4PAK-D

FOUR CHANNEL CONTROLLER/DIMMER

USER GUIDE

JANDS

Copyright & disclaimer

This product is approved for use in Europe and Australia/New Zealand and conforms to the following standards:

- EN61000-6-1

- EN55015:2000

- EN60065

Conformance has been achieved for intended usage in environment E1: Residential.

To ensure continued compliance with EMC Directive 89/336 and the Australian Radio communications Act 1992, use only high quality data cables with continuous shield, and connectors with conductive back shells. Examples of such cables are: DMX: Belden 8102 (100% Aluminium foil screen, 65% Copper braid)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not properly installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient or relocate the receiving antenna;

- increase the separation between the equipment and receiver;

- connect the equipment into an outlet on a different circuit from that to which the receiver is connected;

- consult the dealer or an experienced radio/television technician for help.

Disclaimer

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Disconnect mains power when not in use.

Designed in Australia by:

JANDS Pty Ltd	**ACN 001 187 837**
Locked Bag 15	40 Kent Rd
MASCOT NSW 1460	MASCOT NSW 2020
Sydney Australia	Sydney Australia
Phone: +61-2-9582-0909	www.jands.com.au
Fax: +61-2-9582-0999	info@jands.com.au

Manufactured in China.

Introduction

The 4Pak-D is a four channel integrated desk/dimmer unit with extensive chase and scene facilities plus the ability to be driven from an external DMX-512 source. It has been designed for applications where portability and ease of operation are prime considerations.

The 4Pak-Ds enhanced chase facilities include nine factory-programmed chases, the ability to store nine user chases each up to 32-steps, forward, reverse, and bounce modes, crossfade mode, and the ability to trigger on the room sound via the inbuilt microphone.

The 4Pak-D includes the ability to replay 5 scenes at once under the control of the 4 channel faders and the chase level fader.

A DMX input is provided to allow remote control of the dimmer channels from a standard external control console. The DMX connections also enable up to four 4Pak-Ds to be linked and used/controlled as one unit. This DMX link functionality uses DMX-RDM data packets and if desired the 4Pak-D may be used with other RDM equipment.

Before Use

1. Place the 4Pak-D on a flat stable surface. Ensure the area around all chassis vents is clear with no obstructions.

2. Set all fader levels to zero.

3. Plug lights into the four output sockets. The total and individual channel loadings should not exceed the specified maximums.

4. Fully uncoil the power cord and plug into an earthed power outlet. Note that the power inlet connection must remain accessible at all times during use.

5. Switch on the front panel circuit breaker/s.

6. Switch on the power at the wall. When the 4Pak-D has completed scrolling the startup message the unit is ready for use.

It is recommended that the unit be deep cleared before the start of each different show so that the operator has a clean slate. Refer to page 5.
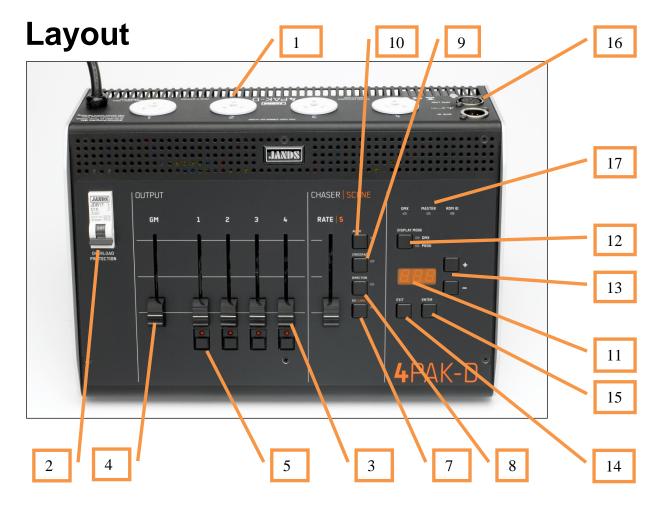
During Use

The 4Pak-D may get hot during use, especially at the rear near the vent holes. This is normal and the vent holes must remain unobstructed for the 4Pak-D to operate correctly. Inadequate ventilation may result in product shutdown.

Note also that the circuit breaker/s are not a main switch and must not be used to turn the product on or off. However this breaker may trip during use if the output loading is too high, if a lamp filament blows, or if there is a faulty output cable. If this occurs, rectify the fault and return the Master fader to zero before resetting the circuit breaker.

Do not expose this product to dripping or splashing liquids. Do not place objects filled with liquid anywhere on or near the 4Pak-D chassis.

After Use

Switch off the mains supply at the wall when not in use.

Layout

1. **Channel output sockets:** The four output sockets connect to the lights.
2. **Overload circuit breaker:** The circuit breaker protects the 4Pak-D from faults and overloading.
3. **Channel faders:** These faders control the channel output levels. In scene mode these faders control the level of four scenes.
4. **Master fader:** Controls the overall level of the faders and the chaser.
5. **Flash buttons:** Allow each channel or scene to be flashed to maximum.
6. **Rate fader:** Controls the stepping speed of the chaser. In Scene mode this fader controls the level of a fifth scene.
7. **Go/Load button:** Activates the chaser. When the chaser is not activated the LED flashes to indicate the chase rate; the LED is on when the chaser is active.
8. **Direction button:** Controls the direction of the chaser – forward, reverse, bounce.
9. **Crossfade button:** Creates a smooth fade in and out of each chaser step.
10. **Audio button:** Turns on the internal microphone for the audio-triggered chaser. The Rate fader controls the minimum chase rate in the absence of sound.
11. **Display:** Provides information to the operator about various settings and parameters.
12. **Display Mode button:** Switches display between DMX start channel and various program parameters.
13. **+ and - buttons:** Change various program parameters and DMX start channel.
14. **Exit button:** Cancel or exit operations and delete various parameters.
15. **Enter button:** Confirm settings and record various parameters.
16. **DMX sockets:** Accepts DMX signals in and sends DMX to other linked 4Pak-Ds.
17. **Function LEDs:** Indicate DMX signal present, Master mode operation and RDM Identify instruction received.

Operation

General Rules

The operation of the 4Pak-D is defined by a few simple rules:

- The mimic LED in the channel flash button always shows the channel level.
- The Master fader always scales the level of the faders and the chaser output.
- The channel flash buttons always flash the contents (either channel or scene) to full.
- The DMX signal is always mixed with the channel faders, flash buttons, and chaser/scene output on a highest takes precedence basis.

Deep Clear

It is occasionally useful to clear out all user recorded scenes and chases and reset the unit to its defaults - this is achieved using the "Deep Clear" function. To Deep Clear a 4Pak-D:

1. Turn the power off.
2. Press and hold the Enter and Exit buttons.
3. Turn the power on. 4Pak-D will display CFR, looking for confirmation.
4. Release the buttons from step 2.
5. Press the Enter button.

The 4Pak-D will take about 30 seconds to completely Deep Clear its memory.

Chaser Operation

The Chaser has 9 pre-programmed chase sequences (C 1 through C 9), each is either 3 or 4 steps long, plus a further 9 user programmable chases sequences (U 1 through U 9) each up to 32 steps long. Chases are activated by selecting the required chase and pressing the Go/Load button.

At any time the Direction button, Crossfade button, Audio button, and Rate fader may be used to control the chase playback as required. When the Rate fader is at 0, the chase may be single stepped using the [+] and [–] buttons.

The active chase can only be changed when the chase is **not** running.

To select and run a Factory Programmed Chase sequence:

Factory programmed chases can be used to quickly get a show going.

1. Press the Display Mode button if necessary to put the Display into Prog (Chase) mode.
2. Ensure the Chase is not active ie the Go/Load LED is not illuminated.
3. Using the [+] or [-] buttons choose a chase sequence from C 1 to C 9.
4. Press the Go/Load button to activate the selected chase.

Use the Direction, Crossfade, and Audio button and the Rate fader while the chase is running to control the chase playback. Note Chase C 9 runs chases C 1 through C 8 sequentially and is ideal for unattended use.

To record and playback a User Chase sequence:

User chase sequences are fully programmable up to 32 steps long.

1. Press the Display Mode button if necessary to put the Display into Prog (Chase) mode.

2. Ensure the Chase is not active ie the Go/Load LED is not illuminated.

3. Using the [+] or [-] buttons choose a chase sequence from U 1 to U 9.

4. Press the Enter button to start recording the selected chase.

5. Adjust the channel levels as necessary for the step.

6. Press the Enter button to record the levels.

7. Repeat steps 5 and 6 until all steps have been recorded.

Note that any step may be re-recorded if necessary by using the + and - buttons to select the step, adjusting the levels as required, and pressing Enter to record. To view the step levels, press and hold the Chase button while the step number is displayed. Release the Chase button to continue.

Press the Exit button to get out of chase record mode.

To activate the chase, press the Go/Load button.

It is possible to delete all steps from a point onward for example, steps 5 and 6 of a 6 step chase. To delete all steps from step 5 onward Enter Chase record mode, select the first setp to be cut, then press and hold store for 3 seconds. The 4Pak-D flashes CUT and pressing Enter again confirms the deletion.

To delete the entire chase, press Cancel and Enter together while the chase number is displayed. The 4Pak-D flashes CFR and pressing Enter again confirms the deletion.

Scene Operation

A Scene allows the operator to assign pre-recorded dimmer levels for all channels to a single channel fader. There are a total of four pages each containing 5 scenes.

To record and playback a Scene:

1. Press the Display Mode button if necessary to put the Display into Prog (Chase) mode.

2. Ensure the Chase is not active ie the Go/Load LED is not illuminated.

3. Using the [+] or [-] buttons choose a Scene page from S 1 to S 4.

4. Press the Enter button to start editing the selected scene page.

5. Adjust the channel levels as necessary for the scene.

6. Press the Enter button to record the levels.

7. Repeat steps 5 and 6 until all 5 scenes have been recorded. The display will show FUL when all 5 scenes on the page have been programmed.

Note that any scene may be re-recorded if necessary by using the [+] and [-] buttons to select the scene, adjusting the levels as required, and pressing Enter to record them.

Press the Exit button to leave scene record mode.

To activate the scenes, press the Go/Load button. The channel faders and flash buttons are now used to control scenes 1 through 4, while the rate fader is used to control scene 5.

To delete the Scene page, press Cancel and Enter together while the Scene page number is displayed. The 4Pak-D flashes CFR and pressing Enter again confirms the deletion.

DMX Operation

The 4Pak-D dimmer channels can operate under the control of an external DMX source, such as a lighting control console. Plug a DMX cable into the input socket on the backpanel of the 4Pak-D and connect the other end of the cable to a DMX source.

To set the DMX channel:

1. Press the Display Mode button if necessary to put the Display into DMX mode.

2. Using the [+] or [-] buttons choose the required DMX start channel.

3. Press the Enter button to record.

The dimmer will now be controlled by the DMX source with dimmer output 1 assigned to the DMX start channel and dimmer outputs 2, 3, and 4 controlled by the next three consecutive DMX channels.

While under DMX control, the dimmer will still function normally, and will output the higher of the DMX or the fader, flash, chaser and scene controls (highest takes precedence).

If DMX signal is lost the 4Pak-D will hold the last received value for 10 minutes, after which the DMX values will be driven to 0. The front panel controls will continue to operate as normal.

Linking

Up to four 4Pak-D dimmers can be linked together so that the factory-programmed chase sequences, the user chase sequences, and the scenes to expand over all linked units as if they were on one large unit. 4Pak-Ds are linked with a single master controlling up to three slave units via standard DMX cables.

To Link 4Pak-Ds:

1. Nominate a particular 4Pak-D as a Master. On this unit plug a DMX cable from the DMX output to the DMX input of the next unit.

2. Continue linking the output from one 4Pak to the input of the next until all 4Paks have been connected.

3. Turn the power on to all 4Pak-Ds **except the Master**.

4. Set the DMX address of the first **slave** 4Pak-D to **5**; the **second** to **9** (if present), and the **third** to **13** (if present).

5. On the Master 4Pak-D, press and hold the "Display Mode" button.

6. Turn the power on to the Master 4Pak-D.

7. Release the Display mode button.

When Chases and Scenes are now be programmed on the Master 4Pak-D they will include levels from both the Master and Slave units. All data is stored in the Master. If the system is disconnected/moved the units should be reconnected with the same 4Pak-D as Master if the programming is to be retained.

Other Functions

To display the internal\ software version, press and hold the Exit button.

To display the internal temperature, press and hold the "-" and Exit buttons together.

Display Glossary

`C 1`	Indicates the 4Pak-D will run factory programmed chase #1 when the Go/Load button is pressed.
`U 2`	Indicates the 4Pak-D will run user programmed chase #2 when the Go/Load button is pressed.
`S 4`	Indicates the 4Pak-D will run user programmed scene page #4 when the Go/Load button is pressed.
`FUL`	The particular chase or scene is full.
`MST`	The unit is in Master mode
`CFr`	The 4Pak-D requires the operator to confirm an operation. Press the Enter button to proceed or Exit to exit without changes.
`F-1`	The Master 4Pak-D has found one slave.
`E01`	Temperature sensor error
`E02`	RDM (linking) error
`E03,E04,E05`	Memory error
`Hot`	Unit has reached the maximum operating temperature
`-E-`	Memory is empty

Specifications

Channels:	4
Pre-programmed chase sequences:	9
User-programmable chase sequences:	9
Steps per user-programmable sequence:	32
User-programmable scene pages:	4
Scenes per program:	5
Audio trigger:	Internal microphone
DMX Input:	5 pin AXR male
DMX Output:	5 pin AXR female
DMX Data:	Conforms to ANSI E1.11-2004 (type EF1)
DMX RDM:	Conforms to ANSI E1.20-2006
Linking:	Up to four 4Pak-D dimmers
Protection:	Integral temperature sensor with thermal overload shutdown.
	Current ramp algorithm to prevent nuisance tripping when cold lamp filaments are suddenly energised.
	Circuit breaker over-current protection.
	PTC transformer protection
Mains Supply:	240VAC +/-10%, 50-60 Hz, with protective Earth
Output load:	25W - 2400W per channel, 2400W total max
Risetime:	85µsec (2400W incandescent load, 50% dimmed)
Cooling:	Convection. Max ambient temperature 40ºC
Size:	350 (W) x 105 (H) x 265 (D)
Weight:	4.5kg net