

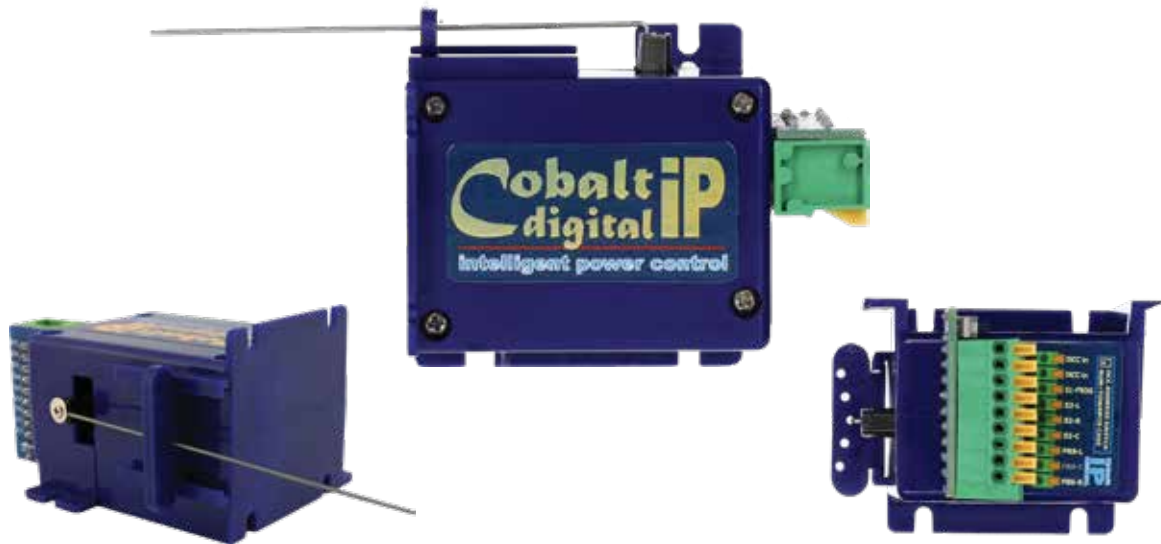
LAYOUT

CONCEPTS



Cobalt iP Digital Point Motor Range

Detailed Instructions



For use with the following Part Numbers:

DCP-CB1DiP Cobalt Digital iP Point Motor - Single Pack & Accessories

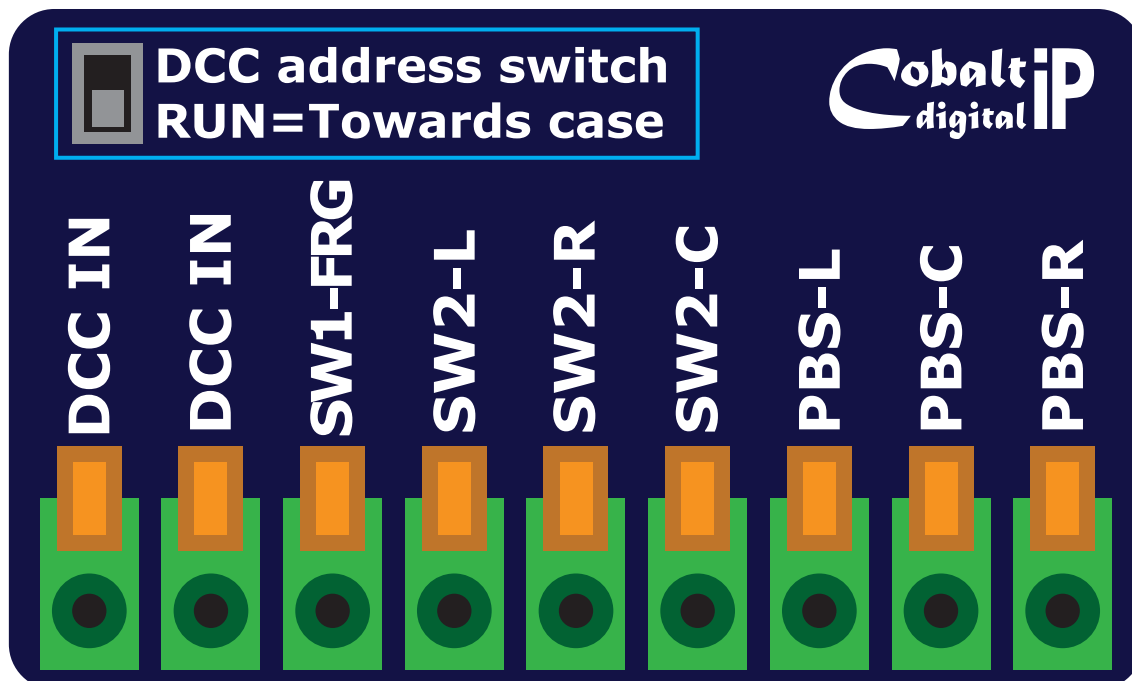
DCP-CB6DiP Cobalt Digital iP Point Motor - 6 Pack & Accessories

DCP-CB12DiP Cobalt Digital iP Point Motor - 12 Pack & Accessories

DCP-CB72DiP Cobalt Digital iP Point Motor - 72 Pack & Accessories

Connections on an iP Digital Motor

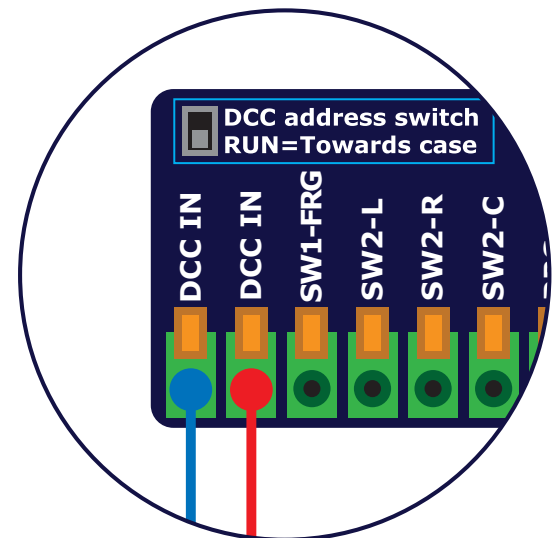
The connections on the Cobalt iP Digital Point Motor are as follows:



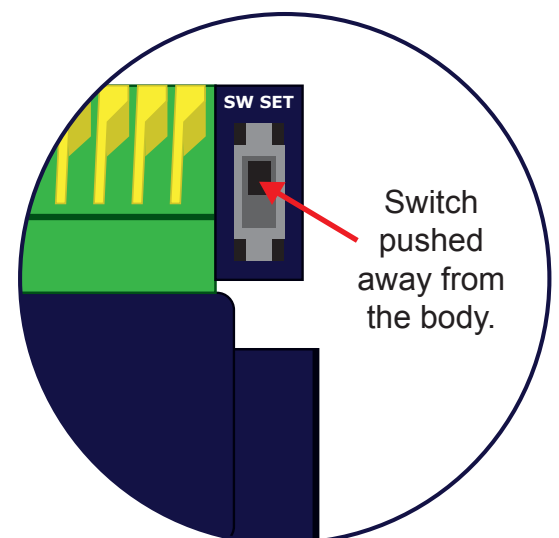
- | | |
|----------------|--|
| DCC IN | Connect your DCC Track/Power Bus here to both power and control the point motor. |
| SW1-FRG | When using Electrofrog or Unifrog points, connect the frog wire to this terminal. The frog is powered via the DCC IN connections. If you are using a separate Accessory Bus, see the section later for instructions on how to switch the frog in this configuration. |
| SW2-L | Left-hand connection for an independent switched circuit. This connection is NOT powered by DCC IN. |
| SW2-R | Right-hand connection for an independent switched circuit. This connection is NOT powered by DCC IN. |
| SW2-C | Common connection for an independent switched circuit. This connection is NOT powered by DCC IN. |
| PBS-L | Left-hand connection for a push button or momentary switch to operate the point motor. Do not connect a power supply to this terminal. |
| PBS-C | Common connection for a push button or momentary switch to operate the point motor. Do not connect a power supply to this terminal. |
| PBS-R | Right-hand connection for a push button or momentary switch to operate the point motor. Do not connect a power supply to this terminal. |

Programming an iP Digital Point Motor

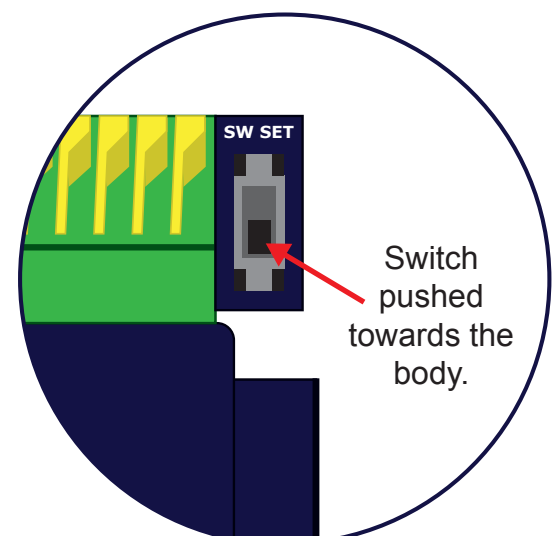
Before programming your Cobalt iP Digital Point Motor, ensure the **DCC IN** terminals are correctly connected to your **DCC controller**, **TRACK/POWER BUS** or **ACCESSORY BUS**. Check that all connections are secure and correctly wired before proceeding with the programming process.



Slide the **SW SET** switch away from the motor body into the **SET** position to begin programming. Using your **DCC controller**, send a **change direction command** to the point motor. This allows the motor to register the selected accessory address for use within your model railway layout.

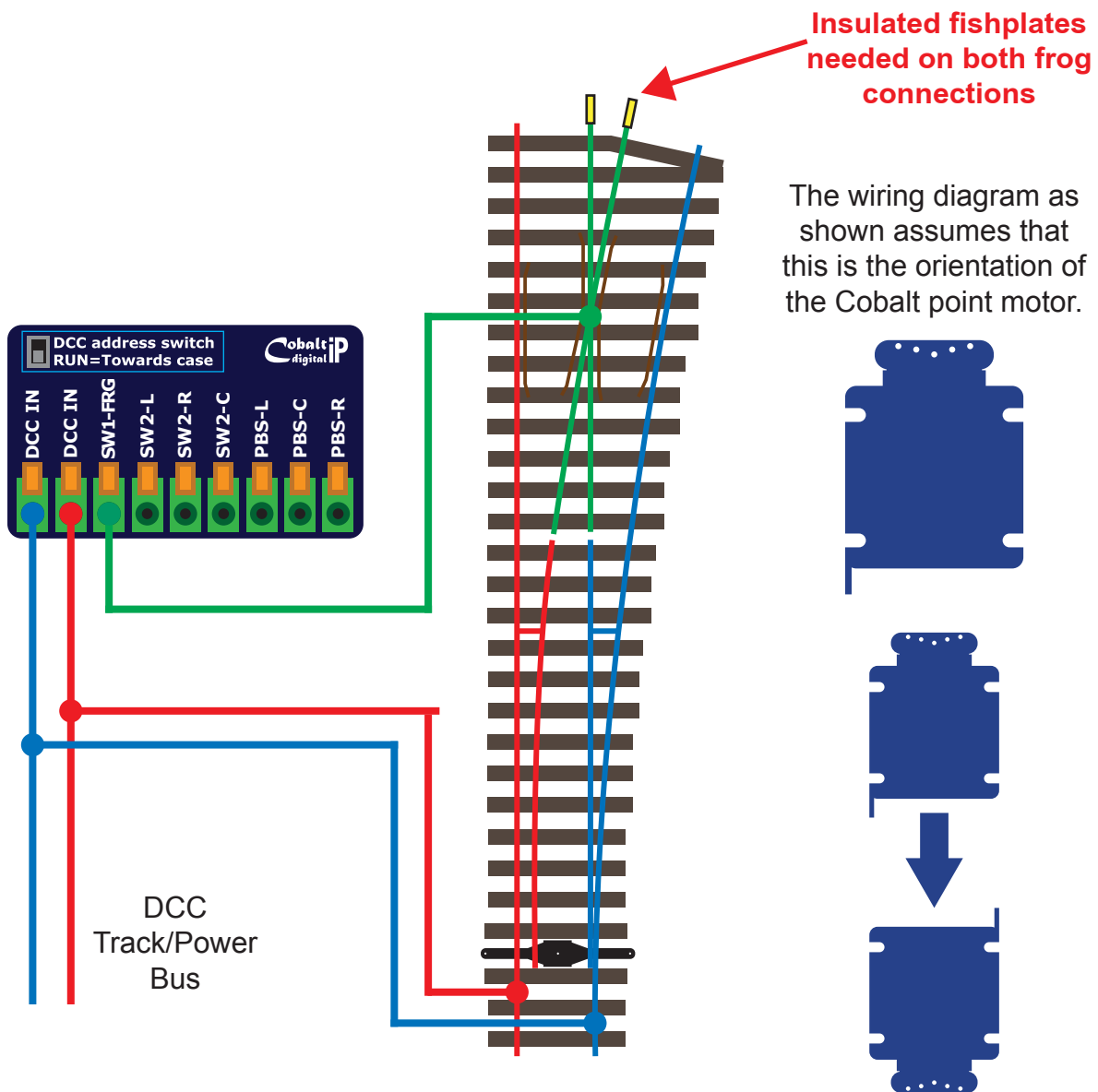


Finally, slide the **SW SET** switch towards the motor body into the **RUN** position to complete the programming process. The Cobalt iP Digital Point Motor is now programmed and ready to operate using the assigned accessory address through your DCC system. If you need to change the address, it can be reprogrammed as often as required by repeating the same procedure.



Electrofrog Point Frog Control from a Track/Power Bus

Connect the two **TRACK BUS** wires to the **DCC IN** terminals on the iP Digital Point Motor to supply DCC power. Then connect the **FROG** wire from the electrofrog turnout to the **SW1-FRG** terminal. This connection allows the motor's built-in switch to change the frog polarity as the turnout moves.

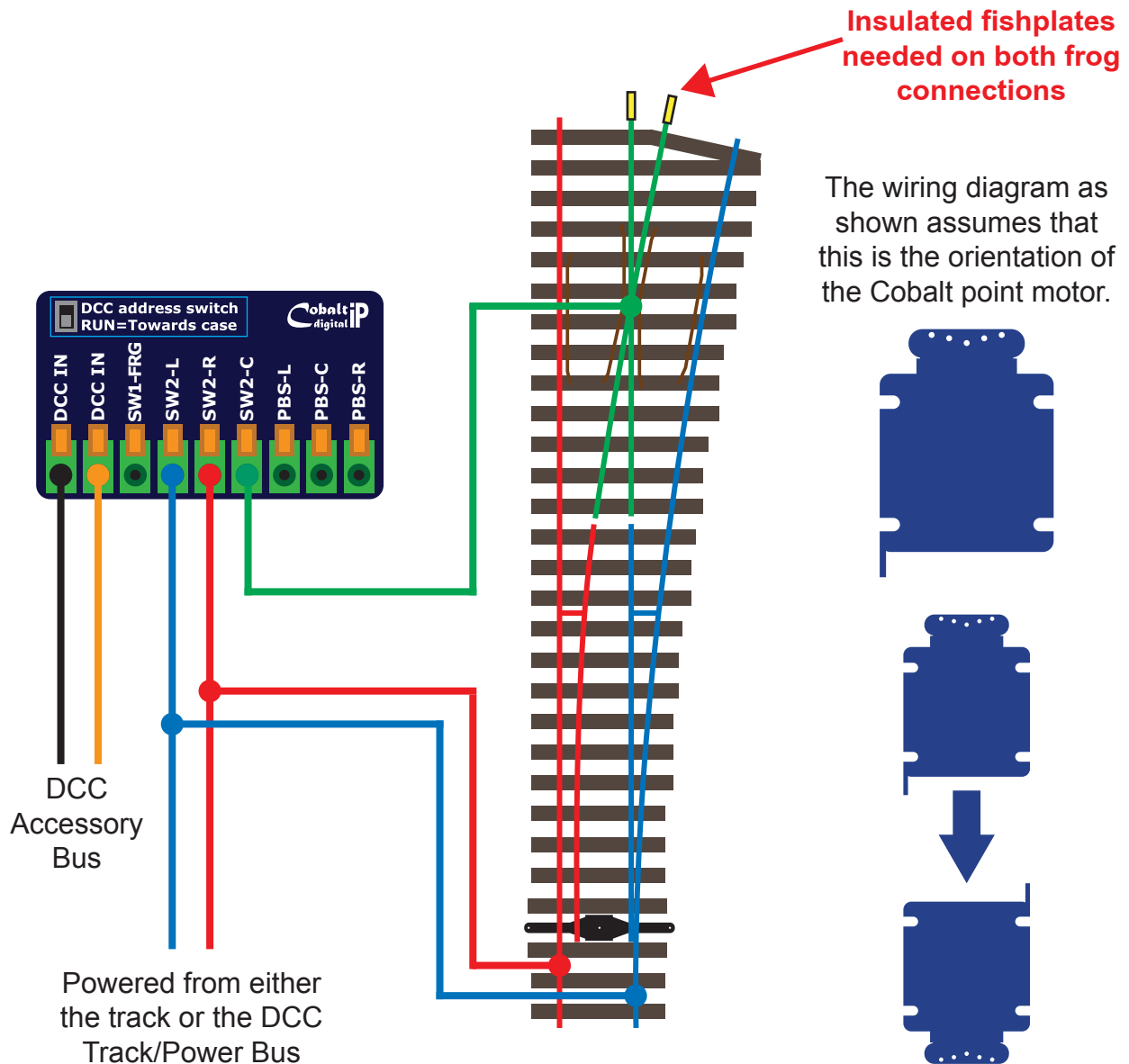


Insulfrog points do not need a frog connection

If an electrical short circuit occurs on the DCC controller when a train crosses the point frog, swap the **RED** and **BLUE** wires connected to the **DCC IN** terminals on the Cobalt iP Digital Point Motor. Once the wires have been swapped, test the point operation and check that the short circuit no longer occurs.

Electrofrog Point Frog Control from an Accessory Bus

Connect the **ACCESSORY BUS** wires to the **DCC IN** terminals on the iP Digital Point Motor to supply power to the motor. Next, connect the two **TRACK BUS** wires to **SW2-L** and **SW2-R**. Finally, connect the **FROG** wire from the electrofrog turnout to **SW2-C**. The SW2 terminals provide switched frog polarity to match the turnout position.

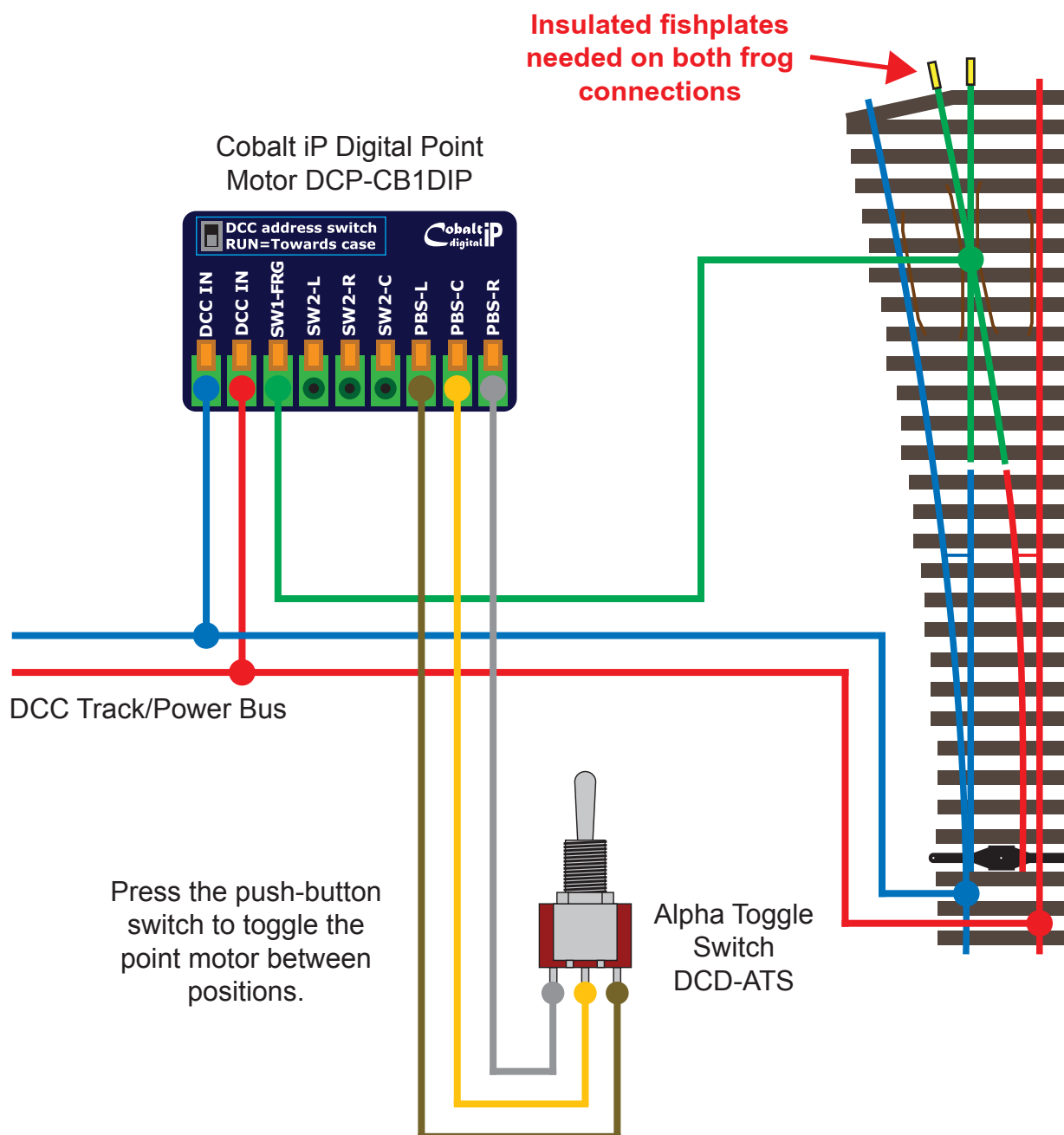


Insulfrog points do not need a frog connection

If an electrical short circuit occurs on the DCC controller when a train crosses the point frog, swap the **RED** and **BLUE** wires connected to the **SW2-L** and **SW2-R** terminals on the Cobalt iP Digital Point Motor. Once the wires have been swapped, test the point operation and check that the short circuit no longer occurs.

Toggle Switch Control

Simply connect the momentary, centre-off, spring-to-centre toggle switch common terminal to **PBS-C**, and the two switched terminals individually to **PBS-L** and **PBS-R** on the iP Digital Point Motor.



The toggle switch must be a momentary centre off type
On-Off-On Spring To Centre

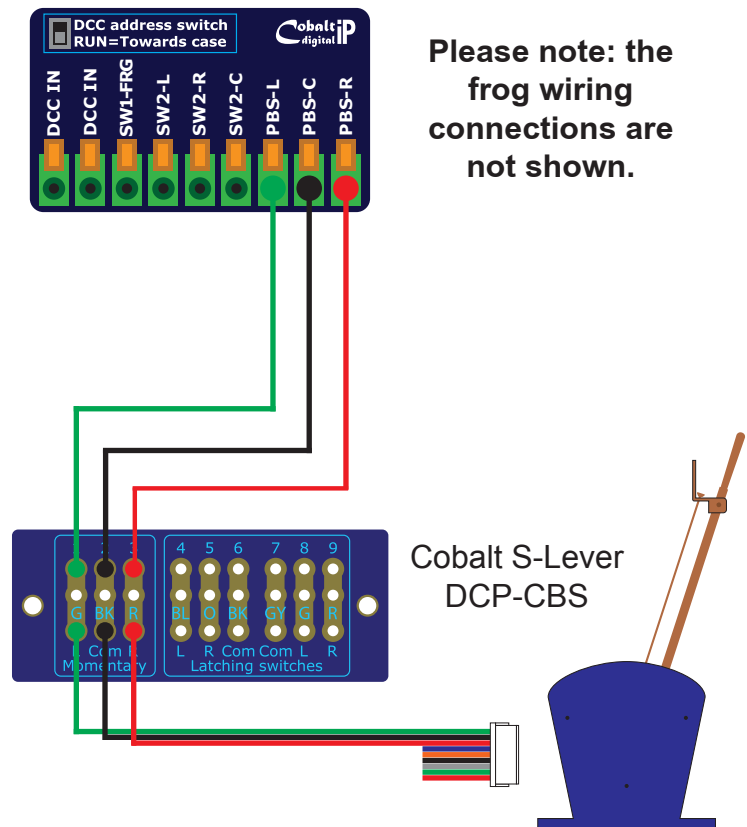
Insulfrog points do not need a frog connection

If the motor runs opposite to the switch direction, swap the **GREY** and **BROWN** wires at **PBS-L** and **PBS-R**.

S-Lever Control

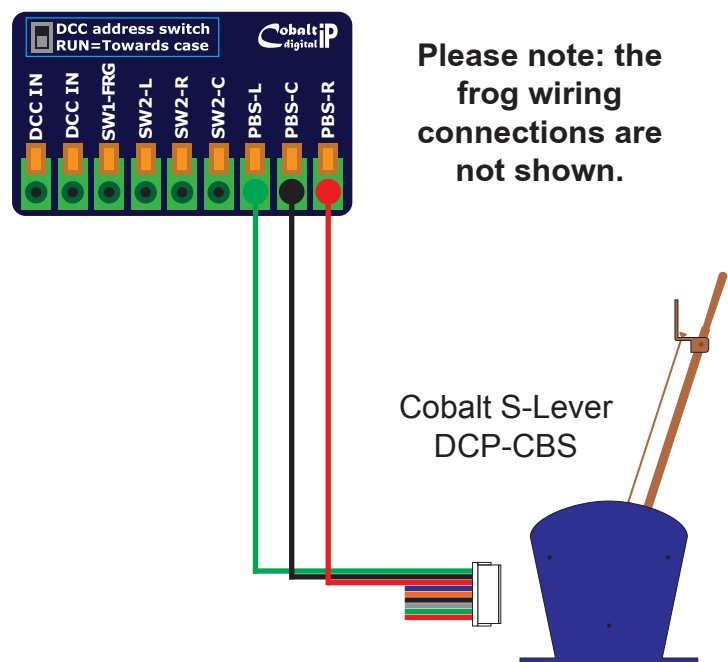
Simply connect the top three wires from the white connector on the S-Lever to the corresponding **PBS-L**, **PBS-C** and **PBS-R** sockets on the iP Digital Point motor.

With circuit board



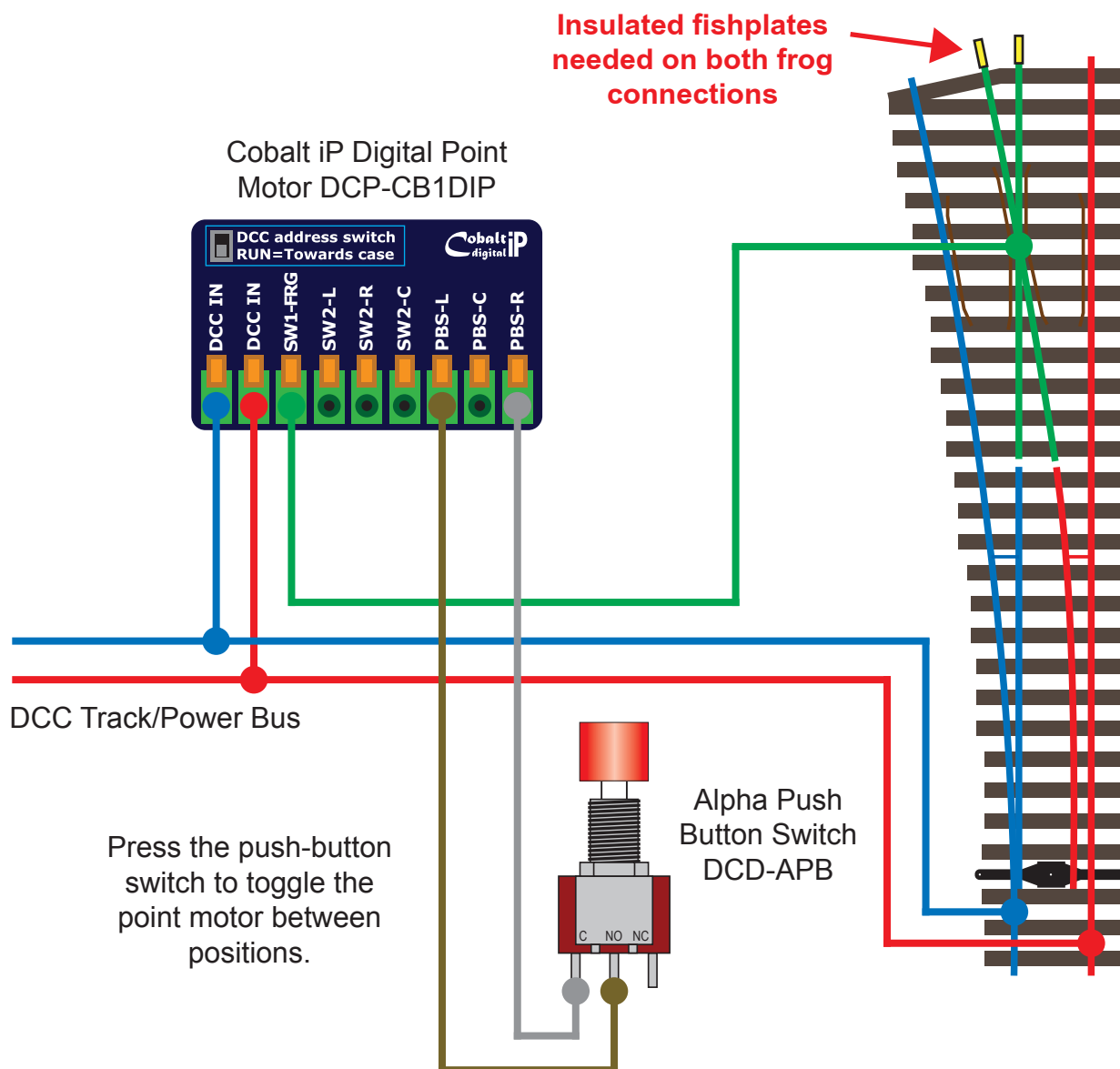
To reverse the output to match the S-Lever throw, swap the **GREEN** and **RED** wires at the relevant Cobalt S-Lever or Cobalt iP Digital point motor.

Without circuit board



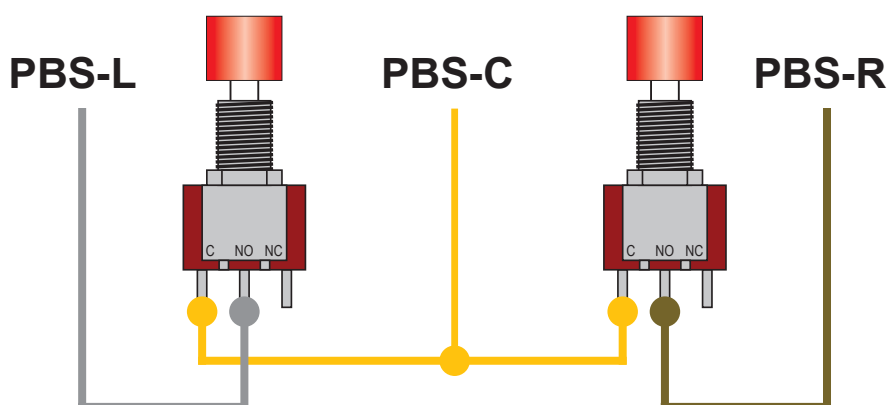
Push Button Control

Connect a normally open, momentary push-button switch to the **PBS-L** and **PBS-R** terminals on the point motor.



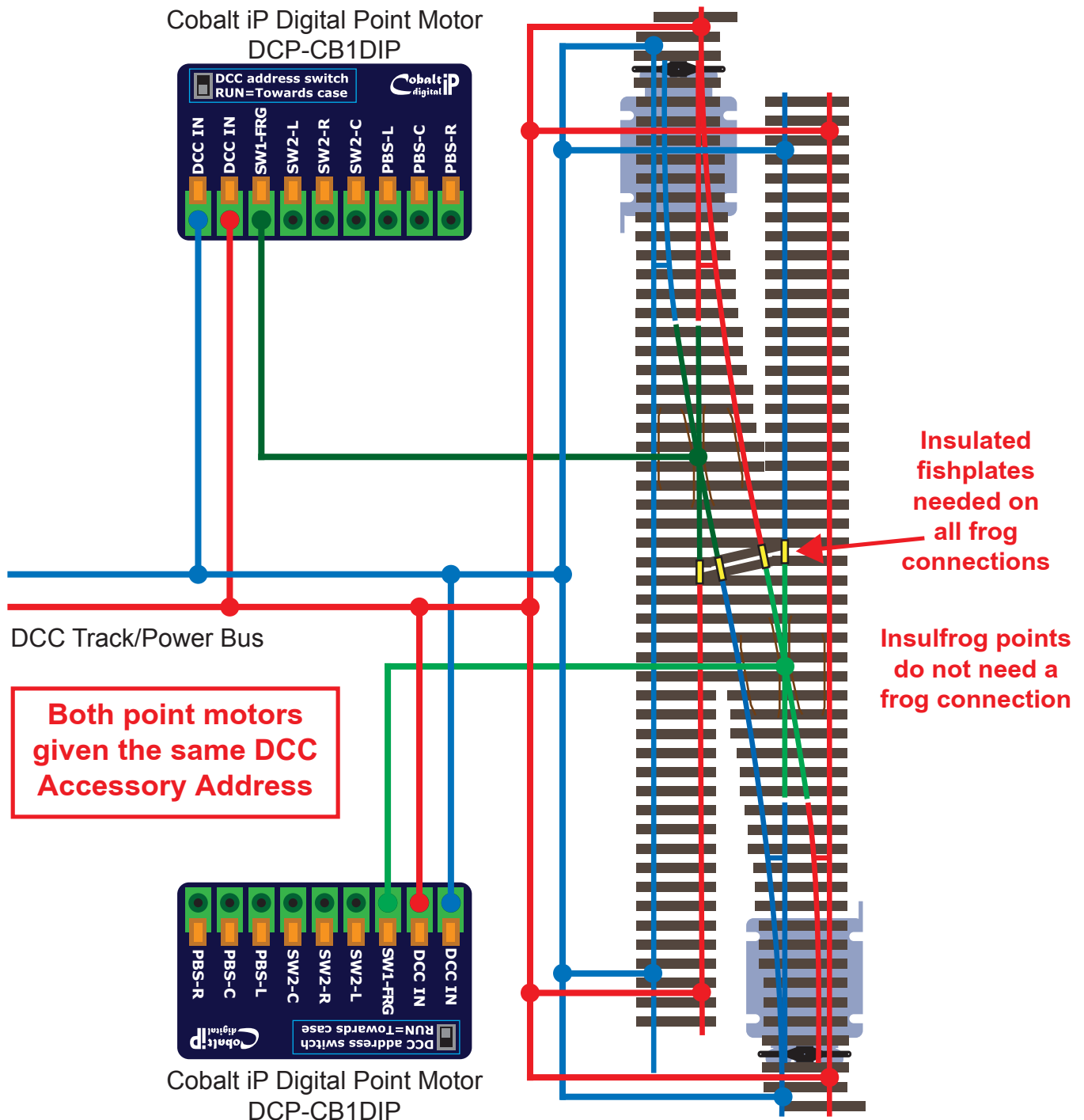
Insulfrog points do not need a frog connection

To use two push-button switches, one for each direction of the point motor, see the diagram below.



Controlling A Crossover

Connect the two **TRACK BUS** wires to the **DCC IN** terminals on both of the iP Digital Point Motors to supply DCC power. Then connect the **FROG** wires from the electrofrog turnouts to the **SW1-FRG** terminals on the relevant motor.

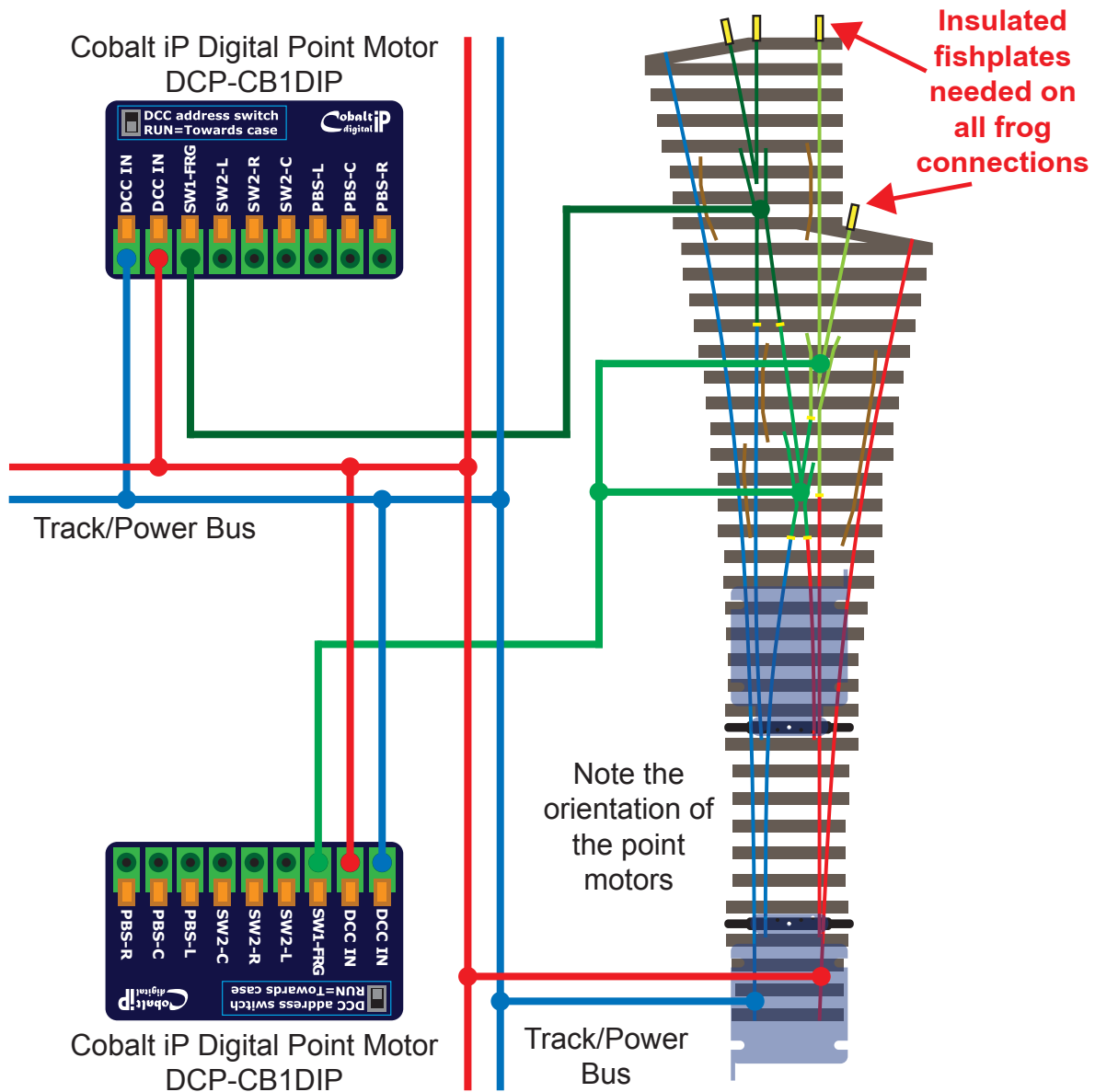


If one motor operates the wrong way, use the **197** special command to change its direction - see page 11 for more information.

If an electrical short circuit occurs on the DCC controller when a train crosses one of the point frogs, swap the **RED** and **BLUE** wires connected to the **DCC IN** terminals on the relevant Cobalt iP Digital Point Motor.

Controlling An Asymmetric 3-Way

Connect the two **TRACK BUS** wires to the **DCC IN** terminals on both of the iP Digital Point Motors to supply DCC power. Connect the **FROG** wires from the bottom **TWO** frog connections to the **SW1-FRG** terminals on the relevant motor. Finally connect the remaining **FROG** wire to the **SW1-FRG** terminals on the remaining motor.



If one motor operates the wrong way, use the **197** special command to change its direction - see page 11 for more information.

When wiring a cascade of frogs, check the polarity of FROG 1 before wiring the next frog. This makes it easier to identify and correct any wiring errors before they become difficult to trace through the cascade.

If an electrical short circuit occurs on the DCC controller when a train crosses one of the point frogs, swap the **RED** and **BLUE** wires connected to the **DCC IN** terminals on the relevant Cobalt iP Digital Point Motor.

Special Commands

The **Cobalt iP Digital Point Motor** includes three special commands that can be activated by programming specific DCC accessory addresses. These commands allow you to change the motor's direction and configure how the tie-bar behaves when power is applied.

We recommend avoiding accessory addresses **197**, **198** and **199** for normal point motor operation on your model railway layout. These addresses are reserved for the Cobalt iP Digital Point Motor's special programming commands. Using them as standard DCC accessory addresses could cause confusion during operation and lead to unintended changes to the motor's settings.

Accessory Address 197 – Reverse Direction



Reverses the motor's direction of movement from its original setting, allowing it to operate in the opposite direction to suit your model railway layout. Please note that using accessory address 197 to reverse the motor's direction will not change its original DCC accessory address, which will remain unchanged.

Accessory Address 198 – Cancel Tie-bar Centre-off



Disables the tie-bar centre-off function, allowing the motor to remain in the last direction it was set to when power is applied. **This is the factory default setting supplied with the motor.**

Accessory Address 199 – Activate Tie-bar Centre-on



Activates the tie-bar centre-on function, causing the motor to return the tie-bar to its centre position each time power is applied.

Each special command is programmed in the same way as the motor's normal DCC accessory address, using your DCC controller to send the appropriate command. After programming any of these special commands, switch the power to the motor off and then back on to allow the new setting to take effect.

Visit the Layout Concepts website today to access over 350 datasheets covering technical guidance and connection issues. Browse the relevant product pages and look on the right-hand side to find the information you need.