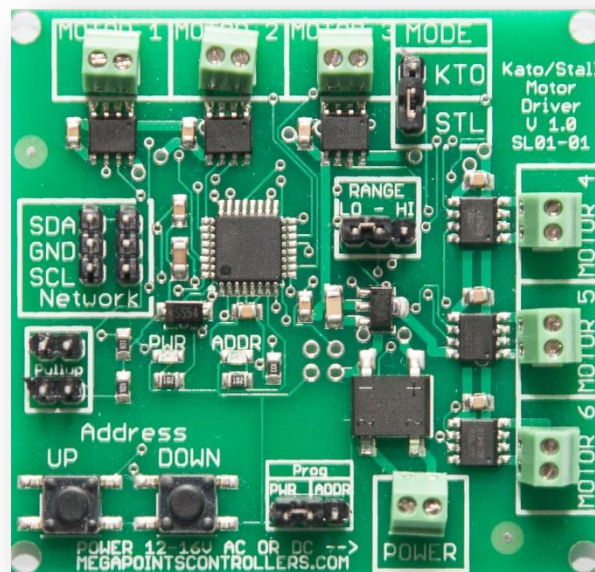# Stall / Kato™ turnout driver
by MegaPoints Controllers

User guide for stall motors and Kato points driver board.

User guide

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Stall motor / Kato driver Board

Introduction

The intelligent driver board is capable of driving up to six stall, reversible turnout motors such as Tortoise™, Uhlenbrock, or Kato turnout motors. *Do not use this board with the conventional three wire solenoids commonly supplied by Hornby, Peco or Seep. For these you should use our Solenoid Driver.*
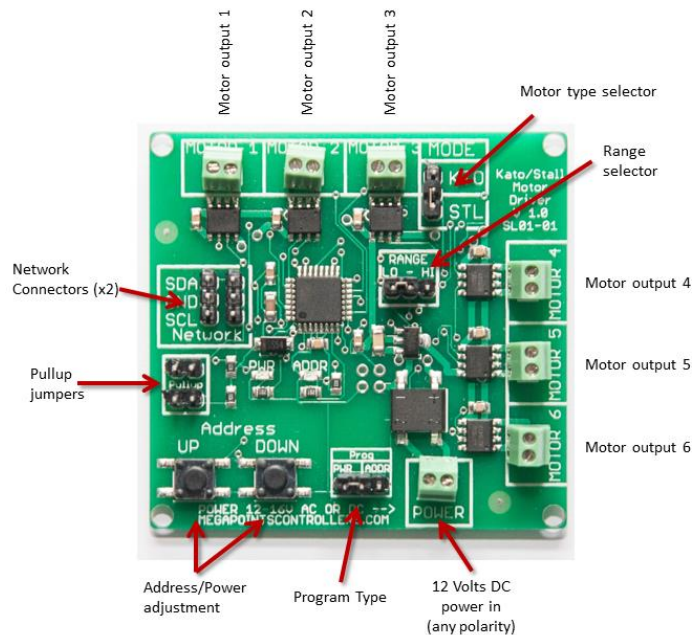
The driver board is designed to be installed on the layout in the vicinity of the turnout motors and controlled either directly by our DCC module or MultiPanel Processor via the network connector.

The driver board includes a short network cable suitable for testing or extending by the user.

Before hooking up you must set the motor type jumper to either "KTO" for Kato or "STL" for stall motors. Failure to set this correctly may result in damage and incorrect operation.

> 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.

Hooking up

See the image below for details.

WARNING: Take care not to short circuit the motor terminals as this will result in damage to the output IC. Power should be from a 1 Amp (minimum) 12 volt DC power supply. The power terminals (located at the bottom) have no polarity.

Each motor is connected to one of the six pairs of screw terminals located around the upper and right edge. Take care not to overtighten. You can reverse the wires to reverse operation if desired.

Network

Two network connectors are located within the "Network" bounded box. Ensure SDA connects to SDA on all network connections. Also note that all network devices must be powered up for the network to function.

Pullup terminals are provided for completeness and are activated by installing a pair of jumpers. These are supplied on two boards when purchased as part of a MultiPanel Starter kit reversible edition.

Jumpers

MODE jumper

This sets the motor type and should be set before hooking up.

For stall or reversible motors such as Tortoise or Uhlenbrock set the "STL" jumper position. Power will be applied for five seconds when changing position.

For Kato select the "KTO" jumper position. Power will be applied for 10 – 50 ms depending on the power setting.

If the jumper is changed while the unit is powered you will observe an alternate LED flashing for two seconds before the unit reboots.

Prog ADDR jumper

The "Prog" jumper can be connected to the right side "ADDR". This activates the Address buttons to change the board address from 2 – 17. By default the board is shipped at address #2 to work directly with a DCC module or the first 12 outputs from a MultiPanel processor.

Pressing either the UP or DOWN buttons will increment or decrement the address between the range 2 - 17. The address is flashed out on the ADDR LED.

Range jumper

Each network address decodes signals for up to 12 devices (*see the Servo Controller for an example*), however this board has connections for up to six reversible motors. The range jumper allows you to select the first or second six for any network address by placing the jumper in the "LO" or "HI" positions.

For example, to control up to 12 motors using channels 1-12 on a MultiPanel configure the first board on the "LO" range and the second board on the "HI" range. Both boards should use the default network address of #2.

Prog PWR jumper

Placing the jumper into the "PWR" terminals activates the UP and DOWN buttons to adjust the power setting. This is set across the entire board. Power is controlled in five steps from 10 ms to 50 ms in 10 ms increments. As the UP and DOWN buttons are pressed the power setting is flashed out on the PWR LED.

When finished adjusting it is suggested the jumper is returned to the centre position (vertically) to disable the buttons and prevent accidental adjustment. See image.

The power setting only operates with Kato point motors. In stall motor (STL) mode the output is active for five seconds before powering off.

Factory reset

The unit can be factory reset by holding down BOTH buttons while powering the unit on. You will observe the unit reboot and the default address (#2) and power (10 ms, #1) flashing on the PWR and ADDR LEDs. Factory reset is possible any time the buttons are held during power on irrespective of the jumper position.

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.