

# Z21 Model train control

**Roco** **FLEISCHMANN**

**Z21**

Digital Allrounder



Gauge N-G

# Z21 The control centre system!

## Digital driving enjoyment begins with the Z21 digital control centre!

This is where all the elements of your model railway system are brought together, whether it's a standard handheld controller or modern touch operation via an app. All your inputs are translated as control commands for locos and turnouts, and output to the track. This turns the control of multiple trains into child's play!

The most important thing in a digital control system is the operation. For this reason, the Z21 system is of a simple, intuitive and clear design. In addition, this system makes contacts easily - the wide variety of interfaces possible, such as X-BUS, LocoNet and CAN, allow you to connect over 30 different handheld controllers, feedback modules and switching modules from various manufacturers. The Z21 also represents the ideal basis for PC-supported automation. Thanks to the open LAN interface, it is the ideal gateway for connecting your automation program with the model railway system. In addition to easy maintenance, the Z21 digital system is suitable for universal use. It offers the ideal solution for any gauge! Control small gauges easily using the Z21 start, the white Z21 and the black Z21 - and for large gauges (0, 1, 2/G), we now offer our black Z21 XL series featuring an output power of 6 amperes!

## z21 control center: For beginners

### The z21 start offers everything needed to get started immediately:

- ▶ z21 start digital control centre
- ▶ Z21 multiMAUS cabled handheld controller
- ▶ Power pack and cable 2 A, 18 V
- ▶ Digital locomotive, wagons and tracks

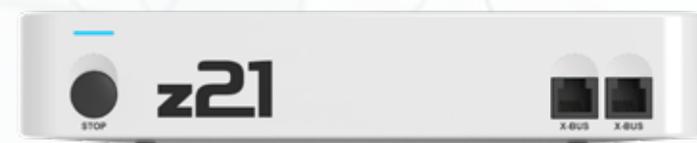
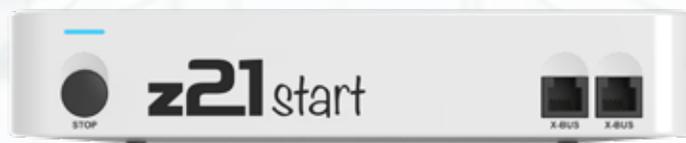
If you want to use the Z21 wlanMAUS and the Z21 app, the WLAN Package with activation code included is the right choice.

### The z21 is also only available in starter kits, meaning it is equipped for getting started right away:

- ▶ z21 digital control centre
- ▶ Z21 multiMAUS or Z21 wlanMAUS
- ▶ Power pack and cable 2 A, 18 V
- ▶ Digital locomotive, wagons and tracks

The WiFi router and power pack come pre-equipped with full network functionality, meaning the Z21 wlanMAUS and Z21 app can be used immediately.

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## Z21 control center: For experts

**The black Z21 offers everything for model railway enthusiasts who want even more.**

### It includes:

- ▶ Adjustable track voltage
- ▶ Separate programming output with Zimo decoder update
- ▶ CAN-Bus for feedback modules and boosters with RailCom\* feedback message, configuration and firmware update
- ▶ LocoNet currently supports more than 21 different and tested handheld controllers, feedback modules as well as switching modules from a wide range of manufacturers
- ▶ Sniffer Bus for old control centres
- ▶ Suitable for track gauges from N to H0

### Included:

- ▶ Z21 digital control centre
- ▶ WiFi router and power pack
- ▶ Power pack and cable

Naturally the Z21 as well as the Z21 XL Series has full network functionality, meaning that Z21 wlanMAUS and Z21 app can be used straight away.

10820



**The black Z21 XL Series offers the same advantages as the normal Z21. But with a higher output power of 6 Ampere in order to meet the need of the big scales.**

### It offers:

- ▶ More output power with 6 A 20 V
- ▶ WiFi management offers good reach and transfer safety
- ▶ Convenient Z21 App and wlanMAUS to manage your whole system
- ▶ Improved Z-CAN interface for a large number of Z21 XL BOOSTERS
- ▶ Suitable for track gauges from 0 to 2

### Included:

- ▶ Z21 XL Series digital command station
- ▶ WiFi router and plug
- ▶ Plug and cable 6 A, 20 V

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# z21start control center



## Features

- ▶ Controls up to 9.999 DCC loco decoders
- ▶ Controls up to 2.048 DCC switch decoders
- ▶ Compatible with Z21 multiMAUS models and with the Lokmaus 2
- ▶ Feedback via RailCom\*

## Technical details

Input voltage	12–24 V
Output voltage	Equivalent to 1 V below input voltage
Maximum output current	3 A
Short circuit/overload shutdown function	Yes, at currents over 3 A
Analogue locos	Cannot be controlled
Maximum number of trains	100 locomotives simultaneously
Dimensions	207 mm x 146 mm x 37 mm

## R-Bus

Roco Feedback-Bus for the detection of occupied sections. Permits you to update your Z21 multiMAUS.

Max. 160 blocks, meaning:  
20 x 10787 feedback module or  
20 x 10808 Z21 DETECTOR or  
10 x 10819 Z21 DETECTOR x16

## B-Bus

BOOSTER Bus for up to:  
4 x 10765 BOOSTER or  
7 x 10805 Z21 light BOOSTER or  
7 x 10806/10807 Z21 single/dual BOOSTER  
(Only adjustable via the Z21 pro LINK)



Main track and programming track in one.  
Change connection depending on respective use.

**More information on the connections for the white Z21:**



## LAN

If you want to use the Z21 wlanMAUS and the Z21 app, then you need the WLAN Package (10814) with activation code included. Settings and updates are of course possible at any time using the Maintenance Tool and the Z21 Updater App.

# Z21 control center



10820

## Features

- ▶ Controls up to 9.999 DCC loco decoders
- ▶ Controls up to 2.048 DCC switch decoders
- ▶ Adjustable, rectified track voltage (12–24 V, 3 A)
- ▶ Compatible with Z21 multiMAUS models and with the Lokmaus 2
- ▶ Separate programming track connection with Zimo decoder update
- ▶ Feedback via RailCom\*
- ▶ Many interfaces
- ▶ Software and sound updates via smartphone

## Technical details

Input voltage	12–24 V
Track voltage	Can be set from 12–24 V, actual maximum possible track voltage is 1 V below input voltage
Maximum output current	3 A
Short circuit/overload shutdown function	Yes, at currents over 3 A
Analogue locos	Cannot be controlled
Maximum number of trains	100 locomotives simultaneously
Dimensions	207 mm x 146 mm x 37 mm

## LocoNet

Currently supports more than 21 different and tested handheld controllers, feedback modules as well as switching modules from a wide range of manufacturers.

Also permits connection via a multiZENTRALEpro to the multiMAUSpro.

## Sniffer-Bus

Read switching and drive commands easily from the DCC signal of old control centres

## R-Bus

ROCO Feedback-Bus for the detection of occupied sections. Permits you to update your Z21 multiMAUS.

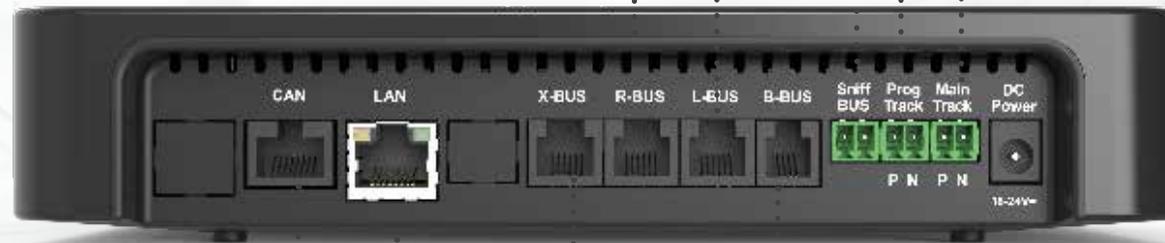
Max. 160 blocks, meaning:  
20 x 10787 Feedback module or  
10 x 10819 Z21 DETECTOR x16

## Prog-Track

CV programming  
MM programming  
Decoder update for sound and firmware

## Track connection

Track connection adjustable  
12 V to 24 V; ideal for small gauge tracks



## CAN-Bus

Cable length more than 300 m  
20 x 10808 Z21 DETECTOR and  
7 x 10806/10807 Z21 single/dual BOOSTER  
Also substantially extensible using the  
10804 Z21 CAN HUB

## B-Bus

BOOSTER Bus for up to:  
4 x 10765 BOOSTER or  
7 x 10805 Z21 light BOOSTER

## LAN

Naturally, the Z21 also has full network functionality, meaning that both the Z21 wlanMAUS and the Z21 app can be used straight away. Settings and updates are of course possible at any time using the Maintenance Tool and the Z21 Updater App.

## X-Bus

Permits the connection of up to 31 X-Bus devices such as the Z21 multiMAUS, Lokmaus 2 or 3, RouteControl and numerous compatible handheld controllers by a diverse range of manufacturers.

2 additional X-Bus interfaces on the front of the Z21 control centre.

# Discover the digital model railway world playfully!

## Innovative operation of the Z21 app!

Thanks to our updates to the Z21 app, you can realise flexible and versatile control options to suit the latest products and special editions.

For our special edition, the EDK crane, you can activate a unique operating field within the Z21 app with two analogue sticks. Furthermore, you can even control the crane using your PS4 controller.

So lifting, turning and lowering various elements is a breeze.

With mobile device

With PS4 Controller



**Here is the link to the video:**  
EDK 750 Operating options - Tutorial



# Z21 App: Driving experience of the new generation

Through the already known and well-proven Z21 app, you will discover many functions and possibilities, which will allow you to create and experience your digital model railway world even more exciting.

The Z21 app allows you to create a detailed library of locomotives. Here you can easily add all locomotive-specific data, as well as main control information (such as , e.g., locomotive address, speed levels, locomotive functions and maximum speed). In addition the Z21 system also supports automatic synchronisation with multiple input devices (such as , e.g., multiMAUS and Z21 app).

## Smartphone view

3 pages for locomotive functions



Conversion to original speed

Driving controller with haptic feedback at 0% and 100%

Function buttons with image and description

## Tablet view



Control of the platforms, signals, etc.

Routes

Switching between the various parts of the system

Full screen mode

Here is the link to the video:  
Z21 App Tutorial – Control centre



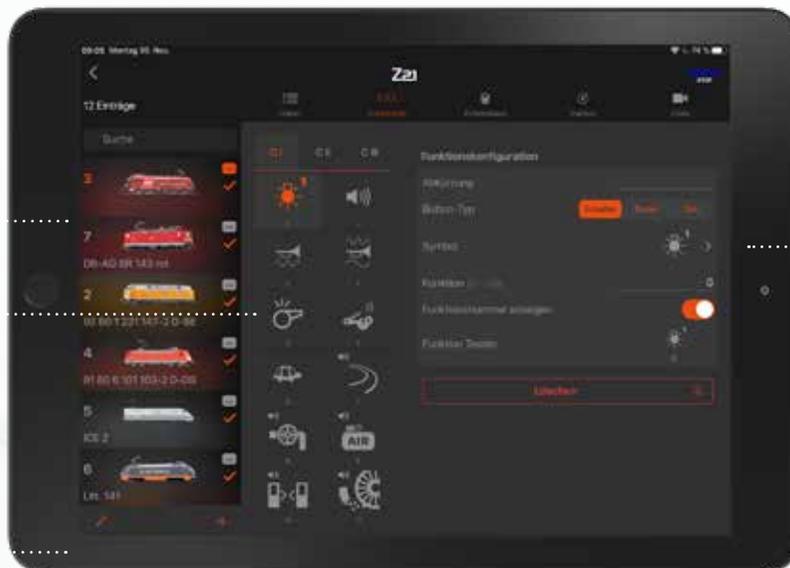
Clear overview of locomotives with names and addresses as well as image

Download in the App Store for iOS or in the Google Play Store for Android! The App is available as a free download and can also be tested without using a Z21 system.

Data:  
Basic data of the locomotive such as name, pictures, address and decoder type

There is a choice of many symbols

Additions are made via the locomotive database: All Roco sound models after 2015 can be imported



Easy customization of the functions and short description

- ▶ DCC and Motorola\*\* formats individually adjustable for each locomotive and magnetic article
- ▶ Read out and get feedback of locomotives via RailCom\*
- ▶ Save and reload database and layout with the Import- and Export-function
- ▶ Wireless controlling via tablet and smartphone and the multiMAUS
- ▶ High-capacity administration (up to 9.999 locomotive and 2.048 turnout addresses)

Create and administer system

Zoomable grid for easy sorting

Simple creation of your platform arrangement

Simple connection/docking of the control center elements



To make adding your models even easier and more convenient, the Z21 app provides you direct access to the ROCO/FLEISCHMANN locomotive database. Here you can simply enter the article number and automatically import all information, incl. model picture, in your personal Z21 app database.

The Z21 app also makes it very easy for you to create a signal box to suit your model system, and takes into account all relevant accessories (such as, e.g., trade occupied sensors, double-diamond crossings, light signals, etc.). Thanks to the integrated Drag & Drop function, as well as simple connection of docking of the control center elements, even complex platform configurations are realized easily.



Selection and configuration of accessories

Suitable for the majority of ROCO/FLEISCHMANN decoders



Automatic download of characteristic curves and subsequent evaluation. Graphical representation in plain text

Settings and live data of the Z21



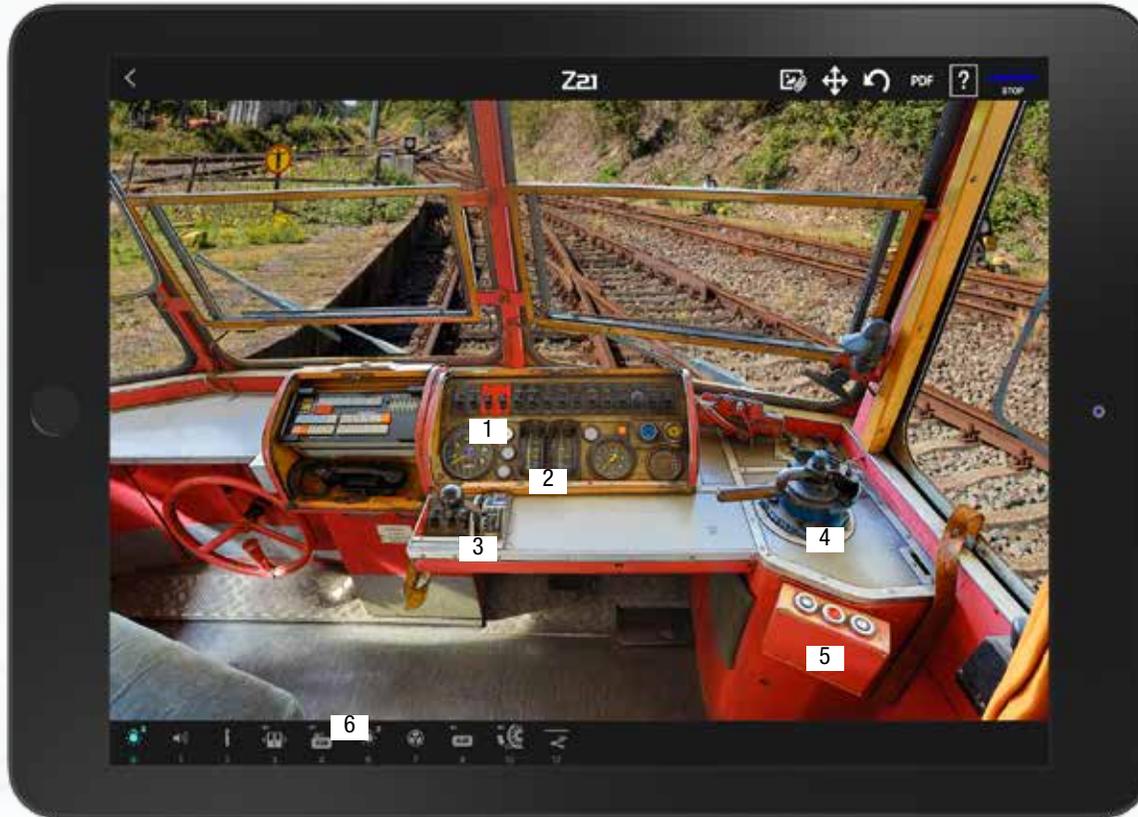
The Z21 app also allows you CV programming to optimize the running behavior of your locomotives.

Models which are already equipped with a RailCom\*-compatible ZIMO decoder also allow innovative CV programming using POM. This allows you to directly address the relevant decoder and read out live. The example is especially helpful when customizing the locomotive driving characteristics (such as, e.g., starting voltage, acceleration, and braking behavior, as well as the sound decoder volume). When doing so, the relevant characteristic curves can be automatically downloaded, evaluated, and processed graphically.

A programming track, as well as the constant repositioning of your locomotives is therefore unnecessary. With decoders or RailCom\* of course you can always revert to traditional CV programming, which the innovative programming help also offers. A new feature for the CV programming is the direct display of the relevant bits, which is a particular help during complex programming, such as, e.g., function mapping.

# Operate like a real engine driver!

## Photo realistic driver's cab for more gaming fun!



- 1 Speed display
- 2 Traction current and battery current display
- 3 Speed notch switch to set up and speed up
- 4 Brake lever
- 5 Door controls for opening and closing
- 6 Operational function keys

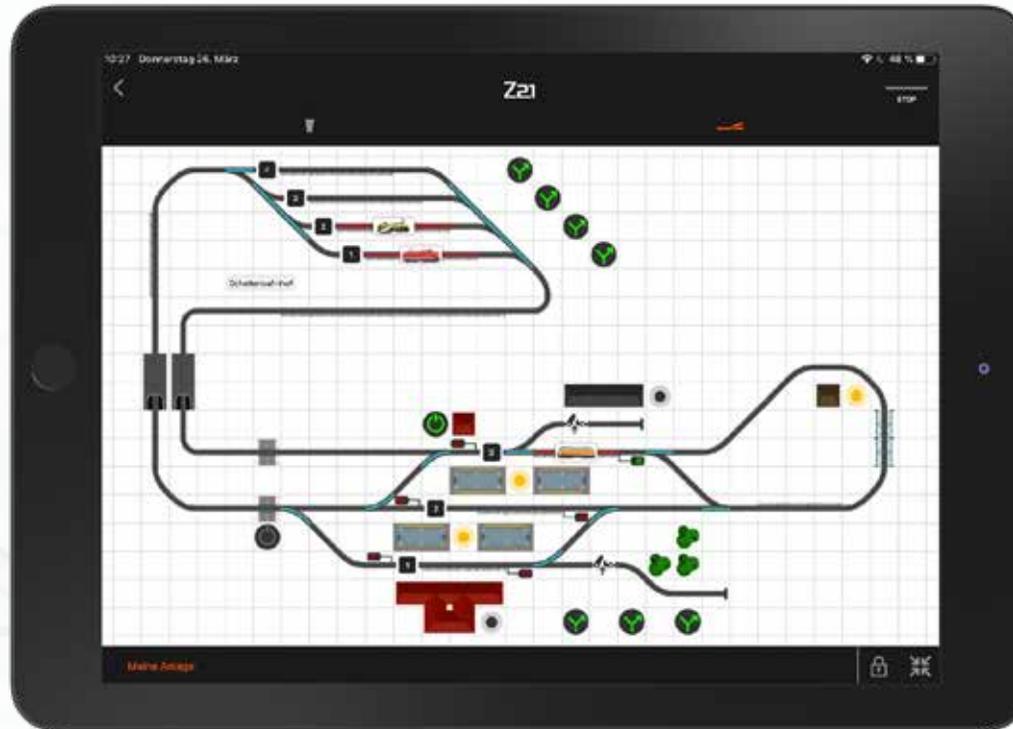
**Here is the link to the video:**  
Z21 App Tutorial - Driver's cab



The digital model railway world brings many benefits, one of which is that you can take control via a virtual driver's cab. Let yourself be thrilled by the photo-realistic display! They are equipped with original switches, controls of the respective locomotive model and interactive controls. Each control button and lever can be selected and causes the prototypical action of your locomotive. In addition, there will be triple growth! Then the Z21 app includes 11 individual driver's cabs, such as those of the Accumulator Railcar class 515, which is only waiting to be controlled by you.



You can choose a schematic signal box to create your track plan and suit your needs. Operation was designed based on popular control software programmes, and the design nods to the original control panel.



Semaphore and light signals

Switches and de-couplers

Many elements can be arranged in a small space

Decorative elements such as platforms, trees and houses

Layout just like real control panels

Side size can be adjusted as required

Here is the link to the video:  
Schematic signal box



## System prerequisites

Our Z21 app currently supports devices with iOS Version 11 and higher or with Android Version 5 and higher in order to guarantee full functionality.

Tablets and smartphones with an older system version can access our temporary app at any time, which is also available in the App Store and Google Play Store.

# Z21 multiMAUS: Functionality and comfort

The Z21 multiMAUS is a digital control system that allows you to control your trains, use the digital functions, switch points and signals, and general programming. It gives you complete control over your layout. The clear design together with the simple operation makes the Z21 multiMAUS the benchmark for digital model railway controllers, not just for beginners. Thanks to the illuminated display and large buttons, operation is clear and simple. The rotary knob also allows you to control your locomotives precisely. The snapping zero point provides feedback about the current knob position, without taking your eye off the system.

The programming with the Z21 multiMAUS is designed intuitively, so that even beginners can get to grips with the basic functions quickly. There is a multitude of extended functions available for digital experts, so that the driving behaviour of the locomotives can be laid out exactly as per the locomotive model (such as e.g. programming the CV-values per POM also by downloading using Railcom\* and programming the CV mode).

These work perfectly together with the Z21. This allows to quickly and easily install updates and function extensions.

## Z21 multiMAUS

- ▶ 64 loco addresses with 5-character names
- ▶ Up to 29 functions can be activated per locomotive
- ▶ Up to 1.024 magnetic items switchable
- ▶ Write and read configuration variables (DCC CVs)

## Z21 wlanMAUS

Additional features:

- ▶ Wireless freedom with WLAN
- ▶ Database for 100 locomotives or 10 routes with 10-character names
- ▶ Operation with standard batteries or rechargeable (3x AAA)
- ▶ Up to 2.048 magnetic items switchable
- ▶ Integrated Z21 control centre settings menu





## Updater App

The Z21 Updater app for iOS and Android allows you to always keep your Z21 system up to date. That is how you benefit from all the improvements and new features.

The following devices are supported:

- ▶ Z21
- ▶ z21 and z21 start
- ▶ smart RAIL

The update process is very simple:

- ▶ **Download updates**  
When you are connected to the Internet you can easily check for new updates. Those updates are directly saved on your device.
- ▶ **Installing new updates**  
Switch to the Z21 network. After connecting to the Z21 device the update can conveniently be installed.



Here is the link to the video:  
Z21 Updater App Tutorial



# Z21 signal DECODER

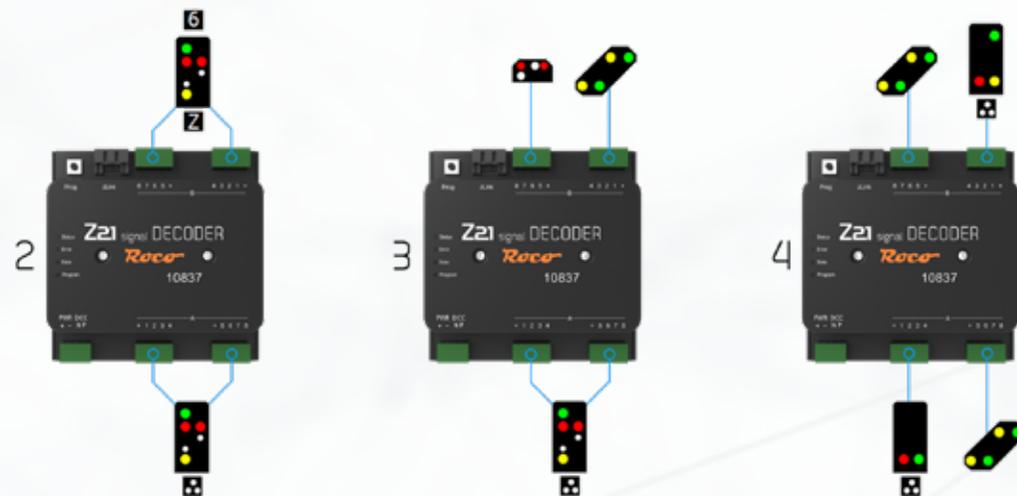


10837

The Z21 signal DECODER is a universal DCC decoder for 2 to 4 complex light signals with a common plus. It is easy to handle and future-proof due to its updatability.

It is therefore ideal for complex LED signals.

## Outputs for 2 to 4 signals



Depending on the complexity of the different signals, a varying number of devices can be connected.

- ▶ **2 signals:** 8 outputs can be used per signal.
- ▶ **3 signals:** 1 signal with 8 outputs can be used. Two additional signals with 4 outputs can also be used.
- ▶ **4 signals:** 4 outputs can be used per signal.

## Simple connection

A separate DC supply can be connected so that the control centre or booster outputs are not placed under unnecessary load. If the wiring should be as simple as possible, the rail signal can also be used as a supply.

In addition, the outputs are protected against overload and short-circuits. The signals are connected with a common plus. Each LED is connected to the Z21 signal DECODER with its own series resistor, because the output voltage corresponds to the supply voltage.

## Simple operation

Operation is even easier with the Z21 app as the signal types are also stored in the app and can be read out automatically from the decoder. RailCom\* enormously simplifies programming via the main track (POM), even in the installed state.

Furthermore, the Z21 signal DECODER can be easily configured and updated via the Z21 pro LINK.

By confirming via the programming button, the address of the next switching command can easily be adopted as the new address for the Z21 signal DECODER.

## Technical details

Input voltage	12–20 V DC or DCC rail voltage
Outputs	16 outputs for up to 4 signals
Output current per output	400 mA
Output current whole module	2 A
Compatible with	DCC Basic und Extended Accessory, RailCom*
Addresses of signals	1–2040
Dimensions	104 mm x 104 mm x 25 mm

\* RailCom is a registered trademark of Lenz Elektronik GmbH

## Many predefined signal types

Many predefined signal types with up to 24 signal aspects are available for easy configuration. This completely eliminates the need for highly complex „function mapping“ - only the signal type needs to be selected. This can be done conveniently via the Z21 pro LINK or by writing a CV. The signal type can of course be set independently per signal.

### Over 30 signal types are included, such as:

- ▶ **Germany:** H/V-signals, Ks-signals, HI-signals, block signals, ...
- ▶ **Austria:** Main-signals class 1980 and 1954, Pre-signals, Protection-signals ...
- ▶ **Switzerland:** System L, System N, Signals for the shunting service, ...

Additional signal types can of course be added by using the update function via the Z21 pro LINK.



# Z21 switch DECODER



10836

- ▶ Input voltage with 12–20 V DC or with DCC rail voltage
- ▶ 16 outputs for 8 switches via plug-in screw terminals
- ▶ 2 A (2,5 A for 1 second) output voltage per output
- ▶ 2 A (2,5 for 1 second) output voltage from entire module
- ▶ Compatible with DCC and RailCom\*
- ▶ Switch numbers 1–2040
- ▶ Dimensions from 104 mm x 104 mm x 25 mm

The Z21 switch DECODER is an all-purpose DCC switch decoder with 16 individual outputs for up to 8 switches or up to 16 consumers such as LEDs and mini light bulbs. It is easy to handle and future-proof due to its updatability.

Therefore, it is ideal for twin coil motors, simple light signals, lighting and the control of relays.

## Adjustable outputs

Each of the 8 output pairs can be set to different modes independently of the other. These are already pre-configured and can simply be selected. Each output pair can also be individually dimmed so that lighting can be adapted precisely to requirements.



## Simple connection

A separate DC supply can be connected so that the control centre or booster are not placed under unnecessary load. If the wiring should be as simple as possible, the rail signal can also be used as a supply. In addition, the outputs are protected against overload and short-circuits.

### Want to set up up to 8 independent switches? Not a problem with the universal Z21 switch DECODER!

#### Adjustable modes

Standard mode	With (configurable) cut-in time for twin coil motors
Instantaneous mode	For switches and uncouplers. Can be activated with a manual controller depending on the operating time (see also 10775)
Bi-stable continuous operation	Switching on or switching over of the lighting and signals
Bi-stable continuous operation 2	Switching on or switching over with light bulb simulation
Alternate flash	
Alternate flash 2	With light bulb simulation

#### Programming with RailCom\*

Massively facilitates the programming via the main track (POM), even in installed condition.

Alternatively, it is possible to simply adopt the switch address of the next switch command as the new address for the Z21 switch DECODER by pressing the programming button.



#### Simple configuration using the Z21 pro Link:

Configure the Z21 switch DECODER even more easily using the Z21 pro LINK. Either simply via the integrated display, or via the Z21 app.

## Extend your railway using our BOOSTERS!

The model railway system contains many power consumers that are connected to the digital voltage that all need to be supplied with power. If the system exceeds a certain size and the power from the track output of the control centre is no longer sufficient, the new Z21 light BOOSTER supplies new track and control sections with up to 3 or 6 A.

### Z21 light BOOSTER



10805

- ▶ Power 3 A (track output)
- ▶ RailCom cutout (adjustable)
- ▶ Reverse loop function can be configured using short-circuit detection
- ▶ Connections via B-Bus
- ▶ Forwarding of short-circuits to control centre (adjustable)

### Z21 single BOOSTER



10806

- ▶ Power 3 A (track output)
- ▶ Adjustable track voltage via Z21 (12–24 V)
- ▶ RailCom\* global detector
- ▶ Reverse loop function can be configured using short-circuit detection
- ▶ Connections via CAN-Bus, B-Bus, CDE bus
- ▶ Configuration and update simply via app, PC with Z21
- ▶ Can also be used as a brake generator
- ▶ Forwarding of short-circuits to control centre (adjustable)

# Z21 dual BOOSTER



10807

- ▶ Amperage: 2 x 3 A (track signals)
- ▶ Voltage for both track signals can be set separately via app or PC on Z21 (12–24 V)
- ▶ RailCom\* global detector
- ▶ Reverse loop function can be configured using short-circuit detection
- ▶ Brake generator can be configured for both separately
- ▶ Connections via CAN-Bus, B-Bus, CDE bus
- ▶ Configuration and update easily via PC on Z21 with CAN interface
- ▶ Forwarding of short-circuits to control centre (adjustable)

## Z21 light BOOSTER

10805

## Z21 single BOOSTER

10806

## Z21 dual BOOSTER

10807

## Z21 XL BOOSTER

10869

	10805	10806	10807	10869
DCC and Motorola track format	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B-Bus	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CAN-Bus	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CDE port	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RailCom* cutout (adjustable)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RailCom* receiver and transfer to the control centre (CAN)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Auto-inversion (adjustable, e.g. for a terminal loop)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Short circuit forwarding to the control centre (adjustable)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DCC brake generator (adjustable)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Firmware update (CAN)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Track voltage can be switched from 12 to 24 V	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Second, independently configurable track output	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Maximum track output voltage	3 A	3 A	2 x 3 A	6 A
Track gauge	N – H0	N – H0	N – H0	0 – 2

To automate your system, it is essential to install a well-functioning feedback system. The main function of the Z21 DETECTOR is the feedback message via current monitoring on track sections. This essential function is possible via R-Bus and CAN. The address of the feedback module can be set very easily using the integrated programming key.

## Z21 DETECTOR



10808

- ▶ Track feedback module for 8 sections
- ▶ Feedback message via current monitoring of track sections
- ▶ Connection via R-Bus or CAN
- ▶ Configuration via buttons or CAN

### Advantages of the CAN-Bus of the black Z21:

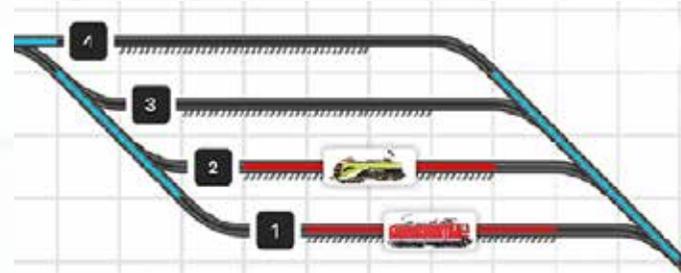
- ▶ Locomotive identification via RailCom\* Local Detector on each of the 8 inputs, and all at the same time.
- ▶ Response characteristics, current thresholds, RailCom\* settings and the address can be easily configured via the Z21 Maintenance Tool.
- ▶ The firmware update for future features can also be carried out easily and quickly using the Z21 Maintenance Tool.

## Z21 DETECTOR x16



10819

- ▶ Track feedback module for 16 sections
- ▶ Feedback message via current monitoring of track sections
- ▶ Connection via R-Bus
- ▶ Configuration via buttons and POM CV programming



Detail from the Z21 schematic signal box of the Z21 app - when using the Z21 DETECTOR (10808) in addition to the feedback message a picture of the locomotive is shown.

# Z21 CAN HUB



10804

- ▶ Additional 2 A power supply for CAN Bus
- ▶ 3 CAN outputs
- ▶ 1 Z-CAN output with booster signal amplification
- ▶ Ideal for large track layouts with many CAN users
- ▶ The package also contains a connecting cable for CAN Bus

Ideal for star-shaped wiring:

- ▶ 45 x 10808 Z21 DETECTOR
- ▶ 20 x 10806/10807 Z21 BOOSTER
- ▶ Zimo MX32

# Z21 multi LOOP



10797

The Z21 multi LOOP reverse loop module facilitates the easy and safe operation of track pieces such as terminal loops, triangular junctions and turntables.

- ▶ Ideal for reverse loops, triangular junctions and turntables for digital operation
- ▶ RailCom\* compatible
- ▶ Operation via short-circuit detection or using switching contacts

## Compatible with:

- ▶ DCC
- ▶ MM
- ▶ RailCom\*
- ▶ Analogue mode

## Operating modes

Short circuit detection	Easiest wiring
Sensor tracks	Short-circuit free detection
Track contacts	Detection via circuit tracks or reed contacts
Mixed operation	Double security

# Z21 pro LINK

## A further step into the future! Simply connect to a zLink-capable device and get started!

Wow! Look what this little digital Swiss Z21 army knife can do: It makes configuring and networking of your Z21 hardware even simpler and more convenient. In addition, the Z21 pro link also stands out thanks to easy operation and the ability to keep up to date with updates.

### The 3 essential functions:

#### Configuring

- ▶ The Z21 pro LINK always automatically detects which device it is currently connected to.
- ▶ You can conveniently configure this device via the installed display and buttons without the need of any other components.
- ▶ You can carry out the necessary adjustments via the Z21 pro LINK website on your PC or smartphone. Thus you benefit from the larger screen.

#### Updates

- ▶ Always keep your Z21 system up to date and benefit permanently from all new functions.
- ▶ You can perform this easily with the Z21 Updater App for iOS and Android or via PC with the Z21 Maintenance Tool.

#### Controlling

- ▶ The Z21 pro LINK also networks all of your devices with zLink interface.
- ▶ It enables to perform communication with control commands and status queries directly via WiFi.
- ▶ Therewith the „Internet of Moba Things“ has become reality.



With mobile device



With PC



Direct configuration with buttons and display

## Configuration and networking of your Z21 components at a new level. Typical Z21!



### Compatible with:

Z21 single BOOSTER 10806

Z21 dual BOOSTER 10807

Z21 signal DECODER 10837

Z21 switch DECODER 10836

and future devices



### Configuration and networking of your Z21 components at a new level:

- ▶ No complex CV tables
- ▶ Directly via the display
- ▶ Installed WiFi

# Z21 XL Series

## The popular Z21 is now also ideal for big scales!

The latest Z21 XL series has been especially designed for the needs of large tracks (0, 1, 2/G) and combines the benefits and comfort of the Z21 system with a high output.

## 6 A main track power for all track outputs!



### The benefits at a glance

- ▶ More output with 6 A 20 V
- ▶ Whole XL series designed for 6 A
- ▶ WiFi management offers good reach and transfer safety
- ▶ Convenient Z21 app and WLANMAUS to manage your whole system

### What the Z21 series includes

- ▶ Z21 XL series digital command station
- ▶ Plug and cable 6 A, 20 V
- ▶ WiFi router & plug

In terms of the functions offered by the command stations, the Z21 XL series differs from the Z21 most noticeably due to its 6A main track power for all track outputs. The rail voltage is not adjustable and depends on the plug used. The Z21 XL series features a Z-CAN for a high number of Z21 XL Boosters (10869).

## The advantages of our XL series? High-performance output and adjusted shutdown designed for the needs of large rails!

The benefit of your own Z21 XL series is that the high-performance output and adjusted shutdown are designed for the needs of large rails. The high currents not only withstand large model mechanics and robust track materials, but require them. As the Z21 system command station protects all downstream devices on the track from overloading, such as the Z21 detector, it may only be combined with XL series components:

- ▶ Z21 XL Series digital command station 10870
- ▶ Z21 multi LOOP 10797
- ▶ Z21 WLANMAUS 10813
- ▶ Z21 XL BOOSTER 10869
- ▶ Z21 CAN HUB 10804
- ▶ Z21 multiMAUS 10810



10869

### The advantages of the Z21 XL BOOSTER

- ▶ More output with 6 A 20 V
- ▶ DCC and Motorola\*\* track format
- ▶ B-Bus
- ▶ CAN-Bus
- ▶ CDE interface
- ▶ RailCom\* recipient and transfer to command station (CAN)
- ▶ Short circuit forwarding to command station (adjustable)
- ▶ Firmware update (CAN)
- ▶ RailCom\* space (adjustable)

**Recommended power supply: 10857 – 120 W Switch-mode power supply with output voltage 20 V and 6 A output current**

# Z21 System

## At a glance



Plug & Play System	<input checked="" type="checkbox"/>				
2 X-Bus ports on the front	<input checked="" type="checkbox"/>				
1 X-Bus port on the back	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DCC & MM	<input checked="" type="checkbox"/>				
POM programming, POM reading, CV programming and CV reading	<input checked="" type="checkbox"/>				
B-Bus and R-Bus	<input checked="" type="checkbox"/>				
Configurable with the Maintenance Tool	<input checked="" type="checkbox"/>				
Steering conveniently via Z21 app and various hand held controllers	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Photorealistic driver's cabs on Android tablets and iPads	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
LocoNet and Sniffer Bus port	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CAN-Bus - enables the convenient configuration of new Z21 components	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Possibility to set the track voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Separate programming track output with Zimo-Decoder-Update-Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Gauges	N – H0	N – H0	N – H0	N – H0	0 – 2

So that you can customise your z21/Z21 system or your smart RAIL even more to your preferences, the Maintenance Tool is available as a free download.

As well as customizing the IP address or the use of various decoder programming modes, this tool also allows you to carry out native Z21 multiMAUS and Z21 firmware updates. The scope of the functions is continuously developing so you can always access the latest version. Depending on the Z21 app version, special functions are also available, such as the ZIMO-decoder update, individual customization of the output voltage or converting the R-Bus interface into an additional X-Bus. The systems are backwards-compatible, and so also ideal companions for model railway veterans who want to squeeze the last drop of performance from their system. Model railway fans who are just starting out will find this equally useful.

The screenshot displays the Maintenance Tool software interface with several callout boxes highlighting key features:

- Configurations and settings of the BUS systems:** Points to the menu bar and the 'multiMAUS' and 'Firmware Update' buttons.
- multiMAUS Update:** Points to the 'multiMAUS' button in the menu bar.
- Firmware Update:** Points to the 'Firmware Update' button in the menu bar.
- Decoder update & soundload for Roco/ZIMO decoders:** Points to the 'Decoder Update' button in the menu bar.
- Convenient CV programming:** Points to the 'CV Programmieren' button in the menu bar.
- Easily adjust track voltage:** Points to the 'Hauptgleis-Spannung (mV)' slider in the 'Allgemeine Einstellungen' section.
- Short-circuit behaviour:** Points to the 'Kurzschluss Hauptgleis' and 'Kurzschluss B-BUS' sliders in the 'Allgemeine Einstellungen' section.

The interface includes a menu bar (Datei, Optionen, Hilfe) and a sub-menu (Status, Einstellungen, IP Einstellungen, LocoNet, CAN, R-BUS, multiMAUS, Firmware Update, Decoder Update, CV Programmieren). The main window is divided into sections: 'Verbindung' (with IP address input and 'Verbinden/Trennen' buttons), 'Versionen' (displaying serial number, firmware version, and hardware type), and 'System' (displaying input and internal voltages and currents). The 'Allgemeine Einstellungen' section contains sliders for track voltage and short-circuit behavior, dropdowns for output format and DCC addresses, and checkboxes for various system options. The 'Programmier-Einstellungen' section includes settings for programming voltage, mode, and packet counts.

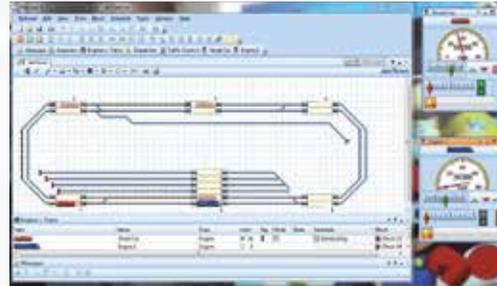
- ▶ Many basic system settings
- ▶ Exact setting of CV programming also possible for older decoders

Another feature which sets the Z21 systems apart is its compatibility with many well-established PC-based model railway controllers . The Z21 also has the major advantage that the complete communication system is extremely reliable via the LAN interface. Both older and new PCs provide this interface.

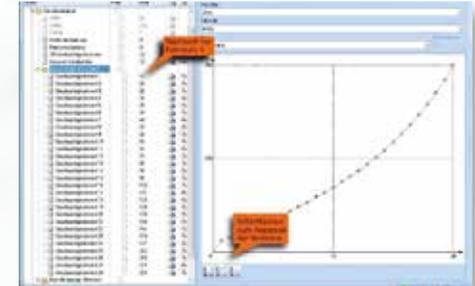
**iTrain from V3.0**



**TrainController from V8.0 B4**



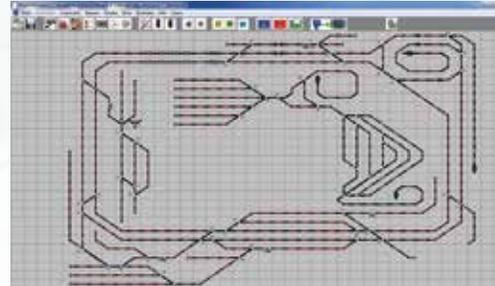
**TrainProgrammer**



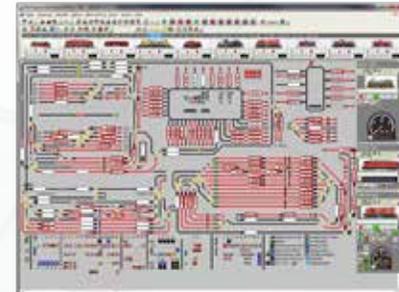
**Rocrail from Rev. 4635**



**ModellStellwerk from V8.20**



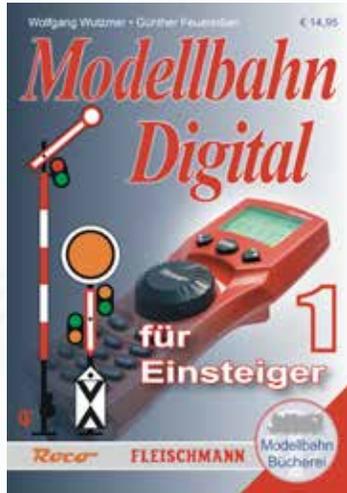
**WinDigipet**



If you would like to find out more about our Z21 systems, then please visit one of our Z21 information events or test the system free of charge at: [www.z21.eu/downloads](http://www.z21.eu/downloads).

# Literature

## Manual: For beginners, Volume 1



81395

What is a digital model railway and how can it be used best? This manual, edited by experts, answers the most important questions to the topic „How to digitize your own model railway layout“.

It provides both beginners and advanced users with valuable tips and tricks.

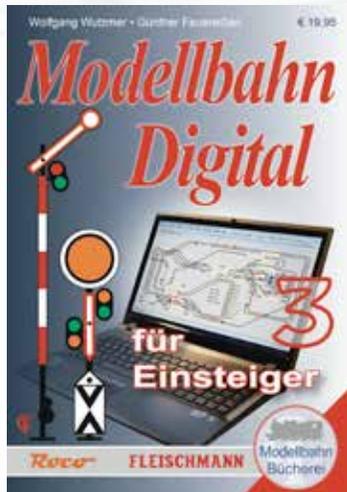
## Manual: For beginners, Volume 2



81396

If you are driving and controlling digitally with the multiMAUS, you already know the advances of the ROCO-/FLEISCHMANN digital system. But how to enlarge your Starter Set, activate the wireless WLANMAUS, use tablet or smartphone for control or how to update your control units etc.

## Manual: For beginners, Volume 3

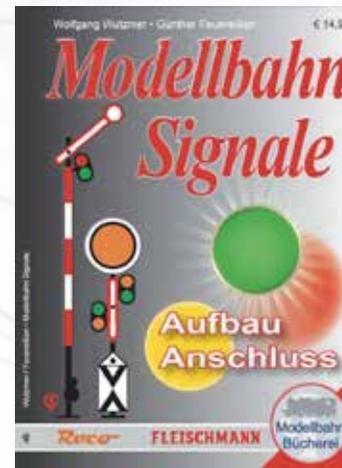


81393

In the digital age, the computer can reduce all manual work. If you still are operating your trains manually and set your points by mouse click then this book is just the right thing for you.

We will help you to set up the interlocking systems and to create the connection with your layout.

## Manual: Model railway signals - Setup and connection



81392

This brochure explains the main electrically-powered model signals, shows you the prototypical installation location and gives specific tips how to set them up for analog or digital switching, from block diagrams to the switching signals and rail crossings. The publication primarily concentrates on the Viessmann signals of nominal size H0 and N present in the Roco-Fleischman distribution. But also older models or signals from other manufacturers and other nominal sizes can be set up and connected based on these instructions.

# Your start into the digital world of model railway!



## Z21 professional digital set

10834

### Contains:

- ▶ Z21 digital control center
- ▶ Z21 WLANMAUS
- ▶ WiFi router, Plug-in power supply



## z21 start basic digital set

10833

### Contains:

- ▶ z21 start digital control center
- ▶ Z21 multiMAUS
- ▶ Plug-in power supply



83049