

MegaPoints ABC Generator

Automatic Brake Controller for DCC systems



User guide

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Requirements

Any DCC locomotive fitted with ABC facilities.

Description

The MegaPoints Controllers Automatic Brake Controller generator will generate asymmetric DCC to activate the braking feature on suitably equipped DCC decoders. ABC is fitted to Lenz silver/gold decoders, Zimo and many others.

The DCC waveform is slightly modified by reducing the voltage on one side of the waveform by around 1.6 Volts. This activates the ABC feature on the DCC decoder (*if present*) and causes the locomotive to gently stop. When the circuit is deactivated the locomotive will gently accelerate.

In its most simple form an ON/OFF switch is connected across the SWITCH terminals to activate the circuit. Later in this document we discuss other methods of activation including signal interlocking and track circuit.

MegaPoints Controllers use static sensitive components that must be handled with care.

Avoid touching any components or the circuit printed on the bottom of the board.

Avoid placing the board on any metallic surfaces including track.

Decoder Setup

We don't provide support for setting up decoders as this should be taken up with your supplier directly, however this section may be used to help get you started.

CV's

The following CV's are pertinent to ABC equipped decoders:

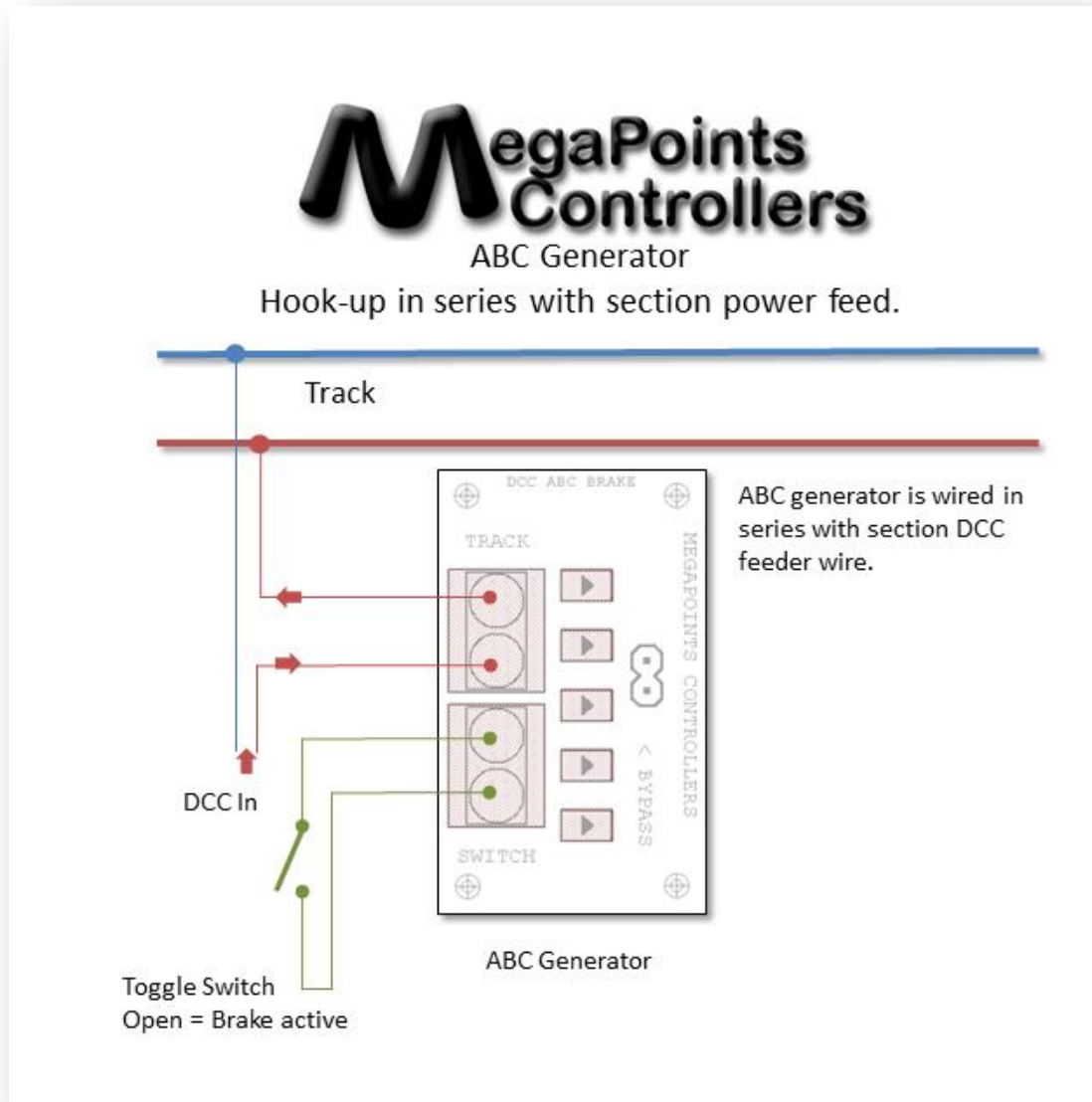
CV	Description
27	Directional stopping (stops in one direction only).
49, 50	Acceleration & deceleration time
134	Voltage threshold
141	Distance controlled stopping
143	Distance controlled stopping

This is not an exhaustive list and should be used as a pointer to get you going. Refer to your decoder manual for specific descriptions.

Not all CV's may be available on all decoders. Example above comes from Zimo decoder manual.

Connecting up

Manual switched control



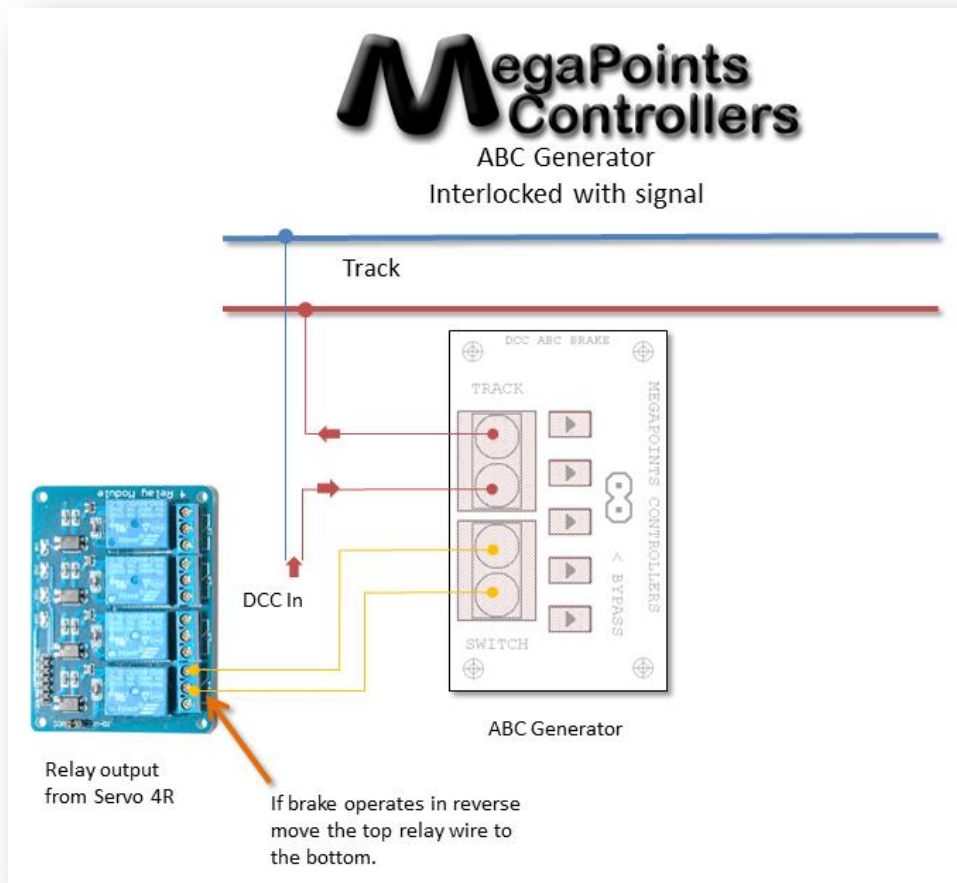
Connect the DCC section power feed to the TRACK terminals as shown. Connect a toggle switch (*not supplied*) to the SWITCH terminals.

When the switch is open the brake is active. When the switch is closed the brake is bypassed.

NOTE: Use a 2 Amp (*minimum*) rated switch at 30 Volts.

Interlocking with signals

This example allows automatic activation of the ABC circuit when a signal changes to danger using a Servo 4R.



Use the centre relay contact plus one of the outer contacts. If the brake operates in reverse (*brakes on clear*) swap the outer terminal for the opposite side.

The relay can be driven by a Servo 4R or Relay Driver that's part of a 12 channel Servo Controller.

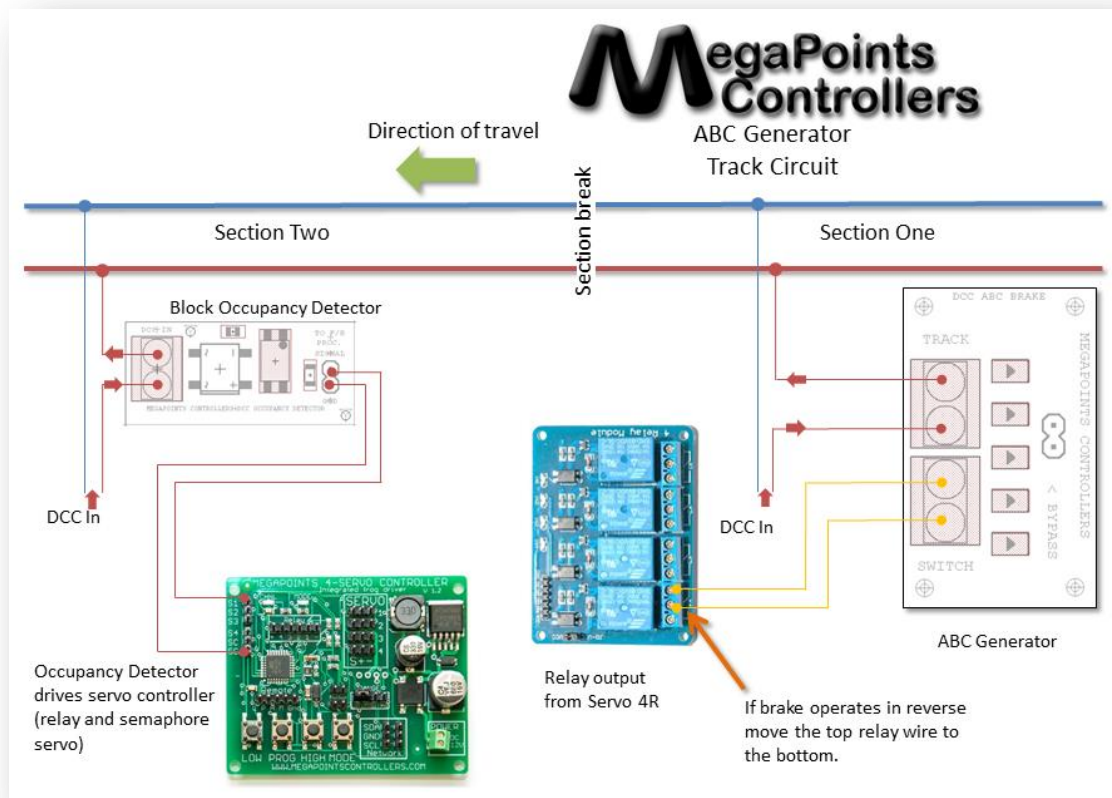
Adding the ABC module to a relay does not change the input options. This means the signal and brake circuit can be activated by any of the following means:

- Locally (Servo Controller) attached toggle switch.
- Network via MultiPanel Processor / mimic panel.
- Network via DCC command (*requires DCC Adaptor*), either directly or via MultiPanel.

Track circuit - full automation

As well as switching a signal its quite simple to fully automate braking using one of our DCC Block Detectors. The block detector determines whether the block ahead is occupied and operates a switched input in a servo controller thus activating a semaphore signal and the braking circuit automatically.

The following diagram provides an overview of how this is configured.



By adding a second relay driven via a MultiPanel or DCC accessory decoder it is possible to override the brake forcing a stop.

Contacting us

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If you have any product improvement suggestions we'd be very pleased to hear from you.

NOTE: We operate on a policy of continuous improvement. Colours, specifications and even the placement of components may vary from time to time. Documentation will continue to be updated to reflect changes or answer frequent customer questions.