

SPOORSLIM

by Auronetix

Your railway. Your choices. A reliable foundation.

The H0 model railway handbook

MÄRKLIN K / MÄRKLIN C / 2-RAIL



Prove the connections on one test layout.

AnyRail · SCARM · iTrain · Rocrail

TrainController · JMRI · RailCom

Design, build, connect, test and finish

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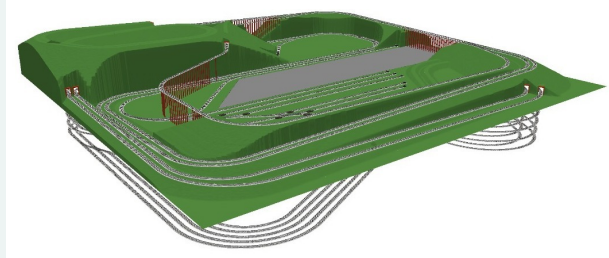
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Read the general foundation and your track-system chapter. Then use the chapters for your command station and software. Case studies and worksheets support every combination.

AnyRail, SCARM and paper planning

Original AnyRail design



Design view: compare levels and access; not proof of construction.

PERSONAL IMAGE · JOHN JORNA

AnyRail and SCARM support track planning using track libraries. SCARM also offers 3D views and an optional virtual train simulator. A successful simulation does not prove that a physical detector or turnout motor works. [B1-B2]

One task, two programs

Draw a station track for a 220 cm train, a passing track and an accessible hidden track. Select the exact track system in each program. Record article choices, minimum curve radius, usable stopping length and height difference. Compare those measurements rather than the prettiest picture.

What software cannot measure for you

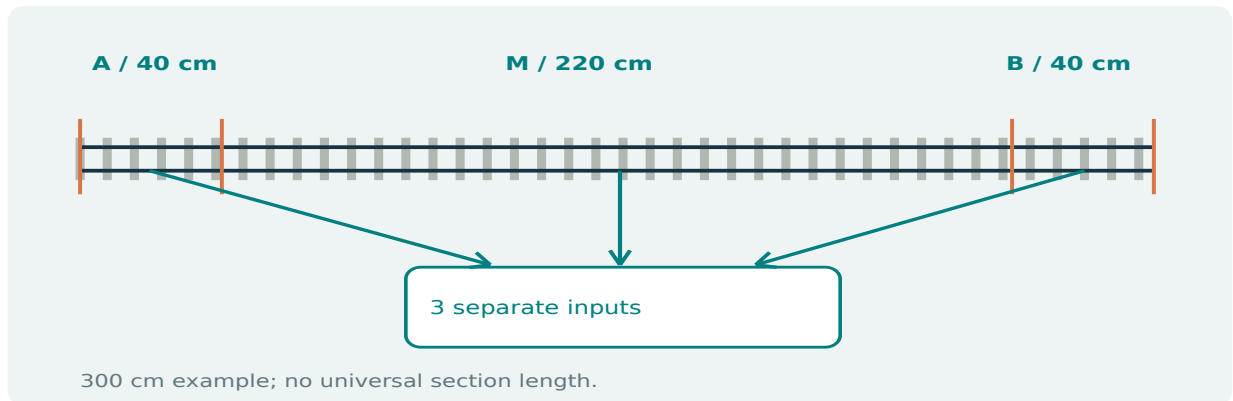
Actual couplings, vehicle overhang, local kinks, cable access and an opening door remain physical checks. Temporarily assemble a critical curve or turnout combination at full size. A simple template matching train length helps you check storage space.

A paper alternative

An accurately scaled drawing with track templates can also work. State units, reference points and revision. A photograph of loosely positioned rails is not a measured plan, but it is useful evidence of the built condition.

Produce three documents: track plan, electrical arrangement and logical layout description. Link them through consistent track names.

Plan detection



ORIGINAL ILLUSTRATION / PRINCIPLE, NOT TO SCALE

Use the example as a design aid, not a universal wiring instruction.

Illustrative arrangement

A 300 cm block contains adjacent sections A = 40 cm, M = 220 cm and B = 40 cm. The end-section length is an example rather than an H0 rule. Choose dimensions for your equipment, vehicles and operating requirements.

Why detect the middle?

Continuous coverage can reveal a detectable vehicle left in the middle. Two short end sections leave an undetected middle invisible to occupancy feedback.

Two-way operation

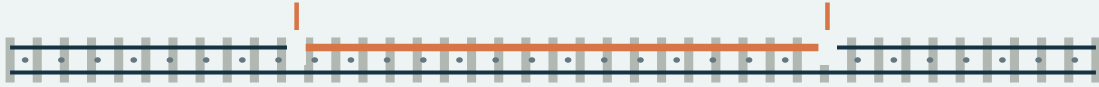
Label the physical sections A, M and B. The first section reached changes with direction. Fixed labels avoid confusion over a section called entry when the train travels the other way.

Your task

Draw the real boundaries and record lengths, feeds and feedback addresses. Check isolation and wiring details in the relevant equipment manuals.

Insulating rail joiners

Isolate the selected rail at both section boundaries



Other running rail: continuous return

Stud contacts: separate supply function

ORIGINAL ILLUSTRATION / PRINCIPLE, NOT TO SCALE

Start with straight or curved K-track without turnouts.

1. Check each loose track piece

With electronics disconnected, check whether its running rails are isolated from each other. Do not use a piece with an internal connection you have not understood.

2. Mark both boundaries

Choose the detection rail. Remove only that rail's metal joiner at each boundary. Keep the mechanical track connection stable.

3. Fit compatible insulating joiners

Use plastic joiners suitable for the rail profile on the same side at both boundaries. Rail ends must not touch and must stay aligned. A loose fit does not prove compatibility.

4. Assemble the section

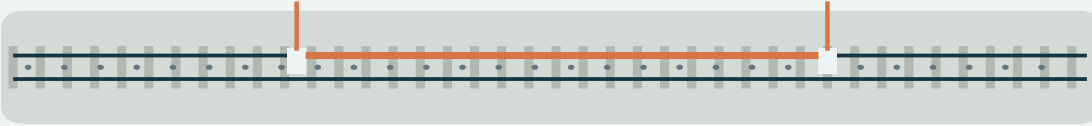
Use ordinary metal joiners within the section to make one continuous detection rail. Do not connect a common-return feed to that isolated rail.

Check

Measure both boundaries and every connection inside. If uncertain, use the factory contact-track option on the next page.

Build a contact section

Märklin C: check roadbed connections and running rail



Trix C belongs to two-rail.

ORIGINAL ILLUSTRATION / PRINCIPLE, NOT TO SCALE

For Märklin C-track with a centre conductor, not Trix C-track.

1. Start with loose ordinary tracks

Begin with a straight piece. Locate the metal connections between both running rails on the underside at both ends. Compare with the official Märklin drawing. [B10]

2. Separate those connections

Cut only these common-rail bridges using suitable tools. Preserve rail contacts and centre conductor. Repeat on each ordinary piece inside the contact section. One forgotten bridge can connect the whole section permanently.

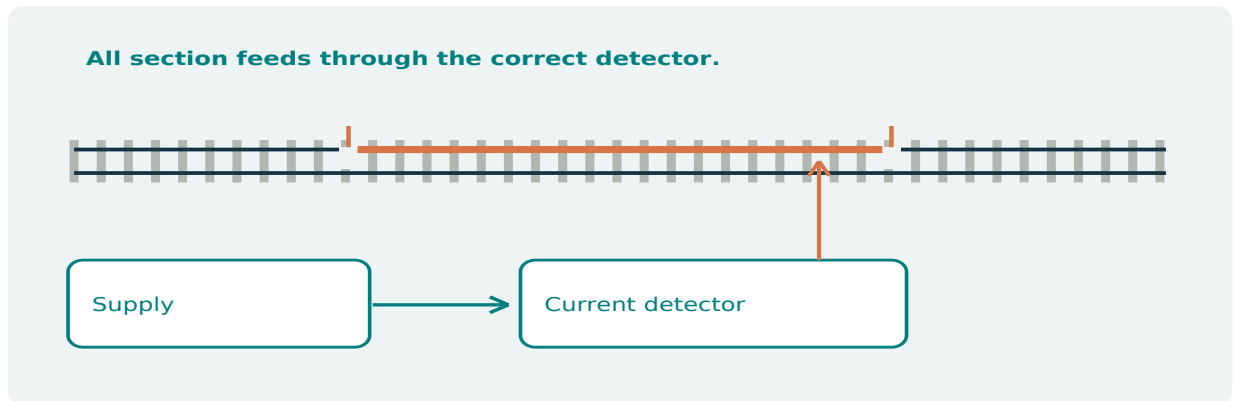
3. Insulate the chosen rail at boundaries

Fit appropriate caps to the same running rail's electrical connection at the start and end. The centre conductor remains continuous in this contact-detection example.

4. Measure before installation

Check each modified piece for separation between running rails, then check the complete section. Record the chosen detection rail; turning a piece changes left/right on the bench.

Isolate the monitored feed rail



ORIGINAL ILLUSTRATION / PRINCIPLE, NOT TO SCALE

Current detection requires the monitored section's feed to pass through the detector.

1. Choose one feed side

Mark the chosen rail throughout the test track. Be consistent: digital track power is not a conventional fixed positive/negative supply.

2. Make both boundaries

Replace metal joiners on that rail at each end with profile-compatible insulating joiners, or make a secured complete gap using suitable tools. Check alignment and flange clearance.

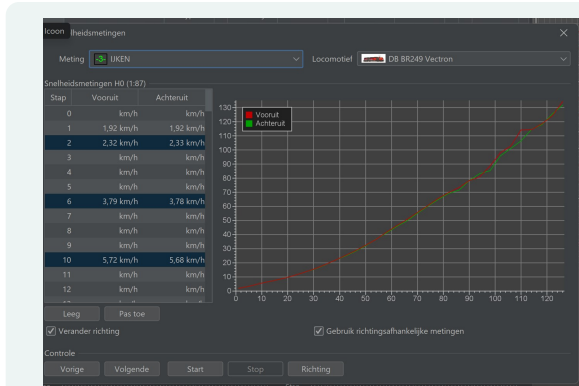
3. Check other feeds

Every feed to that rail inside the section must be downstream of the correct detector output. A direct command-station feed can bypass measurement.

4. Measure disconnected

Check open boundaries, conduction within the section and separation from the other rail. Start without turnouts or reversing loops. Booster and reversing-loop boundaries can require different isolation.

Why a calibration result was invalid



Check calibration critically

This personal iTrain image still has empty measurement fields. It is not an approved calibration: check distance, direction and valid measurements.

PERSONAL IMAGE · JOHN JORNA

An earlier BR146 measurement produced approximately 2.51 km/h forwards and 0.23 km/h backwards. Observations included hesitation, pushing and an incorrect train assignment. The dossier marks the measurement unusable. These values are not reused as a proven speed profile.

The 50-20-50 arrangement

John's measuring track contains two 50 cm side sections and a 20 cm central section. Its total 120 cm is not automatically the entry for every software field. In the selected iTrain method, the relevant measurement is the central section plus any gap to the adjacent section. [B5]

Check the measurement's meaning

20 cm in one second is 0.20 m/s on the model. Multiplying by scale factor 87 gives approximately 62.6 km/h scale speed. A 1 cm error over 20 cm is around 5 percent: reference points matter.

Remove the causes first

Clear the physical route and correct administrative placement. Check smooth running without a push. Repeat both directions under identical conditions before saving a usable profile. Other programs also require a distance appropriate to their measurement method.

A longer measuring section may help, but it does not repair an unreliable locomotive or incorrectly assigned train.

Operating requirements

Requirement	Dimension / limit	Evidence

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Record operations, train length, access and expansion. Make every requirement measurable.

Check while working

An essential function needs a dimension or observable test result. A wish without a criterion remains a wish.

Use your own measurements and keep source and test date.

Additional measurements, evidence and notes