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# Kinesys K2 Console

Operating & Maintenance Manual
[ORIGINAL]

An automation console for Kinesys K2 software

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# Contents

# Glossary

### Action

Actions are the smaller movement commands that make up a Cue. An Action can contain move data for single or multiple Constructs and all or some of the Parameters within those Constructs.

### Construct (noun)

A Construct is a physical object that is modeled and can be moved within K2. In K2's 3D space, a Consstruct is displayed using a solid graphic that represents the look of the object. A Construct can have as few as one Parameter and as many as six in any combination depending on the desired movement of the object. The six possible parameters are X, Y, Z, Pitch, Tilt, and Rotate.

### Cue (noun)

A Cue is an instruction that causes a Device or a group of Devices to move Constructs to a defined position. It can consist of a single movement or a group of many movements, Constructs and Parameters.

### Cuelist

A Cuelist is an ordered list of Cues.

### Device

A Device is a piece of machinery that can be used to move a Construct. Common examples include electric chain hoists and winches. A Device can only have a single degree of freedom and therefore there must be at least as many devices created as there are Construct parameters.

### Downstage

Stage positions are based on the point of view of a performer looking out towards an audience. Downstage is deemed to be in front of the performer, the edge of the stage closest to the audience.

### Effect

An Effect can be applied to one or multiple Parameters within a Construct. An Effect applies a sinusoidal factor to the target position of the Parameter. Therefore the target position will vary over time.

### Link

A Link connects a Device to a Construct. It defines the position of physical connection to the moving object and also where that moving machine enters the virtual world. There are two ends to a Link: the point where it attaches to the Construct and the point where it attaches to the Stage Model. Both of these sets of coordinates must be defined correctly and accurately to ensure precise control of the physical object.

### Machine

The name Machine is a generic term used to describe any physical device that is used to create motion. This can mean a wire rope winch, chain hoist, hydraulic ram, linear actuator or any other motive engine. Each Machine will have a controller associated with it that will provide the interface to the K2 software.

### Page

A Page is a pre-selected arrangement of Cuelists loaded onto Masters. This means all the Cues for a particular section of a show can be made available quickly without needing to load each Cuelist individually.

### Parameter

A Parameter represents one degree of freedom for a given Construct. These are either linear movement along the X, Y or Z axes, or rotation around the Tilt, Pitch and Rotate axes. The combination of Parameters available to each Construct is based on the initial Construct type selected.

### Pitch

Pitch is the rotational movement around the X-axis

### Preset

A Preset can hold target values for each Parameter available in the system. Cues can refer to Presets instead of having their own target values. Changing the values of a single Preset will then result in Cues that contain that Preset changing.

### Rotate

Rotate is the rotational movement around the Z-axis

### Stage Left / Stage Right

Stage positions are based on the point of view of a performer looking out towards an audience. Stage Left is therefore to the left of a performer standing in the middle of the stage and Stage Right is to the right.

### Tilt

Tilt is the rotational movement around the Y-axis

### Upstage

Stage positions are based on the point of view of a performer looking out towards an audience. Upstage is deemed to be behind the performer, the edge of the stage furthest from the audience.

### View

A View is a saved layout of windows on the K2 desktop. Views allow these pre-arranged layouts of windows to be recalled quickly.

### World

All K2 programming and visualisation is done within a 3D World. This World can be imported into K2 in the form of a 3D Studio file (.3ds). All co-ordinates for the position and movement of Constructs are based on the origin and scale of the imported World. The correct scale and axis conventions must be adhered to so hat Worlds, Constructs and their relationship to each other is correctly maintained.

### X (direction)

The X direction is defined to be the axis going across the stage, with the positive direction being right as you face the stage.

### Y (direction)

The Y direction is defined to be the downstage to upstage axis, with the positive direction being towards upstage.

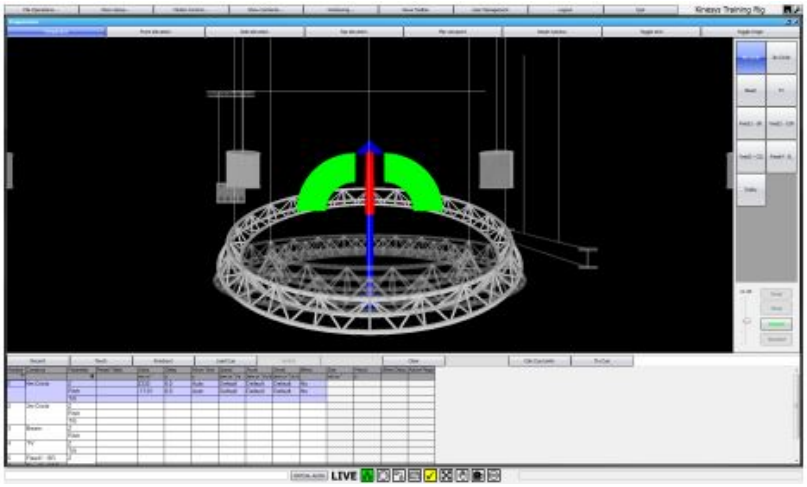
### Z (direction)

The Z direction is defined as the perpendicular axis to the stage, with the positive direction being upwards towards the ceiling.

# List of Figures

# 1. Introduction

## 1.1 K2 software



K2 is a powerful, graphically based control solution for automation and motion control. Programming and Cue playback can be seen in real time using the built-in 3D viewer. 3D worlds can be created or imported to work within K2 and Constructs (the actual moving elements) can be internally generated or imported.

The ability to move Constructs in real world axes (X, Y, Z, pitch P, tilt T, and rotate R) removes the need to perform complex multi-axis calculations.

## 1.2 K2 Console


The K2 Console is a control interface designed specifically for programming and running Cues within K2. The large buttons and controls are designed to make the work flow as natural as possible for the operator, thus minimising the time spent focusing on the console and maximising the time spent focusing on the actual movement operations.

The K2 Console comes with a built-in computer onto which the latest version of K2 software is pre-installed. Therefore a simple HDMI connection to one or more monitors is all that is required to operate the software.

Other features include a built-in keyboard and mouse pad, which may be overridden by an external keyboard and mouse if the user wishes, and an optional desktop light.

## 1.3 Scope and purpose

This manual describes the key features, means of operation and maintenance operations of the K2 Console. It is not intended as a manual for the K2 software package. For details on the programming and operating procedures of K2, consult the K2 manual.

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 Support requests

For technical support on this product, 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

## 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 directives**

| | |
|---|---|
| 2014/30/EU | EC - EMC Directive |
| 2014/35/EU | EC - Low Voltage Directive |

**Harmonized regulations**

| | |
|---|---|
| EN 60950-1 | Information technology equipment. Safety. General requirements. |
| EN 62061 | Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems. |
| EN 61000-6-1 | Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments |
| EN 61000-6-3 | Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments |

## 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 use the K2 Console if it does not appear to be in 100% working order.**
- **Do not operate the equipment, cables or connectors when damaged or wet.**
- **Do not connect or disconnect cables while the system is powered on. Always switch off the power supply before making or breaking connections.**
- **Do not remove the outer casing of the K2 Console, unless explicitly advised by the manufacturer.**
- **Do not modify the K2 Console in any way, unless explicitly advised by the manufacturer.**
- **Do not use any spare parts other than those supplied by the manufacturer.**

**Safety precautions before operation**

- **Do a full risk assessment of the location where the K2 Console and its connected devices are intended to be used.**
- **Do not start movement operations until a qualified person has inspected the K2 Console 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.**
- **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.**
- **Make sure that all cables and adapters are compatible with the outputs of the Vector Console. If in doubt, do not use any cables or adapters without checking for compatibility, as identical looking connectors may be wired differently by various suppliers.**

**Safety instructions during operation**

- **If you notice any unexpected or dangerous movement during operation, press the E-Stop button on the 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 (hold to run) is being used in the system, then release the enabling switch.**
- **If an enabling switch is used in your system to initiate movement of the connected lifting device, 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.**

## 2.3 Visible damages

If any damage or breakages are detected during operation or during tests, do not operate the K2 Console until it has been repaired and a qualified person has checked and approved it.

## 2.4 Spare parts

Only original 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 K2 Console is designed for indoor use only and to work at ambient temperatures between 5°C and 40°C (41°F and 104°F). The K2 Console has an Ingress Protection (IP) rating of IP40.

## 2.6 Transportation and storage

### Condensation

The K2 Console 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 K2 Console to a power source immediately. Leave the unit disconnected until it has reached a safe temperature.

### Shocks

Do not shake, knock or drop the K2 Console. Avoid excessive force when installing and operating the product.

### Handling

Do not lift the K2 Console by any of its cables or connectors as this may cause damage to the unit and/or cables.

### Packaging

Where possible, use the original transit case to transport the K2 Console.

# 3. Product overview

## 3.1 Rear panel connections and features

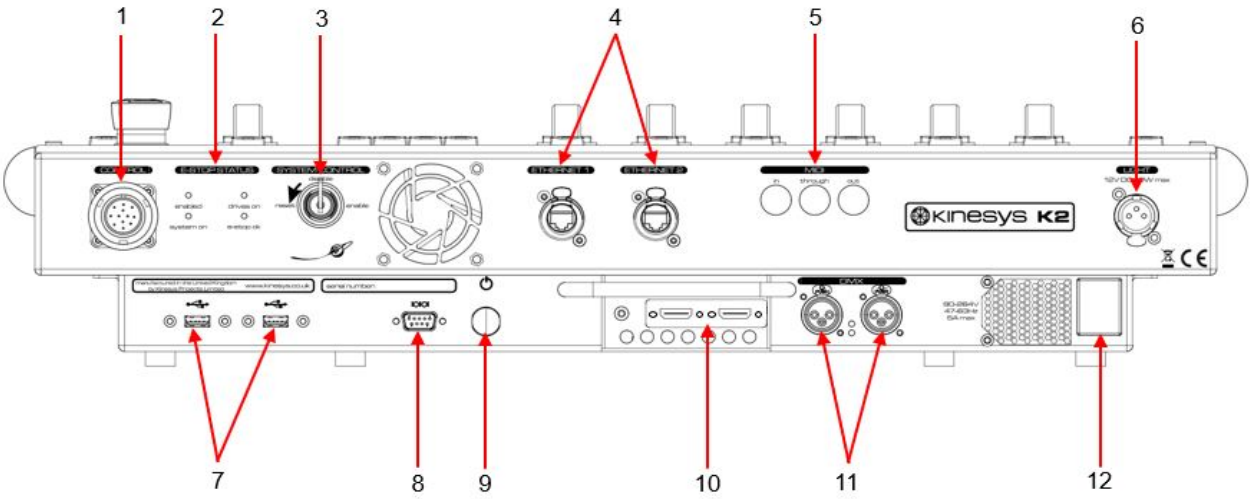



*Figure 1. Rear panel overview*

| Item # | Description | Notes |
|---|---|---|
| 1 | E-Stop connection | For connection to an emergency stop system e.g. Array PD-ES or Mentor |
| 2 | E-Stop status indicators | |
| 3 | Enable / Disable key switch | |
| 4 | Ethernet ports 1 and 2 | For connection to a power distribution unit e.g. Array PD-ES |
| 5 | MIDI connections (In, Through, Out) | |
| 6 | Desktop light connection | |
| 7 | USB connections 1 and 2 | For connecting external devices such as mouse or keyboard |
| 8 | PC RS232 serial port | |
| 9 | Power button | Press and hold to turn the unit on / off |
| 10 | Display ports | For connecting to external monitors. Depending on the model, these could by Display Ports (DP), HDMI ports or one of each type. Two HDMI ports are shown in this example. |
| 11 | DMX inputs 1 and 2 | Used for stage lighting and effects communication networks |
| 12 | Power cable connection | |

## 3.2 Front panel overview

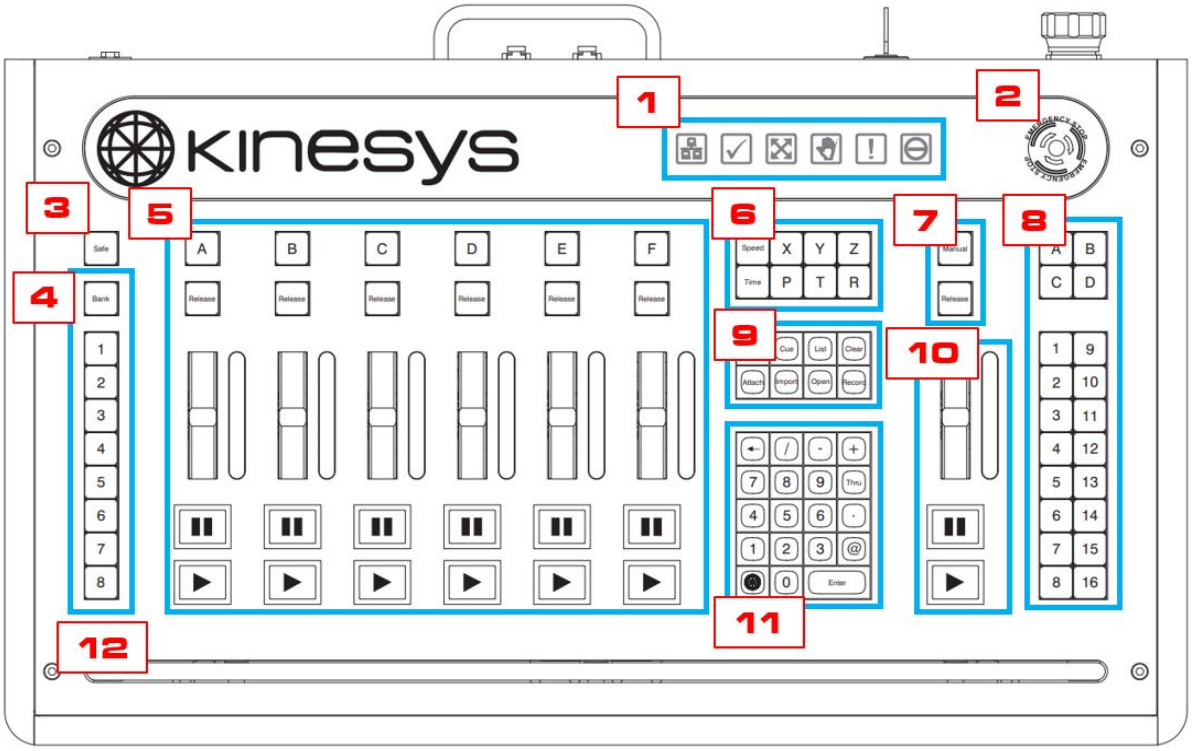



*Figure 2. Front panel overview*

The table below gives a brief description of what different areas on the front panel are used for. For details on the specific button and key commands needed for programming and movement operations within K2 refer to "Commands list" on page 22.

| Item # | Description | Notes |
|---|---|---|
| 1 | Status icons | This area is a condensed version of the status bar at the bottom of the page in K2. For more information see "Product overview" on the previous page. |
| 2 | Emergency stop button | Press the emergency stop button to bring all movement to a stop. Twist the emergency stop button clockwise to release it and reset the system for movement. |
| 3 | Safety button | This button can be pressed to lock the console controls from inadvertent or unauthorised use when left unattended. |
| 4 | Page buttons | A  Page is a group of up to six Cuelists (arranged in Playbacks A to F). Pages can be arranged in up to 8 Banks and each Bank can contain up to 8 Pages. Therefore the total number of Pages available is 64. |
| 5 | Cuelist playback controls | Used for loading, playing, pausing and altering the speed of a particular Cuelist. |
| 6 | Parameter selection buttons | Used for quickly selecting time, speed and up to six available degrees of motion when programming Cues. |
| 7 | Manual mode buttons | Used for enabling / disabling Manual mode |
| 8 | Construct buttons | Used for selecting Constructs for manual movement or Cue programming. Similar to the Pages buttons, these are arranged in Banks A to D. |

| Item # | Description | Notes |
|---|---|---|
| 9 | Command keys | These eight buttons are common commands that often need to be entered into K2 when programming Cues and Cuelists. |
| 10 | Master controls | Used for playing, pausing or changing the speed of a highlighted Cue or for moving Constructs in Manual Mode. |
| 11 | Data entry keypad | Numerical data as well as decimal places and other useful symbols and commands can be entered into K2 using this keypad. |
| 12 | DMH bar (also known as 'Enabling switch') | As well as a dead man's handle, this also acts as the 'Ctrl' button on the keyboard duting programming. For more information see "Product overview" on page 13. |

## 3.3 Keyboard and mouse pad

A keyboard and mouse pad is built into each K2 Console. To access the keyboard and mouse pad slide the tray out from the bottom of the front panel. Alternatively, you may wish to connect your own external keyboard and mouse using the two USB connections on the rear panel.

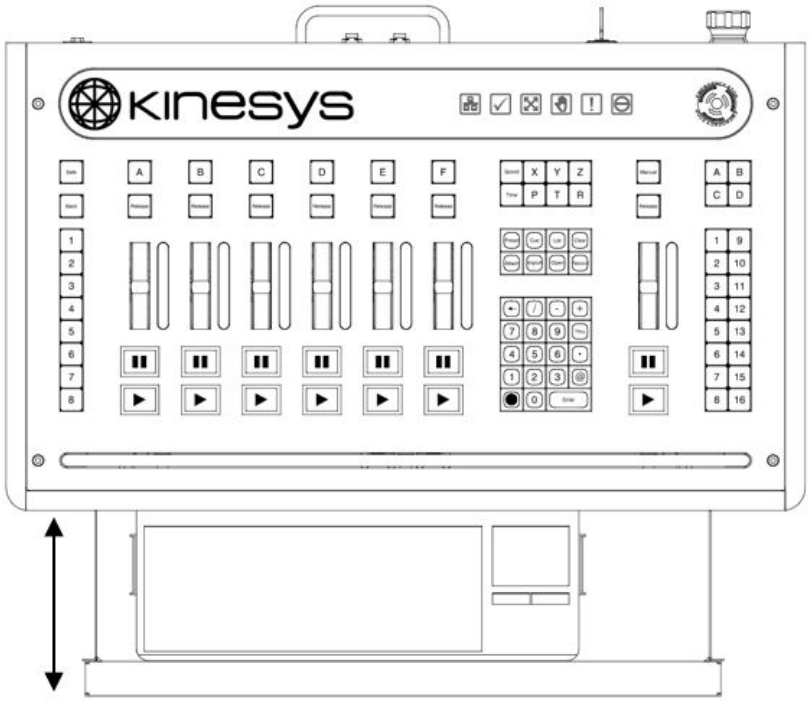



*Figure 3. Keyboard and mouse pad location*

## 3.4 Keys vs buttons

In this manual, keys and buttons are defined as follows:

- A key is a feature that when pressed enters data into the command line K2 in order to form part of a command. This could be numerical data, an action such as Open, or a K2-specific feature such as Cue. They are similar in behaviour to the keys on a computer keyboard and are useful for quickly entering information into K2 without having to use the software interface.

- Buttons are similar to keys in that they can also be pressed to perform data entry. However, they can also be used for specific functions such as starting and stopping Cues. Another key difference is that buttons illuminate in different colours depending on the task being performed or the condition of the system.

## 3.5 DMH bar operation

By default the Dead Man's Handle bar is disabled, meaning that it does not need to be held down in order to begin and maintain movement of the Construct. To enable the DMH bar navigate to the Construct setup window and select the Safety tab. In the Control Mode drop-down menu choose one of the following DMH modes:

- Held - the DMH bar must be pressed at all times until the move is complete.
- Periodic - the DMH bar must only be pressed occasionally to maintain movement. If this mode is selected, you can set the time in which the DMH bar must be pressed in the field to the right.

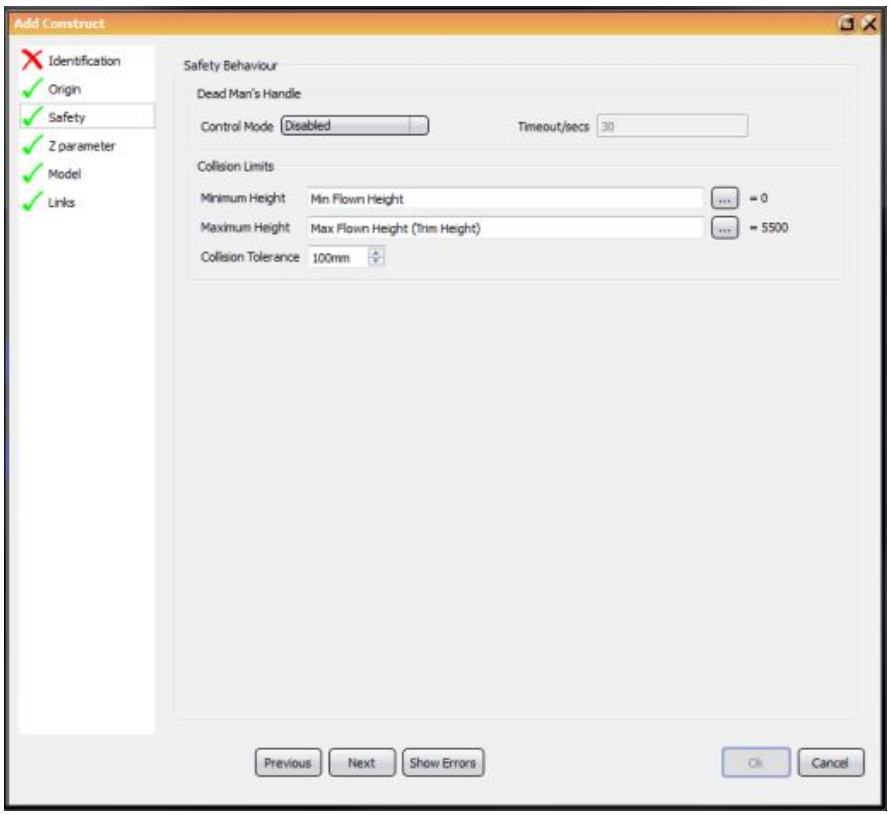



*Figure 4. Configuring the DMH bar*

## 3.6 Status icons

The six icons at the top of the front panel mimic the status bar located at the bottom of the page within K2. Note that these icons are not buttons or keys and therefore do not receive any user input; they are for information purposes only.

| Icon | Description |
|---|---|
|  | This icon illuminates when the network status is OK. |
|  | This icon illuminates when the system is online and communicating successfully with all control Devices. If the icon flashes it means there is a connection issue with one or more control Devices. |
|  | This icon illuminates any time the Constructs are physically moving. |
|  | This icon illuminates if the DMH bar needs to be pressed to initiate or maintain motion. If the DMH is in Periodic mode the icon will flash with increasing frequency as the timeout gets closer. Once the icon is illuminated constantly the DMH bar must be pressed to continue motion. |
|  | This icon will illuminate whenever an alarm condition is detected in K2. |
|  | This icon will illuminate if the emergency stop button has been pressed and all control Devices are reporting back an emergency stop state. |

# 4. System setup

## 4.1 Turning the K2 Console on/off

1. At least one external monitor is required in order to be able to use the console in conjunction with the K2 software. Connect the chosen monitor or monitors to the console using appropriate HDMI cables (one HDMI cable comes supplied with the console) and the HDMI ports on the rear panel.
2. Connect an appropriately rated IEC power cable (not supplied) to the power outlet and turn the mains power supply on. Once this is done, the following power-on sequence will initiate:

a. The six Playback buttons (A-F) and the six Playback Release buttons will flash in a patterned sequence for a few seconds.

b. The Network Status icon will flash steadily for around 30-35 seconds while the system loads.

c. Once the system has loaded, the six Playback buttons (A-F) and the six Playback Release buttons will flash in a patterned sequence once again for a few seconds.

d. Once the flashing sequence stops for a second time, the monitor will display the login screen of the embedded computer, from which you can navigate to the K2 software. From this point onwards the Network Status icon will continue to flash steadily until the unit is turned off.

Note: the Power button does not need to be pressed during the above powering-on sequence.

3. To turn the console off, switch off the mains power supply or disconnect the power cable.

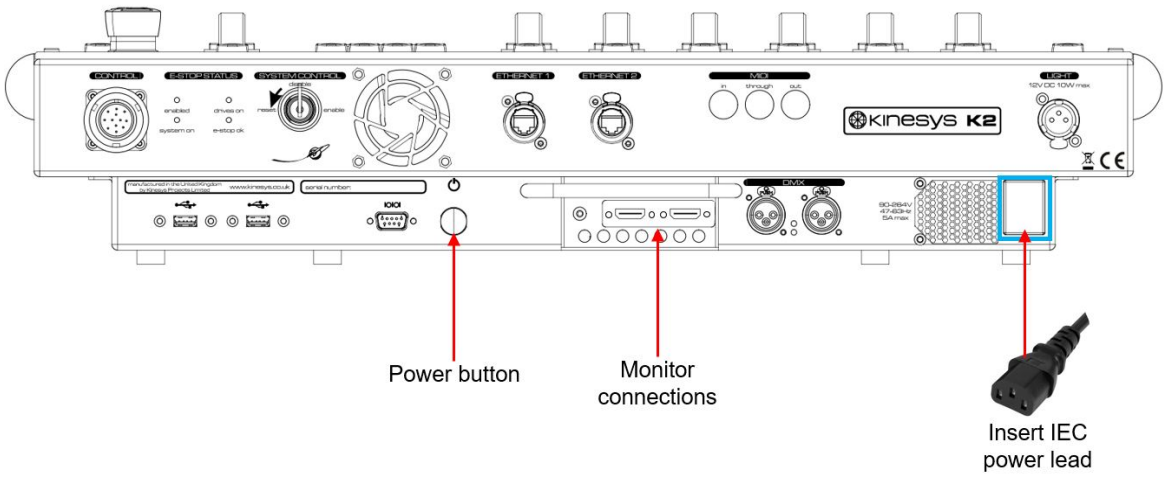



*Figure 5. Turning the K2 Console on*

## 4.2 Standby mode

To put the console into standby mode, press the Power button. When in standby mode, the six Playback buttons (A-F) and six Release buttons will resume the flashing pattern until the Power button is pressed again or if the mains power is disconnected.

## 4.3 System integration

Beyond the setup of the console and monitors, the setup of the wider automation system is dependent on the requirements of each end user and their specific application. The console's wide range of rear panel connections will cater to the majority of automation applications including the use of DMX and MIDI.

Any support requests regarding the setup of the automation system as a whole should be directed towards Kinesys or your local supplier.

### 4.3.1 Power and E-Stop distribution

The K2 Console must be connected to a power and emergency stop distribution system, such as Array PD-ES, Array Mini PD-ES or Mentor. These units distribute power, E-Stop signals and other data communications to all the devices in the system.

To connect to one of these units, use an appropriate Socapex compatible cable and install it to the 22-pin Socapex male connector on the rear panel.

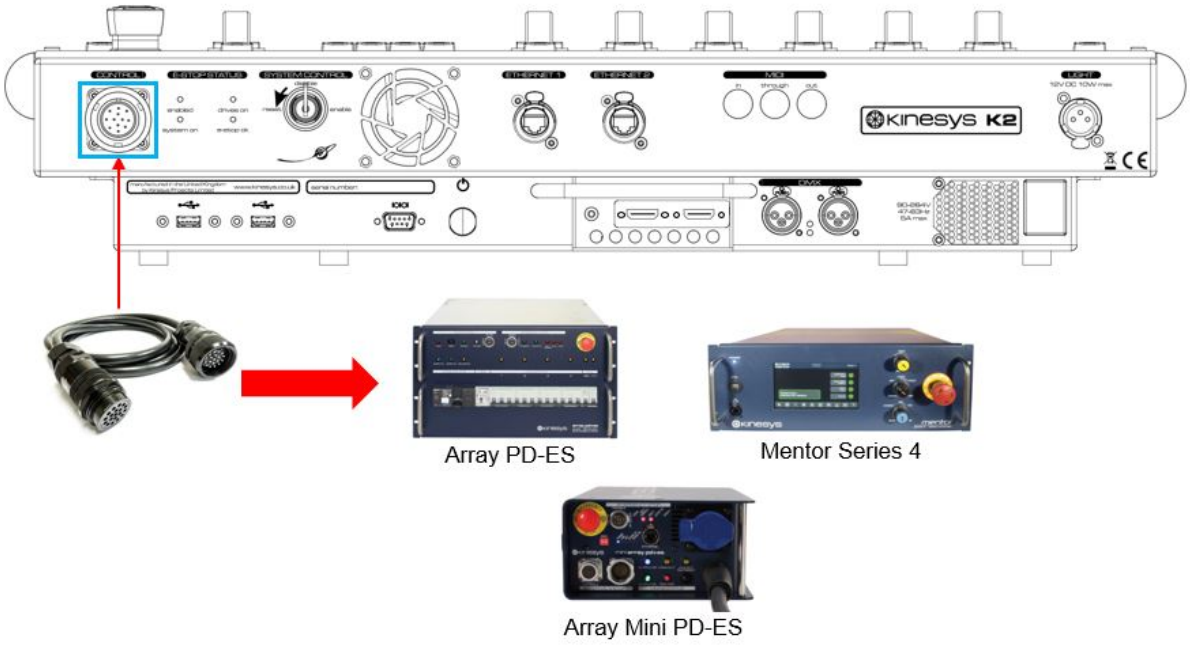



*Figure 6. Power and E-Stop distribution networks*

### 4.3.2 Data distribution

To distribute data communications to a large number of devices, K2 must be connected to a suitable data distribution unit such as Array IP8 (for Ethernet devices) or Array 485 (for XLR7 devices such as Elevation 1+).

To connect to these types of devices, use the two Ethernet ports on the rear panel and appropriate Ethernet cabling.

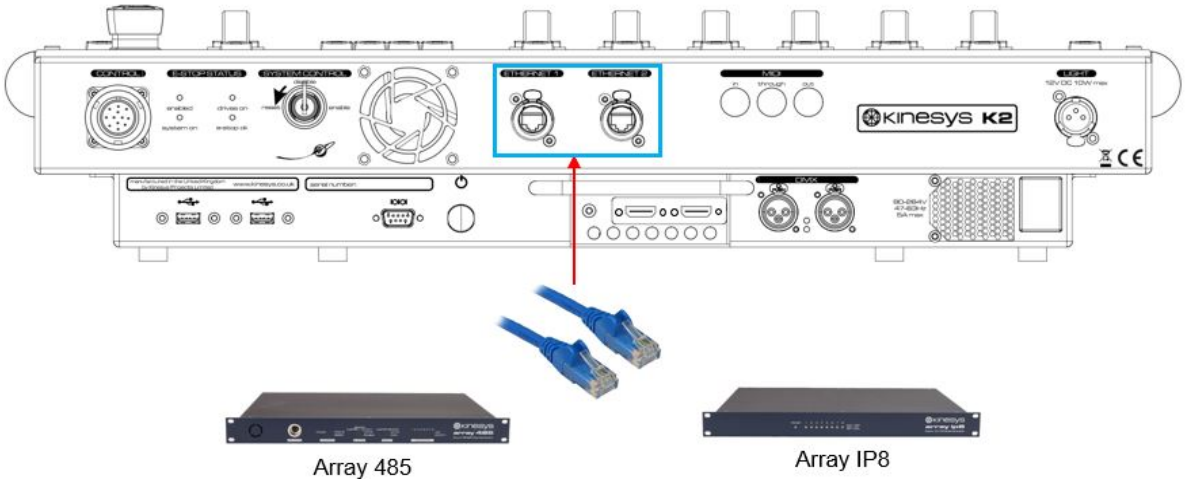



*Figure 7. Data distribution networks*

## 4.4 System setup example

Below is a simple arrangement to show how the basic elements of a K2 Console controlled automation system may be configured. In this example, two Elevation Hoists are being used to life the Construct. Power, emergency stop and XLR7 data connections are made via the Array PD-ES.

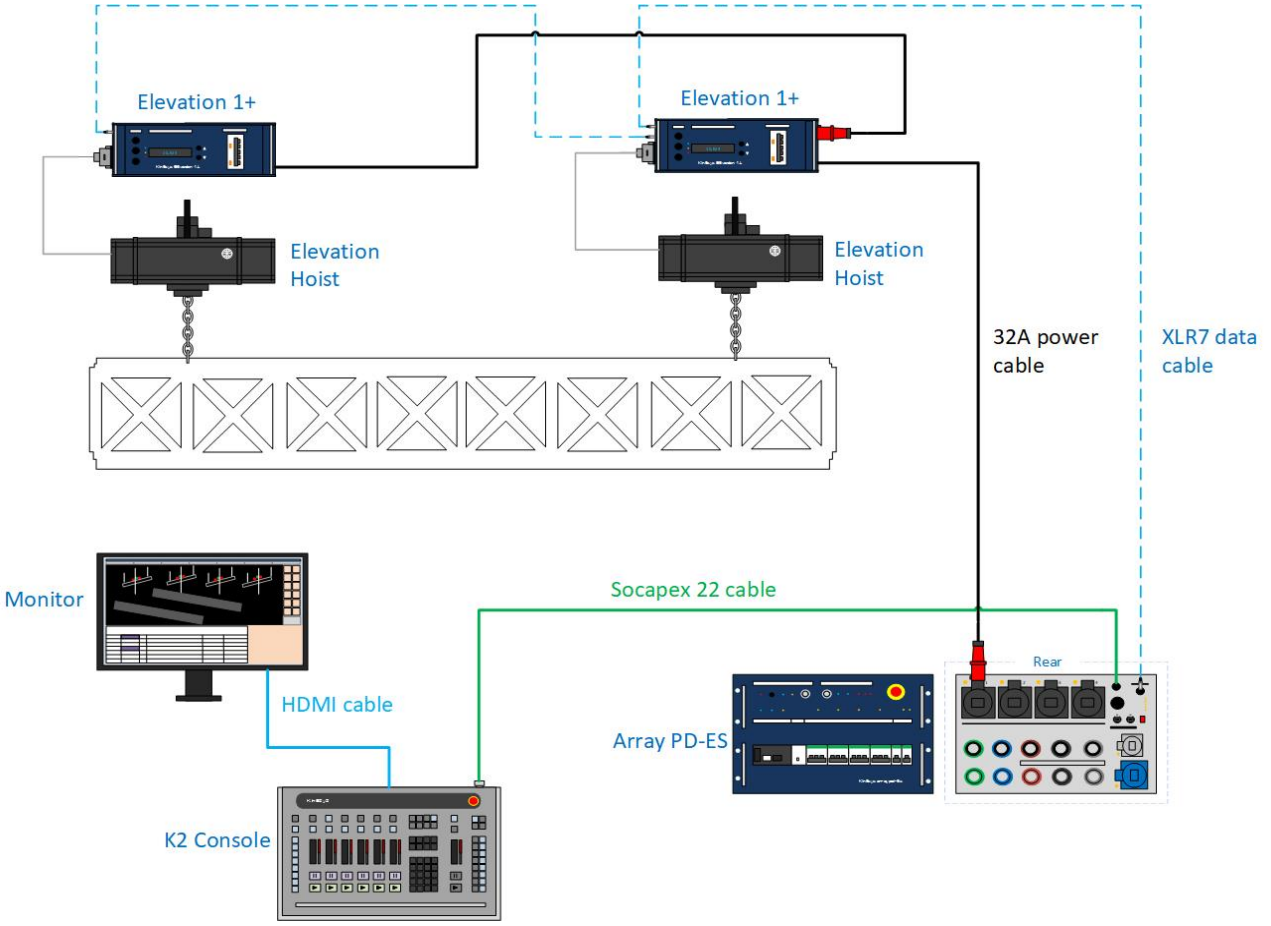



*Figure 8. K2 system example configuration*

# 5. Button colour guide

One of the characteristics that distinguishes buttons from keys on the K2 Console is that they can illuminate in different colours or flash to indicate the state of that function. The colour change and flashing behaviors of the different buttons are explained here.

**Construct, Page and Parameter buttons**

- Solid = available for movement
- Flashing = selected for movement
- Blue = okay and ready for movement
- Red = error detected on that Construct, Page or Parameter
- Green = currently moving

**Construct Bank buttons (A to D)**

- Solid blue = that Bank is currently selected.

**Playback Play buttons**

- Solid green = that Playback has a Cuelist loaded and is ready to run.
- Flashing green = Cuelist is paused, press the button to restart movement.

**Playback Pause buttons**

- Solid red = Cuelist is running on that playback, press to pause.
- Flashing red = Cuelist is paused, pressing the Pause button again will turn the button off but will not resume movement. Press the Play button to resume movement.

**Playback Select buttons (A to F)**

- Solid blue = that Playback is currently selected (there can only be one)

**Playback Release buttons**

- Solid blue = that Playback is running and has locked its Constructs. When pressed, the Constructs associated with that Playback are released and the Release button turns off. Pressing once more will lock the Constructs again and turn the button solid blue.

**Manual button**

- Solid blue = the console is in Manual Mode.

**Safe button**

- Solid blue = the console is in Safe Mode (all other buttons and controls will be locked).

# 6. Commands list

The K2 Console can be used for programming and editing Cues, Cuelists and Presets and for controlling the movement of Constructs. These tasks are achieved through various combinations of buttons, keys and numerical data entry.

This section lists all the commands available to the K2 Console as well as each command's on-screen and keyboard shortcut equivalents where applicable.

The following abbreviations are used throughout this section:

| Abbreviation | Description | Notes |
|---|---|---|
| CTRL | Press and hold the Ctrl key on the keyboard | Pressing and holding the DMH bar on the console has the same function |
| ALT | Press and hold the Alt key on the keyboard | |
| SHIFT | Press and hold the Shift key on the keyboard | |
| ENT | Press the Enter key on the keyboard | Pressing the Enter key on the console keypad has the same function |
| ESC | Press the Esc key on the keyboard | |
| DEL | Press the Delete key on the keyboard | |
| ◄ | Press the Backspace arrow key on the keyboard | Pressing the Backspace arrow key on the console keypad has the same function |
| PARAM | Press either X, Y, Z, P, T, or R for the desired Parameter | The Parameter buttons on the console have similar functions |
| <nn> | Enter a number | |
| <Lnn> | Enter a Cuelist number | These numbers can be specified up to two decimal places, so 1.12 would be a valid entry. |
| <Qnn> | Enter a Cue number | |
| <Pnn> | Enter a Preset number | |
| <Cnn> | Enter a Construct number | |
| <PBx> | Select and enter a playback letter (A to F) on the keyboard | |
| [**Cnn**] | Press one of the 16 Construct buttons on the right side of the console | |
| [**PBx**] | Select and press one of the playback buttons on the console (A to F) | |
| [Open] | Press the named command key on the console. For example, in this case it would be the "Open" key. | There are eight command keys on the console. |
| [PARAM] | Select and press one of the six Parameter buttons on the console (X, Y, Z, P, T, R) | Pressing the CTRL key plus the relevant letter on the keyboard has the same function during Programmer entry. |
| [DMH] | Press and hold the DMH bar at the bottom of the front panel. | Pressing the Ctrl key on the keyboard has the same function |
| [Enter] | Press the Enter key on the console. This is the key located at the bottom right of the | Pressing the Enter key on the keyboard has the same function |

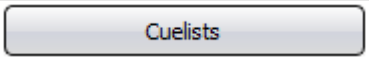
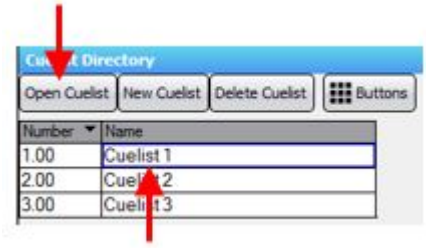
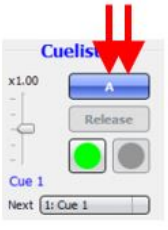
| Abbreviation | Description | Notes |
|---|---|---|
| | keypad. | |
| [◄] | Press the Backspace arrow key on the top left of the console keypad. | Pressing the Backspace arrow key on the keyboard has the same function |
| [Kinesys] | Press the Kinesys logo key on the bottom left of the console keypad. | |
|  | Single-click with the mouse | |
|  | Double-click with the mouse | |

## 6.1 Clearing the command line

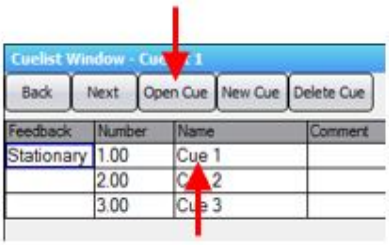
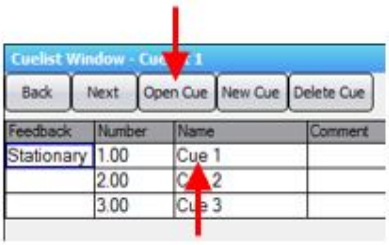
When entering commands into K2, press the Esc key on the keyboard or the Clear button on the console to clear the command line of any unrecognised or incorrect input.

## 6.2 Opening windows

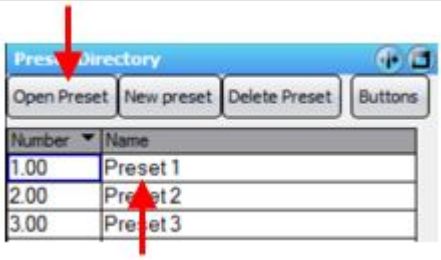
### 6.2.1 Opening Cuelist windows

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Open the Cuelist directory | [Open] [List] [Enter] | O L ENT |  |
| Open a Cuelist window | [Open] [List] <Lnn> [Enter] | O L <Lnn> ENT |  |
| Make a Cuelist the active Cuelist | [**PBx**] | ALT <PBx> |  |
| Open a Cuelist window that is currently loaded on a Playback | [**PBx**] [**PBx**] (press again within in 1 second) | ALT <PBx> ALT <PBx (press again within 1 second) |  |

### 6.2.2 Opening Cue windows

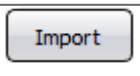
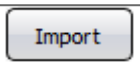
| Task | Console command | Keyboard command | On-screen location |
|---|---|---|---|
| Open a Cue window from the active Cuelist | [Open] [Cue] <Qnn> [Enter] | O Q <Qnn> ENT |  |
| Open a Cue window from a specified Cuelist | [Open] [List] <Lnn> [Cue] <Qnn> [Enter] | O L <Lnn> Q <Qnn> ENT |  |
| | **or** | **or** | |
| | [Open] [Cue] <Qnn> [List] <Lnn> [Enter] | O Q <Qnn> L <Lnn> ENT | |
| | | | |

### 6.2.3 Opening Preset windows

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Open the Preset directory | [Open] [Preset] [Enter] | O P ENT |  |
| Open a Preset window | [Open] [Preset] <Pnn> [Enter] | O P <Pnn> ENT |  |

## 6.3 Edting, importing and recording Cues

### 6.3.1 Importing Cues to the Programmer

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Import a Cue from the current Cuelist into the Programmer | [Import] [Cue] <Qnn> [Enter] | I Q <Qnn> ENT |  Qnn> [Enter] |
| Import a Cue from a specific Cuelist into the Programmer | [Import] [List] <Lnn> [Cue] <Qnn> [Enter] | I L <Lnn> Q <Qnn> ENT |  L <Lnn> Q <Qnn> ENT |
| | **or** | **or** | **or** |
| | [Import] [Cue] <Qnn> [List] <Lnn> [Enter] | I Q <Qnn> L <Lnn> ENT |  Q <Qnn> L <Lnn> ENT |
| | | | |

### 6.3.2 Selecting Constructs

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Select / deselect a Construct | [**Cnn**] - the button will flash when pressed | N/A |  |
| Select a range of Constructs | Press the first Cuelist button and last Cuelist button at the same time to select every Cuelist in between the two. | N/A | Click each Construct button in the range separately. |

### 6.3.3 Editing Cues

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Clear all Cue data (**Warning! cannot be undone**) | [Kinesys] [Clear] (pressed at the same time) | SHIFT K | Clear |
| Remove all data from selected Constructs | N/A | K | Knockout |
| Enter Parameter values from real world movements | N/A | U | Touch |
| Enter an absolute move for a Parameter on the selected Construct/s | [Param] @ <nn> [Enter] | CTRLPARAM @ <nn> ENT | N/A |
| Enter a positive relative move | [Param] + <nn> [Enter] | CTRLPARAM + <nn> ENT | N/A |
| Enter a negative relative move | [Param] - <nn> [Enter] | CTRLPARAM - <nn> ENT | N/A |
| Set a move time | [Param] [Time] <nn> [Enter] | CTRL PARAM T <nn> ENT | N/A |
| Set a move's speed | [Param] [Speed] <nn> [Enter] | CTRL PARAM S <nn> ENT | N/A |
| Set a move's delay time | [Param] [Time] [Time] <nn> [Enter] | CTRL PARAM T T <nn> ENT | N/A |
| Set a move's acceleration | [Param] [Speed] [Speed] <nn> [Enter] | CTRL PARAM S S <nn> ENT | N/A |
| Set a move's deceleration | [Param] [Speed] [Speed] [Speed] <nn> [Enter] | CTRL PARAM S S S <nn> ENT | N/A |
| Set a Construct to a Preset value (all Parameters) | @ [Preset] <Pnn> [Enter] | @ P <Pnn> ENT | N/A |
| Set a specific Construct Parameter to a Preset value | [Param] @ [Preset] <Pnn> [Enter] | CTRL PARAM @ P <Pnn> ENT | N/A |

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Update and save the changes to the Cue | [Record] [Record] again within 1 second | R R ENT | Update |
| Record the current Cue in the Programmer as a Preset | [Record] + [Preset] + <Pnn> + [Enter] | R P ENT <Pnn> | Record P ENT <Pnn> |

### 6.3.4 Testing Cues in the Programmer

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Try a Cue | N/A | End | Try Cue |
| Calculate the minimum and maximum Cue times | N/A | Home | Calc Cue Times |

### 6.3.5 Recording Cues

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Add current Cue to end of current Cuelist | [Record] [Enter] | R ENT | Record [Enter] |
| Add current Cue onto a Cuelist on a selected Playback | [Record] [**PBx**] | R ALT <PBx> ENT | Record<br>A |
| Add a specific Cue to end of current Cuelist | [Record] <Qnn> [Enter] | R <Qnn> ENT | Record <Qnn> ENT |
| Add a specific Cue to end of a specific Cuelist | [Record] [List] <Lnn> [Cue] <Qnn> [Enter] | R L <Lnn> Q <Qnn> ENT | Record <Lnn> Q <Qnn> ENT |
| | **or** | **or** | **or** |
| | [Record] [Cue] <Qnn> [List] <Lnn> [Enter] | R Q <Qnn> L <Lnn> ENT | Record Q <Qnn> L <Lnn> ENT |

### 6.3.6 Attaching Cuelists to Playbacks

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Select a Playback (Playback A demonstrated) | A | ALT <PBx> |  |
| Attach a Cuelist to a currently selected Playback | [Attach] [List] <Lnn> [Enter] | A L <Lnn> ENT |  <Lnn> ENT |
| Attach a Cuelist to a different Playback | [Attach] [List] <Lnn> [**PBx**] | A L <Lnn> ALT <PBx> ENT | Attach <Lnn> A ENT |
| Clear a Cuelist from a selected Playback | [Attach] [**PBx**] | A ALT <PBx> ENT | Attach<br>A |

## 6.4 Importing and recording Presets

Note: Importing Presets is additive, so you can import multiple Presets into the Programmer and each import will overwrite any previous settings. If a Preset has so settings entered for a particular Construct parameter, then the current settings, if any, are maintained.

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Import a specific Preset | [Import] [Preset] <Pnn> [Enter] | I P ENT <Pnn> | Import P ENT <Pnn> |
| Record the current Cue in the Programmer as a Preset | [Record] + [Preset] + <Pnn> + [Enter] | R P ENT <Pnn> | Record P ENT <Pnn> |

## 6.5 Copying Cues, Cuelists and Presets

Copy shortcuts are not possible on the console. Instead, they must be entered using the keyboard. The format is always "Source" + C + "Destination". When copying, the new item will be named "Copy of.." the copied item by default.

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Copy a Cue from one Cuelist to a Cue in a different Cuelist | [List] <Lnn> [Cue] <Qnn> C [List] <Lnn> [Cue] <Qnn> ENT | L <Lnn> Q <Qnn> C L <Lnn> Q <Qnn> ENT | N/A |
| Copy a Cue to another Cue in the same Cuelist | [List] <Lnn> [Cue] <Qnn> C [Cue] <Qnn> ENT | L <Lnn> Q <Qnn> C Q <Qnn> ENT | N/A |
| Copy a Cue to another Cue in the currently selected master (A-F) | [Cue] <Qnn> C [Cue] <Qnn> ENT | Q <Qnn> C Q <Qnn> ENT | N/A |
| Copy a Cuelist to another Cuelist | [List] <Lnn> C [List] <Lnn> ENT | L <Lnn> C L <Lnn> ENT | N/A |
| Copy a Preset to another Preset | [Preset] <Pnn> C [Preset] <Pnn> ENT | P <Pnn> C P <Pnn> ENT | N/A |

## 6.6 Playing Cues using the master controls

To carry out movement operations of the currently selected Cuelist in the Programmer, use the master playback controls located on the right side of the front panel.

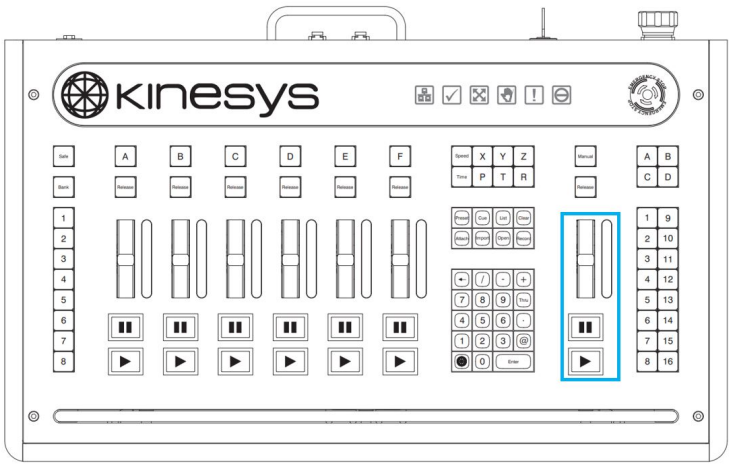



*Figure 9. Master playback controls*

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Start movement of the selected Cue |  | N/A |   |
| Stop the movement of the currently moving Cue |  | N/A |   |
| Rewind to the position before Cue movement | N/A | N/A |   |
| Snap the Construct to its final Cue position (only effective Offline ode) | N/A | N/A |   |

## 6.7 Moving Constructs in Manual mode

Manual mode allows you to move available Parameters of the selected Construct using the master adjustment wheel.

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Enter Manual mode | [Manual] - the Manual button and available Parameter buttons will illuminate blue | N/A | N/A |

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Select / deselect a Construct | [**Cnn**] - the button will flash when pressed | N/A |  |
| Select a range of Constructs | Press the first Cuelist button and last Cuelist button at the same time to select every Cuelist in between the two. | N/A | N/A |
| Select a Parameter for manual movement | [PARAM] - the selected Parameter button will flash blue | N/A | N/A |
| Move the selected Parameter manually | Move the master adjustment wheel up / down - during movement the master Pause button will illuminate red | N/A | N/A |
| Exit Manual mode | [Manual] - the Manual button will turn off | N/A | N/A |

## 6.8 Selecting Playbacks and Cues

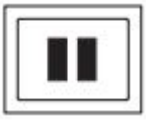
| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Select a Playback for movement (Playback A demonstrated) |  | ALT <PBx> |  |
| Release Constructs currently locked by the selected Playback, to allow another Playback to take control of them |  | N/A |  |
| Check which Playbacks have locked constructs |  <br>Playbacks that are locking Constructs will flash blue | ALT <PBx> |  |

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| | | | Playbacks that are locking Constructs will turn red |
| Select a Cue to be played in the current Playback | [Cue] <Qnn> [Enter] | Q <Qnn> ENT |  Select from the Cue dropdown menuCue dropdown menu |

## 6.9 Playing Cues using Playback controls A - F

Note: Playback controls A-F will only work if a Cuelist is loaded into the Playback. Refer to section 6.3.6

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Playback A Go |  | CTRL F1 |  |
| Playback A Pause |  | F2 |  |
| Playback B Go |  | CTRL F3 |  |
| Playback B Pause |  | F4 |  |
| Playback C Go |  | CTRL F5 |  |

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Playback C Pause |  | F6 |  |
| Playback D Go |  | CTRL F7 |  |
| Playback D Pause |  | F8 |  |
| Playback E Go |  | CTRL F9 |  |
| Playback E Pause |  | F10 |  |
| Playback F Go |  | CTRL F11 |  |
| Playback F Pause |  | F12 |  |
| Adjust the Cue Playback rate during movement |  | N/A |  |

## 6.10 Switching to Safe Mode

Entering Safe Mode disables all buttons and controls on the K2 Console and also locks the software's main features. Once in safe mode the Safe button will illuminate blue and all other buttons will turn off.

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Switch to Safe Mode |   | N/A |   |

## 6.11 Snapping Playbacks (Offline Mode only)

The Snap function jumps or "snaps" all the Constructs to their final Cue position in the virtual world. For example, if A Cuelist has four Cues and you want to view the position of the Constructs after Cue 4 is complete, you can use the Snap function to quickly snap to Cues 1, 2, 3 and 4. This can be especially useful if Cues take several minutes to complete.

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Snap to a Cue position on a chosen Playback | [KINESYS] and  (pressed together) | SHIFT CTRL F1<br><br>F1 = Playback A<br><br>F3 = Playback B etc.. | SHIFT  |
| Snap to the final Cue position on current Playback | | |   |

## 6.12 Selecting Pages

A Page is a group of up to six Cuelists (arranged in Playbacks A to F). To cut down on the number of buttons on the console, Pages are arranged in up to 8 Banks with each Bank able to hold up to 8 Pages. Therefore the total number of Pages available is 64. Pages and Banks can be accessed using the column of buttons on the left side of the front panel.

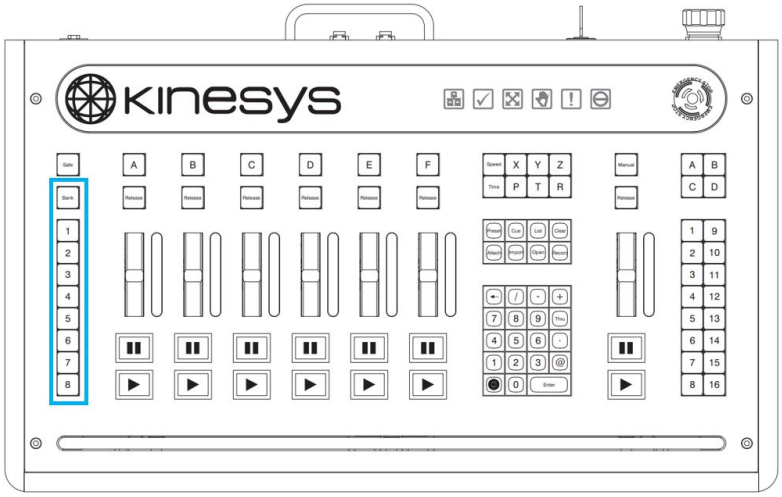
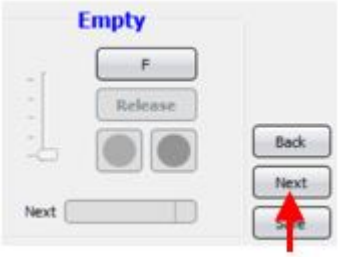
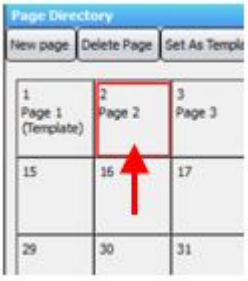
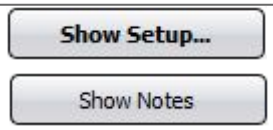



*Figure 10. Page buttons location*

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Load the next Page of Cuelists into Playbacks A to F | [Thru] | > |   |
| Load the previous Page of Cuelists into Playbacks A to F | N/A | < |   |
| Select a Page number from 1 to 8 (Page 2 displayed) |   | N/A |   |
| Select a new Bank of Pages |   | N/A | N/A (Pages 9 and onwards can be selected instead of using Banks) |

## 6.13 Miscellaneous commands

| Task | Console command | Keyboard command | On-screen action |
|---|---|---|---|
| Open the Patch Browser | N/A | B |  |
| DMC manual move up | N/A | CTRL UPARROW |  |
| DMC manual move down | N/A | CTRL DOWNARROW |  |
| Open show notes | N/A | N |  |

## 6.14 Resetting the K2 Console

To reset the console, press and hold Page buttons 1 and 8 and Construct buttons 9 and 16 at the same time. The buttons on the console will then all become illuminated. When these four buttons are released, the console firmware will reset and restart.

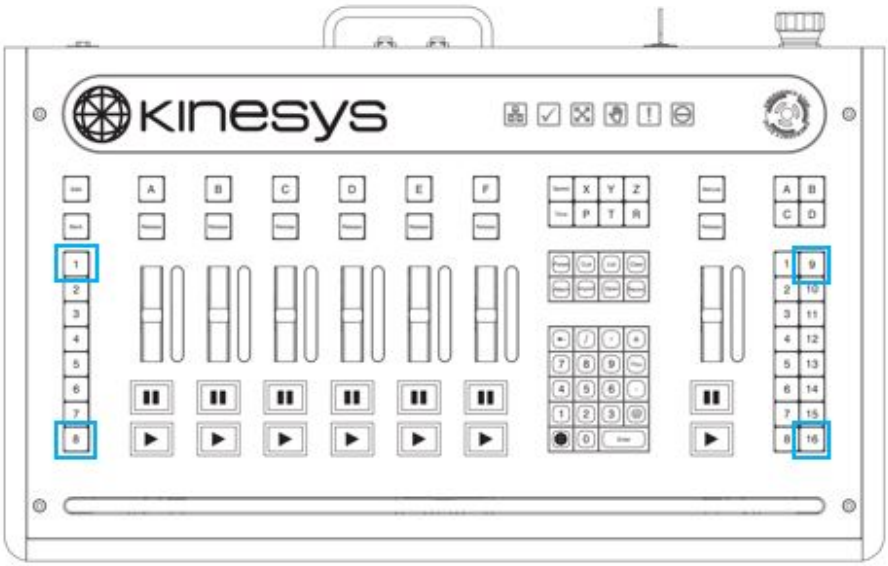



*Figure 11. Resetting the K2 Console*

# 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. Product specifications

| Feature | Specification |
|---|---|
| Environmental | • Operating temperature range: 5°C to 40°C<br>• Storage & transportation temperature range: -25°C to 55°C<br>• Max. humidity: 50% at max temperature (40°C)<br>• For indoor use only<br>• Max. operating altitude: 1000m |
| Ingress Protection rating | IP40(protected from tools and small wires greater than 1 mm, not protected from water).) |
| Mains power supply | • 100-240 V, 50-60 Hz, 5 A Max<br>• Power supply unit: 250W 1U FSP 250-50GUB (CX07) model) |
| Accessories | • Flight Case<br>• Lightwand Pro Conosle Light, XLR3M R/A 6" Gooseneck<br>• 1.5mm HDMI Cable<br>• Cherry MC 1000 3 Button Wired Optical Mouse<br>• 2 x Keys for Enable/Disable Keyswitch |
| Front panel controls | • Emergency stop button (red)<br>• DMH bar (Enabling switch)<br>• Console keyboard and touch pad<br>• 6 x Cuelist Playback controls, A-F (Select button, Release button, 1-axis adjustment wheel, Pause button, Play button)<br>• 1 x set of master Playback controls (Manual button, Release button, 1-axis adjustment wheel, Pause button, Play button)<br>• 1 x Safe button<br>• 8 x Page buttons & 1 x Page Bank button<br>• 8 x Parameter buttons<br>• 8 x Command keys<br>• 1 x data entry keypad<br>• 16 x Construct buttons & 4 Construct Bank buttons (A - D) |
| Rear panel controls | • 2 position key switch (ENABLE, DISABLE)<br>• Push Power button |
| Rear panel connections | • Mains input, 90-264 V, 47-63 Hz, 5 A Max<br>• E-Stop system connection<br>• Automation Ethernet 1 and 2 (etherCON)<br>• MIDI (In, Through, Out)<br>• Light connection , 12V DC 10 W Max |

| Feature | Specification |
|---|---|
| | • 2 x USB<br>• RS232 Serial Port<br>• Media Output x 2 (can be HDMI, Display Port or both depending on model)<br>• DMX connector x 2 |
| Kinesys safety system compatibility | • Array PD-ES<br>• Mini Array PD-ES<br>• Mentor 300 / 400 |
| Enclosure | Aluminium enclosure, powder coat finish |
| Cooling | Force air cooled (1x internal PSU fan, 1x integral cooler on PC), Air exhausts on rear panel. |
| Product Dimensions (including features and buttons) | 668.1 mm x 421.8 mm x 134.6 mm |
| Weight | 16.4 kg |

# 9. 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 K2 Console** | |

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

| | |
|---|---|
| **EN 60950-1** | **Information technology equipment. Safety. General requirements.** |
| **EN 62061** | **Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems.** K2 Console emergency stop switch and "hold-to-run" can be used in applications up to SIL3 in conjunction with suitable safety controllers, data distribution and output devices. |
| **EN 61000-6-1** | **Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light industrial environments** |
| **EN 61000-6-3** | **Electromagnetic compatibility (EMC). Generic standards. Emission standard 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 2010.

**D Weatherhead**
**Managing Director**
Hampton, 21 January 2025

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
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