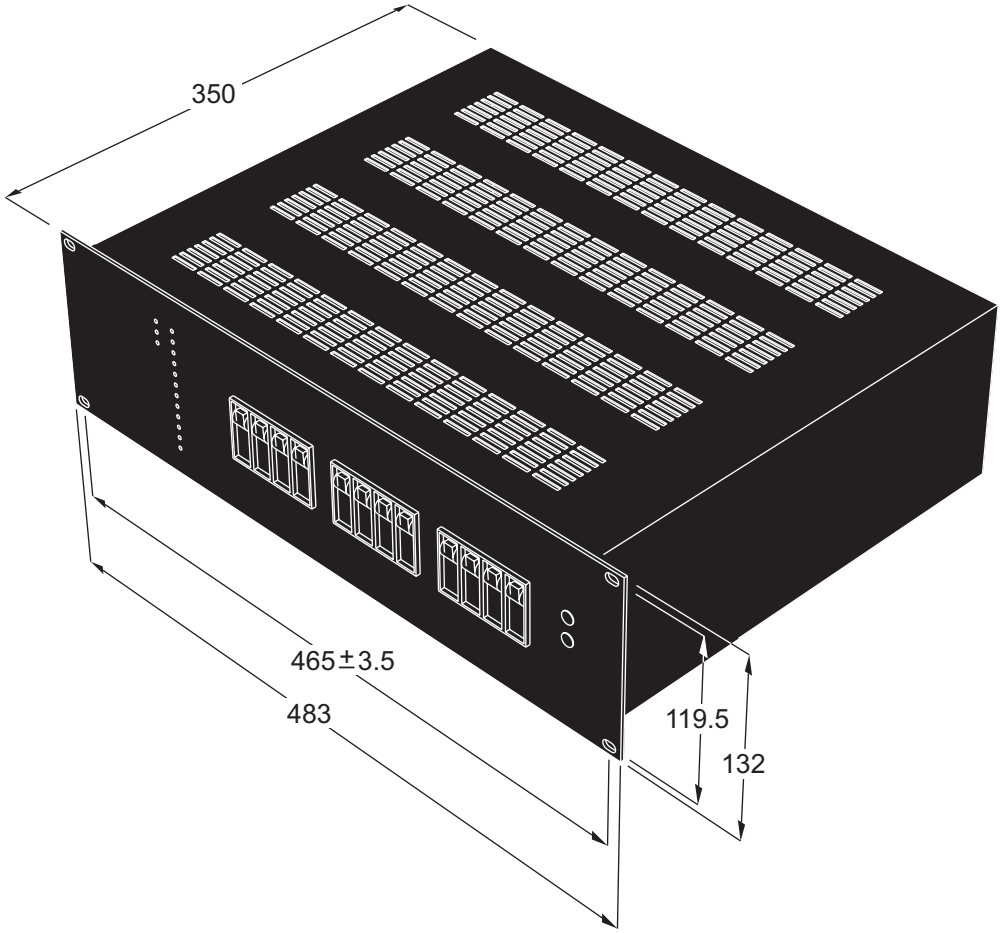
Power Switch Pack-12

user manual

Measurements are in millimeters.



Part number 35000147, Revision A

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INTRODUCTION

Thank you for selecting the Power Switch Pack 12. The Power Switch Pack 12 (PSP-12) enables you to DMX control the power of a complete installation.

Safe and reliable operation makes the PSP-12 the perfect power distributor of your system. Individual circuit breakers, one on each output, protect your installation against short circuits and overloads. The PSP-12 makes any installation easily DMX controllable.

The Power Switch Pack-12 enables you to DMX control the power of a complete installation. Safe and reliable operation makes the PSP-12 the perfect power distributor for your system. Twelve individual circuit breakers, one on each output, protect the installation against short circuits and overload. The PSP-12 makes any installation easily DMX controllable. The DMX protocol gives you total control of all output channels individually.

Features:

- Easy DMX control of interior and exterior light sources and other devices
- Saves on installation costs
- DMX512 compliant
- Smart and reliable control of your power installation
- Bypass switch that allows manual control of all outputs.

Safety information

Warning! This product is for indoor and professional use only. It is not for household use.

This product presents risks of lethal or severe injury due to fire, heat, electric shock, and falls. Read this manual before powering or installing the unit, follow the safety precautions listed below and observe all warnings in this manual and printed on the unit. If you have questions about how to operate the unit safely, please contact your dealer.

Protection from electric shock

- Disconnect the unit from AC power before connecting the outputs, replacing the fuses, or opening the device.
- Always ground (earth) the unit electrically.
- Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault protection.
- Do not expose the unit to rain or moisture.
- Refer any service operation to a qualified technician.
- Never operate the unit with missing or damaged covers.
- Replace the unit if it becomes defective or worn out, or before usage exceeds the maximum service life.

- The AC mains supply shall be fitted with a fuse or circuit breaker of maximum 32A and a ground-fault protection.
- This device may only be installed by a qualified electrician.

Protection from fire

- Never attempt to bypass the circuit breakers or fuses.
- Always replace defective fuses with ones of the specified type and rating.
- The circuit breakers should only be replaced by authorized service personal.
- Keep flammable materials well away from the unit.
- Provide a minimum clearance of 43 mm 1.7 inches (1 unit) from top of the unit.
- Do not modify the unit.
- Do not operate the unit if the ambient temperature (Ta) exceeds 40° C (104° F)
- Always mount this unit in a vented 19-inch rack.

Included items

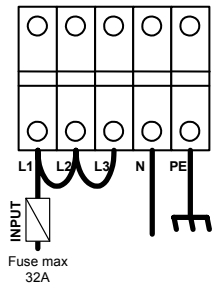
The PSP-12 is shipped in a cardboard box that contains the following items:

- Power Switch Pack-12
- Male and female 5-to-3 pin XLR converters
- Users guide

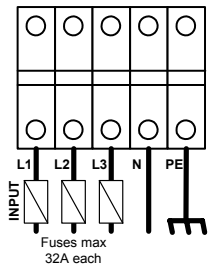
INSTALLATION

Power supply

The PSP-12 can be powered by one or three 115/ 230 V AC phases. Ensure the unit matches local power supply.



The figure above shows how to connect one phase to the PSP-12. The AC mains supply shall be fitted with an external fuse no larger than 32A. NOTE: In this configuration you have a ***total maximum output current of 32A*** and ***a maximum output current of 10A on each output channel***.



The figure above shows how to connect a three-phase input to the PSP-12. Each phase on the AC mains supply shall be fitted with an external fuse no larger than 32A. In this configuration, you will have a ***total maximum output current of 96A (3x32A)*** and a ***maximum output current of 10A on each output***.

To avoid damage to the PSP-12, all loads should have a power factor equal to 1.

Fuses

The PSP-12 comes with five internal fuses:

For the 230 V AC model:

- 63mA for the electronic control circuit (**F2**).
- 0.5 A for the electronic relay circuit (**F4**).
- 250mA for the phase indicators/ add on board (**F5**, **F6** and **F7**).

For the 115 V AC model:

- 125 mA for the electronic control circuit (**F2**).

- 0.5 A for the electronic relay circuit (**F4**).
- 250 mA for the phase indicators/ add on board (**F5**, **F6** and **F7**).

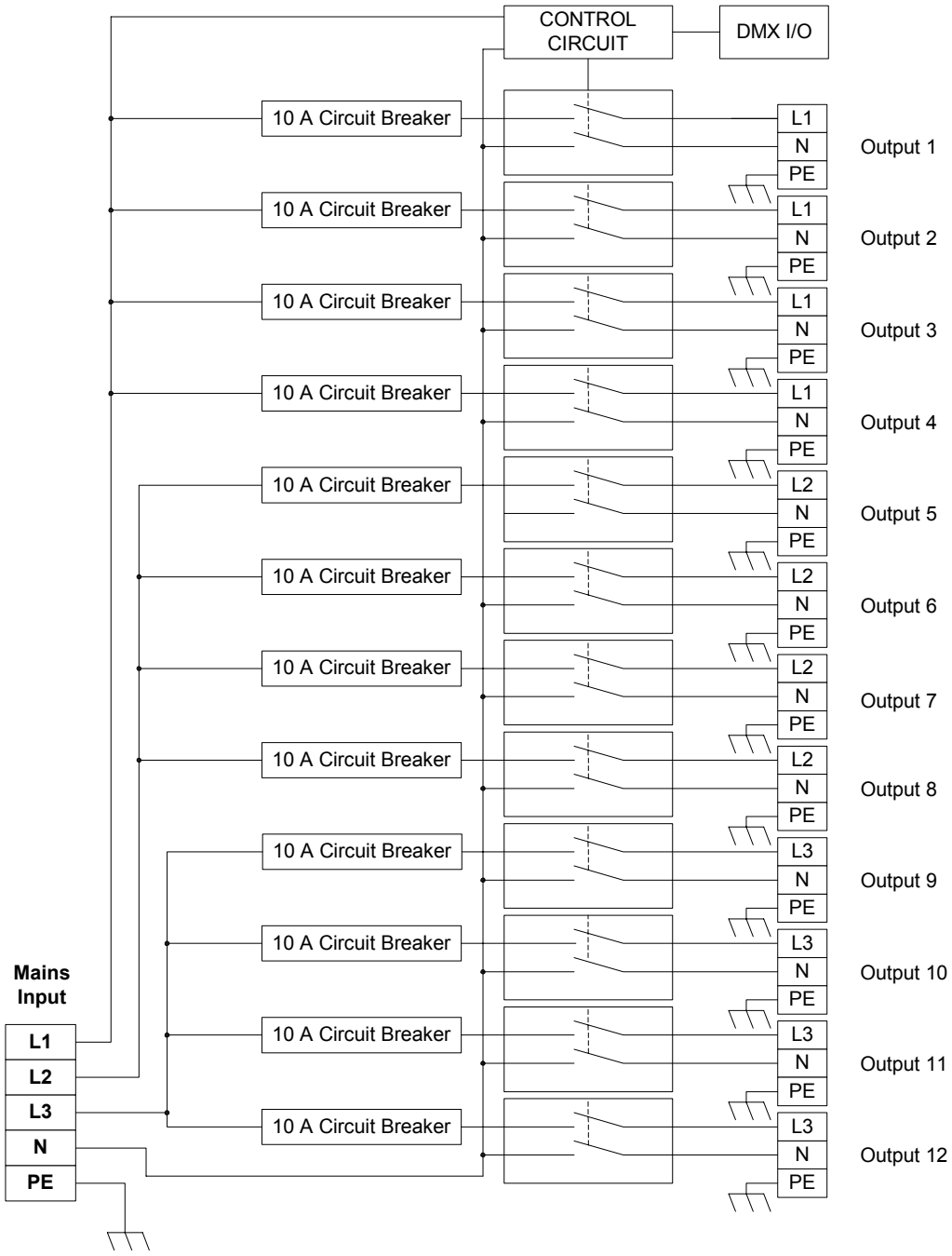
All fuses must be rated for 250 V AC operation.

Circuit block diagram

Phase L1 is distributed to outputs 1 to 4

Phase L2 is distributed to outputs 5 to 8

Phase L3 is distributed to outputs 9 to 12

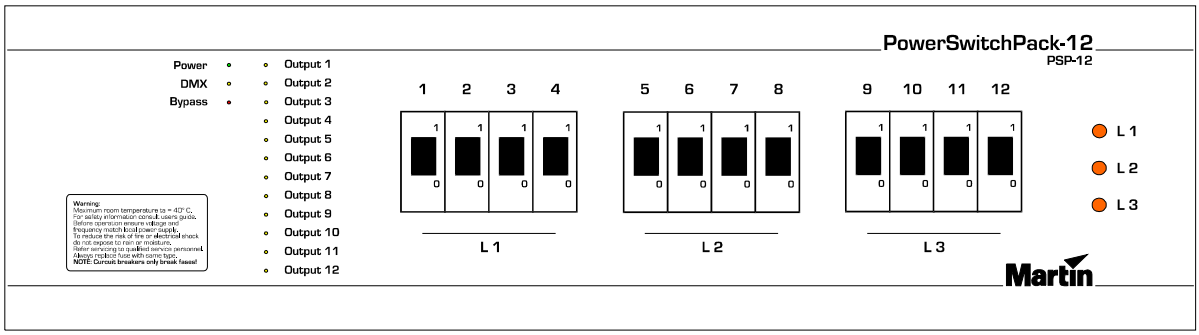


WARNING!!

Each output's neutral (N) and phase (L1, L2 or L3) can be loaded with a maximum of 10A.
To avoid damage to the PSP-12, all loads should have a power factor equal to 1.

OPERATION

Front panel



Power LED

The Power LED indicates power on the low voltage electronics (+5V).

DMX LED

The DMX LED indicates that a DMX signal is present.

Bypass LED

The Bypass LED indicates that the Bypass button, placed on the rear of the unit, is ON and all outputs are active, or the bypass function is activated by a remote (external) bypass switch.

Output LEDs

The output LEDs is used to read out the current status of each output (For example: if the output 1 LED is lit then the corresponding output is activated by the DMX protocol).

These LEDs is only an indication of the output status, and can differ from the actual physical state of the output.

L1, L2 and L3

These three lights indicate which phases are connected to the unit.

Rear panel and internal connections

The rear panel consists of the following items:

Bypass switch

When activating this switch, all output will be activated. Note! The LED output indicators will NOT be lit.

DMX in

Connect a 5-pin female XLR plug from a DMX master. Use the included 5-to-3-pin adaptor if a 3-pin XLR cable is used.

Pin description

Pin 1 GND (shield)

Pin 2 Cold (-)

Pin 3 Hot (+)

Pin 4 No Connection

Pin 5 No Connection

DMX out

Use this output to either:

- Daisy-chain additional PSP-12s or lighting fixtures, or to
- Connect a 5-pin male plug with termination resistance of 120 ohm between pin 2 and pin 3.

Note: The DMX link must always be terminated with a 120 ohm resistor.

Pin description

Pin 1 GND (shield)

Pin 2 Cold (-)

Pin 3 Hot (+)

Pin 4 No Connection

Pin 5 No Connection

Remote bypass input

A remote bypass switch can be connected to the remote (external) bypass input. The input interface is a 2x 1.5# screw terminal. The cable diameter must be 2 x AWG18 to fit the supplied PG9 cable gland.

Outputs 1 to 12

The cables connected to Output1 to Output12 have to be mounted through the PG16 cable glands. The cable diameter must be between AWG 9 and AWG14.

Screw terminal connections:

L1, L2, L3 Live

N Neutral

PE Protecting Earth (Ground)

Mains input

The input mains cable should be connected to AC mains supply and must be mounted through the PG29 cable gland. The cable diameter must be between AWG 17 and AWG 25.

Screw terminal connections:

L1 Live 1 (Phase 1)

L2 Live 2 (Phase 2)

L3: Live 3 (Phase 3)

N Neutral

PE Protecting Earth (Ground)

Note: The mains input MUST be externally fuse protected, see 0.

PGM

This is used for service purpose only, and should **NOT** be connected.

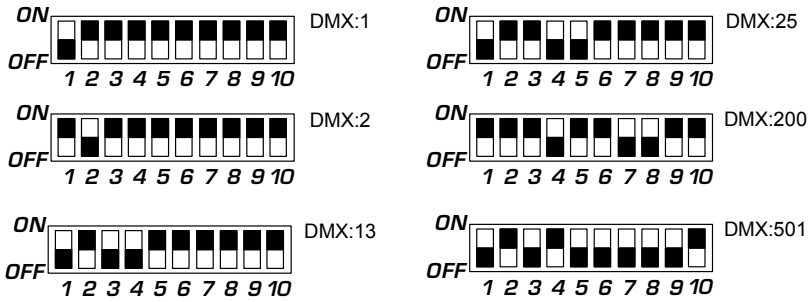
DMX address

The DMX address, also known as the start channel, is the first channel used to receive instructions from the controller. For independent control, each unit must be assigned its own control channels. If identical behavior is desired, two or more units may share the same address.

This unit uses 12 channels, one for each output. The DMX address is set using DIP switches that are located inside the fixture. These may only be set by authorized personnel when the fixture is powered off.

Setting the DMX address

1. Disconnect ALL power from the unit.
2. Open ventilated top cover using a Phillips screwdriver.
3. Locate the DIP switches and set them to the desired address (see examples below, or use the DIP switch calculator available on the internet at http://www.martin.com/service/dipswitchpopup.htm):



4. Close the ventilated top cover and screw it into place.
5. Reapply power to the unit.

Safe mode

Safe mode provides:

- "ON" latency
- Delayed "OFF"

"ON" latency reduces the risk of relay flickering due to noise on the DMX link. The relays turn ON after receiving "ON" level for 5 or more DMX frames.

NOTE: This will add a little delay (latency) depending on the DMX refresh rate (typically 125 milliseconds @ 40 Hz).

The delayed "OFF" function ensures that the outputs have a 5 second delay when switching from ON to OFF. This is similar to having a five second delay for the lamp-off command for a lighting fixture.

Safe mode is activated by setting DIP switch number 10 to ON. The DIP switches are located inside the fixture and can be accessed by removing the top cover using a Phillips screwdriver (only when the fixture is disconnected from power).

Delayed power up sequence (stand alone mode)

When the PSP-12 is set to DMX address 0 (DIP switch 1-9 OFF), it will NOT respond to DMX input, but will instead run a built-in delayed power up sequence each time the PSP-12 is powered-on. The PSP-12 switches on outputs 1-12 will incorporate a delay of 1 or 5 seconds, according to the setting of DIP switch number. 10. When this is set to:

- OFF, the power-up delay will be 1 second
- ON, the power-up delay will be 5 seconds

The DIP switches are located inside the fixture and can be accessed by removing the top cover using a Phillips screwdriver (only when the fixture is disconnected from power).

DMX PROTOCOL

The table below describes the DMX protocol for the PSP-12

DMX channel	Value	Percent	Function Start code = 0
1	0-127	0-50%	Output 1 is OFF
	128-255	51-100%	Output 1 is ON
2	0-127	0-50%	Output 2 is OFF
	128-255	51-100%	Output 2 is ON
3	0-127	0-50%	Output 3 is OFF
	128-255	51-100%	Output 3 is ON
4	0-127	0-50%	Output 4 is OFF
	128-255	51-100%	Output 4 is ON
5	0-127	0-50%	Output 5 is OFF
	128-255	51-100%	Output 5 is ON
6	0-127	0-50%	Output 6 is OFF
	128-255	51-100%	Output 6 is ON
7	0-127	0-50%	Output 7 is OFF
	128-255	51-100%	Output 7 is ON
8	0-127	0-50%	Output 8 is OFF
	128-255	51-100%	Output 8 is ON
9	0-127	0-50%	Output 9 is OFF
	128-255	51-100%	Output 9 is ON
10	0-127	0-50%	Output 10 is OFF
	128-255	51-100%	Output 10 is ON
11	0-127	0-50%	Output 11 is OFF
	128-255	51-100%	Output 11 is ON
12	0-127	0-50%	Output 12 is OFF
	128-255	51-100%	Output 12 is ON

SPECIFICATIONS

Mains inlet: ..... 3x 115/ 230 V AC ±7%, 3x 32 A (max.)
Power consumption: ..... 3 - 25 W
Input Cable diameter:..... AWG 9-14
Outputs:..... 12 channels, max. 10 A. circuit breakers, type C
.....(Max. load 12 x 8 A total)
Output Cable diameter:..... AWG 17-25
Control: ..... DMX512, 12 Channels
DMX Control I/O: ..... 5 Pin XLR.
Address setting: ..... 10 pole DIP switch (internally)
Indicators ..... Power, DMX present, Bypass, 3 x Phase inputs.
Test function: ..... Manual Bypass Switch on rear of unit
Mounting:..... 19” Rack mounting, 3 units
Size (height x width x depth):..... 133 x 482 x 390 mm
Weight:..... 11 kg.