

märklin

H0

3. Mehrzweigbetrieb

Um jede Lokomotive einzeln steuern zu können, sind größere Anlagen mit Mittelleiter-Isolierungen 5022 bzw. bei Gleisstücken der Serie 23 Mittelleiter-Isolierungen 7500 mehrere Stromkreise zu bilden. Jeder Stromkreis erhält einen eigenen Transformator mit Mittelleiteranschluß der Lokomotiven. Vor der Inbetriebnahme ist eine gründliche Prüfung vorzunehmen. Die Transformatoranschlüsse sind anzuschließen und auf einen Spannungswert einzustellen, der dem sind die Massebuchsen einander zu verbinden. Die Buchse »B« Buchse angeschlossen.

Prüflampe, so stimmen die Transformatoren mit ihrer Polarität nicht überein. Der Transformator ist um 180° zu drehen (Fig. 7). Jeder weitere Transformator ist der Reihe nach entsprechend zu überprüfen. In keinem Falle dürfen außer den »B«-Buchsen Buchsen der anderen Pole aneinander verbunden werden.

Anschluß der elektrischen Bahnen
Connecting up electric railways
Branchement des trains électriques
Instructies voor aansluiting
Conexión de los ferrocarriles eléctricos
Alimentazione elettrica del binario
Anslutning av modelljärnvägar
Tilslutning af de elektriske baner

KM

Anschluß der Anlage

Anschlußbeispiel bei Transformatoren mit 3 Anschlußbuchsen

Layout connections
Branchement d'un réseau
Aansluiting van de baan
Conexión de la instalación
Collegamento dell'impianto
Anslutning av anläggning
Anlægstilslutning

Example for connection using transformer with three sockets.

Exemple de branchement à l'aide de transformateurs à 3 prises.

Voorbeeld van aansluiting bij transformatoren met 3 aansluitbussen.

Ejemplo de empalme para transformadores con 3 conexiones.

Esempio di collegamento con trasformatore a tre bocchine in uscita.

Exempel på anslutning till transformatorer med 3 uttag.

Eksempel på tilslutning af transformatorer med 3 tilslutningsbøsninger.

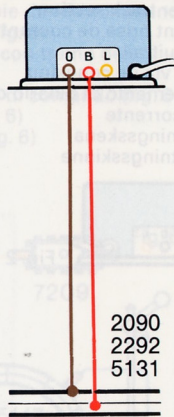


Fig. 1

Ein Anschlußgleisstück

Mehrere Anschlußgleisstücke

Beleuchtung

One feeder track section
Un élément prise de courant
Eén aansluitrail
Tramo de vía de conexión
Con un elemento di binario di
presa di corrente
En anslutningsskena
Een tilslutningsskinne

Several feeder track sections
Plusieurs éléments prise de courant
Meerdere aansluitrails
Varios tramos de vía de conexión
Con più elementi di binario di
presa di corrente
Flere anslutningsskenor
Flere tilslutningsskinner

Lighting
Eclairage
Verlichting
Verlichting
Illuminazione
Illuminazione
Belysning
Belysning

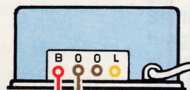


Fig. 2

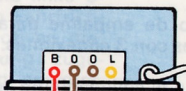


Fig. 3

5131
5111
5103
2292
2290

5131/5111/5103
2292/2290

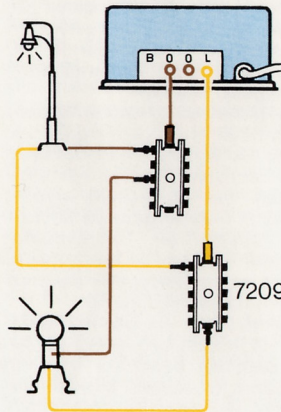


Fig. 4

Magnetartikel: mit Stellpult (Fig. 5); mit Schaltgleisstück (Fig. 6)

Magnetically operated accessories: with box desk (fig. 5); with contact track section (fig. 6)

Accessoires télécommandés: pupitre de commande (fig. 5); voie de télécommande (fig. 6)

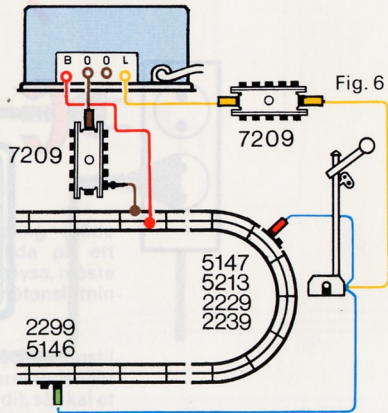
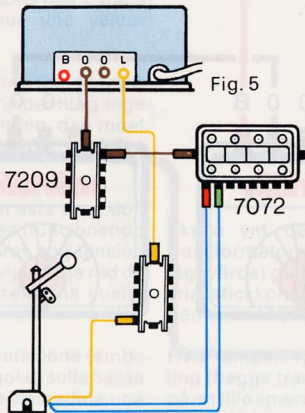
Magnetische artikelen: met seinplaat (fig. 5); met schakelrail (fig. 6)

Artículos electromagnéticos: con pupitre de maniobra (fig. 5); con tramo de via de maniobra (fig. 6)

Articoli magnetici: con scatola di comando (fig. 5); con binario di comando (fig. 6)

Magnetartiklar: med ställpult (fig. 5); med kopplingsskena (fig. 6)

Magnetartikler: med kontrolpult (fig. 5); med kontaktskinne (fig. 6)



Überprüfung der Polarität

Testing polarity
Vérification de la polarité
Vaststelling van de polariteit
Comprobación de la polaridad
Controllo della polarità
Provning av polariteten
Kontrol af polaritet

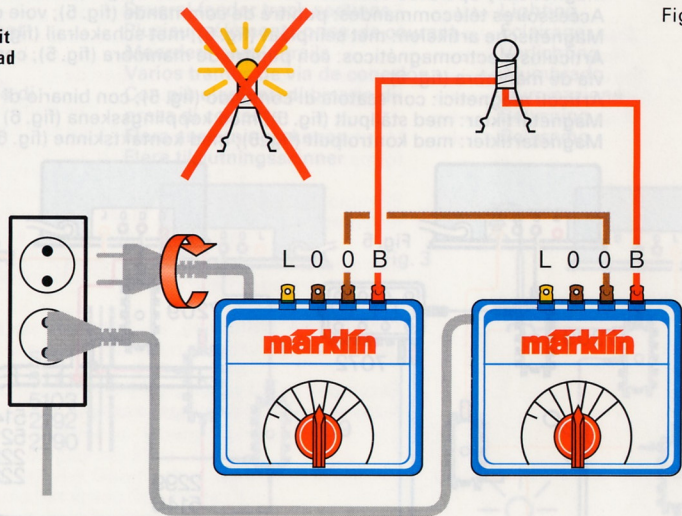


Fig. 7

Sollte bei dieser Schaltung (beide Transformatoren auf einen kleinen Spannungswert eingestellt) die Glühlampe brennen, so ist der Netzstecker um 180° zu drehen.

If the bulb lights up at this setting (both transformers set at a low voltage), one of the house current plugs must be rotated 180 degrees.

Inverser l'une des fiches secteur si la lampe brûle (les boutons des 2 transformateurs réglés sur une valeur faible de la tension).

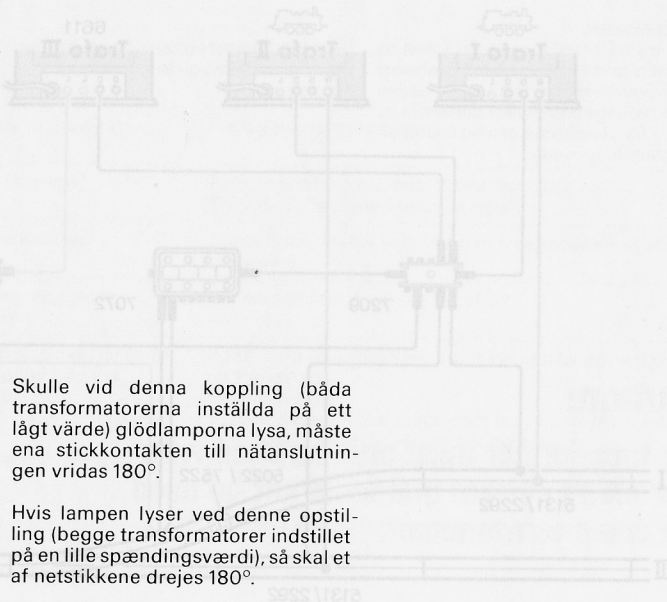
Gaat bij deze schakeling (beide transformatoren op lage rijspanning ingesteld) het lampje branden, dan moet één van de stekers 180° worden omgedraaid.

Si se encendieran con esta conexión las lámparas eléctricas (funcionando los dos transformadores con tensión baja), a una de las clavijas de la red de alumbrado debe dársele una vuelta de 180 grados.

Se durante questa operazione (ambdue i trasformatori regolati sulla bassa tensione) si accende la lampadina, una delle spine deve essere ruotata di 180° .

Skulle vid denna koppling (båda transformatorerna inställda på ett lågt värde) glödlamporna lysa, måste ena stickkontakten till nätanslutningen vridas 180° .

Hvis lampen lyser ved denne opstilling (begge transformatorer indstillet på en lille spændingsværdi), så skal et af netstikkene drejes 180° .



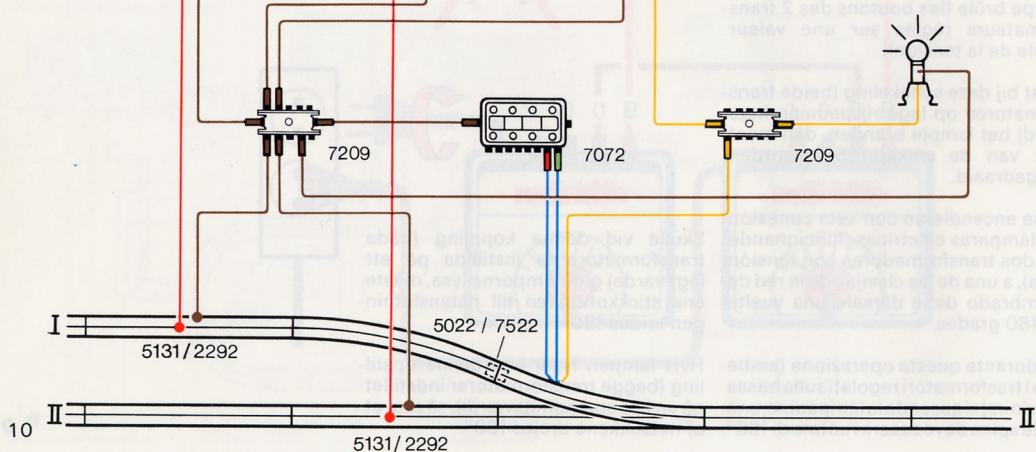
Überprüfung der Polarität

Transformator auf einen kleinen
Stoß bei dieser Schaltung (beide
Transformator um 180° zu drehen.

Testing polarity
Vérification de la
Polarité
Compréhension
Control of polarity
Prüfung der
Kontrolle der Polarität



Fig. 8



Anschluß einer Anlage mit zwei Bahnstromkreisen und einem Lichtstromkreis

Connections for a layout with two track circuits, and an accessory circuit.

Branchement d'un réseau subdivisé en 2 cantons.

Ansluiting van een baan met twee rijstroomkringen en een lichtstroomkring.

Conexión de una instalación con dos circuitos de corriente de tracción.

Collegamento dell'impianto con due circuiti di corrente e con un circuito luce.

Anslutning av en anläggning med två strömkretsar.

Tilslutning af et anlæg med 2 kørestrømkredse.

Regular checking of the above five points will ensure trouble-free operation.

...to set the control knob to "0" and wait until the current switches on again. This will

Every transformer is manufactured to work at a particular voltage, as shown in its power-rating plate. The house current voltage and type of current (a.c. or d.c.) for your home can be found on your electricity meter.

faulty transformers must no longer be used. They must be turned to us to repair.

Check connections according to illustrations 1-4 shown on page 6.

Connect the tracks firmly together.

If the lamp does not light up, there can be a short circuit on the layout. Results can be:

1. A car or any other metal item may be on the track.

Caution: The transformer must only be used with alternating current and must not be used in a damp environment.

If there is a short circuit...

Instructions for connecting and operating electric railroads

1. Transformer.

Every transformer is manufactured to work at a particular voltage, as shown on its power-rating plate. The house current voltage and type of current (a. c. or d. c.) for your home can be found on your electricity meter.

Damaged transformers must not be used. We advise you to send them to us for repair.

2. Extending the layout.

Before extending the layout the new track plan should be considered. Our publication 0702 "Märklin HO-Layouts" contains relevant information. While extending the layout we suggest that you should check the feeder track section lead initially to sockets "O" and "L". If there is a short-circuit the transformer's built-in pilot lamp will be extinguished. If the transformer does not include a pilot lamp, this check can be carried out using another light bulb. It is necessary to pay constant attention to the good connection between rail and conductor connection clips, to avoid a voltage drop. If one transformer is used to power an extensive layout, two or more feeder track sections will probably be required (Fig. 3).

Caution:

The transformer must only be used with alternating current and must not be used in a damp environment.

Dear parents,

There is no need to worry about overloading or other faulty conditions such as fire, electric shock or injury to persons when using your Märklin transformer. In the event of a short-circuit or overloading a built-in thermal switch cuts off the current automatically. If this occurs, we advise you to set the control knob to "0" and wait until the current switches on again. This will take about 1 minute.

Please check your child's layout regularly as follows:

1. Is the transformer connected properly to the plug socket?	Please connect properly
2. Does the transformer show external damage?	Faulty transformers must no longer used. They must be turned to us to repair.
3. Are the wires from the transformer to the track connected properly?	Check connections according to illustrations 1–4 shown on page 6.
4. Are individual pieces of track receiving no power when the transformer is switched on?	Connect the tracks firmly together.
5. For transformers equipped with a lamp: Does the lamp light up when the transformer is plugged into the main house current and connected to Transformers without a lamp: Does a bulb connected to sockets marked "0" and "L" light up? (see Fig. 4)	If the lamp does not light up, there can be a short circuit on the layout. Results can be: 1. A car or any other metal item may be on the track touching the rails and center contact. 2. Tracks are not connected properly. 3. Incorrect wiring to the track. If there is a short circuit on your layout, refer to part 6.

Regular checking of the above five points will ensure trouble-free operation.

Instructions for connecting and operating

1. Transformer.

Every transformer is manufactured to work at a particular voltage, as shown on its power-rating plate. The house current voltage and type of current (a.c. or d.c.) in your home can be found on your electricity meter.

Damaged transformers must not be used. We advise you to send them to us for repair.

3. Multi train operation using separate tracks

To enable each locomotive to be controlled individually, larger layouts are divided into several separate circuits, using center conductor insulators 5022, or, for 2200 series track sections, center conductor insulators 7522. Each circuit has its own transformer with at least one feeder track connection. Before connecting two transformers, the following check should be carried out:

Connect both transformers to the house current supply and adjust them to a low output voltage. The ground connection sockets "O" should be connected together. If a test lamp connected to the "B" socket illuminates, this

shows that the transformers are connected with opposite polarities, and the house current plug of one of the house transformers should be plugged in the other way round (Fig. 7). Every additional transformer should be checked in this way in its turn.

Under no circumstances should the "L" and "B" socket on one transformer be connected to those on any other. "O" sockets may be connected to each other. Each transformer must have its own circuit. 2 transformers should never be connected to the same track or accessory circuit. Take care that the circuits are not connected together unintentionally, by inadequate or damaged isolation at circuit isolation points. For example, to avoid accidents due to this, it is important that when the layout is being switched off, all transformers house current plugs should be removed from house current sockets. With only one plug removed, if there were faulty circuit isolation, it would be possible for the house current voltage to be present on this plug.

We recommend that all transformers should be connected to a single mains splitter box fixed to the layout table. It is then only necessary to remove the splitter box supply. If a switch is incorporated on the house current side, it must be of the 2 pole type and isolate both lines.

Caution:

The transformer must be used with alternating current only in a damp environment.

4. Switching to forward or reverse drive.

When the speed control knob on the transformer is turned counter-clockwise past the zero position, the necessary extra-voltage pulse is supplied to the reverse unit in the locomotives. The speed control knob should only be held in the changeover position for a moment.

5. Track maintenance

Current is supplied via the center conductor and the locomotives pick-up shoes and returned via the wheels and the outer rails.

To keep the electrical resistance as low as possible we suggest you keep the surface of tracks and wheels free from oil and dust by wiping them periodically with a dry cloth; occasionally a more thorough cleaning is advised using a cloth moistened with track cleaner fluid.

6. Short circuit

If a short-circuit is discovered on the layout, it should be eliminated. If the transformer's circuit breaker repeatedly shuts the transformer off and no short circuits can be found, then the transformer is probably overloaded by too many electrically operated items (ex. locomotives, switches, lights, etc.) Some of these should then be connected to another transformer.

Dear children

Should you find it too difficult to connect the transformer to your layout and operate it immediately, do ask your parents or any other adult to help you. We are sure they will gladly give you the assistance you may need.

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A. Omkringning til fremad- og baglænskørsel.

Ved at dreje kørselsreguleringssknap-
pen på transformator over den
venstre O-stilling får lokomotivets
kørselsretningsskifter tilført den
nødvendige overspænding. Regula-
torknappen må kun kortvise blive i
denne stilling.

B. Vedligeholdelse af skinnemateriale.

Strømmen tilføres lokomotivets sla-
dekske via midterlederen. Den føres
tilbage igen via hjulens og kørsels-
remme. For at holde den elektriske
overoverledning så lille som
muligt, er det nødvendigt at holde
hjulens overflade så glat som muligt.
Dvs. de skal jævnligt smøres med
en passende smøremiddel. Dette
gøres ved en større rensning kan man
fugte kilden med petroleum.

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