Kinesys DigiHandset

Operating Manual
[ORIGINAL]

A range of handsets for controlling Kinesys DigiHoists

Contact details

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1. Introduction

1.1 Product description

DigiHandset is a standalone remote controller that can be used to control the Kinesys DigiHoist via the use of toggle switches. Once connected to the DigiHoist the DigiHandset will override the front panel controls, with the exception of the E-Stop button. Any attempt to use GO, RESET or channel direction toggle switches on the DigiHoist will have no effect once a DigiHandset is connected.

DigiHandset is available in 8, 16 and 32 channel variations. Addressing of channels happens automatically once the DigiHandset is connected to the DigiHoist.

The DigiHandset menu can be used to modify various operating parameters and is navigated using the Up, Down and M buttons.

1.2 Scope and purpose

This manual describes the key features, means of operation and maintenance operations of the DigiHandset.

This manual applies to DigiHandset firmware version v3.36.

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.

1.3 Support requests

For support, please use the following contact details:

TAIT
Unit 2 Kempton Gate Business Centre
Oldfield Road
Hampton
Middlesex
TW12 2AF
United Kingdom

TAIT
401 W Lincoln Ave
Lititz PA 17543
USA

support@kinesys.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**
🚫	**Danger: Prohibited actions which are forbidden under all circumstances**
ℹ️	**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

Harmonized regulations

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 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 DigiHandset or do maintenance to the DigiHandset in an area that is accessible to children or other unqualified persons.

- Do not use the DigiHandset 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 DigiHandset if it does not appear to be in 100% working order.

- Do not modify or attempt to repair the DigiHandset 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 DigiHandset and its connected devices are intended to be used.

- Do not start movement operations until a qualified person has inspected the DigiHandset and all other connected equipment, and confirmed that is in 100% working order.

- 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 communication with 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.

Safety instructions during operation

- **If any unexpected or dangerous hoist movement is noticed during operation, press the emergency stop button on the front panel of the DigiHandset or an emergency stop button on a venue-wide safety controller to bring all movement to an immediate stop.**

- **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.**

2.3 Visible damages

If any damage or breakages are detected, do not operate the DigiHandset 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.

2.5 Operating environment

The DigiHandset 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 DigiHandset 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 DigiHandset to a power source immediately. Leave the unit disconnected until it has reached a safe temperature.

Shocks

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

Handling

Do not lift the DigiHandset 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 DigiHandset. Alternatively, a purpose-made flight case may be used (available separately).

3. Product overview

Note: The 8-channel DigiHandset is shown below. The 16-channel and 32-channel variants have the same features.
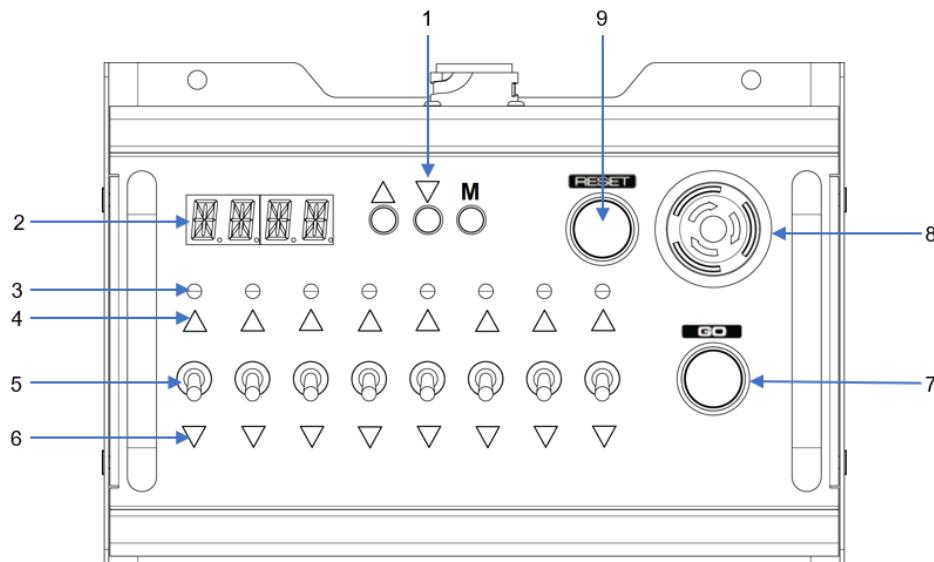
Figure 1. DigiHandset layout

Item #	Description	Notes
1	Menu and navigation buttons	
2	LED information display	
3	Channel status indicators	Illuminates blue when a hoist is present on that channel
4	Channel UP indicators	Illuminates green to indicate the Up direction is selected on that channel
5	Channel toggle switches	Used for selecting the required direction of movement
6	Channel Down indicators	Illuminates red to indicate the Down direction is selected on that channel
7	GO button	Illuminates when the system is ready for movement and will initiate movement when pushed
8	Emergency stop button	Used in the event of an emergency to stop all movement
9	RESET button	Flashes to indicate a reset is required and will reset the system when pushed

4. Connections

4.1 Connecting a DigiHandset Remote Controller

1. Connect one end of a Kinesys DigiLink data cable (available separately) to the socket on the DigiHandset by pushing and twisting the locking ring of the cable connector until it is secure.

2. Connect the other end of the DigiLink data cable to the Data IN socket on the DigiHoist. If you are using a chain of multiple DigiHandsets, make sure the DigiLink data cable is connected to the first controller in the chain.

3. Addressing of the channels and handset will happen automatically. For details on how to operate the handset once connected refer to section 5.

Push connector onto socket   Twist locking ring secure connector
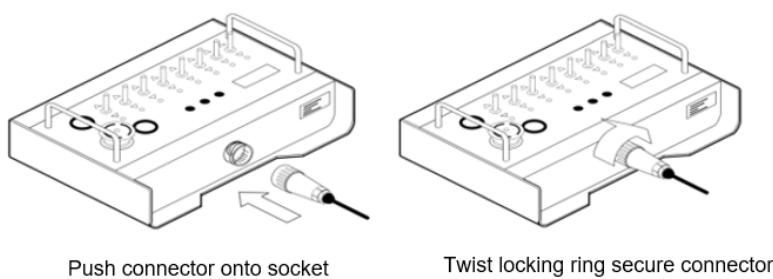
Figure 2. Connecting a DigiLink data cable to the DigiHandset

DigiHoist (32A)

DigiHoist PLUS (63A)
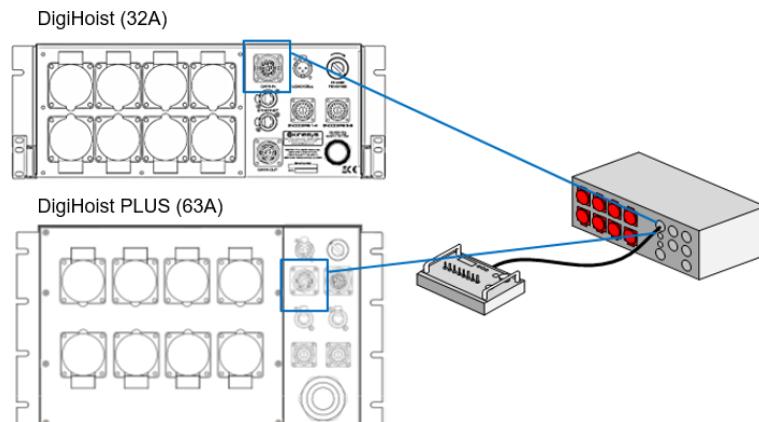
Figure 3. Connecting a DigiHandset

4.1.1 Maximum cable lengths

The following lengths are the distance between the DigiHandset and the first DigiHoist in the chain. These are based on the voltage drop within the E-Stop circuit.These distances can be increased if necessary by using a larger cable - contact Kinesys for support.

Number of DigiHoist units	Max cable length
1	100 m
2	90 m
3	80 m
4	70 m

4.2 Connecting multiple DigiHandsets using DigiLink

To control a system of more than 32 hoists, multiple DigiHandsets are required. The Kinesys DigiLink (sold separately) connects up to four handsets together so that a single GO button can control up to 96 hoists. The DigiLink limits the start of movement to a single GO button on the first DigiHandset while ensuring that all emergency stop buttons remain active.

Note that the GO and RESET buttons on the DigiHandset connected to input 1 on the DigiLink are the default buttons and all other GO and RESET buttons are disabled.

For more information on the DigiLink refer to the relevant product operating manual.
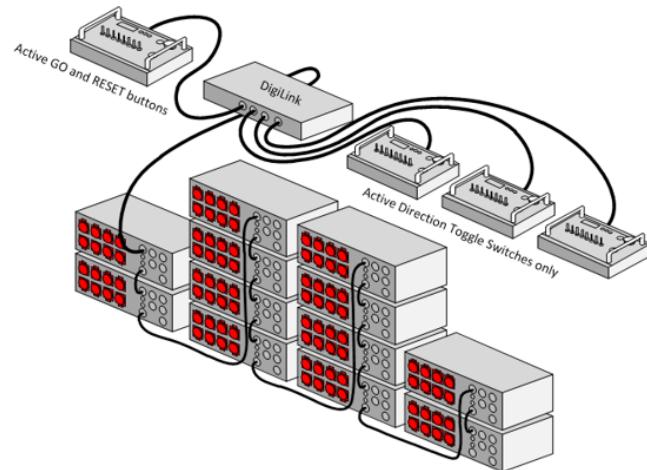
Figure 4. Connecting multiple DigiHandsets

5. Operation

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.

5.1 Moving hoists with a DigiHandset

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

1. Connect the DigiHandset to the DigiHoist using the Data In connection on the rear panel of the DigiHoist. If a group of DigiHoists are being used together, make sure the DigiHandset is connected to the Data In port of the first unit in the chain.

2. The display on the front of the DigiHoist will briefly indicate that the handset has taken control:
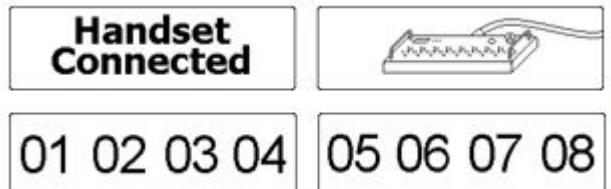
3. The RESET button will flash to indicate that the system needs to be reset.

4. Turn the hoist power key switch to the AUTO or ON position.

5. Press the RESET button on the handset. On Direct Control DigiHoist versions the channel status indicators will all illuminate blue; on Low Voltage DigiHoist versions only channels with hoists connected will illuminate. If any indicators are flashing blue this indicates a fault on the hoist connected to that channel.

6. The LED display on the handset will read "RDY" to indicate that it is connected, the channels have been addressed and it is ready to use.

7. Identify the hoist or group of hoists you want to move. Make sure you know which of the eight channels each hoist or is assigned to and that you have a clear and unobstructed view of the loads.

8. Choose the direction of movement by moving the channel switches on the handset to the UP or DOWN position. The arrow above or below the switches will illuminate to indicate the selected direction of movement: green for UP and red for DOWN.

9. When the hoist or group of hoists is ready for movement, the GO button on the handset 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.

10. 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.

11. To de-select a channel currently set to move, move the switch. The direction arrow, either red or green, will turn off.

12. 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.

5.2 DigiHandset display

The DigiHandset has an LED display to convey information and the status of the system and a single LED indicator in the bottom right corner that flashes to indicate the system is working correctly.
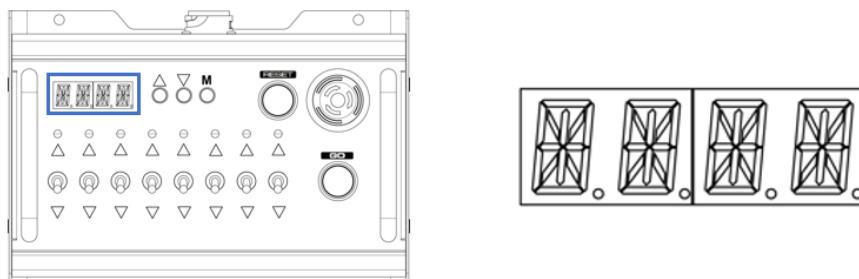

Figure 5. DigiHandset display

5.2.1 DigiHandset display messages

|	
RDY.	The system is ready to operate.
ESTP	An emergency stop button has been pressed.
RST.	A reset of the system is required. Refer to section 1.3 for details.
RSTL	The system has stopped movement due to a limit being reached and requires a reset. Refer to section 1.3 for details.
ER02	Error - an emergency stop button has been pressed while the GO button is being held..
LOST	The DigiHandset has lost communication with one or more DigiHoists.

5.3 DigiHandset channel status indicators
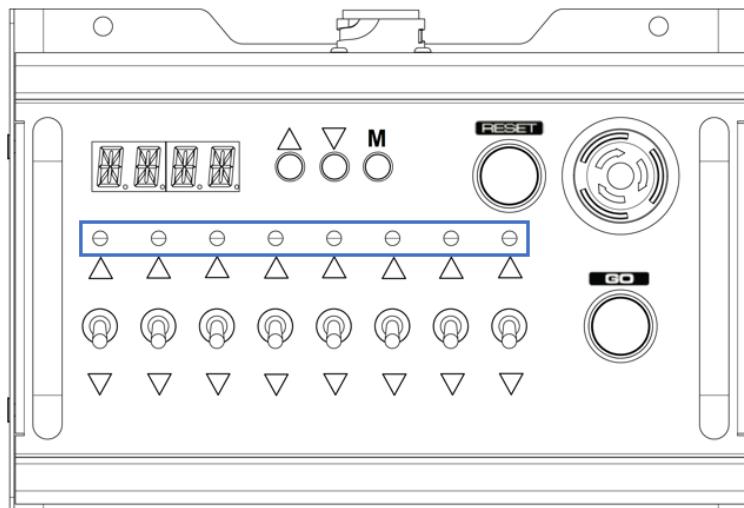
Figure 6. DigiHandset channel status indicators

○	Off	No hoist connected to that channel	
●	On	Hoist detected on that channel	
☀	Flashing	An issue has been detected on that channel. Refer to the troubleshooting guide in the DigiHoist manual for more details.	

5.4 Accessing the DigiHandset menu

The DigiHandset has settings within its menu that can be changed. To access and change settings on the DigiHandset continue as follows:

1. Connect the DigiHandset to the DigiHoist and turn the power supply on.

2. Set the hoist power key switch on the DigiHoist to the OFF position.

3. Press and hold the "M" button on the DigiHandset for two seconds. The display will flash between the menu option and its current setting.

4. Press the UP and DOWN buttons to move up and down through the menu.

5. When you reach the menu option to be changed press the "M" button.

6. Press the UP and DOWN buttons to change the current option. Refer to the next section for details on each option.

7. Once the setting has been changed press the "M" button to save and exit the currently selected option.

8. Press and hold the "M" button on the DigiHandset for two seconds to exit the menu completely.
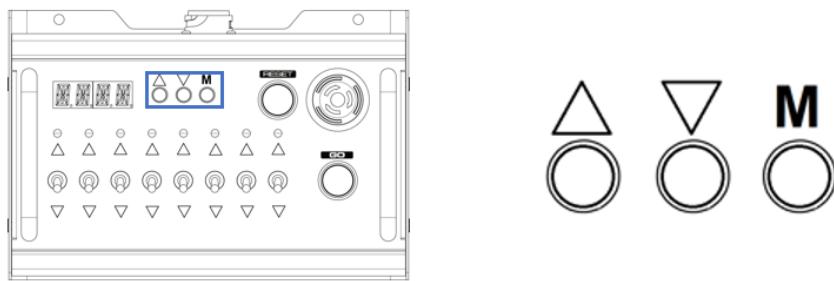
Figure 7. DigiHandset menu access

5.5 DigiHandset menu options

Menu	Name shown on display	Settings
Version	VER	N/A
Limit	LIMT	110V, 24V, NONE
Clear switch fault	CLRF	YES, NO
Clone mode	CLON	ON, OFF
Display brightness	BRGT / DISP	0001 - 0008
Red LED brightness	BRGT / RED	0001 - 0008
Blue LED brightness	BRGT / BLUE	0001 - 0008
Green LED brightness	BRGT / GRN	0001 - 0008

5.5.1 Version

Selecting this will show the software version number of the DigiHandset. It is not changeable.

5.5.2 Limit

This setting sets the sensitivity of the limit detect circuitry. The 110V setting is used for motors that use a 110V control voltage (e.g. Lodestar hoists) and the 24V settings is used for motors with a 24V control voltage (e.g. Liftket hoists). If the Status and Direction indicators are flashing this may indicate that the handset voltage control setting does not match the hoist voltage. Note that long cable runs can cause false hoist detection in 24V mode due to inteference between the motor power and control wiring.

The 24/110V settings change the sensitivity of the internal electronics to achieve the best result while minimising interference or false readings. In some circumstances it may not be possible to reliably read the limits status from the control cables if there is too much interference, especially from adjacent power cables or on long cable runs. In these cases the Limits setting can be set to NONE, which will turn the limit detection off.

5.5.3 Clear switch fault

If a fault develops with one of the switches on the DigiHandset, the Status, Up and Down LEDs will all flash. The fault will be remembered even after disconnecting and powering off. The Clear switch fault option can be used to resolve the switch fault by selecting YES. If this does not clear the fault, the switch may be faulty. In this instance contact your supplier or Kinesys for support.

5.5.4 Clone mode

By default, the DigiHandset connected to input 1 on the DigiLink will be the only handset whose GO and RESET buttons are active and can control the movement of channels in the system. However, if Clone mode is selected on a different DigiHandset the GO and RESET buttons of that handset will become active instead.

5.5.5 Display Brightness

Use this option to set the brightness of the display.

5.5.6 LED Brightness

Use these options to change the brightness of the green (UP), red (DOWN) and blue (Status) LEDs.

6. Product specifications

| Feature	Specification
Power supply	24 V from DigiHoist only
Mains input	DigiLink cable (available separately)
Indicators	Individual channel LEDs (UP, DOWN and Status)
Enclosure	1.5 mm steel, matt black powder coat finish
Ingress Protection (IP) rating	IP30 (protected from tools and wires greater than 2.5 mm.; not protected from liquids)
Temperature range	Operating: 0 to 40°C (32 to 104°F) Storage: -20 to 80ºC (-4 to 175ºF)
Dimensions, excluding cables and handles (W X D X H)	8 channel: 255 mm x 172 mm x 86 mm (10.0 in x 6.8 in x 3.4 in) 16 channel: 395 mm x 172 mm x 86 mm (15.55 in x 6.8 in x 3.4 in) 32 channel: 395 mm x 250 mm x 86 mm (15.55 in x 9.8 in x 3.4 in)
Weight	8 channel: 1.1 kg (2.4 lbs) 16 channel: 1.6 kg (3.5 lbs) 32 channel: 2.3 kg (5.1 lbs)

6.1 Product Dimensions
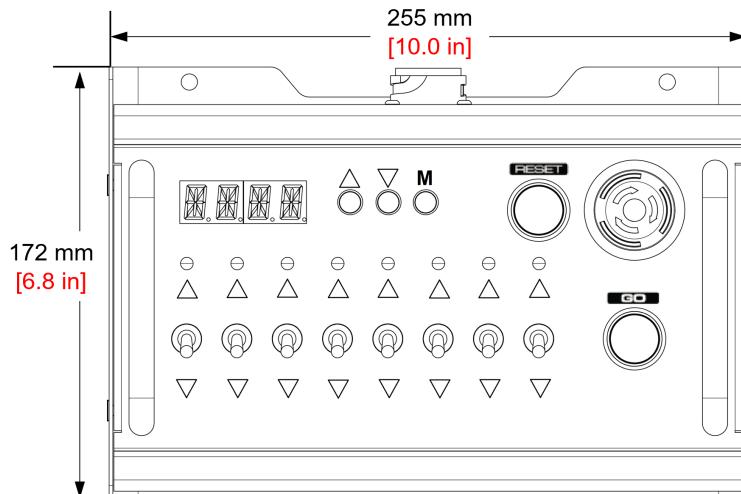
*Figure 8. Product dimensions - 8 channel version*
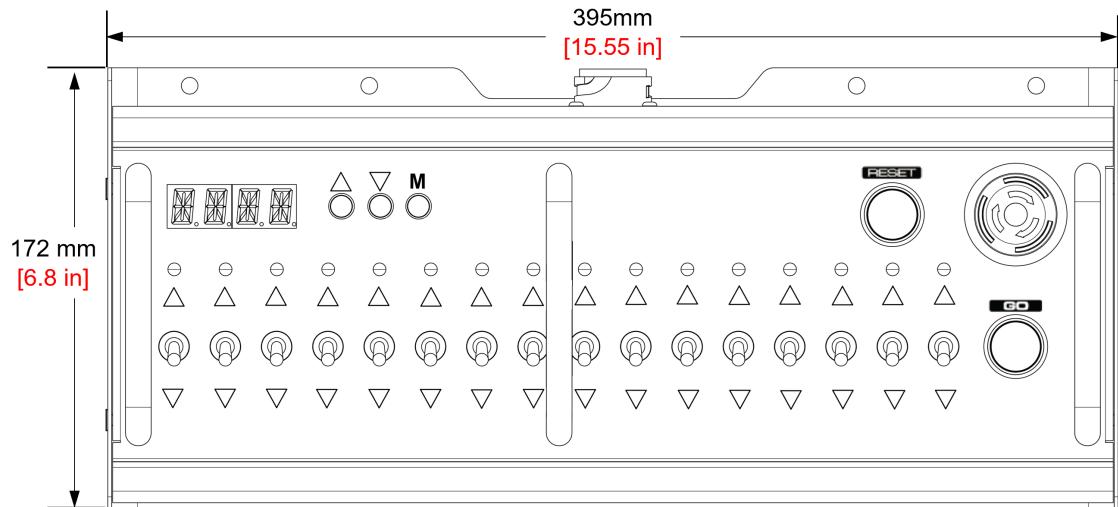
*Figure 9. Product dimensions - 16 channel version*
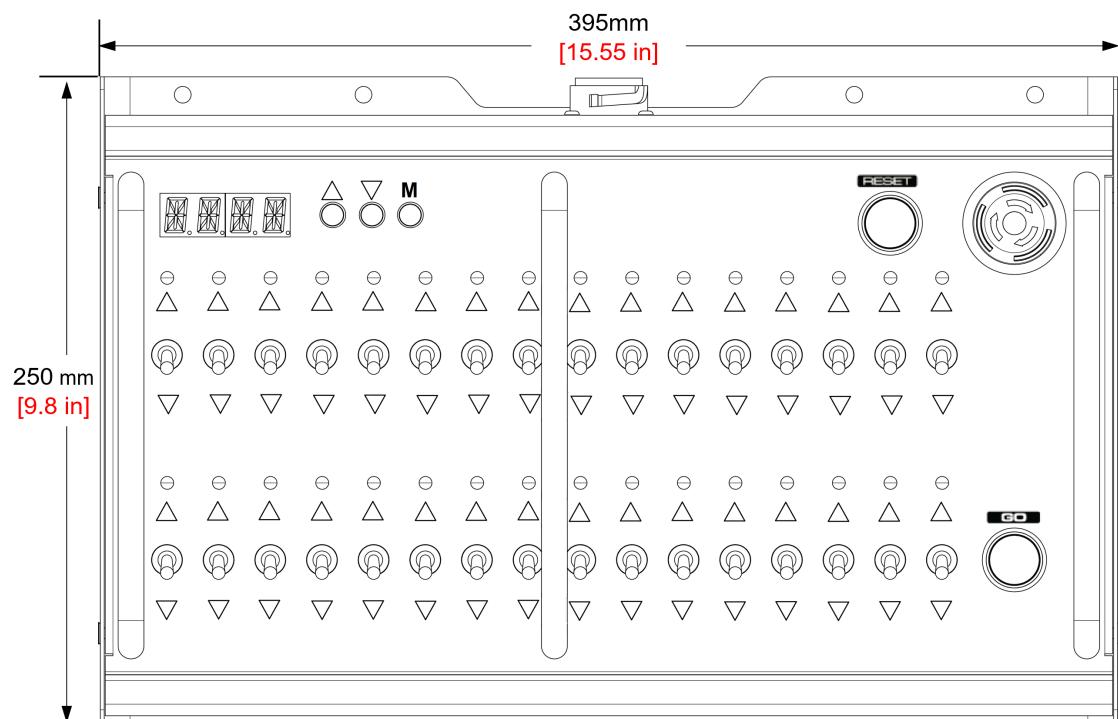
Figure 10. Product dimensions - 32 channel version

7. 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.

8. Declaration of Conformity

TAIT

CE

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 DigiHandset**
with part number:	**DHH-8; DHH-16; DHH-32**

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.

Kinesys Projects Ltd.
TAIT Technologies UK Ltd.
Unit 5 Langthwaite Road, Langthwaite Grange Ind Estate, South Kirkby, Pontefract, West Yorkshire, UK, WF9 3AP

Registered in England and Wales No. 02982782   +44 2082 088000   taittowers.com