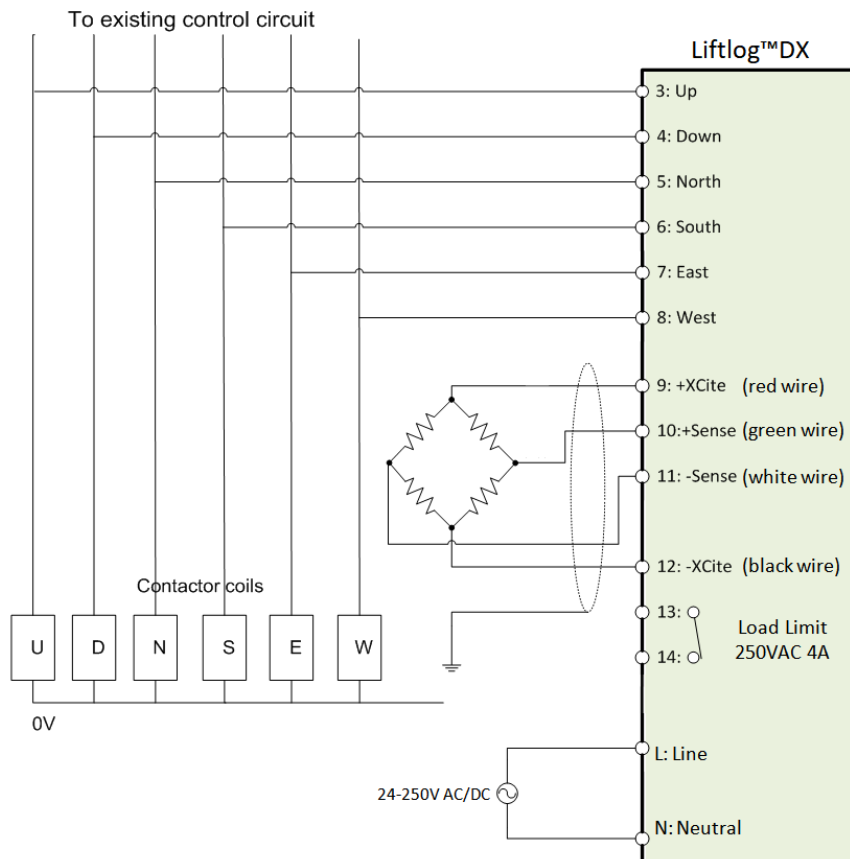


Figure 4: Connecting to a Strain Gauge Load Cell

NB: Output pins (13-14) are Normally Closed and rated for 250VAC 4A. They can be reconfigured to Normally Open using the FSU software.

IMPORTANT, if you are changing a unit supplied as a DCell input to another input type, or vice versa then you may need to change the jumpers on the back of the PCB.



### 3.2.4 Installation with a 4-20mA Load Output

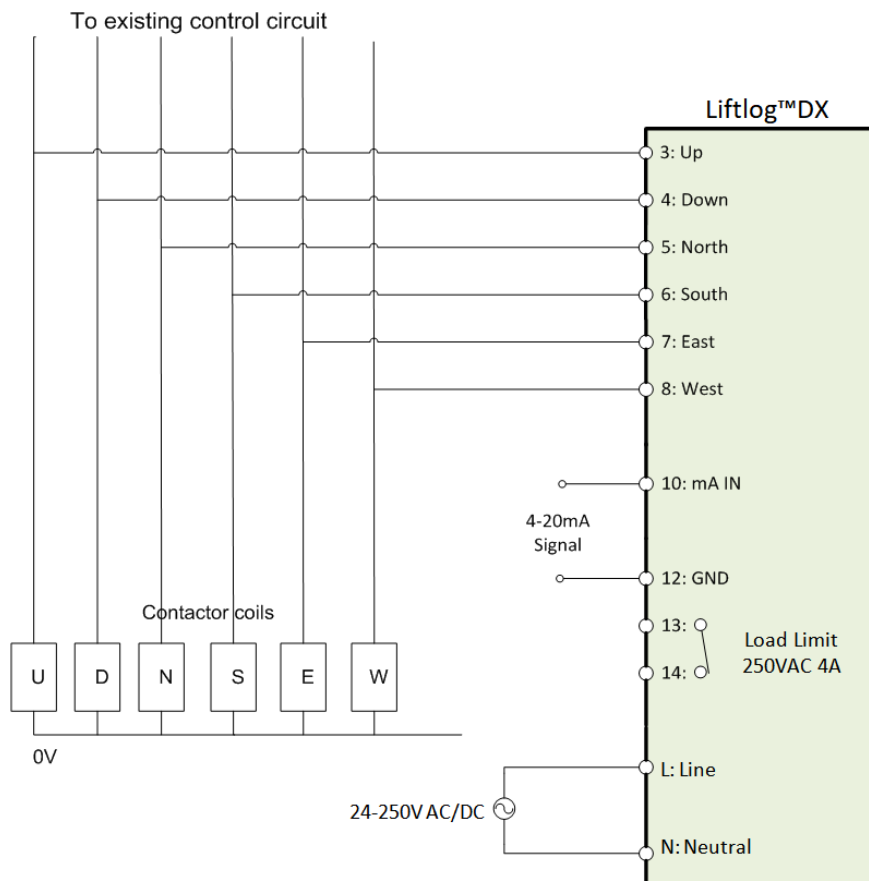


Figure 5: Connecting a 4-20mA Load Signal

NB: Output pins (13-14) are Normally Closed and rated for 250VAC 4A. They can be reconfigured to Normally Open using the FSU software.

IMPORTANT, if you are changing a unit supplied as a DCell input to another input type, or vice versa then you may need to change the jumpers on the back of the PCB.



### 3.2.5 Installation with a 0-10V Load Output

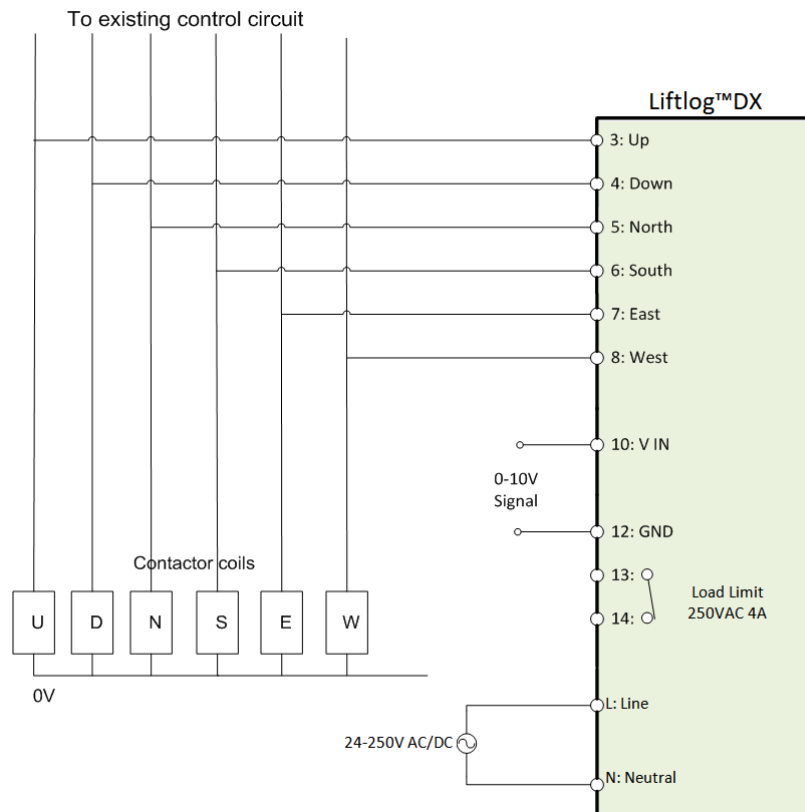


Figure 6: Connecting to a 0-10V Load Signal

NB: Output pins (13-14) are Normally Closed and rated for 250VAC 4A. They can be reconfigured to Normally Open using the FSU software.

IMPORTANT, if you are changing a unit supplied as a DCell input to another input type, or vice versa then you may need to change the jumpers on the back of the PCB.

#### For Konecranes ControlPro or SWF Novamaster

Liftlog Terminal	ControlPro Novamaster Terminal
Terminal: 10	Terminal: 34
Terminal: 12	Terminal: 35

#### For Konecranes or SWF Omni Control

Liftlog Terminal	Omni Control Terminal
Terminal: 10	Terminal: 28
Terminal: 12	Terminal: 29



### 3.2.6 Installation with a Q-Link Output (ABUS LIS)

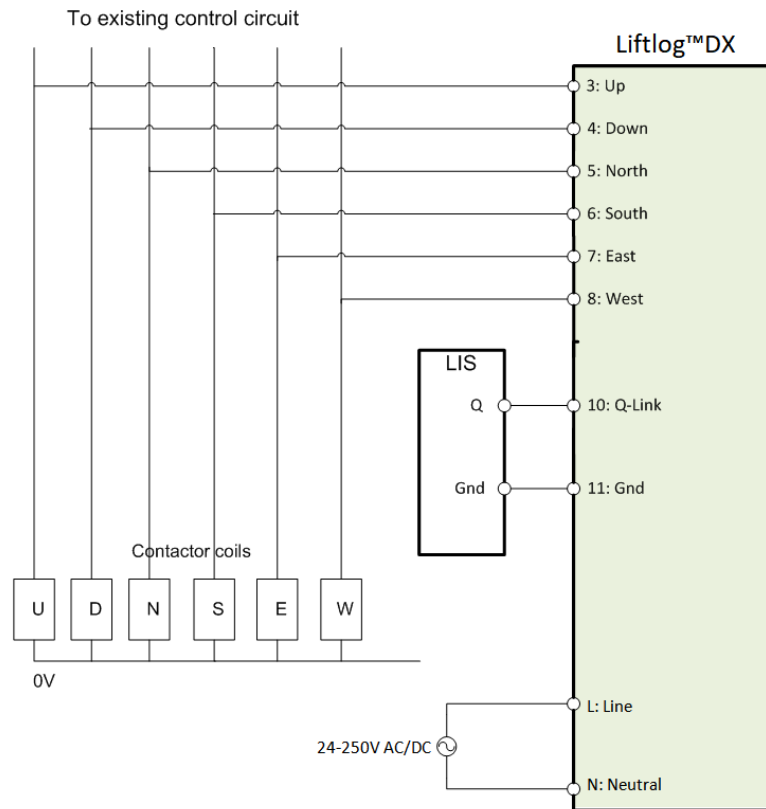


Figure 7: Connection to an ABUS LIS using a Q-Link 'Q' Output

**IMPORTANT**, if you are changing a unit supplied as a DCell input to another input type, or vice versa then you may need to change the jumpers on the back of the PCB.

**NB:** We do not recommend you use the Liftlog for a load limiting function when connected to an LIS as the LIS output is quite slow to change and this may allow peak loads much higher than the set point.



### 3.2.7 Installation with a F-Link Output (ABUS LIS)

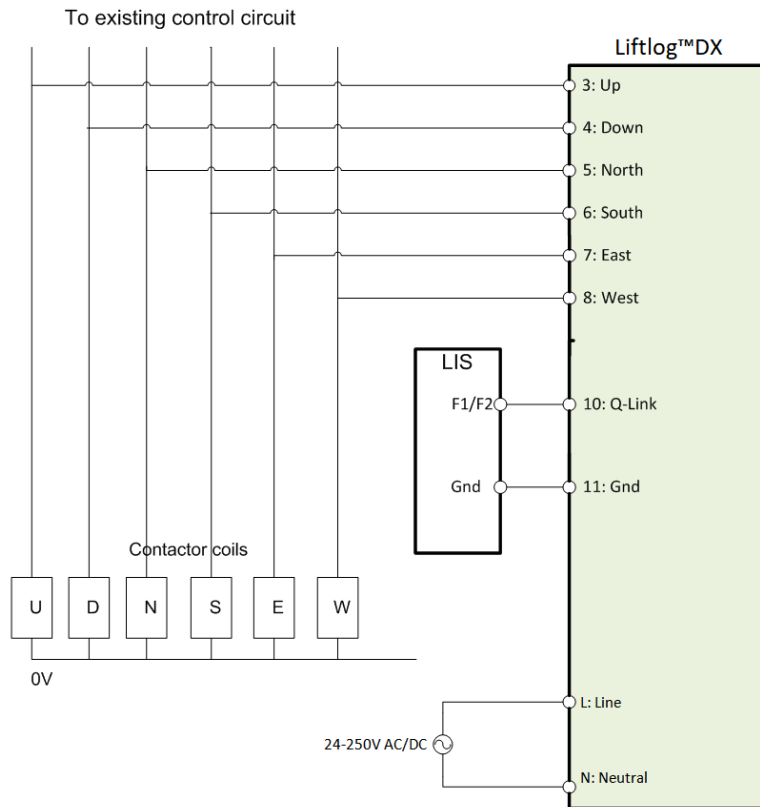


Figure 8: Connecting to an ABUS LIS using the Q-Link Frequency (F1/F2) Output

**IMPORTANT**, if you are changing a unit supplied as a DCell input to another input type, or vice versa then you may need to change the jumpers on the back of the PCB.

**NB:** We do not recommend you use the Liftlog for a load limiting function when connected to an LIS as the LIS output is quite slow to change and this may allow peak loads much higher than the set point.



## 4 INSTALLING A PRE-CALIBRATED LIFTLOG

Installing your Liftlog can be quite easy when following our step by step instructions, or by watching our installation video linked in section 1.

### 4.1 Power off the Crane

Once your crane has had the power turned off you will be able to open the Control Panel and begin the install.

### 4.2 Opening your Package

Inside your Liftlog bundle you should have the following items.

- The D-Cell Load Cell
- Saddle Clamp
- 2 Bolts with Spacers (underneath the LiftlogDX)
- Your LiftlogDX
- A Calibration Certificate.

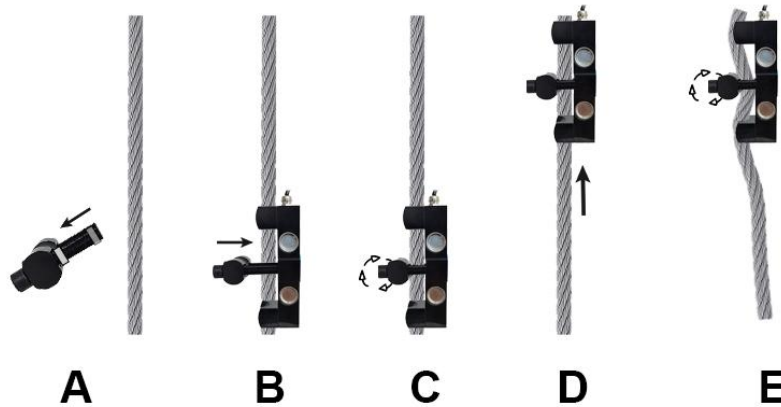
If you are missing any of these items please get in contact with the team at Sole Digital.

### 4.3 Installing the D-Cell Load Cell

Once again if you have a pre existing load cell, or are using a different brand of load cell please skip this part and move straight to step 4.4.

To begin place the bolts through the saddle clamp and then place the spacers on the opposite side to the top of the bolt.

- a) Now take the load cell body and place it onto the dead end of the rope as per the below diagram, then screw the two bolts and saddle into the load cell
- b) Tighten the bolts until Load Cell can freely stand on the rope
- c) then slide Load Cell up the rope until around 30cm from the top of the rope
- d) Now tighten the bolts clamping the spacers between the saddle block and the body of the load cell, the rope should be just touching the body of the load cell
- e) Once the Cell is in place route the cable from the top of the load cell back to the hoist panel and secure the cable in place with zip ties while maintaining separation from high voltage motor wires. The D-Cell cables should then be fed into the hoist panel and wired in using the instructions in step 4.5.



#### 4.4 Installing the Liftlog

The Liftlog has a metal clip with a spring along the bottom of the device, this can be used to secure the Liftlog along in the din rail inside the hoist panel. It is very important to make sure you place your Liftlog at least 1 inch away from large conductors and transformers to prevent electrical interference.

#### 4.5 Wiring the Liftlog

Some cranes may have slightly different wiring configurations, but for the vast majority of cranes the following instructions will be correct. If you have installed our D-Cell product as well this will be the first thing you will want to wire into the Liftlog. The D Cell wires should be trimmed to fit and then wired into the terminal blocks of the Liftlog. The Liftlog the terminal blocks pop out of the unit for easier installation, but it is very important to make sure the terminal blocks are reinserted into their original positions once wired up. For the D-Cell wiring you will want to wire up as follows:

	Red	Terminal 09
	Green	Terminal 10
	White	Terminal 11
	Black	Terminal 12

If you are using the Liftlog for load limiting, you will also need to wire in.

- Terminal 13 = Load Limiting IN
- Terminal 14 = Load Limiting OUT

In series with the up contactor coil circuit.

Next provide power to the Liftlog.

- Live = Terminal L
- Neutral = Terminal N



It is important that live and neutral go to the correct pins and that the supply voltage is the same supply voltage used to energise the contactors.

Next, wire in the direction signals. These tell the Liftlog which direction the crane is moving. Connect the A1 terminals of the contactors to the corresponding inputs on the Liftlog as follows:

<b>Terminal 3</b>	<b>=</b>	<b>Up</b>
<b>Terminal 4</b>	<b>=</b>	<b>Down</b>
<b>Terminal 5</b>	<b>=</b>	<b>North</b>
<b>Terminal 6</b>	<b>=</b>	<b>South</b>
<b>Terminal 7</b>	<b>=</b>	<b>East</b>
<b>Terminal 8</b>	<b>=</b>	<b>West</b>

If you are having trouble deciphering which A1 terminal is responsible for which direction the easiest way to test would be using a Multimeter, or simply powering on the crane and noting which contactor is triggered by each direction.

Now you should be able to power up the crane and begin the process of commissioning the device.



## 5 TARING THE DEVICE

**If you manually calibrated your Liftlog please ignore this step and move straight to Section 6 Commissioning Details.**

### 5.1 Taring the Device

If you have ordered a pre-calibrated Liftlog there should be a calibration certificate in your packaging, in the majority of new purchases our Liftlogs come Pre-Calibrated. When you power the Liftlog on you should see the OLED screen light up and reach this screen.

You should see this once you power the Liftlog on.

*The First Screen*



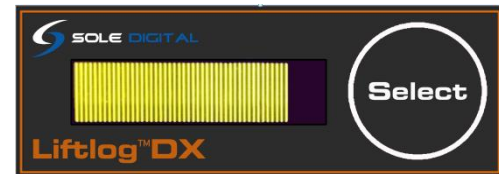
Now press the select button to scroll through the options until you reach the "TARE" screen, it will look like this:

*The Tare Screen*



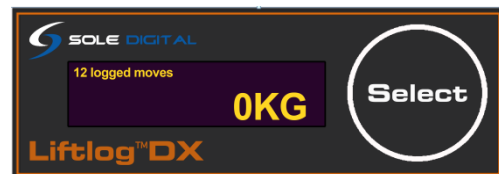
Once on the TARE screen press and hold the select button for 3-5 seconds, the screen should now have a progress bar that will scroll across the screen. This should take around 5 – 15 seconds to complete. You can remove your finger once the progress bar appears.

*The Status Screen*



Once the Crane has been tared the screen will return to the Status screen. Drive your crane up and down to make sure the Liftlog is registering moves. You should see the number of logged moves go up. If you don't see these screens change, you haven't pressed the Tare button for long enough.

Your install is now complete.



### 5.2 Load Limit Settings

Precalibrated Liftlog™DX units will have their limits preset to 110% of SWL. (If these need to be changed to any other value, connect to the Liftlog™DX using the FSU.)



### 5.3 Check Remaining Life

The Liftlog™DX will calculate the remaining life, based on the events stored in its onboard memory. This calculation will be updated once a week. If the memory is cleared, the used life will be reset to zero. For a more accurate history, you must upload the data to the web-based reporting system via the Sole Digital web portal. If you do not have a hyperlink for uploading data, please contact [tech@caswa.com](mailto:tech@caswa.com).

To view the used data for the hoist and crane press the Select button briefly until you get to the following screen:

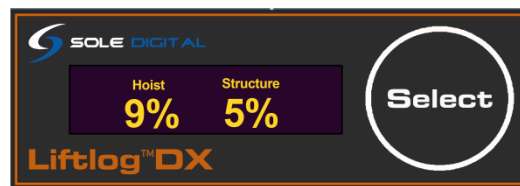


Figure 9: The Remaining Life Screen

The percentages of total life consumed for both the Hoist and Structure are shown on this screen. For more detailed information regarding the remaining life refer to Section 5.6 Uploading Data.

Your crane will now be all tared and ready to go.



## 6 COMMISSIONING DETAILS

### **IMPORTANT: IF YOU HAVE PURCHASED A PRE-CALIBRATED LIFTLOG, PLEASE FOLLOW STEP 5 TARING THE DEVICE**

Liftlog™DX is designed to be commissioned using a laptop computer. To commission the unit you will need a CASWA LINK-2 Bluetooth Modem and the Field Service Utility (FSU) software application, version 17.1 or higher, loaded on a laptop.

**Note: FSU versions prior to 17.1 will not be able to communication with Liftlog™DX units.**

### **6.1 Installing and Launching the FSU Application – (Only for non calibrated units)**

#### **6.1.1 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 B for minimum system requirements). Ensure that the LINK-2 modem is installed and that the drivers have loaded.

#### **6.1.2 Installing the FSU application**

The latest FSU software can be downloaded from: <https://soledigital.com.au/Liftlog.html>

You should check this location periodically for updates.

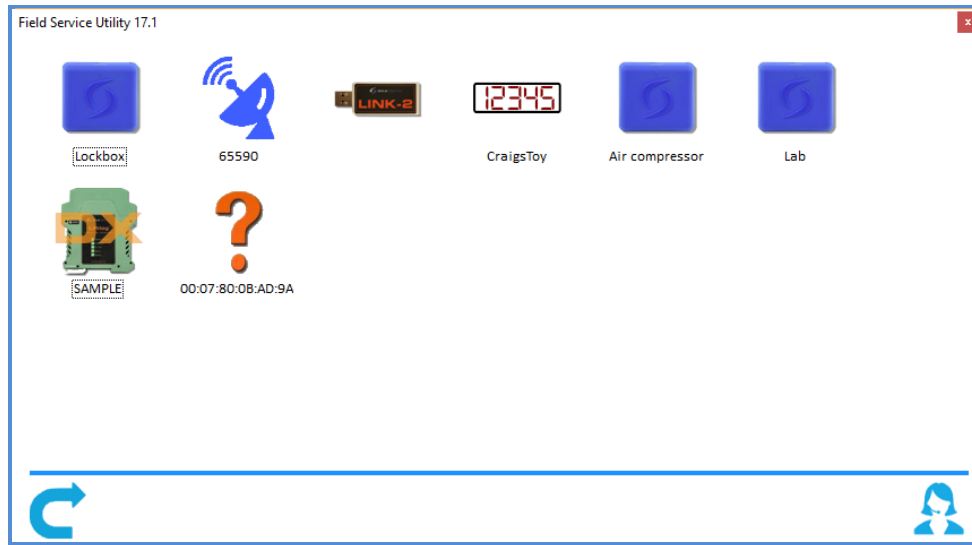
#### **6.1.3 Launching the application**


Double click on the FSU program icon: .

### **6.2 Connecting to the Device**


The FSU will scan for Bluetooth enabled devices. This process takes approximately 10 seconds, when complete a list of all CASWA devices within range will be displayed. Liftlog™DX Units are depicted by

a  icon.



If a particular Liftlog™DX 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 Liftlog™DX has a range of approximately **100m**.

To get help on Sole Digital products, go to our website or open a remote support session, press the  icon.

Otherwise, select the Liftlog™DX you wish to configure by double clicking on the desired icon.



### 6.3 Liftlog™DX Configuration

All configuration options are now shown on a single screen.

**Hoist ID**  
CASWA Test

**Crane Specification**  
C1 M1 10 t

**SWP**  
Structure: 0% Hoist: 0% Last Updated: Never

**Logged Data**  
316079 moves  
**Upload**

**Load limits**  
This Hoist: 15000 kg Combined: 15000 kg Contact 13-14:  N/C  N/O  Locked Out  
There have been a total of 10 Load limit events  
The last was 9775502 kg at: 23/10/24 11:45 **Reset Count**  
The biggest was 9775502 kg at: 23/10/24 11:45

**Inputs**

N  
W E  
S  
U D

**Control Voltage**  
 AC  DC

**System time** 23/10/24 11:52  
**Cabinet temperature** 27 C

**Input type** mA (2 wire cell)

4035kg

**Zero** **Calibrate**

**Load Sharing**

**HoistNet**  
link 1 Unbound disconnected  
link 2 Unbound disconnected

**Sling Safe**  
Default limit 0 kg  
Current limit 0 kg

**Traffic Lite**

SetPoint	Load (kg)	N/C	N/O	Single mode
1	20000	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
2	20000	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
3	20000	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>

fw Ver 51.5

**Units**  
 Kg  lb



### 6.3.1 Setting the Crane/Hoist Classifications

To facilitate more meaningful reporting and calculation of remaining life, the rated SWL and crane/hoist classifications are required.

To set the classification of the crane/hoist, select the desired rating from the drop down menus and enter the Safe Working Limit (SWL) of the crane in tonnes.

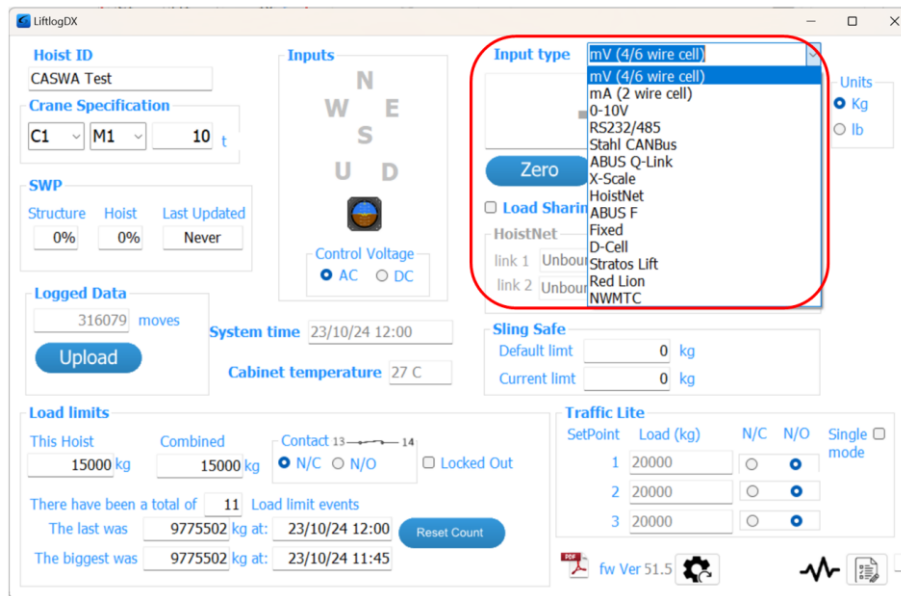
The screenshot shows the LiftlogDX configuration interface. The 'Crane Specification' section is highlighted with a red box, showing 'C1' selected in the first dropdown, 'M1' in the second, and '10 t' in the input field. Other sections include 'Inputs' with a directional pad and 'Control Voltage' set to AC, 'Input type' set to mA (2 wire cell), and a large '4035kg' display. The 'SWP' section shows 0% for both Structure and Hoist. 'Logged Data' shows 316079 moves. 'System time' is 23/10/24 11:52 and 'Cabinet temperature' is 27 C. 'Load limits' shows 15000 kg for both This Hoist and Combined, with 10 load limit events. 'Traffic Lite' has three setpoints at 20000 kg.

Note: The Liftlog™DX will still operate correctly without this information (i.e. all logging and load limiting functions will not be affected). However, this data will be required in order to produce automated or manual reports on remaining design life.



### 6.3.2 Setting the Input Type

Make sure that the Input is set to the type of Liftlog™DX load input. By default, the mV input will be selected. This is applicable for Liftlog™DX devices that have a strain gauge input.



The following table provides a list of commonly used input types and how they map onto the options in this FSU selection box.

Load input coming from:	Use Input type:
DRC3T, DRC5T, DRC10T rope clamp	DCell
Other load cell with 4-6 connections	mV (4/6 wire cell)
Load cell with 2 connections	mA (2 wire cell)
Kone ControlPRO	0-10V
ABUS LIS Q-Link (With a load cell connected)	ABUS Q-Link
Serial Output from an existing load display or PLC	RS232/485
Stahl Hoist (using our adapter CANBus adapter)	Stahl CANBus
Sole Digital X-Scale	DCell
Wirelessly from a Sole Digital device (e.g. MaxOut, HB200, other Liftlog)	HoistNet
F1 Terminal on LIS	ABUS F
Deemed load set as the load limit value	Fixed


IMPORTANT, if you are changing a unit supplied as a DCell input to another input type, or vice versa then you may need to change the jumpers on the back of the PCB.

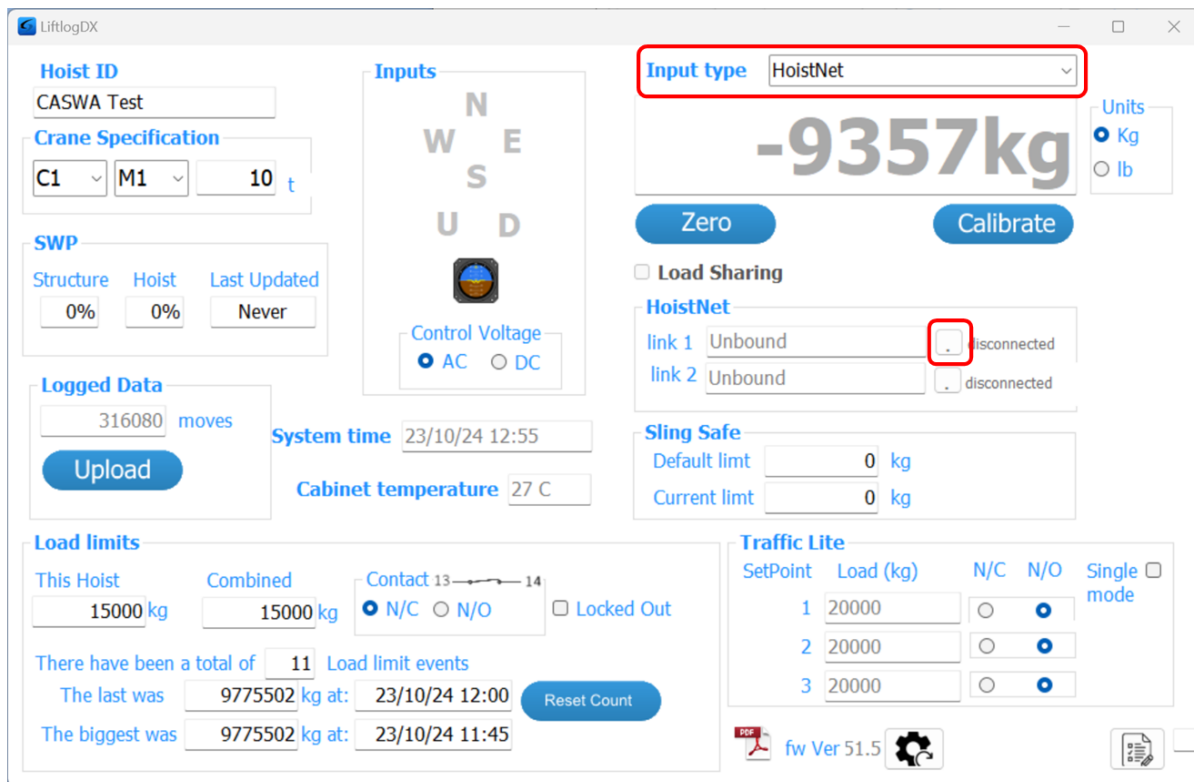


### 6.3.3 Using/Removing a HoistNet Input

Liftlog™DX devices are fully compatible with CASWA HoistNet. This means that they can obtain their load signal wirelessly from any other HoistNet enabled device, eliminating the need for long cable runs between the load cell and data logger.

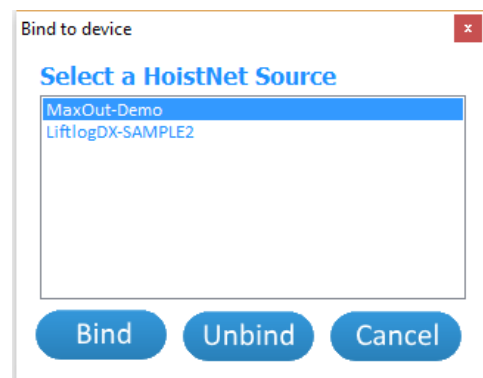
To receive a load signal via HoistNet, select 'HoistNet' option input. The HoistNet controls on the screen will now be enabled.

To select a HoistNet source press the  button for Link1.



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 <Bind>. The popup box will close.






The name of the bound HoistNet device will be shown on the FSU screen. The connection status will also be shown:

**HoistNet**

link 1	MaxOut-Demo	<input checked="" type="checkbox"/> online
link 2	Unbound	<input type="checkbox"/> disconnected

**NB: You will need to ensure that the originating HoistNet load signal has been calibrated correctly.**

If you connect more than one HoistNet input, the load shown and recorded load will be the combined load from both these sources.

To unbind a Liftlog™DX from a HoistNet device, or to change the bound device, press the  button on the Load screen and then select <Unbind> on the popup box.

### 6.3.4 Note on using the Liftlog™DX with a ControlPro or an ABUS LIS

Liftlog™DX connected to a ControlPRO must now be calibrated. (Liftlog units could use the internal calibration of the ControlPRO.) Calibration is now necessary because experience has indicated that the output load being supplied by the ControlPro is often inaccurate.

As the ABUS LIS Q Link output is a digital output, it cannot be calibrated. Therefore, if the load is not showing the expected value, the LIS itself must be recalibrated.

### 6.3.5 Calibrating the Liftlog™DX

If your Liftlog™DX device has been preconfigured (only available with Q-Link inputs) or you are using a HoistNet load signal (which is calibrated separately) or your unit is precalibrated, then you will not need to calibrate the Liftlog™DX.

**All other types of Liftlog™DX must be calibrated and this process will require test weights.**

### 6.3.6 Setting the Zero Value

With no load on the hook (or the crane load display reading 0.00t), click on the <Zero> button.

Within a few seconds the display will change to 0.0.



### 6.3.7 Calibrate

Lift a load (minimum 80% of rated capacity) and click the <Calibrate> button. Enter the mass shown on the load display when prompted and press <OK>.

Calibrate

How many kg are On the hook?

2000

OK

Cancel

NB: If the fault output of the logger is used as an overload, you may need to go to the Overload screen and set a large overload limit (e.g. 3000) to allow the load to be lifted. See section 5.7.1 for details.

Tap the <OK> button and the screen will now display the load on the hook.

If you have selected the Load Sharing option, then you will see two different loads displayed as shown:



The load in the large box shows the load from the local load source (i.e. this logger), whilst the small box, which disappears after 5 seconds, shows the Total Combined load from the two HoistNet sources. See section 0 for more information about load summing.

### 6.3.8 Configuring the Overload

This option is not available for loggers using an ABUS 'Frequency' or 'Q-Link' input (settings will be ignored).

### 6.3.9 Set Overloads

Enter the overload for 'This Hoist'. in kg.

Load limits

This Hoist 10000 kg

Combined 10000 kg

Contact 13  N/C  N/O

Locked Out

The Combined overload is only used in Load Summing mode (see Section 4.5.5).



### 6.3.10 Invert Output

The fault output on the Liftlog™DX is a pair of normally closed contacts. These contacts are a solid state AC relay (If you need to switch a DC input contact CASWA prior to ordering). Selecting the < N/O > option will change the normally closed fault output to normally open. You may need to do this:

- If there is an interposing relay between the Liftlog™DX and the up contactor;
- You want the Liftlog™DX to operate in a “fail functional” rather than a “fail safe” mode;
- You are using the Liftlog™DX for slack rope detection

### 6.3.11 Load Sharing

Load sharing enables two-way wireless communication between 2 or 3 HoistNet devices for the purposes of activating limits based on individual AND combined loads.

Make sure that limits are wired in for both Sole Digital devices.

To activate Load sharing, check the 'Load sharing box on ONE of the devices involved in determining the combined load. (Do not select 'Load Summing' on the other device.)

The HoistNet box will be enabled. Connect to the desired HoistNet source (i.e. from the other hoist on the same crane).

**HoistNet**

link 1	<input type="text" value="MaxOut-Demo"/>	<input checked="" type="checkbox"/> online
link 2	<input type="text" value="Unbound"/>	<input type="checkbox"/> disconnected

Make sure that the Combined Load Limit is set correctly:

**Load limits**

<b>This Hoist</b>	<b>Combined</b>	<b>Contact</b>
<input type="text" value="22000"/> kg	<input type="text" value="22000"/> kg	<input checked="" type="radio"/> N/C <input type="radio"/> N/O

This Combined limit needs to be set on both devices.

The Liftlog™DX will now send its load to the linked device and fetch the remote load. Hoisting will be disabled on both hoists anytime either the combined load exceeds the combined load limit, or the local load exceeds the 'This Hoist' limit.



The FSU will now display the load from this device in the large box and the combined load in the left hand corner box.



### 6.3.12 Setting the Crane ID

Setting the crane ID should be the last step in configuring the device. Whilst the CraneID is “unconfigured”, the device will display lifts but not log them. This prevents data from lifts prior to calibration affecting later analysis.

Type in the desired logger identification in the ‘Hoist ID’ field. This must be 18 characters or less.

#### Hoist ID

SAMPLE2

If the logger will be used with the Liftlog™DX- AccessPack system, set the crane ID as directed by your AccessPack vendor or administrator of the AccessPack manager software at your location.

Tip: Whilst you can set the Crane ID to anything you want, setting it to the crane’s serial number or other external marking will help you distinguish it from other logger equipped cranes. If you also include the crane classification such as C4M5 in the ID then the analysis software will use this in its calculations (if you haven't entered it separately on this screen).

### 6.3.13 Liftlog™DX Flight Control

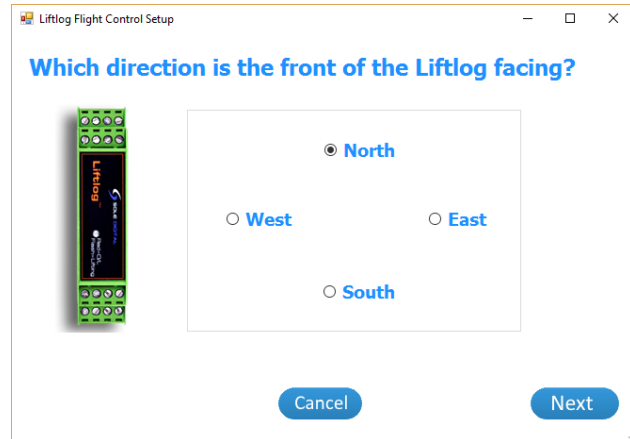
Liftlog™DX contains an onboard accelerometer that can be used to detect longitudinal crane travel. Therefore, if your Liftlog™DX is mounted on the trolley and there are no spare cores in the catenary, you can now set the Liftlog™DX to detect longitudinal travel by acceleration.

To do this, click on the  icon. The Liftlog Flight Control setup screen will appear.

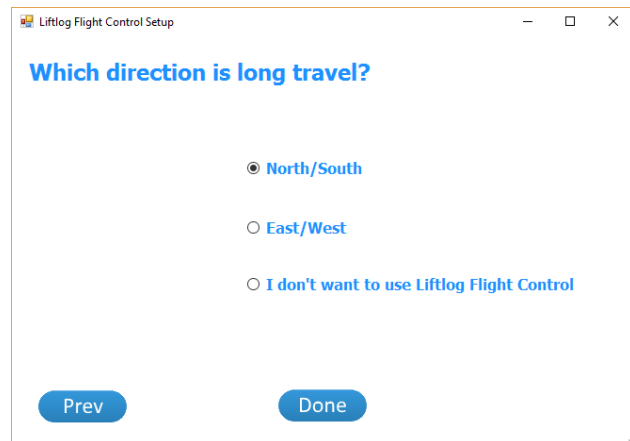




Select the direction that the front of the Liftlog™DX is facing and press Next.



Select the direction of long travel and press Done.



If this motion is also wired into the unit, the Liftlog™DX will use both signals (wired and accelerometer) in parallel, recording the motion when it is first detected. This accelerometer based motion input works well with a simple 2 speed crane. When VFD's are used for long travel the acceleration is too low to be detected.



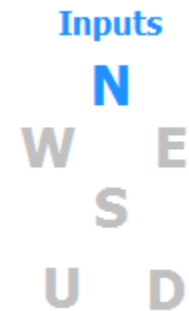
## 6.4 Verifying Your Installation

### 6.4.1 Checking the Inputs

Due to improved noise immunity of the Liftlog™DX, you no longer need to define which inputs are being used.

To verify that an input is being detected correctly, activate the input.

The colour of the associated input (N,S,E,W,U,D) on the FSU screen should change from grey to blue:



## 6.5 Safe Working Period (SWP)

The screenshot shows the LiftlogDX software interface. The SWP (Safe Working Period) section is highlighted with a red box. It displays the following data:

Structure	Hoist	Last Updated
5%	15%	20/10/2024

Other visible sections include:

- Hoist ID:** CASWA Test
- Crane Specification:** C1, M1, 10 t
- Input type:** mA (2 wire cell)
- Current weight:** 4022kg
- Control Voltage:** AC (selected), DC
- System time:** 23/10/24 13:08
- Cabinet temperature:** 27 C
- Load limits:** This Hoist: 15000 kg, Combined: 15000 kg, Contact 13-14: N/O (selected), Locked Out:
- Traffic Lite:** SetPoint 1: 20000 kg, SetPoint 2: 20000 kg, SetPoint 3: 20000 kg

The SWP (Safe Working Period) displays the percentages of remaining life for both the Hoist and Structure.



## 6.6 Uploading Data

To upload the logged data from the device to your computer click on the <Upload> button.

**Logged Data**

659031 moves

Upload

This will bring up a dialog box asking where to save the data. The program defaults to your Documents folder.

Enter the required file name (usually the crane name or serial number).

The resulting data file is a .csv file and the format of its contents is described in Appendix C.

### 6.6.1 Reset Load Limit Events

Liftlog™DX keeps track of the number of times that load limits have been activated. The total number of such events as well as details of the last event and largest event to date can be seen on the FSU main screen:

**Load limits**

This Hoist:  kg

Combined:  kg

Contact 13  14  N/C  N/O  Locked Out

There have been a total of  Load limit events

The last was  kg at:

The biggest was  kg at:

Reset Count

To clear the history of load limit events, press the  button.



## 7 TRAFFICLITE

The Liftlog™DX has the ability to control a set of traffic light indicators when paired with an additional TrafficLite module. It allows 3 Load set points, relay logic to be N/O or N/C and can work in cumulative or single mode, cumulative meaning setpoint outputs remain on when a higher set point is reached, and single meaning that only the highest activated output is on.

Traffic Lite				
SetPoint	Load (kg)	N/C	N/O	Single <input checked="" type="checkbox"/> mode
1	<input type="text" value="10000"/>	<input type="radio"/>	<input checked="" type="radio"/>	
2	<input type="text" value="10000"/>	<input type="radio"/>	<input checked="" type="radio"/>	
3	<input type="text" value="10000"/>	<input type="radio"/>	<input checked="" type="radio"/>	

TrafficLite is a separate product and has its own user manual which contains information about wiring. Please contact Support if you are interested in this functionality.



## 8 INSTALLATION REPORT

The Installation Report takes a snapshot of the configuration of the Liftlog™DX, measures the amount of electrical noise during crane motion and compiles this information into a report.

These reports are stored in My Documents\FSU Reports and are automatically sent back to the manufacturer. We check these reports when they come in and will contact the technician if the data indicates that there is a problem.

The screenshot shows the LiftlogDX software interface with the following sections:

- Hoist ID:** CASWA Test
- Crane Specification:** C1, M1, 10 t
- SWP:** Structure 5%, Hoist 15%, Last Updated 20/10/2024
- Logged Data:** 316080 moves, Upload button
- System time:** 23/10/24 13:08
- Cabinet temperature:** 27 C
- Inputs:** A directional pad (N, S, E, W, U, D) and Control Voltage (AC, DC)
- Input type:** mA (2 wire cell)
- Weight:** 4022kg (Units: Kg selected)
- Buttons:** Zero, Calibrate
- Load Sharing:** Unchecked
- HoistNet:** link 1 HIBEAMII-LOWER (disconnected), link 2 Unbound (disconnected)
- Sling Safe:** Default limit 0 kg, Current limit 0 kg
- Load limits:** This Hoist 15000 kg, Combined 15000 kg, Contact 13-14 (N/O selected), Locked Out unchecked
- Traffic Lite:** SetPoint 1: 20000, 2: 20000, 3: 20000 (N/O selected for all)
- Events:** 11 Load limit events, Last was 9775502 kg at 23/10/24 12:00, Biggest was 9775502 kg at 23/10/24 11:45, Reset Count button
- Footer:** fw Ver 51.5, Settings gear icon, and a red-bordered button with a document icon (Generate Installation Report).

Click on the **Generate Installation Report** button in the bottom right hand corner. Enter your mobile number.



Press **Next**.

**Saving configuration**



0402177280

Cancel

Next



Move the crane in each direction until the green bar is 100%.

If input is not connected press **Skip** and provide a reason for doing so

Once complete press **Next**.

If you are connected to the internet the FSU will send the report immediately.

If there is no internet connection, the Installation Report will be saved locally and next time the FSU is launched with an internet connection you will be promoted to submit the reports.

signoff\_report

**Move the crane in each direction.**

UP

Down

North

**Skip**

South

**Skip**

East

**Skip**

West

**Skip**

Idle

**Cancel**

**Next**

Submit?



Would you like to submit the installation report for DumbWaiter now?

**Yes**

No



## 9 IMPORTING CALIBRATIONS

FSU now supports importing calibrations from one device to another.

These calibrations are saved to the local PC once a connection is made and any calibration from a previously connected device can be imported.

Liftlog™DX only supports calibration files from other Liftlog™DX's and/or MaxOutDX's.

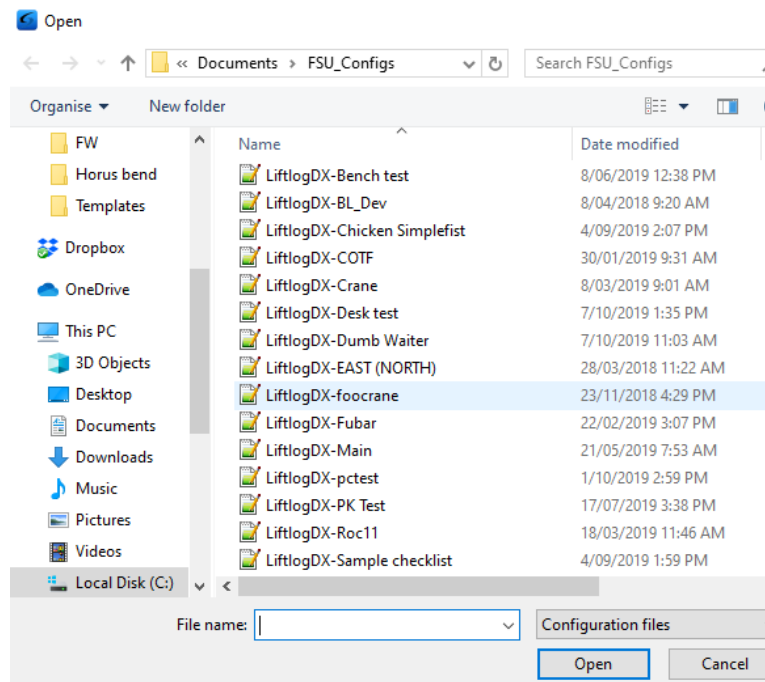
Before you begin, make sure you have previously connected to the Liftlog or MaxOut that you want to copy the calibration from.

Right click the **Calibrate** button and select **From File**



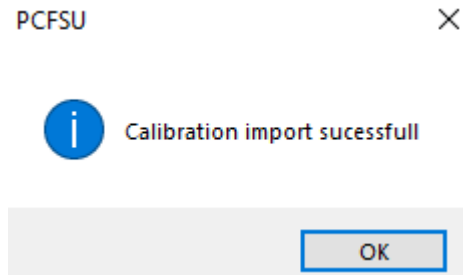
Select the device you want to import calibration from.

Click **Open**





After a successful import you will receive a **Calibration Import Successful** notification

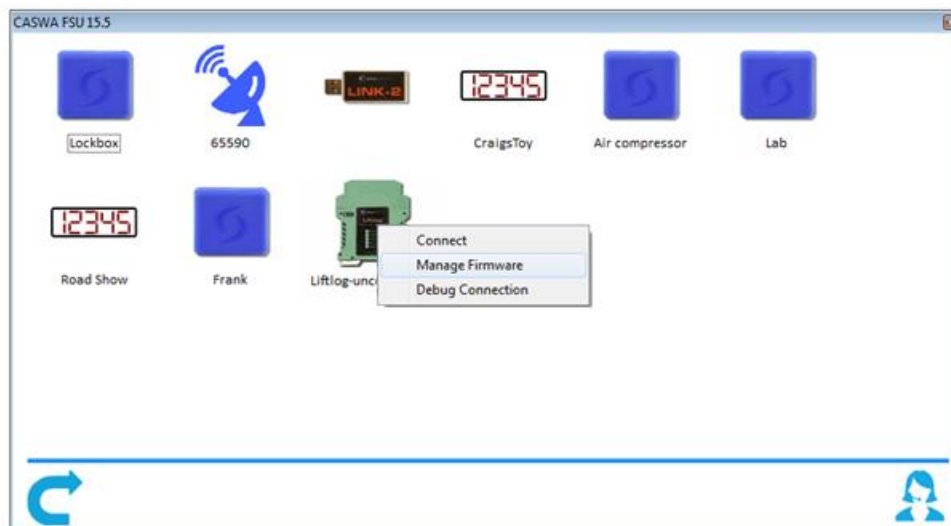


## 9.1 Managing Firmware

Firmware should only be updated if you:

- a) specifically want a new feature that is only available in later versions;
- b) are experiencing a problem that has been rectified by a later version;
- c) are experiencing a problem and need to roll back to an earlier firmware version that didn't cause the problem you are experiencing; or
- d) have been specifically instructed to do so by your Liftlog™DX supplier.

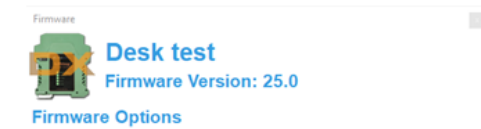
To check for new firmware versions or to access old firmware versions, return to the Device Display screen and right click the desired equipment icon. Select 'Manage Firmware'.



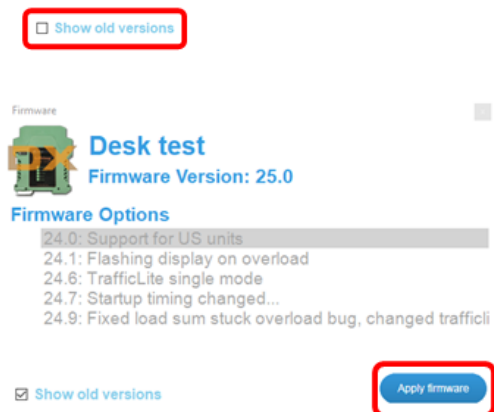
A new window will popup and show the FSU software connecting to the device. When this is complete, the window will show the name of the device, its current firmware version and a list of newer firmware that is available for the device.



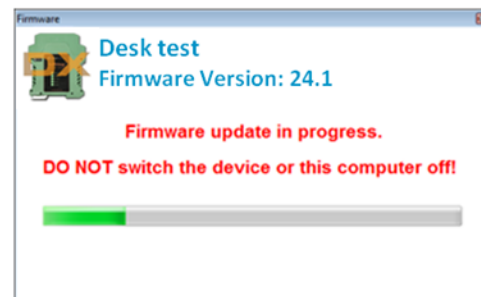
If you need to roll back to an earlier version, check the 'Show old versions' box in the lower left corner of the window



Select a firmware version and then press the <Apply firmware> button that appears in the lower right corner of the window:

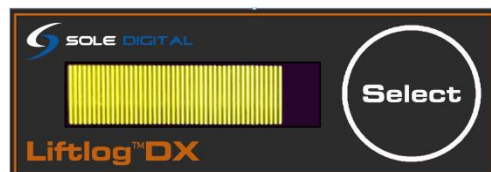



The display will change to the following:

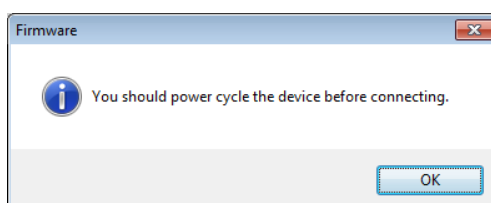


As the message states, **DO NOT switch off the Liftlog™DX or the computer running the FSU software, or remove the Link2 modem** until you are told to do so. If either device loses power then the Liftlog™DX may become unusable and the device will need to be returned to your supplier for repair. If your Liftlog™DX was purchased after October 2019 it will enter a recover state when powered back up and the firmware update can be attempted again.

Holding in the Select button while the Liftlog™DX powers on will also force it into the recovery state.



When the firmware has finished updating successfully you will see a  **Success** message in the popup window and also be told to power cycle the device before reconnecting:





Close this window, wait for the manage firmware window to close (this may take 20 seconds) and power cycle the device as instructed. You will be returned to the first FSU screen, Manage Connections.

Wait a few seconds after power cycling the device and then select the device you wish to connect to by double clicking the device.

## 10 CHANGING THE LIFTLOG INPUT SELECTION

The LiftlogDX accept load information from a wide variety of signals. Some of these signals are analog, some are digital.

---

### Analog Sources

mV	ie load pin or third party load cell
mA	Display output, Stahl SMC unit
V	0-10V input on a Control pro

---

### Digital Sources

DCell	Sole Digital digital load cell
Q-Link	ABUS LIS
F-Link	ABUS LIS
RS232	PLC/Display

If you need to change the input from an analog source to a digital source, then you will need to change some solder bridged jumper inside the unit.



Liftlogs sold in DCell bundles don't have solder bridges as the connection is done via pcb tracks.



To change a DCell to Analog these tracks will need to be cut.



To cut the track run a blade down the first column closest to the digicell side as shown in following image.



Once the track has been cut solder the bridges to the analog terminals.





## 11 ROUTINE MAINTENANCE

It is recommended that the Liftlog™DX unit be inspected annually during which time:

- (a) logged data is downloaded from the device and saved to disk, and
- (b) the internal battery is checked and replaced if necessary.

### 11.1 Battery Maintenance

The Button cell battery inside of the Liftlog™DX device keeps the internal clock/calendar running when the logger has no external power. It should be checked by removing it from the logger and measuring its open circuit voltage. If this measurement is <2V then the battery should be replaced.



## 12 TROUBLESHOOTING

Fault	Cause	Fix
Unable to connect to logger from FSU	Logger or FSU are busy	Power cycle the crane.
	Incorrect wiring	Check that the display on the Liftlog is active
	Wrong FSU Version	Check <a href="https://www.soledigitla.com.au">https://www.soledigitla.com.au</a> for the latest version
	Pluggable terminals not seating correctly	Replace pluggable terminal and rewire the associated terminals.
Oled Screen Blank	Hoistnet connection active	Turn off corresponding Hoistnet device.
	Power to the Liftlog has been disconnected	Check you have 24-240VAC/DC on terminals L and N
Oled Screen just shows the word "Reflash"	Load cell has failed	Try unplugging the load cell from the liftlog.
	Failure of a firmware update	Retry the firmware again with the FSU software making sure any hoistnet devices are disconnected and there's no Link-4 in range.
	Select button stuck down	Make sure the select button clicks when pressed. If the sticker is holding the button pressed in you may need a new sticker.
Multiple inputs trigger at the same time	Cross talk on cabling	Separate cables or fit 1W 1kOhm terminating resistors between the input terminal on the Liftlog™DX and a GND terminal.
Input(s) constantly on or flickering	Active and neutral reversed	Check and swap as necessary.
Limit cuts out prematurely on hoisting and adjusting sensitivity has no effect	Magnetic interference causing Liftlog™DX to reset	Check that Liftlog™DX is at least 15mm from any large contactor.

## APPENDIX A: COMMUNICATION PROTOCOL

For information about how to communicate with Sole Digital Devices contact [Technical Support](#).



## APPENDIX B: FSU SYSTEM REQUIREMENTS

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

- Windows 10 or later;
- One Spare USB port;
- Microsoft .NET framework 4.5;
- An internet connection.

## APPENDIX C: DATA FILE FORMAT

Data is recorded each time a motion is detected (a contactor closes). Each datum set contains:

1. Date/Time (based on the logger's internal clock – when a user connects to the logger via Bluetooth using the FSU software, the time is compared to the time on the laptop and can be reset)
2. Operator (only used if a logger is bound to an AccessPack)
3. Hook (For Liftlog this will should always be 1.)
4. Load from Load cell/other input in Kg
5. Duration of motion in tenths of a second
6. Motion code – type of motion as shown in the following table.

Motion Code	Motion
0	No move
1	Move Up
2	Move Down
4	Move Fast
8	Move East
16	Move West
32	Move North
64	Move South
128	Move Up Fast
256	Move Aux1 / Aux
512	Move Aux2 / Magnet
1024	Move Aux3/Override
2048	Move Aux1 Off
4096	Move Aux2/Magnet Off
8192	Move Aux3/Override Off

Note: If a combined motion is detected, then the sum of the individual motions is recorded (e.g. Move Up and Move Fast = 1+4=5).