



MASTERswitch[®] V2

Guaranteed to improve performance, bring much greater reliability to any twin-coil solenoid and add the benefits of LED panel lights & frog power switching - all from one convenient package!

We enjoyed great success with our original MASTERswitch and received lots praise plus some great feedback from users. We've taken note of user suggestions and created MASTERswitch V2. A truly great product with all the great benefits of the original, and much more!

- * Low power surge at turn-on - less than 100mA
- * Universal Power supply now accepts AC, DC or DCC at between 12 and 20 volts comfortably
- * Greater power to switch multiple Peco, H&M or even the very high current NJ international solenoids with ease.
- * Common + LED solder pads with built-in resistor
- * Clearer connection layout, with screw terminals on all of the common connections.
- * ZERO recovery time despite HUGE power handling
- * Still with our totally user friendly "Goof Proof" Warranty

We also noted your frequent request for switches and LED's to be provided separately to give choice... So from now, all MASTERswitch products will be packed separately from control swithes etc, giving you the choice of either our switch and LED packs, or using your own!

TIP: You can power MASTERswitch V2 with any form of power, but we've discovered that a laptop computer power supply is the perfect way to power solenoids: Most are 17~19volts DC, well regulated and 3amps, and when used with MASTERswitch, they give perfect results! Best of all, these are usually available free as laptops are retired from use often.

About MASTERswitch® V2

MASTERswitch® V2 contents:

MASTERswitch V2 is packed in pairs: Each pack consists of a set of parts as follows: Instructions & two MASTERswitch V2.

MASTERswitch® V2 Features & Benefits:

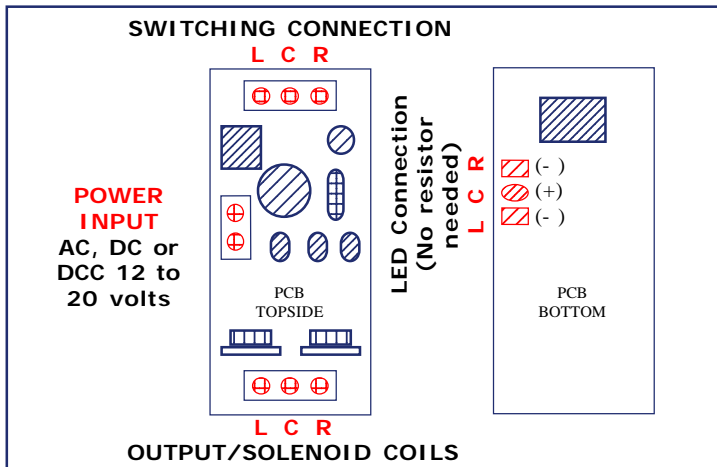
- * Use conventional switches in place of momentary, giving visual indication of turnout position
- * Easily add panel LEDs with built-in LED connections (no resistor needed!) and/or use them for your LED signals!
- * Simple connection, with all main connections via easy-to-use screw terminals (Clearly marked for easy use)
- * Spare terminals on switch for Frog Power switching
- * Universal power - runs on 12~20 volts AC, DC or DCC
- * Low turn-on current (now appx 50mA max per unit)
- * Huge power ability - Guaranteed ability to easily and reliably throw minimum 2 (up to 4) solenoids at once
- * Guaranteed impossible to ever burn out a solenoid
- * Guaranteed improved performance from any brand DCC accessory decoder when used with MS V2.
- * Guaranteed longer life from panel switches due to the super low switching power needs of MS V2 operation.
- * Low power switching allows light wire for panel wiring
- * Can be combined with other devices or switched by anything from a std switch to a delicate magnetic reed switch
- * One year totally Goof Proof Warranty.

Economical MASTERswitch Accessory packs:

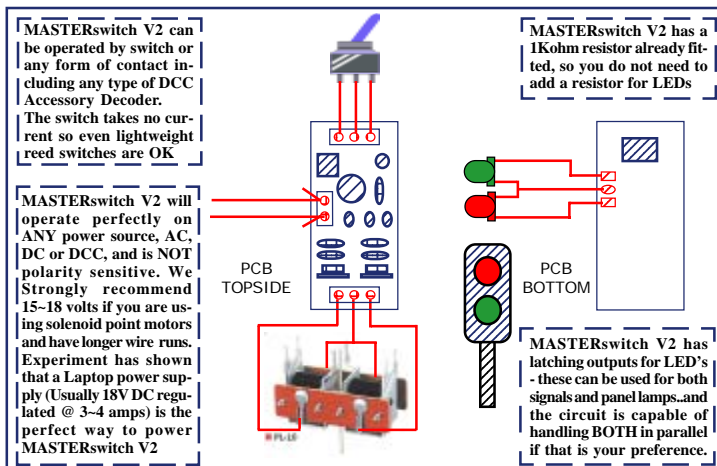
DCM-MSP1	3x DPDT toggle Sw, 3x 3mm Bipolar Red/Green LED (3 lead, common positive)
DCM-MSP2	3x SPDT Momentary Pushbutton Sw, 3x 3mm Bipolar Red/Green LED (3 lead, common positive)

MASTERswitch is designed and made by DCCconcepts Perth Australia

MASTERswitch® V2 Connection data



MASTERswitch®V2 - Common Uses



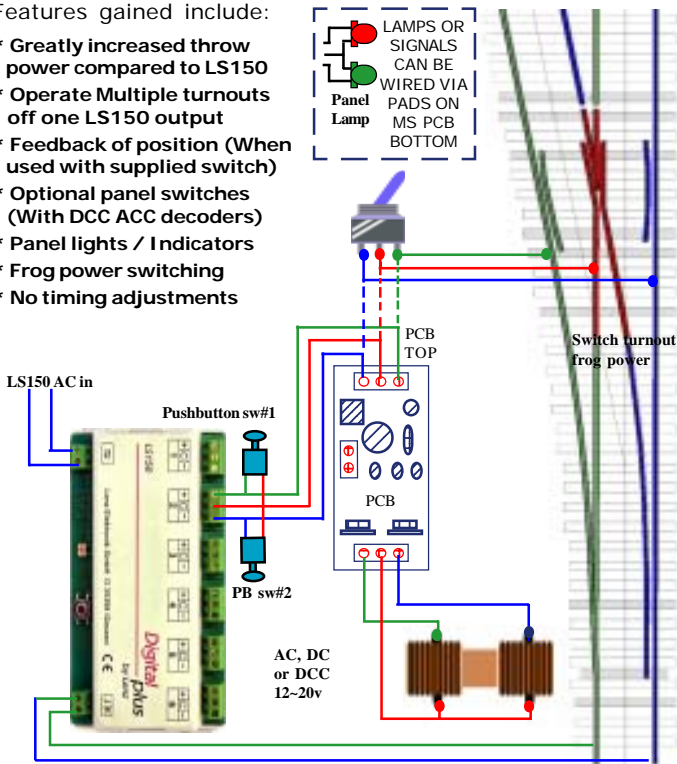
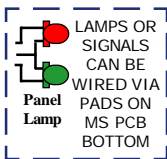
MASTERswitch® V2 General connection data

MASTERswitch V2 can be used to improve the operation of ANY solenoid type turnout/point motor and will also extend the operational performance and flexibility of use of every DCC accessory decoder.

Our example uses the very common Lenz LS150. In this example, we show the connection of the LS150 & BOTH the connection for twin coil & motor drive point motors to the MASTERswitchPLUS.

Features gained include:

- * Greatly increased throw power compared to LS150
- * Operate Multiple turnouts off one LS150 output
- * Feedback of position (When used with supplied switch)
- * Optional panel switches (With DCC ACC decoders)
- * Panel lights / Indicators
- * Frog power switching
- * No timing adjustments



LS150 DCC connection to track **DCC power can also be used for MASTERswitch V2 but be sure your system has enough power

MASTERswitch® V2: Controlling a crossover

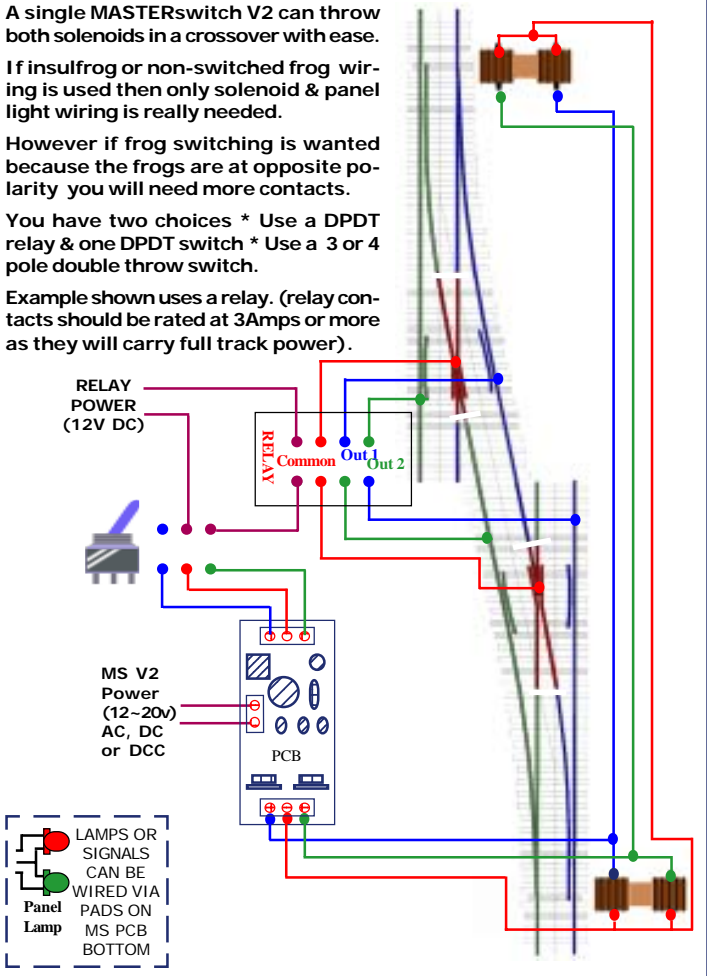
A single MASTERswitch V2 can throw both solenoids in a crossover with ease.

If insulfrog or non-switched frog wiring is used then only solenoid & panel light wiring is really needed.

However if frog switching is wanted because the frogs are at opposite polarity you will need more contacts.

You have two choices * Use a DPDT relay & one DPDT switch * Use a 3 or 4 pole double throw switch.

Example shown uses a relay. (relay contacts should be rated at 3Amps or more as they will carry full track power).

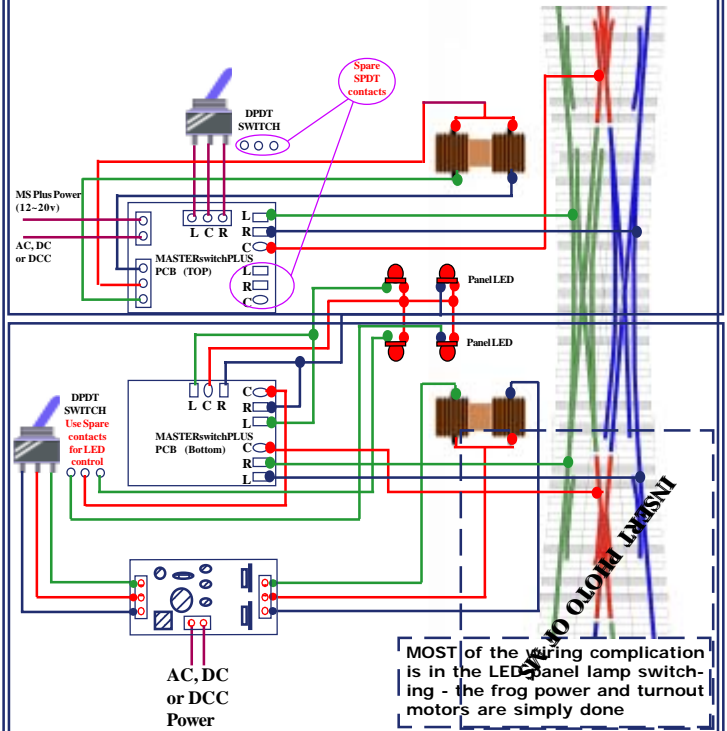


MASTERSwitch® PLUS & MS V2 Control a Slip

A double slip is simply two points or turnouts which overlap. Wiring this sort of turnout is much simpler than many expect.

Using one MASTERSwitch PLUS and one MASTERSwitch V2, we manage to control the whole thing, switch frog power AND have full LED panel lighting - yet we still have TWO spare sets of contacts available for signalling, operating other accessories, section isolation to protect against over-running of a wrongly set turnout etc.

NOTE: On a double slip, each solenoid switches at the same time as the common crossing/frog at the OPPOSITE end of the slip!



MASTERswitch®V2 - Think outside the square!

Each MASTERswitch is equally at home on DC, AC or DCC powered layouts. It is incredibly versatile and has, if you look at it closely, an amazing set of options that can allow you to really "think outside the square" and control almost anything on the layout.

In addition to any "operating switch" contacts, these are:

- * One set of momentary outputs able to switch several solenoids at once
- * One set of llow power outputs (common positive) for LED's
- * Spare latching contacts on the operating switch

Additionally, MASTERswitch itself can be triggered by anything capable of creating a simple low power contact - It can be either momentary or latching. from a reed or magnetic switch to a simple track contact, any DCC decoder or accessory decoder, any detector that is able to create an on/off pulse or latched connection or even another MASTERswitch.

The possibilites are endless!Combine the switching power of each set of the switches latching contacts with a DPDT relay coil each side (each switch alternating control of two relays) and ONE Masterswitch can then control MANY circuits or devices!

Daisy chain MASTERswitch and with several, you could control every signalling possibility on a single, double or multitrack main line or complex station throat INCLUDING interfacing of turnouts and appropriate "modification" and interlocking of signal aspects to correctly reflect line status - AND you can STILL switch frogs, isolate sections ahead of reversed turnouts AND automate reversing loops all at the same time - with NO need for human intervention at all!

IT'S NOT COMPLICATED AT ALL.

As I was writing this manual, it struck me that to many of you, several of the diagrammes might start to look intimidating. Don't be put off by that - there are only really THREE basic switching arrangements.

- (1) Polarity change (as in Frog polarity)

In this, the centre always goes to the frog, the Left and right wires are routed to the appropriate rails.

- (2) Optional control (Solenoids and LEDs)

Centre is always common and each of the other leads is connected by the switch.

- (3) Reversing: I tem controlled by terminals either end of DPDT switch. Outside pairs of terminals joined by diagonally crossed wires. Supply goes to centre terminals of switch.

MASTERswitch® V2 - Specs & comments

Pack contents:	2x MASTERswitch V2, 1x Manual
Input Power requirement:	12~20volts, AC, DC or DCC (We recommend that you use 15 volts or greater if possible)
Turn on load: (momentary)	Appx 50Ma avg , (all will peak at 50mA at turn on, dropping rapidly to a very low level)
Solenoid current: (momentary peak)	12 amps (max momentary) - you can reliably switch up to 4 Peco point motors at once.
SPST Latching Switch contacts:	Rated 3 amp continuous (Safe for frog power switching under DCC & all signalling etc)
Solenoid connection:	Screw terminals for easy connection
LED Connection:	regulated with resistor. Safe for all LED types.
Note re -Solder pads:	Solder pads have been coded by shape for easy identification - "Centre" or common pad in each set is oval, Left & right pads are square.

MASTERswitch® V2 - Warranty details.

A 100% pre-check means that every MASTERswitch V2 will work as claimed, however we are realistic enough to realise that perfection is impossible, so should you have any problems which do lead to damage, or experience failure within one year of purchase, we'll replace it for you - all we ask is the cost of return postage.

MASTERswitch V2 is tough and we've tested it in every possible application we can find with no failures as all - so we'd also like you to be adventurous and creative in the way that you use your MASTERswitch V2... So please - DO try new things and experiment with confidence because if things go wrong, we WILL look after you.

If you need to make a claim under "goof proof" either return it to your retailer or send it to us with information about the fault plus a copy of receipt & either \$A5 or C/Card info (for return post costs)

PLEASE NOTE THE FOLLOWING REGARDING DIAGRAMMES

We've done our best to make sure that all diagrammes are correct, especially where there is a relationship between turnout motors and related frog power etc, however in the "real world" visual orientation can make such things confusing. Don't worry about this too much - follow the diagrammes as closely as you can and if things are "backwards" just change over left/right.

However, we don't claim to be perfect, so if you do find an error please email us at sales@DCCconcepts.com to let us know, and we will both advise the correct method and of course change the manual for subsequent editions

Many thanks from all at DCCconcepts.