Central Station 3

Table of Contents

Setting Up and Starting

The following components are required to get started

60061/60065 switched mode power pack (60 VA; for Märklin H0, Trix H0, and Minitrix) or 60101 or 51095 switched mode power packs (100 VA; for Märklin 1 Gauge and LGB), Central Station 3, track feeder wires, track layout, locomotives and cars, and/or solenoid items.

Only the switched mode power packs listed above can be used with the CS3. Transformers are no longer allowed.

Connect the components as shown in the following illustrations. First, connect the Central Station to the model railroad layout, then connect the switched mode power pack and finally plug the latter into a wall outlet.

Connections for power supply
Central Station

power

60061 (Märklin)
60101 (Märklin)
51095 (LGB)

Connections to a Layout

Make sure you have the correct polarity: red = track current (B), brown/blue = ground (0)

C Track connection · K Track connection · 1 Gauge connection · LGB connection
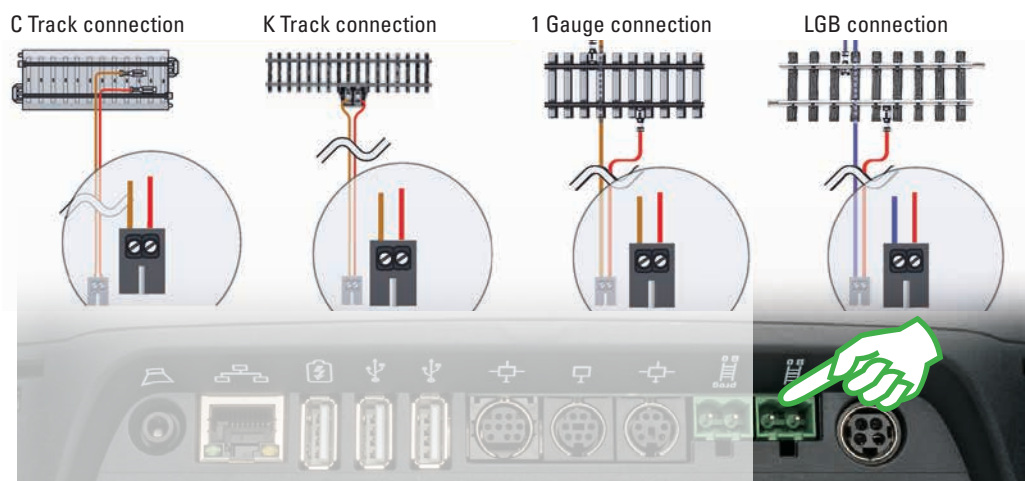

Connections to the Programming Track

The programming track must not have direct electrical contact with the layout and no other users (example: lighting, turnout decoders, lighted track bumpers, etc.) may be connected to it. It is required to read, program, and edit locomotives / powered units in the formats DCC or Motorola (MM2). No programming track is required for registering mfx locomotives.

Programming track for C Track · Programming track for K Track · Programming track for 1 Gauge · Programming track for LGB
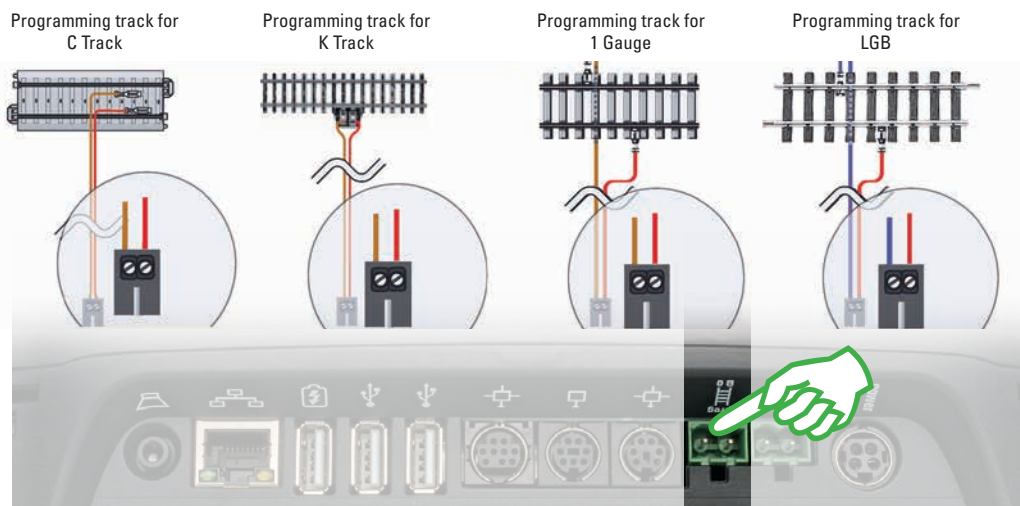

Selecting the Language / Introduction Assistant
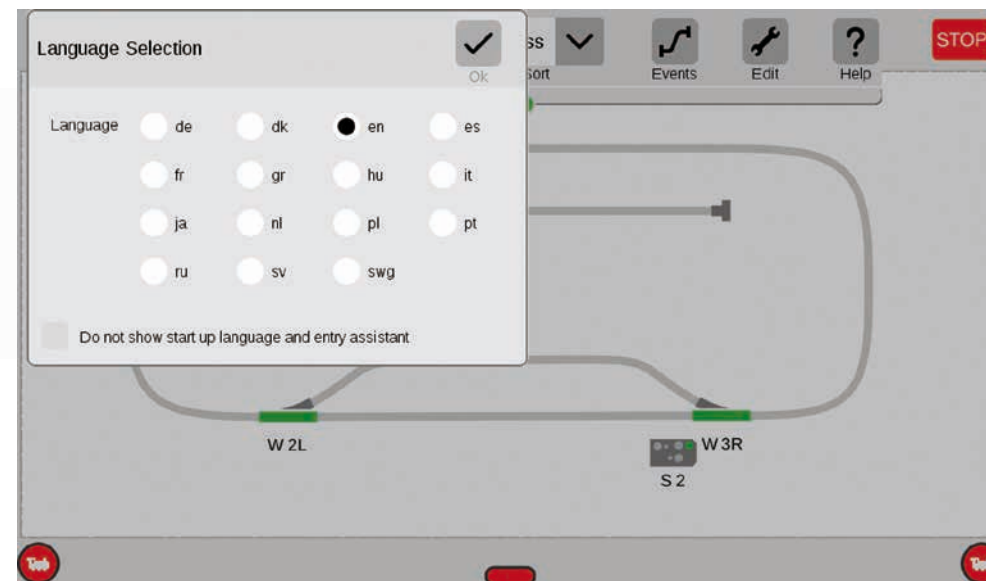
After you turn it on, the CS3 will greet you with the language selection dialog (upper image). Here you can set the language for the user interface. The English language is already pre-selected. Confirm your choice with a tap of your finger on „Ok".

The introduction assistant will then appear (right image). He will present basic operating steps for the CS3 interface with the help of several short exercises.

Tip: In the beginning work through the introduction assistant once. Activate the option „Do not show start up language and entry assistant" in the language selection window so that the language dialog and the introduction assistant no longer start automatically when starting the CS3 in the future. You can reverse this decision at any time in the system settings (see Page 32).
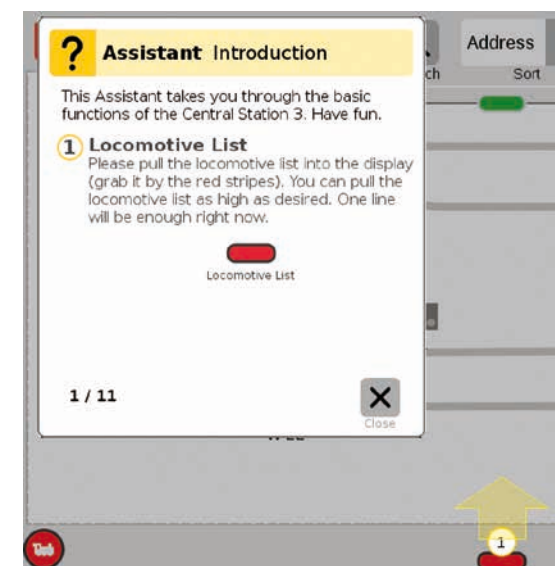
Basic Functions and Connections

1

Large display with high-resolution color screen including a touchscreen – all functions can be controlled with a tap of your finger.

2

The track diagram is at the center of the CS3 and provides the most important information about the current status of your layout.

3

Two locomotive controllers (left and right) are visible in the basic setting.

4

The central Stop button serves simultaneously as „Emergency Off" – in critical train operating situations probably the most important function on the Central Station 3.

5

The change area: From here, you can get to the different basic menus. Tap on one item and the new menu appears.

6

Practical: The speed can now be controlled by wiping your finger across a vertical bar chart.

7

The functions for individual locomotives are displayed in rows of eight positions each. They can be activated with a tap of your finger.

8

The speed can also be controlled by means of the control knob. The change is displayed visually in the vertical bar chart (green).

The CS3 plus also has a direct S88 connection on the underside.

Output Mobile Station

Output Mobile Station
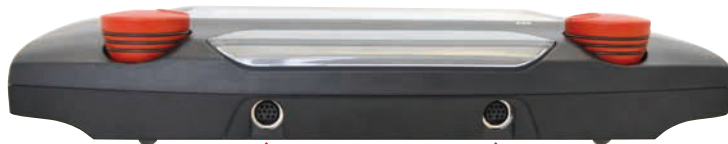
Slot for a chip card with locomotive data

Connection for network / PC

USB connections for data exchange

Märklin CAN Bus input (6-conductor)

Connection for switched mode power pack

Slot for a chip card with locomotive data
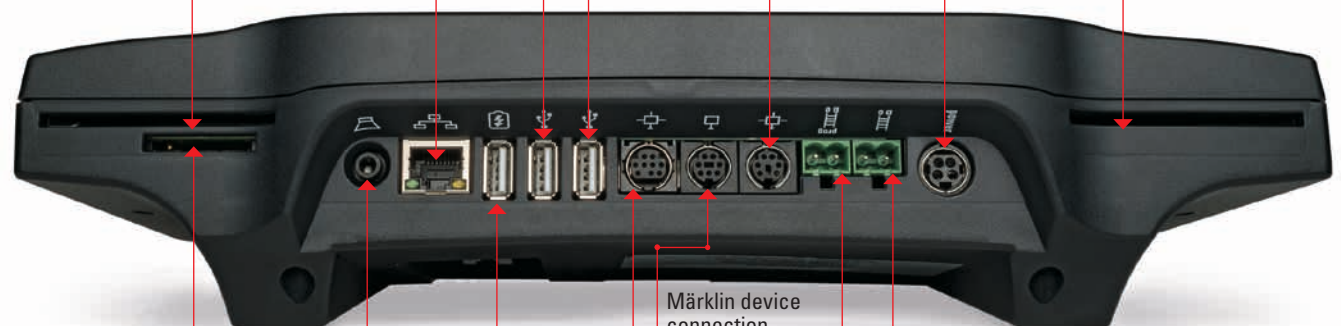
Slot for SD memory card (max. 32 GB)

Speaker / headphone connection

USB connection for loading devices

Märklin device connection (7-conductor)

Märklin CAN Bus output (9-conductor)

Main track

Programming track

Operating | Getting Started Quickly

## Tapping and Wiping: Working with the Touchscreen

Dragging and Zooming: Thanks to the high-resolution Touchscreen, simple touches are all you need to operate this device – such as with a Smartphone or a Tablet. For example, in order to enlarge the track diagram, you drag with the thumb and index finger „away from each other".

Registering mfx Locomotives

The functions for Locomotive V 60 107 are being read

Setup: Place the mfx locomotive completely on the track. mfx locomotives can be done on both the main track and on the programming track.
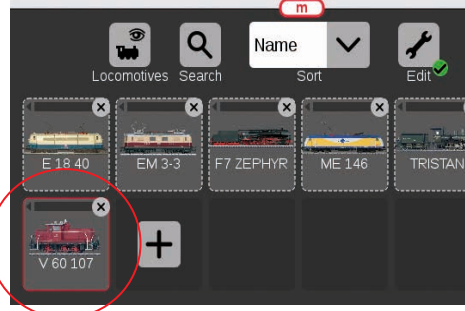
Reading: After several seconds, the CS3 automatically begins to read the data. **Finished:** The newly entered locomotive appears outlined in red in the locomotive list. A red „m" on the edge of the locomotive list also refers to the new registration of the mfx locomotive.

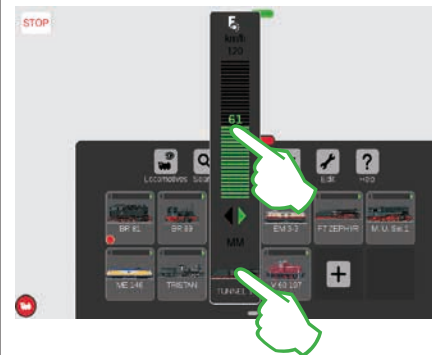## Simple Access to the Locomotive and Item List

Pulling up the Locomotive List: The locomotive list can be enlarged as required with the help of the red horizontal bar on its upper edge. Simply touch the horizontal bar and pull up. Pulling in the opposite direction reduces the locomotive list and even hides it completely.

Pulling up the Item List: Touch the green horizontal bar and pull down: The item list will open as far as required. Pulling the horizontal bar up reduces the item list or hides it completely.
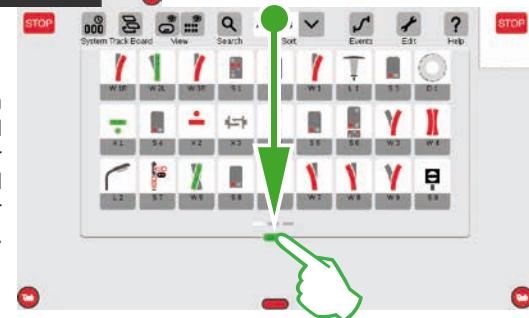
Quick Access to the Locomotive Controller
(„Popup Fahrpult" has to be enabled first in the System Settings)

Running the Locomotive: Tap on the locomotive symbol and hold your finger pressed down on it a little. The spontaneous control will open (left image). You set the speed with your fingertip on the control knob. You can also set the speed by „pushing up" on the green bar. Close the spontaneous control by tapping left or right next to it on the screen.

Calling up Functions: Open the functions for the locomotive by tapping on the „F" symbol on the upper end of the control knob (right image). You switch the functions on/off by pressing with your finger.

5
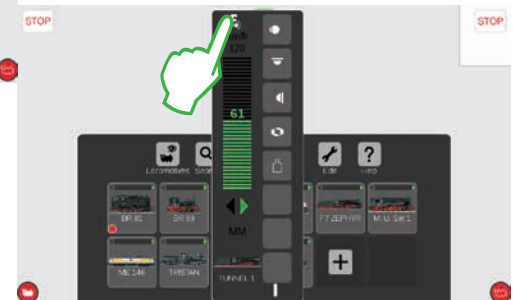
Importing CS2 Data

Importing Existing Data from the Central Station 2

Have you already been controlling your layout with the Central Station 2? Then you can take the valuable locomotive, solenoid item, and track data from there in a few steps and put it into the Central Station 3. All you require for this is a USB stick with the backup of your CS2 data. **Important:** As the first step, plug the USB stick into one of the two USB data sockets on the back of the CS3.
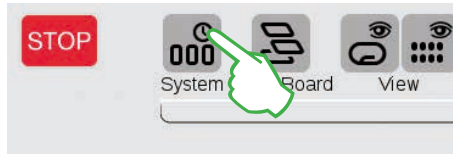

Tap in the upper left corner on the „System" button (upper image) on the start screen for the CS3.
Tap below left on „System" (right image) in the system overview.
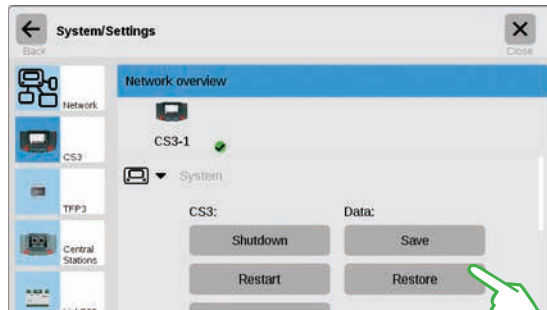
This will take you directly into the system settings for the CS3. There tap on the button „Restore".
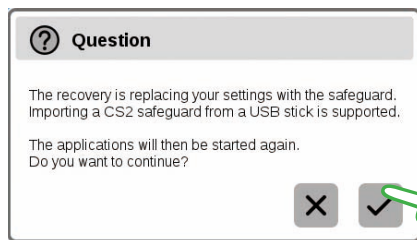
Now the CS3 will ask whether you are really sure you want to do this. Confirm by tapping with your finger on the check mark.
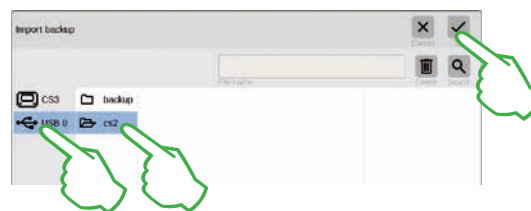
In the file selection dialog, tap on „USB" and on the directory containing the CS2 backup. Select the backup and confirm with „Ok". After a few moments, you will receive the start screen for the CS3.

Note: Extensive information about creating a backup for your CS2 data can be found in the operating instructions for your CS2.
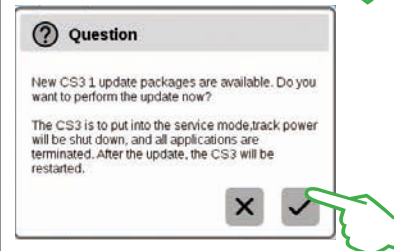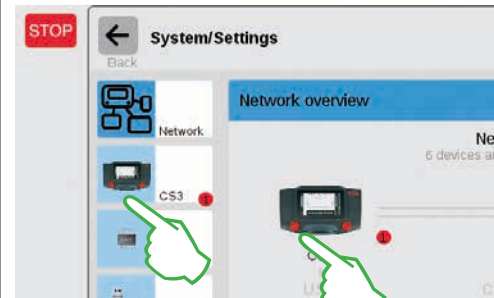
Updating the CS3

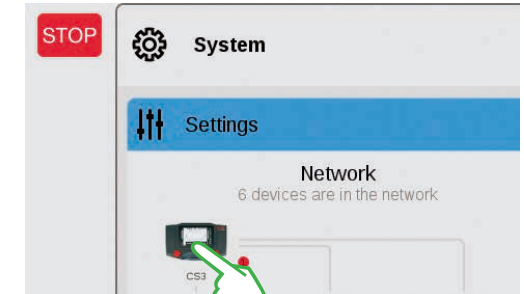## This way you are always up-to-date: Updating the CS3 Software

Märklin continues to develop the operating software for the CS3. As soon as a newer version is available, a small red dot at the foot of the „System" symbol on the CS3 start screen is the signal that this newer version is available. **Tip:** If a connection from your CS3 to the Internet is not possible, you can do updates by means of a USB stick (see Page 35).
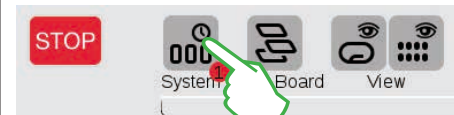
Tap on the „System" symbol in order to update the firmware. The red dot guides you through the system settings. Tap on the symbols next to the red dot.

First in the system overview (upper image), then in the system settings (left image). Both possibilities there will lead you to the destination: to the update button (lower image) that you activate with the tap of your finger.
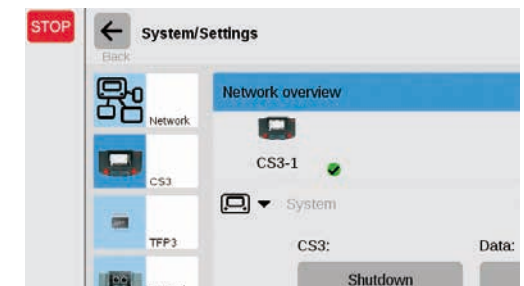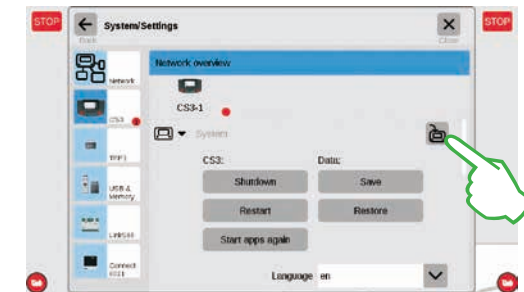
Now the CS3 will ask whether you really want to do the update. Confirm by tapping on the check mark. Now detail information will appear about the update – confirm in the upper right by tapping with your finger on „Start". After that, the CS3 will carry out the update. At the end, confirm in the upper right with „Ok". The green check mark in the system settings will signal that the CS3 is using the newest operating software (right image).

Introduction

Faster, easier, and still more user friendly: The new Central Station 3 offers model railroaders not only the latest technology for multi-train control, but an operator interface that enables intuitive control thanks to a modern touchscreen. As with modern Smartphones and Tablets, the screen must only be touched more and parts of the screen can be enlarged with the zoom function. For example, locomotives can be taken quickly and easily into a locomotive controller or solenoid items can be taken into the track diagram control screen (Layout) with a wipe of your finger (drag & drop).

For the first time Märklin is offering two versions of the control unit with the Central Station 3: the Central Station 3 plus (item number 60216) and the Central Station 3 (item number 60226). Important: Operating both devices is identical. The operating instructions before you therefore apply to both versions. The two versions of the CS3 differ essentially in their hardware features:

Central Station 3 plus (60216): This version allows you to use several Central Stations in parallel. In addition, it has its own S88 connection and thereby has a direct connection potential for the 60881 and 60882 feedback modules.

Central Station 3 (60226): This version is ideal for layouts that are to be controlled only from a single central control unit. S88 feedback modules can be connected to it by means of the Link S88 (60883).

An overview of the possible connections for these control units can be found on Pages 37 and 38.

You can be assured of trouble-free operation of this complex system only if you use tested and certified Märklin system components. The use of other makes of products invalidates any manufacturer warranty from Märklin. The operator is responsible for damages arising from the use of other makes of products.

Adhere to the technology and principles presented in this manual when making connections to or on the layout. The use of other circuits can easily lead to damage to the electronic components. It is therefore best to refrain from „expensive" experiments.

The Central Station is not a toy. Make sure that this device is also used by children only as a controller for model railroading. We hope you will have hours of enjoyment using the Central Station on your model railroad layout.

Your Märklin Service Team

Safety Notes

- Only for operation in dry spaces.
- The LEDs in this device correspond to Laser Class 1 according to Standard EN 60825-1.
- This device can be used by children ages 8 and above and by people with limited physical, sensory, or mental abilities or a lack of experience and/or knowledge, if they are supervised or if they have been trained regarding safe use of the device, and if they have understood the dangers resulting from it. Children may not play with this device. Children must be supervised if they are going to clean or give the device user service.

- Voltage supply: Use only with the Märklin switched mode power packs for 60 watts (60061/60065), Märklin power packs for 100 watts (60101), or LGB power packs for 100 watts (51095).
- Pay attention to the notes in this manual about the switched mode power pack being used.
- Use a moist cloth for cleaning this device. Do not use solvents or cleaning agents. The power to this device must be turned off (no voltage present) when you are cleaning it.
- Pay attention to the instructions for this unit.

Technical Notes

- The device before you is a digital controller for operating today's model railroads with Märklin Digital, Märklin Systems, Märklin MM, or DCC.
- An SD memory card up to 32 GB can be used to expand the internal memory.
- A mouse, keyboard, or a memory stick can be plugged directly into the two USB sockets or by means of a USB hub.
- The USB charging socket is designed for supplying power to a Tablet/WLAN router (max. load of 1 amp).

Limitations of the 60226 Central Station

Since the 60226 Central Station does not have a Märklin CAN Bus input, it cannot be used in Master/Slave operation as a slave. This Central Station has a second connection for a Märklin device in place of the Märklin CAN Bus input.
In addition, feedback modules can only be connected by means of the Link S88 (60883). The S88 connection on the underside of the Central Station is not present on this unit.

Operating for the First Time

All you have to do is connect the track and the switched mode power pack to the Central Station the first time you operate it.
1. Connect the layout track and the programming track, if present, to the Central Station.
2. Connect the Central Station to the switched mode power pack.
3. Plug the switched mode power pack into the nearest wall outlet of your household power system.
   We recommend using a power strip that can be turned on/off. We further recommend plugging all of the switched mode power packs on the layout into this power strip.
4. The Central Station will start automatically.
5. The first time you start the Central Station you can do language settings and you will be guided through the unit with the help of a Start assistant. There are other assistants built into the unit that will introduce you to the details of the Central Station.

Note: Pressing on the STOP button for a long time (up to 10 seconds) allows you to do a forced shutoff of the Central Station. Pressing on the STOP button again will start the Central Station again.

Connections

|	
power	Switched mode power pack
	Track connection (max. 5 amps)
	Programming track connection (max. 1.5 amps); connections diagram same as for layout track
	Märklin CAN Bus input (6-pin; only on 60216)
	Märklin device connection (7-pin) for Booster (60175/60174), Adapter 6021 (60128), and Link S88 (60833)
	Märklin CAN Bus output (9-pin)
	USB: mouse, keyboard, memory, hub,
	USB: only for charging
	LAN, direct connection to a router
	Line Out, connection for an active speaker
S88	Connections on the underside of the device for 60881/60882 S88 decoders, (only on 60216)

Running Locomotives

Selecting and Running Locomotives

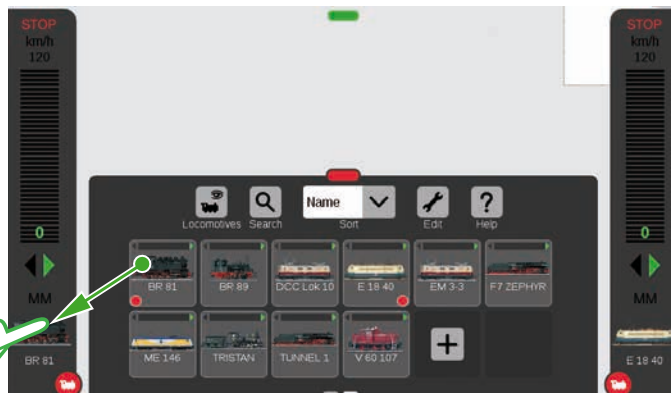## Taking Locomotives into the Locomotive List: Automatic Registration of mfx Locomotives
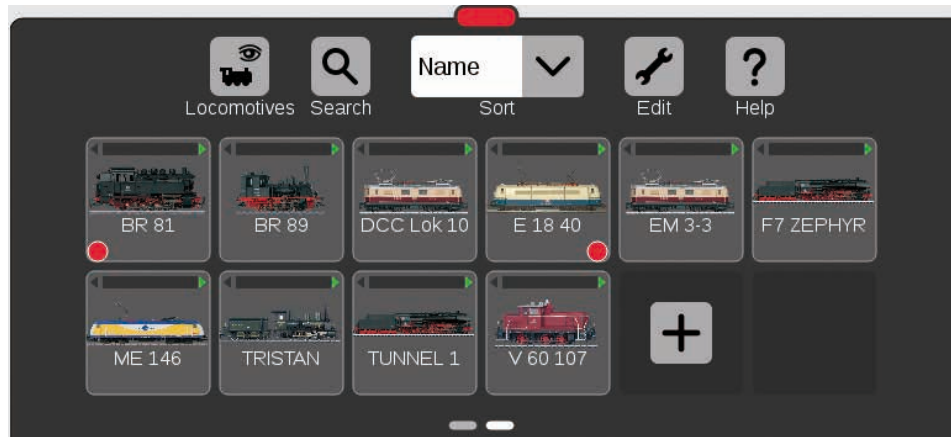
In the beginning, we recommend that you first register all locomotives with mfx decoders (see Getting Started Quickly on Page 5). This is the easiest way to fill the locomotive list (upper image) and to get started quickly.

Tip: Several mfx locomotives can be registered at the same time. However, we recommend adding them one after the other. In our experience, this goes faster.

Tip: Make sure the STOP button is not activated. No registrations can be done in the Stop mode.

Putting Locomotives into the Locomotive Controller

A small red dot in the locomotive list highlights the two locomotives active in the locomotive controllers.

In order to select a locomotive, pull it from the locomotive list to the left (as here in the image) or to the right of the edge of the screen. Lift your finger from the display above the automatically overlaid locomotive controller. The selected locomotive, the mfx protocol, the green direction arrow, the speed controller, and at the top the STOP control are now displayed in the locomotive controller. If a locomotive is running, this is also displayed in the locomotive list with a green bar on the upper edge of the locomotive symbol.

Turning Functions On

Pull the red circle with a small white locomotive in the direction of the center of the screen: The locomotive functions become visible, eight functions per column. Up to 32 functions can be shown at a time depending on how far you pull the list up.

Switching Functions

The functions are switched by tapping on the function symbols. For example, in the image to the left the light, coupling/uncoupling, the whistle, and the blowers are being activated.

Tip: Tapping on the red circle turns the locomotive controller off – and also turns it back on.

Running the Locomotive with the Speed Controller

Tap on the speed controller and the green bar becomes visible: The locomotive runs. Alternatively wipe over the bar or control with the red control knob – even if the locomotive controller is faded out. You change the direction of travel with the green arrow – or by pressing on the control knob.
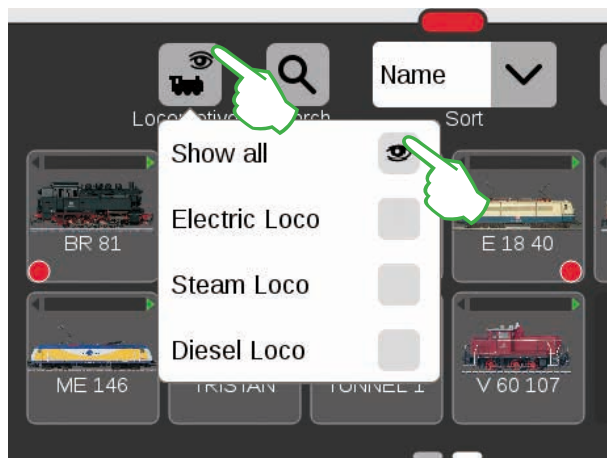
Emergency Stop / Stop

When the speed bar is shown in red, the Stop mode is activated. Press the Stop button or tap on the Stop symbol on the upper corner of the locomotive controller in order to turn it off.

Locomotive List: Sorting and Searching for Locomotives

Displaying Registered Locomotives Independently of the Mode of Propulsion

The locomotive list can be filtered with the help of the mode of propulsion in order to give you a larger overview. A small menu will open up with a tap of your finger on the locomotive symbol on the upper edge of the locomotive list. Tapping on the locomotive symbol fades the selection menu out again.
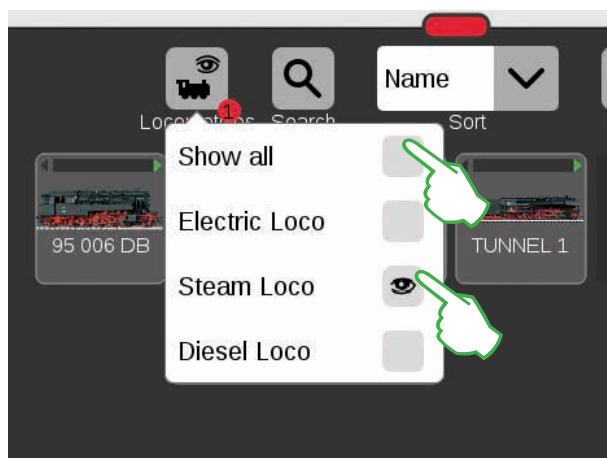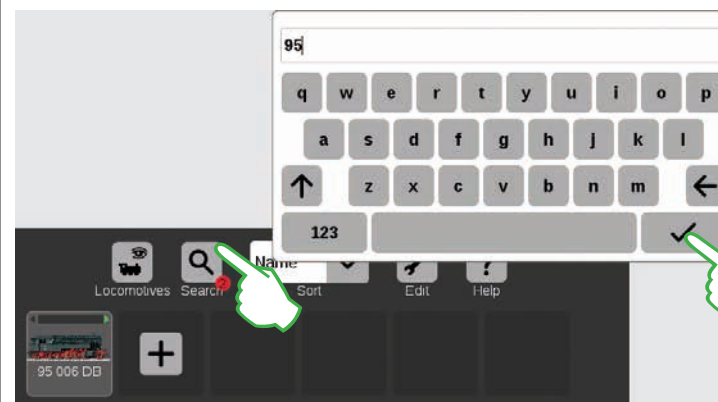

Important: „Show all" must be de-activated in order to show individual powered units.

For example, a tap of your finger on „Steam Loco" shows all locomotives with steam as their propulsion. The remaining units are turned off. The small red dot shows that the filter is activated.

Tip: After selecting a type of locomotive (example: steam locomotive / diesel locomotive), you can quickly turn the entire locomotive list back on with „Show all".

Searching for Particular Locomotives / Live Search

Do you want to find a particular locomotive? Tap on the magnifica-tion lens on the upper edge of the locomotive list that is lettered with „Search" and enter the name or part of the name. The CS3 carries out a live search directly after each entry. Important: The complete search term must be deleted again in order to end the search.

The small red dot at the foot of the magnification symbol signals that the search function is activated.

Different Possible Ways to Sort
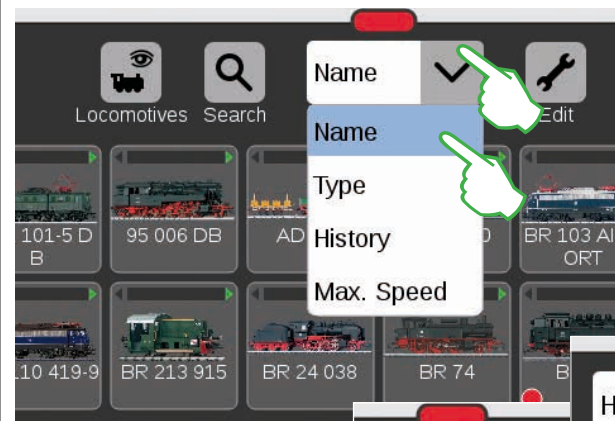
You can get even more of an over-view with the help of the drop-down menu on the upper edge of the locomotive list. Simply tap on it and the menu will open. You can sort by locomotive names by tapping on „Name". The trains are then sorted alphabetically (see left).

Tapping on „Type" sorts the locomotive list by the type of locomotive in the sequence steam, diesel, electric, other. Select „Run" and the last locomotives to be used are the first ones to be shown. „V/max" sorts the locomotive list by the maximum speed indicated in the settings under „Speedome-ter" (see Page 11).
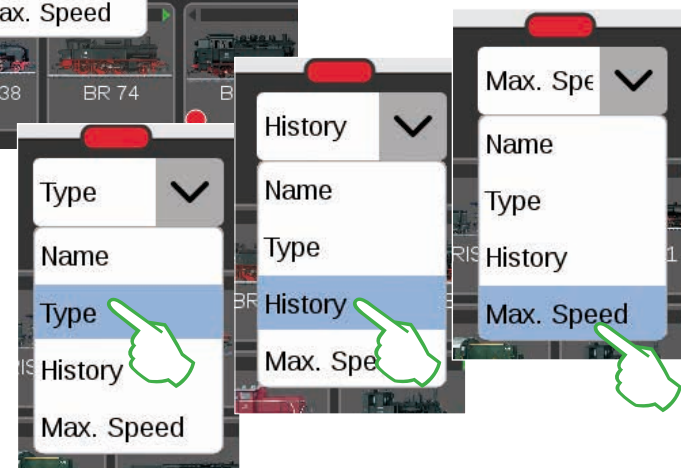
Adding Locomotives Manually

This is the way you add more locomotives:
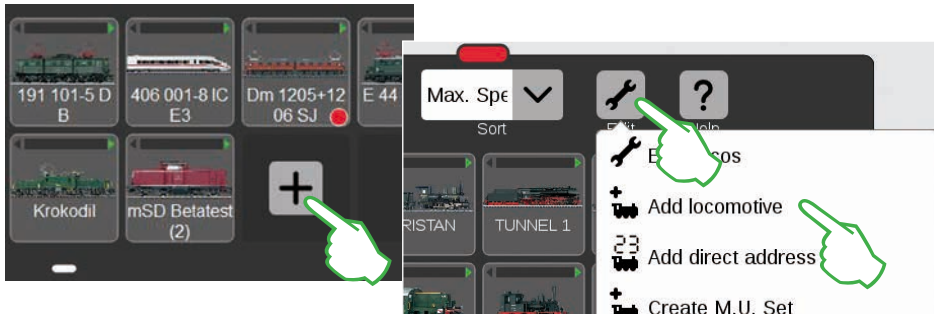
Locomotives without an mfx decoder are added by hand. To do this simply tap on the large plus sign at the end of the locomotive list. You can also tap on the tool symbol („Edit") in the locomotive list and select „Add locomotive" in the menu that is turned on.

Step 1: Finding the locomotive in the database

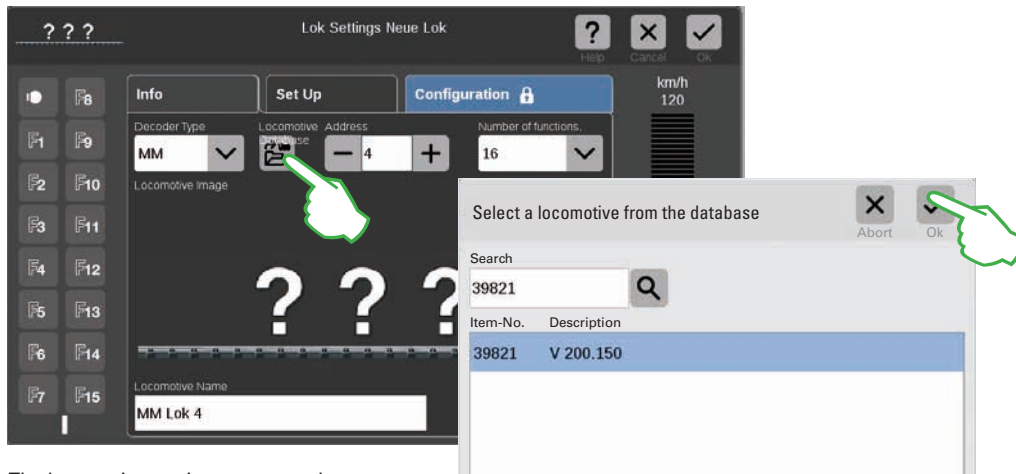The locomotive settings are turned on, and the „Info" tab is active. All settings are modified there (image above). Always begin with the database search for the desired locomotive. To do this tap on the lower edge on the symbol designated „Locomotive Database". A search template will open (right image).

A keyboard is turned on with a tap of your finger on the magnification lens. Here you enter the item number or the locomotive name: The system immediately begins the search. Each additional symbol makes the search results more exact. After that, you select the locomotive being searched and confirm with „Ok".

Tip: It is best to do the search by means of the item number, since this is straightforward.

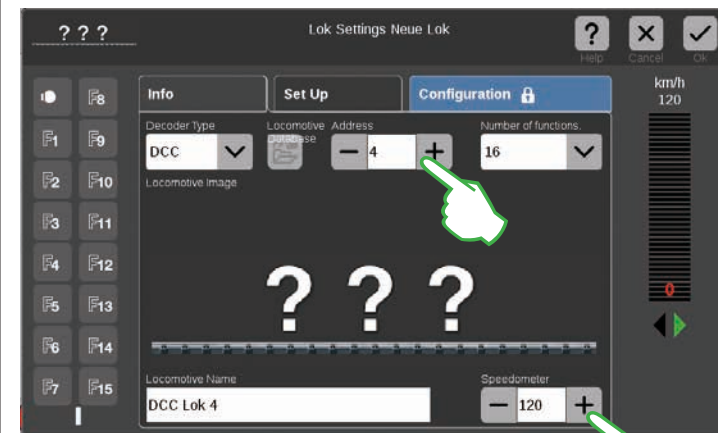## Step 2: Adding a photo from the image database
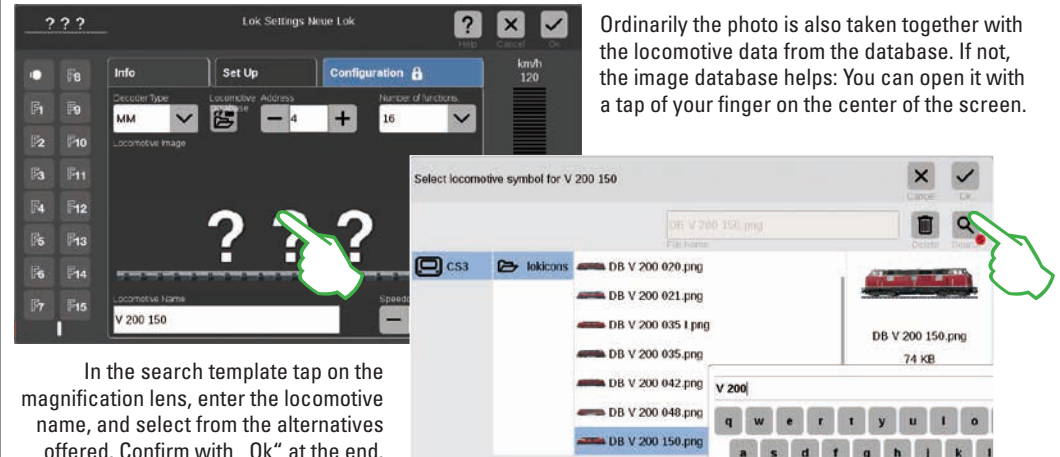
Ordinarily the photo is also taken together with the locomotive data from the database. If not, the image database helps: You can open it with a tap of your finger on the center of the screen.

In the search template tap on the magnification lens, enter the locomotive name, and select from the alternatives offered. Confirm with „Ok" at the end.

Tip: You can also import your own locomotive images. Details on this can be found on Page 35.

Entering Locomotives without the Database: Completely Manual Entry

If the locomotive is not in the database, you can also enter the key data by hand. At the end, confirm with „Ok" in the upper right corner.

Tap in the field „Locomotive Name" in order to enter the name. To the right of that you will find the drop-down menu „Number of Functions" in which you can set the number of functions that can be occupied. How you insert a photo is described above on this page.
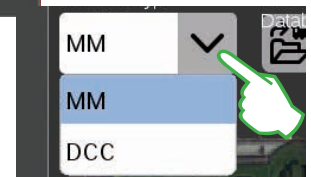
You set the locomotive address by taping on the minus and plus signs. Important: If the address appears in red, it has already been taken. Then simply tap on „plus" until the color changes back to black.

You determine the maximum speed to be displayed on the locomotive controller in the field „Speedometer".

You select the decoder present in the drop-down menu „Decoder Type".

Editing Locomotive Settings | Locomotive Card

Changing to the Editing Mode
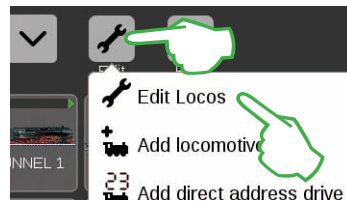
You activate the editing mode with a tap of your finger on the tool symbol and then on „Edit Locos" (left image). You will recognize it by the green check mark appearing at the foot of the tool symbol (image below): All of the locomotives now appear with a dashed frame and they can be deleted by means of a brief touch on the „X".

Now you can edit the settings for the locomotives: To do this tap on the desired locomotive (right image) and the locomotive settings will open (image below).

Tab „Info": Changing Main Data

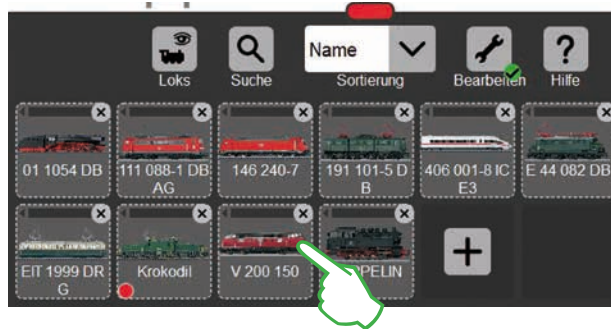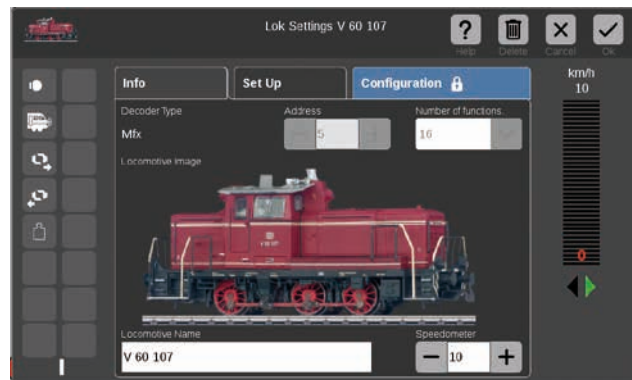You are now in the opened tab „Info" for the locomotive settings. Even with mfx locomotives, you can change the name and the maximum speed shown on the locomotive controller – if desired.
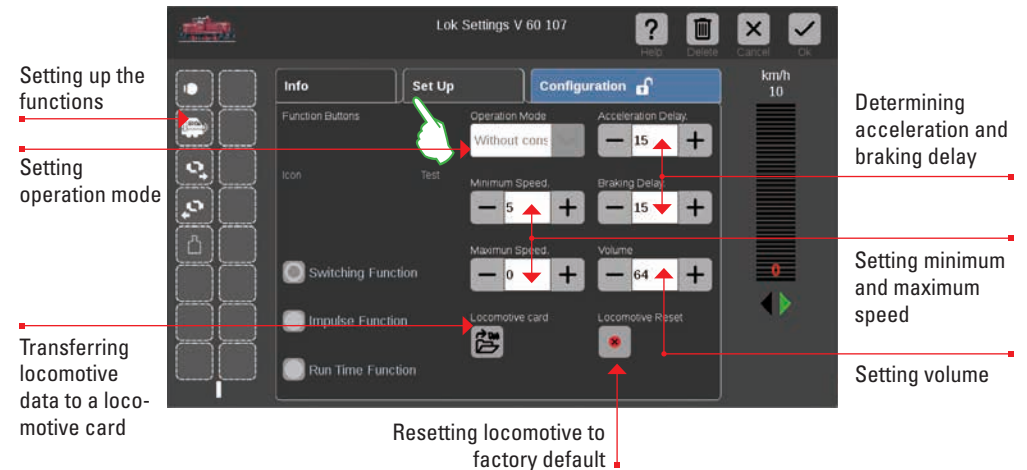
Reading the Address on the Locomotive Decoder

On the lower edge of the „Info" tab for the locomotive settings, you will find the option „Read" for MM and DCC locomotives: Tap on it and the CS3 takes over the address set in the locomotive decoder.
Tip: A new locomotive must be added before this (see Page 11).

„Setting Up" the Tab: Changing Important Settings and Functions

You get to the locomotive settings by first activating the editing mode in the locomotive list and selecting the locomotive to be edited (see the section „Changing to the Editing Mode" on the left side of this page. Then tap on the tab „Set Up".

Setting up the functions

Setting operation mode

Transferring locomotive data to a locomotive card

Determining acceleration and braking delay

Setting minimum and maximum speed

Setting volume

Resetting locomotive to factory default

Important: Altered data are immediately stored in the locomotive decoder. MM and DCC locomotives must be on the programming track to be edited.

Special Case for a Locomotive Card: Reading and Storing Locomotive Data

You can take locomotives into the locomotive list from existing cards or you can rewrite a locomotive card.
Reading: Insert the locomotive card into the card reader as shown. The data are taken into the locomotive list and you can run the locomotive immediately. Important: Make sure that the chip on the card is facing down.
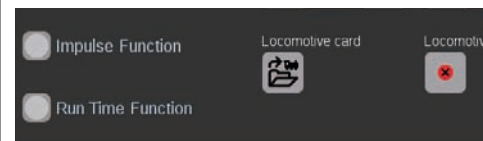
Writing: Insert the locomotive card into the card reader as shown. Tap on the symbol „Locomotive card" in the tab „Set Up" in the locomotive settings: The CS3 will write the locomotive data on the locomotive card.

Setting up Functions

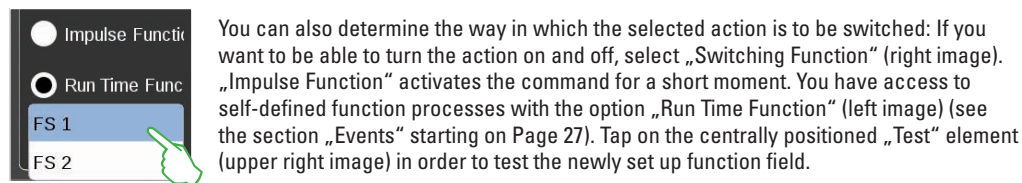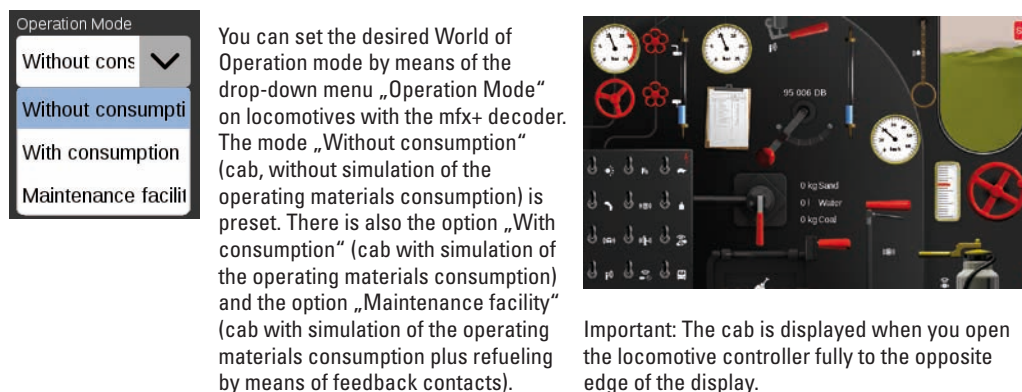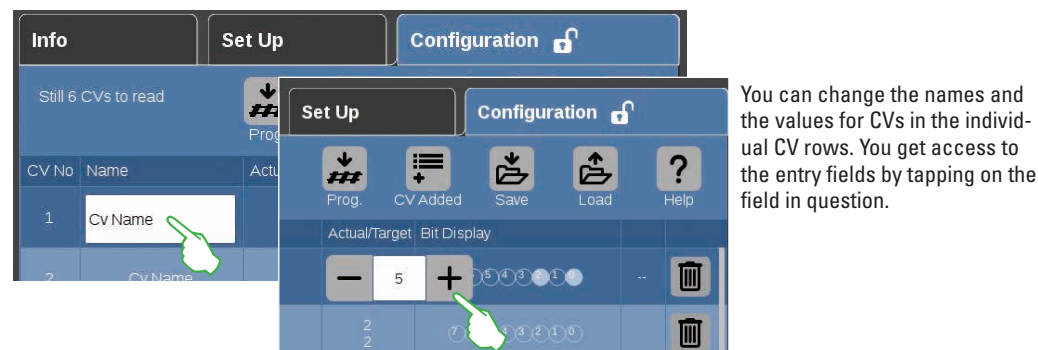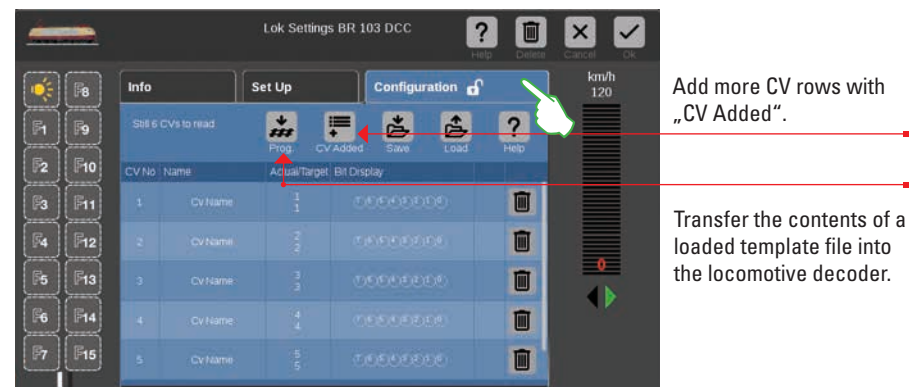Tap on a function field on the left side in order to assign a function to a locomotive. The symbol of the left side now appears in the middle of the window. An entry template will open after that with a tap of your finger (small image to the left).

Numerous different function symbols from which to select are available here divided among the three tabs „Light", „Sound", and „Mechanic". In the example, we tap on the tab „Mechanic" and select the acceleration/braking delay symbol. The CS3 now replaces the empty placeholder symbol with the icon for the newly selected action (right image).

Selecting and Testing the Type of Function

You can also determine the way in which the selected action is to be switched: If you want to be able to turn the action on and off, select „Switching Function" (right image). „Impulse Function" activates the command for a short moment. You have access to self-defined function processes with the option „Run Time Function" (left image) (see the section „Events" starting on Page 27). Tap on the centrally positioned „Test" element (upper right image) in order to test the newly set up function field.

World of Operation Mode

You can set the desired World of Operation mode by means of the drop-down menu „Operation Mode" on locomotives with the mfx+ decoder. The mode „Without consumption" (cab, without simulation of the operating materials consumption) is preset. There is also the option „With consumption" (cab with simulation of the operating materials consumption) and the option „Maintenance facility" (cab with simulation of the operating materials consumption plus refueling by means of feedback contacts).

Important: The cab is displayed when you open the locomotive controller fully to the opposite edge of the display.

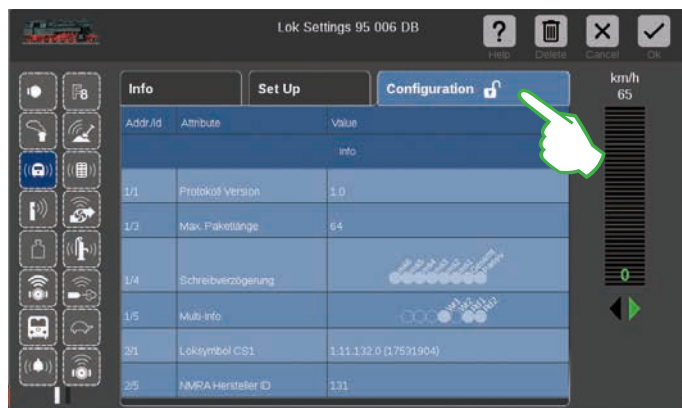## This is the way to edit individual CV values

Tap on the tab „Configuration" after you have activated the editing mode and after selecting the locomotive to be edited (see Section „Set Up" on Page 12). The following user interface is opened in the case of a locomotive with an MM or DCC decoder. **Tip:** The blue areas are only intended for experts. Please change something only when you know what you are doing.

Add more CV rows with „CV Added".

Transfer the contents of a loaded template file into the locomotive decoder.

You can change the names and the values for CVs in the individual CV rows. You get access to the entry fields by tapping on the field in question.

Loading and Storing CV Templates

Tap in the tab „Configuration" on the two symbols „Save" and „Load" in order to load an existing CV template or to store a newly created CV template. After that, a file selection dialog will open and/or suggest a file name for storing.

Configuring mfx Locomotives

All detail settings for a locomotive decoder are loaded as soon as you open the tab „Configuration" in the locomotive settings for an mfx locomotive.

The blue areas are only intended for experts. Please change something only when you know what you are doing. You must make no modifications in this location in normal operation.

## Running a Locomotive with Address Control
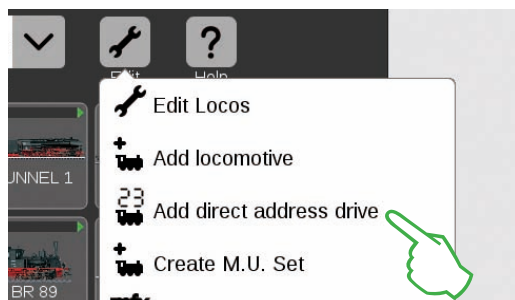
Tap in the locomotive list on the tool symbol („Edit") in order to control and run a locomotive directly by means of its address and then select the „Add direct address drive" (left image) in the drop-down menu that opens.

Enter the address for the locomotive on the numerical keypad that opens and select the protocol for the decoder in use. The address entered is automatically taken into the locomotive controller (in the example to the right the address 25). Now you can run the locomotive directly.

You can change the address and protocol at any time for such an address control locomotive: Simply tap on the address display. The keypad will then appear again (right image).
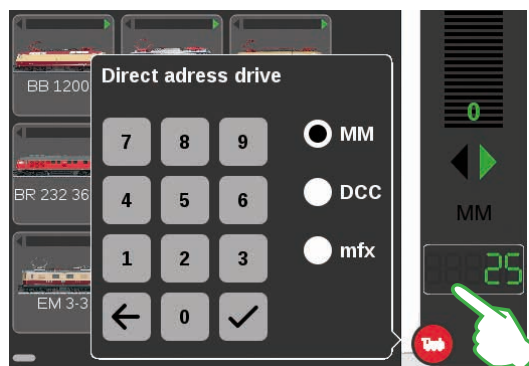

Putting Locomotives into a Multiple Unit (m.u.) Combination
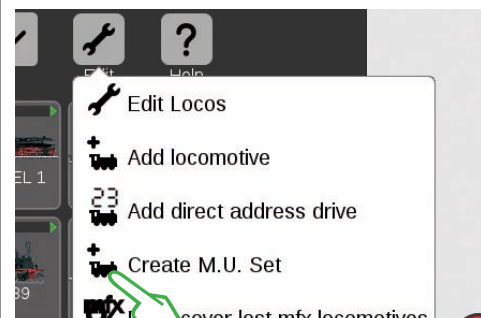

You create a double or multiple unit (m.u.) combination of locomotives with the menu item „Create M.U. Set" (left image). Open the drop-down menu with a tap of your finger on the tool symbol in the locomotive list („Edit"). You can give the new multiple unit combination a name in the entry template that turns on after that.
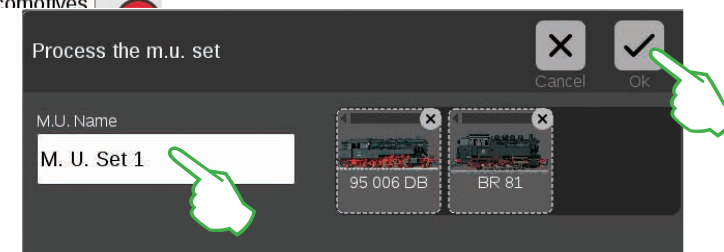
Pull the desired locomotives from the locomotive list into the entry template with a wipe of your finger in order to create a multiple unit combination (center image to the right). Confirm by tapping on „Ok" – and the new multiple unit combination will appear in the locomotive list (right image).
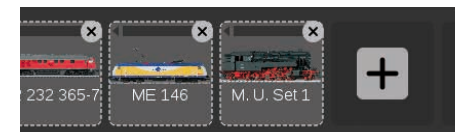
Finding Lost mfx Locomotives
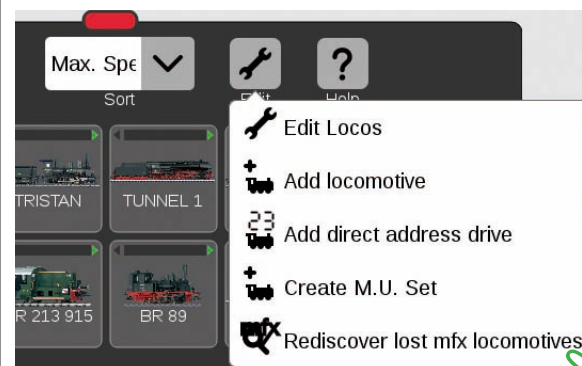
In rare cases, it can happen that an mfx locomotive is no longer displayed in the locomotive list. This option can be helpful. All of the existing data are checked and the system investigates for missing mfx locomotives.

You start the function in the locomotive list by means of the button „Edit" and then with a tap of your finger on „Rediscover lost mfx locomotives".

Editing the Item List

Setting Up · Sorting · Switching Solenoid Items

Adding Solenoid Items

Preparation

As delivered from the factory the Märklin starter set is shown in the Central Station 3 – with an item list including a few solenoid items and a simple track diagram. If you do not require the track diagram and the items, you should delete the items in any event. In addition, you can also set up a new Track Diagram Control Board Section (TDCB Section) right away with names of your own choosing.

Deleting Existing Solenoid Items

First, tap on the tool symbol („Edit") in the toolbar for the item list and there select „Edit Article List" in order to remove an item from the CS3. You delete the individual items by tapping on the „X" in each case in the upper right corner (left image).

## Setting Up a New TDCB Section with Custom Names
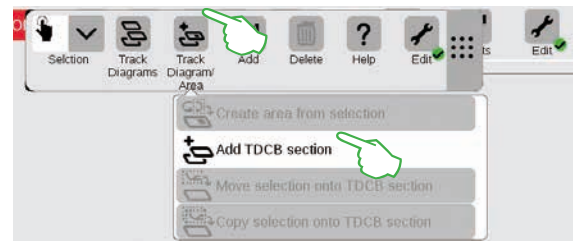
The TDCB section the basis of your track diagram control screen. First, tap in the upper right on the tool symbol („Edit") and then select „Edit Track Board Page" in order to add a new Board. Tap on „Track Diagram/Area" and in the drop-down menu on „Add TDCB section" (left image) in the toolbar now opened. Additional details about setting up a TDCB section can be found on Page 21.
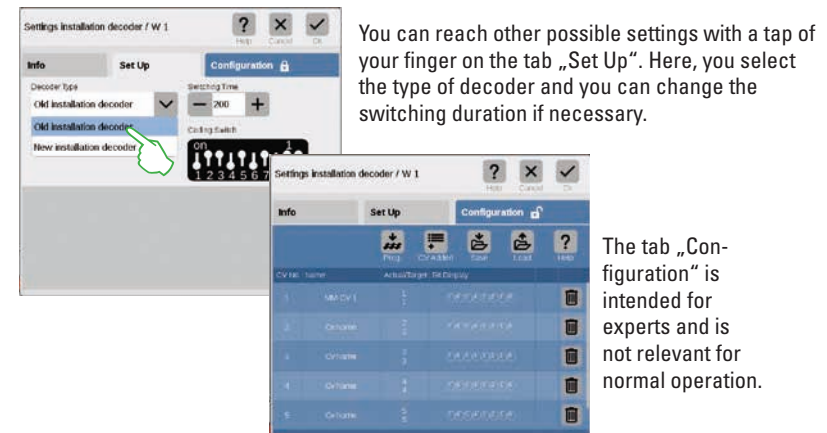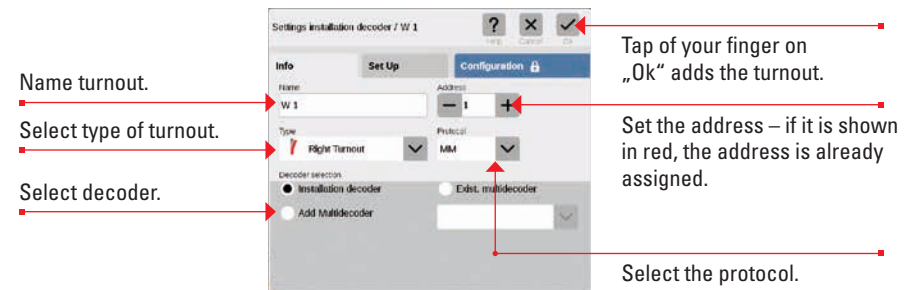
Adding a Turnout

Tap on the tool symbol and open a drop-down menu with it in order to set up a turnout. There select „Add Article".
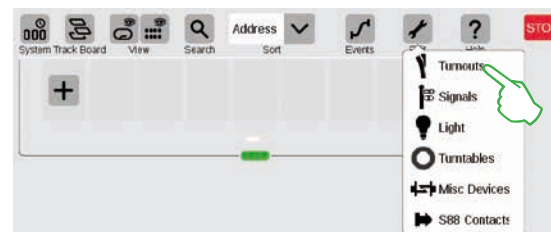
Another drop-down menu is shown. There, select „Turnouts".

All of the details of the new turnout can be set in the entry template now opened:

Name turnout.

Select type of turnout.

Select decoder.

Tap of your finger on „Ok" adds the turnout.

Set the address – if it is shown in red, the address is already assigned.

Select the protocol.

You can reach other possible settings with a tap of your finger on the tab „Set Up". Here, you select the type of decoder and you can change the switching duration if necessary.

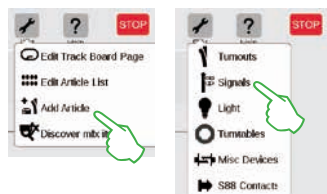The tab „Configuration" is intended for experts and is not relevant for normal operation.

The new turnout is set up in the item list as soon as you confirm with „Ok". At the same time, the turnout will already appear on the board (lower image).
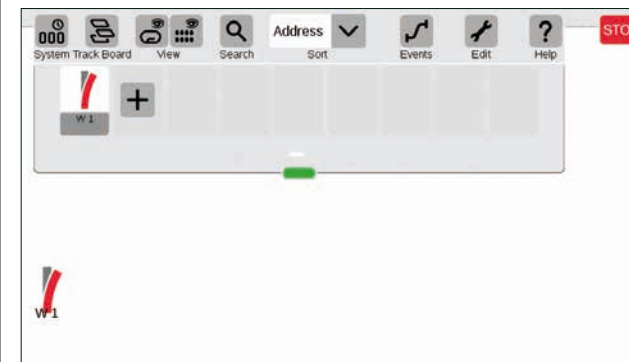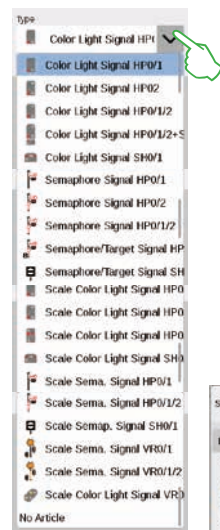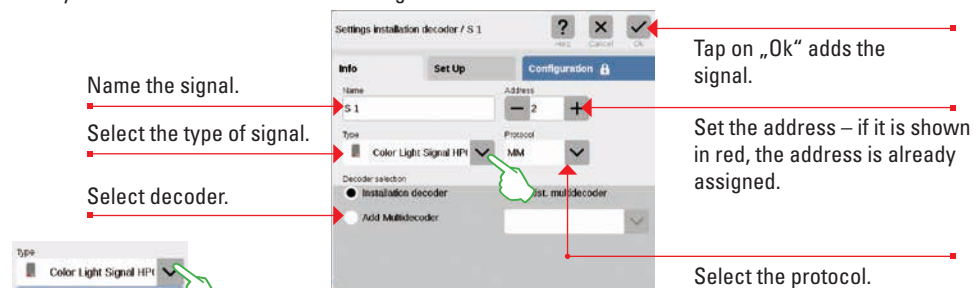

Important: The CS3 automatically drops every newly added item on that board that is active at the time the item is being added. Therefore, make sure which board is in the foreground.

Adding a Signal

Tap in the item list on the tool symbol and select „Add Article" (left image) in the drop-down menu that opens in order to set up a signal. Then tap on „Signals" (right image) and open the settings (lower image).

Here you can set the details for the new signal item:

Name the signal.

Select the type of signal.

Select decoder.

Tap on „Ok" adds the signal.

Set the address – if it is shown in red, the address is already assigned.

Select the protocol.

You determine the type of signal by means of a drop-down menu that you open up with a tap of your finger. Different signal variations are there ready to be selected.
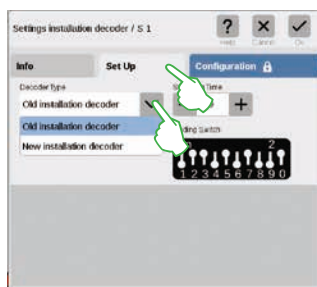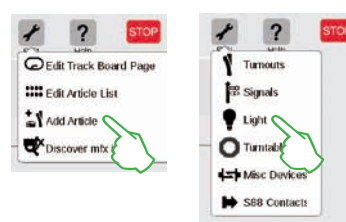

You can do other settings in the tab „Set Up". Here you select the type of decoder and you can also change the switching duration.
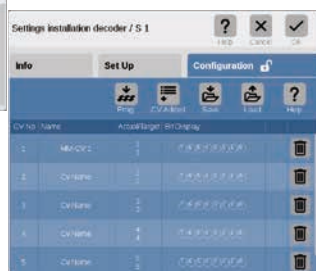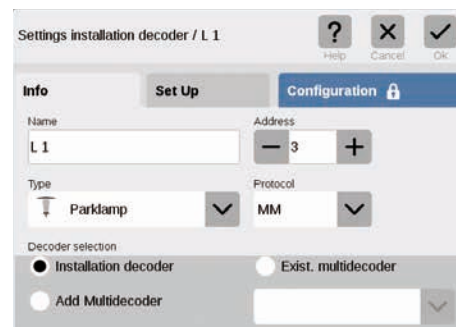

The tab „Configuration" is intended for experts and is not relevant for normal operation.

Adding a Light

A new light item is quickly set up: A drop-down menu opens with a tap of your finger on the tool symbol for the item list („Edit"). Here you select „Add Article". Tap on „Light" (images to the left) in the menu that opens.
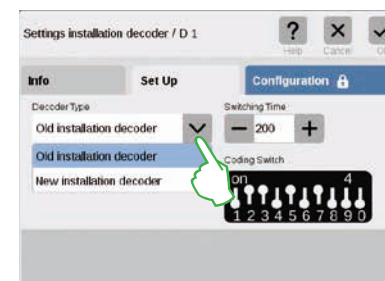

Now, all of the settings (name, address, type, protocol, decoder, or type of decoder, and switching duration) can be edited: in the tabs „Info" (left image) and „Set Up" (lower image).
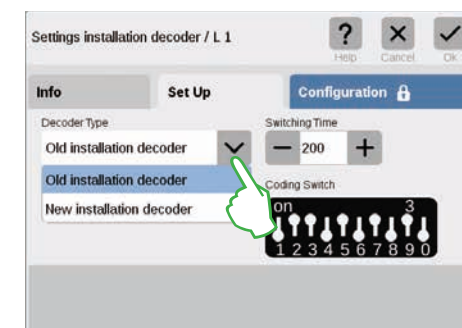

Adding a Turntable

A turntable is also easily put into the item list: A drop-down menu opens with a tap of your finger on the tool symbol for the item list („Edit"). Here you select „Add Article" (left image). Tap on „Turntables" in the menu that follows.


Now you have access to all of the settings in the tabs „Info" (name, address, type, protocol, and decoder) (left image) and „Set Up" (type of decoder and switching duration) (right image).

Adding Other Items
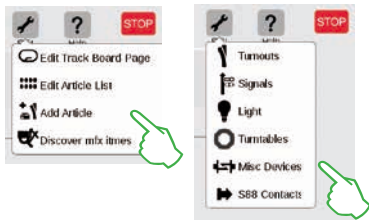
All kinds of items can be added by means of this option: Tap on the tool symbol for the item list and select „Add Article" in the drop-down menu (left image) as well as in the extension „Misc Devices".
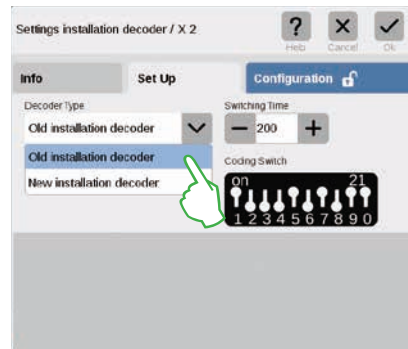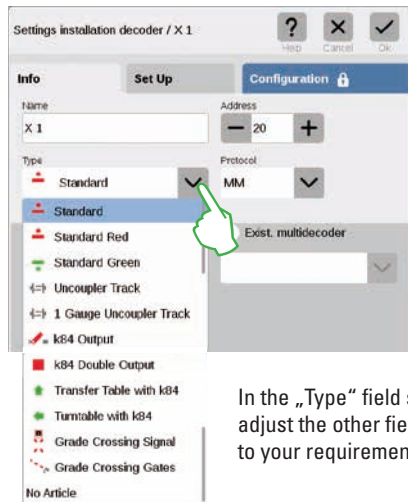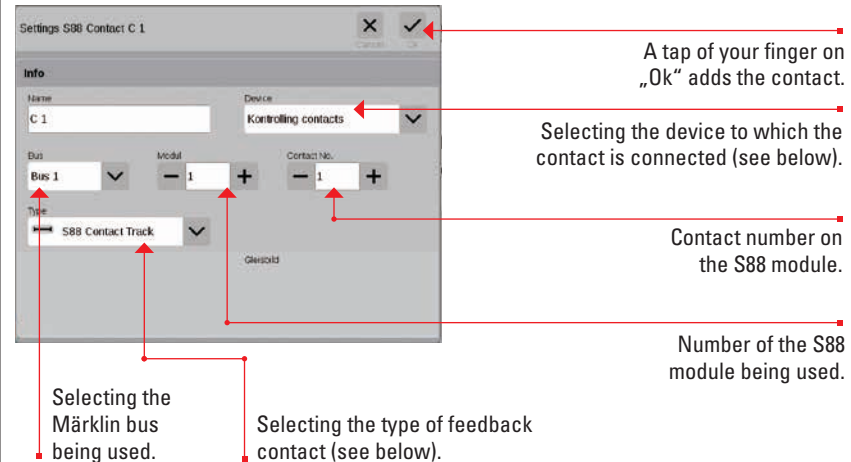

In the „Type" field set the definite type of item (left image) and adjust the other fields – in the tabs „Info" and „Set Up" – to your requirements.
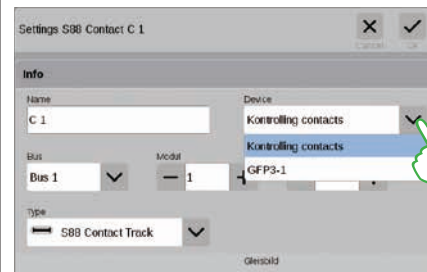
Adding S88 Contacts

S88 contacts expand the possible ways to control enormously. Tap on the tool symbol for the item list („Edit") and in the drop-down menu tap on „Add Article" (left image) in order to add them to the item list. Select „S88 Contacts" in the menu that follows.

Now you are in the settings menu. Here you set the details for the new S88 contact:

A tap of your finger on „Ok" adds the contact.

Selecting the device to which the contact is connected (see below).

Contact number on the S88 module.

Number of the S88 module being used.

Selecting the Märklin bus being used.

Selecting the type of feedback contact (see below).

Extension path for the feedback contact:

You set the device to which the feedback contact is connected in the drop-down menu „Device".
On the CS3 plus you will find here the option „GFP3-1" that corresponds to the S88 connection on the underside of the device (left image).
On the CS3 (60226) feedback modules are connected by means of the Link S88 (see below).

Bus and Module Entry When Using the Link S88:
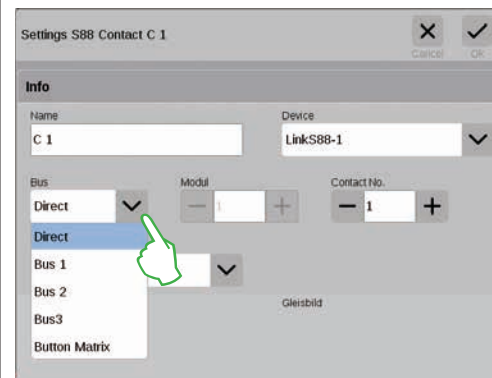
When you are using the Link S88, feedback contacts can be connected in the following ways:
- Directly at the Link S88
- To other S88 modules that are connected to the Link S88 (by means of Bus 1, Bus 2, or Bus 3)
- By means of a button matrix (see Page 19)

You select the type of connection (Bus) per contact and enter the number for the S88 module (1-32) and the number for the switching contact on the module. With the type of connection „Direct", it is enough to enter the number for the switching contact at the Link S88.

Button Matrix:
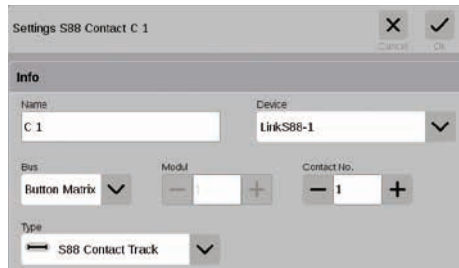
You can use the L88 for a button matrix, such as for a track diagram control screen. Up to 64 buttons (32 solenoid items or 64 routes) are supported. You enter the switching points belonging to them in the field „Contact No.".

Selecting the type of S88 feedback contact:
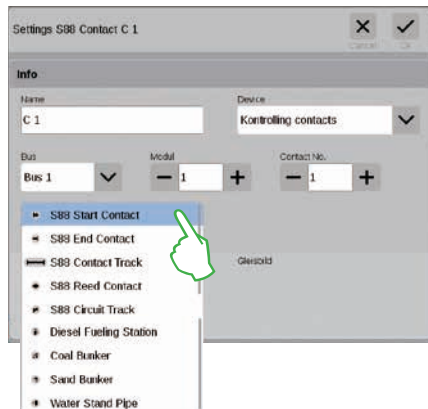
In the drop-down menu „Type", select the type of feedback contact installed: contact track, reed contact, or circuit track.

Other types of contacts are available for the mfx+ World of Operation mode such as diesel fueling station, coalbunker, sand bunker, and water standpipe.

Discover mfx Items

In rare cases, it can happen that an item set up in the item list is no longer displayed.
This function is used to find it again.
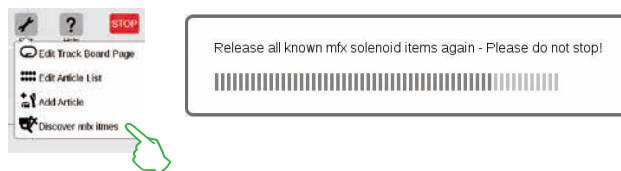
Start the function by tapping on the tool symbol for the item list („Edit") and on „Discover mfx items" (left image) in the drop-down menu. After that, the CS3 will turn on the message above that it is linking to all known mfx solenoid items. You must now merely wait a few minutes.

Searching for Solenoid Items / Live Search
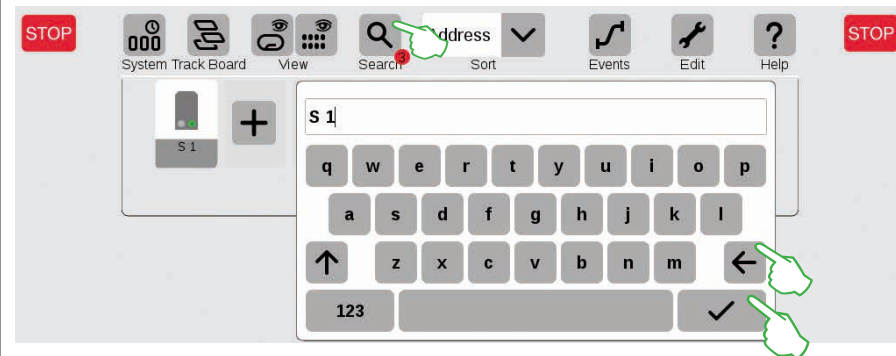
With the search function, you can search specifically by name or part of the name for individual or several solenoid items. Tap on the magnification lens symbol („Search") and enter the search term on the keypad that is turned on. The CS3 searches directly after the entry of each symbol (live search). A small red dot indicates the active search. The number shown in this dot corresponds to the number of symbols entered. You can end the search mode by deleting the search term with the backspace key. Tap on the confirmation check mark on the keypad in order to turn it off.

Sorting Solenoid Items
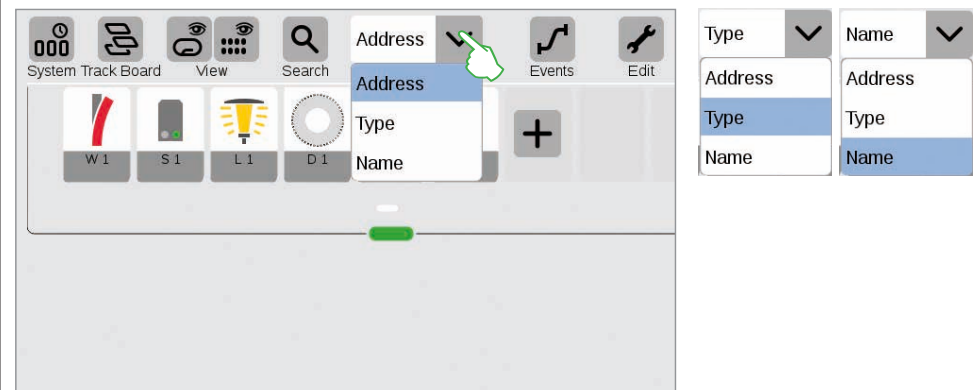
You sort solenoid items by different criteria by means of the drop-down menu on the upper edge of the item list: by the assigned address, the item designation in question („Name") and the type of item.
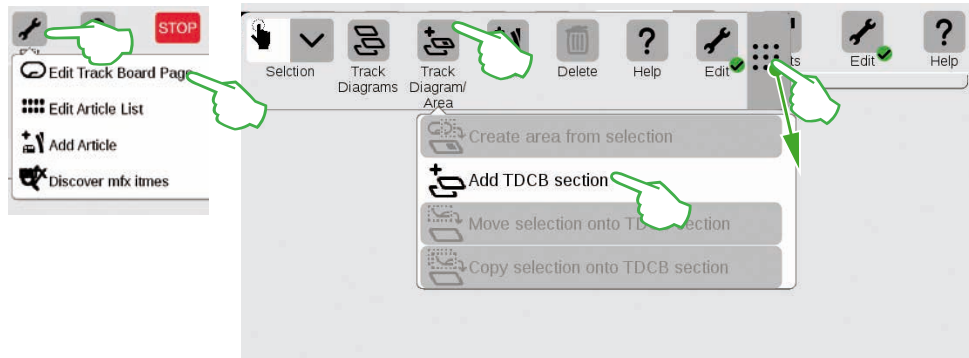
Editing the Track Diagram Control Screen

Positioning · Rotating · Connecting Track Items

Setting up a Track Diagram Control Screen

In this section, you will become familiar with all of the necessary steps for setting up a track diagram control screen in the Central Station 3. The simple track diagram of a Märklin starter set (see Page 24) will serve as an example that we will model step-by-step on the following pages.

Adding a Panel

You create the basis for the track diagram control screen with a TDCB section. First, activate the edit mode by tapping in the upper right on the tool symbol („Edit") and then select „Edit Track Board Page". In the tool bar now turned on tap on „Track Diagram/ Area" in the drop-down menu on „Add TDCB Section".
Tip: You can shift the tool bar if you pull the 9-dot symbol on its right side with your finger to the destination position.


Enter a name for the new Track Diagram Control Board Section in the dialog field turned on and confirm with „Ok".
Important: Select the designation sensibly. The name for the board cannot be changed later.

Deleting a Panel
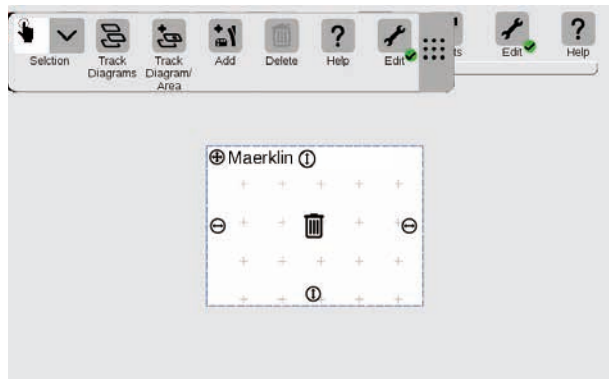
The new board is already created, here in the example with the name „Maerklin". This board can be deleted again with a tap of your finger on the wastepaper basket symbol in the center of the board – so long as it is empty and the edit mode is active. You will recognize it from two features: from the light gray plus symbol laid over the board and from the green circle with a check mark at the foot of the tool symbol.

Changing the Size of the Panel
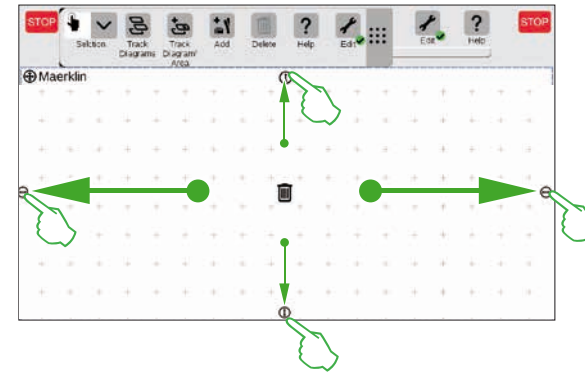
The board can be enlarged or reduced in size with the help of the small black circles visible on every side of the board.
In order to make the board the size of the display, tap on one of the circles, hold your finger on the display, and pull your finger to the edge of the screen. Repeat this for the other three sides. Done! Now you have enough room to set up the simple track diagram (see Page 24) described on the following pages.

## Pulling Solenoid Items from the Item List onto the Panel
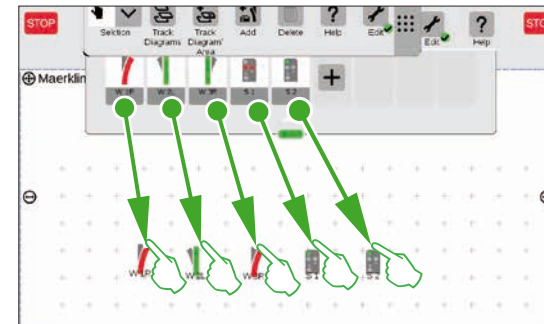
Now pull the required solenoid items from the item list onto the board that has been created: the turnouts W1R, W2L, and W3R as well as the signals S1 and S2. To do this touch the symbol in question, pull your finger to the center of the display, and lift it again from the screen. The track diagram edit mode must continue to be activated for these steps.

Moving Solenoid Items on the Panel
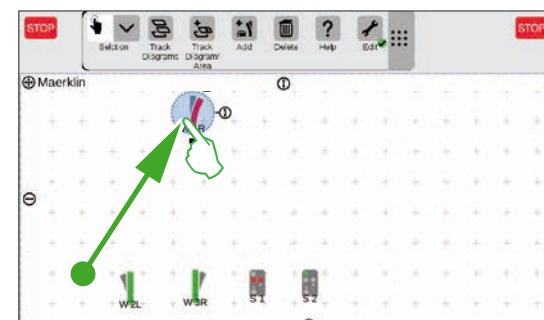
The turnout W1R has its place in the upper left section of the board in the planned track diagram (see Page 24). Therefore, pull the turnout into this area by touching the turnout symbol and pulling your finger upward on the display. The light blue circle around the turnout indicates that you have selected the turnout by tapping on it.

Rotating Solenoid Items: The Rotation Mode
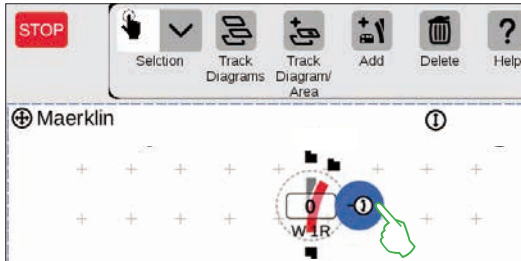
We need the turnout in a horizontal alignment for the planned track diagram control screen. We will therefore rotate it 90 degrees: First, we mark the turnout by tapping briefly on it. You will see the light blue circle again surrounding the turnout. Then we tap again – this time specifically on the double arrow on the edge of the turnout – and hold the finger pressed down on it. The arrow is now shown outlined in blue (left image).
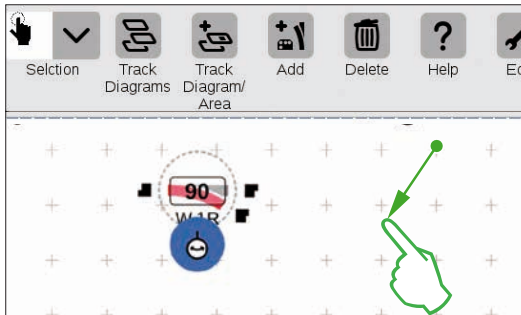

The turnout is now in the **rotation mode**. You can now move your finger up and down. The turnout will rotate according to the movement of your finger. The current angle for the turnout will be shown on the turnout symbol. Stop at 90 degrees.
Tip: The farther from the turnout you move your finger on the screen, the slower the rotation will be: The intended angle can be set more easily this way.
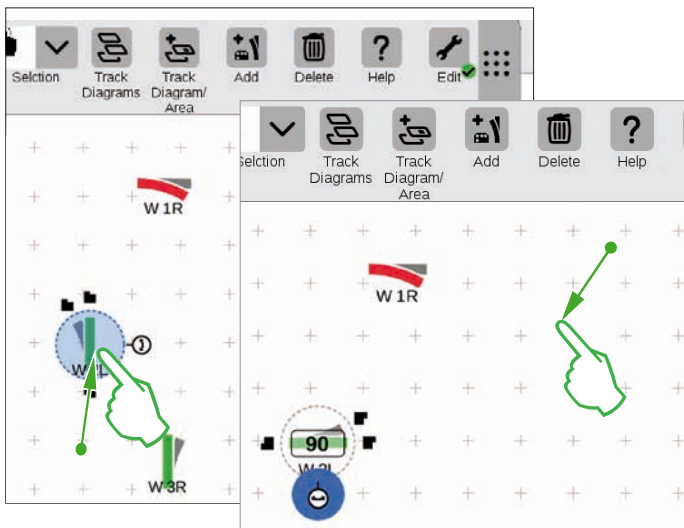

We need turnout „W 2L" in the lower left section of the board in order to get closer to the desired track diagram. The same steps are needed for this as described above: So, pull the turnout to the lower left section of the board (left image), activate the rotation mode and rotate the turnout in a horizontal direction to an angle as shown of 90 degrees (right image).

Adding Track Laying Items
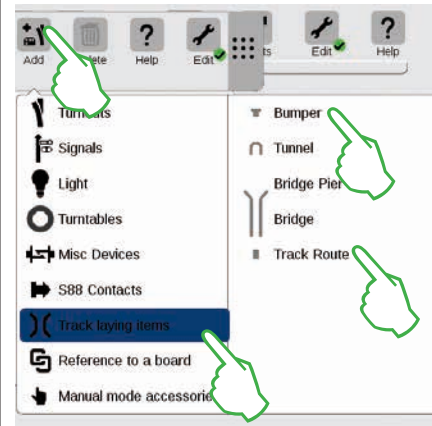
We need track path items in order to generate a visually appealing track diagram. These are purely decorative elements without a function. Open a drop-down menu by means of the „Add" button in the tool bar. Here you will select „Track laying items". In the menu that follows, tap four times on „Track Route" and once on „Bumper" since a storage siding is also part of the desired track diagram. Tap again on „Add" or on an area outside of the menu in order to close it.

Tip: You can add other possible track building items such as tunnels, bridge retainers, and bridges (left image) using the same process. All other items from turnouts to S88 contacts can be added in this way and at the same time, they can be put in the item list.
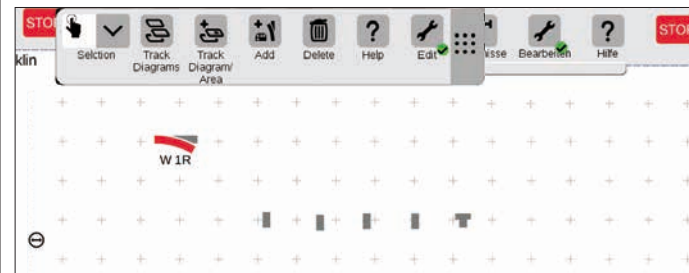

The track path items and the track bumper are automatically put on the activated board by the add function, in our case the „Maerklin".
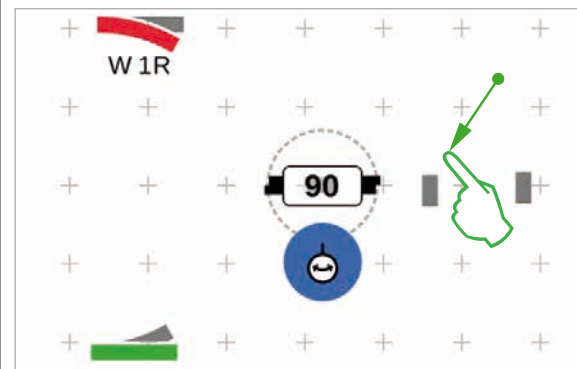

The items added always appear on the board in a set alignment. Since we need a horizontal track path item for the next step, we have to realign it and rotate it to a horizontal position (Rotation Mode, see Page 22).

22

Connecting Items: The Connection Mode
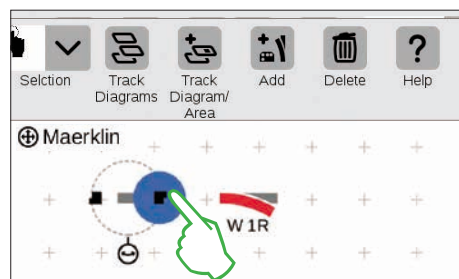
Pull the now horizontal track path item to the left next to the turnout „W 1R". You will see two black symbols to the left and right on the edge of the marked track path item. They are the docking positions by which two items are connected with each other. Now tap on the right symbol that is marked in blue by the act of tapping on it: You have activated the **Connection Mode** (left image).
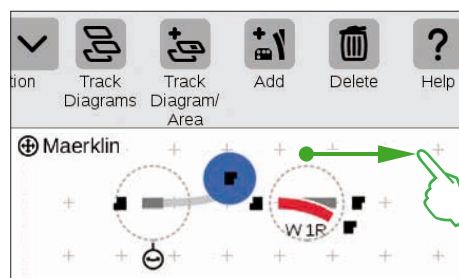

Pull this connection symbol marked in blue in the direction of the turnout (left image).

Tip: You can carry out the pull motion with your finger at any spot on the display. You thus have a perfect view of the items to be connected.
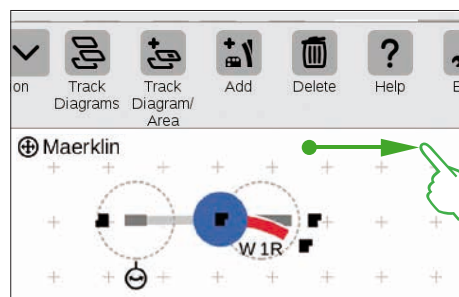

As soon as the two docking positions overlap, lift your finger from the display. The Central Station 3 automatically makes the track connection between the connection positions (left image).
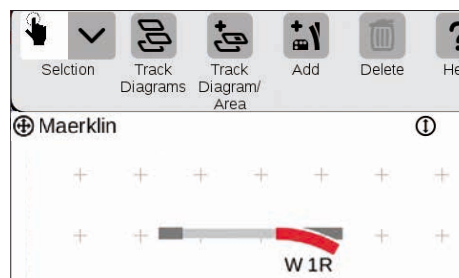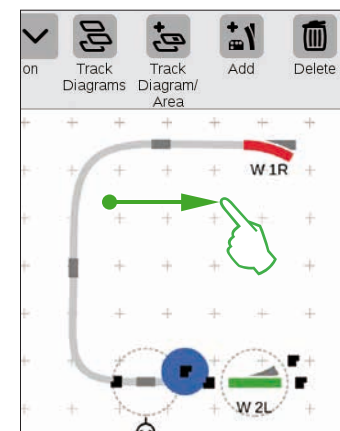

Tap next to the turnout and the track path item on the board and all of the markings are thus removed. You see only the items together with the track connection (left image). Congratulations, you have connected your first pair of items!

Tip: You can also connect the items by placing them close to each other.
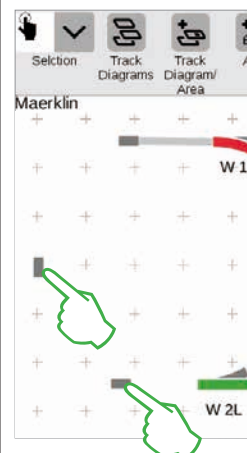

Now you have the opportunity to practice more connections: Make the connection to the turnout „W 2L" that was already positioned on the previous page. To do that place two of the track path items already added as shown (left image). You need to do a rotation of 90 degrees once (see „Rotation Mode" on Page 22). Finally, connect the items by first switching a docking position in each case to the Connection Mode (right image) and then making the connection (see „Connection Mode" at the beginning of this page).

Connecting a Turnout and a Track Bumper
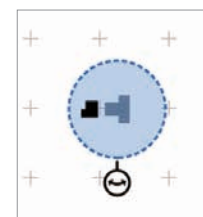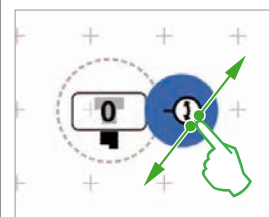
Now a storage siding will be connected to the upper turnout. To do that, first rotate the track bumper and a track path item by 90 degrees (images to the left, see „Rotation Mode" on Page 22).
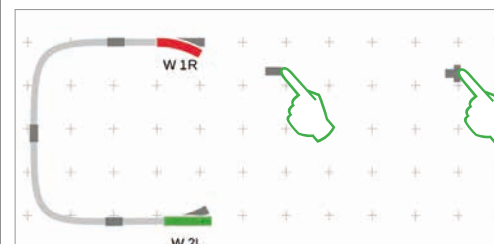
Now both track-building items are positioned as shown in the diagram nearby. After that, the turnout is connected to the track path item (see „Connection Mode" at the beginning of this page). Then make the connection between the track path item and the track bumper (lower image).

23
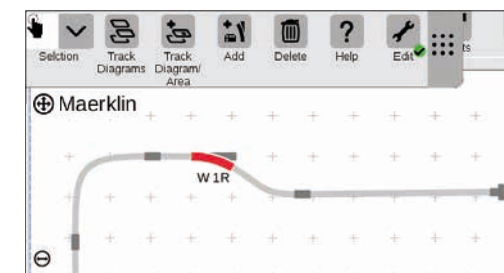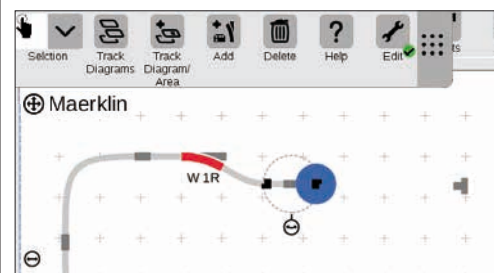
Completing the Track Diagram Control Screen
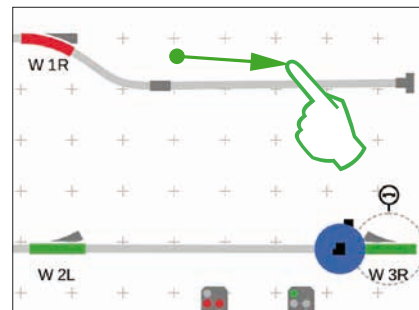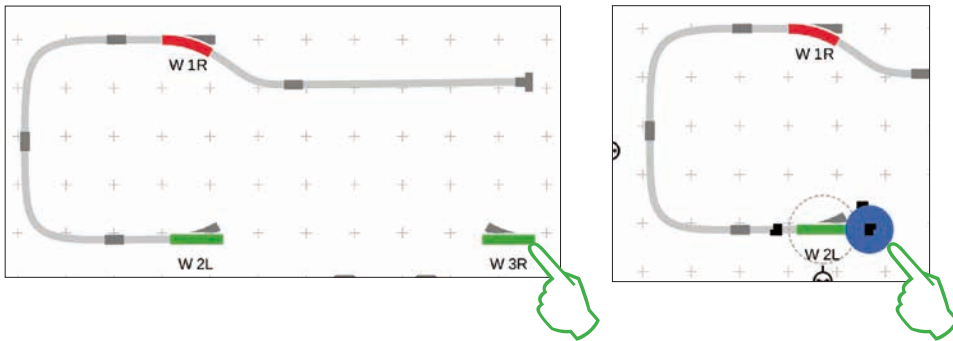
Half of the track diagram is now ready. Now comes the station and the rest of the oval: We pull the turnout „W 3R" to the lower right section of the board and rotate it to a horizontal position (upper left image), activate the connection mode at the turnout „W 2L" (upper right image) and connect them with the right turnout (left image).

Now a second track is put in the station and the oval is closed. To do this we add five more track path items, position them as shown below, and rotate them as required for the right alignment (lower left image). Finally, the turnouts and track path items are connected with each other.
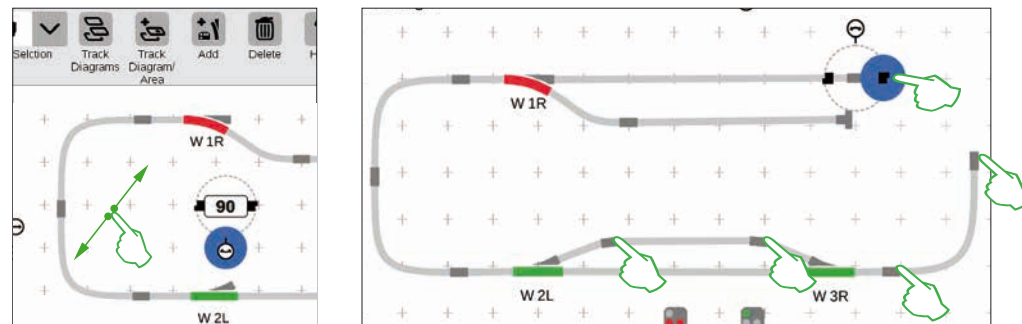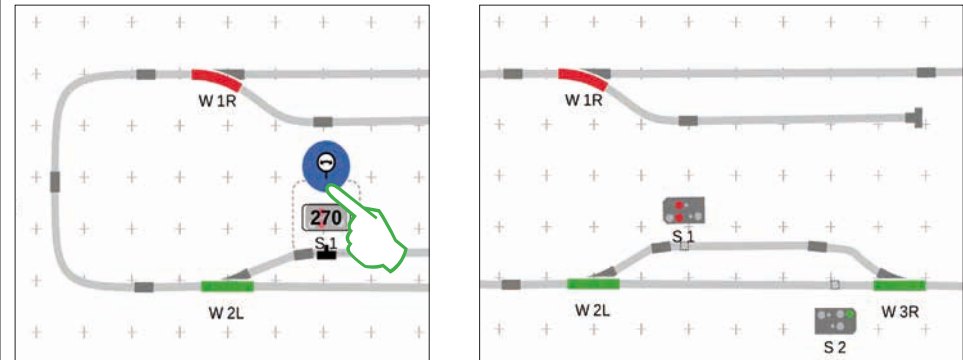

Adding Signals

Now come the signals: First, we pull the signals into position: As soon as they are above the right track section, we lift our finger from the display. The signal docks automatically at the track in question.

Then we activate the rotation mode in each case and adjust the angle: the left signal at 270 degrees (left image) and the second signal at 90 degrees for the opposite direction of travel.

Track Diagram Control Screen Finished
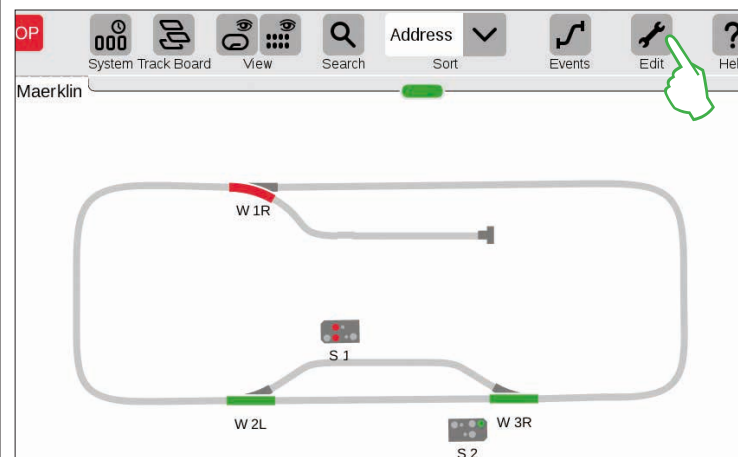
At the end, you end the editing mode by tapping on the tool symbol. The track path items are thereby turned off (left image).

Congratulations, you have created your first track diagram! You have surely noticed that the editing of the track diagram becomes a little easier each time you do another step.

View Options

Tap on the button „View" in the upper toolbar in order to have numerous filter options shown. The option „Show all" is marked in the standard setting. You can get a marvelous overview of your board with a tap of your finger on the individual item categories.

Changing an Active Panel

The button „Track Board" is very useful the moment you are operating track diagram control screens on several boards. This button allows you to switch back and forth between the track diagram control screens. Tap on the button „Track Board" in order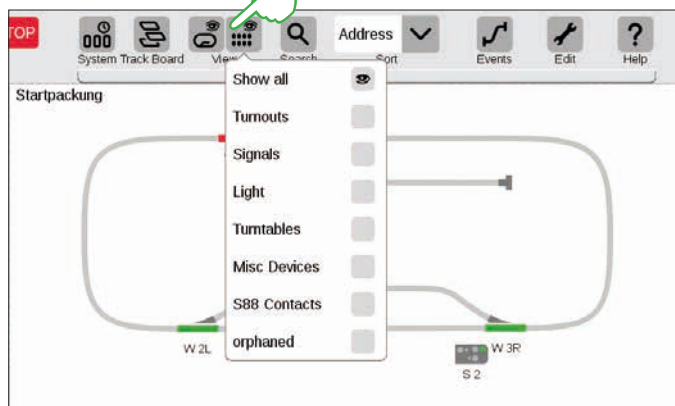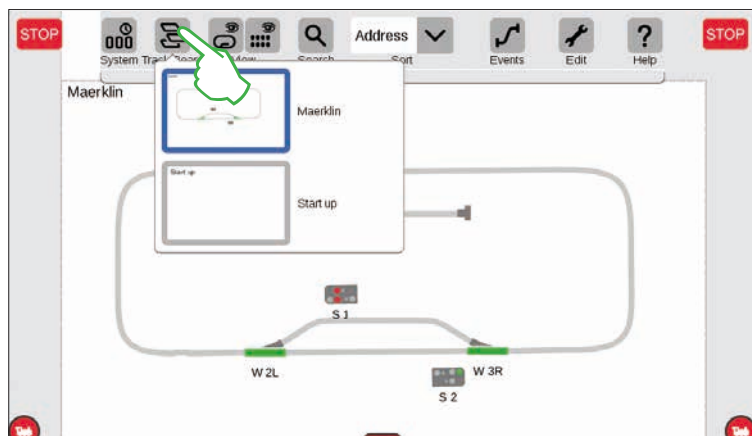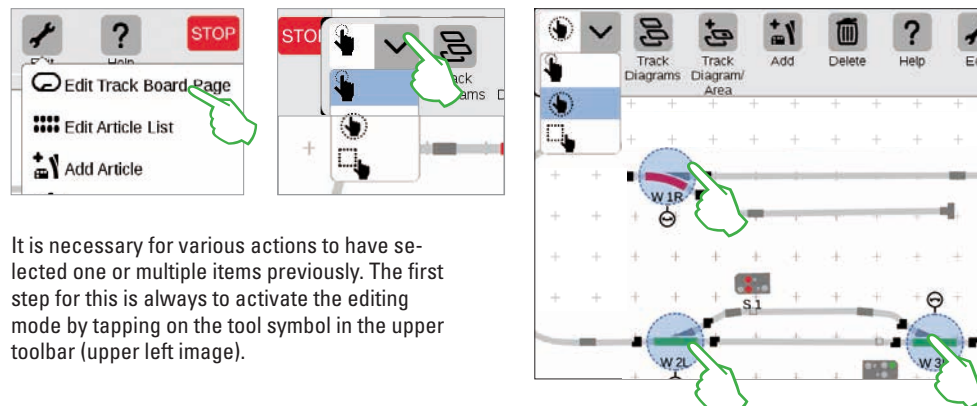 to change the active board and then tap on the desired board: The new board is now in the foreground. Tap twice on the active board in order to show it completely.

Selecting Individual and Multiple Items

It is necessary for various actions to have selected one or multiple items previously. The first step for this is always to activate the editing mode by tapping on the tool symbol in the upper toolbar (upper left image).

Individual items are selected by tapping briefly on them: A light blue circle signals the selection. The double arrow for the rotation mode and the docking positions for the connection mode become visible. This is the first option in the drop-down menu show above.

Multiple items are selected by tapping on the selection button in the upper left in the editing toolbar and selecting the second option in the drop-down menu, the hand in a circle (center image above). Then tap on all objects in the row that you would like to include in the selection (upper right image).

Selecting an Area
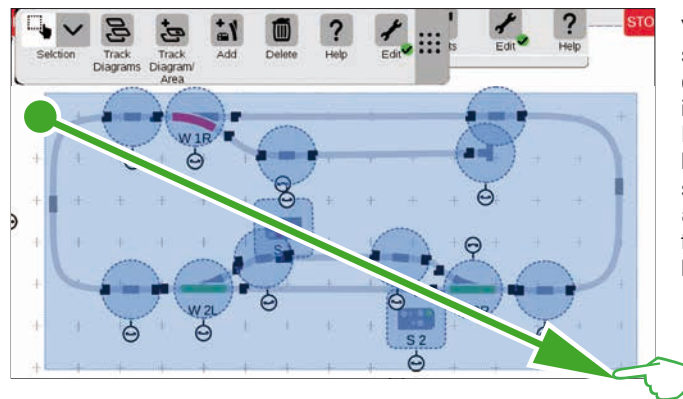
You can mark an entire board or any section of it with the area selection. To do this, tap on the „Selection" button in the upper left in the editing toolbar. In the drop-down menu, select the lowest option that is shown with a square. Now tap on a corner dot of the area you would like to select, pull your finger to the opposite corner point and lift your finger from the display.

Creating an Area from Selection
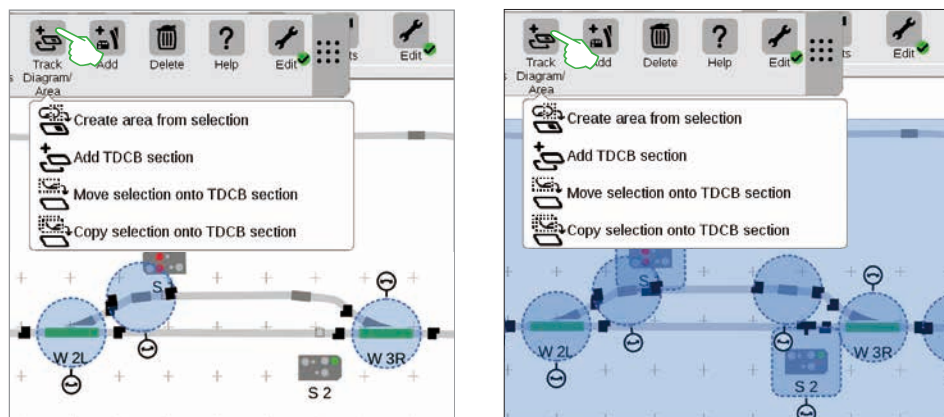
As soon as you have selected several items (left image) or an area (right image) as described on the previous page, other options previously greyed out can be activated in the drop-down menu for the button („Tra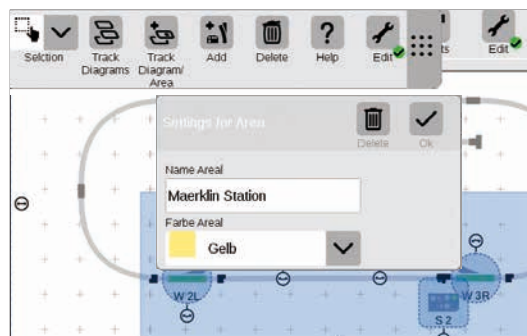ck Diagram/ Area"): „Create area from selection", „Move selection onto TDCB section", and „Copy selection onto TDCB section".

You must have selected an area in order to create an area. In this example, we are creating an area from the two-dimensional station that has been selected (see left image). To do this, open the corresponding drop-down menu with a tap of your finger on the button „Track Diagram/ Area" and select „Create area from selection" there. Give the area a name in the entry template that is turned on, select its color, and confirm with „Ok".
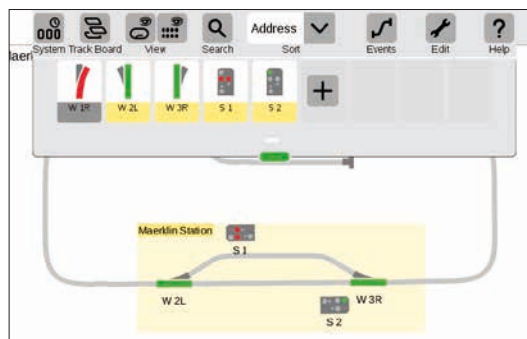
After that, the section selected is permanently marked in the color selected. All items in an area are easy to recognize in the item list too thanks to the color.

Moving and Copying a Selection onto a TDCB Section
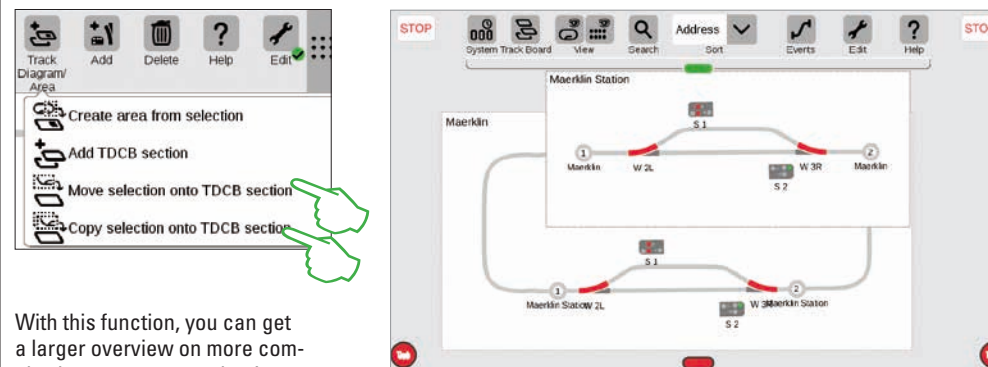
With this function, you can get a larger overview on more complex layouts, copy a selection to a new board (upper right image), or move a selection to a new board (right image). The new board was named „Maerklin Station".

Your layout is thereby spread over two boards, but the two boards remain logically linked with each other – nothing changes in the function. The transitions between the two boards are symbolized here by the two numbers „1" and „2".
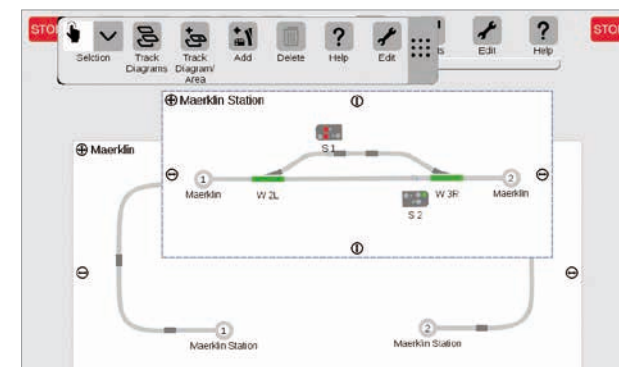
Switching Turnouts and Signals
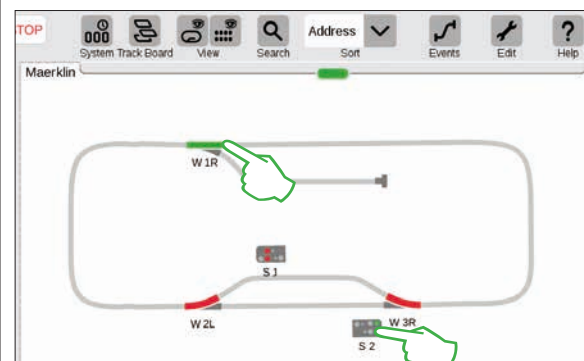
You can switch all solenoid items such as turnouts and signals directly on your track diagram control screens: Simply tap on the symbol in question.

Tip: Make sure that the STOP button is not activated. The track must be supplied with current in order to switch solenoid items.

Creating and Editing Events

Creating Routes · Programming and Switching Procedures

Adding Events | Automating Procedures

It is easy to start programming

Automating procedures is the crowning achievement of their hobby for many model railroaders. With the Central Station 3, creating routes, locomotive procedures, and the automatic control of entire layouts has once again been significantly simplified. Thanks to Drag & Drop, the individual elements only have to be pulled into the procedure bar. Monitoring is also significantly easier.

Tap on the button „Events" in order to create new procedures or edit existing ones. A list will open up similar to the themes locomotives and items. If you do not have any procedures pro-grammed yet, there will be a „+" sign in the first square. You add a new procedure by means of the „+" sign or by means of the menu item „Edit", „Add event".

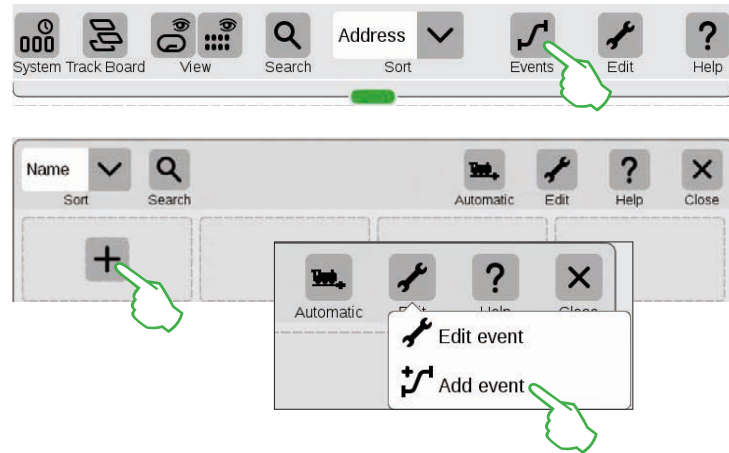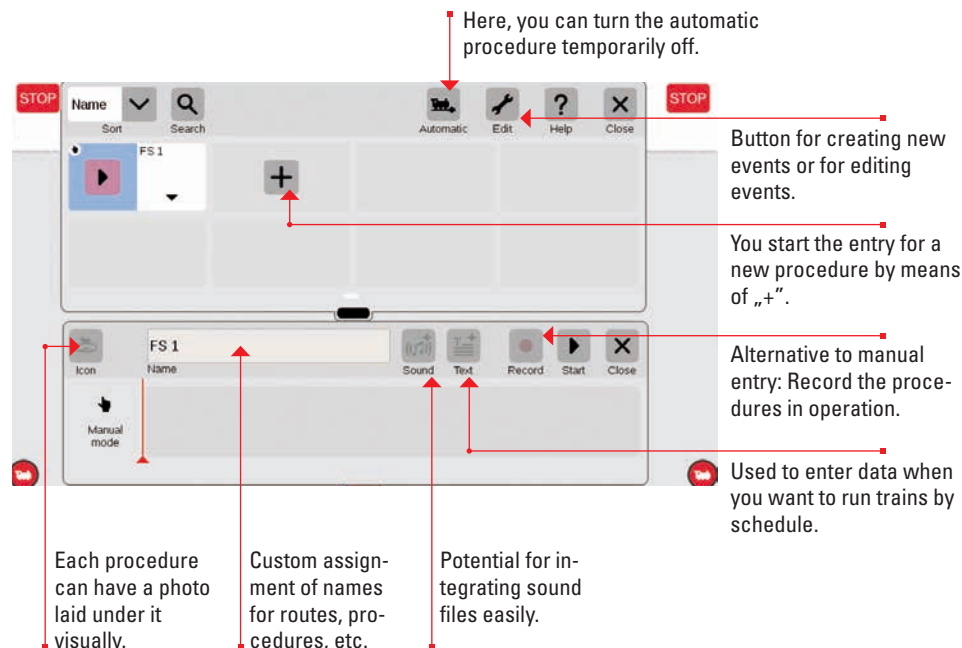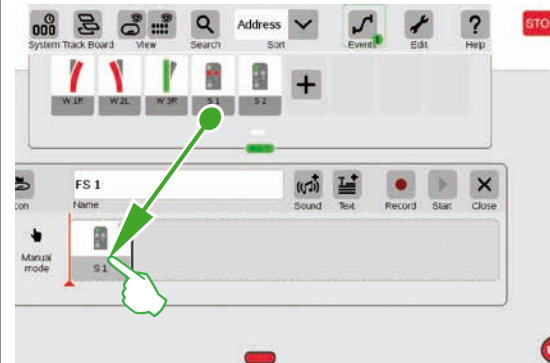## An Overview of the Main Menu for Procedure Control

Here, you can turn the automatic procedure temporarily off.

Button for creating new events or for editing events.

You start the entry for a new procedure by means of „+".

Alternative to manual entry: Record the proce-dures in operation.

Used to enter data when you want to run trains by schedule.

Each procedure can have a photo laid under it visually.

Custom assign-ment of names for routes, pro-cedures, etc.

Potential for in-tegrating sound files easily.

Setting up Routes: Step-by-Step

After opening the menu item „Add event", simply pull the corresponding items into the timeline – Signal 1 for example. The route can be set up this way step-by-step. When tapping on the item – Signal 1 for example – the menu bar opens automati-cally in order to set the desired function.

Integrating Locomotives
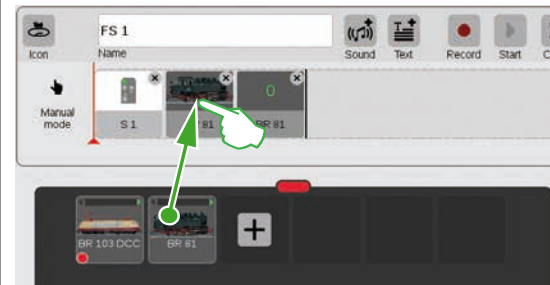
A desired locomotive or powered unit can be drawn from the locomotive list similar to solenoid items and it can be placed in the timeline.

Sound files can be integrated at each spot on the procedure by means of the „Sound" button. Either the files can be located in the CS3 or they can be imported by means of a USB stick (right image).

Completing a Small Route

The route can be assembled step-by-step by means of drag & drop. Each individual point (speed, signal and turnout settings, etc.) can be adjusted individually in the process (see the following pages).

28

Editing Settings / Speed

This is the way adjusting settings works: Call up the item „Edit event" and tap on the corresponding procedure. The event changes to the editing mode, recognizable from small „x" signs in the squares above right.

The speed for a locomotive can be changed this way by means of the value entry (above) or by means of the speed bar.

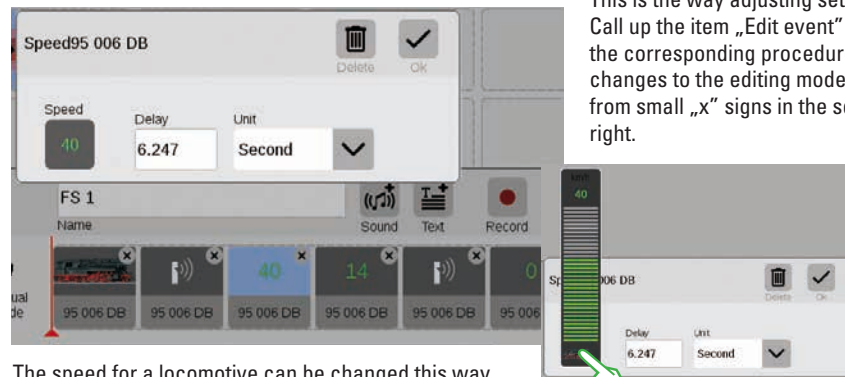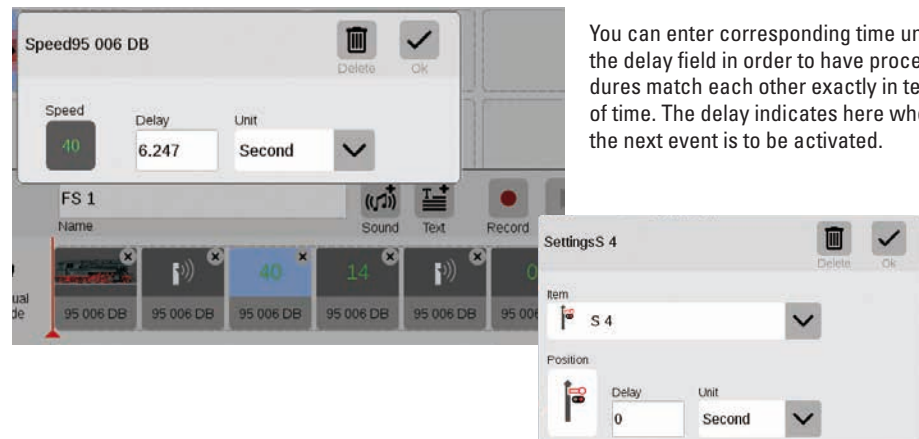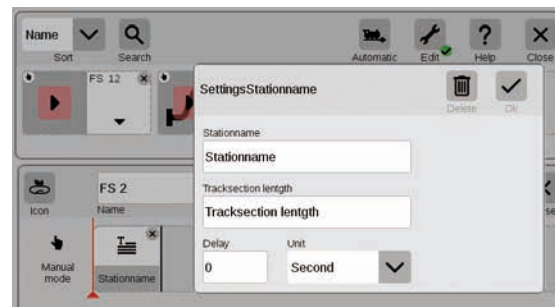## Time Specifications / Entering Delays

You can enter corresponding time units in the delay field in order to have procedures match each other exactly in terms of time. The delay indicates here when the next event is to be activated.

Adding Text Information

A component is available with the item „Text" that allows you to enter information when you are to run trains by schedule.

Sorting Events

Overview: All of the routes and procedures created can be sorted quite easily by name or by feedback contacts (S88). Simply tap on the drop-down menu in the upper left corner of the window.
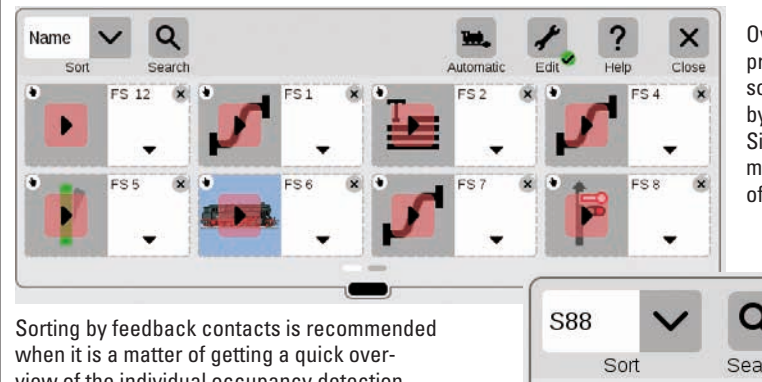
Sorting by feedback contacts is recommended when it is a matter of getting a quick overview of the individual occupancy detection messages.

Using the Recording Function

Along with the manual entry of routes and procedures, with the CS3 you can also gather these items by means of a recording function. Similar to a video camera, the CS3 records a procedure here and plays it back later.

Important: Only the desired route can be switched when programming with the recording function.
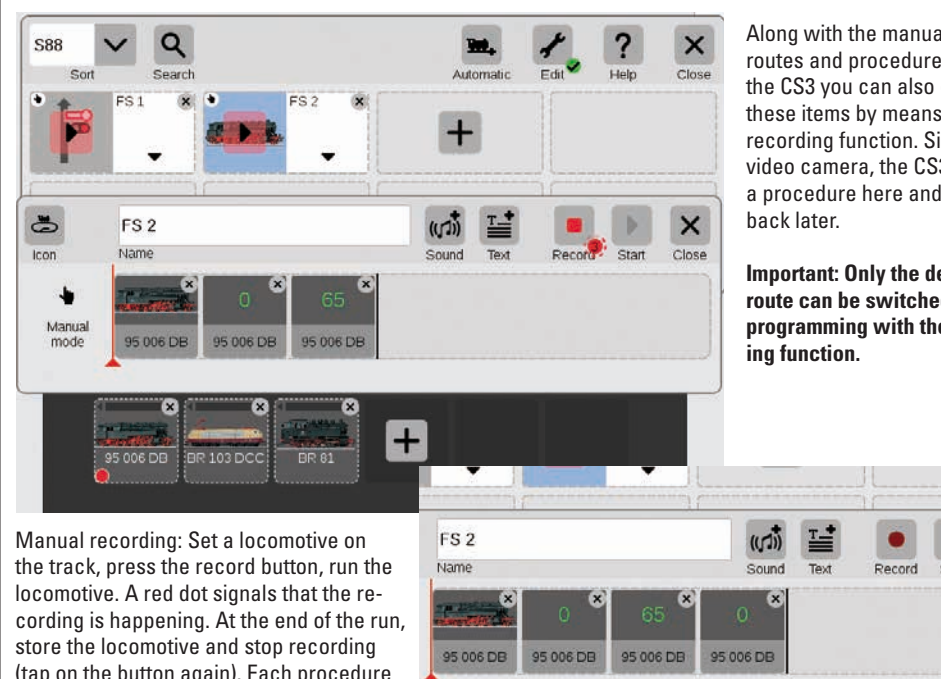
Manual recording: Set a locomotive on the track, press the record button, run the locomotive. A red dot signals that the recording is happening. At the end of the run, store the locomotive and stop recording (tap on the button again). Each procedure element can be edited later on after the recording (right image).

Creating Turnout Arrangements

It has never been so easy to create turnout arrangements with the CS3: Pull the individual turnouts from the item list into the timeline, and the route is done.

All of the different turnouts can be set individually by means of the menu „Edit" (extreme left image). The route can be checked by means of the „Start" button. A green dot will appear in the field for the route. It further reports the current status of the procedure control.

Programming Locomotive Procedures
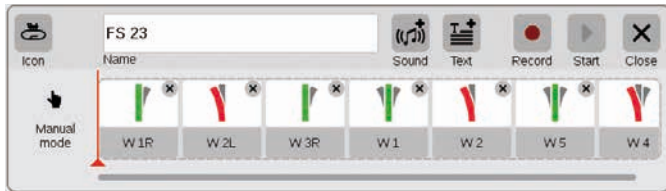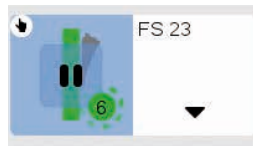

Locomotive procedures can also be programmed easily with the CS3: Select the locomotive and take different functions such as „Running Sounds on" or „Light Changeover on" from the function elements.

Each different function can be set individually by tapping on the icons (images below). The entire procedure can be played/monitored with the „Start" button.
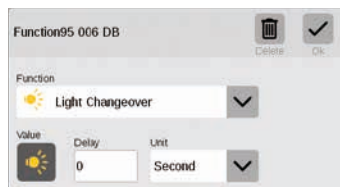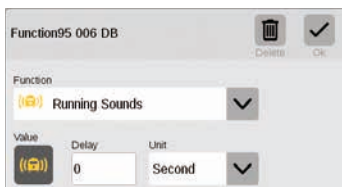
Procedure Control by Means of Feedback Contacts

If contacts are to be used as activators for routes or automated procedures, you can do it quite easily as follows: Pull the contact into the field on the left edge of the route – C1 for example (upper image). Then tap on this contact symbol and define the conditions – „Entering" for example (right image). The entire procedure is then switched when Contact 1 reports occupancy. Other feedback contacts can be taken into the procedure itself in turn (example: S88-2, upper image) by pulling them into the timeline.
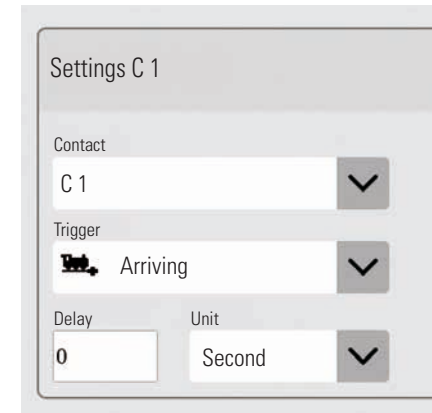
Procedure Control with Qualified Execution
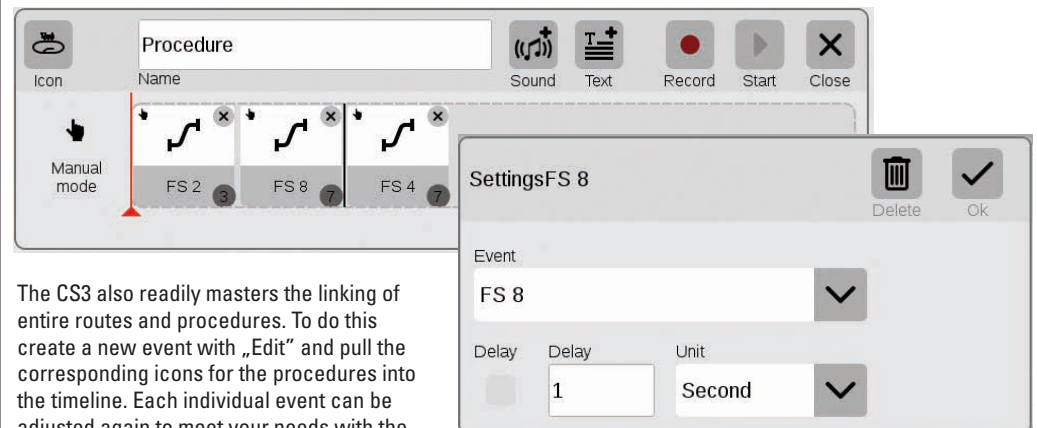
The CS3 also readily masters the linking of entire routes and procedures. To do this create a new event with „Edit" and pull the corresponding icons for the procedures into the timeline. Each individual event can be adjusted again to meet your needs with the menu „Edit".

System Settings

Adjusting the System · System Data

Calling up and Changing System Settings

Calling up the System Menu

You get to the startup page for the system settings (right image) by tapping in the toolbar for the item list in the upper left on the button „System" (see also Page 6). With a tap of your finger, open in each case the settings or a detailed view on the startup page.

Overview of the connected devices.

Options for the performance of locomotives and solenoid items.

Settings for the Central Station 3.

Master-Slave options.

Gives the version numbers for hardware and software.

IP setting in case an LAN cable is connected.

Network: Overview of all Active Components

The network overview gives information about all connected and active devices. You can reach their settings directly by a tap of your finger in the overview or by means of the menu column on the left edge. Wiping your finger upward takes you to the lower sections of the page (right image). Inactive devices are shown „greyed out".
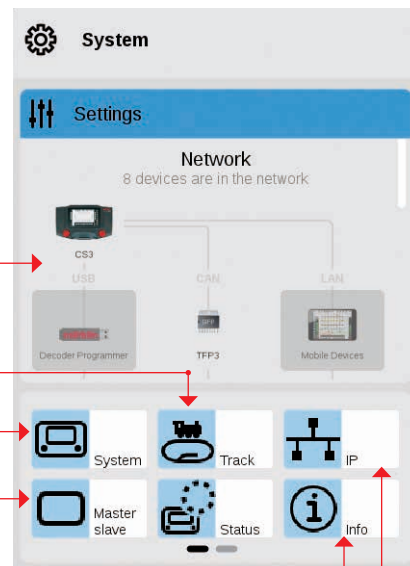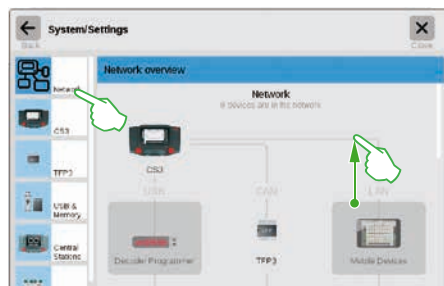
Access to Basic Functions for the Central Station 3

Tap in the network overview or in the menu column on the left edge on the CS3 symbol in order to open the CS3 system settings. The lower sections of the page can be reached by wiping up with your finger in the middle of the display.

The safe and recommended way to turn the CS3 off.

Creates a protection for your current CS3 data.
Tip: Use this function regularly to protect editing statuses – the best way is also with a USB stick.

Restores the CS3 to an earlier editing status with the help of a previously created protection file (see also Page 6).

Turns the CS3 off and restarts.

Restart of the internal applications such as the user interface.

Changes the language for the user interface.

Adjusts screen brightness or volume with a sliding controller.

Choice between built-in and external speaker.

Only relevant in case of an incomplete CS3 update.

The CS3 checks regularly whether a firmware update is available when this option is selected.

Enable quick access to the locomotive controller.
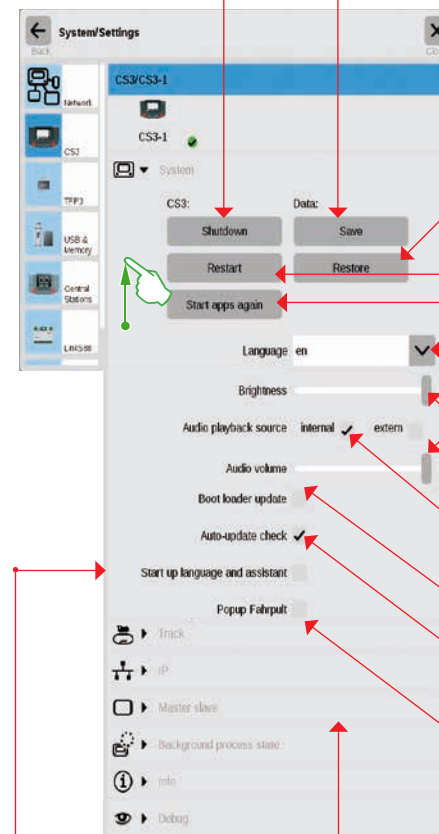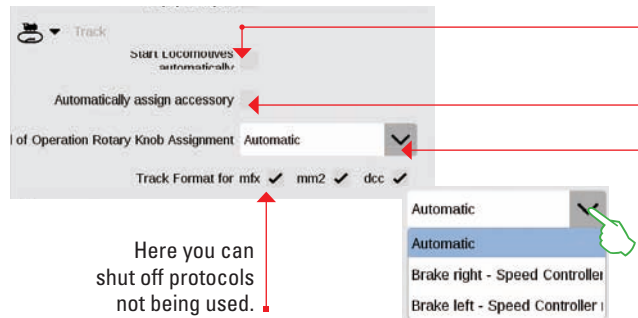
Activates language selection dialog and setup wizard when starting the CS3 (see also Page 3).

The other sections „Track", „IP", „Master-Slave", and „Info" are explained on thxe next page. You can open them by tapping on them.

Touch the „Go Back" button in the upper left in order to go back at any time to the startup page for the system settings. The other options shown in the left menu column can also be reached with a tap of your finger.

Calling up Track Settings
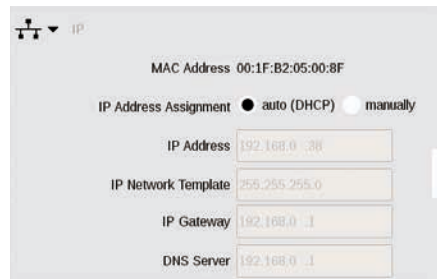
Sets all locomotives automatically to the last known status after restarting the CS3.

Assigns new mfx items automatically to a free address.

In the drop-down menu, you can define the assignment for the control knob in the World of Operation mode.

Here you can shut off protocols not being used.

Seeing IP Settings

This option is available when you connect your Central Station 3 to your router with an LAN cable. Here you have the choice whether the CS3 is to obtain the necessary network addresses from the router or whether you are to enter the data manually.

Master-Slave Settings

This section takes on importance as soon as more than one CS3 or CS3 plus is being used: Here you set which CS3 is the main device (Master) and whether this device is a secondary or slave device.
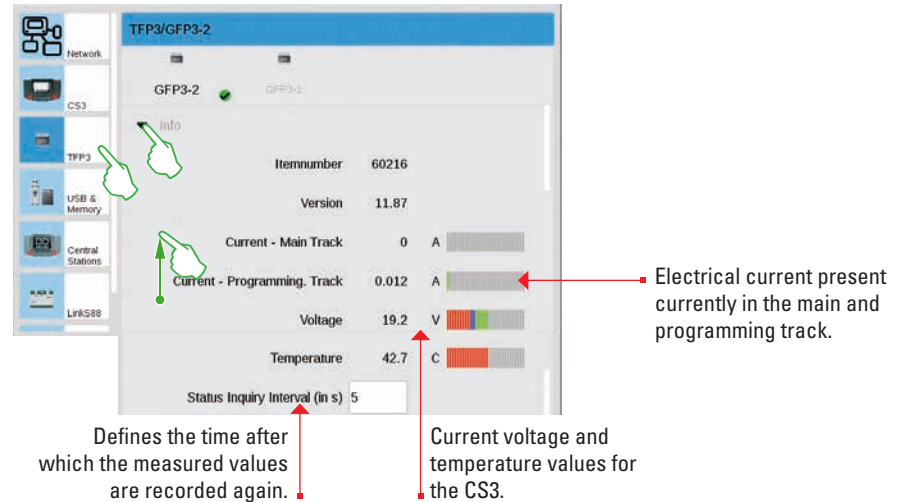
Information Section

The hardware and software version of your CS3 as well as legal information are shown in the information section.

GFP3 – Data

The GFP3 (Track Format Processor 3) gives you information about the current measurement data for the layout and the CS3. A wipe of your finger upward takes you to the lower sections of the page, including the settings (images below).

Electrical current present currently in the main and programming track.

Defines the time after which the measured values are recorded again.

Current voltage and temperature values for the CS3.

GFP3 – Settings

Changing a designation.

Selecting the network in use:

Adjusting the mode:

S88 Bus: Setting the length, cycle time, and bit time.

Managing the USB Connections and Memory
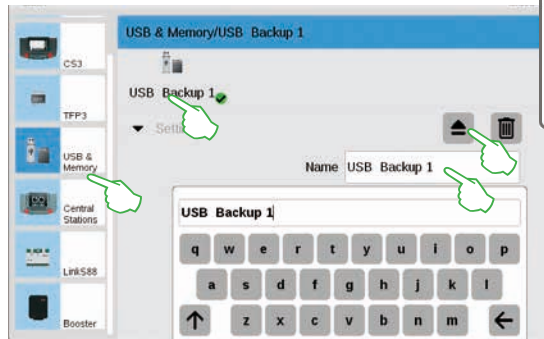
Question

Is this device to be thrown out?

In this section, you will see the USB devices connected to the CS3. Using a tap of your finger change between the devices in the first line. Tap on the name field in question in order to assign a descriptive name. Touch the eject icon in order to delete the USB device (small image).

Tip: Always use this eject option in order to prevent data loss on your USB stick before you pull the USB stick from the CS3 again.

Central Stations: Integrating Other CS Controllers

You can assign an individual designation in the Central Station settings. Moreover, you can set the interval of how frequently the device's status is queried. Standard setting: every five seconds. The ID is automatically assigned. In the case of a new device replacing a defective device, enter the value here for the old device.

Link S88

You define the interval in the settings for the Link S88 how frequently the feedback module queries the status. Standard: every five seconds. Here too you c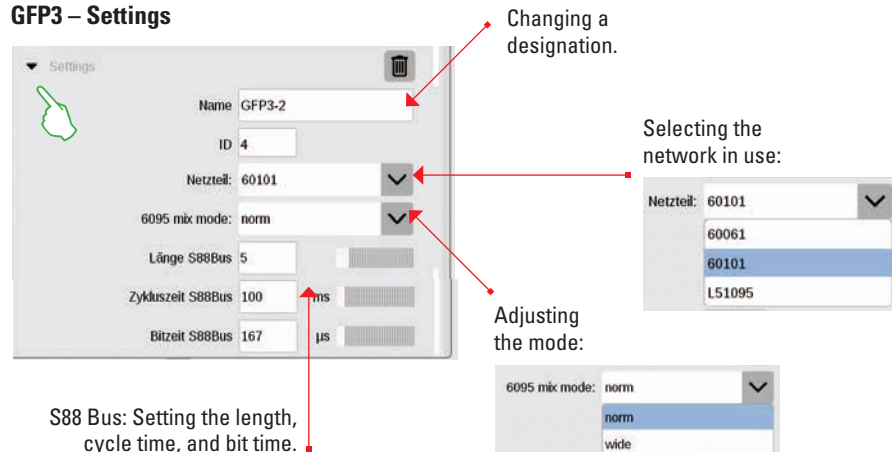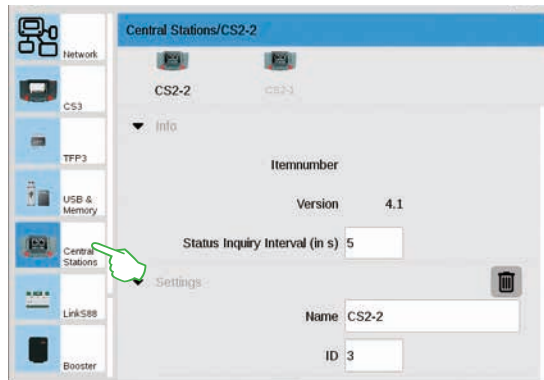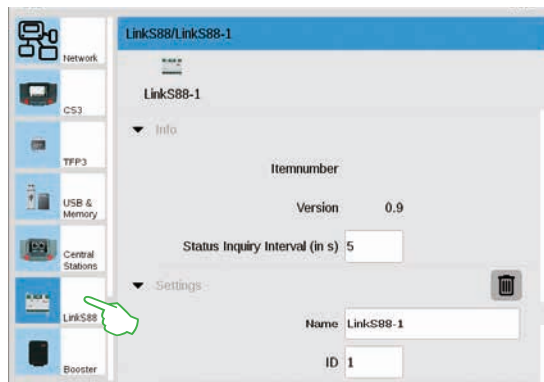an change the designation. The CS3 assigns the ID automatically. In the case of a new Link S88 replacing a defective unit, enter the value here for the old unit.

Configuring Booster Connections
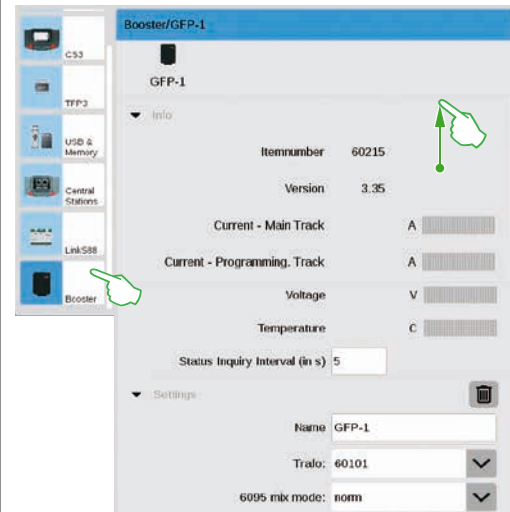
You can change the interval between two status queries in the Booster settings. Standard: every five seconds. In addition, you can set individually the designation as well as the transformer being used and the desired Mix Mode. Wipe with your finger in the direction of the upper edge of the screen in order to see the lower sections of the page.

Integrating the Connect 6021 Control Units
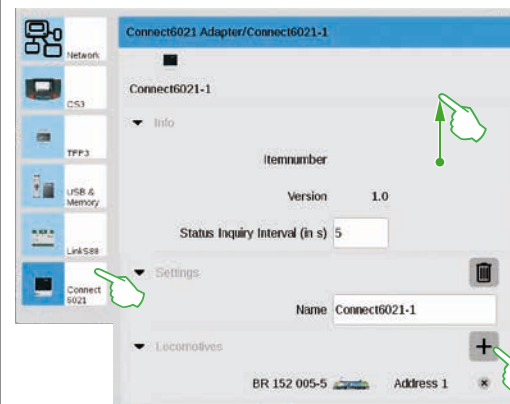
You can adjust the status query interval if necessary in the information and settings segments. Tap on the plus symbol in the „Locomotives" segment in order to add locomotives. Select with a tap of your finger in the selection window that is turned on (small image). Locomotives that have been added will appear after that in the lowest position (left image).

Deleting Device Settings No Longer Required

The CS3 remembers the settings for each device that was once connected to it. The advantage: You can separate all of the devices from the CS3 without losing their settings. You can delete these settings if necessary with the wastepaper basket. This icon can be found in the system settings in the section „Settings" for each device. You remove the device's data with a tap of your finger on the icon. That device will no longer be shown in the system settings.

Update by USB Stick

If you do not have a network connection available to update the CS3, you can also download an update to the newest software version with the help of a USB sticks.
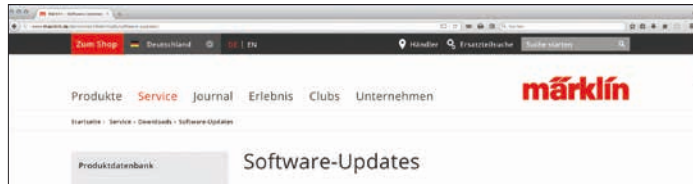
To do this, download the image file from the Märklin Website (http://www. maerklin.de/de/service/downloads/cs3-updates/) and store it in the main registry of a USB stick. After you have connected the USB stick to the CS3, please be patient for about 10 to 15 seconds. The CS3 will recognize the new software version on the USB stick automatically and will signal this with a small red dot on the „System" icon.

The remaining steps are the same as for updating with the network. Please use the description on Page 6 for this.

Regular Creation of Backups

The CS3 stores entries and adjustments continuously on its own within a few seconds. Your data are therefore safe even in the event of a power outage or a hard reset. We do recommend regular backups, also on USB sticks. For example, backups make it very easy to reverse extensive changes by restoring an earlier editing status.

SD Card: Expanding the Internal Memory

With an SD card (SDHC), you can expand the internal memory (4 GB) by up to 32 GB. All you have to do is plug the card into the card slot. You do not have to make any other settings.

Tip: Märklin recommends that SD cards not be used as a removable disk but exclusively for the purpose described here of expanding the memory. It is better to use USB sticks to copy data such as locomotive images onto the CS3.

Importing Locomotive Images Using the Web Browser

The CS3 comes with a variety of locomotive images that may satisfy the requirements in most cases of many model railroaders. Moreover, you can also import your own locomotive images into the CS3's image database (see Page 11). The easiest way is to use the Web interface on the CS3 that is called up by means of any Web browser.
Important: The CS3 must be connected with the computer by means of a network router to do this.
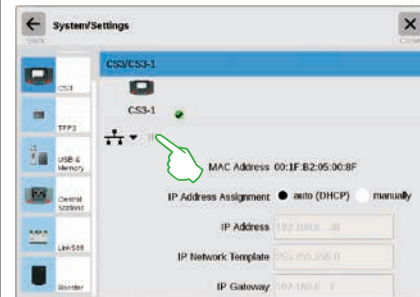
You must first find out the IP address for your CS3 in order to start the Web interface. To do this call up the CS3 system settings (see Page 32) and there open the section „IP". In the standard setting, the CS3 automatically receives an IP address assigned to it from the router connected to it. This is shown in the field „IP Address" (left image).

Now enter this IP, in our example „192.168.0.61", in the address line of your Web browser and press the entry button: The Märklin CS3 Web interface will appear on the screen (left image).

Move the cursor across the button „Lokbilder" and click on the option „Hochladen" that is turned on after that. You can now drag and drop your locomotive image easily into the field provided for it (left image). Alternatively click on the field in order to select the image file.
Important: The file must be no larger than 5 MB in size. The image format or the image size play no role here.

If you have moved the image into the field or have selected your desired image, the image will be opened in an image editor that offers numerous ways to edit the image. You can move your subject, change the size, rotate, and flip or mirror it. All the way to the right is the option „Preview" that you can use to check the adjusted subject again. At the end click on „Hochladen". The locomotive image is now stored under its file name in the image database.

A small green colored overlay lets you know that the locomotive image has been successfully uploaded.
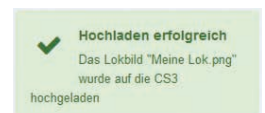
Symbols

Available Function Pictograms

All of the pictograms available on the CS3 at a glance. This page offers you this overview. They are the same function symbols from which you can choose when setting up the functions in the locomotive settings (see Page 13) – divided into the sections Light, Sound, and Mechanical. This complete overview is intended to facilitate your selection.

Light

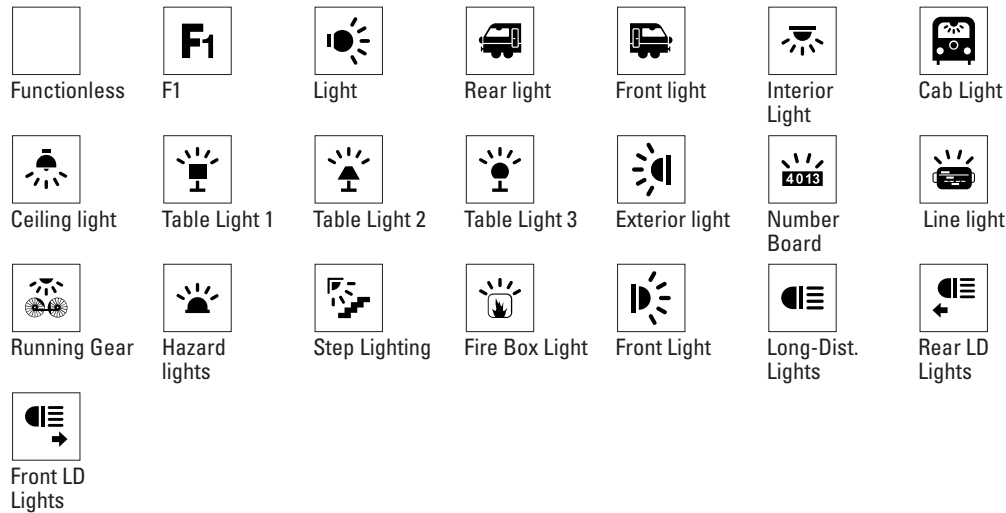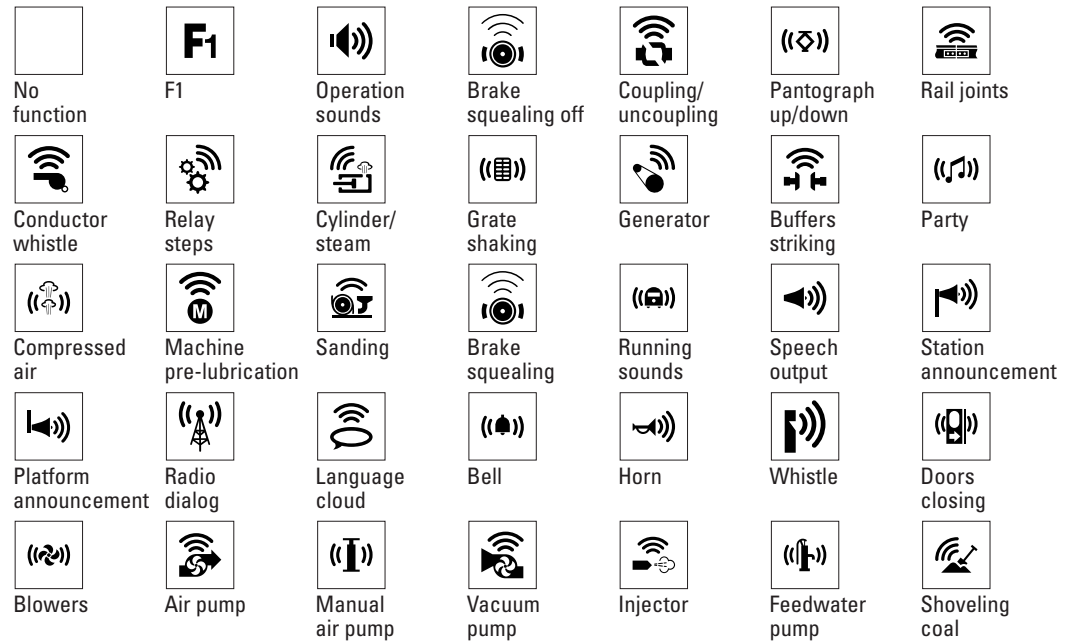|						
Functionless	F1	Light	Rear light	Front light	Interior Light	Cab Light
Ceiling light	Table Light 1	Table Light 2	Table Light 3	Exterior light	Number Board	Line light
Running Gear	Hazard lights	Step Lighting	Fire Box Light	Front Light	Long-Dist. Lights	Rear LD Lights
Front LD Lights						

Sound

No function	F1	Operation sounds	Brake squealing off	Coupling/ uncoupling	Pantograph up/down	Rail joints
Conductor whistle	Relay steps	Cylinder/ steam	Grate shaking	Generator	Buffers striking	Party
Compressed air	Machine pre-lubrication	Sanding	Brake squealing	Running sounds	Speech output	Station announcement
Platform announcement	Radio dialog	Language cloud	Bell	Horn	Whistle	Doors closing
Blowers	Air pump	Manual air pump	Vacuum pump	Injector	Feedwater pump	Shoveling coal

Mechanical

No function	F1	Switching range on	Switching release	ABV off	ABV off	Telex
Rear Telex	Front Telex	Smoke unit	Panto- graph	Rear Panto	Front Panto	Doors closing
Blowers	Crane	Tilt crane	Raise/lower crane	Rotate crane	Rotate crane	Operate crane
Crane double hook	Crane magnet	Crane up	Crane down	Crane left	Crane right	Shift
Mute/Fade						

System Architecture: CS3 and CS3 plus
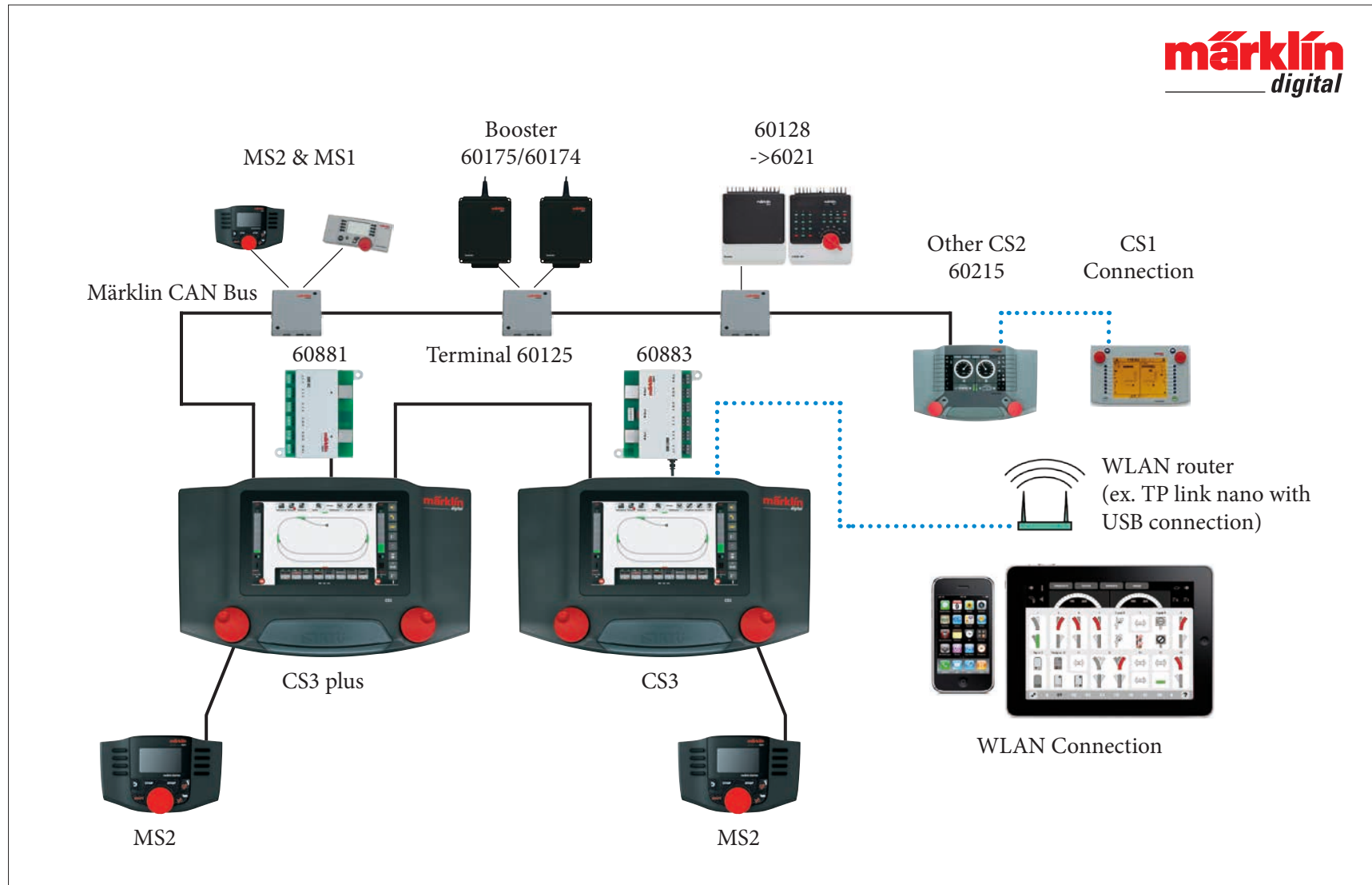
märklin *digital*

MS2 & MS1

Booster
60175/60174

60128
->6021

Other CS2
60215

CS1
Connection

Märklin CAN Bus

60881

Terminal 60125

60883

WLAN router
(ex. TP link nano with
USB connection)

CS3 plus

CS3

WLAN Connection
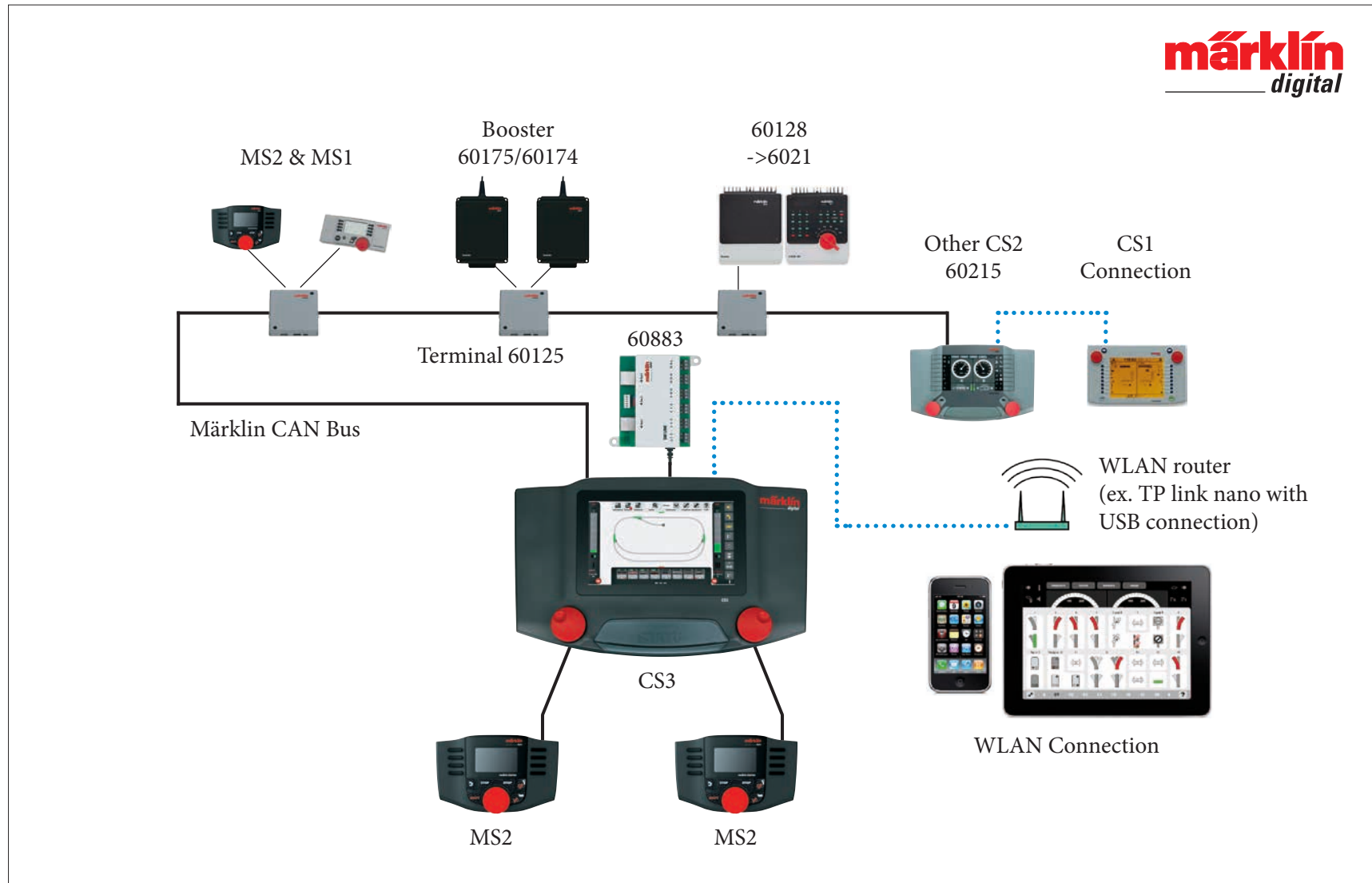
MS2

MS2

Schematic representation. Please refer to the respective operation instructions for the exact connection assignment.

System Architecture: CS3

MS2 & MS1

Booster
60175/60174

60128
->6021

Other CS2
60215

CS1
Connection

60883

Terminal 60125

Märklin CAN Bus

WLAN router
(ex. TP link nano with
USB connection)

CS3

WLAN Connection

MS2

MS2

märklin digital

Schematic representation. Please refer to the respective operation instructions for the exact connection assignment.