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Kinesys DigiHoist Controller

Operating & Maintenance Manual
[ORIGINAL]

A range of digital fixed-speed hoist controllers

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The contents of this manual are believed to be correct at the time of printing. In a commitment to a policy of continuous development and improvement, TAIT reserves the right to change the specification of the product or its performance, or the contents of this manual, without notice.

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1. Introduction

1.1 Product description

DigiHoist is a family of digital hoist controllers capable of controlling fixed-speed electric chain hoists. Key safety features, depending on the model, include digital communication, limit monitoring, load & positioning monitoring, and group halt.

DigiHoist controllers can work as standalone units for controlling a single hoist or can be linked together to control a system of up to 96 hoists. The high resolution display on the front panel allows the key features to be adjusted by the user.

There are two versions of DigiHoist - the standard DigiHoist 32A and the larger DigiHoist PLUS 63A . Each of these versions comes as either a Direct Control or Low Voltage variant. Direct Control is used for hoists with externally controlled three-phase supplies and Low Voltage is used for hoists controlled by external switches or relays.

There are also multiple power connection options available for each variant; three for Direct Control and six for Low Voltage.

DigiHoists with the Positioning & Ethernet upgrade can connect to hoist encoders for more precise positioning information.

The DigiHoist incorporates an Emergency Stop system to SIL2 and can be used as part of a Category A (BS7906-1:2001) or D8+ (SQ P2:2010) system. However, the DigiHoist can also achieve SIL3 compliance when used in conjunction with a Kinesys Mentor system.

1.2 Creating an EN17206 compliant system for fixed-speed hoists

As demand for EN17206 compliant systems increases around the world, there are many fixed-speed systems that no-longer meet the desired requirements of this standard. Compliance can be achieved by deploying a combination of the Kinesys DigiHoist Controller and LibraCELL load cells.

For rigging applications using variable speed hoists, the Kinesys Apex system offers a straightforward and EN17206-compliant system.

1.3 Scope and purpose

This manual describes the key features, means of operation and maintenance operations of the DigiHoist fixed speed hoist controller.

The manual is based on DigiHoist software version v4.91.

The equipment described in this manual may only be operated by personnel qualified to do so. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with this and associated equipment.

1.4 Model part numbers

This manual applies to the following DigiHoist models:

DigiHoist 32A		Model Number range
Low Voltage	Standard	DGH-00-0020 to DGH-00-0031
	Positioning & Ethernet upgrade	DGH-00-1020 to DGH-00-1031
Direct Control	Standard	DGH-00-0040 to DGH-00-0044
	Positioning & Ethernet upgrade	DGH-00-1040 to DGH-00-1044

DigiHoist PLUS 63A		Model Number range
Low Voltage	Standard	DGH-01-0020 to DGH-01-0031
	Positioning & Ethernet upgrade	DGH-01-1020 to DGH-01-1031
Direct Control	Standard	DGH-01-0040 to DGH-01-0044
	Positioning & Ethernet upgrade	DGH-01-1040 to DGH-01-1044

The DigiHoist model number can be found on the rear panel or on the main display by accessing the System Setup menu.

1.5 Support requests

For support, please use the following contact details:

support@taittowers.com
Tel: +44(0) 20 8481 9850

To resolve your support request as quickly as possible, please provide the following information, if available, when contacting Kinesys:

- Site name, address, machine location details and your contact details.
- As much detail as possible on the behaviour observed, including any unusual changes in behaviour that are different from normal operation and any environmental conditions that may be a factor (e.g. fluctuations in temperature and water damage).
- Details on the behaviour that should have been expected.
- The exact steps required that produce the issue.
- Any solutions to fix the issue that you have already tried.
- Any workarounds that you have found.
- Equipment item numbers and serial numbers, such as those displayed on the identification plates/labels.
- Version numbers of any software being used.
- Any screen shots, photographs or videos of the issue.

2. Safety information

The following symbols are used to indicate specific items which require special attention by the user:

	**Warning: Instructions which relate to safety**
	**Warning: Instructions which relate to safety where there is a particular risk of electric shock**
	**Warning: Instructions which relate to safety where there is a particular overhead risk**
	**Danger: Prohibited actions which are forbidden under all circumstances**
	**Additional important information**

2.1 Safety regulations

The following regulations serve as the basis for assembly, installation, certification and maintenance of automation equipment within the area of the European community. For countries other than those mentioned, local legislation and directives may apply in addition to or in place of the European regulations as stated in this manual.

The manufacturer's guarantee depends on the consideration of these regulations and the operating instructions.

European regulations

2006/42/EC	EC - Machinery Directive
2014/30/EU	EC - Directive relating to electromagnetic compatibility
2014/35/EU	EC - Electrical equipment designed for use within certain voltage limits

BGV accident prevention regulations (Germany only)

DGUV Vorschrift 3 (BGV A1)	Principles of accident prevention
DGUV Vorschrift 3 (BGV A3)	Electrical facilities and equipment
DGUV Vorschrift 52 (BGV D6)	Accident prevention regulation for use in crane systems
DGUV Vorschrift 54 (BGV D8)	Accident prevention regulation for electric winches, lifting and pulling equipment
DGUV Regel 100-500 (BGR 500)	Hoisting accessories
DGUV Grundsatz 309-001 (BGG 905)	Principles for crane inspections

Harmonized regulations

EN ISO 12100	Safety of machinery; Basic terminology, methodology
EN 14492-2	Cranes - Power driven winches and hoists
EN 818-7	Short link chain for lifting purposes; Fine tolerance hoist chain, Grade T
EN ISO 13849-1 & 2 / BS EN 62061	Safety of machinery - Safety-related parts of control systems; General principles for design
EN 60034-1	Rotating electrical machines; Rating and performance
EN 60034-5	Rotating electrical machines; Degrees of protection provided by the integral design of rotating electrical machines
EN 60204-1	Electrical equipment of machines, General requirements
EN 60204-32	Electrical equipment of machines; Requirements for hoisting machines
EN 60529	Degrees of protection provided by enclosures (IP-Code)
EN 60947-1	Low-voltage switchgear and control gear
EN 61000-6-2	Electromagnetic compatibility; Immunity for industrial environments
EN 61000-6-4	Electromagnetic compatibility; Emission standard for industrial environments
EN 82079-1	Preparation of instructions for use - Structuring, content and presentation

European regulations

EN 17206	Machinery for stages and other production areas; Safety requirements and inspections

Regulations and technical specifications

FEM 9.511:1986	Rules for the design of series lifting equipment; Classification of mechanisms
FEM 9.683:1995	Series lifting equipment; Selection of hoisting and travelling motors
FEM 9.751:1998	Series lifting equipment; Power driven series hoist mechanisms; Safety
FEM 9.755:1993	Serial hoist units; Measures for achieving safe working periods

2.2 Safety warnings

IF IN DOUBT ABOUT ANY ASPECT OF MOVING OBJECTS, ALWAYS SEEK PROFESSIONAL ADVICE BEFORE OPERATION.

Make sure this Operating & Maintenance Manual is always kept in a complete and fully readable condition and that it is always accessible to all operators of the equipment.

Prohibitions of operation

- **Do not install the DigiHoist or do maintenance to the DigiHoist in an area that is accessible to children or other unqualified persons.**
- **Do not use the DigiHoist in an aggressive environment. An aggressive environment is defined as an environment which contains hazardous substances that may degrade the load bearing capacity of the hoist.**
- **Do not use the DigiHoist if it does not appear to be in 100% working order.**
- **Do not modify or attempt to repair the DigiHoist in any way other than those described in the maintenance procedures within this manual.**

Safety precautions before operation

- **Do a full risk assessment of the location where the DigiHoist and its connected devices are intended to be used.**
- **If used in rigging, the DigiHoist and its connected lifting device must be attached from suitable scaffolds, approved working platforms, or similar safe working positions. Make sure a qualified rigging specialist has assessed that the structure where the DigiHoist, lifting device and attached load are installed can safely support the combined weight of the equipment.**
- **Do not start movement operations until a qualified person has inspected the DigiHoist and all other connected equipment, and confirmed that is in 100% working order.**
- **Software-independent means of stopping movement must be provided, including a hardware emergency stop system that is compliant with all local regulations (e.g. Mentor).**
- **Make sure all machine stop buttons, emergency stop buttons and enabling switches in the system have been tested and are functioning correctly.**
- **Make sure all operators know the locations of the machine stop buttons, emergency stop buttons and enabling switches in the system.**
- **Make sure all attached loads are unobstructed and will not come into contact with other static or moving objects during movement.**
- **Make sure all attached loads are always visible to the operator where possible. If this is not possible, make sure the operator has reliable communicationwith a person who can clearly see the attached loads.**
- **Make sure all persons in the hazard zone underneath the lifting equipment**

are aware of the potential for movement.

- **Make sure that all cables, adapters and hoists connected to the DigiHoist have the correct connector wired to the same standard as the DigiHoist outputs. If in doubt, do not connect hoists or cables without checking for compatibility. Physically identical connectors may be wired differently by different suppliers.**

Safety instructions during operation

- **If you notice any unexpected or dangerous hoist movement during operation, press the emergency stop button on the front panel of the DigiHoistor an emergency stop button on a venue-wide safety controller to bring all movement to an immediate stop. Note that not all stop buttons in the system necessarily stop the movement an individual lifting device. Alternatively, if an enabling switch is used in the system, then release the enabling switch.**
- **If an enabling switch is used in your system to initiate movement of the hoist, be aware that releasing it may cause movement to stop unexpectedly.**
- **After a stop button has been pressed, the reason for its actuation must be found, and all possible failures in the system removed by trained personnel. The stop button must then be reset before continuing operation. Note that the stop button reset procedure may be different for different devices - refer to individual product manuals for more details.**

Safety instructions during maintenance

- **Maintenance and repairs to the hoist must only be carried out be competent and trained personnel.**
- **Only use original Kinesys parts when replacing components, including all fixings such as nuts, washers and screws.**
- **Do not modify or attempt to repair the DigiHoist in any way other than those described in the maintenance procedures within this manual. If a hoist needs repair work done beyond what is described in this manual, contact Kinesys to arrange a repair.**
- **Make sure to disconnect the power and remove attached loads when carrying out maintenance procedures.**
- **Make sure the maintenance area is secure before carrying out maintenance work.**

2.3 Visible damages

If any damage or breakages are detected during operation or during hoist tests, do not operate the DigiHoist until it has been repaired and a qualified person has checked and approved it.

2.4 Spare parts

Only original fixing components, spare parts, and accessories listed in manufacturer's spare parts catalogue are acceptable for use. The manufacturer's guarantee is given for those spare parts only. The manufacturer cannot be held responsible for any damages due to the use of non-original parts or accessories.

2.5 Operating environment

The DigiHoist is designed for indoor use only and to work in ambient temperatures between 5°C and 40°C (41°F and 104°F). The humidity of the environment must not exceed 90%.

2.6 Handling and storage

Condensation

The DigiHoist is designed for indoor use only. If the product has been exposed to temperature fluctuations, for example during transport, there may be risk of condensation which may result in damage. Do not connect the DigiHoist to a power source immediately. Leave the unit disconnected until it has reached a safe temperature

Shocks

Do not shake, knock or drop the DigiHoist. Avoid excessive force when installing and operating the product.

Handling

Do not lift the DigiHoist by any of its cables or connectors as this may cause damage to the unit and/or the cables.

Packaging

Where possible, use the original packaging to transport the DigiHoist. Alternatively, a purpose-made flight case may be used (available separately).

3. Product overview - DigiHoist 32A

3.1 Front panel overview - DigiHoist 32A

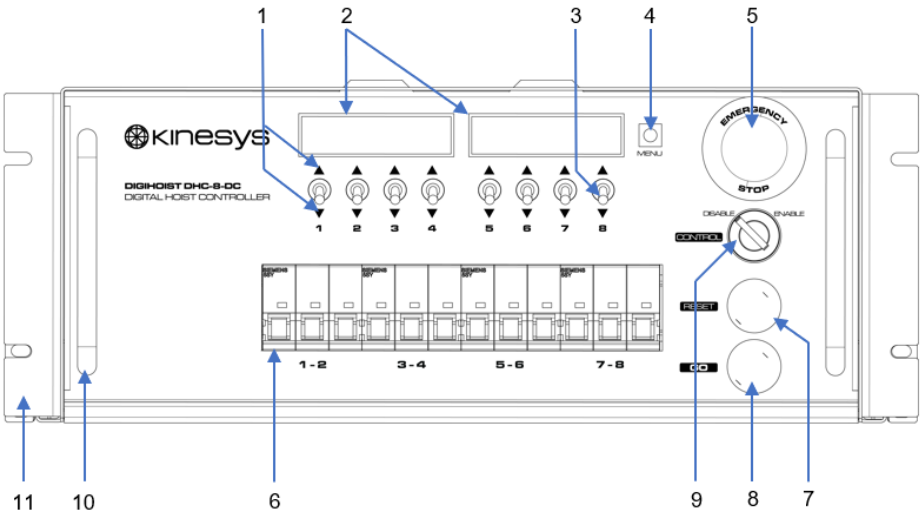


Figure 1. Front panel - DigiHoist 32A

Item #	Description	Notes
1	Channel direction indicators	Show the direction of movement for each channel
2	OLED displays	Main information displays
3	Channel direction toggle switches	Used for selecting / changing the direction of travel
4	MENU button	Used to access the main settings menu
5	Emergency stop button	Used for bringing all movement to a stop in the event of an emergency
6	Channel breakers (one per pair of outputs)	Provide override protection for each pair of hoist outputs
7	GO button	Will illuminate when system is ready and will initiate movement when pressed
8	RESET button	Will flash to indicate a system reset is required and will reset the system when pressed
9	Hoist power key switch	Used to enable the power supply to the hoists
10	Transportation handles	Used for lifting and transporting the unit
11	Rack mount ear	Used for installing the unit to a standard 19" rack

3.2 Rear panel overview - DigiHoist 32A

The rear panel is split into two sections: Power and Control. The Power section is used for connection to hoists and the Control section is used for connecting to other equipment or for linking to other DigiHoist controllers.

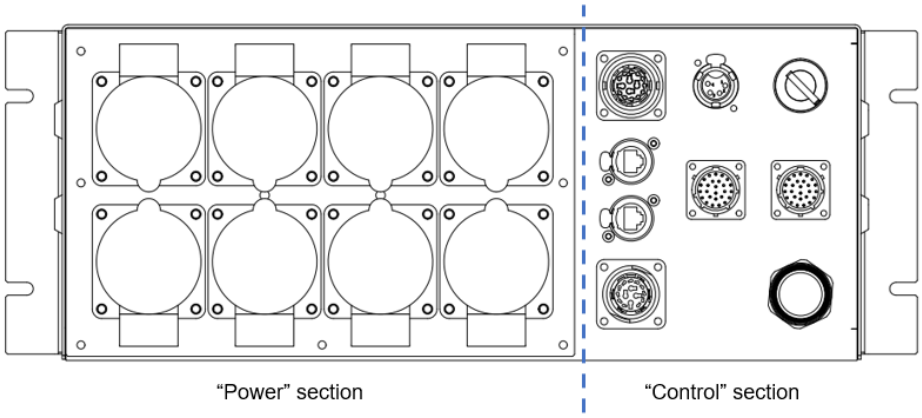


Figure 2. Rear panel - DigiHoist 32A

3.2.1 Power connection options - DigiHoist 32A, Direct Control

The following variations are available as power connection options on Direct Control models.

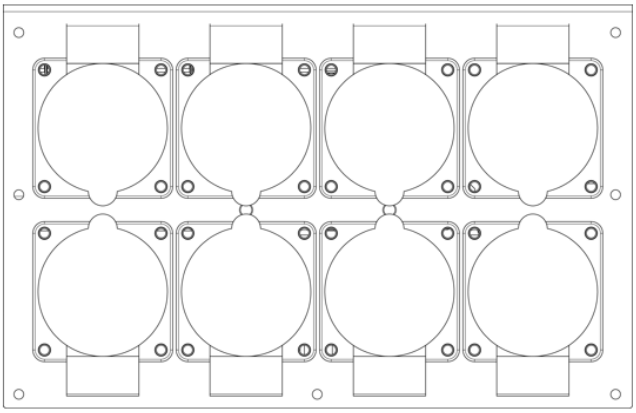


Figure 3. Power connections - 8 x CEE Form

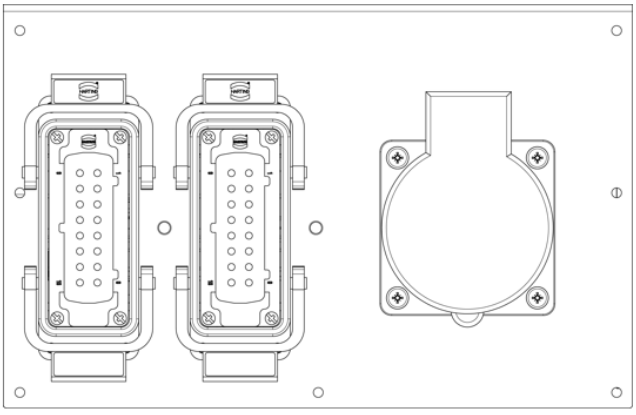


Figure 4. Power connections - 2 x Harting 16 and 1 x 32A CEE Form

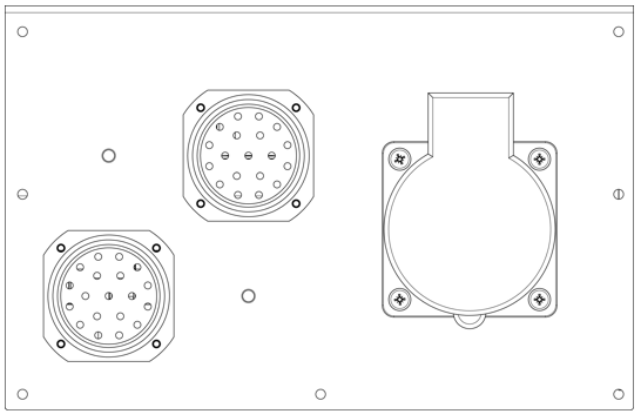


Figure 5. Power connections - 2 x Socapex 19 and 1 x 32A CEE Form

3.2.2 Power connection options - DigiHoist 32A, Low Voltage

The following variations are available as power connection options on Low Voltage models.

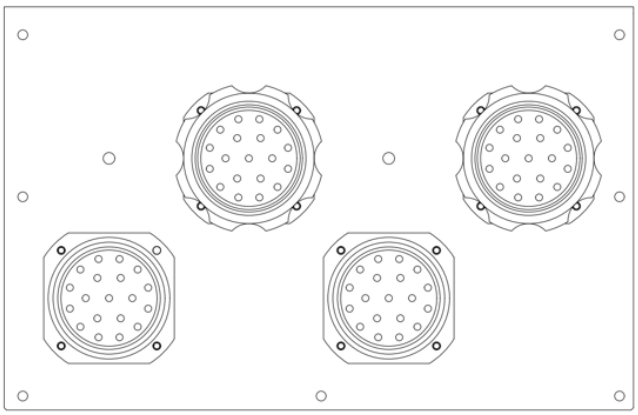


Figure 6. Power connection - 4 x Socapex 19

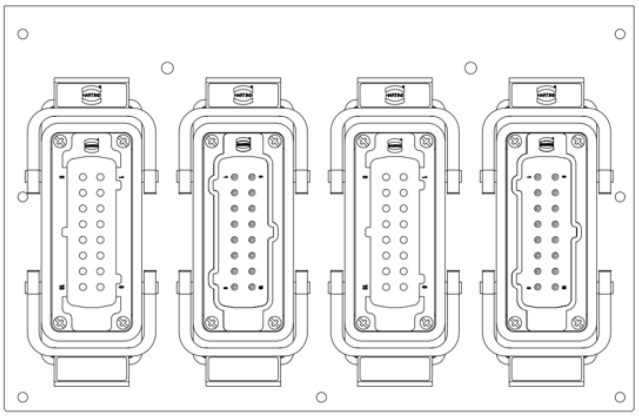


Figure 7. Power connections - 4 x Harting 16

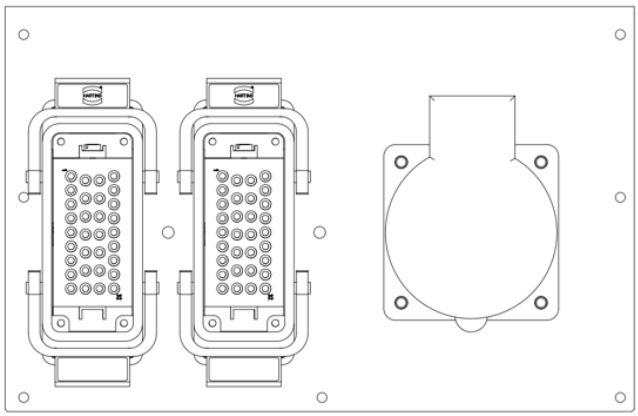


Figure 8. Power connections - 2 x Harting 32 and 1 x 32A CEE Form

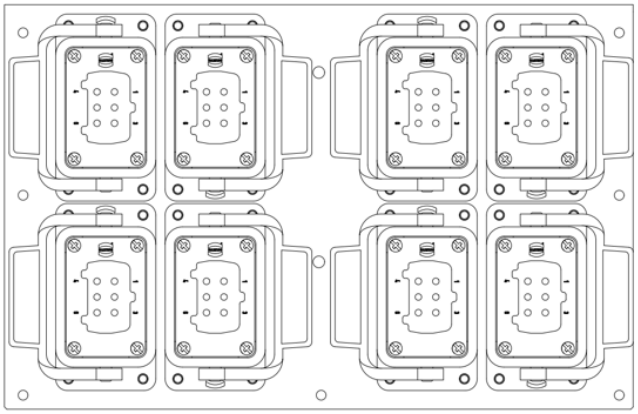


Figure 9. Power connections - 8 x Harting 6

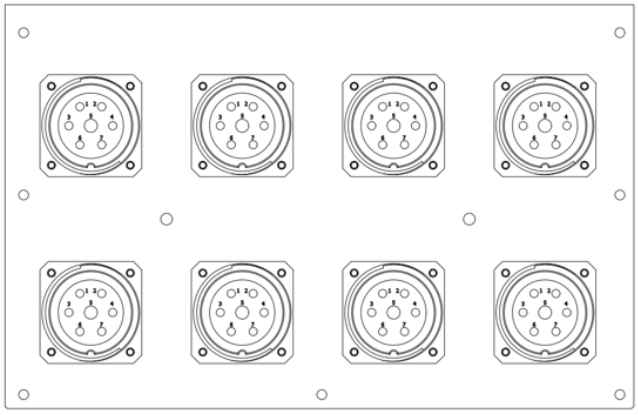


Figure 10. Power connections - 8 x Socapex 7

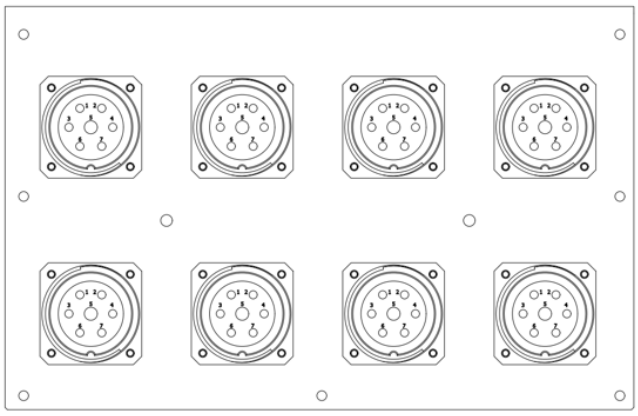


Figure 11. Power connections - 8 x Socapex 14

3.2.3 Control connection options - DigiHoist 32A

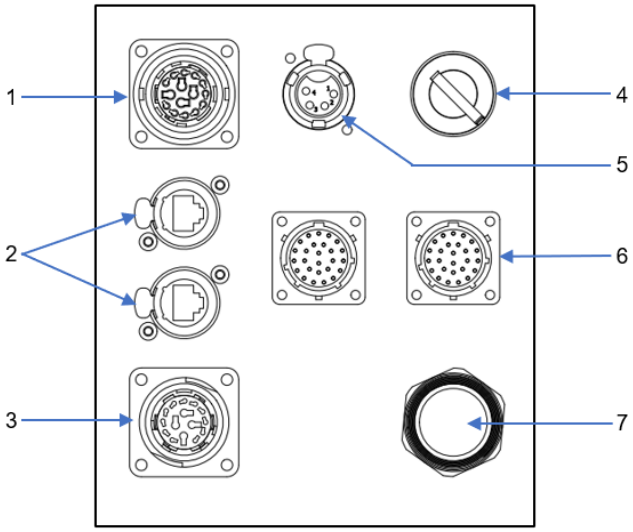


Figure 12. Control connection options - DigiHoist 32A

Item #	Description	Notes
1	DigiHoist Data In	For linking DigiHoists or connection to DigiHandset / DigiLink
2	Ethernet ports 1 & 2	For connection to a Vector Console / K2 Console / Ethernet hub for software-controlled movements (only available on Positioning & Ethernet upgrade versions)
3	DigiHoist Data OUT	For linking DigiHoists or connecting to emergency stop buttons
4	Phase reverse key	Low Voltage versions only - see section 7.3 for details
5	Loadcell input	For connection to LibraCELL monitoring shackles or LibraWifi power injector
6	Encoder outputs (1-4 & 5-8)	For connection to hoist encoders (only available on Positioning & Ethernet upgrade versions)
7	Mains power input	For mains connection to the unit (3 phase + Neutral + Earth 32A CEE Form or 30A L2 1-30)

4. Product overview - DigiHoist PLUS 63A

4.1 Front panel overview - DigiHoist PLUS 63A

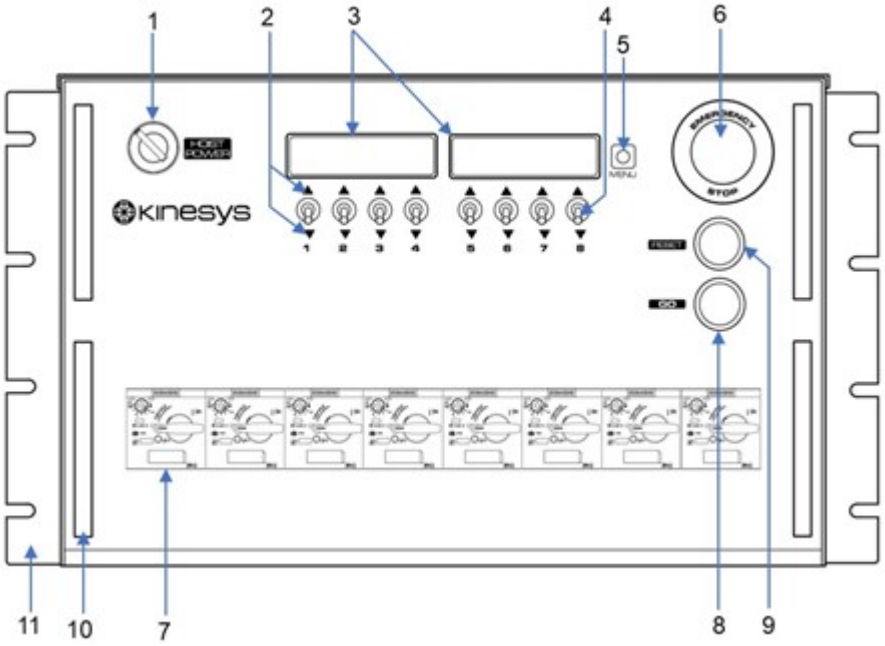


Figure 13. Front panel - DigiHoist PLUS 63A

Item #	Description	Notes
1	Hoist power key switch	Used to enable the power supply to the hoists
2	Channel direction indicators	Show the direction of movement for each channel
3	OLED displays	Main information displays
4	Channel direction toggle switches	Used for selecting / changing the direction of travel
5	MENU button	Used to access the main settings menu
6	Emergency stop button	Used for bringing all movement to a stop in the event of an emergency
7	Channel breakers (one per output)	Provides overcurrent protection for each hoist outlet
8	GO button	Will illuminate when system is ready and will initiate movement when pressed and held
9	RESET button	Will flash to indicate a system reset is required and will reset the system when pressed
10	Transportation handles	Used for lifting and transporting the unit
11	Rack mount ear	Used for installing the unit to a standard 19" rack

4.2 Rear panel overview - DigiHoist PLUS 63A

The rear panel is split into two sections: Power and Control. The Power section is used for connection to hoists and the Control section is used for connecting to other equipment or for linking to other DigiHoist controllers.

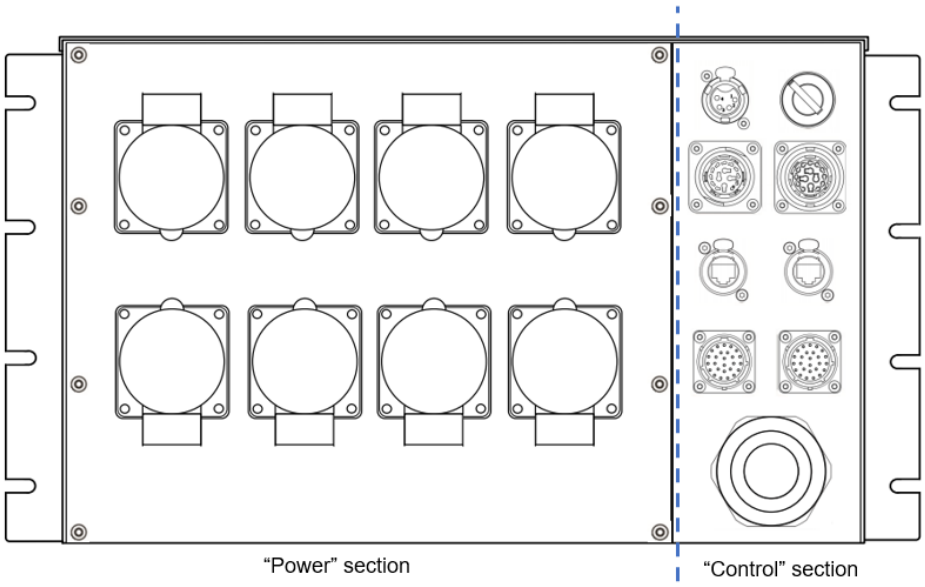


Figure 14. Rear panel - DigiHoist PLUS 63A

4.2.1 Power connection options - DigiHoist PLUS 63A, Direct Control

The following variations are available as power connection options on Direct Control models. These are the same as the 32A version - see the illustrations in section 3 for details.

- 8 x CEE Form
- 2 x Harting 16 and 1 x 32A CEE Form
- 2 x Socapex 19 and 1 x 32A CEE Form

4.2.2 Power connection options - DigiHoist PLUS 63A, Low Voltage

The following variations are available as power connection options on Low Voltage models. These are the same as the 32A version - see the illustrations in section 3 for details.

- 4 x Socapex 19
- 4 x Harting 16
- 2 x Harting 32 and 1 x 32A CEE Form
- 8 x Harting 6
- 8 x Socapex 7
- 8 x Socapex 14

4.2.3 Control connection options - DigiHoist PLUS 63A

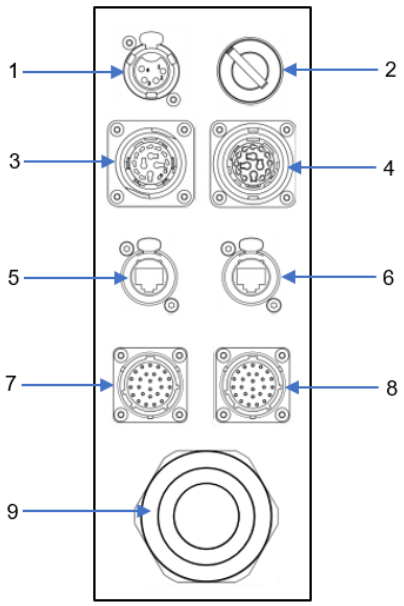


Figure 15. Control connection options - DigiHoist PLUS 63A

Item #	Description	Notes
1	Loadcell input	For connection to a LibraCELL monitoring shackle or LibraWifi power injector
2	Phase reverse key	Low Voltage versions only - see section 7.3 for details
3	DigiHoist Data In	For linking DigiHoists or connection to DigiHandset / DigiLink
4	DigiHoist Data OUT	For linking DigiHoists or connecting to emergency stop buttons
5	Ethernet port 1	For connection to a Vector Console / K2 Console / Ethernet hub for software-controlled movements (only available on Positioning & Ethernet upgrade versions)
6	Ethernet port 2	
7	Encoder outputs 5-8	For connection to hoist encoders (only available on Positioning & Ethernet upgrade versions)
8	Encoder outputs 1-4	
9	Mains power input	For mains connection to the unit (3 phase + Neutral + Earth 64A Red CEE Form)

5. Preparing the DigiHoist for operation

5.1 Circuit breakers

The circuit breakers on the front of the DigiHoist provide overcurrent protection for the hoist outputs. The circuit breakers operate in differently between the 32A and 63A versions.

5.1.1 Circuit breakers - DigiHoist 32A

One circuit breaker is provided for each pair of outputs. To isolate power to a pair of channels, locate the breaker for that channel and move the channel breaker switches DOWN to the OFF position. To restore power, move the channel breaker switches UP to the ON position.

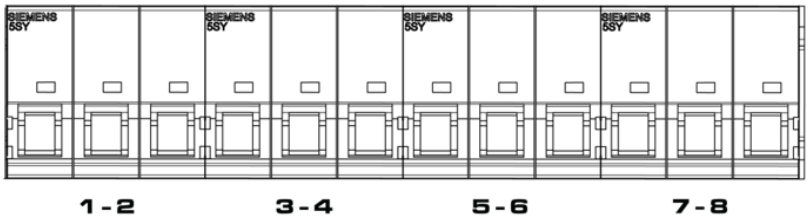


Figure 16. Circuit breakers - DigiHoist 32A

5.1.2 Circuit breakers - DigiHoist PLUS 63A

One circuit breaker is provided for each individual output. To isolate power on a specific channel, locate the breaker for that channel and rotate the switch to the OFF position. To restore power, rotate the channel breaker switch clockwise to the ON position.

In the event of a fault on one of the outputs, the circuit breaker will trip with the lever in the 10 o' clock position. Turn the lever fully counterclockwise to reset and then turn clockwise to restore power. If the circuit breaker trips repeatedly, check the hoist and cabling to identify the source of the fault.

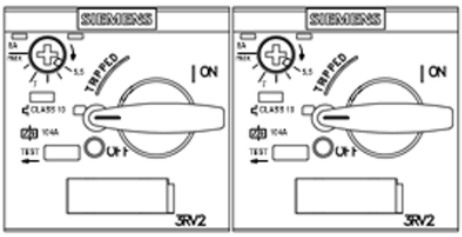


Figure 17. Circuit breakers - DigiHoist PLUS 63A

Warning! If a circuit breaker repeatedly trips when a hoist is connected or moved, stop immediately and investigate the problem. Do not repeatedly reset the circuit breaker or attempt to force it on. Contact Kinesys for further support.

5.2 Setting the trip current - DigiHoist PLUS 63A

The circuit breaker on the DigiHoist PLUS 63A has an option to adjust the trip current. Use a Philips screwdriver to adjust the setting on each circuit breaker to match the Full Load Protection rating of the hoist on that channel. Each circuit breaker has an adjustment range of between 5.5 A and 8 A. For details on what to set this to, refer to the rating plate on the hoist or the documentation supplied with the hoist. Circuit breakers with a different range of current settings are available to special order.

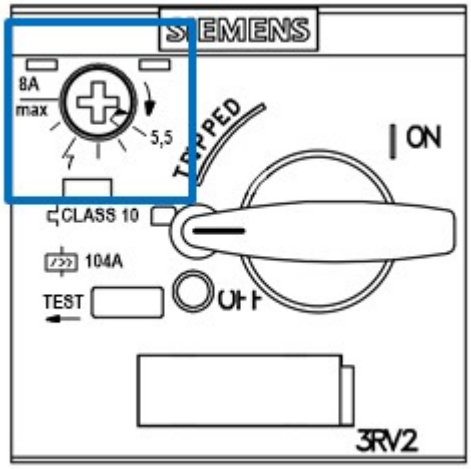


Figure 18. Setting the trip current - DigiHoist PLUS 63A

5.3 Testing the circuit breaker - DigiHoist PLUS 63A

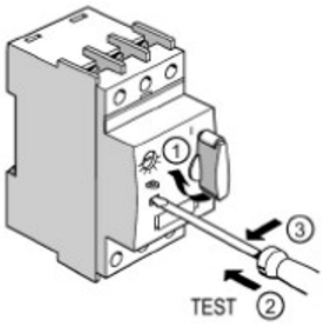


Figure 19. Testing the circuit breaker - DigiHoist PLUS 63A

To test the circuit breaker's overload release, continue as follows:

1. Turn the rotary button from 0 (OFF) to 1 (ON).
2. Insert a flat head screwdriver into the test opening.
3. Turn the screwdriver to the left.
4. If the rotary button snaps into the "TRIPPED" setting, the test has shown that the overload release is working correctly.

5.4 Installing the DigiHoist

5.4.1 Installation location

When considering the location to install the DigiHoist make sure the device will not be exposed to extreme levels of heat, cold, moisture, humidity, or dust.

The DigiHoist comes with rack mount ears as standard, which are used to secure the unit to the front of an industry standard 19" rack. DigiHoist units may be stacked on top of one another from the bottom of a rack upwards and in this scenario the rack mount ears are sufficient to provide security. However if DigiHoist units are to be placed higher up in the rack without the support of units underneath, or if the bottom unit in a rack is unsupported, guide rail assemblies must be used in addition to the rack mount ears to provide additional support at the rear of the rack. The guide rail assemblies are available separately - contact Kinesys or your supplier for details.

5.4.2 Rack mount ear installation

The DigiHoist has two rack mount ears for installation to the front of an industry standard 19" rack. Note that the DigiHoist 32A has a height of 4U (178 in) and the DigiHoist PLUS 63A has a height of 6U (264.6 in).

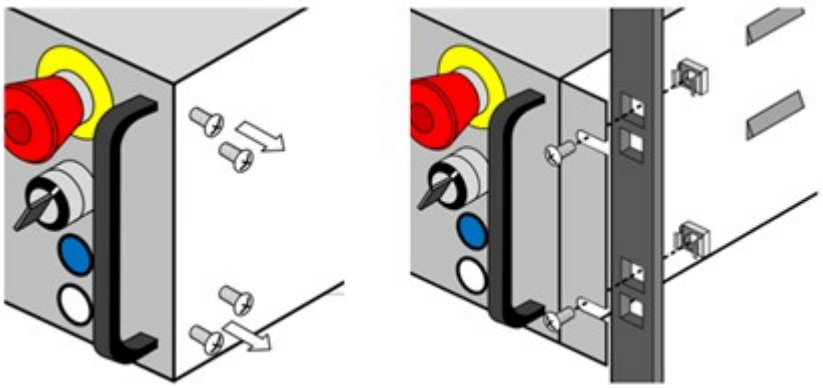


Figure 20. Rack mount installation

To install a DigiHoist to a rack continue as follows:

1. Unscrew the bolts on each side of the DigiHoist at the front.
2. Install the rack mount ears to each side of the DigiHoist using the removed screws.
3. Install the DigiHoist to the rack and align the mounting slots with the holes in the rack.
4. Use cage nuts and bolts (not supplied) to secure the DigiHoist to the rack on both sides.
5. Make sure there is enough space within the rack to allow for cables and connections at the rear, and switches and controls on the front.
6. Make sure there is is adequate ventilation to the DigiHoist once installed to the rack.

5.4.3 Guide rail installation

Guide rail assemblies are available separately and are used to secure the DigiHoist to the rear of an industry standard 19" rack to provide additional support.

Note: DigiHoist 32A is shown - the procedure for DigiHoist PLUS 63A is the same.

To install the guide rail assemblies continue as follows:

1. Attach the left guide rail and right guide rail to the sides of the DigiHoist using two M5 screws. Note that the slots along the length of each guide rail allow installation to racks of different depths.
2. Attach the left and right rack slides to the rear of the rack using screws and cage nuts.
3. Align the guide rails with the rack slides and carefully slide the DigiHoist into the rack.
4. Finally, secure the rack mount ears to the front of the rack in accordance with section 5.4.2.

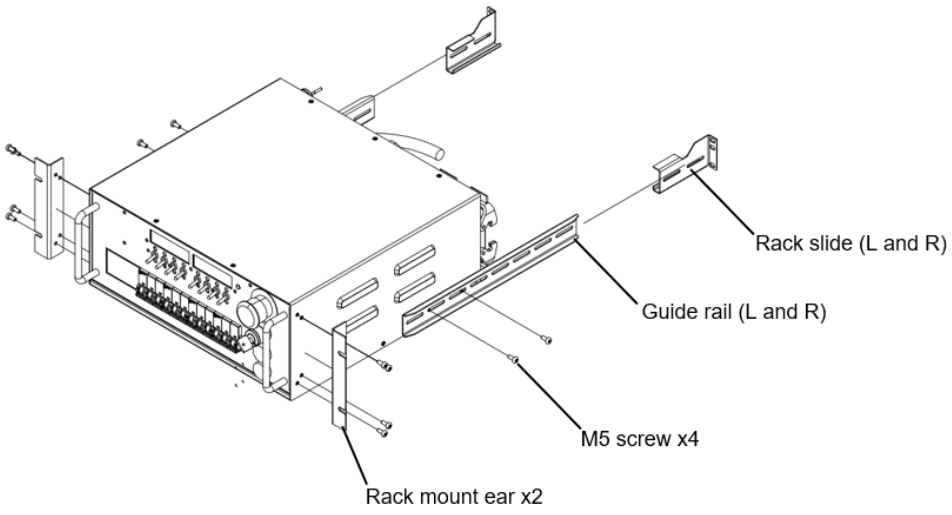


Figure 21. Guide rail installation

6. DigiHoist connections

6.1 Mains connection

The supply to the DigiHoist should be protected by an external fuse or circuit breaker with a rating not exceeding 32 A (30 A US) or 63 A (60 A US) (depending on the version of DigiHoist and the rating of the mains power connector).

If the supplied mains power connector is removed, a replacement connector of a suitable voltage and current rating must be installed by a competent electrician. The wires in the supplied mains cable are color-coded as follows:

- Phase L1 - Brown
- Phase L2 - Black
- Phase L3 - Grey or Black
- Neutral - Blue
- Earth (Ground) - Green/Yellow

6.2 Phase sequence

The DigiHoist detects the phase rotation on the incoming supply and automatically corrects for reverse-phased supplies. If the incoming 3-phase power supply is missing on of the second or third phases, “Phase Fault” will be shown on the display:

If the “Phase Fault” message is displayed, determine if the fault is present on the incoming power supply. If the incoming supply is correct, check the internal fuses in the DigiHoist. For more information on the layout of internal fuses see section 14.

If the first phase of the 3-phase power supply is missing the DigiHoist will not power on.

6.3 Pinout variations

Warning! Manufacturers and end users may wire the same connectors in different ways. This means it is possible to have physically mating connectors which may not function correctly or may cause an electrical hazard. Details of the different connector pinout configurations are shown in section 13. A label on the rear panel of the DigiHoist states which version of the pinout is being used on which connector.

6.4 Connecting the hoist power cable

The process of connecting the hoist power cable to the DigiHoist will depend on the connection interface on the rear panel. The power connection differs between Direct Control and Low Voltage versions of the DigiHoist. For the differences between the connection options, see sections 3 and 4.

Observe the following guidelines when connecting power cables:

- Make sure all connections are made firmly and securing methods are used in accordance with the cable manufacturer's requirements.
- Make sure there is enough cable length and that connections are not under excessive strain or unnecessary load.
- Make sure you know which hoist is connected to which channel on the DigiHoist. This is especially important when connecting more than one DigiHoist together in a system with more than 8 hoists.
- Use the pinout configurations in section 13 to confirm the connections are correct and compatible with the hoist. You should also refer to the instructions supplied with the hoist.

6.5 Connecting to LibraCELL

Kinesys LibraCELL load monitoring shackles are used to convey live load information to the DigiHoist display.

The DigiHoist can connect to a maximum of eight LibraCELLs, which when connected are auto-assigned to the eight DigiHoist channels.

1. Connect an XLR4 data cable (available separately) to the "LOADCELL" socket on the rear of the DigiHoist.
2. Connect the other end of the XLR4 cable to the socket on the LibraCELL. Note that it is possible to daisy chain up to eight cells in this way.
3. As soon as the LibraCELL is connected the DigiHoist will automatically display the load cell information.

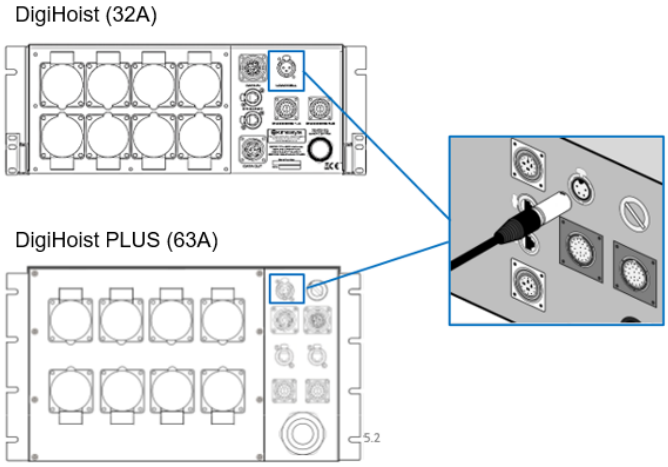


Figure 22. Connecting to LibraCELL

6.6 Connecting multiple DigiHoists

DigiHoists can be linked to one another to control a system of up to 96 channels/hoists.

1. Connect a Kinesys DigiHoist data cable (available separately) to the Data OUT socket on the first DigiHoist in the chain.
2. Connect the other end of the DigiHoist data cable to the Data In socket on the second DigiHoist in the chain.
3. Repeat steps 1 and 2 up to a maximum of 12 DigiHoists.

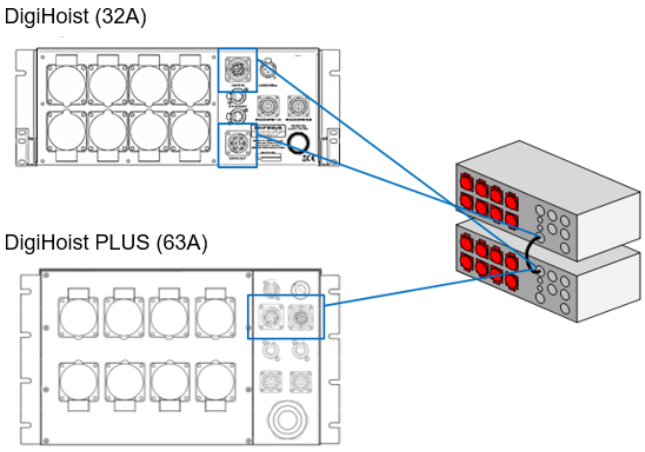


Figure 23. Connecting multiple DigiHoists

6.7 Connecting a DigiHandset Remote Controller

The DigiHoist can be controlled remotely by a Kinesys DigiHandset (available separately) if necessary. For information on how to connect DigiHandsets refer to the DigiHandset operating manual.

6.8 Connecting to a hoist encoder

If the DigiHoist has the Positioning & Ethernet upgrade option, positioning information relating to each hoist can be viewed on the display if connected to a hoist encoder.

1. Connect a Kinesys encoder fan out cable (available separately) to the encoder input 1-4, or 5-8.
2. Connect the 4 way split end of the encoder fan out cable to the encoder cable of the hoist.

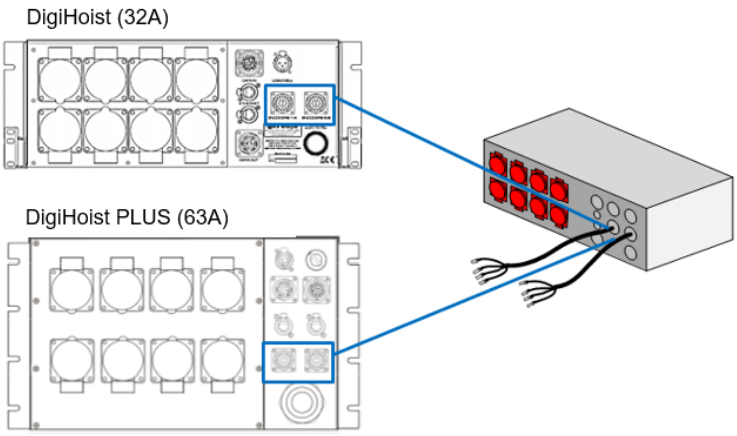


Figure 24. Connecting to an encoder fan out cable

6.9 Connecting a remote emergency stop button

An additional emergency stop button can be connected to the DigiHoist to give emergency stop functionality in a remote location.

1. Connect the end of the remote emergency stop button cable (available separately) to the Data Out socket. Twist the locking ring to secure it. If a chain of DigiHoists is being used, connect the emergency stop button to last unit in the chain.
2. Position the emergency stop button within easy reach and visibility of the operator. For details on resetting the system after an emergency stop refer to section 8.3.

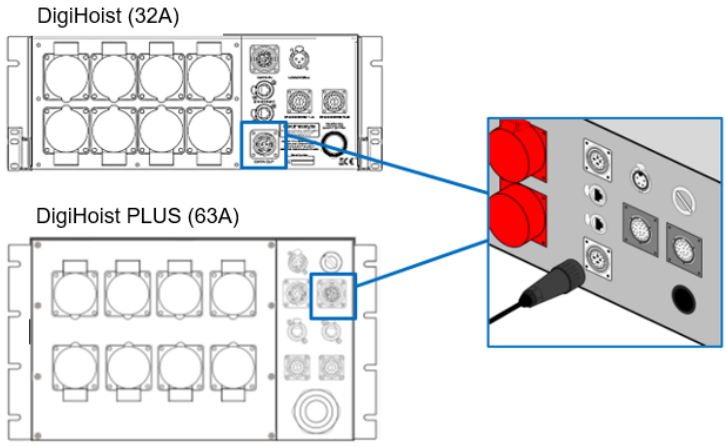


Figure 25. Connecting a remote emergency stop button

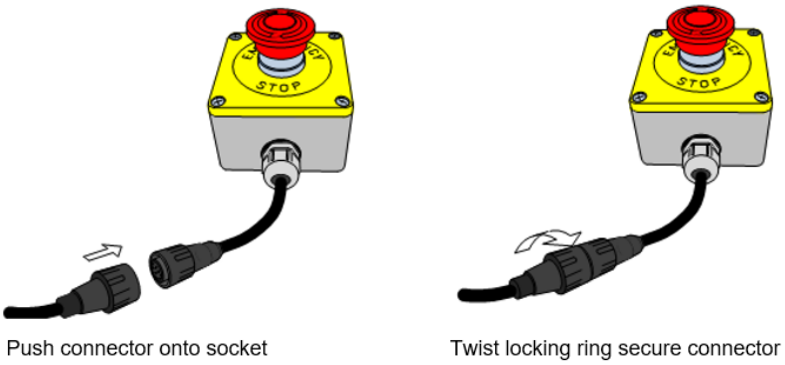


Figure 26. Connecting the emergency stop button cable

7. Getting started

7.1 Hoist power key switch operation

The hoist power key switch governs the power supply from the DigiHoist to the connected hoists. Its function varies between Low Voltage and Direct Control versions.

7.1.1 Low Voltage version

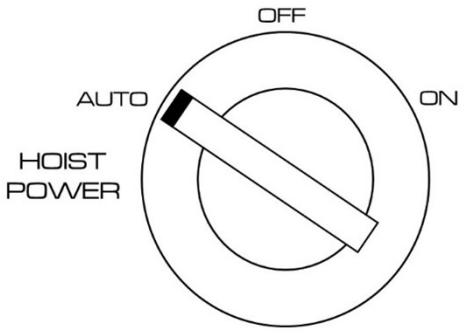


Figure 27. Hoist power key switch - Low Voltage DigiHoist

- OFF - no power is supplied to any hoists connected to the DigiHoist. Use OFF mode to prevent operation when equipment rigged onto hoists controlled by the DigiHoist must not be moved.
- ON - power is supplied to all hoists connected to the DigiHoist except when an emergency stop button is pressed. In ON mode a cable fault or hoist fault could cause unwanted movement. It is recommended to only use this mode when the hoists need to be run by individual pickles/ hand held controllers.
- AUTO - power is supplied to the connected hoists only when the GO button is pressed. Connected hoists will receive power even if not selected to move. In situations where multiple DigiHoist units are linked together, the linked DigiHoist units will only supply power to their hoists when one or more channels are selected to move. AUTO mode reduces the probability of unwanted movement due to a fault, and reduces heat dissipation in the hoist and controllers. AUTO mode is recommended for normal remote operation.

7.1.2 Direct Control version:

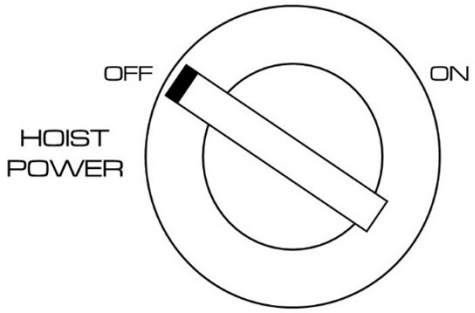


Figure 28. Hoist power key switch - Direct Control DigiHoist

- OFF - no power is supplied to any hoists connected to the DigiHoist. Use OFF mode to prevent operation when equipment rigged onto hoists controlled by the DigiHoist must not be moved.

- ON - power is only supplied to the hoists that have been selected to move when the GO button is pressed. Any other hoists connected but not selected to move will not receive power.

The RESET button must be pressed whenever the key switch position is changed.

The key can only be removed while in the AUTO and OFF positions.

Warning! It is safer to set the hoist power key switch to the OFF position when not using the DigiHoist, even if it powered on. This stops the possibility of inadvertent and anauthorized channel selection or hoist movement.

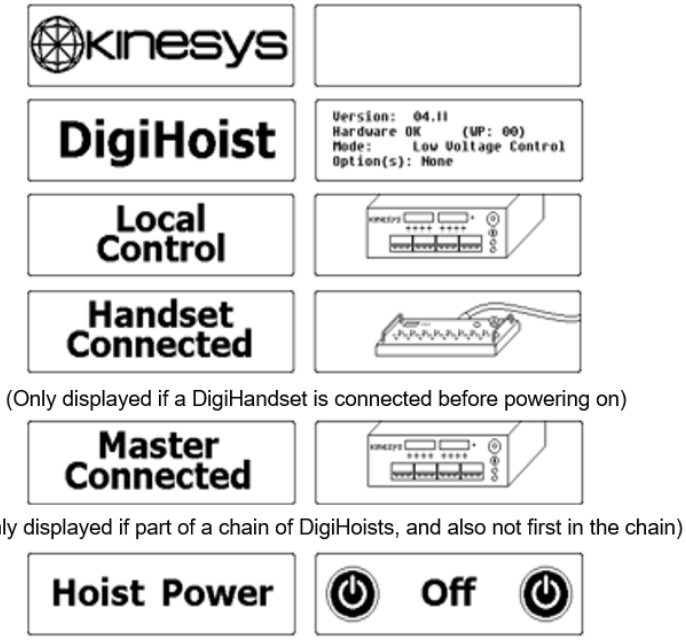
7.2 Powering the unit on

Once all the connections have been made, the DigiHoist can be powered on. For more information about DigiHoist connections refer to section 6.

Warning! The power supply may differ depending on location and local setup. Consult a qualified electrician at the installation location for safely supplying power.

Power on the unit as follows:

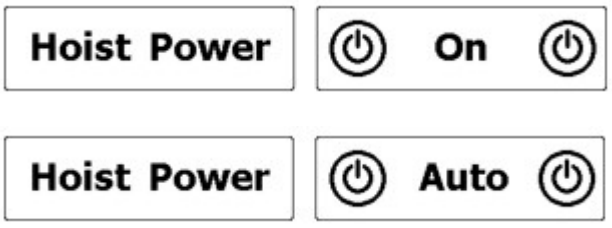
1. Make sure that all the channel breakers are set to the up/ON position.
2. Turn the hoist power key switch to the OFF position.
3. Turn the mains power supply on.
4. The RESET button will flash blue and the following messages will appear on the display:



(Only displayed if a DigiHandset is connected before powering on)

(Only displayed if part of a chain of DigiHoists, and also not first in the chain)

5. Turn the hoist power key switch to either the ON or AUTO position. One of the following screens will appear:



6. Press the RESET button. The RESET button will stop flashing blue and the following screens will appear:

Warning! Test all emergency stop buttons before operating the DigiHoist. Refer to section 7.4 for more details.

7.3 Phase reverse key (Low Voltage version only)

The DigiHoist will automatically adjust itself to take account of the incoming supply phase rotation. The phase reverse key enables the supply to the hoists to be intentionally phase-reversed.

The phase reverse key can be found on the rear panel of all Low Voltage Control versions - refer to sections 3.2.3 and 4.2.3 for details.

Phase reverse warnings

- **Manually reversing the phasing of the power supply can be dangerous. This action should only be carried out by competent personnel.**
- **When the phase reverse key is set to ON, the hoists will move in the opposite direction to that commanded and all hardware limit switches will be inoperable.**
- **Some models of hoist use limit switches that can be damaged if the hoist is moved beyond the limit of travel. Refer to the manual supplied with the hoist or contact the hoist manufacturer for more information.**
- **Hoists with ultimate limits connected to a separate line contactor may operate the ultimate limits if bypassed. This will inhibit movement in any direction and may require removing the hoist cover to reset. Refer to the manual supplied with the hoist or contact the hoist manufacturer.**

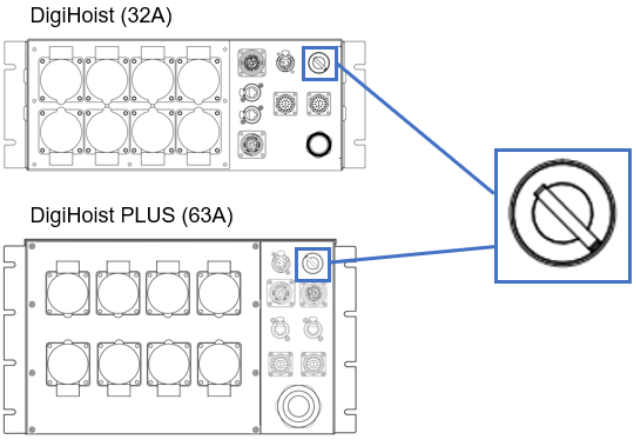


Figure 29. Phase reverse key

To manually reverse the phase supply, continue as follows:

1. Turn the phase reverse key all the way to the right and hold it in position.
2. Press the flashing RESET button to reset the system. While the key is being held, the incoming phase supply will reverse. All on-screen displays will report true movement based on the phase change.
3. As soon as the key is released, the DigiHoist will revert to its normal phase operation.

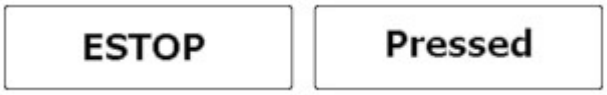
If the phase reverse key is turned to the left or released while movement is in progress, all movement will stop. A reset of the system will be required.

7.4 Testing and resetting the emergency stop system

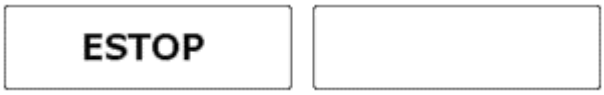
It is recommended to test all emergency stop buttons in the DigiHoist system as described in this section before commencing any movement operations.

Test the emergency stop system as follows:

1. Press the emergency stop button on the front of the DigiHoist. Make sure the red light flashes in the centre of the button and the following message appears:



2. Turn the emergency stop button clockwise to release it.
3. The RESET button will flash blue to indicate the system needs to be reset. Press the RESET button to reset the system.
4. If multiple DigiHoists are linked together, or an external emergency stop button is connected, test all other emergency stop buttons in the system by pressing each one in turn. Each time an emergency stop button is pressed, make sure the following message appears:



5. Reset the system each time by turning the emergency stop button clockwise and then pressing the RESET button on the DigiHoist or the RESET button on the DigiHandset.

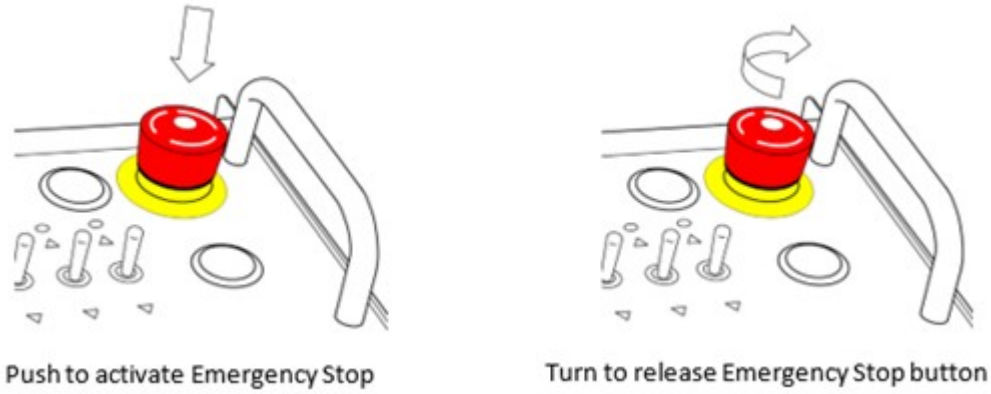


Figure 30. Testing the emergency stop button

Warning! Test all emergency stop buttons following any new installation or configuration of the system, and at regular intervals thereafter.

8. Moving hoists

8.1 Using the front panel controls to move hoists

Warnings before movement

- **Only begin movement of the connected hoists once all emergency stop buttons have been tested in accordance with section 7.4.**
- **Make sure the hoist power key switch is in the OFF position when not using the DigiHoist, even when powered on. This stops the possibility of inadvertent and unauthorized channel selection or hoist movement.**

To begin movement operations continue as follows:

1. Turn the hoist power key switch to the AUTO or ON position.
2. Press the flashing RESET button to reset the system.
3. Identify the hoist or group of hoists you want to move. Make sure you know which of the eight channels the hoist is assigned to and that you have a clear and unobstructed view of the loads attached to the hoists.
4. Choose the direction of movement by moving the channel toggle switches either UP or DOWN. The toggle switches are momentary switches, which means they will return to the centre position when released. The arrow above or below the toggle switches will illuminate to indicate the selected direction of movement (green for UP and red or DOWN).
5. When the hoist or group of hoists is ready for movement, the GO button will illuminate white. To begin movement press and hold the GO button. The hoists will continue to move in the selected direction until the GO button is released. The direction of movement is indicated by an UP or DOWN arrow on the display.
6. If the DigiHoist has the Positioning & Ethernet upgrade, the current hoist position will be shown below each channel on the display and will change as the hoist moves.
7. To de-select a channel currently set to move, move the toggle switch once in the opposite direction to that currently selected. The direction arrow, either red or green, will stop illuminating.
8. If any unexpected or dangerous movement occurs, press one of the emergency stop buttons to stop all movement. Investigate and rectify the problem before continuing.

8.2 Group halt function

A group halt occurs when a group of hoists that are moving at the same time are stopped due to one or more selected hoists developing a fault, reaching a limit or certain other situations as listed below.

In these circumstances, movement of all hoists in the group will not be possible until the problem is resolved and the system is reset.

Circumstances that can trigger a group halt include:

- If a hoist or load cell is not present but selected for movement
- Overload or underload detected (requires a load monitoring device)
- Upper or lower software limit reached (Ethernet & Positioning upgrade only)
- Upper or lower hardware limit reached (Low Voltage versions only)
- The activation of an emergency stop button
- Connecting a DigiHandset while using the front panel controls
- Disconnecting a DigiHandset while still in use
- Using software to take control while the front panel controls are still in use
- The circuit breaker being tripped during movement
- A fault developing in any hoist within the group

For more information on faults and possible solutions see section 16. Alternatively, contact your supplier or Kinesys for further support.

8.3 Resetting the system

If the system needs to be reset following a fault, a limit being reached or for any other reason, the RESET button will flash blue and “PRESS RESET” will be shown on the display of the DigiHoist or DigiHandset.

The system may also need to be reset after an issue has been resolved. In these cases, press the flashing RESET button to reset the system. If pressing the button does not reset the system, contact your supplier or Kinesys for further support.

9. DigiHandset operation

The DigiHandset is a standalone remote controller that can be used to control the DigiHoist. When connected it will override the front panel controls of the DigiHoist.

When a DigiHandset is connected to the DigiHoist it will supersede the front panel controls with the exception of the emergency stop button. Any attempt to use GO, RESET or channel direction toggle switches will have no effect and result in the following message being shown on the DigiHoist display:

The addressing of channels will happen automatically when the DigiHandset is connected. The status of the hoists will be indicated by the blue indicator LEDs on the handset display.

The DigiHandset is sold separately and is available in three variants: 8, 16 and 32 channels. For more information on the operation of the DigiHandset, including how to connect the DigiHandset to the DigiHoist, refer to the DigiHandset operating manual.

10. Advanced operations

10.1 Addressing

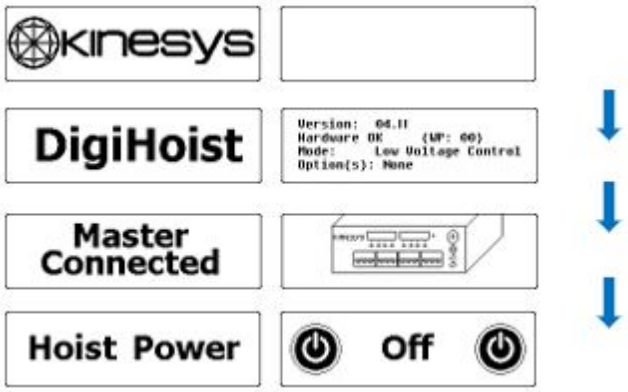
The DigiHoist will automatically assign connected channels from 1 to 8. Once the hoists are connected to the DigiHoist make sure you know which hoist is connected to which channel.

10.2 Linking and addressing additional DigiHoists

When linking multiple DigiHoists, the first DigiHoist in the chain will be assigned as the master controller and will assign all subsequent channels in sequence.

For example, the primary DigiHoist will be assigned channels 1-8, the second DigiHoist channels 9-16, the third DigiHoist Controller channels 17 to 24 and so on for a maximum of 12 DigiHoists controlling 96 hoists. In this configuration the master DigiHoist will be the only unit with active GO and RESET buttons.

After powering on all the DigiHoists the following messages will appear on all displays except the primary DigiHoist:

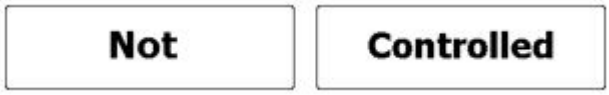


If an attempt is made to use the GO or RESET buttons on any DigiHoist except the master, the following message will appear:

10.3 Moving hoists using linked DigiHoists

1. Turn the hoist power key switch on each DigiHoist to the ON or AUTO position. If using a DigiHandset, connect it in accordance with section 9.
2. The following message will appear on the display of each DigiHoist:

3. If using a DigiHandset, the following message will appear if there are too many DigiHoists connected for the DigiHandset to control:



4. Press the flashing RESET button on the primary DigiHoist to reset the system.
5. The following displays will appear on each DigiHoist controller in groups of 8 for up to a maximum of 96 channels:

Primary DigiHoist display:	01 02 03 04	05 06 07 08
Second DigiHoist display:	09 10 11 12	13 14 15 16
Third DigiHoist display:	17 18 19 20	21 22 23 24

6. Identify the hoist or group of hoists you want to move. Make sure you know which of the eight channels each hoist is assigned to and that you have a clear and unobstructed view of the loads.
7. Choose the direction of movement by moving the channel toggle switches on the handset to the UP or DOWN position. The arrow above or below the toggle switches will illuminate to indicate the selected direction of movement: green for UP and red or DOWN.
8. When the hoist or group of hoists is ready for movement, the GO button on the master DigiHoist or the DigiHandset will illuminate white. To begin movement press and hold the GO button. The hoists will continue to move in the selected direction until the GO button is released. The direction of movement is indicated by an UP or DOWN arrow on the display.
9. If the DigiHoist has the Positioning & Ethernet upgrade the current hoist position will be indicated below each channel on the display and will change as the hoist moves.
10. To de-select a channel currently set to move, move the toggle switch on the DigiHoist or DigiHandset once in the opposite direction to that currently selected. The direction arrow, either red or green, will stop illuminating.
11. If any unexpected or dangerous movement occurs, press one of the emergency stop buttons to stop all movement. Investigate and rectify the problem before continuing.

10.4 Software-controlled movements

If the DigiHoist has the Positioning & Ethernet upgrade it is possible to program moves using dedicated consoles such as Vector, K2 or Navigator.

10.4.1 Connecting to consoles

To enable the control of DigiHoist by a console continue as follows:

1. Connect one end of an Ethernet cable (sold separately) to one of the Ethernet ports of the rear panel of the DigiHoist and the other end to the computer's Ethernet port or an Ethernet switch.

2. If using multiple DigiHoists, connect an Ethernet cable and DigiLink cable between each DigiHoist in a daisy chain formation.
3. Connect an emergency stop button to the Data Out connection of the last DigiHoist in the chain. For details on connecting a remote emergency stop button refer to section 6.9. When more than one remote emergency stop button is required, a Mentor or ESA safety control system may be connected to the Data Out connection of the last DigiHoist in the chain.

10.4.2 Movement operations while a console is connected

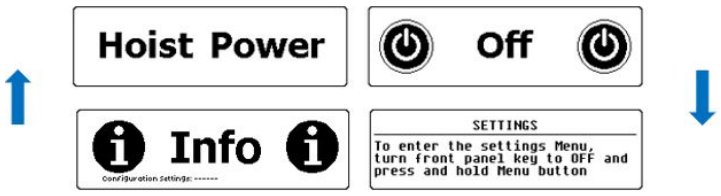
- When the DigiHoist is being controlled by a console, the GO/RESET buttons and the directional toggle switches become inactive. However, after 60 seconds of console inactivity these controls will become active again.
- If movement is being performed using the front panel controls, any movement initiated from the console will override that movement. For example, if a Vector Console is connected to the controller and the user presses the play button on the console this would override any movement currently being controlled by the DigiHoist front panel and bring all other movements to a stop.
- If a DigiHandset is connected to the controller while software is also connected, the handset takes precedence and will take control. If a handset is connected while software-controlled movement is in operation, all movement will stop and the handset will become active. As soon as the handset is disconnected, software control is then re-established automatically.
- Refer to the relavant console operating manual for more information on specific movement operations of these tools.

11. Display and menu options

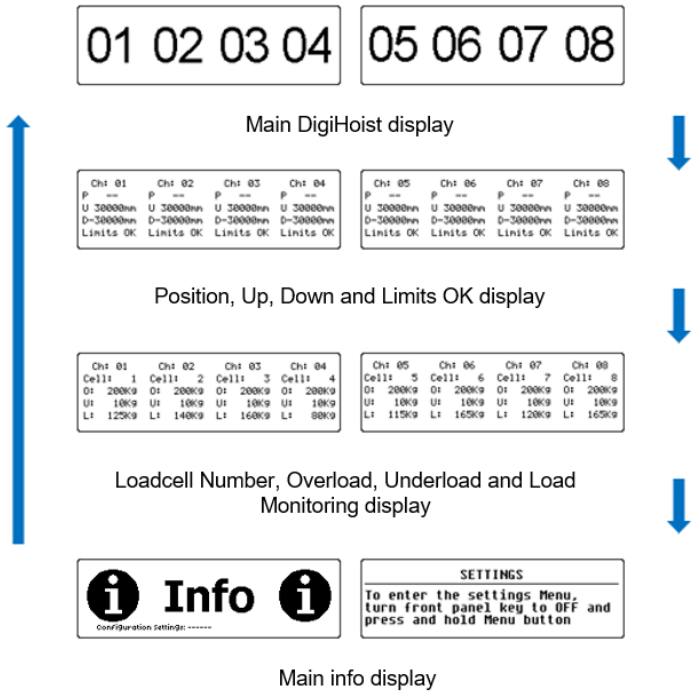
The DigiHoist has two OLED display windows on the front panel to display system information and channel-specific information.

11.1 General information screens

If the hoist power key switch is in the OFF position, pressing the MENU button will cycle between the following two displays:



If the hoist power key switch is in the ON or AUTO position, pressing the MENU button will cycle between the following screens showing information about hoist position, limit settings, load limits and load monitoring (Positioning & Ethernet upgrade versions only):



Pressing the RESET at any time will close the information screen and return to the main DigiHoist display.

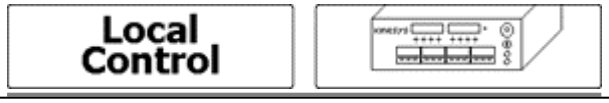
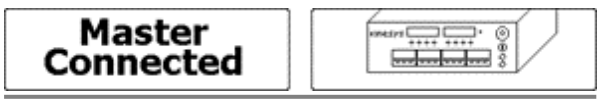
11.2 Info screen

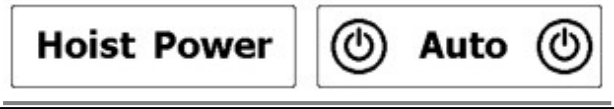
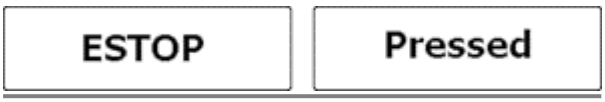
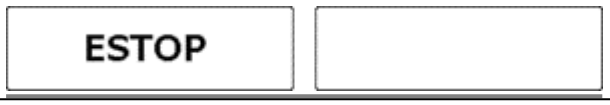
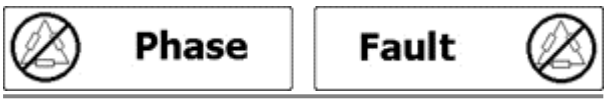
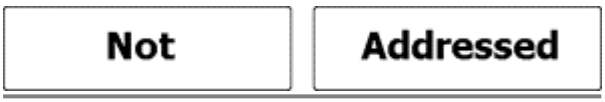
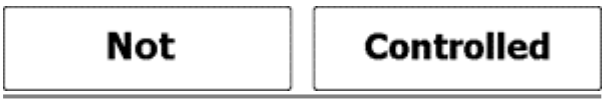
The Info screen appears on the left of the two OLED displays in certain scenarios. At the bottom of the Info screen there is a "Configuration Settings" bar with a series of six dashes and letters. Each letter represents a setting that has been enabled on the DigiHoist. Note that it is possible for multiple settings to be enabled at once.

------		No special settings applied
A-----		Emerency stop auto-reset enabled
-U----		Underload bypass on
--L---		Soft limit bypass on
---E--		Encoder bypass on
----F-		Front panel locked

11.3 System information screens

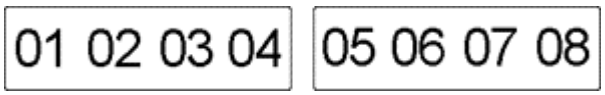
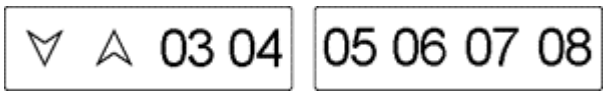
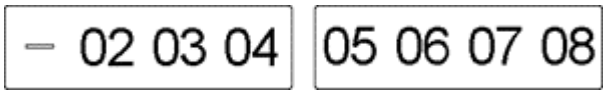
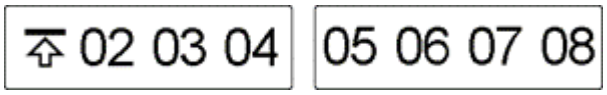
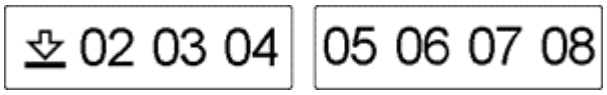
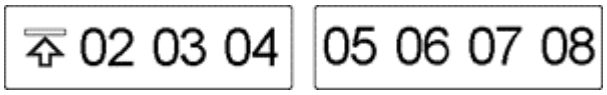
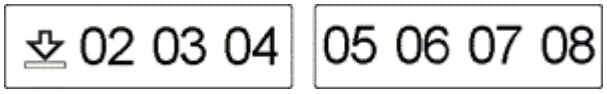
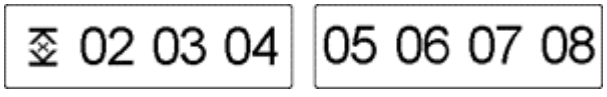
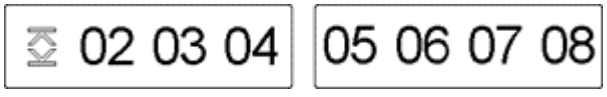
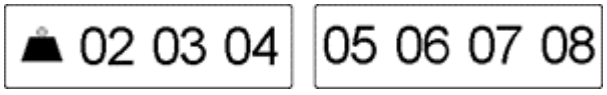
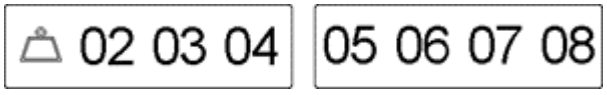
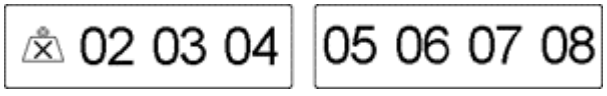
These messages are displayed to provide information about the DigiHoist under certain conditions:

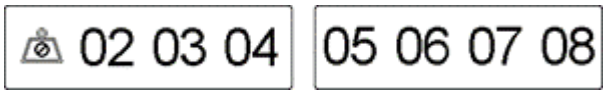
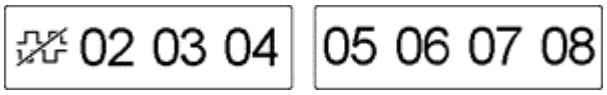
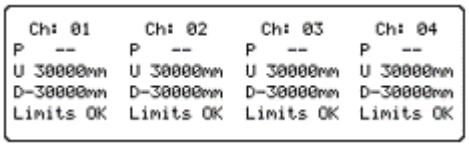
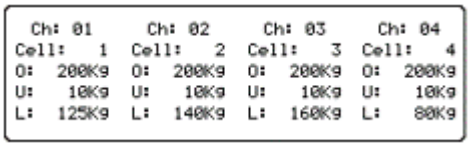
	The Kinesys logo will appear when the controller is first powered on.
	Displays the software version and model type when the controller is powered on.
	Appears after powering on if the front panel controls are active.
	Appears when a DigiHandset is connected or when powering on with a DigiHandset already connected.
	Appears when powering on if the controller is linked to a chain of controllers. This indicates that the GO and RESET buttons are active on the master controller only.
	The hoist power key switch is in the OFF position.
	The hoist power key is in the ON position (Low Voltage version only).

	The hoist power key is in the AUTO position (Low Voltage version only).
	The system needs to be reset. Press the RESET button to continue.
	The emergency stop button on the controller has been pressed. For details on resetting emergency stop buttons see section 7.4.
	An emergency stop somewhere else in the network has been pressed.
	Indicates there is a problem with the incoming power supply. The phase may need to be reversed. See section 7.3 for details.
	Appears when there are not enough channels available for the master controller, there is a fault with the connecting cable, or no DigiHandsets are connected.
	Appears if there is a DigiHandset connected but there are more hoists connected to the system than directional toggle switches on the DigiHandset.

11.4 Channel information screens

The channel information screen shows information relating to each hoist connected to the DigiHoist.

On-screen display	Explanation
	Channel numbers indicate which directional toggle switches relate to which hoists, up to a maximum of eight per controller and 96 in an entire system.
	The UP and DOWN arrows indicate the current direction of movement of that specific channel. These will only appear while the GO button is pressed and the hoist is moving.
	A dash icon in place of a channel number indicates an issue with a hoist or that a hoist is not connected to that channel (Low Voltage version only).
	An UP arrow with a solid line indicates a “Hard” UP limit has been reached for that channel (Low Voltage version only).
	A DOWN arrow with a solid line indicates a “Hard” DOWN limit has been reached for that channel (Low Voltage version only).
	An UP arrow with an outlined line indicates a “Soft” UP limit has been reached for that channel (Positioning & Ethernet version only).
	A Down arrow with an outlined line indicates a “Soft” Down limit has been reached for that channel (Positioning & Ethernet version only).
	This icon indicates that Hard limits have been bypassed for that channel (Low Voltage version only).
	This icon indicates that Soft limits have been bypassed for that channel (Positioning & Ethernet version only).
	A solid weight icon indicates an overload has been detected according to the overload limits set for that channel.
	An outlined weight icon indicates an underload has been detected according to the underload limits that have been set for that channel.
	An outlined weight icon with a cross indicates that underload and overload limits have been set for that

On-screen display	Explanation
	channel but no load cell is present.
	A weight icon with a “No Entry” sign indicates that underload settings have been bypassed on that channel.
	This icon indicates a possible fault with a connected encoder on that channel. There is a number between 1 and 4 next to the symbol on the left - refer to section 11.5 for details.
	When connected to a load cell, the current load on a hoist is displayed below the channel number. This can be changed to imperial units if desired (see section 12 for details)
	For Positioning & Ethernet versions, the current position of each channel is shown below the channel number. This can be changed to imperial units if desired (see section 12 for details)
	This display is accessible by cycling through the MENU button displays and shows the current UP and DOWN limit settings and an indication of the current limit status.
	This display is accessible by cycling through the MENU button displays and shows the overload and underload settings for each channel as well as the current live load information.

11.5 Encoder error status

At the corner of the symbol on the Encoder Error screen, there will be a number between 1 and 4 which indicates the type of error.

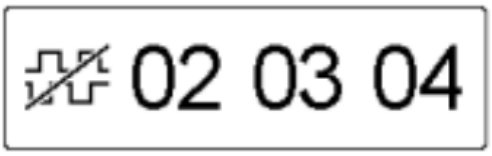


Figure 31. Encoder error status

Number	Explanation
1	No encoder detected (reported for SSI encoders)
2	Encoder counts are detected when hoist is not being asked to move
3	Hoist is being asked to move but no encoder counts are detected
4	Hoist is being asked to move in one direction but counts are in the opposite direction

12. Editing the DigiHoist settings

The Settings menu allows various parameters of the DigiHoist to be set by the user.

To access the Settings menu turn the hoist power key switch to the OFF position and then press and hold the MENU button. The following settings screen will appear initially, which shows the version number, model type, and if there is an option for connecting a load cell:

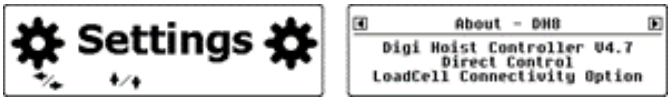


Figure 32. Initial Settings screen

12.1 Navigating the Settings menus

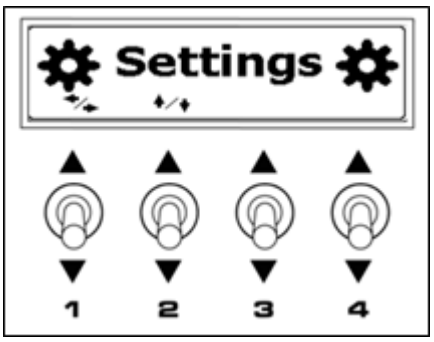


Figure 33. Settings menu navigation

Navigating and editing values in the Settings menus is done using channel toggle switches 1 to 4. An icon appears above each channel toggle switch on the display when its functionality becomes available.

To navigate through the menus and sub-menus, use channel toggle switch 1; move the switch up to navigate left and down to navigate right.

To navigate within a sub-menu or to select options that can be edited, use channel toggle switch 2; move the switch up to scroll up and down to scroll down.

When a selected setting is editable a pencil icon appears above channel toggle switch 4; move the switch up to enable editing of that setting.

To edit the selected setting, use channel toggle switch 2 to change the values – these can either be Yes/No options or a range of numerical values.

While editing a setting a tick icon and cross icon appear above channel toggle switches 4 and 3. Move switch 4 up to confirm the change or move switch 3 up to cancel any changes and revert to the original settings.

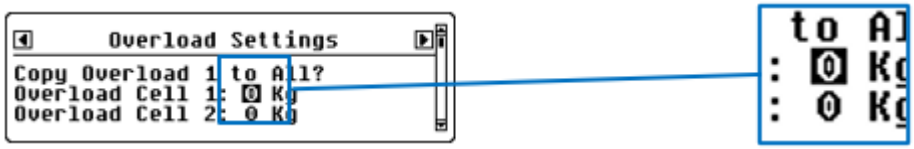
To exit the System Setup menu at any time, press the MENU button.

12.2 Changing numerical values using toggle switches

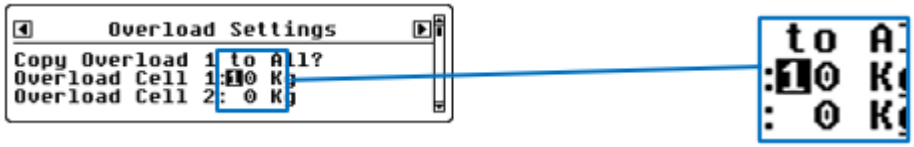
If a numerical value is highlighted for editing, move channel toggle switch 2 up or down to change the number in incremental steps. To change the number more quickly, hold the switch in the up or down position.

Channel toggle switch 1 can be used to increase the number in larger increments. Moving the switch once to the left will change the increment from one to two digits. Moving twice will change the increment to three digits and so on up to the maximum value of the setting.

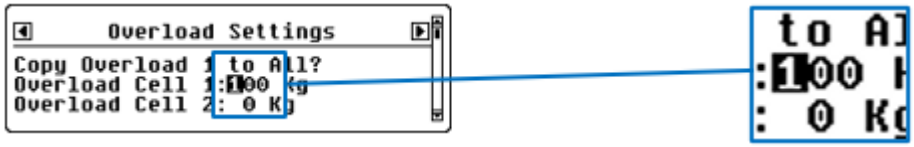
1 digit increments:



2 digit increments:



3 digit increments:



12.3 Settings menus

Menu	Sub-Menu	Changeable settings	Explanation
About DH-8	N/A	N/A	
System Versions	N/A	N/A	
Global Settings	Display Brightness:	5% - 100%	
	Demo Mode Active:	Yes / No	Set this to Yes turn Demo Mode on.
Internal Settings	Password	0 - 9999	By default there is no password. If a password has been set, it must be entered by the user here to change any settings in subsequent sub-menus. The password is a number between 0 and 9999.
	New Password:	0 - 9999	Select this to change the password.
	Secure Menu Password:	0 – 9999	The "Secure System Settings" menu is the last Settings menu and is hidden from normal view. It can only be accessed by entering the secure menu password here. After exiting the Settings menus, the secure menu password is cleared and must be re-entered. The password is a number between 0 and 9999.
	New Secure Menu Password:	0 – 9999	Select this to change the secure menu password.
	Set Factory Defaults?	✓	Select to set all settings to the factory default.
Limits Settings	Copy Limit 1 to All?	✓	Select this to copy the limit settings of channel 1 to all other channels.
	Limit Ch 1: – Limit Ch 8:	24V Hoist, 110V Hoist or No Limits	Set the limit setting on each channel to 24V Hoist, 110V Hoist or No Limits. No Limits disables limit detection on an individual channel.

Menu	Sub-Menu	Changeable settings	Explanation
Load Cell Setting	Load Cell Units	kg / lb	Select this to change the display between metric and imperial load cell units. (see Note)
	Bypass Underload Limit	On / Off	Select this to turn the Underload Bypass on or off.
Load Cell Address	Set Auto Address From Ch1?	✓	If this is selected, the DigiHoist will automatically assign channels 1 through 8 in a sequential order starting at channel 1. For example, if channel 1 is currently assigned to address 10 selecting this would assign channel 2 to 11, 3 to 12 and so on.
	Address Cell Ch 1: – Address Cell Ch 8:	1 to 255	Select this to manually change the load cell address value for each channel.
Overload Settings	Copy Overload 1 to All?	✓	Select this to copy the overload settings of channel 1 to all other channels.
	Overload Cell 1: – Overload Cell 8:	0 to 10000 (kg)	Select this to change the overload value for each channel.
Underload Settings	Copy Underload 1 to All?	✓	Select this to copy the underload settings of channel 1 to all other channels.
	Underload Cell 1: – Underload Cell 8:	0 to 10000 (kg)	Select this to change the underload value for each channel.
Tare Settings	Copy Tare 1 to All	✓	Select this to copy the tare value of channel 1 to all other channels.
	Tare Cell 1: – Tare Cell 8:	0 to 10000 (kg)	Select this to copy the reeving settings of channel 1 to all other channels.
Reeving Settings	Copy Reeving 1 To All?	✓	Select this to copy the reeving settings of channel 1 to all other channels.
	Reeving Cell 1: – Reeving Cell 8:	1 or 2	Select 1 if the hoist is single reeved and 2 if the hoist is double reeved.

Menu	Sub-Menu	Changeable settings	Explanation
Encoder Type (Positioning & Ethernet upgrade only)	Copy Enc 1 to All?	✓	Select this to copy the encoder settings of channel 1 to all other channels.
	Enc Cell 1: – Enc Cell 8:	• No Encoder • Dummy Encoder • Pulse (A) • Quad (A B) • Quad (A B) Inv • Pulse (A / A) Quad • (A / A B / B) Quad • (A / A B / B) Inv • Abs SSI • Abs SSI Inv • Limit Sw (A:Up B:Dn)	Select this to change the encoder type for each channel.
Dummy Encoder Speed	Copy Speed 1 to All?	✓	Select this to copy the encoder scaling settings of channel 1 to all other channels.
	Motor 1 Speed: – Motor 8 Speed	0 – 999 (mm/s)	Select this to change the encoder scaling for each channel.
Encoder Scaling Settings (Positioning & Ethernet upgrade only)	Copy Enc Scale 1 to All?	✓	Select this to copy the encoder scaling settings of channel 1 to all other channels.
	Enc Scale 1: – Enc Scale 8:	-1215752 to 1215752	Select this to change the encoder scaling for each channel.
Position Settings (Positioning & Ethernet upgrade only)	Copy Position 1 to All?	✓	Sets positional values for channels if they are different from their absolute positions. Select this to copy the encoder scaling settings of channel 1 to all other channels.
	Position 1: – Position 8:	-100000 to100000 (mm)	Select this to change the position setting for each channel.

Menu	Sub-Menu	Changeable settings	Explanation
Up Limit Settings	Copy Up Limit 1 to All?	✓	Select this to copy the upper limit settings of channel 1 to all other channels.
	Up Limit 1: – Up Limit 8:	-100000 to 100000 (mm)	Select this to change the upper limit for each channel.
Down Limit Settings	Copy Down Limit 1 to All?	✓	Select this to copy the down limit settings of channel 1 to all other channels.
	Down Limit 1: – Up Limit 8:	-100000 to 100000 (mm)	Select this to change the lower limit for each channel.
Position Card Settings	IP Address:	0 to 200	The DigiHoist has its own IP Address for communicating via a network. The default address is 61 but this can be changed by selecting this setting.
	Bypass Soft Limits:	✓	Select this to temporarily bypass the software upper and lower limits.
	Soft Limits Group Halt:	✓	Select this to turn on the soft limits group halt. When this function is on, all movement of hoists will stop if an upper or lower limit is reached. If this is turned off only the hoist that reaches the limit will stop.
	Position Units:	mm / ft	Select this to set the units to millimetres or feet. (see Note below)
Channel Group Number **(version 4.91 onwards only)**	Copy Ch1 group number to all?	✓	Select this to copy the group number of channel 1 to all other channels.
	Group number Ch1 - Group number Ch8	0-32	See section 12.3.3 for details.
Secure System Settings (requires secure password entry)	E-Stop Auto-Reset	On / Off	See section 12.3.1 for details.
	Front Panel Lockout	On / Off	See section 12.3.2 for details.

Note: Changing the units to imperial only affects what is shown on the display - the load read by the control software is always in kg and mm.

12.3.1 Emergency stop auto-reset

In normal operation, a system reset must be done following an emergency stop button release. This may be done from the front panel RESET button, the RESET button of a connected DigiHandset, or via a remote command from automation software such as Vector.

When "E-Stop Auto-Reset" mode is enabled, a system reset is done automatically following an emergency stop button release. This may be desired in cases where remotely issuing a reset from automation software is not convenient. This setting is persistent in memory following power cycle of the unit.

Warning! The emergency stop auto-reset should only be enabled after an assessment of the connected safety system.

12.3.2 Front panel lockout

In normal operation, local motion control from the DigiHoist front panel is possible using the channel toggle switches, GO button and RESET button.

When Front panel lockout mode is enabled, motion control from the front panel controls is disabled. An information screen indicating this is displayed if any of the controls are pushed or selected.

In this mode, most settings in the system setup menus are read-only; these may only be edited when Front panel lockout is disabled.

This setting is persistent in the DigiHoist memory following power cycling of the unit.

12.3.3 Group numbering

Note: This feature is only available in firmware versions 4.91 onwards.

In this menu there is the option to assign each channel a group number (from 1-32).

If a user selects only channels with a matching group number to be moved, then normal operation is permitted. If a user selects a channel from a group that is different to the channels already selected, then movement is not permitted and the blue LEDs will flash alternately between the groups - the GO button will also illuminate.

There is also a wild card "Group 0" which, if selected, will always have the option to move with any group.

This feature only applies to operation from the front panel and DigiHandsets. It does not apply to remote operation from Vector or other computer programs.

13. Pinout configurations

13.1 Hoist power cable pinouts

It is possible to request different pinout configurations for the hoist power connection depending on individual requirements. This must be requested at the time of purchase either from your supplier or Kinesys.

Warning! If there are more than one set of pinout options for a particular socket, check with your supplier, or Kinesys, for which version the DigiHoist has. Damage may occur if the wrong pinout combination is used

Note:

- Different hoist manufacturers may wire the connectors to their hoists in different ways. Refer to the information supplied with the hoist to confirm the pin assignment is the same. Alternatively, contact the supplier of the hoist, the hoist manufacturer or Kinesys for support.
- All illustrations in this section are as viewed from the DigiHoist back panel.

13.1.1 Cee Form IEC 60309 (Direct Control only)

Figure 34. CEE Form IEC 60309 pinout

Pin 1	L1
Pin 2	L2
Pin 3	L3
Pin 4	Earth

13.1.2 Harting 6

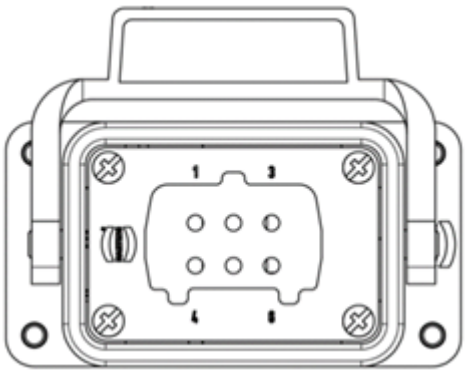


Figure 35. Harting 6 pinout

Pin 1	L1
Pin 2	L2
Pin 3	L3
Pin 4	Common
Pin 5	Up
Pin 6	Down
Shell	Earth

13.1.3 Harting 16

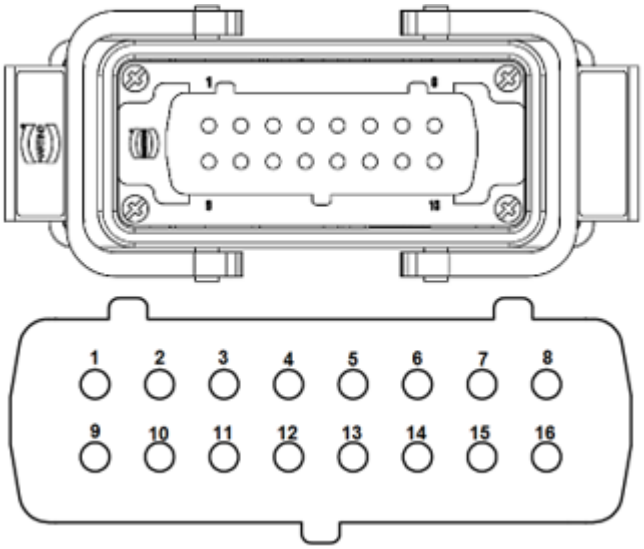


Figure 36. Harting 16 pinout

Version A:			Version B:		
	Power (Female)	Control (Male)		Power (Female)	Control (Male)
Pin 1	Motor 1 L1	Motor 1 Common	Pin 1	Motor 1 L1	Motor 1 Common
Pin 2	Motor 1 L2	Motor 1 Down	Pin 2	Motor 1 L2	Motor 1 Down
Pin 3	Motor 1 L3	Motor 1 Up	Pin 3	Motor 1 L3	Motor 1 Up
Pin 4	Motor 2 L1	Motor 2 Common	Pin 4	Earth 1	Earth 1
Pin 5	Motor 2 L2	Motor 2 Down	Pin 5	Motor 2 L1	Motor 2 Common
Pin 6	Motor 2 L3	Motor 2 Up	Pin 6	Motor 2 L2	Motor 2 Down
Pin 7	Earth 1	Earth 1	Pin 7	Motor 2 L3	Motor 2 Up
Pin 8	Earth 2	Earth 2	Pin 8	Earth 2	Earth 2
Pin 9	Motor 3 L1	Motor 3 Common	Pin 9	Motor 3 L1	Motor 3 Common
Pin 10	Motor 3 L2	Motor 3 Down	Pin 10	Motor 3 L2	Motor 3 Down
Pin 11	Motor 3 L3	Motor 3 Up	Pin 11	Motor 3 L3	Motor 3 Up
Pin 12	Motor 4 L1	Motor 4 Common	Pin 12	Earth 3	Earth 3
Pin 13	Motor 4 L2	Motor 4 Down	Pin 13	Motor 4 L1	Motor 4 Common
Pin 14	Motor 4 L3	Motor 4 Up	Pin 14	Motor 4 L2	Motor 4 Down
Pin 15	Earth 3	Earth 3	Pin 15	Motor 4 L3	Motor 4 Up
Pin 16	Earth 4	Earth 4	Pin 16	Earth 4	Earth 4
Shell	Earth	Earth	Shell	Earth	Earth

13.1.4 Harting 32

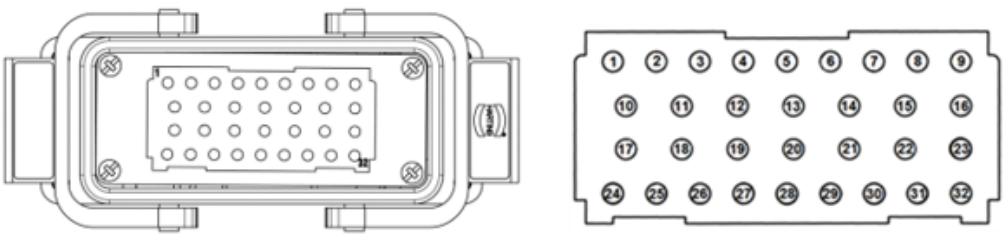


Figure 37. Harting 32 pinout

Version A:			Version B:		
Pin 1 / 17	Motor 1 L1	Motor 3 L1	Pin 1 / 17	Motor 1 L1	Motor 3 Up
Pin 2 / 18	Motor 1 L2	Motor 3 L2	Pin 2 / 18	Motor 1 L2	Motor 3 Down
Pin 3 / 19	Motor 1 L3	Motor 3 L3	Pin 3 / 19	Motor 1 L3	Motor 4 L1
Pin 4 / 20	Motor 1 Common	Motor 3 Common	Pin 4 / 20	Motor 1 Common	Motor 4 L2
Pin 5 / 21	Motor 1 Up	Motor 3 Up	Pin 5 / 21	Motor 1 Up	Motor 4 L3
Pin 6 / 22	Motor 1 Down	Motor 3 Down	Pin 6 / 22	Motor 1 Down	Motor 4 Common
Pin 7 / 23	Earth 1	Earth 3	Pin 7 / 23	Motor 2 L1	Motor 4 Up
Pin 8 / 24	No Connection	Motor 4 L1	Pin 8 / 24	Motor 2 L2	Motor 4 Down
Pin 9 / 25	No Connection	Motor 4 L2	Pin 9 / 25	Motor 2 L3	Earth
Pin 10 / 26	Motor 2 L1	Motor 4 L3	Pin 10 / 26	Motor 2 Common	No Connection
Pin 11 / 27	Motor 2 L2	Motor 4 Common	Pin 11 / 27	Motor 2 Up	No Connection
Pin 12 / 28	Motor 2 L3	Motor 4 Up	Pin 12 / 28	Motor 2 Down	No Connection
Pin 13 / 29	Motor 2 Common	Motor 4 Down	Pin 13 / 29	Motor 3 L1	No Connection
Pin 14 / 30	Motor 2 Up	Earth 4	Pin 14 / 30	Motor 3 L2	No Connection
Pin 15 / 31	Motor 2 Down	No Connection	Pin 15 / 31	Motor 3 L3	No Connection
Pin 16 / 32	Earth 2	No Connection	Pin 16 / 32	Motor 3 Common	No Connection
Shell	Earth (Ground)		Shell	Earth (Ground)	

13.1.5 Socapex 7

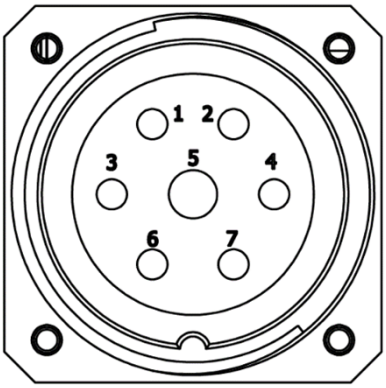


Figure 38. Socapex 7 pinout

Version A:		Version B:	
Pin 1	Motor 1 L1	Pin 1	Motor 1 L1
Pin 2	Motor 1 L2	Pin 2	Motor 1 L2
Pin 3	Motor 1 L3	Pin 3	Motor 1 L3
Pin 4	Earth	Pin 4	Motor 1 Up
Pin 5	Motor 1 Up	Pin 5	Earth
Pin 6	Motor 1 Common	Pin 6	Motor 1 Common
Pin 7	Motor 1 Down	Pin 7	Motor 1 Down
Shell	No Connection	Shell	No Connection

Version C:		Version D:	
Pin 1	Motor 1 L1	Pin 1	Motor 1 L3
Pin 2	Motor 1 L2	Pin 2	Motor 1 L2
Pin 3	Motor 1 L3	Pin 3	Motor 1 L1
Pin 4	Earth	Pin 4	Motor 1 Up
Pin 5	Motor 1 Up	Pin 5	Earth
Pin 6	Motor 1 Down	Pin 6	Motor 1 Common
Pin 7	Motor 1 Common	Pin 7	Motor 1 Down
Shell	No Connection	Shell	No Connection

13.1.6 Socapex 14

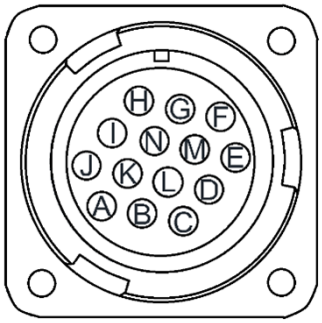


Figure 39. Socapex 14 pinout

Version A:	
Pin A	Motor 1 L1
Pin B	Motor 1 L2
Pin C	Motor 1 L3
Pin D	Motor 1 Up
Pin E	Motor 1 Common
Pin F	Motor 1 Down
Pin G	No Connection
Pin H	No Connection
Pin I	No Connection
Pin J	No Connection
Pin K	No Connection
Pin L	No Connection
Pin M	No Connection
Pin N	Earth
Shell	No Connection

Version B:	
Pin A	Motor 1 L3
Pin B	Motor 1 L2
Pin C	Motor 1 L1
Pin D	Motor 1 Up
Pin E	Motor 1 Common
Pin F	Motor 1 Down
Pin G	No Connection
Pin H	No Connection
Pin I	No Connection
Pin J	No Connection
Pin K	No Connection
Pin L	No Connection
Pin M	No Connection
Pin N	Earth
Shell	No Connection

13.1.7 Socapex 19

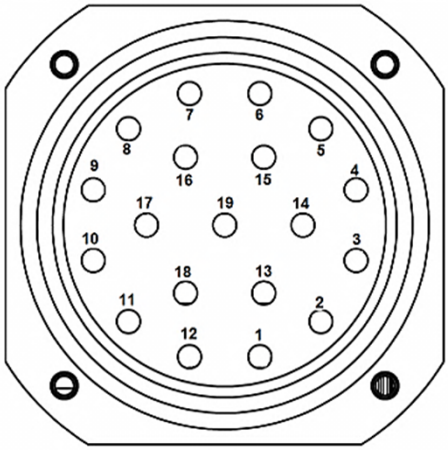


Figure 40. Socapex 19 pinout

	Power (Female)	Control (Male)
Pin 1	Motor 1 L1	Motor 1 Common
Pin 2	Motor 1 L2	Motor 1 Down
Pin 3	Motor 1 L3	Motor 1 Up
Pin 4	Motor 2 L1	Motor 2 Common
Pin 5	Motor 2 L2	Motor 2 Down
Pin 6	Motor 2 L3	Motor 2 Up
Pin 7	Motor 3 L1	Motor 3 Common
Pin 8	Motor 3 L2	Motor 3 Down
Pin 9	Motor 3 L3	Motor 3 Up
Pin 10	Motor 4 L1	Motor 4 Common
Pin 11	Motor 4 L2	Motor 4 Down
Pin 12	Motor 4 L3	Motor 1 Up
Pin 13	Earth 1	Earth 1
Pin 14	Earth 2	Earth 2
Pin 15	Earth 3	Earth 3
Pin 16	Earth 4	Earth 4
Pin 17	Earth	Earth
Pin 18	Earth	Earth
Pin 19	Earth	Earth

13.2 Low Voltage hoist socket pinouts

For Low Voltage DigiHoist versions, Kinesys offers a range of adapters and fanout cables to connect the multi-pin connections of the DigiHoist to an IEC 60309 CEE connection. These consist of a red CEE form socket for power to the hoist and a yellow CEE form connector for the control signals to the hoist:

Figure 41. Red CEE form socket pinout

Pin 1	L1
Pin 2	L2
Pin 3	L3
E	Earth

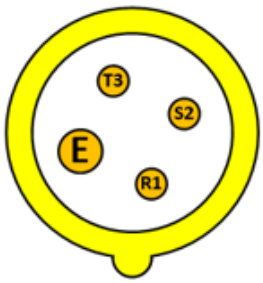


Figure 42. Yellow CEE Form socket pinout

Pin R1	Up
Pin S2	Down
Pin T3	Feed
E	Earth

13.3 Data connection pinouts

Warning! Only use compatible Kinesys DigiLink data cables when connecting DigiHoist, DigiHandset and DigiLink.

13.3.1 Data IN (Amphenol C16 14+E Male socket)

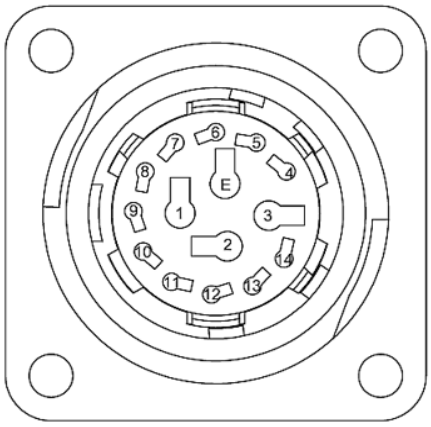


Figure 43. Data IN pinout

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

13.3.2 Data OUT (Amphenol C16 14+E Male socket)

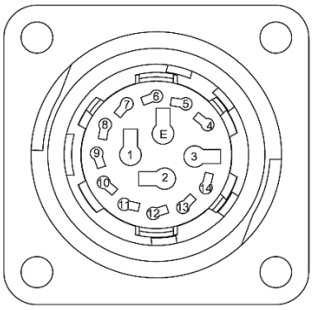


Figure 44. Data OUT pinout

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

13.4 DigiHoist Data cable pinout

13.4.1 Male to Female Amphenol C16 14+E connectors

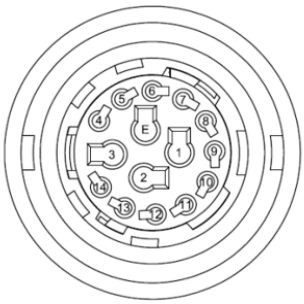


Figure 45. DigiHoist Data cable Female connector pinout

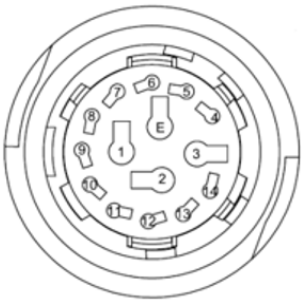


Figure 46. DigiHoist Data cable Male connector pinout

		Size	Colour
Pin 1	No Connection	-	-
Pin 2	No Connection	-	-
Pin 3	No Connection	-	-
Pin 4	24v	1mm^2	Brown
Pin 5	0v	1mm^2	White
Pin 6	E-Stop +	0.25mm^2	Red
Pin 7	E-Stop -	0.25mm^2	Black
Pin 8	Data -	0.25mm^2	Brown
Pin 9	Data +	0.25mm^2	Green
Pin 10	E-Stop Return +	0.25mm^2	Grey
Pin 11	E-Stop Return -	0.25mm^2	Pink
Pin 12	Presence +	0.25mm^2	Blue
Pin 13	Presence -	0.25mm^2	Violet
Pin 14	Shield	1mm^2	-
E	No Connection	-	-

13.4.2 Encoder connection pinouts (Positioning & Ethernet upgrade only)

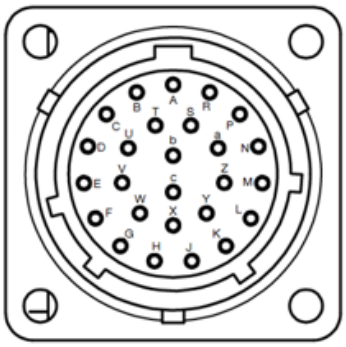


Figure 47. Encoder connection pinout

Circuit	Pin	Function
1	U	12V
	A	A
	B	/A
	C	B
	D	/B
	T	0V
2	W	12V
	E	A
	F	/A
	G	B
	H	/B
	V	0V
3	Y	12V
	J	A
	K	/A
	L	B
	M	/B
	X	0V
4	a	12V
	N	A
	P	/A
	R	B
	S	/B
	Z	0V
	b	No Connection
	c	No Connection

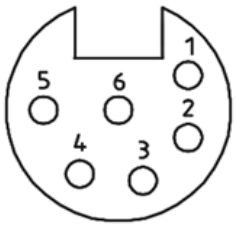


Figure 48. XLR6 Encoder connection pinout

Pin	Function	Colour	Pair
Pin 1	+V	Black	1
Pin 2	Data A	Red	2
Pin 3	Data /A	Green	2
Pin 4	Data B	Orange	3
Pin 5	Data/B	Blue	3
Pin 6	0V	White	1
Shell	Screen	Screen	-

14. Internal fuse layout

Warnings

- **Always disconnect the mains power supply before inspecting or replacing fuses.**
- **Fuses must only be replaced with types and rating shown on the fuse label fitted inside the DigiHoist case.**

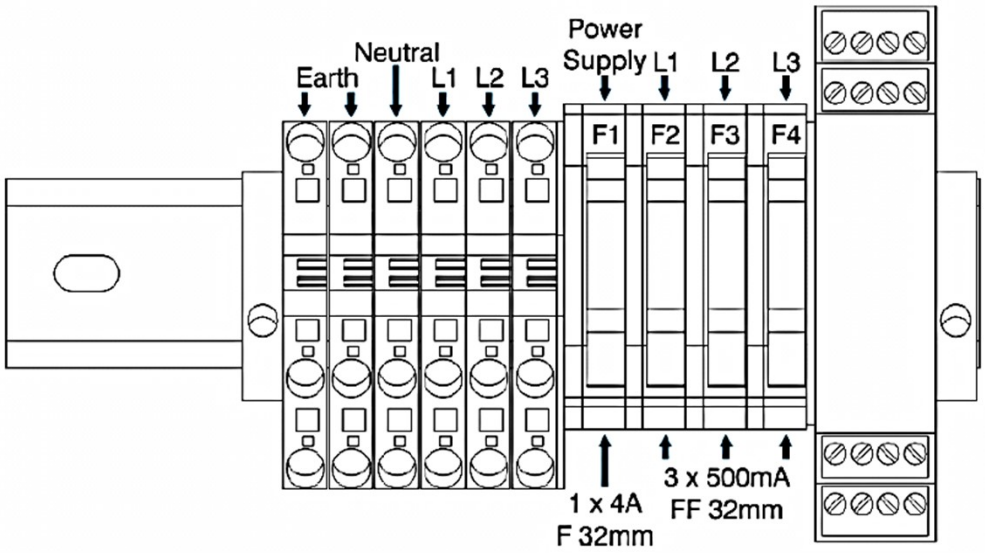


Figure 49. Internal fuse layout

F1	Internal low voltage power supply
F2	Phase 1 supply monitoring
F3	Phase 2 supply monitoring
F4	Phase 3 supply monitoring
4A F	Fast acting
500mA FF	Super-fast acting

15. Calculating the encoder scaling

The encoder scaling converts the number of encoder pulses derived from the hoist to physical distance travelled in millimetres. The encoder scaling is defined as the distance travelled per encoder pulse edge. The units are the distance measured in mm x 100,000.

The number of encoder pulse edges per encoder revolution is 4 x the number of encoder pulses per revolution (a 100 pulse encoder will produce 400 encoder pulse edges per revolution). As an example, an encoder scaling of 55060 means the encoder produces a pulse edge every 0.5506 mm. If the encoder scaling value is incorrect this may result in no movement in the hoist or failure of the hoist to meet its correct target position.

Example calculation:

A hoist has a 1024 pulse encoder connected directly to a drum of 788mm circumference.

Distance travelled per encoder edge (mm) = Drum circ. / (Encoder pulses x 4) = 788 / (1024 x 4) = 0.19238 mm.

This equates to an encoder scaling of 19238.

16. Troubleshooting and FAQs

Problem / Question	Possible Solution / Answer
General	
No power	• Check the power cable is connected correctly. See section 6.1 for details. • Check that the three phases of power are present in the incoming power supply. See section 6.2
Display	
What do the different symbols on the display mean?	See section 11 for details.
What is the flashing light in the corner of the display?	A small flashing light in the bottom left corner of the display indicates that the system is powered on and working correctly.
Unable to adjust settings in the Settings menu / there is no pencil icon to edit settings.	If a password has been set, the Settings menu is viewable but not editable. In order to edit the settings the correct password must be entered. See section 12 for details.
The display is too bright / dark.	Adjust the brightness of the display in the Settings. See section 12 for details.
Unable to access the Settings menu.	Make sure the hoist power key switch is in the OFF position.
Controls	
The GO and RESET buttons are not active.	• The DigiHoist may be part of a group. In this case only the master DigiHoist has active GO and RESET buttons. • A DigiHandset may be connected to the DigiHoist. • The DigiHoist may be connected to a console. See section 10.4.2 for details on how the functionality changes when software and / or a DigiHandset is connected.
Pressing the RESET button does not clear the 'Press Reset' message	The safety relay may be in a locked state. Press and release all emergency stop buttons in the system. If the problem persists contact your supplier or Kinesys for support.
A channel direction indicator is flashing	• This may indicate a fault with the hoist connected to that channel. Check the hoist is working correctly and refer to the hoist manufacturer's manual if necessary. • If the RESET button is also flashing this may indicate a hoist has reached a limit. For details on setting the limits see section 12. For details on resetting the system see section 8.3.
Hoist Movement	
The hoist movement suddenly stops	• A limit may have been reached. Check the display of the DigiHoist or DigiHandset for any messages on this issue. • Check the power supply to the DigiHoist is connected correctly. • Check that an RCD or circuit breaker has not tripped on the DigiHoist or on the power supply. • A DigiHandset may have been connected or disconnected whilst movement is in progress. If this happens, all

Problem / Question	Possible Solution / Answer
	movement is stopped and the system must be reset before continuing. • If the DigiHoist is controlled using the front panel controls while connected to a computer, control may have returned to the console.
Encoders	
Which encoders are compatible with the DigiHoist controller?	• Pulse (A) • Quad (AB) • Quad (AB) Inv • Pulse (A/A) • Quad (A/A B/B) • Quad (A/A B/B) Inv • Abs SSI • Abs SSI Inv • Limit Sw (A:Up B:Dn)
How do I calculate the encoder scaling?	See section 15.
DigiHandset	
The DigiHandset is stuck in Reset mode	Disconnect and re-connect the DigiHandset to the DigiHoist Controller. If the problems persists contact your supplier or Kinesys for support.
The DigiHandset display is showing 'LOST' and is not working but the DigiHoist controls are working.	The DigiHandset may be receiving power from the DigiHoist but has lost communications with it. Check the DigiHoist Data cable for breaks or kinks, as well as the pins in the connections at both ends. Replace the cable if required. If the problems persists contact your supplier or Kinesys for support.
Software	
The DigiHoist is showing as Disabled on the console.	Make sure a remote emergency stop button has been connected to a DigiHoist (if it has the Positioning & Ethernet upgrade). This must be connected in order to receive commands via Ethernet. For details on connecting a remote emergency stop button see section 6.9.

17. Product specifications

17.1 DigiHoist 32A specifications

Feature	Specification
Power supply	• 3 Phase + Neutral + Earth • 175-435V, 50-60 Hz, 32A maximum
Mains input	• 5 pin 32A Red “CEE Form” type plug to IEC60309 on 1.5m trailing lead • Alternative connectors available on request
Controls	• Phase reverse switch (Low Voltage versions only) • Emergency stop button • 3-position directional momentary toggle switches for UP / OFF / DOWN operation • Hoist Power key switch to OFF, AUTO and ON • RESET and GO buttons
Indicators	Individual channel status LEDs and OLED displays
Hoist connection options (Low Voltage version)	• 4 x Harting 16 • 8 x Harting 6 • 2 x Harting 32 • 8 x Socapex 7 • 4 x Socapex 19 • 8 x Socapex 14
Hoist connection options (Direct Control version)	• 8 x CEE Form • 2 x Harting 16 • 2 x Socapex 19
Control connections	• Amphenol C16-3 Link In Male 14+PE • Amphenol C16-3 Link Out Female 14+PE • EtherCON input • XLR4 input for load cells
Enclosure	1.5 mm steel, matt black powder coat finish
Ingress Protection (IP) rating	IP40 (protected from tools and small wires greater than 1 mm, not protected from water.)
Operating temperature range	0 to 40°C (32 to 104°F)
Cooling	Natural air cooling
Dimensions, excluding cables, connectors and mounting hardware (W X H X D)	424 mm x 178 mm x 400 mm (16.7 in x 7.0 in x 15.7 in)
Weight	18-25 kg (depending on configuration)

17.2 DigiHoist PLUS 63A specifications

Feature	Specification
Power supply	• 3 Phase + Neutral + Earth • 175-435V, 50-60 Hz, 63A maximum
Mains input	• 5 pin 32A Red “CEE Form” type plug to IEC60309 on 1.5m trailing lead • Alternative connectors available on request
Controls	• Phase reverse switch (Low Voltage versions only) • Emergency stop button • 3-position directional momentary toggle switches for UP / OFF / DOWN operation • Hoist Power key switch to OFF, AUTO and ON • RESET and GO buttons
Indicators	Individual channel status LEDs and OLED displays
Hoist connection options (Low Voltage version)	• 4 x Harting 16 • 8 x Harting 6 • 2 x Harting 32 • 8 x Socapex 7 • 4 x Socapex 19 • 8 x Socapex 14
Hoist connection options (Direct Control version)	• 8 x CEE Form • 2 x Harting 16 • 2 x Socapex 19
Control connections	• Amphenol C16-3 Link In Male 14+PE • Amphenol C16-3 Link Out Female 14+PE • EtherCON input • XLR4 input for load cells
Enclosure	1.5 mm steel, matt black powder coat finish
Ingress Protection (IP) rating	IP40 (protected from tools and small wires greater than 1 mm, not protected from water.)
Operating temperature range	0 to 40°C (32 to 104°F)
Cooling	Natural air cooling
Dimensions, excluding cables, connectors and mounting hardware (W X H X D)	420 mm x 264.6 mm x 500 mm (16.5 in x 10.4 in x 19.7 in)
Weight	30-35 kg (depending on configuration)

17.3 Product dimensions

17.3.1 DigiHoist 32A

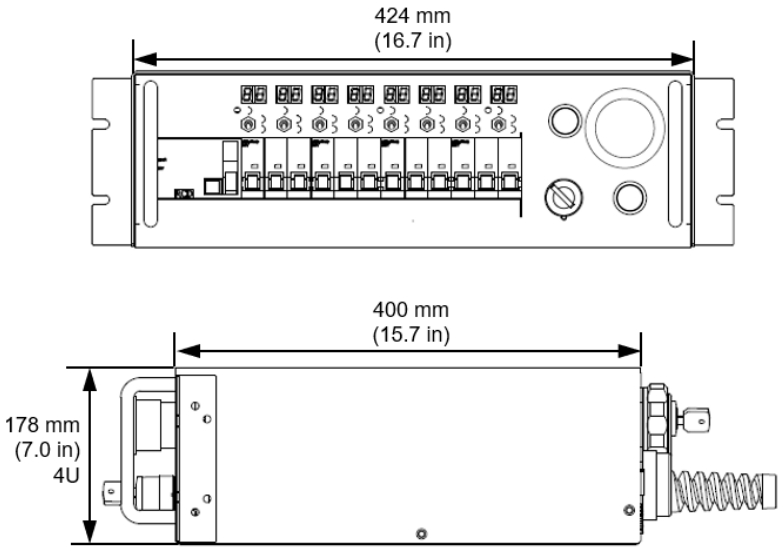


Figure 50. DigiHoist 32A dimensions

17.3.2 DigiHoist PLUS 63A

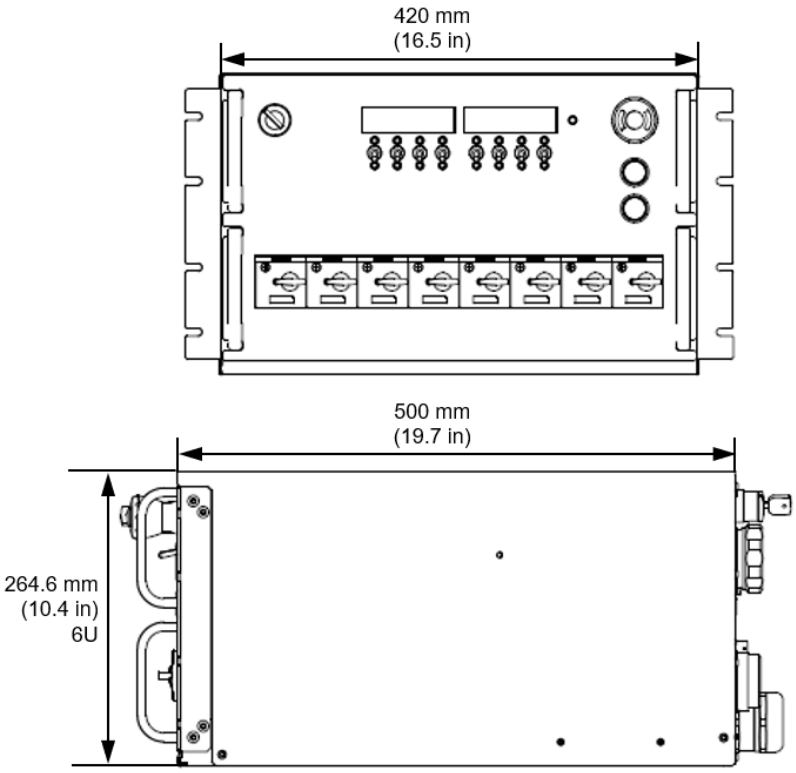


Figure 51. DigiHoist PLUS 63A dimensions

18. Service & End of Life

In the event of a product being considered beyond economic repair it should be disposed of with care and in line with local legislation on disposal of Waste Electrical and Electronic Equipment (WEEE).

In Europe WEEE shall be disposed of in accordance with European Union Directive 2012/19/EU.

In most regions of the world, similar legislation exists to ensure that WEEE is handled separately to maximise reuse of materials and avoidance of landfill.

19. Declaration of Conformity

ORIGINAL

EC Declaration of Conformity

Manufacturer:	Kinesys Projects Limited
of the address:	Unit 2 Kempton Gate, Oldfield Road, Hampton, Middlesex, TW12 2AF, UK
in accordance with the following EC directives:	**Low Voltage Directive 2014/35/EU** **EMC Directive 2014/30/EU**
declares that the product:	**Kinesys DigiHoist Controller (including DigiHoist PLUS)**
with part number:	**DHC-8-LV; DHC-8-DC**

is in conformity with the applicable requirements of the following harmonised standards:

EN 60204-1:2006	**Safety of machinery – Electrical equipment of machines – Part 1: General requirements**
EN 62061:2005	**Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems** Emergency stop circuit complies to SIL2.
EN 61000-6-1:2007	**Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments.**
EN 61000-6-3:2007	**Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments.**

The manufacturer hereby declares that the products named above have been designed to comply with the relevant sections of the above referenced standards. The units comply with all applicable essential requirements of the directives.

In the EU the party authorised to compile the technical file is:
TAIT Netherlands B.V.
Weesperplein 4a, 1018 XA Amsterdam, The Netherlands
In the UK the party authorised to compile the technical file is:
Kinesys Projects Ltd.
Unit 2 Kempton Gate, Oldfield Road, Hampton,
Middlesex, TW12 2AF, UK

Equipment referred to in this Declaration of Conformity was first manufactured in 2011.

D Weatherhead
Managing Director
Hampton, November 2024

The attention of the specifier, purchaser, installer, or user is drawn to special measures and limitations to use which must be observed when these products are taken into service to maintain compliance with the above directives. Details of these special measures and limitations to use are available on request and are also contained in the product manuals.

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