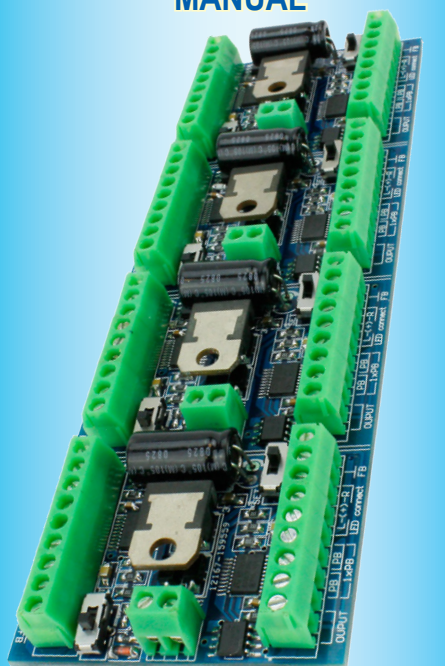
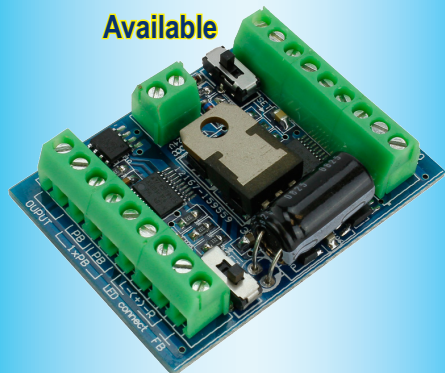


Cobalt AD-8fx Stall Motor Decoders

OWNERS MANUAL



**Cobalt AD-2fx also
Available**



Overview: **Cobalt** AD-8fx Decoders The perfect way to change all motor drive point motors

Please be sure to read these instructions before installing your **AD-8fx** Decoder. DCCconcepts AD-8fx decoders have been designed from the outset to work perfectly on both DC & DCC controlled layouts and each output is able to very reliably change one or several Cobalt-type or similar point motors. AD-8fx can be used with DC or DCC power.

AD-8fx Decoders can be connected directly to the DCC track power or DCC accessory power bus and need no added power supply or wiring when used with DCC (15v DC is required for DC layouts).

Unlike other Accessory decoders which have very limited power drive ability and no added features, AD-8fx decoders are able to reliably change several DC-motor point motors simultaneously.

AD-8fx decoders also offer parallel pushbutton + digital control. They also incorporate computer IO indication and feedback and offer connection of control panel LEDs should you need them.

Power use is intelligently managed on-board, so you don't need a big power supply even when used on DC layouts - any regulated 15v DC supply that can deliver above 1.5 amps should be just fine!

AD-8fx also has some exclusive added features:

AD-8fx has all the features that Cobalt users could wish for.

- * Computer IO and DCC system feedback directly from decoder.
- * LED outputs ready for you to add lights to your control panel.
- * Dual momentary contact switch option so you can have both digital & manual control of your points - switching contacts are triggerable with hall, diode matrix or detectors for automation.

Overview: **Cobalt** AD-8fx Connection

DCCconcepts AD-8fx decoders have screw terminals for all of the common connections to make wiring easier for you.

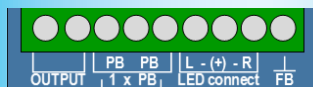
The use of all terminals is marked clearly on the PCB.

Please do NOT tin the wire ends when using screw connectors - it is less reliable long term. Just strip the wires carefully and twist them tightly.

We recommend the following wire choices for AD-8fx;

- (1) Power-in wiring: 16x 0.2 is recommended.
(Your choice may be different depending on where you put your AD-8fx decoders. Heavier 6-core (alarm) wire can be an excellent choice as it gives you 3 wires for switches and 3 more LED etc in one tidy cable).
- (2) Switch, LED & IO wiring: 7x0.2 to 16x 0.2 is OK (light wire is OK).
(Your choice may be different depending on where you put your AD-8fx decoders. Heavier 6-core (alarm) wire can be an excellent choice as it gives you 3 wires for switches and 3 more LED etc in one tidy cable).
- (3) Other wiring to/from Cobalt etc to track: 16x 0.2 recommended.
(Please keep frog power wires as short as possible. We suggest you adopt a consistent colour for frog wires - green is the usual choice).

AD-8fx has all wiring positions clearly marked on the PCB. Before wiring your AD-8fx decoder please read these instructions from start to finish and then take note of the following advice:



AD-8fx is easy for you to wire as all of the connections are clearly marked on the PCB

Important: AD-8fx has a high power CDU on each of its outputs. Allowing the lower face of the PCB to contact conductive areas, metal tools, etc. will cause serious damage to on-board electronics.

Overview: **Cobalt** AD-8fx Connection (Continued)

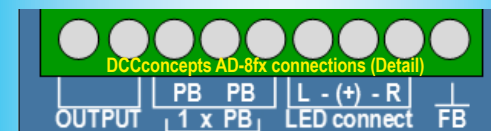
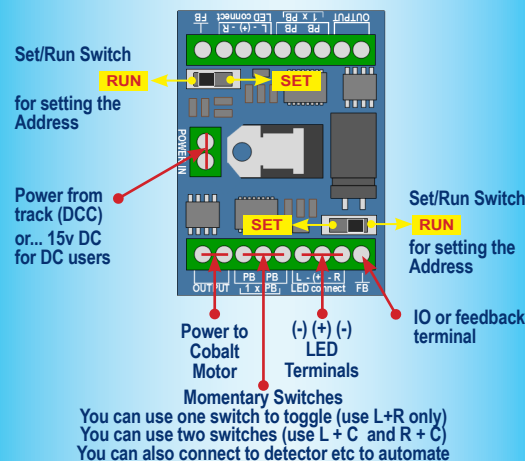
- * Make sure your soldering iron is ESD safe. A soldering iron with voltage or mains leakage at the tip can be very dangerous AND it will cause damage to the AD-8fx electronic circuits.
- * Make sure your mounting or work surface is clean. Also make sure it is clear of metal objects that can cause accidental short circuits.
- * Make sure layout power is turned off before connecting AD-8fx.
- * While the LED outputs are already current limited, we recommend that you do add a resistor as panel lights should not be too bright!

Overview: **Cobalt** AD-8fx Connection

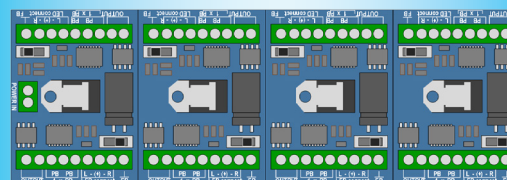
DCCconcepts AD-8fx Accessory decoder connection structure.

- * For clarity, we show only one 2-output section of the AD-8fx here.
- * Each output has a similar layout. Only ONE power input is needed, and a single power input provides power to all 8 x AD-8fx outputs.
- * Layout of the 3-way connections is always "Left - Common - Right".

(More wiring diagrams are provided on the next page)

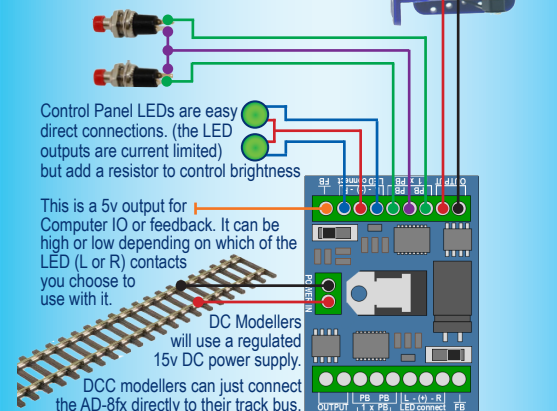


An 8-way AD-8fx Stall-motor decoder looks like this



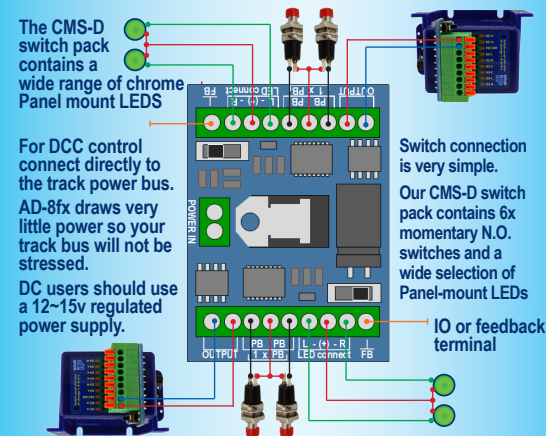
Overview: **Cobalt** AD-8fx Connection

You can control AD-8fx with Push-button switches, Diode Matrixes, Stud and Probe or link them to other things such as Hall devices reed switches or detectors for auto-control... DCCconcepts CMS-D switch pack includes all you need, including chrome-mount LEDs to let you create a professional looking panel

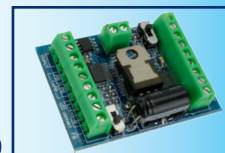


Example: **Cobalt** AD-8fx Connection

IO, Motor, LED & Switch Connections - full set!



Need help? please email us at:
salesuk@dccconcepts.com
or visit our website at:
www.dccconcepts.com



Cobalt AD-8fx can do everything you need! or call us on +44 (0) 1729 821080 (10-5)

Cobalt AD-8fx Stall Motor Decoders

Example: Cobalt AD-8fx Connection

Setting the Address

Giving your DCCconcepts AD decoder its own address is very easy.

Just remember to use ONLY these DCCconcepts instructions as all other DCC manufacturer instructions are valid only for their own accessory decoders.

You do NOT ever need to connect AD-8fx decoders to a program track

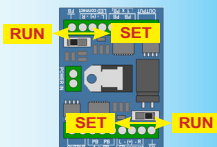
For ALL handset and console based products that use a simple and direct "Press-the-button" routine to change a point or turnout, do as follows:

- * Connect the AD-8fx to the track power bus or the dcc accessory power bus.
- * Decide on the number that you wish to give each AD-8fx Decoder output
- * Carefully move the "Set/Run" switch of that output to the "SET" position
- * Follow your control systems instructions for **Operating** a point at that address. Use just the number only - do not add any leading zeros. (3 = 3, not 0003) (Complete the operation totally - from "select address" to "changing the point").
- * Return the "Set/Run" switch to the Run position and your AD-8fx decoder will now respond to that address - it really IS that simple!

For ALL Screen-based products such as ESU, Z21, Hornby E-link and similar products you may first have to set up a track diagram or add a new point (turnout) to the controller system's accessory control library.

Using your controller instructions, first complete the on-screen track plan or enter any information needed for the new accessory.

Once that is done, and you have chosen which turnout on your on-screen display you want to control, follow the instructions above.



Cobalt AD-8fx Set-up and connections

With all AD-8fx wiring able to be done by screw connector and with spring connectors on all Cobalt Classic, Cobalt iP & Cobalt Ω Omega motors plus clear instructions printed onto the PCB... wiring just couldn't get any easier.

Adding LED's is also super-easy. Just remember that the centre connection pad is (+) Positive (for all common LED's, the long lead is the positive lead).

Having so much wired up to your AD-8fx decoder will not limit your other abilities either - even with everything connected you will still have three spare SPDT switches on each Cobalt motor available to control other useful things!

Cobalt AD-8fx Special software commands

We have incorporated some useful "Convenience Features" into AD-8fx decoders.

Self-Centering ON: This self-centres Cobalt iP Analog motors automatically. To activate, follow standard addressing procedure to set the address to 199. Cycle the power by turning the DCC system on and off (pause before turning on). Now when you apply power again, the Cobalt iP Analog will center its throw-bar.

Self-Centering OFF: As above, but use address 198 to turn self-centering off.

Swap Change Direction: This changes the direction of change to let you easily match computer programs, screen based track layouts etc. To change the throw direction using AD-8fx software, proceed as above but set the address to 197.

NOTE: Some DCC systems have slow responses - when using command 199/8/7 take your time and press buttons firmly but slowly. Pause during the power cycling.

Important: Be careful when powering up your AD-8fx decoder. Allowing the lower face of the PCB to contact conductive areas, metal tools etc. will cause serious damage to onboard electronics.

The Cobalt Collection - Point Motors and Signal Levers, Decoders and Accessories

While the first Cobalt product was a unique form of point motor, the DCCconcepts "Cobalt Collection" has already evolved to be much, much more than that.

Our Cobalt range now includes a wide range of Point Motors, Signal Levers and extremely high-feature level Accessory Decoders... accompanied by an economical and versatile range of Accessories.

Cobalt continues to evolve and now includes many other products, each unique in its class. Before too long, the Cobalt Collection will include everything you will ever need to control the layout.

Cobalt Ω (Omega) Point Motor

Successor to the original Cobalt, Cobalt Ω looks very familiar but it has been totally re-tooled inside and out to make them even better.

Cobalt may look the same as before... but Cobalt Ω has a revised internal gear structure, is even quieter than its predecessor and now features THREE on-board SPDT switches for extreme versatility.

We have also added a simple to use voltage range-change switch giving you totally reliable performance over a very wide power supply choice (We like to operate at 9v, but really anywhere from 6 ~18 volts DC is just fine).

Current users of Cobalt motors will find the Cobalt Ω operates in total harmony with their existing Cobalt motors.

The only real wiring change is the position of power-input connections. These are now moved to terminals 1 and 2 (same as Cobalt iP and iP Digital) to keep all "New Generation" Cobalt motors in harmony.



Cobalt iP Analog Point Motor

While the shape is familiar, our Cobalt iP Analog has the same super-quiet operation and 3 on-board switches of Cobalt Ω plus a simple to use "Swap direction" switch to let you synchronise the changing of direction with software / macros or route control.

We have also added something very special inside.... The iP in the Cobalt iP Analog name means Intelligent power control! Cobalt iP Analog self-manages power use for the same drive speed irrespective of voltage (7~23v is OK).

When it's standing still, Cobalt iP Analog draws only enough power to listen for the next command and even when operating, it draws only 40~60mA. That is in fact less than the current draw of one super bright LED! Cobalt iP Analog really is the best choice for larger, busy layouts!



Cobalt iP Digital Point Motor

Cobalt iP Digital includes all of the features of iP Analog and more! Connection-wise, we've added a second set of momentary push button switch contacts for fully independent left/right "change direction" control (instead of 1-button toggled action).

Cobalt iP Digital is comfortable with 7~23v DCC track power and is super-easy to install as it's delivered self-centred and ready to go!

Cobalt iP Digital also has three simple-to-use software commands built in. We've made use of these easy by utilising standard "Address-setting procedures" to activate or deactivate them. These new software options activate or deactivate the self centering function and also let you "flip the change direction".

This allows you to synchronise or change operating direction so that it matches perfectly with track diagrams on screen-based control systems & with any brand of layout control software, route control or similar digital control methods.

(It also makes it possible to install Cobalt iP digital facing either the Toe or Heel of the point, so installations in tight places are easier!)



Cobalt-S Traditional Signal Levers

Cobalt-S is something very special. For the first time, the average modeller in ANY scale can have a signal-box lever that operates just like the real thing. Even better, the Cobalt-S lever really is the most versatile control device ever offered by anyone, as it can literally control everything ever made... by any brand - in any scale.

Cobalt-S includes both a momentary contact SPDT changeover switch and TWO on-on SPDT changeover switches, giving it the ability to work with AC, DC or DCC control and literally capable of operating every item ever designed for use with a model railway.

At 140mm high, it is a substantial product that is very satisfying to use... the lever and mechanism itself is solid brass, the contacts are high quality long-life phosphor bronze and the case is a tough engineering plastic.

Cobalt-S oozes quality and as a result it is guaranteed for life!

The full Cobalt-S range can be seen at www.dccconcepts.com...

Please drop in and take a look soon!



Cobalt Accessories

Each and every Cobalt product has a matching range of accessories.

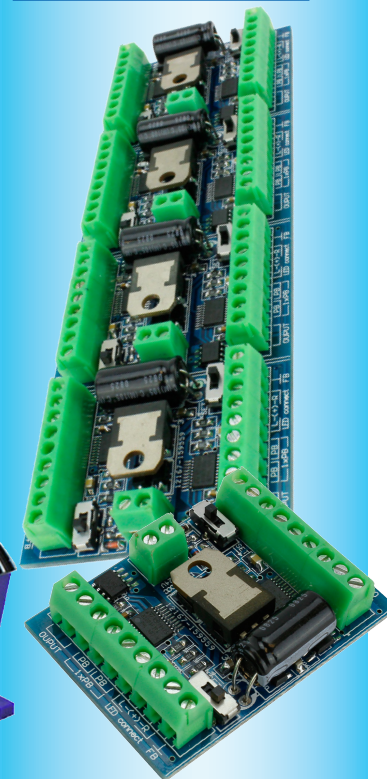
These are of course perfect for Cobalt product operation and they represent exceptional value as we always include many options in the pack. We also pre-wire some switches to make your installation easier wherever possible.



The full range of accessory packs is shown and explained clearly on our website at

www.dccconcepts.com

Please visit us on the web soon!



DCCconcepts

Thinking Outside the Square!