

We're getting on well with our beginner's layout, don't you think? The turnouts are already equipped, the tracks are laid

and the Faller Car system is also laid. All that's still missing – so far – is electricity. "For goodness' sake", one or the other will think, "electrics – no, thank you!". Don't be frightened: if you stick to the Märklin coding, the wiring is really simple. We want to bring a little light into the darkness, and not merely by lighting up the wiring color code and the wiring itself, but also the solenoid drives, signal controlling and other layout features.

Turnout connections

Let's begin with the connection of tracks, turnouts and signals. Most important when we pull the first wires is the color code for all the respective wires we have illustrated on the left at the top of this page. If you stick to these rules, you'll keep things under control – above all if you ever have to track down a fault. If you run and control digitally, you can for the most part do without the blue wires, but not the others.

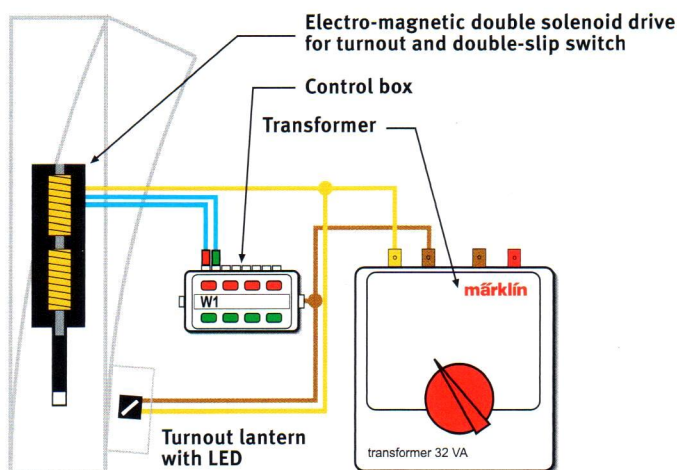
We described in the last issue how turnouts with twin-solenoid motor drive and a turnout lantern with LED lighting are equipped. Now we have to make the electrical connection so that the turnout can be remotely controlled. Our diagram in the middle on the left shows how easy the wiring connection looks. The turnout motor is fitted with two blue wires and a yellow one. The yellow wire leads to the transformer on the yellow lighting socket. The two blue wires lead to the control box, or alternatively to circuit tracks.

From there they are fed with impulse power from the brown ground wire, and look – the turnout switches from 'branch' to 'main line'. Now for the external turnout lantern, the LED lighting has to be fed with the yellow and brown wires, and that's all there is to it!

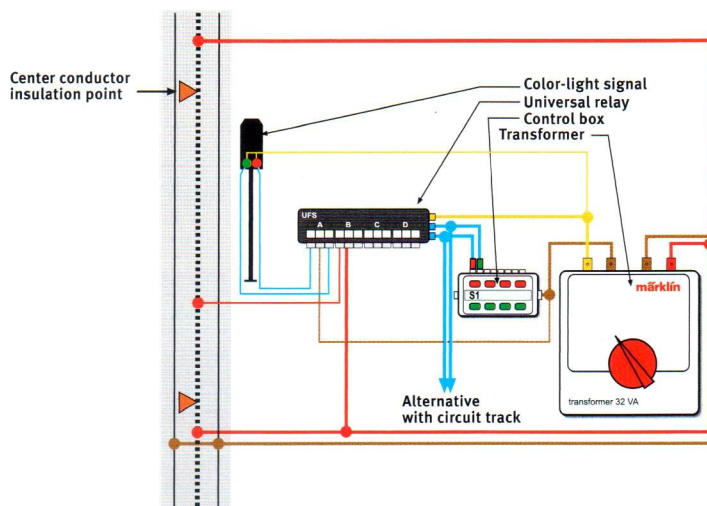
Connections: basic principles

| | | |
|---------------------------------------|--------|--|
| — | RED | Traction current 0-16 V + 24 V loco changeover switch |
| — | BROWN | Ground return |
| — | YELLOW | Lighting current 16 V |
| — | BLUE | Ground = Switching current for solenoid accessories (signals, turnouts etc.) |
| — | GRAY | Lighting accessories |

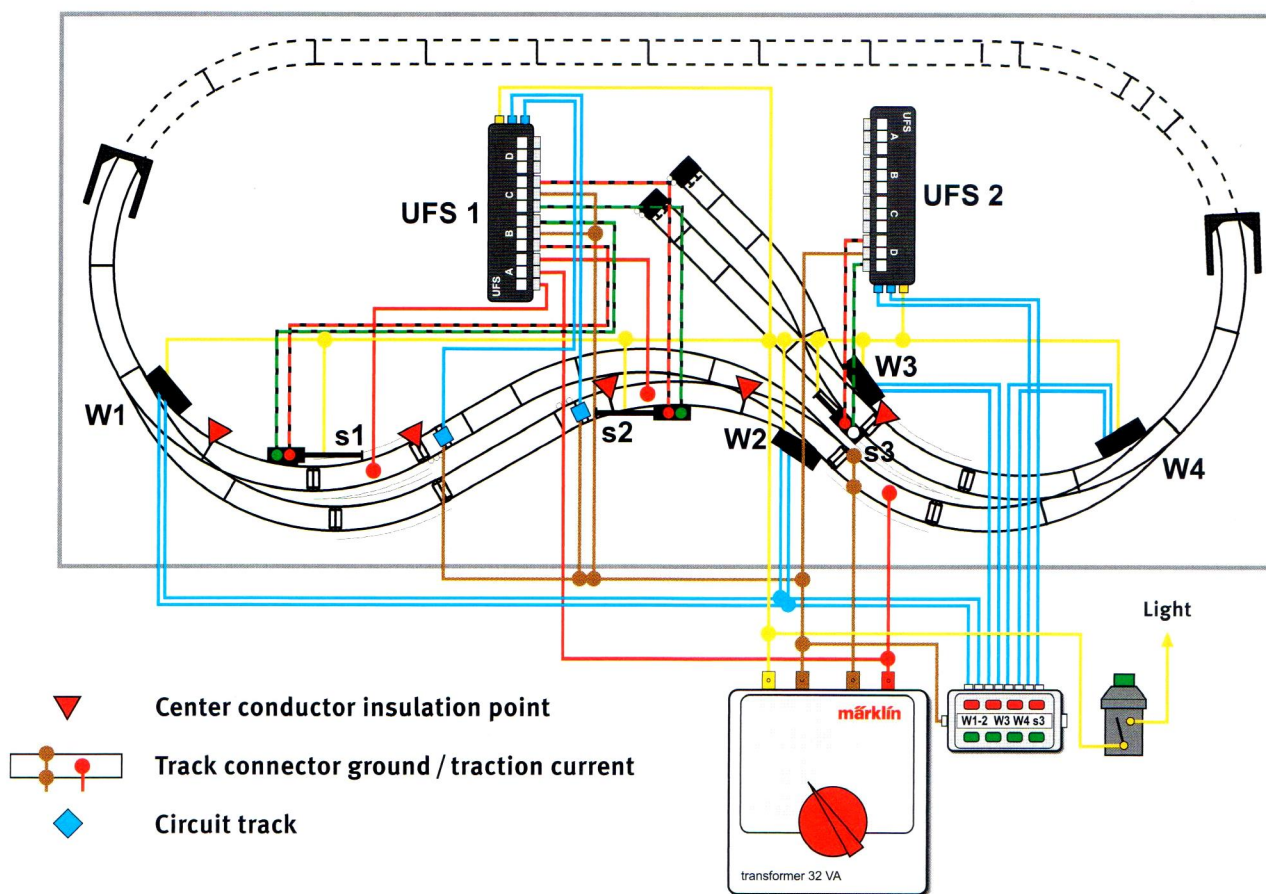
Makes assignment child's play: If you stick strictly to the Märklin color code, you won't make any mistakes when laying the wires.



Not witchcraft: The schematic representation shows how uncomplicated it is to make the connections for a turnout with double solenoid drive.



A little more complex: Signal functions are controlled by the universal remote relay, which in turn is switched from a control box.

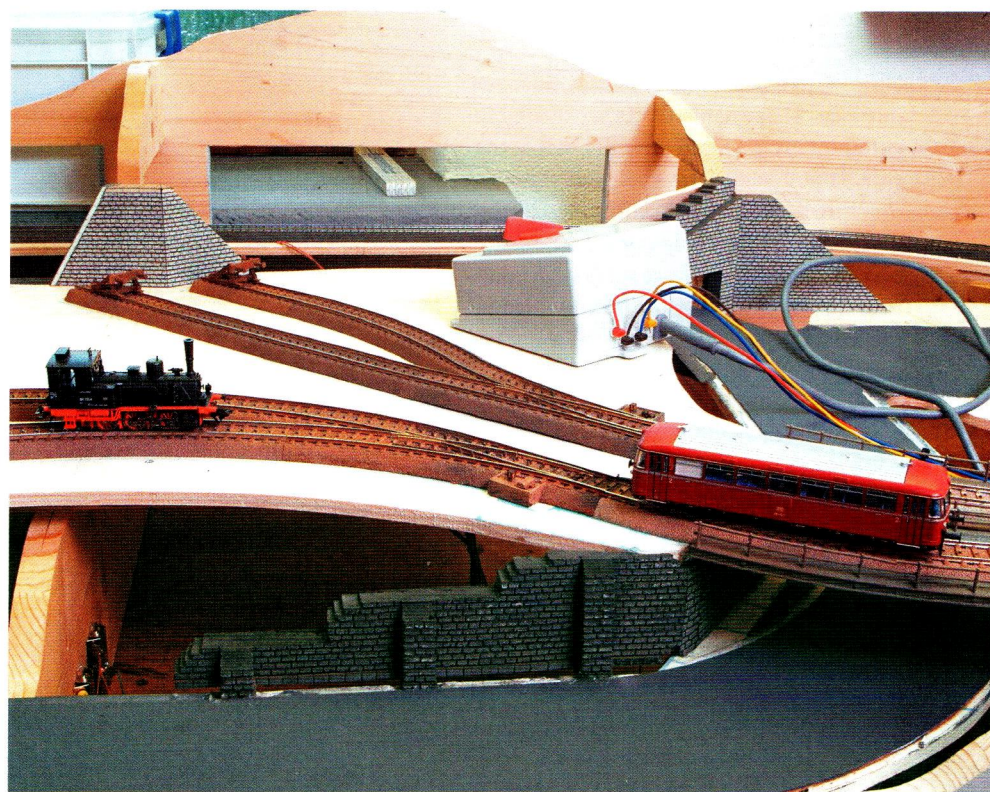


Signal connection

The signal's train control function (on/off for traction current in the stopping section) is carried out by the Märklin universal remote relay (item 7244, see drawing below, left). This is operated by the control box (item 72710) or alternatively by a circuit track. The universal relay has four independent switches. The four sets of contacts can be used to switch on, switch off or switch over up to four different electrical circuits, AC, digital or DC. For instance, A can stand for signal red / green, B for traction current feed when green. C can alternatively be used for feedback purposes to a track diagram control board.

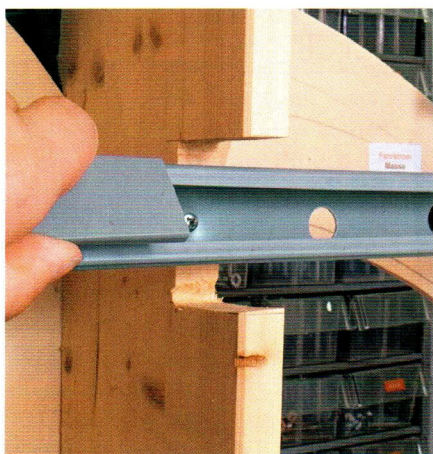
All at a glance

You can see at a glance from our complete plan above exactly how all the turn-outs and signals are connected. It's not actually necessary when you stick to the Märklin color code and the connection numbering plan drawn up – but nevertheless it is clear and helpful.

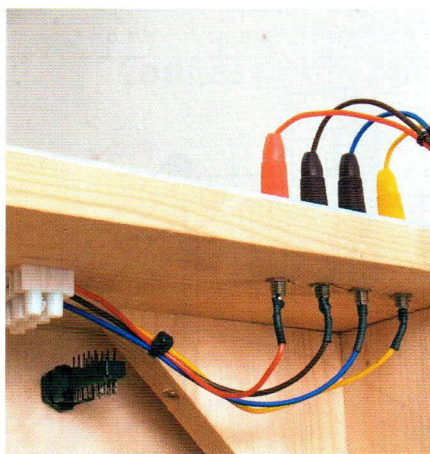


Just right: loco and rail car are running already.

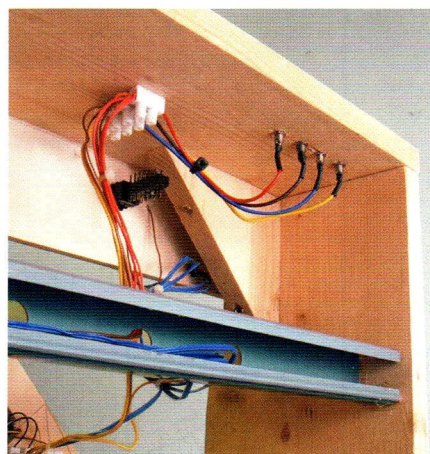
Tidily: this is how wires are cleanly laid



Keep everything tidy: We lay our wires tidily in a cable duct.



Good connection: We use plugs for supplying the current.



Cleaned up: Plugs, luster connectors and cable duct guarantee order.

→ Now for safety's sake we recheck all our turnouts are securely fixed to the baseboard now they are wired up, and that the wires have been fed through the holes to the underside of the layout. For the final wiring, we tilt the layout upwards on its edge and put it on the work bench like that, holding it firmly with a screw clamp.

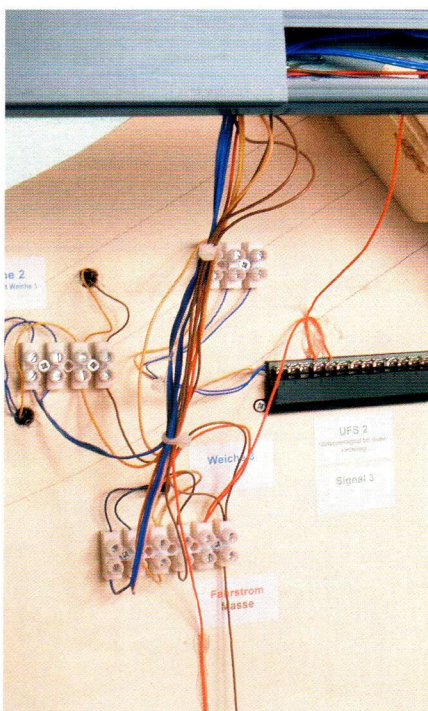
Now we fit a plastic cable duct with cover in place. These cable ducts are available either totally enclosed or with a slot at the side. If you select the enclosed version, don't forget to drill 12 mm holes in the underside for the cable outlets. These are best drilled with a hole saw. It's very practical that there are already holes drilled in the frame for the wiring. The cable duct is secured there with a single screw.

Next follows feeding the layout to the power supply or the transformer. We obtained plugs and sockets from the electrical shop. Using luster terminals, we make a wire connection from the sockets to the main distributor. Then we continue to lay the wires from here,

Always one wire after the other

Every turnout, signal and traction current must now be clearly marked with adhesive labels. A turnout always needs a sub-distributor with at least four connec-

tions: 2 x blue, 1 x brown (ground) and 1 x yellow (light power). Placing these sub-distributors, which are located right next to the users, is the first thing to do. Then the wires are connected with the control center (control box, light switch on/off, transformer). Important: always



Keep things under control: if you mark your connections clearly, you'll be able to track any future faults down quickly.

do this only one wire at a time, so that start and target cannot get mixed up.

For our layout, we have planned an automatic operation, using circuit tracks. In other words, a train runs into a station platform and just before the stop section a circuit track is actuated. This uses universal relay 1 to switch off the stop section which has just been occupied and at the same time the section for the train going the other way is switched on. The LEDs of the two signals switch from red to green and vice-versa at the same time.

It looks a little complicated, but it's really quite simple. If you are a beginner, we recommend a trial setting-up, which as a rule will help you understand the electrical material.

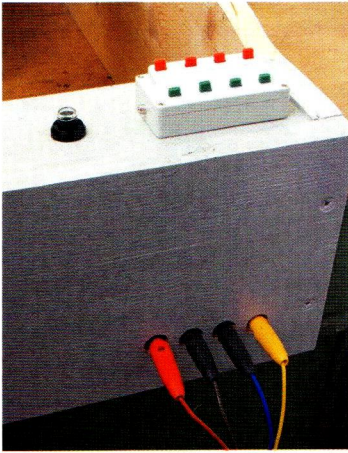
If you want more in-depth information on the subject of wiring, you'll find an article with fully-detailed general instructions in the download area under www.maerklin-magazin.de.

Text and photographs: M. T. Nickl

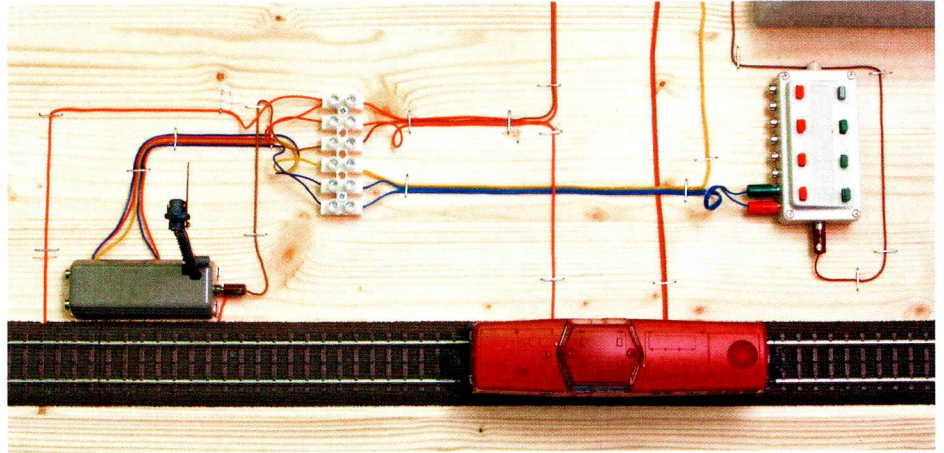


All parts of this series can be downloaded from the Internet under: www.maerklin-magazin.de

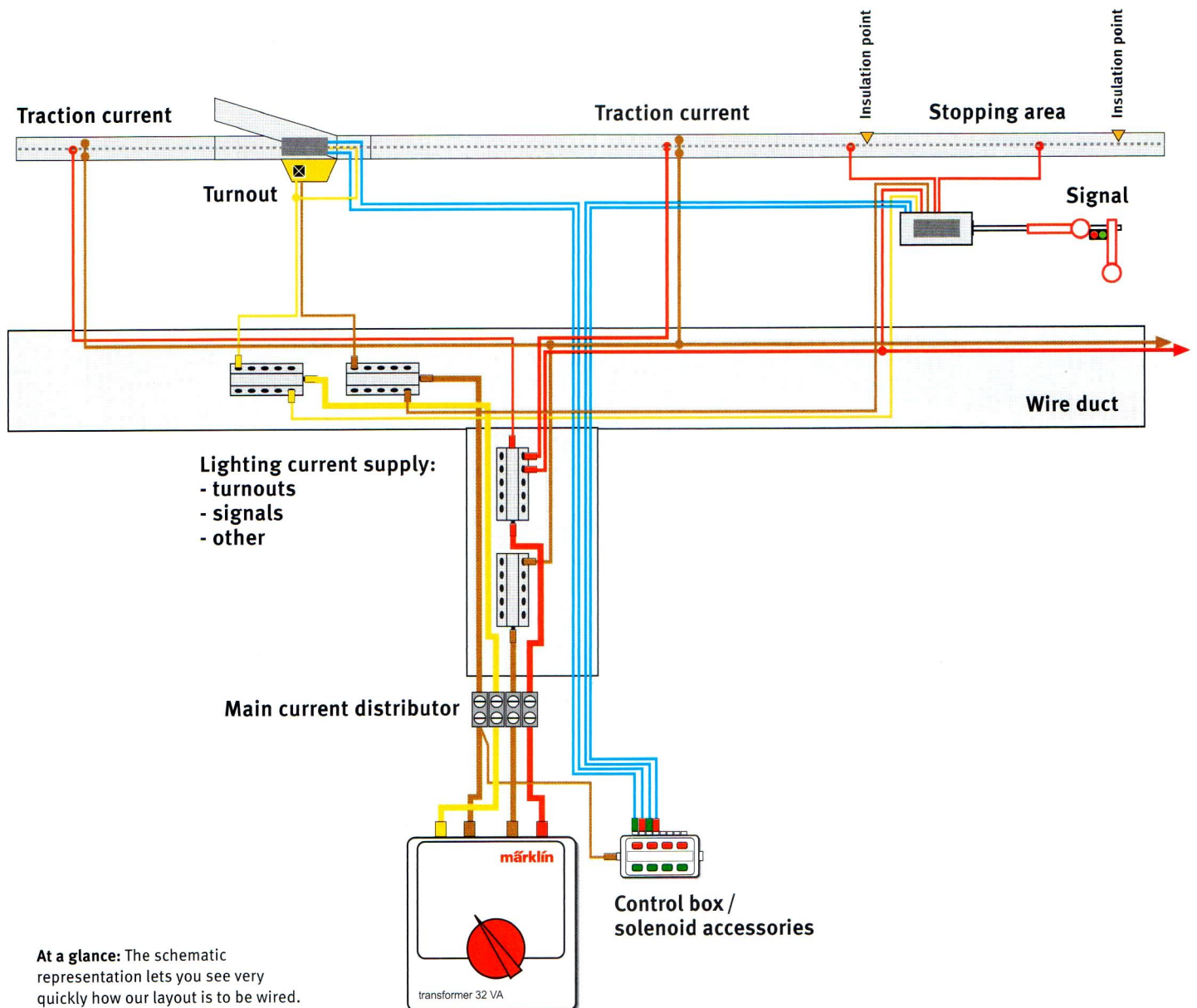
Recommended: a trial setting-up



Clear to see: Four wires lead to the control center.



Test run: If you're not yet very experienced in wiring, it's worth doing a trial set-up in advance; that will very quickly make it clear where the wires have to be connected.



At a glance: The schematic representation lets you see very quickly how our layout is to be wired.