



# Cobalt Cdu 2+

## The Concept:

Make it easier for modellers who use solenoid point motors. Create a way to power all brands of higher current solenoids singly or in multiples... that will ensure the best possible reliability irrespective of the control method used, speed of commands or complexity of operations. Keep it easy to use and wire.

CDU 2+ is a totally self-contained, mains powered and super-high energy dual output capacitor discharge unit.

Economical, simple to connect and easy to wire, it is the one and only guaranteed way for you to be sure of reliable solenoid operation, always, no matter which solenoid type you choose to use or how you change them.

CDU 2+ will deliver all the energy and power you'll ever need for changing one, two or even several solenoid point motors at once. Because CDU 2+ has its own internal mains supply we've been able to design it to have the fastest possible recharge giving it huge energy potential by building in the highest power of any CDU ever offered.

Combine this with the fact that there are actually two high power CDU circuits inside to share the load, this gives the ability to double the power by combining them for extreme needs and no matter how many point motors you want to change or how fast your control system can send the commands, CDU 2+ will never fail you... whether your layout is DC or DCC powered, manually switched, DCC or computer controlled, large or small.

## Cobalt Cdu2+

Connection just couldn't be easier. CDU2+ is fully compatible with and standards approved for mains power use in the UK, Europe, Australia, NZ and other countries using standard domestic 220~250v AC mains power.

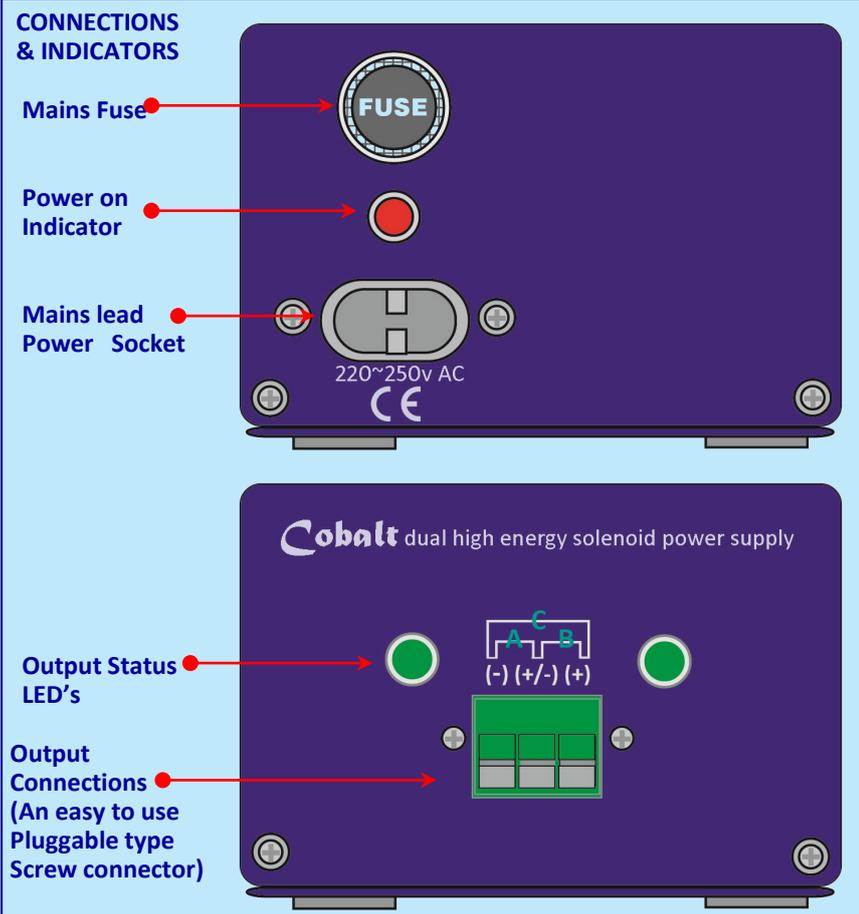
We chose an international standard "Figure 8" type mains power lead so modellers in any country can also be supplied with the correct mains connection without the need for changing plugs.

### OUTPUT Specifications:

Output connection wiring is clearly indicated by the diagram above the three-terminal connector.

A and B are two separate output channels, and each individual channel is able to supply a 20v pulse via 13,800 microfarad 35v capacitors and each re-charges super fast, ready for next time.

You can also double power with "Option C" for long runs that have multiple solenoids at the end where all need to be changed at the same time. Option C gives a double power "kick" that guarantees totally reliable changing every time.



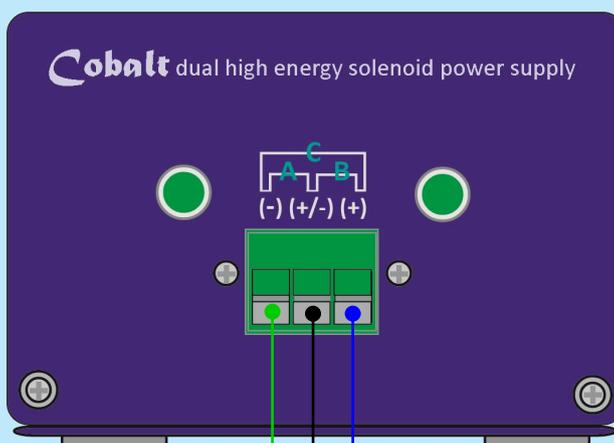


# Cobalt Cdu 2+

**Cobalt Cdu2+** is very easy to wire: this is the conventional way for you to wire it.

When using this wiring method you can share the load between CDU-A and CDU-B. That way even with rapid-fire activity from software or DCC system macro's solenoids will work every time.

- (1) Wire should be at least 16x0.2 but preferably larger (32x0.2)
- (2) Switches can be any common NO type (normally off) push button switches as commonly used in model railways.
- (3) You can still also use the very high power C option for changing multiple solenoids if you are using this method.



### BLACK WIRE:

Solenoid common. (this wire is both + and - at the same time)

### GREEN WIRE:

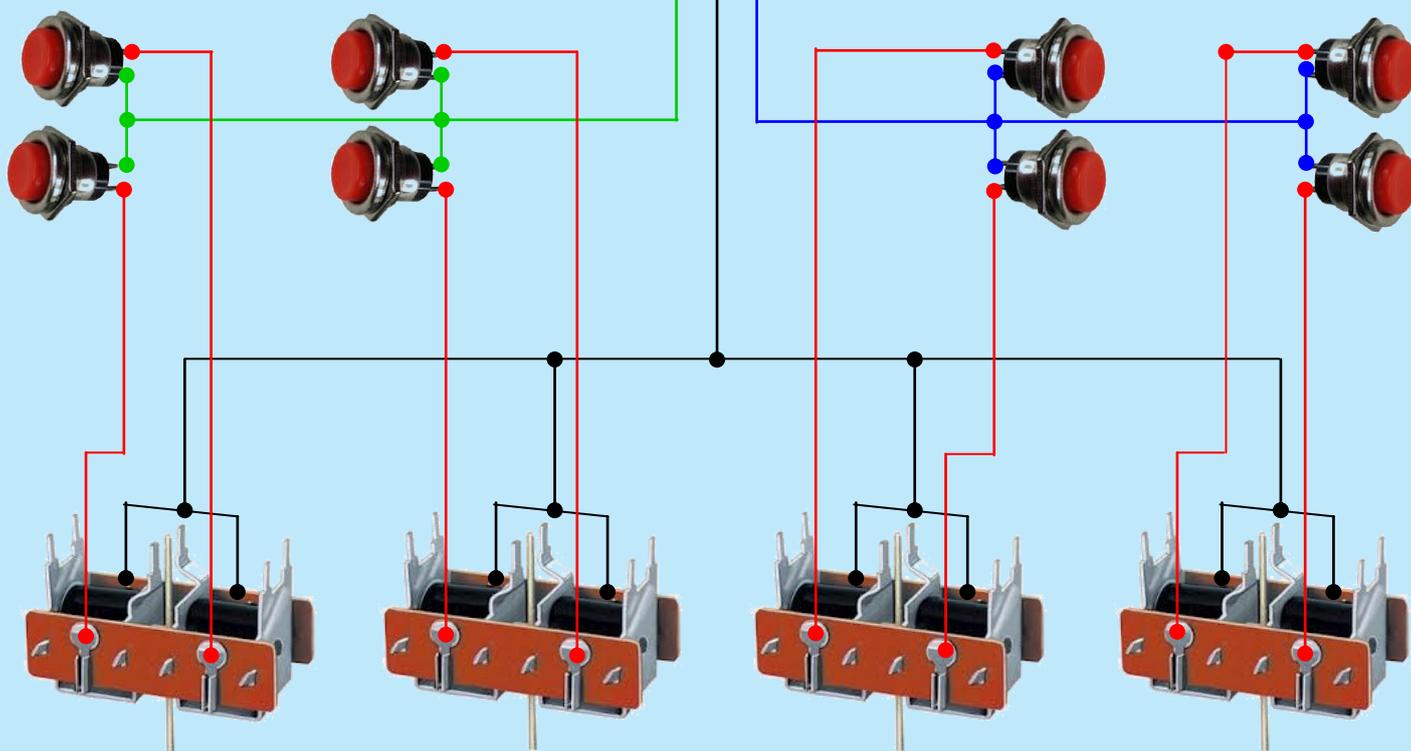
Switched wire (to all solenoids using CDU - A for power)

### BLUE WIRE:

Switched wire (to all solenoids using CDU - B for power)

### RED WIRE:

Trigger wires (from each pair of pushbutton switches to individual solenoid coils on each of the points / turnouts)

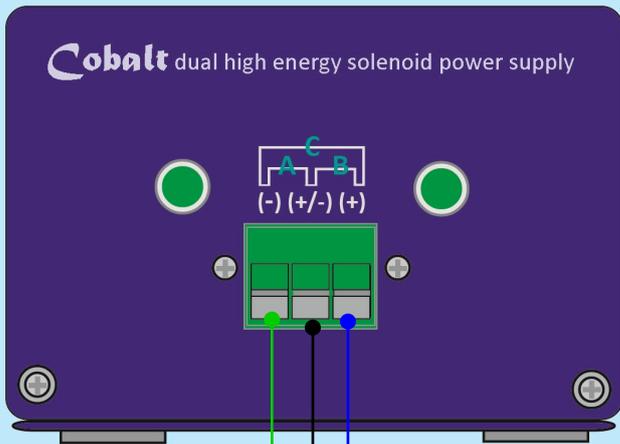


*This example was created using PECO PL10 solenoids, however connections are similar for all brands of 2-coil solenoids. Please follow the instructions that were supplied with your chosen solenoid brand for the exact position of connections.*



# Cobalt Cdu2+

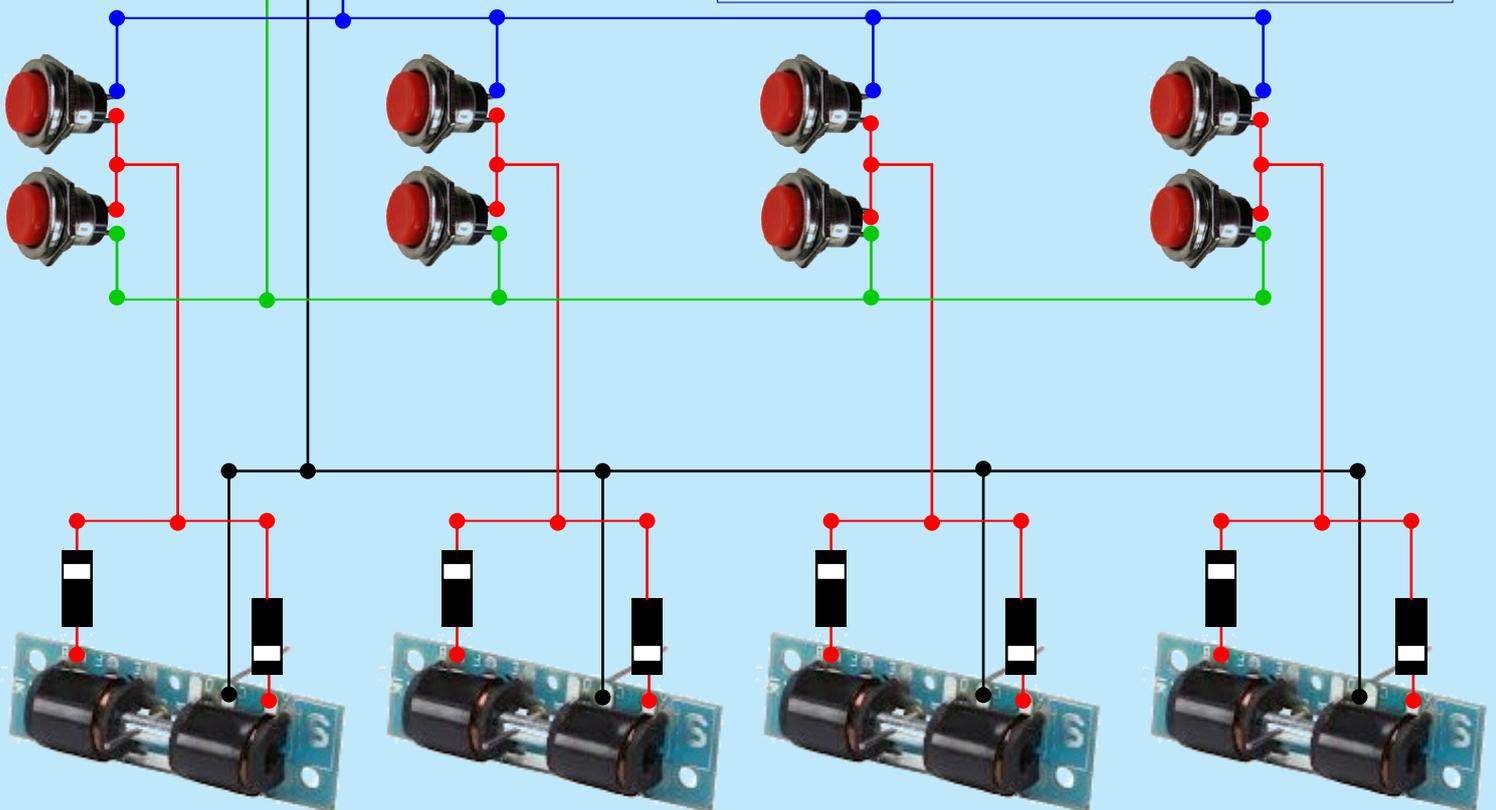
**Cobalt Cdu2+** is very easy to wire: this is an optional way you can do it - with only **TWO** wires to be connected to each point motor thanks to the help of some diodes.



**When using this connection method please note:**

- (1) Wire should be no smaller than 16x0.2, preferably larger.
- (2) Diodes should be IN5400 50v 3 amp or larger. These are low cost diodes that are easy to obtain in many places.
- (3) Push-buttons can be any commonly available "normally off" switch as frequently used in model railways.
- (4) Please take care to orient the diodes as shown. If the point / solenoid changes "opposite to your requirement" just swap over the red and green wires at the switch pair.
- (5) You can still also use the super high power C option for changing multiple solenoids if you are using this method.

BLACK WIRE:	Solenoid common. (to all solenoids)
GREEN WIRE:	Negative wire (to all switches)
BLUE WIRE:	Positive wire (to all switches)
RED WIRE:	Trigger wire (to individual solenoids)



*This example was created using SEEP brand solenoids. However connections are similar for all brands of 2-coil solenoids. Please follow the instructions that were supplied with your chosen solenoid brand for the exact position of connections.*

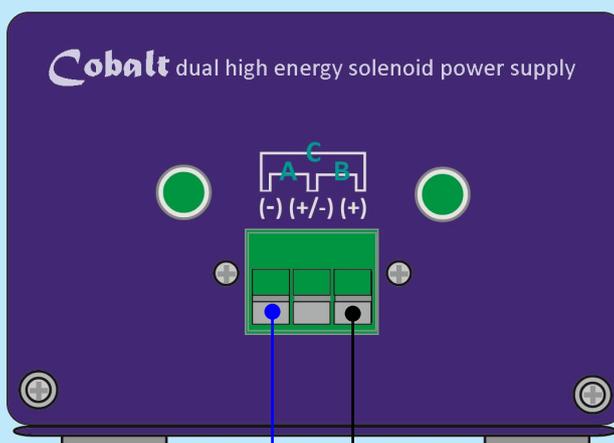


# Cobalt Cdu 2+

## Cobalt Cdu2+ "High Energy" mode can deliver even more power easily & reliably.

When you need to move several high current solenoids at once, the low impedance and very heavy instantaneous load result in a very large voltage drop making it quite difficult to deliver enough energy to do the job well. Using this "doubled up" configuration we guarantee that even simultaneous 4 to 8 solenoid changes will happen reliably on distant parts of your layout.

- (1) Wire should be at least 16x0.2 and preferably larger (32x0.2)
- (2) Switches can be any common NO type (normally off) push button switches as commonly used in model railways



### BLACK WIRE:

Solenoid common wire.  
(common to all solenoid coils)

### BLUE WIRE:

Switch common wire (common to both push-button switches)

### GREEN WIRE:

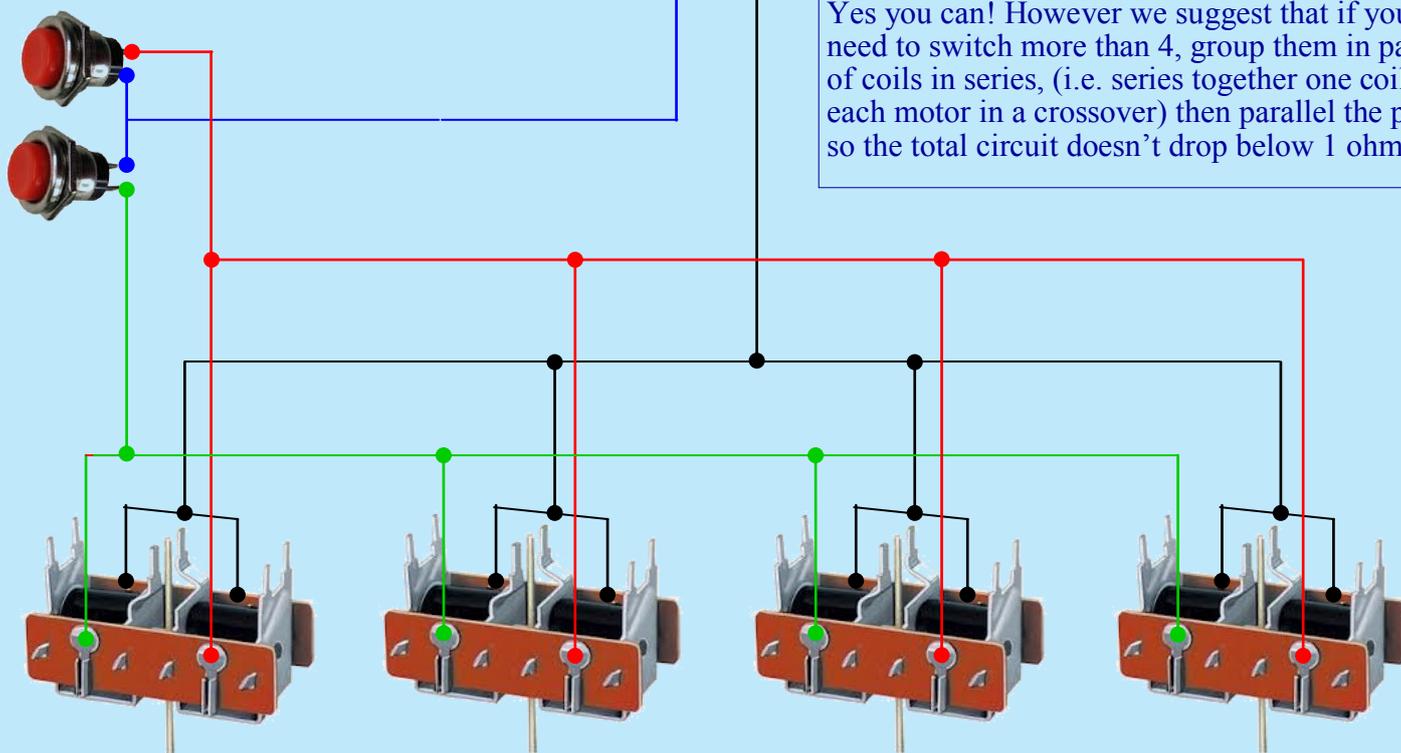
Switched wire 1 (wired to all solenoids in parallel for multiple simultaneous change)

### RED WIRE:

Switched wire 2 (wired to all solenoids in parallel for multiple simultaneous change)

### CAN WE DO MORE THAN 4?

Yes you can! However we suggest that if you need to switch more than 4, group them in pairs of coils in series, (i.e. series together one coil of each motor in a crossover) then parallel the pairs so the total circuit doesn't drop below 1 ohm.



*This example was created using PECO PL10 solenoids. however connections are similar for all brands of 2-coil solenoids. Please follow the instructions that were supplied with your chosen solenoid brand for the exact position of connections.*

