



## The EVOLUTION of the Cobalt range: Detail comparisons

### Comparison #1: Cobalt Classic vs Cobalt Classic Ω

Model Name	Cobalt Classic	Cobalt Classic Ω (omega)
Body Size:	52mm high, 40mm wide, 34mm thick (67 x 52 x 34 over connector/feet)	52mm high, 40mm wide, 34mm thick (67 x 52 x 34 over connector/feet)
Pre-Centered when delivered?	No	Yes (also any ADfx can auto-center it)
Current draw:	Dependent on drive volts, avg 22mA	Dependent on drive volts, avg 18mA
Connector type:	8 way solder-free spring connector	9 way solder-free spring connector
Power input / Acceptable voltage range:	7~13v DC (sensitive to over-voltage)	Range Switch. 6~12v and 12~18v DC
SPDT switch linked to power inputs?	No.	Yes, diode switched vs input for panel LED, signalling, feedback/computer
Additional “High power” SPDT switches?	Yes, two (each has a 5amp power ability)	Yes, two (each has a 5 amp power ability)
Power input terminals:	Terminal 1 and 8	Terminals 1 and 2

### Comparison #2: Cobalt Classic Ω vs Cobalt iP Analog (iP = intelligent power)

Model Name	Cobalt Classic Ω (omega)	Cobalt iP Analog
Body Size:	52mm high, 40mm wide, 34mm thick (67 x 52 x 34 over connector/feet)	52mm high, 40mm wide, 34mm thick (67 x 52 x 34 over connector/feet)
Pre-Centered when delivered?	Yes (also any ADfx can auto-center)	Yes (also any ADfx can auto-center)
Current draw:	Dependent on drive volts, av. 18mA	<5mA static, avg 50mA when moving
Connector type:	9 way solderless spring connector	9 way solderless spring connector
Power input / Acceptable voltage range:	Range Switch. 6~12v and 12~18v DC	Auto ranging, (quite happy @ 7~23v DC)
“Flip direction” for computer diagram?	No. Need to change wiring	Yes, located beside the connector strip
SPDT switch linked to power inputs:	Yes, diode switched vs input for panel LED, signalling, feedback/computer	Yes, diode switched vs input for panel LED, signalling, feedback/computer
Additional High power SPDT switches?	Yes, two (each has a 5amp power ability)	Yes, two (each has a 5amp power ability)
Power input terminals:	Terminals 1 and 2	Terminals 1 and 2

At first sight the differences may appear small, however there is much more there than meets the eye. There are also significant internal tooling changes to reduce case resonances and modify the gear structure.

**Important note for existing Cobalt users:** Cobalt Classic Ω has been kept 100% compatible for existing Cobalt Classic users, so even though production of original Cobalt Classic has ceased, you can just transfer any new purchases to the all new Cobalt Classic Ω or, of course Cobalt iP Analog and be comfortable with the transition as the new models simply add more features and there is only a small change in the wiring.

**New Cobalt users:** You can choose between Cobalt Classic Ω, iP Analog or digital. Especially for DCC users and those with larger layouts and many turnout motors, flexible voltage and low current draw are a real iP bonus. (“Larger Scale” users with high voltages will REALLY appreciate the voltage range abilities of Cobalt iP).

**A very note about accessory decoder choices:**

While Cobalt Classic and Classic Ω are comfortable with various brands of “stall motor decoders”, the interactive way that Cobalt iP handles power means that with very few exceptions, ONLY the original AD-HP or new DCCconcepts AD-2fx or AD-8fx accessory decoders should be used with Cobalt iP Analog for best possible performance.

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## Comparison #3: Original Cobalt Digital vs Cobalt iP Digital

Model Name	Cobalt Classic Digital	Cobalt iP Digital
Body Size:	52mm high, 40mm wide, 34mm thick (67 x 52 x 34 over connector/feet)	52mm high, 40mm wide, 34mm thick (67 x 52 x 34mm over connector/feet)
Pre-Centered when delivered?	No (it really needs 12v DC/DCC power directly to the Cobalt motors to do it)	Yes, pre-centered. Also has a selectable and defeatable self-centering function, activated by "command 199" and defeated by "command 198" which are just as easy as to use as setting the address.
Simple address setting?	Yes, via a very small micro switch under the connector PCB	Yes, by a new, larger and easier to use switch conveniently placed alongside the connector terminals.
Current draw:	Dependent on drive volts, avg 18~25mA (constant power draw)	<5mA when static, avg 50mA for less than 3 seconds and ONLY when moving
Connector type:	8 way solderless spring connector	9 way solderless spring connector
Power input / Acceptable voltage range:	Limited, 9~12v DC or DCC	Auto ranging (quite happy @ 7~23v DC)
"Flip direction" for computer diagram?	No. Need to change wiring OR remount facing the opposite way	Yes, using "command 197". This easy to use command reverses direction of throw
Manual control option?	Yes, by single push-button switch	Yes, can be controlled by single push button OR two independent pushbuttons
SPDT switch linked to power inputs:	Yes, for frog connection or similar uses. This switch has a 5amp power ability	Yes, for frog connection or similar uses. This switch has a 5amp power ability
Additional 2nd High power SPDT switch?	Yes, switch has a 5amp power ability	Yes, switch has a 5amp power ability
Power input terminals:	Terminals 1 and 2	Terminals 1 and 2

As you can see from the chart above, there are some quite important differences between original Classic Digital and the Cobalt iP Digital. Together they make Cobalt iP Digital a very powerful product.

As with other variants, there are also significant internal tooling changes to reduce case resonances and modify the gear structure. Again, there is no reason to rush to change existing installations or change over - those wishing to continue with the original digital should feel comfortable in doing so.

We do strongly suggest however that for those intending to use either DC, DCC or computer control, there are significant advantages in adopting the Cobalt iP Digital with its two button analog control option as it's also usable for parallel "Sensor triggering" from detectors and Hall etc... Of course the easy "software reversal" of drive direction to match computer displays is also a real bonus to all users.

We have shown the overall connection structure of each of the new Cobalt models below.

COBALT OMEGA ANALOG



COBALT iP ANALOG



COBALT iP DIGITAL





