



Using words like detection, feedback and sensor often results in an assumption of complicated things to be done and difficult installations, often needing gaps in the rails and added wiring that is not welcomed by many.

We too think that having already connected so many wires to make a DC layout work OR having “gone digital” to reduce wiring complication, it simply seems an unnecessary burden to add it all back to get things to work!

So... We are constantly looking at ways to preserve your modelling sanity - and ours!

The subject of this Newsletter is a small device that will do many things and bring a great sigh of relief to most.

So what is this clever wee thing?

It is a simple magnetic sensor

- It can be added at any time without disturbing track or its wiring
- It is small enough to fit between the sleepers of Peco code 100 and code 75 track... and either fits easily or requires only a very slight adjustment between sleepers of any other brand of track too
- It will be pretty well invisible the moment it is installed
- It needs no added power in your wiring and adds no load to anything
- It has no particular polarity or power source requirement
- It needs about 2 seconds with a 4mm drill to prepare the place it will be installed. For those in the rest of the non metric world, that is a #20 drill... or 5/32" ~ 11/64" in imperial
- A dab of PVA or similar glue will hold it in place while leaving it easy to remove.

So - how is it activated and how does it act?

In essence it is a simple “normally off” switch so it acts like a momentary push button . The difference is that instead of needing a finger or some form of pressure, it closes the circuit when a magnet is close to it, so a magnet hidden in or under rolling stock or locomotives will do the job perfectly.

As all the fancy words in the first line of this newsletter just mean the same thing, that something has happened and told something else to act / react, it is almost universally usable for just about anything at all in automation, signalling, feedback to control panels or even telling your train to stop or your turnouts to change to prevent over-running a turnout that is set against a train.

Because you can choose left, central or right placement of the sensor and magnets, they can also be directional!

Sensitivity is good too. Use a tiny magnet that has to be close to the sensor to trigger it OR use a bigger one to allow it to be up to a 12mm or more away and still react. (That’s about 1/2 inch for rest of you). We love them!

Lets take a look at the device itself.

As promised - its simple to look at and use. Part number is DCP-TMS. It comes in a pack of 4 at a UK retail price of £12.95. Of course, if you are outside UK VAT area, this will be about £10.80 per pack as UK VAT tax will not apply.

We cannot pack magnets with it for two reasons... We do not want them to magnetise the inside of the switch by being too close for too long... and WE cannot know what scale you will model in so we can’t exactly make a good choice in magnet size or shape!

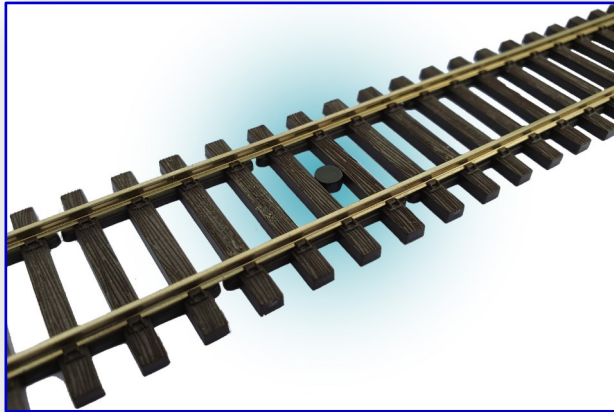
Actually while ANY neodymium (aka super magnet) will work, for those who want to experiment we have three magnet packs that will give you a wide selection to choose from. All can be seen on our website of course.

- DCX-PBM 12 magnets, as per the Powerbase start kit / value pack style
- DCX-PBMXE 24 assorted magnets, Various sizes for O, OO and HO etc (Use for more distant detection)
- DCX-PBMXS 30 smaller assorted magnets, various styles, for N or closer detection on OO and HO etc.



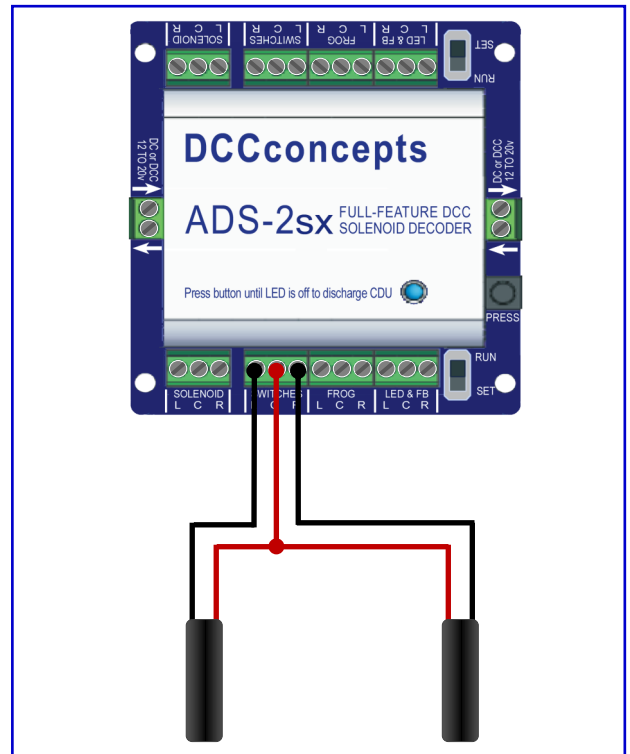
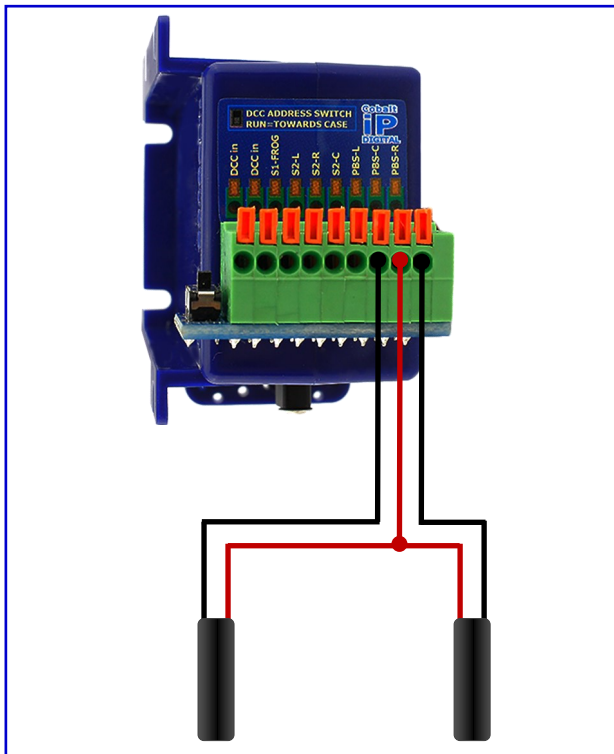
A picture is worth many words...

These two pictures will clarify the size and simplicity of this sensor.



Simple diagrams also explain things clearly...

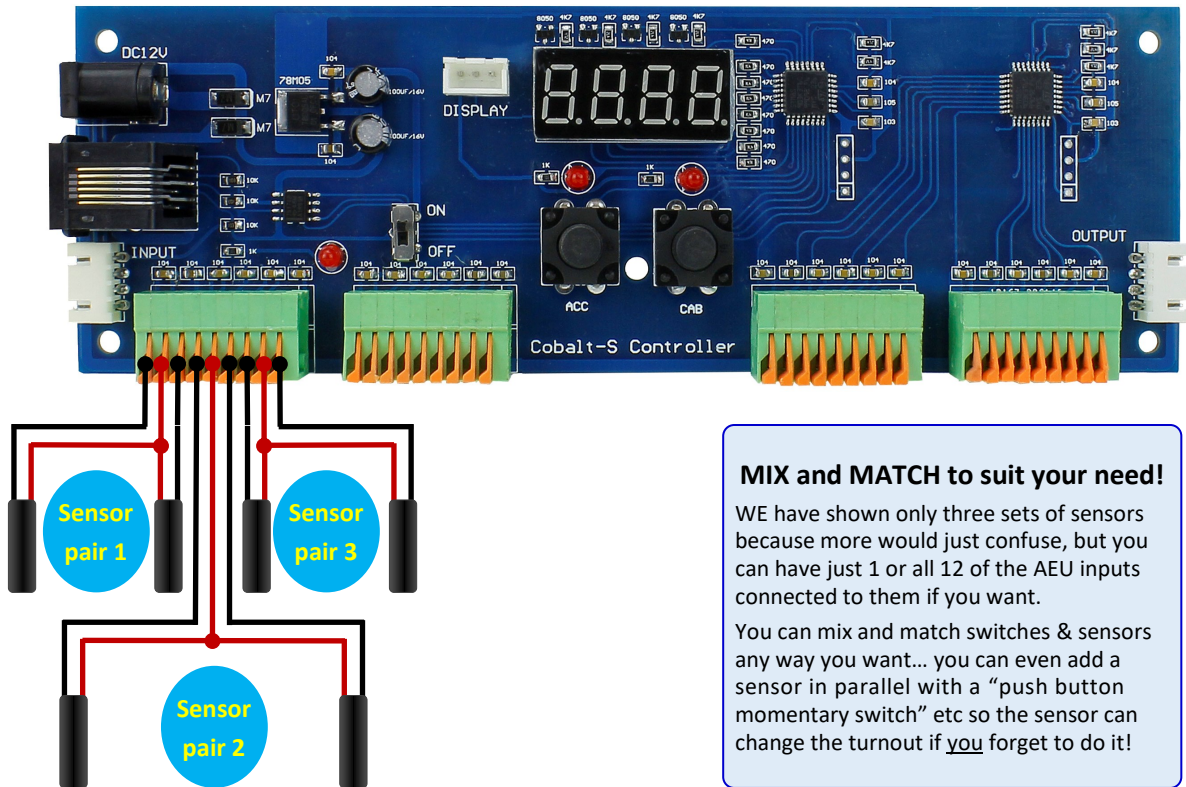
These two show connection to a Cobalt iP Digital motor and an AD-S2 decoder. Other things are wired the same





How about as easy-to-do digital automation...

If we use sensors to trigger an Alpha AEU Encoder, then it will create a DCC accessory command that can be transmitted to an Alpha Mimic display, turnout or decoder anywhere on the layout without the need for wires!

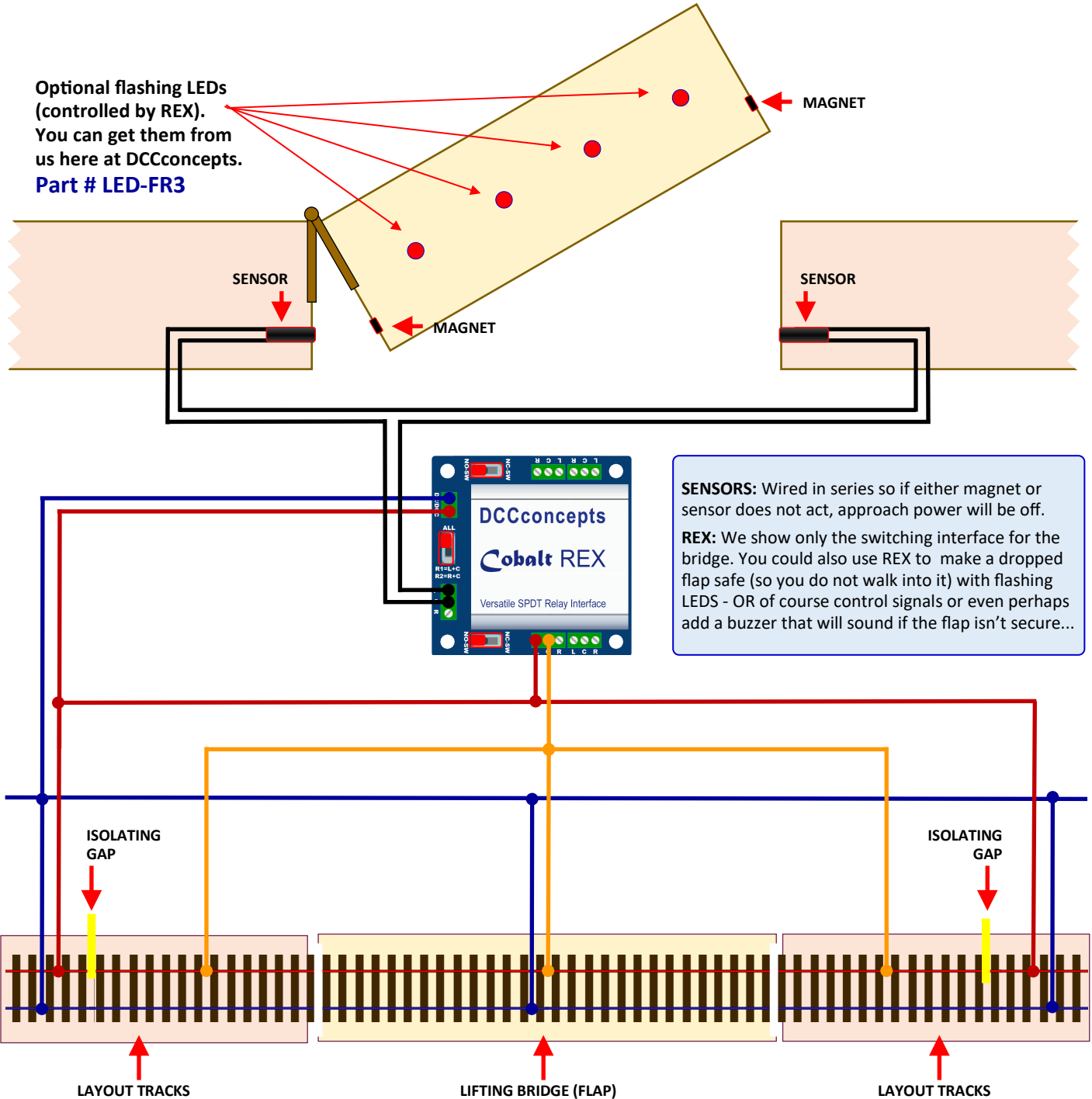


Or, how about using them with Alpha for a very sleek control panel...

A sensor is, in fact, a switch which can be deployed to do any job you can think, so why not a control panel? Magnetism will transmit through many surfaces so there is no need for things to penetrate the panel... Both the sensors and our LED ranges are available with a flat front so are easily installed flush & under the panel face, leaving you with a totally smooth "wipe clean" surface that can even have LEDs visible under the face. Add a small round magnet to a stylus or stick and it becomes a magic wand - or quietly stick one to the end of your finger for an impressive demonstration of magic... and drive your layout with a bit of flair. Of course as your control panel has NO visible switches for others to fiddle with there are practical benefits too.



Protect that lifting flap... This one can tell its own story!



SENSORS: Wired in series so if either magnet or sensor does not act, approach power will be off.
REX: We show only the switching interface for the bridge. You could also use REX to make a dropped flap safe (so you do not walk into it) with flashing LEDs - OR of course control signals or even perhaps add a buzzer that will sound if the flap isn't secure...

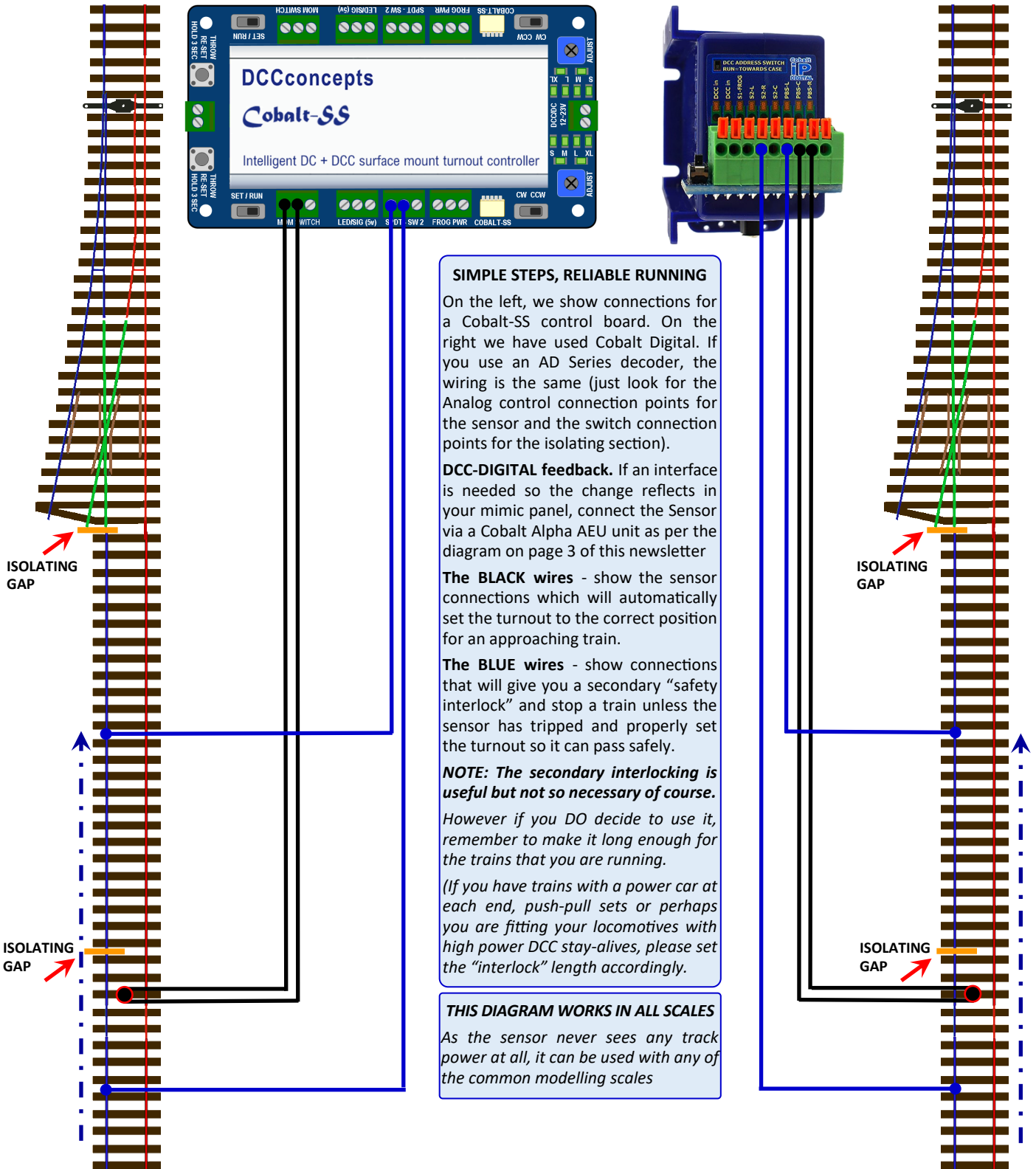
LENGTH OF THE STOP SECTION:
 We show a short section because of space constraints in the diagram, but the stop section (Between isolating gap and lifting section) will need to be as long as the longest powered train that will be stopped when the lift section is raised. If you are running trains with a power car at each end, push-pull sets or perhaps fitting your locomotives with high power DCC stay-alives, please set the length accordingly.



Simple Sensing, Super Easy to Install

NEVER over-run a wrongly set turnout again!

Drilling a small hole for the sensor and connecting a couple of wires to your COBALT or other turnout motor or DCCconcepts accessory decoder ensures those "accidental short circuits" due to careless route control or driver error disappear forever.





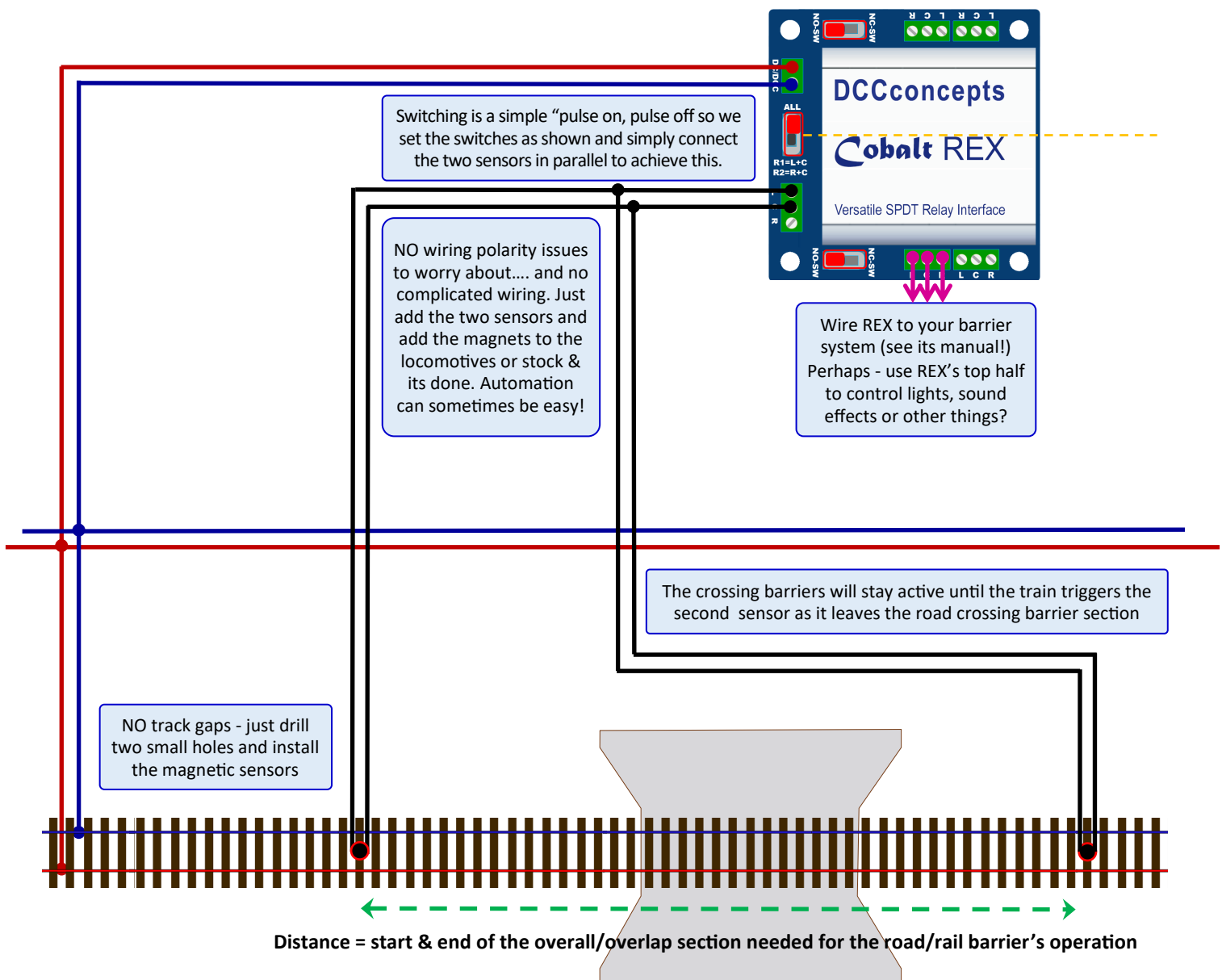
The grade crossing (Single track): The intersection between rail and road features on many layouts and we are often asked how to interface the crossing barriers so that they act as a train approaches. We will now show you TWO ways to achieve this using our sensors with REX.

Example A: single track, bi-directional. REX plus TWO of our simple magnetic sensors. REX will remain active until the second sensor is triggered. (set distance between them accordingly)


Again the wiring is very simple: Please be sure to use the correct terminals on the detector and set the REX switches as shown in the diagram. In this case it is wired to "toggle".

You will need just one REX and two magnetic sensors: The sensor part # is DCP-TMS (4 in a pack).

How it works: When the sensor senses a train arriving in the section it covers, the road barriers will act to stop road traffic. Barriers will remain active until the train triggers the second sensor.



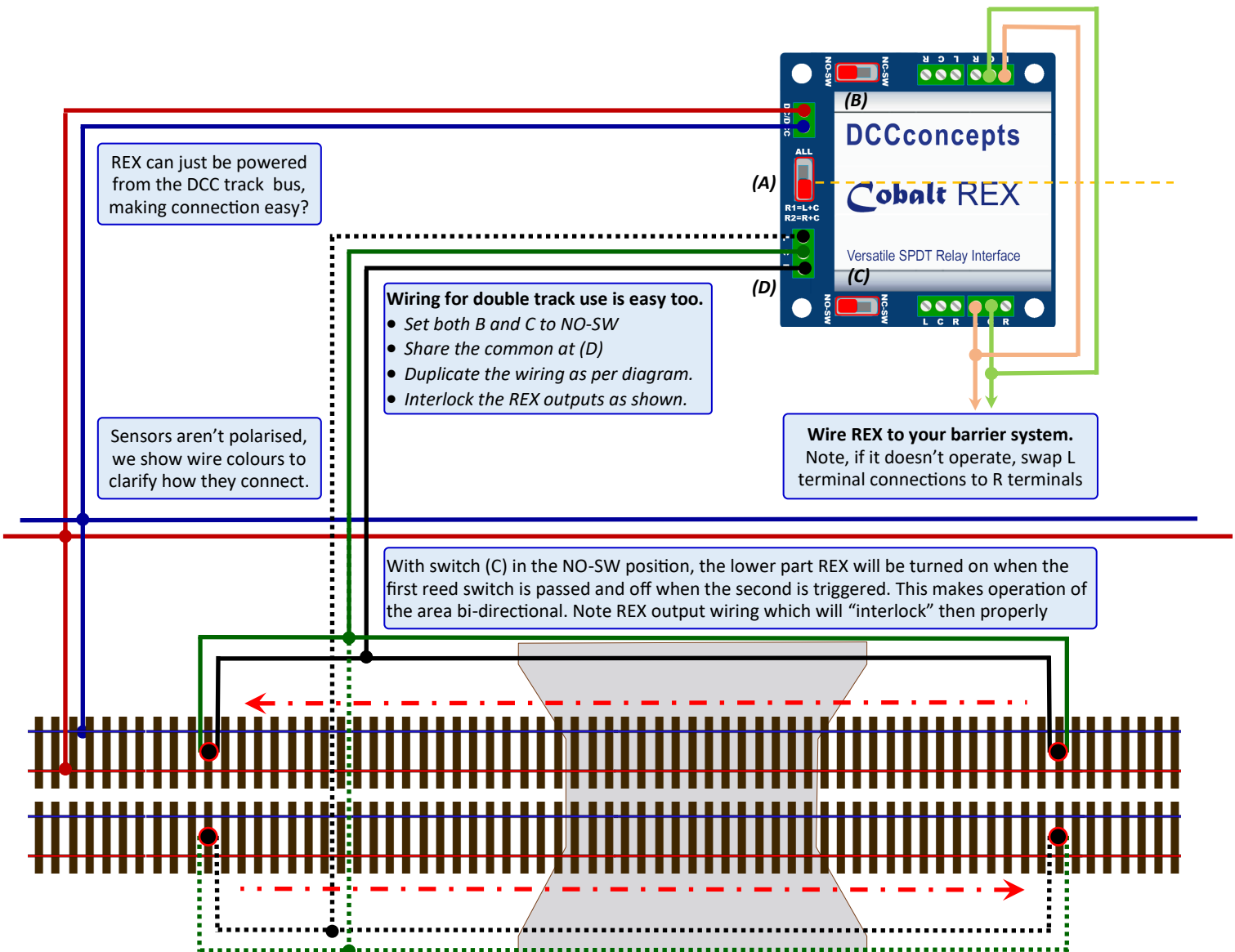


 **The grade crossing (double track):** We can extend the use of inductive detectors by using two of them for double track.... They need “interlocking” but we will still need only one REX!

Example B: Double track, Interlocked. REX plus four sensors that are active momentarily but toggle the REX unit on and off so that it remains active while the trains cross the track section controlling the barriers. Interlocked so trains can pass in both directions at the same time, but only the last train to exit can release the barriers.

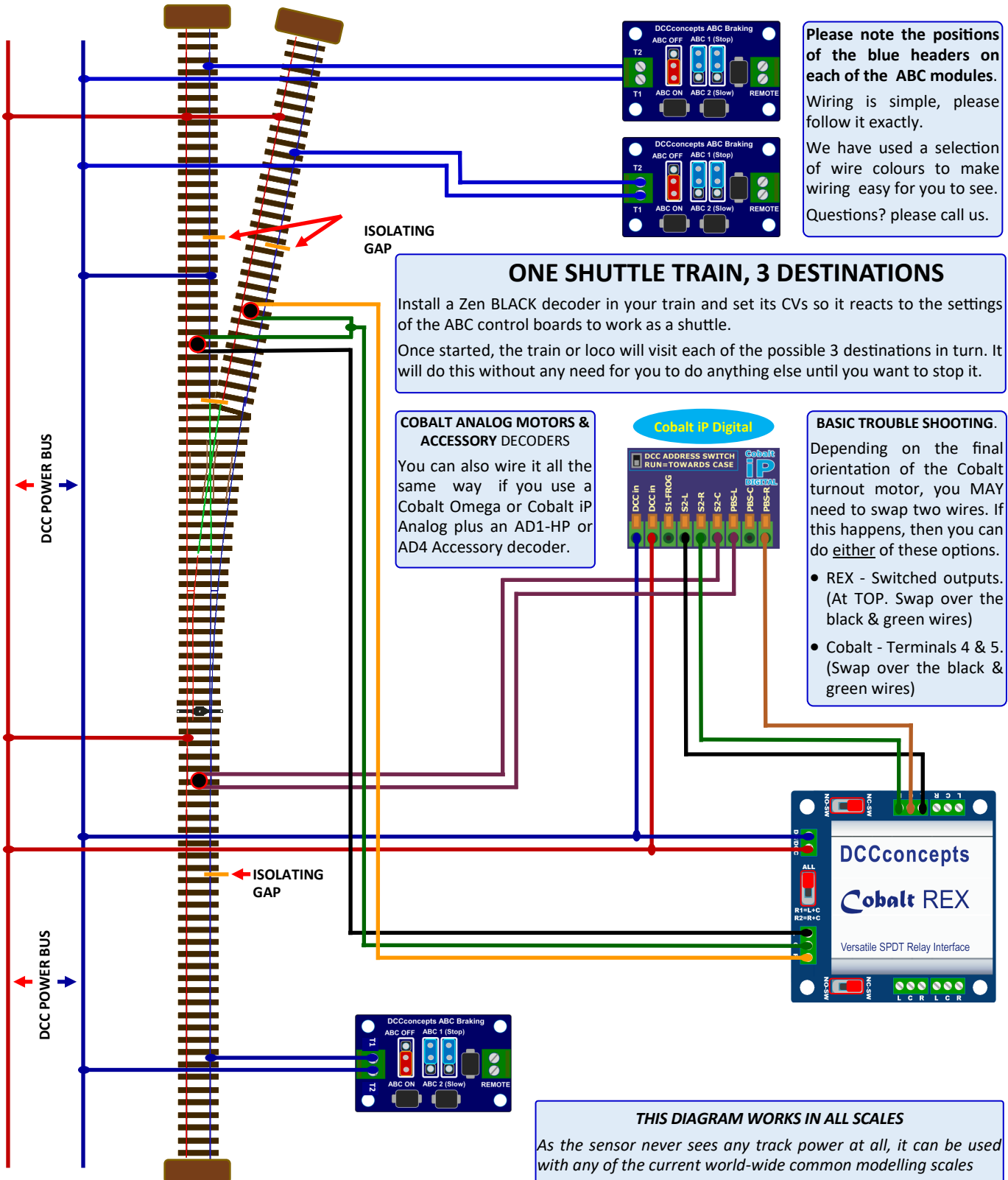
Again the wiring is very simple: Please be sure to set the REX switches as shown in the diagram. Please also note the OUTPUT wiring of rex.

How it works: When either sensor senses the presence of a train in the section the road barriers lower to stop road traffic. If two trains enter the section it’s OK as REX’s outputs are interlocked. Therefore the barriers will remain active or down until the last train leaves the detector section.





An additional "Shuttle" idea using our new Sensor, REX, ABC and Zen BLACK
 We were recently asked how to make a shuttle visit 3 alternate stations on each run. Here is an answer using these Sensors.



Please note the positions of the blue headers on each of the ABC modules. Wiring is simple, please follow it exactly. We have used a selection of wire colours to make wiring easy for you to see. Questions? please call us.

ONE SHUTTLE TRAIN, 3 DESTINATIONS
 Install a Zen BLACK decoder in your train and set its CVs so it reacts to the settings of the ABC control boards to work as a shuttle. Once started, the train or loco will visit each of the possible 3 destinations in turn. It will do this without any need for you to do anything else until you want to stop it.

COBALT ANALOG MOTORS & ACCESSORY DECODERS
 You can also wire it all the same way if you use a Cobalt Omega or Cobalt iP Analog plus an AD1-HP or AD4 Accessory decoder.

BASIC TROUBLE SHOOTING.
 Depending on the final orientation of the Cobalt turnout motor, you MAY need to swap two wires. If this happens, then you can do either of these options.

- REX - Switched outputs. (At TOP. Swap over the black & green wires)
- Cobalt - Terminals 4 & 5. (Swap over the black & green wires)

THIS DIAGRAM WORKS IN ALL SCALES
 As the sensor never sees any track power at all, it can be used with any of the current world-wide common modelling scales



Thank you for sharing your valuable hobby time with us.

We do think its been a very worthwhile few hours putting this together though, because in this world of digital things, complex layout wiring and other head-spinning innovations, it is not often that we can find a simple, small item that needs no real skill to install, has no wiring issues with polarity yet has such a wide, useful application in all common modelling scale and for both digital and analog modellers.

It also occurred to us that some of you may have registered for our newsletters only recently, so may not have seen them all... so we have just added them all to our website.

If you would like to look through the archive, please go to www.dccconcepts.com and click on the NEWS link. If you do that, it will take you to THIS newsletter in PDF form - PLUS a second link to more than 20 others, with most of them full of diagrams & interesting modelling techniques.

Until the next time.....

