The PSX Circuit Breaker

How to use it, how to connect it <u>and</u> how to set it up for best results

We do like this product, but the PSX manual is the most daunting thing we have ever read. Most of you will be happy to just get it installed and working to protect your layout in the simplest and most efficient manner, so we've simplified all of that onto one page.

(Of course, there will be those who wish to explore the limits - so we've included a full copy of the PSX circuit breaker manual as a PDF with your PSX circuit breaker. You will find it on a DCCconcepts branded USB memory card/stick included in the packaging)

If you still have some questions, please do not hesitate to ask. Please call us on 01729 821 080 or email salesuk@dccconcepts.com

How to set up your layout wiring to make best use of this circuit breaker

This circuit breaker will both add protection to starter sets with minimal built-in protection & supplement the circuit breaker already built in others.

You can of course simply connect it between the controller and anything else, but to do that will not give you the ideal result.

Now you have a DCC circuit breaker, it makes sense to consider separating train power and accessory power. Apart from better system protection from the most common source of short circuits or overloads (the running tracks) a circuit breaker will let you separately protect the running track and accessory bus power so that a short circuit or overload in one does not affect the operation of the other.

If you will use only ONE circuit breaker, then because the track is the most likely source of overload or accidental short circuits, it is sensible for you to connect the accessory power bus directly to the control system and place the circuit breaker between the controller and the track.

The main wiring of your PSX Circuit Breaker is very simple to do: (NOTE: The PSX is only suitable for use with DCC systems.)

(1)   Take the track power output and connect it to the two upper terminals as shown below (LHS). Daisy chain from the same connector (using the two lower terminals) to connect the accessory power bus. Please note the red/black sequence in the drawing and be consistent.

(2)   Connect the two RHS terminals of the PSX Breaker to your track power bus. That is all there is to it! (Now we just need to set the trip current)
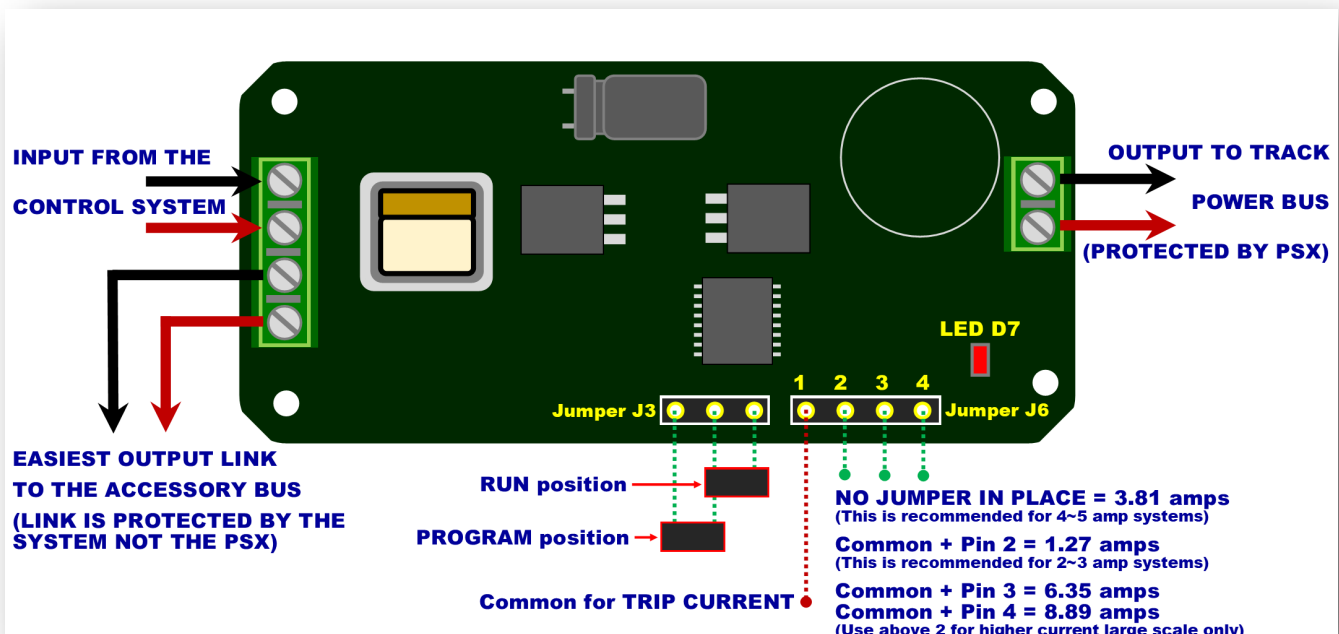
Setting the trip current on the PSX Circuit Breaker correctly:

Out of the box, the PSX Circuit Breaker will add protection and buffer the control system from many voltage spikes and harmful short circuits, but it still needs to be properly set for the best results.

As we already indicated, it is the track power that will be the source of most overloading and accidental short-circuits, so we need to set the PSX trip current so that your PSX circuit breaker acts BEFORE the limit of your control system is reached. That way, the system is properly protected AND if there is a short or track overload, accessories such as point-work will still be able to operate to correct things if needed.

It is possible to set trip current using CVs but the process is not that simple and some systems may not make this possible. It CAN be done very easily with a simple wire link though—and we think that this is the best approach. (To set via CVs, move the J3 jumper as shown. Use Program on the Main.)

All you need to do is use the solder pads (marked J6 in the drawing above), making a simple soldered link between two of them to set the trip current. The diagram above tells you which two to use and also recommends selections based on the total output power of your DCC system.

Being conservative always makes more sense: here are some specific recommendations:

DCC systems with lower power limits, small power supplies or having limited overload with protection: SET TRACK TO 1.27 AMPS.
This covers Roco, Roco Z21 Black, Roco Z21 White, Bachmann Dynamis and EZ Command, ALL Hornby, NCE PowerCab, Piko, Digitrax Zephyr, etc.

DCC Systems 4~6 Amp power limits and good quality substantial power supplies: SET TRACK TO 3.81 AMPS.
This covers ESU ECoS, NCE Power Pro Systems, ZTC full system, Digitrax 5 Amp systems and all other "full power output" combinations. (Please note we also think that "fine scale O scale layout systems" should be set to this level as modern O scale uses very little power. If you have older O scale or "tinplate" or "hi-rail" O scale, then you should experiment with higher trip currents PROVIDING they are lower than your DCC systems power output.