Instructions for **Cobalt α Alpha**

Cobalt α Alpha

OWNERS MANUAL

Important: All electronics are sensitive to how you handle them. Please do all connections with power off. Be sure that you do not accidentally expose them to static discharge or accidental shorts .
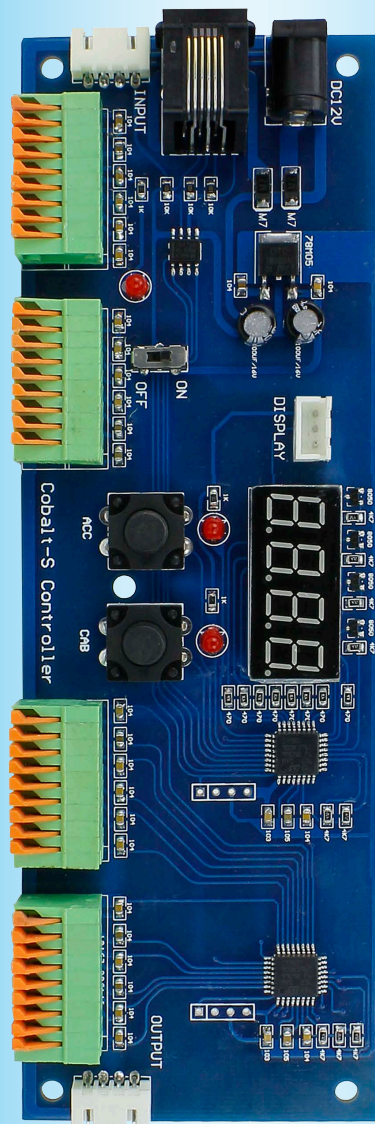

Overview: Cobalt α Alpha
Makes control panel creation wire-free & easy

Please be sure to read these instructions before installing your new Cobalt Alpha.

DCCconcepts Cobalt Alpha is a digital encoder that turns any form of standard switch into a digital control device, making it possible to create complex control panels with simple wiring... in fact you will need only one pair of wires between your panel and the layout!

DCCconcepts Cobalt Alpha is equally usable by all modellers in all of the common scales, whether you drive the trains with AC, DC or DCC power.

What is needed? As bought, Cobalt Alpha is directly connectable to the command bus of all NCE DCC systems with a standard RJ12 cable.

Add the Cobalt "Alpha box" and AC and DC modellers can immediately take advantage of Cobalt Alpha to reduce their control panel complexity. (DCC brands with sniffer ports can use the Alpha box too if they wish).

Add a Lenz, MRC~gaugemaster, Digitrax or other adapter and Cobalt Alpha will now connect directly to your existing DCC command bus.

How does it connect? If you have a DC or AC powered layout you need NO change to controllers or locomotives at all, but you will need to add a DCC-standards based accessory decoders to each turnout or active accessory you wish to control and create an accessory power bus.

DC or AC users ...will also need the "Alpha box" which is a low cost high power interface for Cobalt Alpha that converts command information and delivers it to the power bus to operate the accessory decoders.

All DCC users can also use the "Alpha box" ...as a command centre for their DCC Accessory power bus if their accessory use is separated from train driving. NCE PowerCab users can also use it to increase the power and performance of Powercab to that of a full 5 amp DCC system.

If you have another brand of DCC system ...you can use Cobalt Alpha with the addition of an appropriate "Command bus protocol adapter".

Cobalt Alpha will then connect to your layouts "Command bus" and it will act as a specialised controller for accessories and any accessory decoder designed to work with DCC standards.

This is the Alpha Range. Interface release will be progressive.

DCP- AEU Cobalt Alpha (Directly connectible to NCE system bus)

DCP- ADX Cobalt Alpha extension display.

DCP- AUX Cobalt "Alpha Box" unit for DC or Accessory power Bus.
     (Also for DCC modellers who do not use NCE DCC or do not wish to do accessory control with their DCC handsets).

DCD-ACL 6 foot 6-wire RJ12 curly cord for Cobalt Alpha or NCE.

DCD-CAC 500mm 6-wire flat RJ12 lead for Cobalt Alpha connection

DCD-LZX Lenz/Roco/Z21 interface for Cobalt Alpha. (Input socket RJ12, output socket to lenz for the Lenz control bus).
     (This adapter should also allow connection to Roco Z21, Hornby, ZTC and other "Xpress-net users" providing they consistently follow the standards)

DCD-GMX Gaugemaster Prodigy or MRC interface for Cobalt Alpha.
     (Input socket RJ12, output socket to GM~MRC RJ45

DCD-DTX Digitrax interface for Cobalt Alpha. ((Input RJ12, output wired for Digitrax RJ12. It will connect to a Loco-net bus)

DCD-ECX ESU interface for Cobalt Alpha. (ESU control bus)

Overview: Cobalt α Alpha Connections
Making wiring easier, every step along the way

The COMMAND BUS wiring:

* Cobalt Alpha can either be wired in series. all with the same cab address or in parallel using a different cab address:

* If you are wiring Alpha in series, we have supplied the cable you need.

* If you are wiring Alpha in parallel, use only correctly wired RJ12 6-wire cables and layout command bus utility panels.

* If you are using the "Alpha Box" or a Cobalt Alpha interface, we will have supplied you with an RJ 12 lead to use between Cobalt Alpha & the "Alpha box" .

* If you are interfacing Alpha with your own DCC system using an Alpha adapter unit, it will have the correct sockets but you may also need to provide the cabling to connect correctly to your own DCC system.

* Careless damage is not covered by warranty, so take your time and make sure the work surface you are using is appropriate and is also clear of metal objects that can cause accidental short circuits.

The 12v DC POWER wiring:

* Power for Cobalt Alpha is normally provided via the Command bus.

* Each Cobalt Alpha draws approximately the same as a DCC handset when in use. (a little under 100mA).

* A command bus (most brands) usually supplies about 500mA.

* Therefore unless you are using several Cobalt Alpha plus more than one Cab there wil be NO need to add 12v DC power to the DC power socket that is provided on each cobalt Alpha.

* If you DO use many Cobalt alpha and several handsets, or if your command bus is going to be longer than around 20 metres, we do recommend adding a regulated 1 amp 12v DC wall plug power supply and connecting it to the DC socket on Cobalt Alpha.

* As a rule of thumb, to be conservative and not stress your power supplies so they will last a long time, add another 1 amp 12v regulated DC power supply about every 6 Cobalt Alphas or DCC handsets.

Linking Cobalt Alpha IN SERIES:

* This is the most common and easiest approach.

* The 4-wire cable you will need is provided with every Cobalt Alpha.

* You can link as many as you need, just remember to add a regulated 1 amp 12v DC power supply every 6 units or so.

* Addressing can be daisy-chained too. Once linked they can all set addresses together, so for example if you have 6 together and switch 1 on Alpha #1 will be 1, then they will all work together and automatically create all the addresses between 1 and 72 in an instant!

Connecting SWITCHES to Cobalt Alpha:

* The switch connections are spring connectors and need no soldering.

* They are arranged in blocks of 3 switches, each is Left-Common-Right.

* You can use any form of switching, even the old favourite "Stud and Probe if you wish... but where possible please make them momentary types - ie: common N.O. type push-buttons or TACT type switches.

* For the most elegant panel possible, use our new DCCconcepts Digital Switch packs which have TACT switches with integrated LEDs. They're in turn connected to a PCB with harnesses to make control panel wiring simpler than its ever been! Finally connect them to Cobalt Alpha with our specially created 3-wire ribbon cable for the perfect control panel.

Overview: Cobalt α Alpha Connections
Using the Cobalt Alpha Display Extension

The DISPLAY Extension:

* Cobalt Alpha already has a display mounted onto the PCB that helps you to set cab addresses and output address, and that same display also reconfirms the number of every switch that you press.

* While identifying which switch is which will generally not be an issue once a control panel is made, we know that many of you will want to be able to see their switch command confirmed, so we have created a "display extension" that you can mount onto your control panel.

* Identical to the original display, and mirroring its output, the display extension simply plugs into a socket on the Cobalt Alpha PCB using the lead supplied, and is mounted onto a bezel that is supplied with it, giving you a panel display that confirms each button press.

Overview: Cobalt α Alpha set-up
Addressing and operating your Cobalt Alpha

The On/Off switch:
* As you would expect, this simply turns Cobalt α Alpha on or off. Initial setup requires use of this switch. Once set, it just remains on until more set-up changes are wanted.

The CAB switch:
* Hold this button down as you turn Cobalt α Alpha on and the display will flash, ready for you to change the cab number. Default cab number is 4.

* Use the CAB button to select which display # will change and the ACC button to select the Cab number that you want if to be.

* The Cab switch also "confirms and saves" settings. Once you've set the Cab address to your preference using the two buttons, hold the CAB button down until it flashes "Yes" to confirm saving.

The ACC switch:
* Hold this button down as you turn Cobalt α Alpha on and the display will flash, ready for you to change the input address.

* You only need to choose and set up an address for input number 1 and other addresses are set automatically. Default for address #1 is 1.

* Use the CAB button to select which display # will change and the ACC button to select the Address button to select the value for that number.

* The Cab switch also "confirms and saves" settings. Once you've set the Cab address to your preference using the two buttons, hold the CAB button down until it flashes "Yes" to confirm saving.

Addressing several Cobalt Alpha units in series, all at once:
* To address several units at once, turn them all on but leave #1 till last and hold down the ACC switch on Cobalt Alpha #1 as it is turned on.

* When you set and confirm output 1, all outputs in all units will be set.

(Please note: more data and diagrams can be found on the next page)

* **Need help? please email us at:**
  Sales@dccconcepts.com
* **Or visit our website at:**
  www.dccconcepts.com
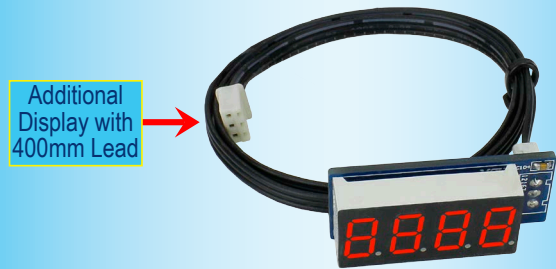* **Or call us +61 8 9437 2470 (10~5)**

Overview: *Cobalt α Alpha* Connections
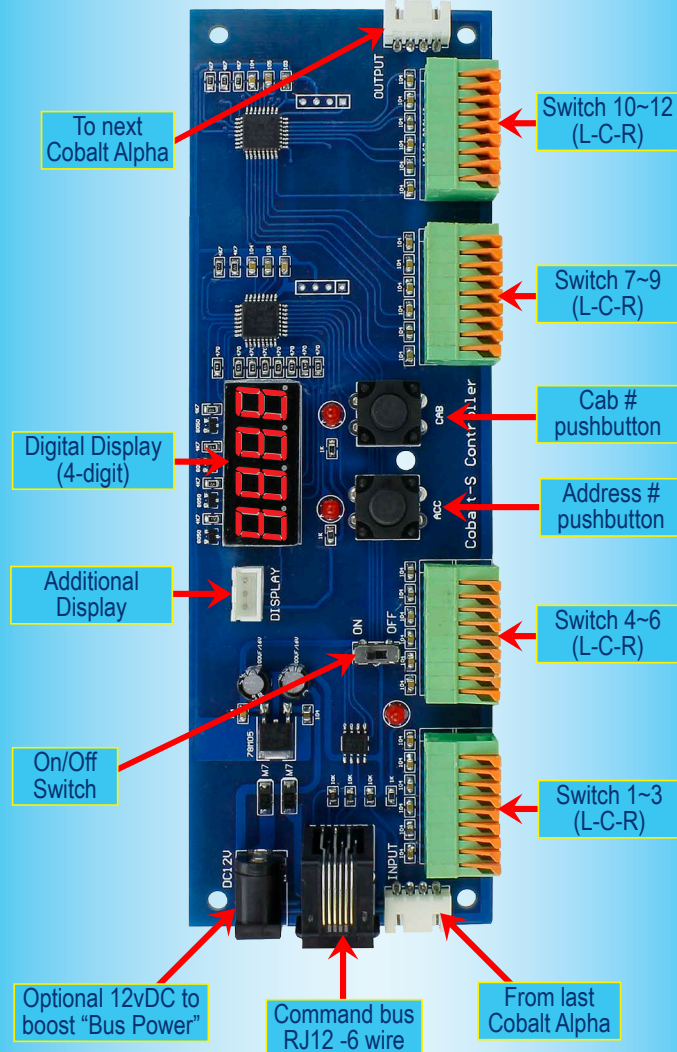
More help with Cobalt Alpha.

The diagrams below will give you lots more information and show all connections and functions clearly.

Cobalt Alpha also has clear labelling on each function or connection.

If you need help or more information on Cobalt Alpha, please visit www.dccconcepts.com or email us on questions@dccconcepts.com

Additional Display with 400mm Lead

Cobalt α Alpha default address is 1 to 12

To next Cobalt Alpha

Switch 10~12 (L-C-R)

Switch 7~9 (L-C-R)

Digital Display (4-digit)

Cab # pushbutton

Address # pushbutton

Additional Display

Switch 4~6 (L-C-R)

On/Off Switch

Switch 1~3 (L-C-R)

Optional 12vDC to boost "Bus Power"

Command bus RJ12 -6 wire

From last Cobalt Alpha

The *Cobalt Collection* - Point Motors, Signal Levers, Accessory Decoders and related 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 familar 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 significant wiring change being the position of the 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!

To allow DCC + full manual control 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 you the ability to work with AC, DC or DCC control and it is literally able to operate every electrical item ever designed to be used with a model railway.

At 140mm high, it is a substantial product that is very satisying to use... the lever and mechanism itself are 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 AD-fx Accessory Decoders
(AD-8fx eight-way and AD-2fx two-way)

Cobalt AD Accessory decoders are the ONLY decoder you should use with original "Classic" Cobalt, Cobalt Ω and Cobalt iP Analog.

Why? Because DCCconcepts AD-fx decoders are the strongest, most versatile, most capable 2 and 8-output reversing DC Accessory decoders ever offered. Unlike ALL other "Stall motor" type decoder, they can reliably control multiple Cobalt motors - and besides, they have several added features that other brands just cannot offer!

AD-2fx & AD-8fx both have all these features on every output:
* ONE power input powers all outputs
* Highest power available - 4 or more motors using ONE output.
* Ability to add two momentary switches for simultaneous / parallel local control panel use and digital or computer control together.
* Ability to directly add LED indicators or LED signal control via the AD Decoder connections (Also usable for low current/voltage relays etc)
* Feedback or computer IO connection directly from the Decoder.

The 2-way AD-2fx is shown... the AD-8fx 8-way decoder is great value and is also available now.

Cobalt ADS-fx Accessory Decoders
(ADS-8fx eight-way and ADS-2fx two-way)

The "S" in ADS Stands for "Solenoid Control...

With a CDU on every output thats capable of reliably changing TWO Peco turnout motors, built-in frog switching and the ability to connect LEDs for control panel indication, as well as reliable IO (feedback) of turnout position, The Cobalt ADS decoders are the answer to every single problem faced by users of solenoids!

They are available in 2-way (AD-S2fx) and 8-way (AD-S8fx) versions

Cobalt Accessories

Each & 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 too.

The full range of accessory packs are shown and explained clearly on our website at www.dccconcepts.com... Please visit us there soon!

Nothing is impossible any more!

To add icing to the cake, ALL three new Cobalt point motors now come pre-centred and ready to install. (Cobalt iP Digital also has a unique set of software commands to activate self-centering). We now also include our die-cut "foam mounting pads" free with every Cobalt point motor.