



# **DigiHoist**

## Product Manual

Manual Version 2.4.0  
Controller Software Version 3.03  
Handset Software Version 3.02  
© 2012 Kinesys Projects Ltd

# DigiHoist

© 2012 Kinesys Projects Ltd

All rights reserved. No parts of this work may be reproduced in any form or by any means - graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems - without the written permission of the publisher.

Products that are referred to in this document may be either trademarks and/or registered trademarks of the respective owners. The publisher and the author make no claim to these trademarks.

While every precaution has been taken in the preparation of this document, the publisher and the author assume no responsibility for errors or omissions, or for damages resulting from the use of information contained in this document or from the use of programs and source code that may accompany it. In no event shall the publisher and the author be liable for any loss of profit or any other commercial damage caused or alleged to have been caused directly or indirectly by this document.

Printed: August 2012

## **Publisher**

*Kinesys Projects Ltd*

## **Technical Editors**

*Dave Weatherhead*

*Martin Honeywill*

*Andy Hicks*

# Table of Contents

<b>Part 1</b>	<b>Safety Advice</b>	<b>4</b>
<b>Part 2</b>	<b>Introduction</b>	<b>5</b>
<b>Part 3</b>	<b>Quick Start Guide</b>	<b>6</b>
<b>Part 4</b>	<b>Layout</b>	<b>8</b>
<b>Part 5</b>	<b>Motor Controller Operation</b>	<b>12</b>
	1 Mains Connection .....	13
	2 Emergency Stop .....	15
	3 Startup .....	16
	4 Addressing .....	17
	5 Motor Controller Display .....	18
	6 Motor Controller Controls .....	20
<b>Part 6</b>	<b>Handset Operation</b>	<b>21</b>
	1 Emergency Stop .....	22
	2 The GO and RESET buttons .....	23
	3 Addressing .....	24
	4 The Handset Display and Menu .....	25
	5 Moving Hoists .....	28
	6 Group Halt .....	29
<b>Part 7</b>	<b>Glossary</b>	<b>30</b>
	1 Controller Connections .....	31
	2 Fuse Layout .....	37
	3 Handset Connection .....	38
	4 Display .....	39
<b>Part 8</b>	<b>Contact Information</b>	<b>43</b>

# 1 Safety Advice

**If in doubt about any aspect of moving objects always seek professional advice.  
SAFETY MUST ALWAYS BE THE FIRST PRIORITY!**

- If you are unsure of any aspect of moving loads with the system stop and seek professional advice on the appropriate usage of the system.
- Never run the system without all emergency stop switches connected and in position.
- Ensure all operators and maintenance personnel are aware of the location of emergency stop switches.
- Test the emergency stop system daily.
- Never operate hoists without having a clear view of the load or reliable communication with an observer
- If an unexpected move presents a potentially hazardous situation, use the emergency stop button to bring all movement to an immediate stop.
- Use extreme caution when using any bypass facilities in the system.
- Carry out a full risk assessment for your particular application.
- Only allow competent personnel to operate the system.

## **Hoist Multicore Wiring Variations**

Different pin outs for the hoist multicore connector exist in the same connector package. Different manufacturers have wired the same connector in different ways. Details of the different pin outs are show in the Glossary. A label on the rear of the controller clearly states which version of the pin out is being used. Always ensure that multicore cables and fanouts used with this controller are compatible.

## 2 Introduction

The DigiHoist system comprises of the DHC-8-LV (Low Voltage) and DHC-8-DC (Direct Control) motor controllers, DHH-8, DHH-16 and DHH-32 handsets and the DHL-4 handset linking unit.

The DHC-8-LV and DHC-8-DC motor controller offers 8 channels of low voltage motor control. These units can be easily daisy chained together to form a much larger system when required. They both feature OLED displays allowing instant visual feedback of the address of the channel, as well as clear, easy to understand messages, providing the user with further information.

The DHH-8 (8 way), DHH-16 (16 way) and DHH-32 (32 way) handsets allow complete control of the system with instant feedback alerting the user to any travel limits that are struck or errors in the system.

The digital nature of the communications between the handset and controller allows robust, instant communications over long distances through a single cable. This also allows the whole system to automatically address itself, leaving the user to concentrate on the operation of the hoists.

The units are modeled on industry standard handheld chain hoist controllers and as such offer an instantly recognisable method of operation. Their simplicity and rugged construction ensures that the units can be operated safely with a minimal amount of training.

## 3 Quick Start Guide

### ***Putting The System Together and Powering It Up***

- Plug the motor cables to the rear of the motor controller and attach the hoists. The type of motor connector will vary between the different models of DigiHoist.
- Attach a 32A power cable to the motor controller.
- If you are using multiple motor controllers daisy chain the data connection between all units.
- If you are using a handset or DigiLink attach these, otherwise the local controls will become active on the front panel of the first DigiHoist.
- When powered up the units will automatically address themselves. The address of each channel will be shown on the display above the channel number.
- **When the motor controller is powered up, the Reset button must be pressed before any motor movement can occur.**

#### **Hoist Power Key Switch**

The Hoist Power key switch determines the operation of the motor controller, its function varies slightly between LV and Direct Control models.

##### **LV Control**

###### **only**

- |             |  |
|-------------|--|
| <b>OFF</b>  | With the key switch in this position the unit will not supply power to any hoists.   |
| <b>ON</b>   | This option will supply power to any attached hoists at all times, unless an emergency stop button is pressed.   |
| <b>AUTO</b> | This option will only supply power to the attached hoists when the user moves those hoists. All connected hoists will be powered up, even if they are not moved. |

##### **DC Control**

###### **only**

- |            |   |
|------------|---|
| <b>OFF</b> | With the key switch in this position the unit will not supply power to any hoists.          |
| <b>ON</b>  | This option will only supply power to the attached hoists when the user moves those hoists. |

### ***The Emergency Stop System***

**Before operating the DigiHoist system, ensure that the emergency stop system is fully tested and operational.**

A red emergency stop button is located on both the handset and motor controller, pressing either of these emergency stop buttons will bring the system to a stop, and inhibit further movement.

### **Resetting the Emergency Stop System**

- Release any activated emergency stop buttons by twisting them clockwise.
- Press the flashing Reset button to complete the reset procedure.

### **Moving Hoists**

Once the system is cabled up hoists can be moved. This can either be done via the local controls on the front panel of the DigiHoist or on an attached handset.

- When a handset is plugged into a motor controller the Reset button must be pushed before any movement can occur.
- (LV Mode) A solid blue status Indicator above each channel on the handset confirms if there is a hoist attached (except when the Hoist Power key switch is placed in Auto mode, as the hoists do not receive power unless they are moving). On the controller this will be represented by a channel number. In AUTO mode the controller assumes a hoist is connected. The display on the controller will show the channel numbers for all addressed channels that have a hoist attached.  
(DC Mode) In DC mode the controller assumes a hoist is connected. The display on the controller will show the channel numbers for all addressed channels that have a hoist attached.
- Select the direction of movement required
- Press the Go button

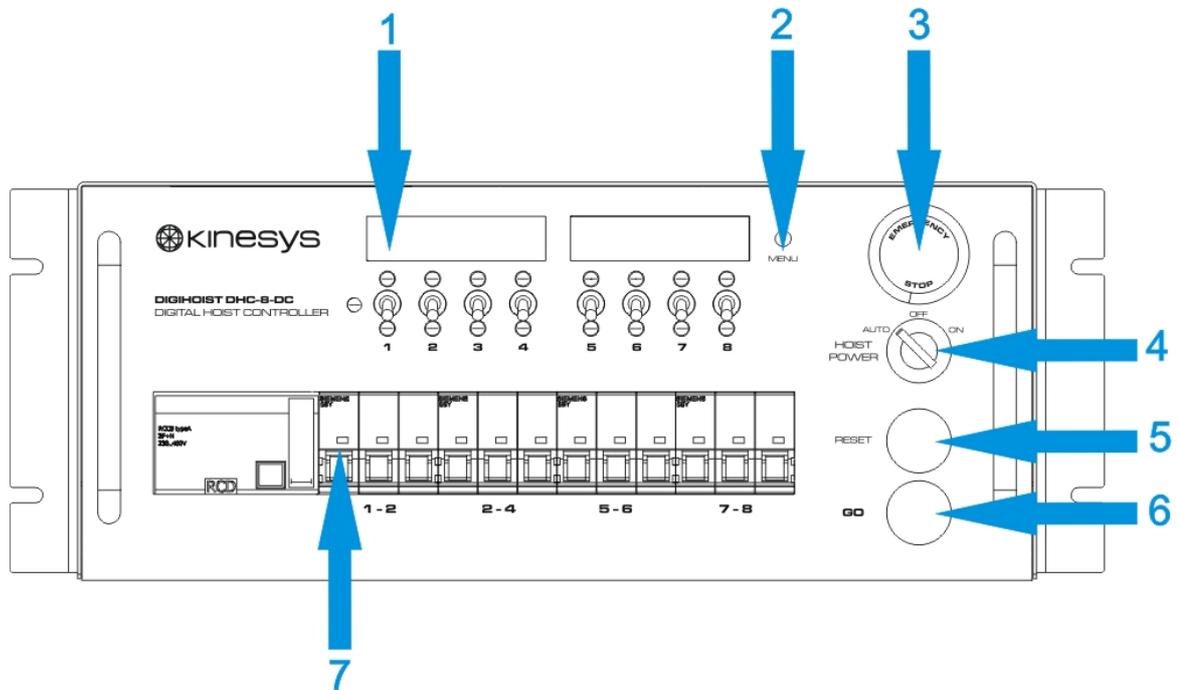
### **Other Indicators**

- On the handset the red and green arrows will flash to indicate if movement is inhibited in the indicated direction, for instance on a LV unit if a limit has been hit. If a movement is inhibited in a direction, movement is only possible in the opposite direction, until the hoist is moved away from the limit. If the controller is phase reversed limits are ignored (BUT overloads are not), see the section of the manual on Mains Connection for further details.
- On the controller the display will indicate any limits hit or other faults.

## 4 Layout

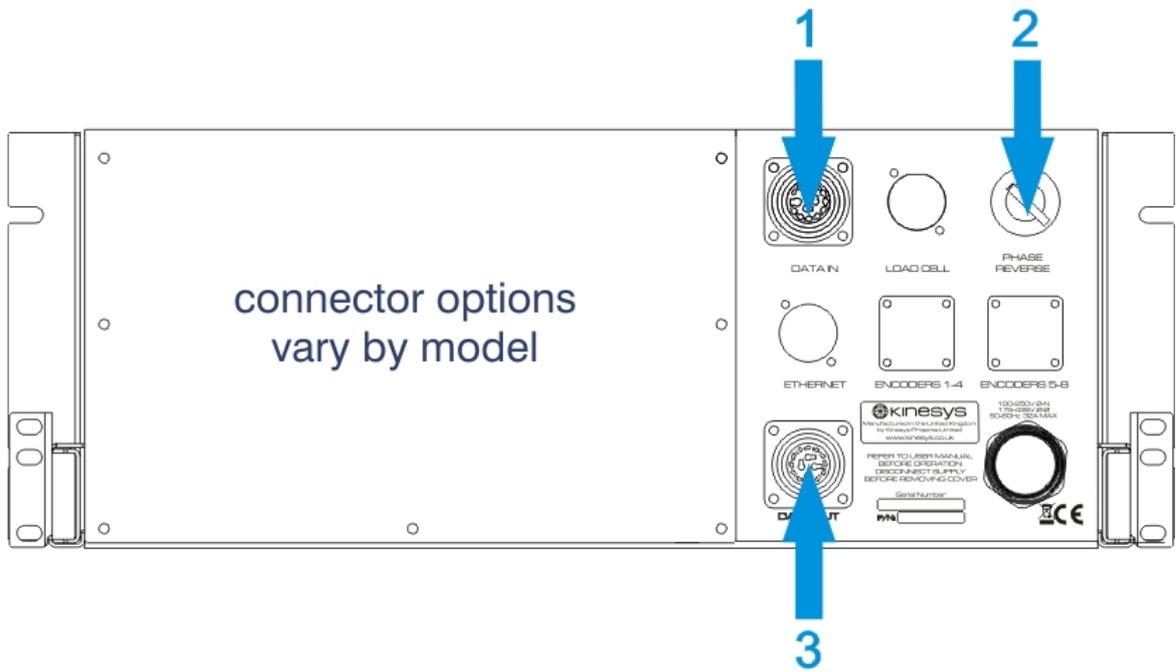
The following section covers the layout of the DH8-LV motor controller, the DHR-8, DHR-16 and DHR-32 handsets.

### Controller



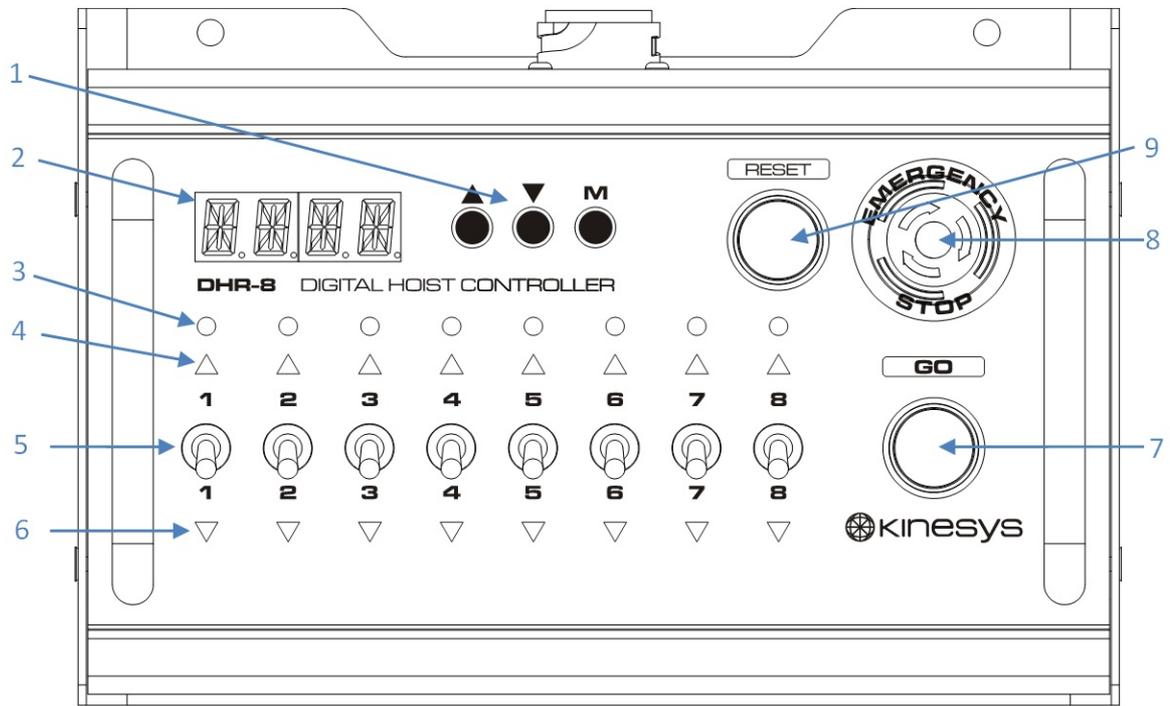
DHC-8 Front View

1. Channel Status Display
2. Menu Button
3. Emergency Stop Button
4. Hoist Power Key Switch
5. Reset Button
6. Go Button
7. Channel Breakers (In Pairs)

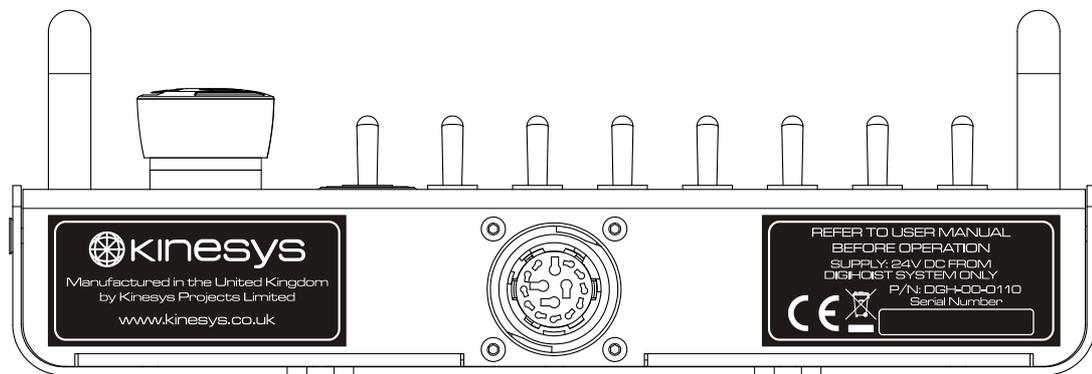


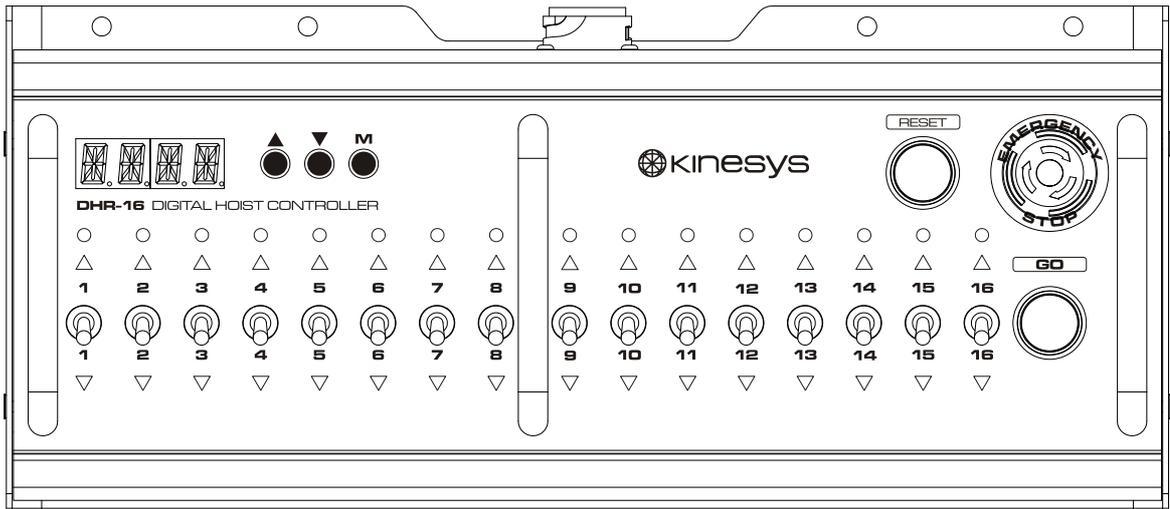
DHC-8 Rear View

1. Data Connection Input
2. Phase Reverse Key Switch
3. Data Connection Output

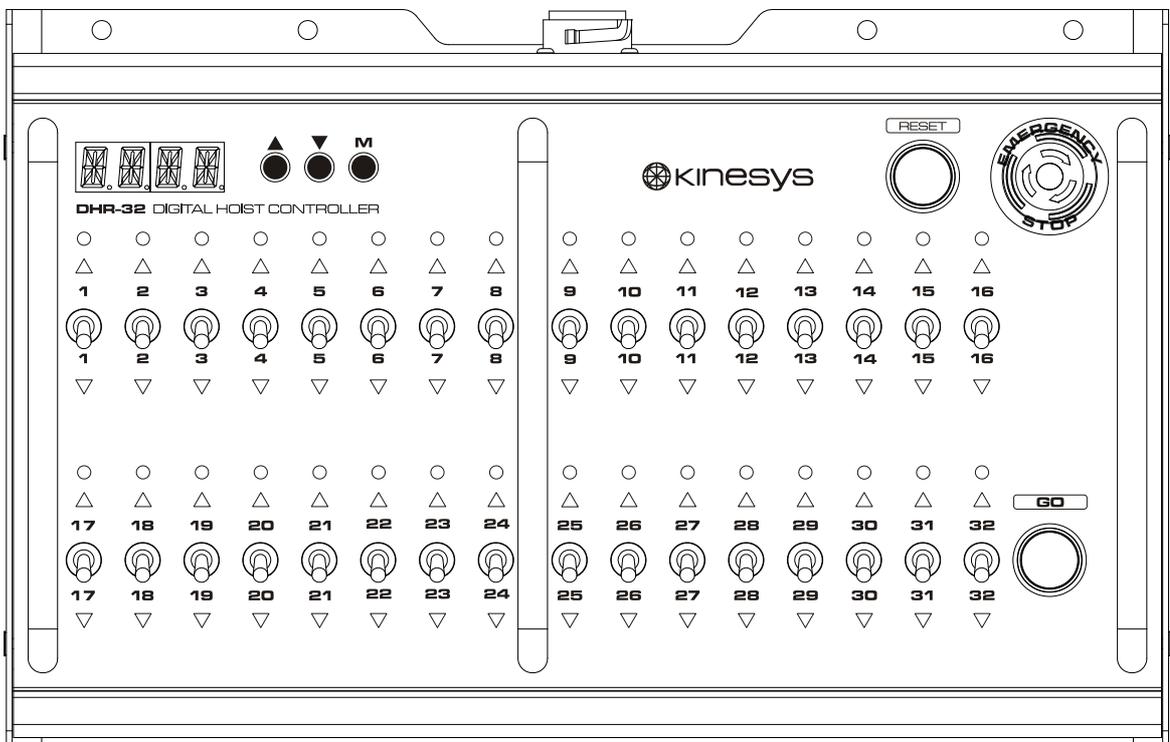
**Handset****DHR-8 Front View**

1. Controls to navigate the handset menus.
2. Handset display.
3. Status Indicator
4. Up Indicator
5. Direction Toggle Switch
6. Down Indicator
7. Go Button - Only lit when active
8. Emergency Stop Button
9. Reset Button

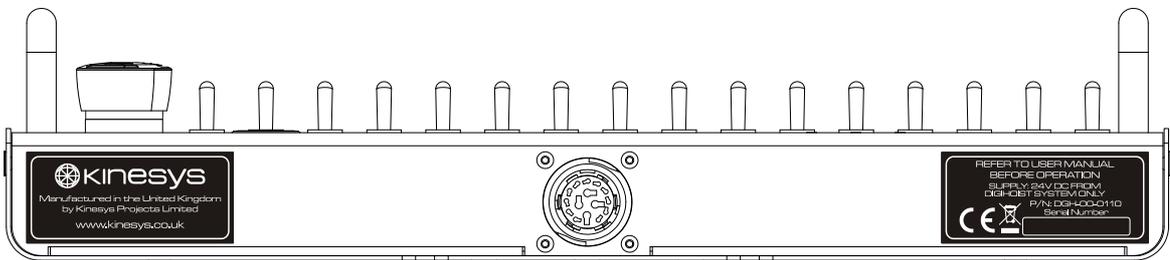
**DHR-8 Rear View**



DHR-16 Front View



DHR-32 Front View



DHR-16 & DHR-32 Rear View

## 5 Motor Controller Operation

The following section covers the operation of the DigiHoist DHC motor controller, when used as part of the DigiHoist system.

## 5.1 Mains Connection

### *Input*

The DigiHoist controller requires a connection to a 32A three-phase outlet.  
100-250V Ø-N 175-435V Ø-Ø 50-60Hz

### *Phase Sequence*

The motor controller will automatically detect any phase rotation on the incoming supply and correct for it.

If the incoming supply is missing one or two of the three phases, the displays on the front panel, will be used to communicate this.



**Phase Fault**



In the event that the phase fault message is displayed, if you have determined the fault is not present on the incoming supply, check the internal fuses. More information on the internal fuses can be found in section 7.2 - Fuse Layout.

If all 3 phases are missing the unit will not power up.

### ***Manual Phase Reversal (Low Voltage Controller Only)***

If there is a need to override the auto correction and reverse the phasing manually, a key switch is located at the rear of the controller.

#### **Warning**

**Manually reversing the phasing of the incoming power supply can be dangerous.  
This action should only be carried out by a competent person.**

#### **LIMITS BYPASSED**

**WHEN MOVING HOISTS WITH THE PHASE REVERSE KEY SWITCH SET TO ON  
ALL LIMITS WILL BE IGNORED**

#### **LIMIT SWITCH DAMAGE**

**SOME TYPES OF HOIST USE LIMIT SWITCHES THAT CAN BE DAMAGED IF  
THEY ARE ELECTRICALLY BYPASSED**

#### **HOISTS WITH ULTIMATE LIMIT SWITCHES**

**HOISTS WITH DOUBLE LIMITS (BVGC1) WILL HIT THEIR ULTIMATE LIMITS IF  
BYPASSED. THIS WILL INHIBIT MOVEMENT IN ANY DIRECTION AND MAY  
REQUIRE REMOVING THE HOIST COVER TO RESET**

To manually reverse phases the Phase Override key switch at the rear of the controller must be turned to the ON position and held in place.

Releasing the switch will revert the unit to its original phasing.

For safety reasons the unit cannot be reset with the key switch held in the Phase Override position.

The system is aware when the Phase Override key switch has been activated and all displays and indicators will display the true direction of hoist movement.

If the Phase Reverse key switch is activated or released while hoists are moving, all movement will stop and the GO button must be released and the system reset to allow hoists to move again.

## 5.2 Emergency Stop

The motor controller and handset both have emergency stop buttons built in. No shorting plugs are required to operate the system.

The emergency stop button on the motor controller contains a red LED, its behaviour will give an indication of the status of the emergency stop system.

<b>OFF</b>	The emergency stop system is ok
<b>ON</b>	The emergency stop system is active. An emergency stop button has been activated somewhere on the system
<b>FLASHING</b>	The emergency stop system on this motor controller is active.

The OLED displays will also give an indication of the status of the emergency stop system

**ESTOP Pressed**

This is displayed if the emergency stop button on that controller has been pressed.

**ESTOP**

This is displayed if an emergency stop button has been pressed on another controller or handset.

### ***Resetting the Emergency Stop System***

Once an emergency stop button has been pressed, the system can be reset is by using the Reset button on the handset or front panel. This applies if an emergency stop button is pressed on the handset or on a motor controller.

**Press Reset**

**Note:** The system can only be reset once any emergency stop button(s) that have been activated are released, by twisting them clockwise. For further information see the Handset Operation - Emergency Stop section.

If a reset does not occur, press and release an emergency stop and then press the reset button again.

## 5.3 Startup

Once the motor controller is connected to a power supply the Hoist Power key switch on the front panel determines the operation of the unit, its function varies slightly between LV and Direct Control models.

### LV Control

#### only

#### OFF

With the key switch in this position the unit will not supply power to any hoists.

#### ON

This option will supply power to any attached hoists at all times, unless an emergency stop button is pressed.

#### AUTO

This option will only supply power to the attached hoists when the user moves those hoists. All connected hoists will be powered up, even if they are not moved.

### DC Control

#### only

#### OFF

With the key switch in this position the unit will not supply power to any hoists.

#### ON

This option will only supply power to the attached hoists when the user moves those hoists.

The key can be removed from the key switch in any position except ON.

When the key switch is moved to a different position, for safety reasons the Reset button must be pressed, before any movement can occur.

The system settings menu can only be accessed with the key switch in the OFF position, by pressing and holding the menu button.

## 5.4 Addressing

Each motor controller has 8 channels, each of which has an individual address. The system will address itself automatically as soon as it is powered up.

If only one motor controller is present, it will address the 8 channels present as channels 1 - 8.

If there are multiple motor controllers connected together the first motor controller in the line, will be addressed as channels 1 - 8, then look to see if there is another controller connected. If so then the next motor controller will be allocated channels 9 - 16. This process will repeat until the system has either addressed 96 channels or allocated the number of channels on the handset.

The channels are allocated on the motor controller regardless of whether a hoist is plugged into the output or not.

Once a motor controller has been addressed the display above the switch will display its allocated channel. If a hoist is moving or has a fault the display will alternate between its address and that message.

### ***Adding or Removing Motor Controllers From A System***

A motor controller can be added to the end of an already addressed system and will be assigned the next available bank of channels automatically.

If a motor controller with units before and after it is powered down or removed from the system, all motor controllers in the system after that point will lose their addresses and channel allocation. Once the previous state is restored the remaining units will be allocated channels.

## 5.5 Motor Controller Display

The motor controller features two displays above the direction switches. These displays will convey the status of the channel, system status and menus.

The displays are also used as one large display to display longer, system wide messages. For example if an emergency stop is pressed.

Not all error messages will stop the hoists from moving if they are in motion when the error occurs, similarly not all error messages prevent hoists from being moved if they are stopped.

A status indicator flashes in the bottom right hand corner of the display to indicate the system is functioning correctly.

### Key

Icon	Description
0123456789	Channel Numbers
	No Hoist Detected (Low Voltage Controller Only)
	Hard Up Limit (Low Voltage Controller Only)
	Hard Down Limit (Low Voltage Controller Only)
	Soft Up Limit (Encoder card only)
	Soft Down Limit (Encoder card only)
	Bypass Limits (Low Voltage Controller Only)
	Underload Detected (Load Cell Upgrade Only)

	Overload Detected (Load Cell Upgrade Only)
	Underload Detected (Load Cell Upgrade Only)
	Underload Bypass (Load Cell Upgrade Only)

### Group Halt

The system employs a group halt feature, which means that if a group of hoists are being moved and one of those hoists develops a fault or hits a limit, the system will stop. Once the hoist with the problem has been deselected or the fault cleared and a reset has been performed movement can continue.

### Menu System

The DigiHoist controller features an integrated menu system that allow settings to be edited or changed. The contents of this menu system will differ slightly depending on what model or options your DigiHoist has. For example if you do not have the Load Cell Upgrade fitted you will not see any menu options for the Load Cell system.

The controls for the menu system are very simple to use. There are 5 options to chose from when operating the menu system:

-  Move left and right between menus
-  Navigate up and down a menu
-  Edit a menu option
-  Save
-  Exit without saving

## 5.6 Motor Controller Controls

The DigiHoist controller has on board controls for controlling movement without the need for a DigiHoist Handset. There are 8 directional switches under the main display along with a Go and Reset button.

The 8 directional switches are momentary switches meaning that they will always remain in the middle (Off) position even when a direction is selected. If a direction is selected this will be indicated by the green up or red down LEDs immediately above and below the switches.

To select a direction of movement move the switch in the appropriate direction, to change direction or to clear the direction of movement move the switch in the opposite direction until the up and down LEDs are off.

When multiple Digihoist controllers are connected together without a handset, the first Digihoist controller in the chain (Channels 1- 8) will become the masker controller. Only its GO and RESET buttons will be functional, and will illuminate.

## 6 Handset Operation

This section covers operation of the DHH-8, DHH-16 and DHH-32 handsets. The only difference between the 3 units is the number of channels that can be controlled, all other features and function are identical.

## 6.1 Emergency Stop

An emergency stop button located on the handset works in addition to the button located on the front panel of the controller. Pressing either of these buttons will stop all motor movement from the DigiHoist system.

The emergency stop system is only enabled when the handset is plugged into the motor controller.

### ***Resetting the Emergency Stop System***

After the emergency stop system has been activated, a 2 step reset is required.

1. When it is safe to do so reset any depressed emergency stop buttons by twisting them clockwise.
2. Press the flashing blue Reset button on the handset to reset the emergency stop system. The system is now active and ready for use.

The blue Reset button will only be lit when the system needs to be reset.

For further information on the emergency stop system, refer to section 5.2 Motor Controller Operation - Emergency Stop.

## 6.2 The GO and RESET buttons

In addition to the channel selection switches the handset has two other buttons.

### **RESET Button**

The RESET button is used to acknowledge and reset a fault condition in the motor controller, if it needs to be pressed it will flash blue. This button is used to clear the RST and RSTL messages on the handset display.

If a situation occurs when pressing the Reset button does not clear the RST or RSTL messages on the handset display, pressing and then releasing the emergency stop on the handset will clear the messages.

### **GO Button**

The GO button button is used to initiate hoist movement, it will only illuminate if pressing the go button will cause movement. If for example the system was in a reset state or a selected channel could not move then the GO button would not be illuminated.

## 6.3 Addressing

As soon as the handset is plugged into the input of the first motor controller it will begin the auto addressing process.

When the Hoist Power key switch on the front of the motor controller is in the ON position any channels that have a hoist connected will be represented by a solid blue status Indicator above the channel.

When the Hoist Power key switch on the front of the motor controller is in the AUTO position the blue status Indicators will be illuminated until the GO button is pressed. When the GO button is pressed the status indicators will indicate the if a hoist is connected to a channel.

For further information about Addressing, see the section "Motor Controller Operation - Addressing".

## 6.4 The Handset Display and Menu

In addition to the 7 segment displays on the front of the motor controller, a Starburst type display is present on the handset. This provides status information about the system in addition to the Indicators on the handset.

The handset display features a flashing status indicator in the bottom right corner of the screen to indicate the system is working correctly. This mirrors the one found on the display of the DigiHoist motor controller.

The status messages shown on the handset display are outlined below:

<b>RDY</b>	The system is ready to run.
<b>ESTP</b>	An emergency stop button has been pressed
<b>RST</b>	A reset of the system is required (by pressing the Reset button on the handset, which will be flashing).
<b>RSTL</b>	The system has stopped movement due to a fault condition, like a limit being stuck. A reset of the system is required (by pressing the Reset button on the handset, which will be flashing).
<b>ER02</b>	The emergency stop button has been released with the GO button held down.

### ***The Handset Menu***

The Handset display can be used to modify operating parameters. The menu is navigated using the three buttons labeled M, Up and Down.

#### ***Parameter list mode***

Pressing and holding the M button for two seconds will cause the display to enter the parameter list mode. In this mode the parameters can be viewed. The display will alternate between showing the parameter name and its value. Pressing the up and down buttons allow different parameters to be viewed. Pressing the M button for two seconds will cause the display to revert to the normal display mode.

#### ***Parameter edit mode***

When the desired parameter is selected pressing the M button will cause the display to enter the parameter edit mode. If the currently selected parameter cannot be changed the display will show " - " for as long as the M button is pressed. If the currently selected parameter can be edited the display will show its value and the up and down buttons are used to change its value.

Pressing the M button briefly will save the changed parameter value and revert the display to the parameter list mode, the display will again alternate between the parameter name and its new value.

Pressing the M button for more than two seconds will cause the display to revert to the parameter list mode, without saving the changed parameter value.

Whilst in either the parameter list mode or the parameter edit mode if no button is pressed for 20 seconds the display will revert to the default display mode without saving any values.

### ***Parameter list***

The following parameters are available.

<b>Parameter</b>	<b>Editable</b>	<b>Description</b>	<b>Values</b>	<b>Default</b>
CLRF	Yes	Clear a switch fault	Yes No	No
Ver	No	Display the software version	--	--
Clone	Yes	Put the handset into clone mode. <u>Only available when plugged into a DigiLink</u>	Yes No	No
Limit	Yes	Set the limit sensitivity	110v 24v NONE	110v

### ***Parameter descriptions***

#### **limit - Set limit sensitivity (Only available when connected to a PRG DigiHoist Controller)**

This setting will set the sensitivity of the Limit detect circuitry. The 110V setting is used for motors with 110V handset supplies, like Lodestar hoists. The 24V setting is used for motors with 24V handset supplies, Like Liftket hoists. Long multi core cable runs (greater than 100m) can cause false hoist detection in 24V mode, this is due to excessive cable capacitance. If the Status and Direction indicators are seen to be flickering then the Handset is set to 110V mode and is being used with 24V hoists. Setting 24V mode will eliminate this effect with the possible by products of falsely detecting hoists if very long multi core cables are used.

If required limit detection can be temporarily turned off by setting this parameter to NONE. When in NONE mode the display will alternate between RDY and NONE to indicate limit sensing is disabled. The handset will startup with the same limit settings that were present when it was shut down. When the limit setting is set to NONE the system will act like a more traditional motor controller and will assume motors are always present.

**Ver - Software version number**

This will cause the handset to display its software version number. All connected and addressed motor controllers will also display their own software version number, status and fitted options.

**Clone - Clone Mode (DigiLink Only)**

Clone mode allows a single Handset to take control of the whole system and for that control to be easily switched between Handsets. It is activated via a Handset being plugged into input 1 of the DigiLink. Once a handset is connected to a DigiLink a new menu option appears in the menu system called Clone with the options On and Off.

Selecting On will turn that Handset and all other handsets connected to the DigiLink into clone mode.

**CLRF - Clear Fault**

CLFT allows any switches detected as faulty to be cleared. When detected as faulty the Status, Up and Down LEDs around the faulty switch will flash fast. The handset remembers switches marked as faulty when powered down so, powering down a handset will not clear the fault. If the fault is able to be cleared selecting Yes in the CLRF menu will clear any switch faults. If the fault persists and cannot be cleared the switch may need to be replaced.

## 6.5 Moving Hoists

All hoist movements are conducted through the local controls on the front panel of a controller or a handset.

Select the direction you wish the motors to travel using the switches and press Go

### ***Handset Status Indicators***

The blue status Indicators provide information regarding the status of the hoist connected to that channel

**ON** A hoist is present on that channel

**OFF** No hoist detected.

**FLASHING** A problem has been detected with the hoist on that channel.

On the controller the displays will provide feedback as to what the current status of a channel is. See the Motor Controller Operation - Motor Controller Display section for more information

### ***Direction Indicators***

The direction indicators are the red and green arrow shaped lights above and below each channel switch.

#### **Red**

**ON** Down selected

**OFF** No direction selected

**FLASHING** Down selected and a down limit has been hit

#### **Green**

**ON** Up selected

**OFF** No direction selected

**FLASHING** Up selected and an up limit has been hit

### **Phase Rotation**

When the Phase Override key switch on the rear panel of the motor controller has set to the ON position, this will cause the hoists to move in the opposite direction than normal. In this instance the system knows this information and all displays and indicators will represent the true direction of movement of the hoist.

## 6.6 Group Halt

A group is defined as any motors that are active on the system.

If a group of motors are moving and one of them develops a fault, all movement will be stopped. Once the faulty channel has been deselected from the move, or the fault has been cleared, and the system has been reset, movement can carry on as normal.

- Check the indicators on the handset and displays on the front of the motor controller for more information on any faults.
- To reset the system after clearing any faults press the blue Reset button. This will flash when the system needs to be reset.
- Group Halting caused by limit detection is inactive if the limit mode is set to NONE (on PRG DigiHoist models only).

## 7 Glossary

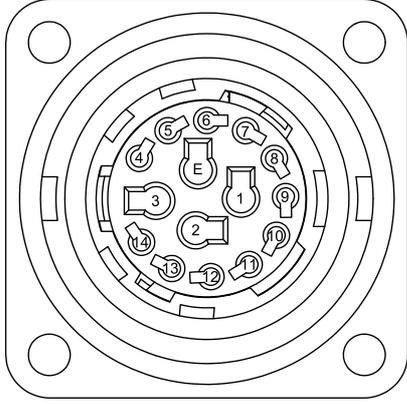
The following section outlines further information including connector pin out information and status messages displayed on the various screens on the DigiHoist system.

## 7.1 Controller Connections

### Data Connection

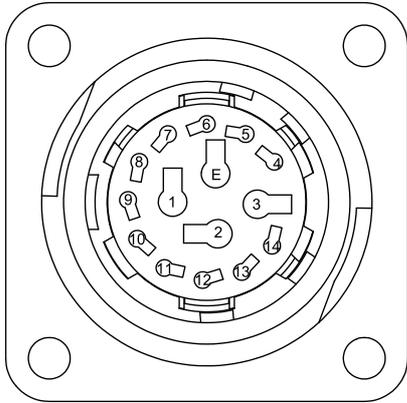
#### Female

Pin	Function
1	No Connection
2	No Connection
3	No Connection
4	24V
5	0V
6	E-Stop +
7	E-Stop -
8	Data -
9	Data +
10	E-Stop Return +
11	E-Stop Return -
12	Presence +
13	Presence -
14	Shield
E	No Connection



#### Male

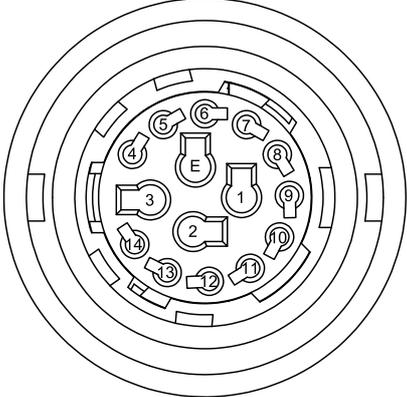
Pin	Function
1	No Connection
2	No Connection
3	No Connection
4	Presence +
5	Presence -
6	E-Stop +
7	E-Stop -
8	Data -
9	Data +
10	E-Stop Return +
11	E-Stop Return -
12	24V
13	0V
14	Shield
E	No Connection



## Link Cable

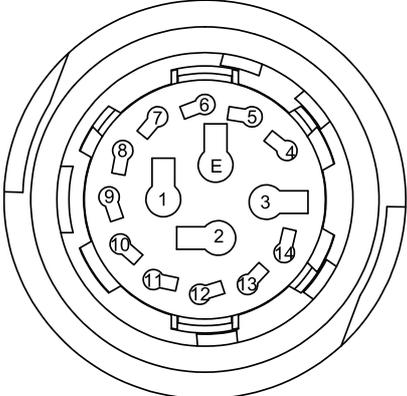
### Female

Pin	Colour	Size
1	No Connection	No Connection
2	No Connection	No Connection
3	No Connection	No Connection
4	Brown	1mm <sup>2</sup>
5	White	1mm <sup>2</sup>
6	Red	0.25mm <sup>2</sup>
7	Black	0.25mm <sup>2</sup>
8	Brown	0.25mm <sup>2</sup>
9	Green	0.25mm <sup>2</sup>
10	Grey	0.25mm <sup>2</sup>
11	Pink	0.25mm <sup>2</sup>
12	Blue	0.25mm <sup>2</sup>
13	Violet	0.25mm <sup>2</sup>
14	Shield	1mm <sup>2</sup>
E	No Connection	No Connection

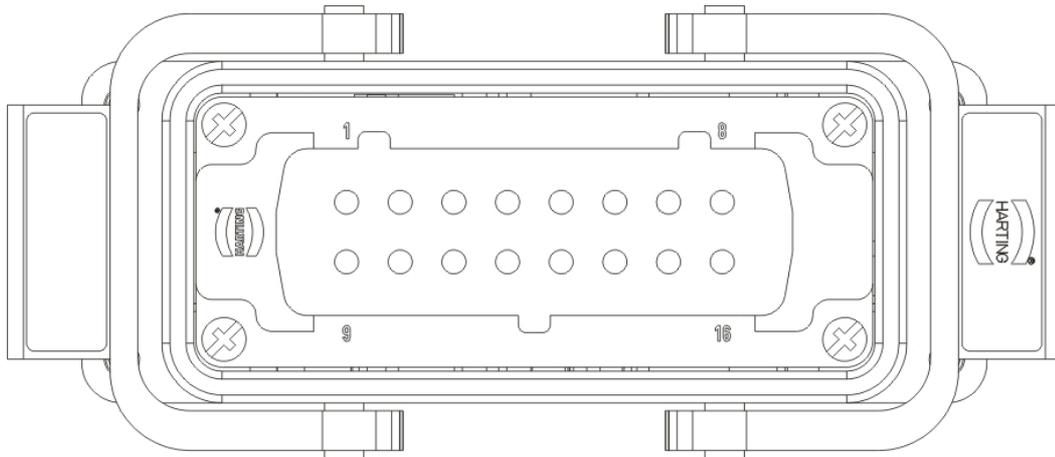


### Male

Pin	Colour	Size
1	No Connection	No Connection
2	No Connection	No Connection
3	No Connection	No Connection
4	Brown	1mm <sup>2</sup>
5	White	1mm <sup>2</sup>
6	Red	0.25mm <sup>2</sup>
7	Black	0.25mm <sup>2</sup>
8	Brown	0.25mm <sup>2</sup>
9	Green	0.25mm <sup>2</sup>
10	Grey	0.25mm <sup>2</sup>
11	Pink	0.25mm <sup>2</sup>
12	Blue	0.25mm <sup>2</sup>
13	Violet	0.25mm <sup>2</sup>
14	Shield	1mm <sup>2</sup>
E	No Connection	No Connection

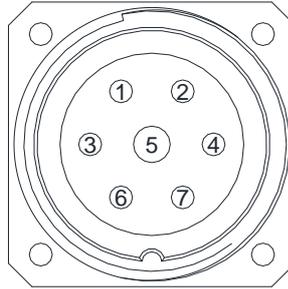


## Hoist Connection - Harting HE16



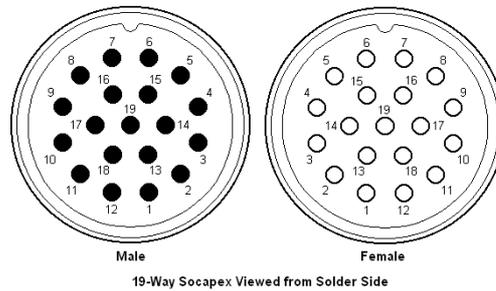
Pin	Hoist	Connection
1	1	L1 Motor 1
2	1	L2 Motor 1
3	1	L3 Motor 1
4	2	L1 Motor 2
5	2	L2 Motor 2
6	2	L3 Motor 2
7	-	Earth
8	-	Earth
9	3	L1 Motor 3
10	3	L2 Motor 3
11	3	L3 Motor 3
12	4	L1 Motor 4
13	4	L2 Motor 4
14	4	L3 Motor 4
15	-	Earth
16	-	Earth
shell	-	Earth

### **Hoist Connection - 7 Pin Socapex - Version A**



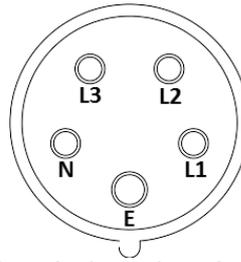
<b>Pin</b>	<b>Connection</b>
1	L1
2	L2
3	L3
4	Earth
5	Up
6	Common
7	Down

## Hoist Connection - 7 Pin Socapex - Version A



Pin Number	Power	Control
	B1	B2
1	Motor 1 L1	Motor 1 Common
2	Motor 1 L2	Motor 1 Down
3	Motor 1 L3	Motor 1 Up
4	Motor 2 L1	Motor 2 Common
5	Motor 2 L2	Motor 2 Down
6	Motor 2 L3	Motor 2 Up
7	Motor 3 L1	Motor 3 Common
8	Motor 3 L2	Motor 3 Down
9	Motor 3 L3	Motor 3 Up
10	Motor 4 L1	Motor 4 Common
11	Motor 4 L2	Motor 4 Down
12	Motor 4 L3	Motor 4 Up
13	Earth 1	Earth 1
14	Earth 2	Earth 2
15	Earth 3	Earth 3
16	Earth 4	Earth 4
17	Earth	Earth
18	Earth	Earth
19	Earth	Earth
<b>Rack End</b>	Male	Female
<b>Truss End</b>	Female	Male
<b>Fan-out</b>	Female	Male

## Power Connection

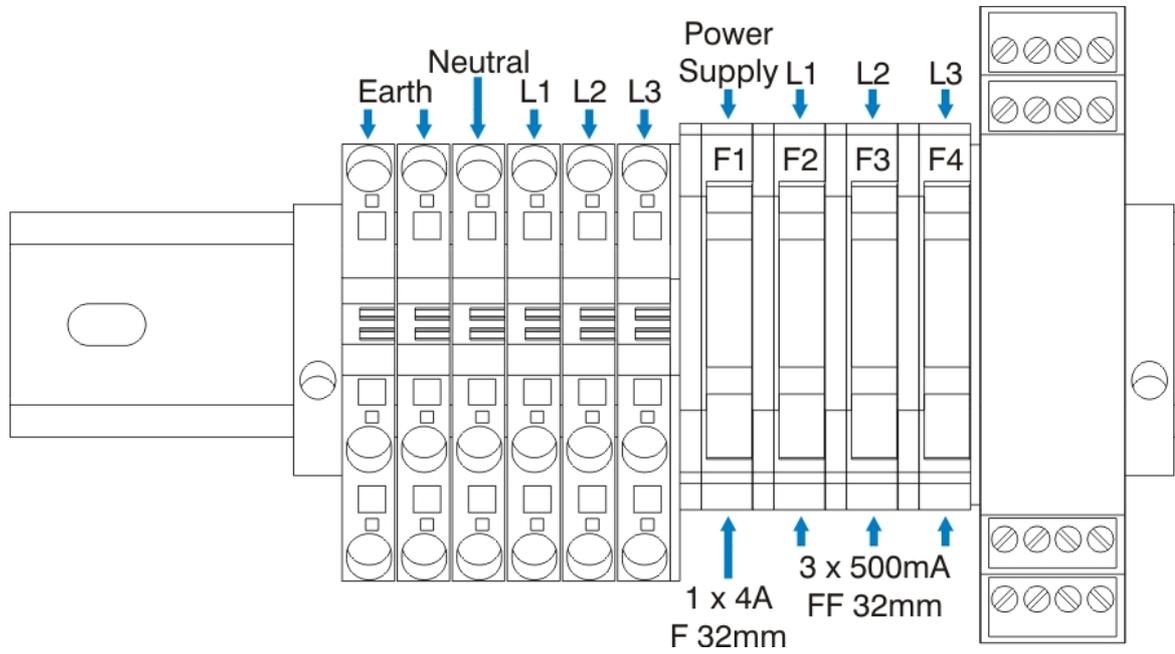


Viewed from the front of a male connector

Pin	Connection
L1	Phase 1
L2	Phase 2
L3	Phase 3
N	Neutral
E	Earth

## 7.2 Fuse Layout

The following diagram outlines the layout of the fuses inside the Digihost controller.

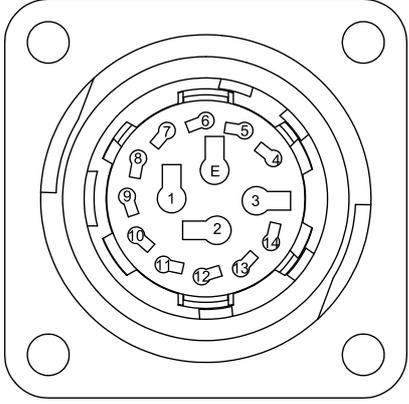


## 7.3 Handset Connection

### *Data Connection*

#### Male

Pin	Function
1	No Connection
2	No Connection
3	No Connection
4	Presence +
5	Presence -
6	E-Stop +
7	E-Stop -
8	Data -
9	Data +
10	E-Stop Return +
11	E-Stop Return -
12	24V
13	0V
14	Shield
E	No Connection

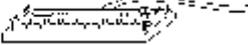
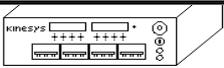
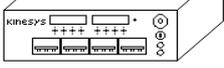


## 7.4 Display

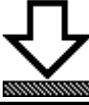
The following section provides information relating to the display of information on the handset and motor controller displays and indicators.

### *Motor Controller Display*

#### System Wide Messages

Displayed Message	Description
 <b>Phase Fault</b> 	Incoming supply phase issue.
<b>Hoist Power</b>  <b>Off</b> 	Hoist Power Key Switch in OFF position
<b>Hoist Power</b>  <b>On</b> 	Hoist Power Key Switch in ON position
<b>Hoist Power</b>  <b>Auto</b> 	Hoist Power Key Switch in Auto position
<b>ESTOP</b>	Emergency stop button pressed somewhere in the system
<b>ESTOP Pressed</b>	The emergency stop button on this controller has been pressed
<b>Press Reset</b>	The reset button needs to be pressed in order for the system to operate
<b>Not Controlled</b>	The master unit does not have channels available to control this unit
<b>Not Addressed</b>	A unit has been detected further up the chain, but this unit has not been addressed
<b>Handset Connected</b> 	A handset has been connected and front panel controls have been disabled
<b>Local Control</b> 	All local controls are now active
<b>Master Connected</b> 	A master DigiHoist is now controlling the system

### Channel Specific Messages

Icon	Description
0123456789	Channel Numbers
	No Hoist Detected (Low Voltage Controller Only)
	Hard Up Limit (Low Voltage Controller Only)
	Hard Down Limit (Low Voltage Controller Only)
	Soft Up Limit (Encoder card only)
	Soft Down Limit (Encoder card only)
	Bypass Limits (Low Voltage Controller Only)
	Underload Detected (Load Cell Upgrade Only)
	Overload Detected (Load Cell Upgrade Only)
	Underload Detected (Load Cell Upgrade Only)
	Underload Bypass (Load Cell Upgrade Only)

Any channel specific message beginning with an E relates to an internal component fault. These are numbered 1-9.

## Motor Controller Controls

INDICATOR	Description
GREEN	Up direction of travel selected
RED	Down direction of travel selected
Flashing	A limit has been hit on that channel, movement can only be made in the opposite direction

## Handset Display

Displayed Message	Description
RDY	The system is ready to run with no faults detected.
ESTP	An emergency stop button has been pressed
ESTOP PRESSED	The emergency stop button on that handset has been pressed.
RST	A reset of the system is required (by pressing the Reset button on the handset, which will be flashing).
RSTL	The system has stopped movement due to a fault condition, like a limit being stuck. A reset of the system is required (by pressing the Reset button on the handset, which will be flashing).
ER02	The GO button is held down while attempting to reset the emergency stop system. Release the GO button and reset the emergency stop system.

## Handset Indicators

### Status Indicator (Blue)

INDICATOR	Description
ON	A hoist is present on that channel
OFF	No hoist detected. Either the hoist is unplugged or the Hoist Power key switch is in AUTO mode.
Flashing	A problem has been detected with the hoist on that channel.

### Down Indicator (Red)

INDICATOR	Description
ON	Down selected (Unless Phase Override is active)
OFF	No direction selected
FLASHING	Down selected and a down limit has been hit

### Up Indicator (Green)

<b>INDICATOR</b>	<b>Description</b>
ON	Up selected (Unless Phase Override is active)
OFF	No direction selected
FLASHING	Up selected and an up limit has been hit

## 8 Contact Information

If you would like to get in touch with Kinesys then please use any of the following methods.

Email: [info@kinesys.co.uk](mailto:info@kinesys.co.uk)

Website: [www.kinesys.co.uk](http://www.kinesys.co.uk)

Tel: +44 (0) 20 8481 9850

Fax: +44 (0) 20 8487 0396

Mail: Unit 2 Kempton Gate Business Centre  
Oldfield Road  
HAMPTON  
Middlesex  
TW12 2AF  
United Kingdom

### **Feedback**

We are always keen to hear feedback from the users of Kinesys products. If you have a feature request, any comments about the documentation or just want to say hello, please get in touch.

In the unlikely event that this product has not performed to the high standards that we work to and our users expect then please let us know as soon as possible.

To leave feedback please email [info@kinesys.co.uk](mailto:info@kinesys.co.uk) or call us on +44 (0)20 8481 9850.

If you require technical support please contact us either at +44 (0)20 8481 9850 or [support@kinesys.co.uk](mailto:support@kinesys.co.uk)