

Cobalt DCP-SPS12 Split-Rail Power Supply

Information, overview & input connections

The part number for the complete power supply product is: **DCP-SPS12.**

The part number for the Interface circuit board only is: **DCP-SPCB.**

Each complete power supply 1-pack contains the following items:

- 2 x 12v, 1.5 amp regulated DC switch-mode power supplies (World approved / World voltage)
- 1 x DCP-SPCB power supply connection circuit board.

Depending on your location, we will also include the following mains power plug adapters:

- DCP-SPS12 AU - For Australia and Asia. NO mains plug adapters are required or included
- DCP-SPS12 US - For North America. Two USA type mains adapters are included
- DCP-SPS12 UK - For the United Kingdom. Two UK type mains adapters are included
- DCP-SPS12 EU - For use in Europe. Two EU type mains adapters are included

Using and connecting the DCP-SPS12 or DCP-SPCB.

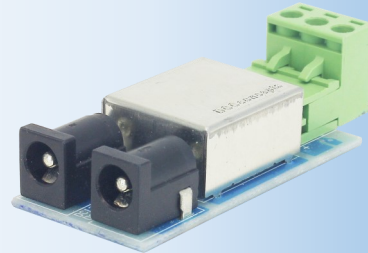
This product is intended for indoor hobby use only. It is not suitable for un-supervised use by children of any age. As with all electronic products, especially mains-connected products, it is important that you read & understand these instructions before use.

Please be aware that wrong connection or misuse will invalidate all warranties and may also cause irreversible or serious damage to any connected items. Therefore we ask you to carefully observe the instructions and diagrams in this manual and wire DCP-SPS12 or DCP-SPCB in accordance to the information we have included into this manual.

Basic connection guidelines for DCP-SPS12 and DCP-SPCB (Power Input side)

(1) **Input Connections for the DCP-SPCB board:**

The SPS12 "Set" is supplied with the DCP-SPCB and 2 x 12v 1.5 amp power supplies that should be connected directly to the two power input sockets. The power supplies that we include are fitted with the correct plugs making this easy.



(2) **If you intend to use DCP-SPCB with your own power supplies, limit the voltage to 6~15v DC.**

Both power supplies should be identical. Quality matters in power delivery so please be quite sure that the power supplies that you choose are marked "regulated power supplies" and that the plug is both the correct size and has a positive (+) centre connection.

TIP: Look for plug packs with a set of adapters. Many brands are sold with a series of common plug size adapters. These will always include the correct plugs for DCP-SPCB.

(3) **Plug adapters are not usually fixed polarity.** So - please be sure to fit adapters correctly so that the centre-pin is positive or your DCP-SPCB will not work and may be damaged.

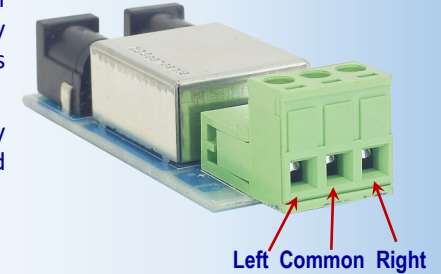
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Output connection: Alpha-Switch & DCP-CPS

Basic connection guidelines for DCP-SPS12 and DCP-SPCB (Power Output side)

This combination of two individual power supplies with DCP-SPCB creates a 3-wire (-) (+/-) (+) power supply that simplifies polarity-change based switching via its common terminal structure, making wiring easier.

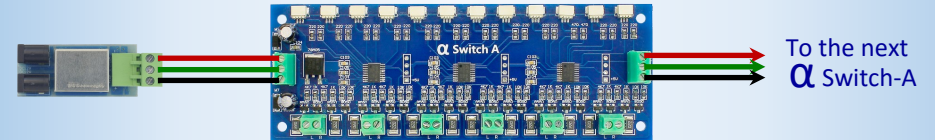
Using it in place of a 2-wire power supply will greatly reduce the number of wires you'll need to run around the layout and will mean only half as much soldering!



(1) **Using the DCP-SPS12 with Alpha-Switch A**

This is a very simple connection to make. Just connect the 3-wire output terminals of your DCP-SPCB power supply adapter to the 3-wire power input terminals of your Alpha-Switch PCB as per this illustration. DCCconcepts provide a 3-wire ribbon cable to make this neat and tidy too.

The part number for the Ribbon Wire is DCD-RGB and each pack contains 5 metres.



The DCP-SPS12 power supply includes 2 x high quality 1.5A wall-plug type power supplies. If wired in this it way will easily handle 20 or more Alpha-Switch Analog Switch packs

The DCCconcepts DCP-SPS12 contains power supplies manufactured, tested and approved for use world wide. It is guaranteed for 12 months We have done our best to provide clear usage instructions. We advise you to follow these instructions carefully and ask you to contact us if you need further advice (email sales@dccconcepts.com) as incorrect use may cause damage not covered by any warranty or guarantees.

Part # DCP-SPS12 (complete set)

Barcode Here Please

Cobalt DCP-SPS12 Split-Rail Power Supply

Using DCP-SPS12 and DCP-PNP together

Basic connection guidelines for DCP-SPS12 and DCP-SPCB (Power Output side)

Our new switch pack DCP-PNP has that name because it makes control panel really easy for those who want LED indicators... Each LED is already pre-wired for plug and play assembly, and this reduces the need for soldering when creating a control panel by an estimated 75%.

Using The DCP-SPCB with this new switch pack give you even more simplification as we have designed them to work together, making control panel creation easier than ever.

(2) Using the DCP-SPS12 adapter with the "Plug and Play" Analog Switch pack DCP-PNP

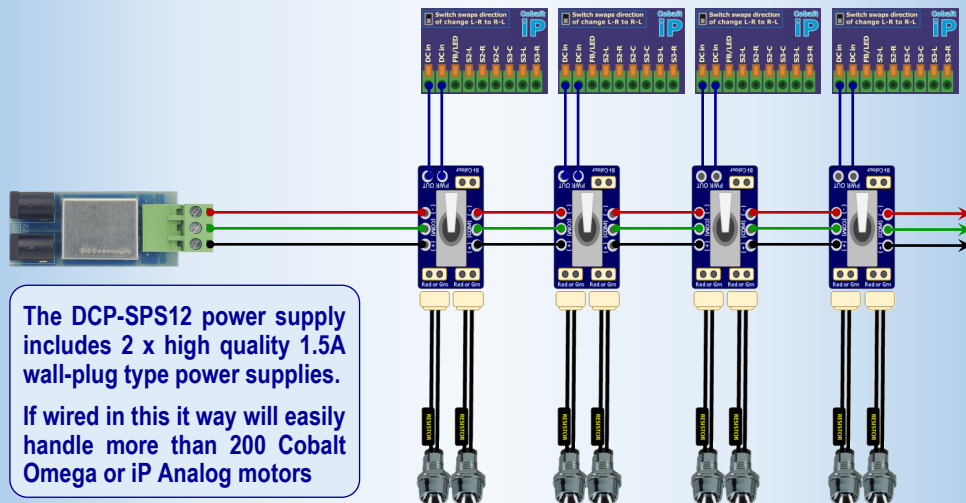
Available March 2016, this Analog control switch pack is perfect for control of all Analog Cobalt motors or any low current device controlled by "reversing DC".

With each DCP-PNP switch pack actually costing less than you will pay for individual parts from a local store, this switch pack includes BOTH individual and red/green LEDs so you can make your panel any way you want!

Even better, it takes the same easy-to-use "Plug and Play" approach of Cobalt Alpha-Switch for the installation of its Chrome-bezel mount control panel LEDs reducing the need for soldering to simple connection of power and motor control wires!

Wiring this switch pack using the DCP-SPCB is simple and easy to do, as this drawing shows.

- Connect the DCP-SPCB power supply adapter and the switch with our 3-wire ribbon cable, then do the same between all of the switches.
- Connect each switch to a Cobalt iP Analog, Cobalt Omega or similar motor with a light 2-wire cable then just plug in the LEDs and you are done!



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Output connection: SPDT wiring diagram

Basic connection guidelines for DCP-SPS12 and DCP-SPCB (Power Output side)

As we mentioned earlier - using it in place of a 2-wire power supply will greatly reduce wiring complexity and more than halve the number of wires you'll need to run around the layout.

Here is an example using standard SPDT (single pole double throw) switches.

- Using the DCP-SPS12 to power Cobalt or similar reversing-DC point/turnout motors with standard SPDT Switches such as those supplied in our DCP-CMS-SP switch pack and also available at many electronic parts supply stores.

The wiring connections to do this are as follows:

* **Common** (Centre) output terminal of the DCP-SPCB should be connected directly to one of the DC power input terminals of the Cobalt or other brand analog turnout motor.

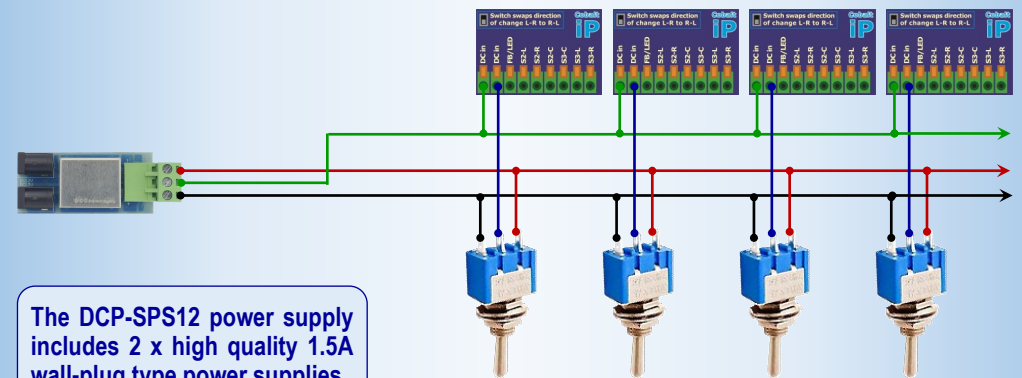
This is the GREEN wire in the diagram below. If you have more than one, just link this wire to all of them as we have done in this example.

* **Left** to one output terminal of an On-On type SPDT Switch. (RED wire in the diagram)

* **Right** output terminal of the DCP-SPCB should be connected to the other side of the On-On type SPDT Switch. (The BLACK wire in the diagram)

* **FINALLY** Connect the common centre terminal of each SPDT switch to the other DC power input terminal side of the Cobalt iP Analog, Cobalt Omega or similar other-brand motor. This is shown by the BLUE wire in the diagram)

This diagram explains the process clearly.



The DCP-SPS12 power supply includes 2 x high quality 1.5A wall-plug type power supplies. If wired in this it way will easily handle more than 200 Cobalt Omega or iP Analog motors