



All new items at a Glance
With application examples

2016/2017

CATALOGUE

Credits

Publisher

Uhlenbrock Elektronik GmbH
Mercatorstr. 6
D-46244 Bottrop

Association Memberships

Deutscher Verband der
Spielwaren-Industrie e.V.
RAILCOMMUNITY, Verband der Hersteller
Digitaler Modellbahngeräte e.V.
BDEF, Bundesverband Deutscher
Eisenbahn-Freunde e.V.
MOBA, Modellbahnverband in
Deutschland e.V.

Layout, Type Setting, Reduction and Graphics

Tanja Jentsch, 7 Silben, Bottrop

English Translation

Wolfram Steinke, Melbourne

Photography, Illustrations

Rüdiger Uhlenbrock, Bottrop
Rolf Knipper, Burscheid
Wolfgang Langmesser, Willich

Lithography and printing

Eisenbahnfachbuchverlag
Michael Resch, Neustadt/Coburg

We reserve the right to change catalogue contents at any time.

Names used in this catalogue are the Trademarks of the particular companies.

"Intellibox", "IntelliSound" und "Uhlenbrock-Elektronik" are Trademarks registered to Uhlenbrock Elektronik GmbH.

All rights to reproduce, duplicate and translation are strictly reserved.

No part of this catalogue may be reproduced or processed using electronic systems, Duplicated or disseminated in any form without permission of Uhlenbrock Elektronik GmbH.

Table of Contents



Uhlenbrock

- 4 New Items
- 6 Seminars & Service



Digital Centers and Control Devices

- 8 The Digital Center from Uhlenbrock
- 10 DAISY II DCC Digital Set
- 10 Convenient holder for DAISY
- 11 DAISY II LocoNet Hand Controller
- 12 DAISY II-Radio
- 13 DAISY II DCC-Radio
- 13 Radio Receiver GT-XControl for DCC-Radio
- 14 Intellibox II
- 18 Intellibox Basic
- 19 RailCom Expansion
- 20 IB-Com – The Digital Center for the PC
- 21 IB-Control II
- 22 IRIS – The Infrared Intellibox Control
- 22 LocoNet IR Receiver



LocoNet & Software

- 24 The Model Railway network
- 26 Components & Cables
- 26 Cable Tester
- 26 LocoNet-Distributor
- 27 LocoNet-Tool
- 27 USB-LocoNet Interface
- 28 LocoNet TCP/IP Interface
- 28 XPressNet-Adapter & Maus Adapter
- 29 IB-MultiControl
- 30 Win-Digipet 2015 Small Edition



Track Plan Panel

- 21 Track-Control – The Uhlenbrock Track Plan Panel



Automation without PC

- 38 Train Influencing systems
- 40 Universal Control
- 42 LocoNet Feedback Module with Automatic functions
- 43 LISSY & MARCo
- 45 MARCo and LISSY Components
- 48 Lissy/MARCo-Creator



Switch and Servo Decoder, Servos

- 50 LocoNet Switch Module
- 51 Solenoid and Switch Decoder
- 52 Servos Drives
- 53 Digital Servo & Digital Motor
- 54 Servo Decoder
- 55 Servos



Model Railway Lighting

- 58 IntelliLight LED
- 60 LED Festoon & LED Effect lighting



Energy

- 62 Booster – Power 4
- 62 Reversing loop Relay
- 63 Booster – Power 8
- 64 Transformers



Decoder

- 66 Digital Decoder
- 67 Digital Decoder for N, TT, H0e and small H0 locos
- 68 Digital Decoder for H0 – IIm locos
- 69 Energy Buffer
- 69 Pickup Switcher
- 69 Digital Decoder for 0, I and IIm locos
- 70 Function Decoder
- 70 Motor Noise Suppressor
- 71 Interface plugs and Sockets
- 71 Digital Decoder Lexikon



Locomotive sound

- 74 IntelliSound
- 75 IntelliSound-Modules & Decoder
- 76 Loud speakers
- 77 IntelliSound Loading Adapter
- 77 SUSI-Interface
- 78 Sound Library



Layout Sound

- 80 Sound-Director



Analog running

- 82 Track-Control – The Uhlenbrock Track Plan Panel
- 83 Track Occupancy detector GBM
- 84 Acceleration-Brake Module ABBS
- 85 Infrared Speed Controller IRIS
- 86 Reversing Switch FRU



Functional Models & Accessories

- 88 Uhlenbrock Head Office
- 89 Water Crane
- 90 Gantry Crane
- 91 Load lifting Magnet
- 92 REPA Uncoupler



Literature - digital Model Railway

- 93 Digital practices for Model Railways
- 93 Operating practices for digital Model Railways



Info

- 94 Small Model Railway Lexicon
- 95 Overseas Representatives, Exhibition Timetable
- 95 Fair dates

Neuheiten 2015



Convenient Holder for DAISY II

Page 10

Plexi-glass holder to screw to the layout frame; cable holder included.

Part No. 66 320

DAISY-Convenient holder
Currently available



LocoNet-Distributor

Page 26

Four in One – Distributor, Patch panel, Power injector

Part No. 62 260

LocoNet-Verteiler
Available from October 2015



Win-Digipet 2015 Small Edition

Page 30

Cost effective Computer Version for entry into the world of digital control of model railway layouts.

Part No. 19 920

Win-Digipet 2015 Small Edition
Currently available



Track-Control analogue

Page 82

Now it is also possible to install a Track-Control in analogue layouts. There is description on page 82.

Available from November 2015



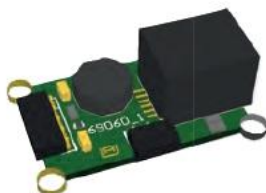
9-Button control panel

Page 32

We offer a complete 9-Button control panel with which 9 different control functions can be directly controlled.

Part No. 69 020

9-Button control panel
Available from November 2015



Track-Control Connection Module

Page 34

Makes the Track-Control attractive even with a small number of control elements.

Part No. 69 060

Track-Control Connection Module
Available from November 2015



IntelliLight LED

Page 58

Further development of the IntelliLight. Better and considerably more cost effective.

Available from November 2015

Marco Receiver + Feedback

Page 45

The MARCo Receiver has two RailCom-Detectors and two feedback modules for monitoring two track sections.

Part No. 68 510

MARCo Receiver + Feedback

Available from
October 2015



New Items 2016

mf^x® for the Intellibox II

Page 14

The new mfu-Modul expands the Intellibox II with the mf^x® Data format. With the module the mf^x® locomotives report their presence automatically and all functions are switchable.

Part No. 65 110

mfu-Module

Available in 2016



LocoNet-TCP/IP Interface

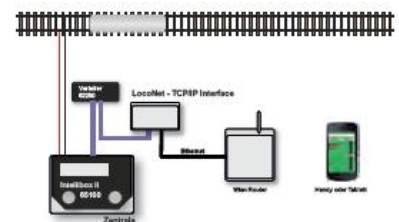
Page 28

Control your model railway with your smart phone or tablet.

Part No. 63 860

LocoNet-TCP/IP Interface

Available in 2016



XPressNet-Adapter

Page 28

With this Adapter you control LocoNet devices, such as the TrackControl or DAISY with a Lenz central controller.

Part No. 63 850

XPressNet-Adapter

Available in 2016



New on our website

IB-II-Tool

The IB-II-Tool for manipulating the database in the Intellibox II can be downloaded from our website free of charge.

Daisy-Tool

The DAISY-Tool for manipulating the database in the DAISY II can also be downloaded from our website free of charge.

www.uhlenbrock.de

Uhlenbrock-Seminars



Specialized knowledge first Hand

You will receive from us all necessary support from entry level to digital model railways to the many possibilities which the Uhlenbrock digital system opens up for you.

You will receive comprehensive instruction from operating the Intellibox right to automation of the model railway with LISSY or MARCo. There is also ample time for asking questions about individual problems. Ample play time is also provided.

Allow yourself to be seduced by the digital world of the Uhlenbrock components with a small group of participants. Learn many Tips and Tricks in handling the Uhlenbrock Digital system. Get to know new aspects to your Hobby.

Timetable and Reservations

You can find timetables, further information and Seminar reservations on our website: www.uhlenbrock.de.

From 2016 the following Seminars are offered:

Introductory Seminars

- Digital beginners with the DAISY II-DCC Digital set
- Information all round the Intellibox II
- LocoNet – the model Railway Network with its unbelievable possibilities

Advanced Seminars

- Planning an automation and subsequently programming of a complete model railway layout with LISSY/MARCo
- LocoNet-Tool, LISSY-MARCo-Creator
- Module programming by PC

Track-Control Seminar

- Analogue and digital
- Planning
- Construction
- Commissioning

Uhlenbrock on the Internet

Our Internet site contains the latest current information about Digital techniques. Besides our product range you will find:

- Our Price list
- Our Webshop
- A specialist dealer listing
- A Timetable for exhibitions, Seminars or Info-days at your dealer's
- All Product manuals and descriptions in PDF Format
- A Sound library of individual sounds to Download
- FAQs to answer frequently asked questions

Our Internet site is most definitely worth a visit.

www.uhlenbrock.de



Service

With a possible defect, please return the product to us for repair, along with proof of purchase and a short description of the fault.

Hotline 02045-858327

Your direct connection to a technician. We are there for you when you have questions.

Mondays 14:00–16:00
 Tuesdays 14:00–16:00
 Wednesdays 16:00–18:00
 Thursdays 14:00–16:00
 Fridays 14:00–16:00

E-mail: service@uhlenbrock.de

Premium Hotline 0900-1858327

For urgent advice, a technician can be reached on the Premium Hotline from Monday to Friday, between 10:00 and 16:00.


















This hotline is subject to a charge (0,98E/min on land line and higher on mobile networks)

2 Year Guarantee

Our Products are covered by a two year guarantee.

Legend

For a better overview we have used the following symbols in this catalogue:

	Gauge N
	Gauge TT
	Gauge H0e
	Gauge H0m
	Gauge H0
	Gauge 0
	Gauge 1
	Gauge G, IIm (LGB)
	Direct current
	Alternating current
	LocoNet connection.
	With USB Interface
	Motorola format
	DCC format
	FMZ format
	TRIX format
	RailCom by Lenz Elektronik GmbH

Digital Centers and Control Devices

A

DAISY II Digital Start Set

DAISY II – Control via Radio

Intellibox II – now also an mfx®-Control System

Intellibox Basic – for Digital Purists

IB-Control II – the Universal Control Device

IRIS – Infrared, wireless, very cost effective control



The Digital Center from Uhlenbrock

When the first Intellibox appeared on the market ten years ago it was a unique digital center. Equipped at the time with features other manufacturers only dreamed about. And we promised that further additions could be implemented with simple updates. In this way the first Intellibox is still up-to-date. In the meantime a program was developed which leaves no Model railroader's desires unanswered.

Which Intellibox do you need?

You can select between three different variations.



Intellibox II

The first choice from the digital centers is the Intellibox II. With a large, high resolution display you can see all essential information at a glance. Setup and programming tasks become child's play.

The enormous functionality and capacity which no other center offers makes the Intellibox II an all round talent for every size of layout.

The Intellibox II still has the proven mechanical keys which can also be "blindly" operated.

We consciously decided against a colour display and Touch screen. These are not essential for easy layout control. That way some cash remains for other purchases.

Intellibox Basic

The cost effective entry level Intellibox. You can run up to 32 Locomotives simultaneously and naturally switch Signals and turnouts.

For PC-Driver who occasionally likes to drive manually, Intellibox Basic is also the correct choice.

An extension of the functionality, e.g. an Infrared remote control or simple connection to the LocoNet, is possible at anytime.

IB-Com

Would you like to control the layout by PC? Then the IB-Com is the right center for you. Without controls the IB-Com is the cost effective solution with high capability.

DAISY II-DCC Digital Set

It is a digital entry system for the ambitious model railroader. It consists of a DAISY II-Hand Controller and a DCC center, that communicate with each other via a LocoNet cable. It provides all the functions that are desirable for easy model railway operation.

The digital center is the heart of the DAISY II-Digital Set. All commands are coordinated in the center and processed according to its meaning. It generates the DCC track signal and feeds them to the LocoNet connection for the hand controller to use.

You do not need anything else! Unpack and start because the power pack is also contained in the set.

Intellibox IR

The Intellibox IR, is no longer available

but will nevertheless continue to be supported and is on the latest footing with Upgrade 2.0.

Several Centers working together

All Intelliboxes can be combined with one another. This way one Intellibox takes on the role of Center. All others function as speed controllers and Keyboard. Furthermore, the Intellibox Basic and Intellibox II can also be used as additional Boosters.

To install as additional speed controller and keyboard the Intellibox 650, 65000 and 65050 must have Software-Version 2.0.

Digital Centers – all Variations in a Glance

Intellibox Basic, IB-Com, Intellibox IR and Intellibox II comparison

		DAISY II Start Set	Intellibox Basic	IB-Com	Intellibox II
Track system	2-Rail	yes	yes	yes	yes
	3-Rail	yes	Yes	yes	yes
Data format/Addresses	Märklin-Motorola	-	255	255	255
	DCC	9999	9999	9999	9999
	Selectrix	-	No	no	111
Speed steps	Motorola	-	14	14	14
	DCC	128	128	128	128
	Selectrix	-	-	-	31
Simultaneously controlled addresses		20	32	32	119
Connection possibilities	Programming track	yes	Yes	yes	yes
	LocoNet	yes	Yes	yes	yes
	Märklin-Devives (I ² C-Bus)	-	-	-	-
	Computer Interface	-	USB	USB	USB
	Infrared receiver	-	-	-	integrated
	s88 Feedback	-	-	yes	yes
	LocoNet Feedback	yes	Yes	yes	yes
	MARCo/LISSY control system	yes	Yes	yes	yes
Special Functions	Booster	2A	3.5A	3.5A	3.5A
	Keyboard	Integrated	Integrated	-	Integrated
	Loco Programmer	Integrated	Integrated	Via Computer	Integrated
	Virtual Locomotive Addresses	Symbol, Text und Digits	-	Via Computer	Text and numbers
	Multi-traction	Double traction	-	Via Computer	4 Locos
	DirectDrive-Function	-	Yes	-	yes
	RailCom Support	yes	*)	*)	Yes
	Multilingual display	yes	Yes	-	Yes
	Route Control	yes	-	Via Computer	Yes
	Updatable Software	yes	Yes	yes	yes

*) The Intellibox IR is no longer available.

Upgrade Software 2.0 – Extension of the Intellibox and Intellibox IR System software

The Upgrade 2.0 is an extension for all Intelliboxes with the part number 650, 65000 and 65050, which have a system software lower than 2.0. The following new features are available:

10 000 Loco Special functions

On particular DCC Decoders special functions f0–f9999 can be accessed.

Loco selection from Refresh Cycle

The Refresh cycle contains all locomotive addresses that are currently being supplied with digital information by the Intellibox. The new Software makes a selection list of these addresses available for directly selecting the desired locomotive.

Lokfind Function

As soon as a locomotive with a DCC Decoder is placed on the programming track the locomotive address of the decoder is automatically taken up on a speed controller.

Restoring the locomotive addresses

The locomotive addresses shown on the Intellibox display are saved at power down if desired and are available again at power up without having to reenter them.

Stop Mode

The Intellibox can be in stop mode with the STOP and GO keys. All locomotives are stopped by emergency stop and track power remains on. Turnouts and Signals can still be changed.

Use Intellibox as IB-Control

The Intellibox can be configured using the device configuration so it behaves like an IB-Control. That way it is possible to use two Intelliboxes together on one layout.

Route control

For all devices without route control the new System software adds the possibility of switching up to 48 routes.

mfx-Special functions

mfx-Locomotives are controlled by the Intellibox with the Motorola Data format. If a locomotive has more than four special functions, then special functions f5–f8 are automatically controlled by the following decoder address.

The Upgrade Software is available free of charge to owners of the Intellibox IR. For older devices the Software can be purchased.

Part No. 65 020 Upgrade-Software 2.0

DAISY II-DCC-Digital-Set



The DAISY II-Digital-Set is a digital entry level system for the ambitious model railroader. It consists of a DAISY II Hand Controller and a DCC Center which are connected to each other with a LocoNet cable. It controls all the functions that are desirable for easy model railway operation.

The Digital Center is the heart of the DAISY II-Digital-Set. All commands are coordinated in the center and processed according to its meaning. It generates the DCC track signal and feeds them to the LocoNet connection for the hand controller to use.

- 20 locomotives simultaneously controlled
- 9 999 Loco addresses
- Data format DCC with 14, 28, and 128 speed steps
- Every loco address individually selectable
- Up to 24 switchable Loco special functions per loco
- Up to 2000 switchable solenoids in DCC Data format
- Route buffer for 16 routes.
- These routes can each switch a maximum of 10 steps with any desired solenoid address between 1 and 2048.
- Illuminated keys
- Max. Output current: 2 A
- Programming output for DCC decoders
- LNCV programming for LocoNet devices

- Output for the reversing loop relay 61080 for automatic control of a reversing loop
- LocoNet-T connection for all usual LocoNet devices
- LocoNet-B connection for external LN-Boosters like the Power 4 or Power 8
- With RailCom® CutOut in the DCC Signal e.g. for the MARCo automation system
- Dispatch mode for the FRED Hand Controller
- Updateable via USB-LoCoNet-Interface 63120 or 63130

Extensibility

You can attach up to 20 hand controllers to the DAISY Center. For that, you only require the 5-way LocoNet-Distributor 62 250. Also all other LocoNet devices can be connected directly.

To that belong, among others:

- The Computer Interface 63 120, 63 130
- The 8-way Feedback module 63 320
- The track plan desk TrackControl
- The Block section and shadow station control 68 720
- The Booster Power 4, 63 240

If you wish to use an Intellibox II, naturally, you can continue to use all the components from the set. The center is then connected to the 2A Booster.

Part No. 64 300 DAISY II-Digital-Set
Consists of:
DAISY II Center,
DAISY II Hand Controller,
Power pack, 3 m Spiral
cable, operating manual



Convenient Holder for DAISY II NEW

... also for FRED, DAISY and System Radio



Plexi-glass holder for screwing to the layout frame. With cable holder.

Part No. 66 320 DAISY Convenient holder

DAISY II LocoNet-Hand Controller

- High contrast display with yellow text on a black background
- Intuitive Menu flow
- Up to 9 999 Decoder addresses
- Up to 128 speed steps
- Up to 32000 Locomotive special functions
- Locomotive database with Locomotive names, Loco and function symbols
- Up to 2048 turnout addresses
- Continuous rotary speed control with reversing switch
- Night design, illuminated keys
- Updateable
- Connectable to Intellibox, Intellibox IR, Intellibox Basic, Intellibox II, IB-Com, DAISY II-Digital Set, System Control 7, TwinCenter and Piko Power-Box
- Route mode for calling up external routes
- Expanable to DAISY II Radio Hand Controller by adding the radio module



High visibility display with yellow text

Up to 9999 Decoder addresses & 128 Routes

Up to 2048 Turnout addresses

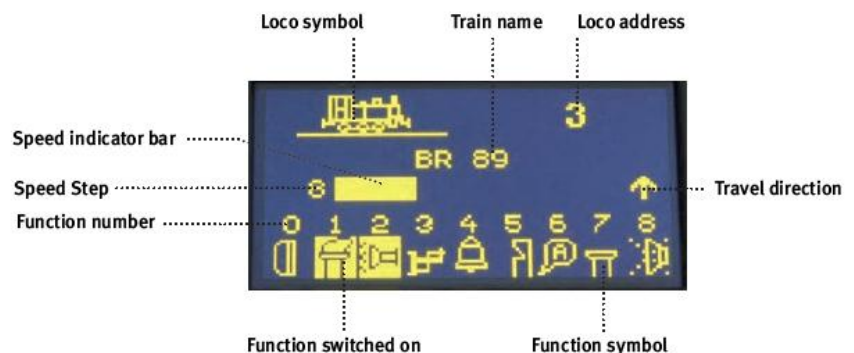
Simple database maintenance with the free DAISY II Tool

With the DAISY II Hand Controller all address and control information is shown in the display. The speed is controlled with the continuous rotary. A push on the control changes the travel direction. 24 special locomotive functions are switched directly by the numeric keys.

DAISY II can be disconnected from the LocoNet at any time without loss of the actual state of the locomotives and reconnected at another location.

The DAISY II Hand Controller can be extended with the radio module to make the DAISY II Radio Hand Controller. For radio operation you only need to add the Radio Master. See the next page.

The informative DAISY II display



Part No. 66 300 DAISY II Hand Controller with 3 m Spiral cable

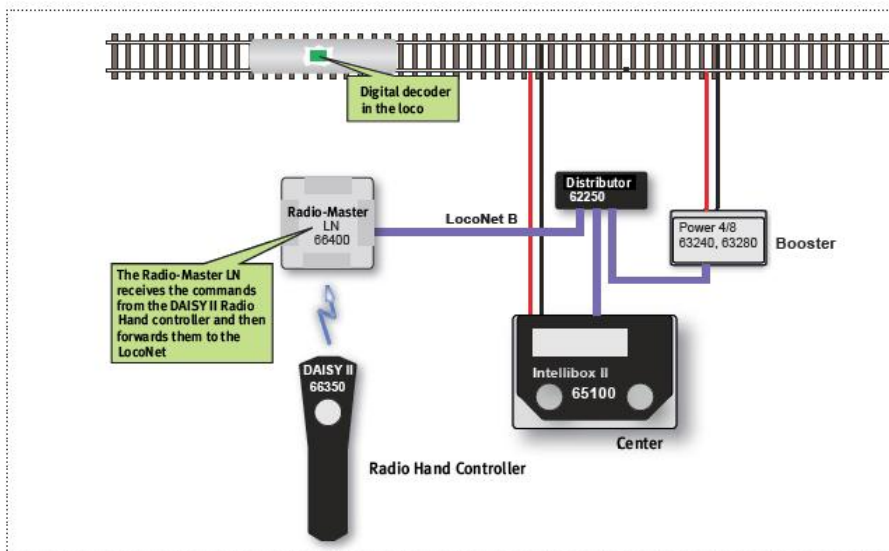


Part No. 66 310 DAISY II Radio module with charging adapter



DAISY II-Radio

With our expandable radio system you can enjoy all the freedom of wireless model railway control. The Basis of the radio system is the Radio-Master LN. It is the radio centre in which all radio operations are coordinated.



- Functionally like the DAISY II LocoNet Hand Controller
- Range up to 100 m
- Up to 20 simultaneous Radio Hand Controllers
- Battery charged via the LocoNet or Charging adapter
- Radio-Master LN can be connected to an Intellibox, Intellibox IR, Intellibox Basic, Intellibox II, IB-Com, DAISY II-Digital-Set, System Control 7, TwinCenter, Piko Power-Box and Computer (USB)
- Radio frequency 868 MHz
- Option for installing with Gamesontrack-Position



The DAISY II Radio Hand Controller is also suitable for use on a center with LocoNet connection. It can be connected directly to the Loco-Net, that is cable bound, or via radio with a Radio -Master, which is connected with the center via the LocoNet. The range of the DAISY II Radio Hand Controller is up to 100 m (free field) to the nearest Radio-Master.

Depending on the System configuration up to 20 DAISY II Radio Hand Controllers can be simultaneously connected. The DAISY II Radio Hand Controller can be easily charged from the LocoNet or the included charging adapter.

Part No. 66 350 DAISY II Funk-Hand Controller with 3m Spiral cable + charging adapter

Part No. 66 400 Radio-Master LN

Part No. 64 400 DAISY II-Radio-Set: DAISY II- Radio-Hand Controller Radio-Master LN, 3m Spiral cable, charging adapter



Future Proof!

The radio system is expanded by Software. By extending the Software you can extend the Radio-Master LN into the Radio -Master LN+DCC.

Further Software extensions ensure that the Radio-Master can also be used with the Faller Car-System and the Gamesontrack-Position.

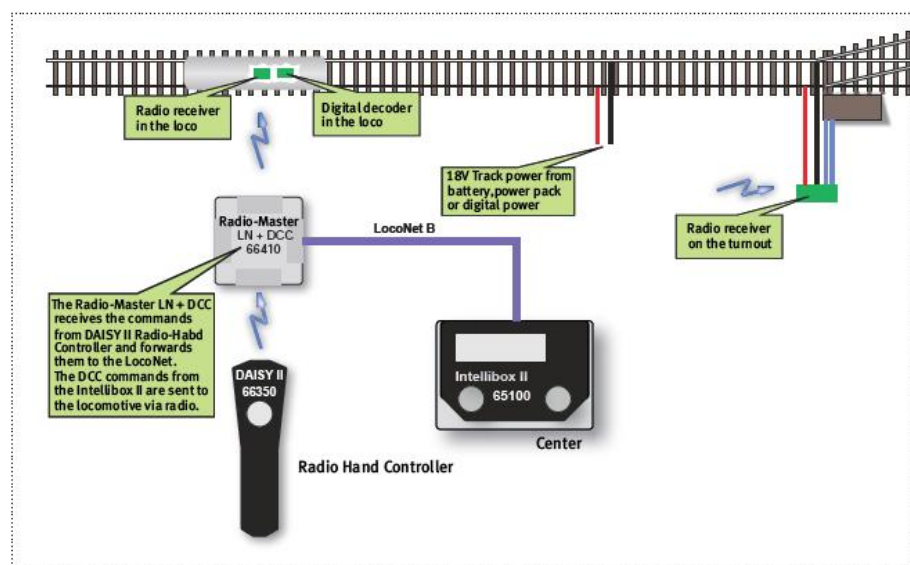
DAISY II – DCC-Radio

Locomotives and Turnouts directly controlled by Radio

A reliable digital control for a garden railway is not always delivered via the rails, e.g. with leaf contamination. These problems are avoided when the DCC signals are sent directly to the locomotive decoder via a radio link. A radio receiver GT-XControl is installed in the locomotive and fitted between power supply and locomotive decoder.

The power supply can come from the rails with 18-24 V DC or digital or from a battery placed in the locomotive

For the DCC-Radio you need a Radio-Master LN+DCC (Part-No. 66 410), a DAISY II-Radio Hand Controller (Part-No. 66 350), a digital center with LocoNet-B connection, as for example all Intelliboxes, and for the equipped locomotives the Radio receiver GT-XControl Part No. 00 721 or 00 701.




Part No. 66 350 DAISY II Radio-Hand Controller with 3m Spiral cable + Charging adapter


Part No. 66 410 Radio-Master LN+DCC 45.3 x 24 x 12.5 mm



Radio-Receiver GT-XControl für DCC-Funk

GT-Xcontrol is a Radio receiver that is installed between the locomotive's power source and the locomotive's digital decoder.

- Can be used with any DCC decoder
- As turnout receiver for direct switching of solenoid turnout motors for double or single coil drives (LGB, PIKO G)
- Up to 3A load current (0-Ilm)

Part No. 00 701 GT-Xcontrol H0

Not available yet*

Part No. 00 721 GT-Xcontrol O-Ilm 45.3 x 24 x 12.5 mm


Part No. 00 728 GT-Xcontrol Turnout receiver

Not available yet*



* Available from 2016. Technical Data was not firm at time of printing.

Intellibox II – The »Ultimate«

The Intellibox II is the successor to the legendary Intellibox, which has been the yard stick for all Digital centers for a decade. Tailored for model railroaders who want to drive for an attractive price and not play with a Computer.

- DCC, Motorola, Selectrix data format
- Up to 128 speed steps
- Up to 9999 Decoder addresses
- Multi-traction (Consisting)
- DirectDrive Function
- Switching of turnouts, signals and routes
- Integrated Infrared receiver
- Connections for LocoNet, Transformer, Track, Programming tracks, Märklin Booster, DCC Booster, s88 Module and additional Infrared receiver
- Integrated 3.5 A Booster
- Large, high resolution display with backlight
- Detailed representation and readable from the side
- Information in plain text or as symbols
- Night design with backlit keys
- Context sensitive keys assignments
- Speed indication also in km/h
- Up to 32768 switchable special functions per locomotive
- Locomotive database with locomotive names
- Decoder programming in plain text
- Locomotive position display in conjunction with LISSY/MARCo
- Routes callable by feedback contacts
- Locomotive commands in routes, e.g. for shuttle traffic
- Help function
- Model Time clock
- USB Computer Interface
- Data security with a PC

If you are familiar with the Intellibox or the TwinCenter, you will find it easy to operate the Intellibox II. The operating concepts have been retained – differing from many other Centers that have come on the market. The operation has become even simpler with the large display. Many new functions await you.

Technically the Intellibox II is a completely new device. Only the proven ergonomics remain. For us it is only natural that the previous devices can continue to be used.

The biggest innovation is the large high resolution Display. The display of the various parameters is done in plain text and function symbols. The representation is highly detailed and also readable from the side.



The additional keys on the left and right of the display are context sensitive and therefore suitable for quick access to menu options and functions.

The speed indication is not only in speed steps and percent but also in km/h. Up to 32768 special functions per locomotive can be switched.

A large locomotive database with text display of locomotive names can be individually set up.

Also new is the decoder programming in plain text, the detailed help function, a model time clock and USB computer connection.

Now also with »mfx®« NEW



With the new mfu-Module your Intellibox II can also communicate with mfx®-vehicles on your layout. Because of the automatic registration the vehicles are instantly entered into the Intellibox II database by name and their function symbols, so that can be easily accessed and controlled. Now you can reach all the special functions and control your mfx®-vehicles with 128 speed steps.

The installation is as always conceivably simple: the mfu-module is connected to the track output of the Intellibox II, to the track and the LocoNet.

Part No. 65 110 mfu-Modul



*This Product is not available as yet; a delivery schedule had not been determined at the time of printing. Anticipated availability: 2016.
mfx® is a registered trademark of Gebrüder Märklin & Cie. GmbH*

As before: Everything in one Box

With the Intellibox II you are completely fitted out for digital operation.

Only one device puts the following digital system components at your disposal: Central processor unit, Booster, two speed controls, Keyboard, Programmer, Interface, feedback monitor, route control, model time clock and the LISSY/MARCO Mode with the Direct-Drive function.

The integrated Infrared receiver allows direct use of the Infrared remote control IRIS.

As a BUS System the Intellibox II uses the proven model railway network LocoNet. Data communication is rapid and reliable.

Every accessory can be simply connected and problem free.

The installation of the Individual Loco control system LISSY or the RailCom based control system MARCO makes it possible to automate the layout without the need of a computer.

By using the DirectDrive function any locomotive that has passed a LISSY receiver can be taken over by a speed controller with the simple push of a button.

The integrated USB interface provides a fast connection to a PC. Any Software which supports the LocoNet protocol can automate the control of the layout.

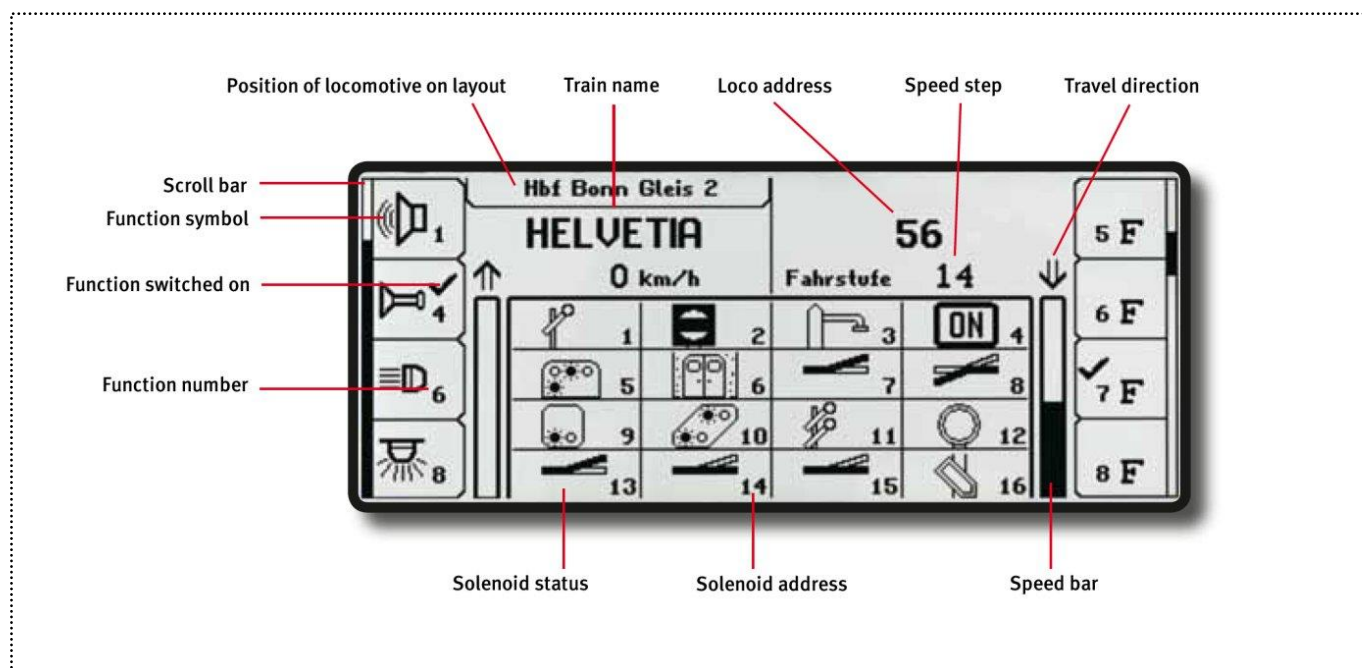
LokPosi*

Unique!

The locomotive position display with the help of LISSY or MARCO can tell you the location on the layout of a locomotive at any time. Call up your V200 for example with the name Helvetia and you will be shown that it is on track 2 of the Bonn central station. When you call up the BR50 you see it is on track 5 of the shadow station.

NEW

The free IB-II-Tool for Intellibox II database maintenance can be downloaded from our website.



The Display is divided into three areas: left control desk, key block, right control desk. In the left part of illustration is a locomotive whose data are stored in the locomotive database. The special functions are shown as symbols. The speed display is in km/h. In conjunction with the Individual loco control system LISSY or MARCO, the locomotive's location is at the top of the display.

In the middle part there is the 16'er switch panel with various switch symbols.

You can also display other information in this area. Among these you can count Routes, Feedbacks, IRIS remote controls, and model time, LISSY and Booster monitoring.

In the right driving panel you see the standard display for the locomotive with address 56. The special functions are shown as numbers. The speed is shown in speed steps.

* Patent registered with the German patent and trademark office.

The Intellibox II can control 119 locomotives simultaneously and up to 2048 turnouts and signals.

Various Data formats

The Intellibox II can operate 2-rail or 3-rail layouts. Simultaneously controllable are: locomotive, function, turnout and signal decoders in Märklin Motorola, DCC and Selectrix Data formats from different manufacturers.

Connect what you wish

Additional digital components are quickly and simply connected to the LocoNet-sockets. You can find a detailed explanation of the LocoNet in the following pages.

Very clear Display

The backlit LCD display has a clearly arranged workspace. The following languages can be selected for the display: German, English, French, Italian, Spanish, Portuguese, Dutch, Swedish and Danish.

Central Processing Unit

The central processor serves to co-ordinate the individual digital components, processes the incoming data and generates various data signals.

Two Speed Controls

The two Speed Controllers with large handy knobs can control two locomotives independently of one another. The rotary controls, without end stops, automatically restore the previous speed when a new locomotive is selected. The speed controller can operate in DC mode with middle stop or AC mode with reversing switch.

128 Speed steps – 9999 Decoder addresses

The number of available speed steps and addresses depends on the decoder type. The Intellibox II supports all speed steps and decoder addresses which the decoder offers in its respective data format.

32768 Locomotive Special functions

In DCC Mode the Intellibox II supports up to 32768 special functions per locomotive. Yes, you read correctly. The functions can be switched by key press or numerical entry.

Locomotive, Train Names

Each decoder, in addition to its programmed address, can additionally have a name assigned to it.

Multi-traction (Consist)

Eight combinations with up to 4 locomotives each can be administered by the Intellibox II. The entire consist is controlled by one speed controller under the address or name of the first locomotive.

Switch panel

The switch panel can switch 320 Märklin- i.e. 2048 DCC solenoids. The turnout or signal state is shown in the Display.

Route Control

The route control in the Intellibox II can administer up to 80 routes. Each route can have up to 24 switching instructions. Because of the capability for one route to call another route, routes can be flexibly extended. These routes can also be activated by a running train with feedback messages. Furthermore locomotive instruction such as speed, direction and special functions can be embedded in a route e.g. to operate a shuttle section.

Locomotive Programmer

Decoder programming is easy in clear text thanks to the menu driven procedure.

Non-volatile memory

All settings that are carried out for Intellibox only need to be done once and are safely saved in non-volatile memory.

Infrared Receiver

The Intellibox II has an integrated Infrared Receiver, so that the IRIS remote control can be used directly.

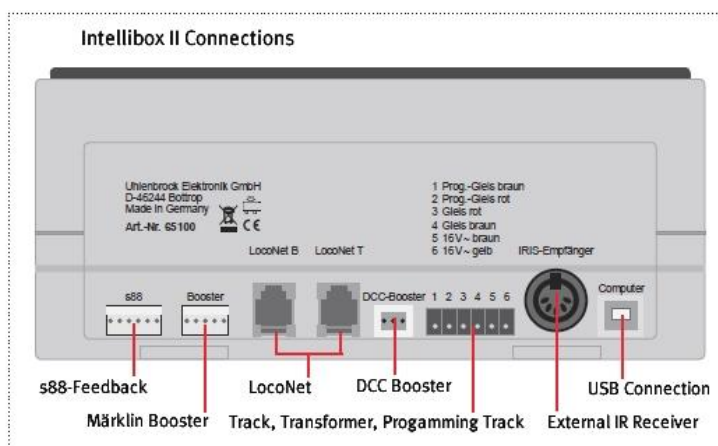
Interface

The integrated USB LocoNet Interface provides a fast connection to PC or MAC. For layout control any software that supports the LocoNet Protocol can be used.

The Intellibox II - Night design



Intellibox II Connections



LISSY/MARCO Mode

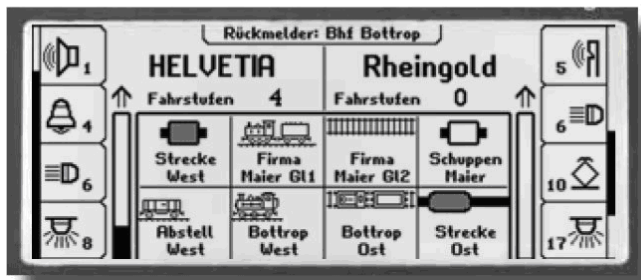


In automatic operations just like with manual control you always have the question: "Which Locomotive is at which location on the layout at any particular time?" With LISSY or MARCO the Intellibox II can easily answer this question. In LISSY Mode it provides the following information:

The identification of the receiver location, the locomotive address or locomotive name and train category of the passing locomotive as well as the travelling direction and the speed of the locomotive at the receiving point.

With the display it is possible to monitor Block sections and shadow stations. You know which locomotive is in which track section at any time.

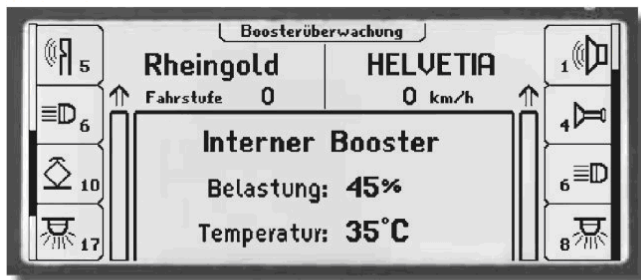
Feedback Monitor



The Intellibox II not only supports LocoNet Feedback modules, but also a maximum of 31 s88-Feedback modules.

In Feedback mode the occupied status of the connected feedback units can be monitored by various feedback symbols and freely configurable descriptions. By grouping, for example, the feedback from a shadow station under the name "Shadow station" you can always call them up by this name.

Booster



The integrated booster has a maximum current output of 3.5A. The output has overload and short circuit protection. The Booster mode in the display allows the permanent monitoring of the Intellibox II built-in booster and the Power 4 and Power 7 boosters connected to the LocoNet. The load, in percent, and the operating temperature of the booster being monitored are displayed. It is possible to assign an individual name to each and monitor the state of a layout area by entering these names.

Model Time Clock



A prerequisite for timetable operation is a model time clock. The Intellibox II has a model time which can be incorporated in the display. It shows the time and the week day. This model time can run at normal time or accelerated by a factor between 1 and 127. The clock in the Intellibox II can also be synchronized with other clocks connected to the LocoNet.

Updatable

The latest system software for the Intellibox II can be uploaded from a PC. It is available on the Internet free of charge. Future enhancements of Intellibox II can be obtained as an upgrade. So you will also profit in the future from our continued development.

DirectDrive

With the press of a button – without entering a locomotive address or locomotive name – the Locomotive that passes a designated LISSY or MARCO receiver can be taken over by a speed controller.

Part No. 65100

Intellibox II with connectors and manual



Accessories

Part No. 20 075

70 VA-Transformer

Part No. 61 060

Replacement plug set

Part No. 61 070

USB cable

We recommend our 70 VA Transformer 20 075, as the power supply since it is optimally suited for the Intellibox II.

Intellibox Basic

Efficient and inexpensive

With the Intellibox Basic you fully setup for digital operation. It offers all digital functions that you require on your model railway layout.



- DCC, Motorola data format
- Up to 128 speed steps
- Up to 9999 Decoder addresses
- Up to 10000 switchable special functions per locomotive
- DirectDrive Function
- Switching of turnouts and signals
- Connections for LocoNet, transformer, track, programming track und DCC Booster
- Integrated 3.5 A Booster
- USB Computer interface
- Cool Power Technology

Everything in one Box

The Intellibox Basic is efficient and inexpensive and therefore an ideal center for model railroaders who wish to begin with digital technology and want the important functionality that digital control provides.

It can control 32 locomotives and switch up to 2048 turnouts and Signals.

Various Data formats

The Intellibox Basic can operate 2-rail or 3-rail layouts. Simultaneously controllable are: locomotive, function, turnout and signal decoders in Märklin Motorola and DCC Data formats from different manufacturers.

Connect what you wish

Additional digital components are quickly and simply connected to the Intellibox Basic via the LocoNet, the universel Network for model railways.

With very clear Display

The backlit LCD display has a clearly arranged workspace.

The following languages can be selected for the display: German, English, French, Italian, Spanish, Portuguese, Dutch, Swedish and Danish.

Central Processing Unit

The central processor serves to co-ordinate the individual digital components, processes the incoming data and generates various data signals.

128 Speed steps – 9999 Decoder addresses

The number of available speed steps and addresses depends on the decoder type. The Intellibox Basic supports all speed steps and decoder addresses which the decoder offers in its respective data format.

Two Speed Controls

The two Speed Controllers with large handy knobs can control two locomotives independent of one another.

The rotary controls, without end stops, automatically restore the previous speed when a new locomotive is selected.

The speed controller can operate in DC mode with middle stop or AC mode with reversing switch.

10,000 Locomotive Special functions

In DCC Mode the Intellibox Basic supports up to 10,000 Special functions per locomotive. Yes, you read correctly. Functions f0–f12 can be controlled directly and the additional functions are switched by entering their number.

LISSY Mode

Every LISSY/MARCo receiver can be monitored by an Intellibox Basic. If a locomotive with a LISSY transmitter is recognised the Intellibox displays the locomotive.

DirectDrive

With the press of a button – without entering a locomotive address or locomotive name – the Locomotive that passes a designated LISSY/MARCo receiver can be taken over by a speed controller.

Keyboard

The keyboard switches 320 Märklin or 2048 DCC solenoids. The turnout or Signal state is shown in the Display.

Feedback monitor

The IntelliboxBasic can evaluate up to 2048 feedback messages. The state of the track section can then be read directly from the IntelliboxBasic display.

Booster

The integrated powerful booster delivers a maximum current of 3.5A. The output is short circuit and overload protected.

Locomotive Programmer

The programming of Uhlenbrock Motorola or DCC compatible decoders is simple thanks to the menu driven method.

Part No. 65 060 IntelliboxBasic



Non-volatile memory

All settings that are carried out for IntelliboxBasic only need to be done once and are safely saved in non-volatile memory.

Interface

The integrated USB LocoNet Interface provides a fast connection to PC or MAC. For layout control any software that supports the LocoNet Protocol can be used.

Updatable

The latest IntelliboxBasic system software can be updated directly from a PC. It is provided free of charge from the internet.

The Intellibox Basic as auxiliary controller and Booster

The Intellibox Basic is not only useful as a complete digital center, but also as additional speed controllers, as Keyboard and as Booster.

In this Function, the Intellibox Basic can be connected to an IntelliboxIR or an IntelliboxII which will then act as a central unit.

In this way Intellibox Basic can replace an IB-Control and a Power 4 booster.

Accessories

Part No. 20 075 70 VA Transformer

Part No. 61 060 Replacement plug set

Part No. 61 070 USB connecting cable

Part No. 65 030 RailCom Expansion

RailCom-Expansion

For the Intellibox, Intellibox IR, Intellibox Basic and IB-Com



One Circuit board (*no Image*), which is installed in the Digital Center (Part No. 650, 65 000, 65 050, 65 060, 65 070), ensures that for the RailCom operation the required Cutout is provided.

Part No. 65 030 RailCom Expansion



Bitte beachten

Installation of the RailCom Expansion is done by sending the Center to Uhlenbrock Elektronik GmbH.



IB-Com – The Digital Center for the PC

The cost effective Solution for automating a layout

The control of a model railway layout with the help of a Computer is gaining popularity. Specifically designed for this purpose is the IB-Com., efficient and inexpensive.



- Data format DCC, Motorola
- Up to 128 speed steps
- Up to 9999 Decoder addresses
- Switch up to 32768 Special functions per locomotive
- Setting of turnouts and Signals
- Connection for LocoNet, transformer, track, programming track, s88-Modules and DCC Booster
- Integrated 3.5 A Booster
- USB Computer interface
- Connect external control devices via LocoNet
- Installable with any control software, that supports the LocoNet Protocol
- Cool power technology

Different Data formats

The IB-Com can be used with 2-rail or 3-rail layouts. Locomotive, functions, turnout and switching decoders in DCC and Motorola data format of most other manufacturers can be operated on the layout at the same time. It can run 32 locomotives simultaneously.

Connect what you like

Additional digital components are simply and easily connected to the IB-Com via LocoNet, the universal Network for model railways.

128 Speed steps – 9999 Decoder addresses

The number of the available drive positions and addresses depends on the respective decoder brand. In principle IB-Com supports all speedsteps

and decoder addresses, which the decoders offer.

32 768 Locomotive Special functions

In DCC Mode the IB-Com supports up to 32768 Special functions per locomotive.

Switches 2 048 Solenoids

In Motorola Data format up to 320 and in DCC up to 2 048 solenoids, such as turnouts and signals, can be switched.

2 048 Feedback addresses

The IB-Com can evaluate up to 2 048 feedback addresses from LocoNet or s88-Feedback modules.

Booster

The integrated efficient Booster delivers a maximum output current of 3.5A. The output is protected against short circuits and overload.

Interface

The integrated USB-LocoNet interface gives a fast connection to PC or MAC. All Software that supports the LocoNet-Protocol can be used to control the layout.

Updatable

The newest System software can be uploaded directly from a PC. It is available free of charge from the internet.

Part No. 65 070 IB-Com with Utility Software and Win-Digipet Small Edition 2015

Part No. 65 071 IB-Com with Utility Software



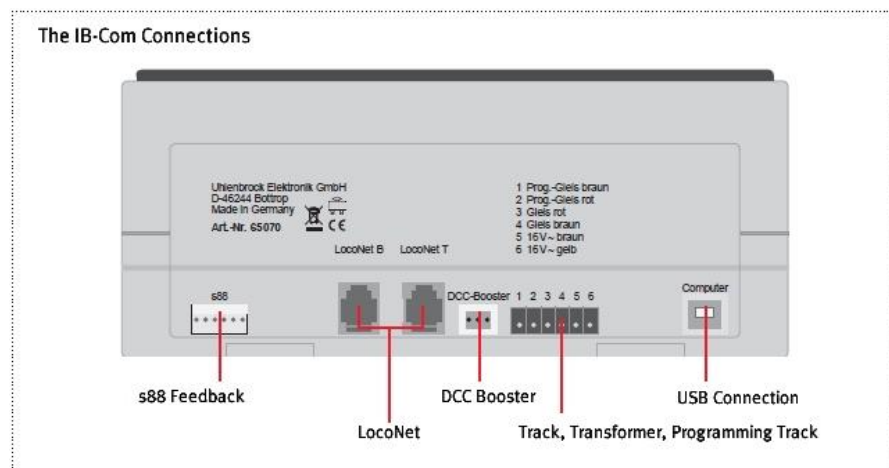
Accessories

Part No. 20 075 70VA Transformer

Part No. 61 060 Replacement plug set

Part No. 61 070 USB cable

Part No. 65 030 RailCom Expansion



IB-Control II

Are you positioned too far from the shunting yard with your Control Center?
Do you need permanent access to more locomotives?
Do you need additional routes?

You need the IB-Control II

- Connects to Intellibox, Intellibox IR, Intellibox Basic, Intellibox II, IB-Com, TwinCenter, Piko Power-Box, KM1 SystemControl 7, DAISY Start-Set via Loco-Net
- Up to 128 Routes
- Up to 9999 decoder addresses
- Multitraction (Consisting)
- DirectDrive-Function
- Switching of turnouts, signals and routes
- Large high visibility display with backlight.
- Detailed representation and therefore very easy to read
- Information in plain text or as Symbols
- Night design, keys with back lighting
- Context sensitive key illumination
- Speed indication display also in km/h
- Up to 32768 switchable special functions per locomotive
- Locomotive database with locomotive names
- Loco position display in conjunction with LISSY or MARCo
- An additional 80 routes callable via feedback contacts
- Help function
- Model Time Clock



Nice Views

The new IB-Control II, as an additional control device, makes a modern control system with easy operation from any LocoNet Center. It extends every center by two additional speed controls with locomotive selection by locomotive name, which are stored in a database, a control panel with symbols for turnouts and signals and monitoring of occupancy alarms and LISSY/MARCo Receivers and a model time clock.

Each IB-Control II extends the digital controller by 80 routes, which can be called up by key press or feedback commands.

With a crystal-clear LCD and a keyboard with backlit night design, the model railway fun really starts with a new IB-Control II for all LocoNet Centers.

Part No. 65 410 IB-Control II



IRIS – The Infrared Intellibox Controller

The Infrared Intellibox Controller IRIS expands the Intellibox with a wireless remote control for distances up to 10m. With IRIS locomotives can be selected on the digital layout and have their speed, direction and special functions controlled. IRIS can switch all solenoids and routes that are stored in the Intellibox.

- Direct control of to any 4 locomotives
- Address range 1–9999
- Special functions: Light and f1–f12
- Switch turnout in range 1–2 048
- Activates routes that are stored in the Intellibox
- Support all speed step modes (14–128 speed steps)
- With 4 different channels, i.e. there are 4 transmitters available per Intellibox
- Multiple external receivers with 5m connecting cable.



IRIS-Transmitter

IRIS uses four different transmission channels to control the Intellibox. They can be selected using the A, B, C, D keys. With each transmission channel a locomotive address can be controlled independently from the others.

Further, different solenoid addresses can be assigned to each channel. The addresses selected per channel are permanently saved in the Intellibox and are therefore still available even after the layout has been switched off and back on again.

If only remote control is used then with the help of the channel buttons one can quickly switch between controlling four locomotives and for groups of four solenoid addresses each.

If a number of remote controllers are used then each player can control their locomotive over a transmission channel without affecting the other player who are switched to a different channel.

The remote control has four different channels which makes it possible to use four transmitters in the same room.

Important:

For operating the IRIS with the Intellibox 650 or 65 000 you must have System software version 1.5 or higher.

Part No. 66 500 IRIS-Set with IRIS transmitter, IRIS Receiver and batteries, for Intellibox 650, 65 000 and Fleischmann Twin Center

Part No. 66 510 IRIS transmitter with batteries, as extension for the set and for Intellibox IR, Intellibox II and Piko Power-Box

IRIS-Receiver



IRIS Receivers can be fitted at any location in the room because of their 5 m cable.

If in a particular room situation more than one receiver is required then an additional three external infrared receivers can be installed using the included Y-cable connection.

Part No. 66 520 IRIS-Receiver with Y-cable

Part No. 66 530 Single Y-cable

LocoNet IR-Receiver



With the LocoNet IR-Set you can have wireless control of locomotives, turnouts and routes with any LocoNet Digital Center. To that belong IB-Basic, IB-Com, DAISY and the ProfiBoss.

Simply connect the IR receiver to the LocoNet and control everything on the layout with up to four IR transmitters.

Not usable in rooms in which a digital center with integrated or connected IR receiver are being used.

Part No. 64 830 LocoNet IR-Set with IRIS transmitter, LocoNet IR Receiver & Batteries, for Intellibox Basic & IB-Com

Part No. 63 830 LocoNet IR-Receiver



LocoNet and Software

B

The Railway Network - fast and reliable

IB-MultiControl - Decoder programming made easy

Win-Digipet 2015 Small Edition



LocoNet: The Model Railway Network — fast and safe

The LocoNet bus is an inexpensive and safe way for connecting digital center, control devices, feedback modules, switch modules and other elements. Simply stated: the entire layout can be wired with LocoNet.

LocoNet was developed by Digitrax and has been widely adopted. It is used by Uhlenbrock, Digitrax, Fleischmann, Piko and the other manufacturers.

All accessory devices are connected to the LocoNet. Devices from other manufacturers may also be used.

For setting up a network we offer a multiplicity of suitable, inexpensive, elements. Cable runs of up to 100 meters are absolutely no problem for the LocoNet.

The LocoNet uses a six way cable and is easily managed by using RJ-12 modular connectors. The ease of insertion and extraction of the connectors makes the design of modular layouts far simpler. In addition it does not matter where in the LocoNet a module is attached. Any vacant LocoNet socket can be used.

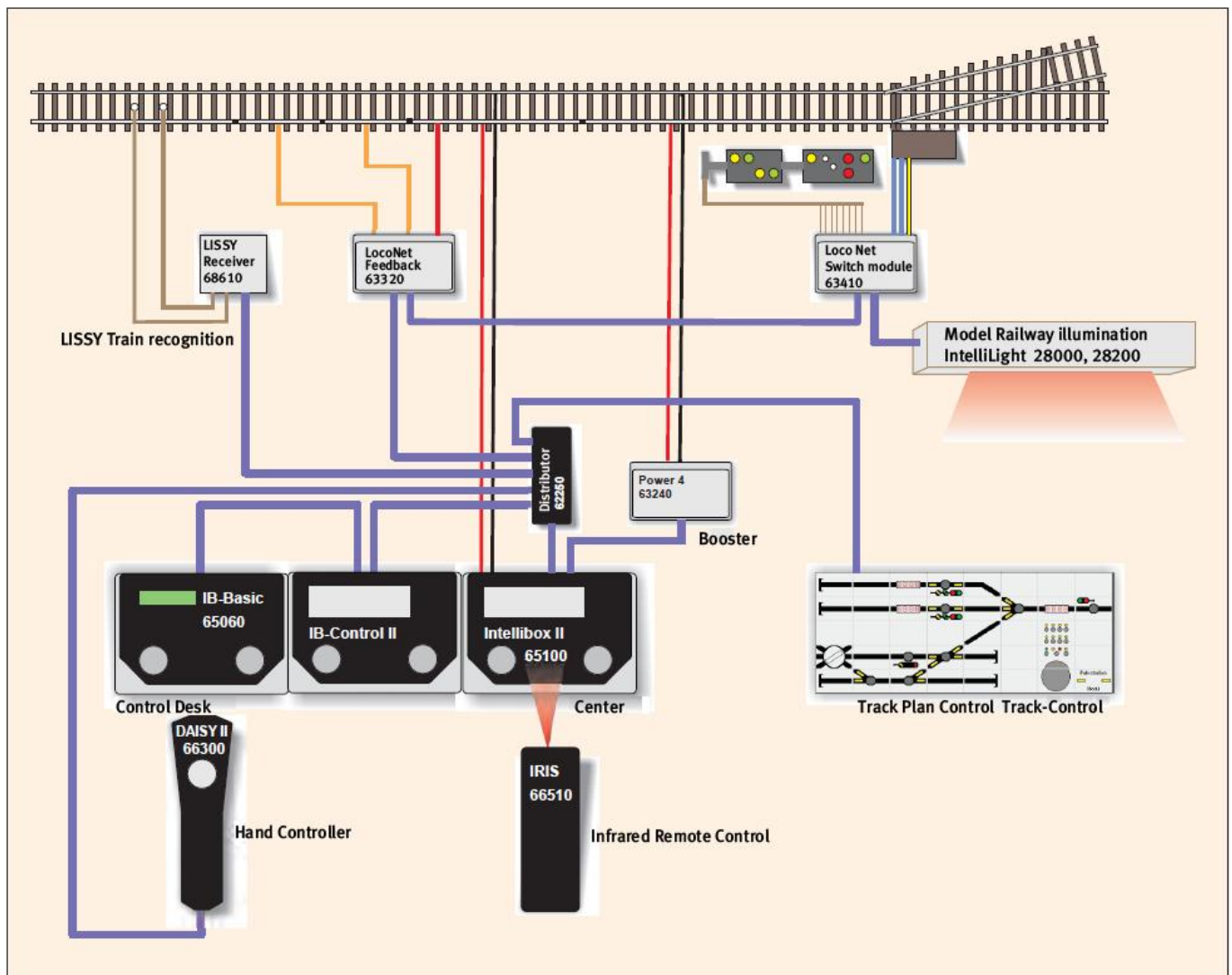
Most of the devices that are connected to the LocoNet draw their operating power from the LocoNet.

For mobile hand control one can plan sockets in the side panels of the layout to connect oneself at lightning speed to any location on the layout.

The necessary current is provided to the LocoNet by the digital center. When using an Intellibox this is 500 mA. If the current consumption of the attached devices exceeds the current supplied by the digital center, then an additional LocoNet Power feed unit is necessary.

The LocoNet Power Feed Unit (63 100) is equipped with a load indicator. A power plug pack is supplied.

A Layout with LocoNet



Here is a typical example of a layout setup with LocoNet cables. The LocoNet is represented in violet.

How does the LocoNet function?

That is the question we are frequently asked. As you saw on the preceding page all the LocoNet devices can be connected i.e. Digital center, Hand controller, track controller's desk, feedback module and train recognition.

Every device can send or receive LocoNet instructions to/from other devices or simply dispatch information. Here are a few examples.

1. The button set to turnout 23 straight is pressed on a Hand controller. The Hand controller sends the instruction "switch 23 - straight" to the LocoNet. The digital center receives this instruction and sends it via the rail signal to the turnout decoder.

2. The LISSY receiver 1 detects a locomotive with the number 220 on the track. It sends the information "locomotive 220 passed LISSY receiver 1".

The train number display in the Track-Control detects this information. Question: Do I have to display this locomotive? If the train number display is set for this LISSY receiver, the "220" will appear on the display.

From the examples we see that the instructions and information run in all directions. So obviously a computer can also operate as LocoNet device.

The only thing which you need is the LocoNet interface. Many digital centers, like the Intellibox, already have such an interface.

The individual LocoNet devices are often configurable. In example 2 the train number display must know to which LISSY receiver it is to react. This setting can be done with the Intellibox or much more easily with the "LocoNet Tool" program.

The Intellibox LocoNet Sockets

The Intellibox provides two different LocoNet Connections



LocoNet B

This socket outputs not only the LocoNet signals, but the rail signal is also available. Hence LocoNet boosters such as the Power 4 or the Power 7 can be connected to this socket. The LocoNet B connection can be loaded by up to 200 mA.

In principle all LocoNet devices can be connected here. However this should be reserved for LocoNet boosters.

LocoNet T

The Rail control signal is not available from this socket. Instead this socket has a DC voltage, which can be loaded by up to 500 mA. All LocoNet of devices, except boosters, should be attached to this socket.

Power consumption of LocoNet Devices

Part No.	Description	Power used from
28 00	Intellilight	0 mA
38 000	Sound-Director	0 mA
63 2xx	Power 2, 4, 7, 8	0 mA
63 3xx	Feedback modules	30 mA
63 400	Switch-Control	30 mA
63 410	LocoNet-Switchmodule	0 mA
63 440	LocoNet panel display	60 mA
63 340	LocoNet Display	150 mA
63 810	mobile station Adapter	0 mA
63 820	6021-Infrared- & LocoNet-Adapter	LocoNet feed from the 6021
63 830	LocoNet IR Receiver	30 mA
63 840	Mouse Adapter with three Lokmice	90 mA
63 880	s88-LocoNet Adapter	25 mA
65 400	IB-Control	120 mA

Part No.	Description	Power used from LocoNet
65 410	IB-Control II	160 mA
65 500	Profi-Control	30 mA
65 800	IB-Switch	100 mA
66 200	FRED	25 mA
66 200	DAISY	50 mA
66 300	DAISY II	25 mA
66 350	DAISY II Radio	25 mA/400 mA ^{1.)}
66 4xx	Radio Master	250 mA/0 mA ^{2.)}
66 5xx	MARCo Receiver	25 mA
68 6xx	LISSY Receiver	25 mA
68 620	LISSY Single Receiver	15 mA
68 7xx	Universal Control	0 mA
69 xxx	Track-Control per Element	Approx. 10 mA

1.) 400 mA when charging the batteries
2.) When connected to a Transformer 0mA

Not all that looks like LocoNet is LocoNet!

The LocoNet sockets that we use are now also used in other systems as for example with the Xpress Net or RocoNet. These systems are not compatible with one another.

If they are connected with the LocoNet it can result in damage to individual devices.

Therefore only interconnect the devices with those labeled LocoNet.

LocoNet Components



LocoNet-Kabel



Part No. 62 015	Cable 28 cm, Plug/ Plug
Part No. 62 025	Cable 2.15 cm, Plug / Plug
Part No. 62 035	Spiral cable 3 m, Plug / Plug
Part No. 62 045	Cable 60 cm, Plug / Plug
Part No. 62 065	Cable 6 m, Plug / Plug
Part No. 62 120	Branch 2.15 m, plug/double Socket
Part No. 62 225	Coupling, Socket/ Socket
Part No. 62 250	Distributor, Plug / 5-way Socket
Part No. 62 260	LocoNet Distributor and Power Plug Pack
Part No. 62 270	Power Plug Pack for 62 260

LocoNet Cable Tester

The fast way to fault-free LocoNet wiring



- Recognises short circuits
- Test cables for continuity
- Recognises crossed cables
- Testing of single or multiple cables

Contents:

Cable tester, protective pouch, 9V battery, operating instructions, spiral LocoNet cable, LocoNet coupling.

Part No. 62 000

LocoNet Cable Tester



LocoNet Distributor **NEW**

Four in One – distributor, patch panel, power injector, load indicator



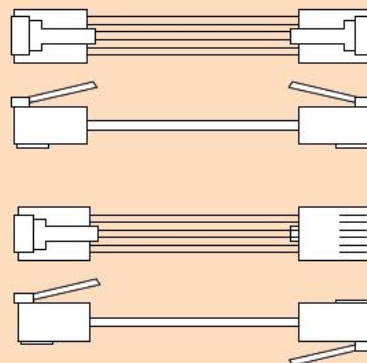
The LocoNet Distributor offers 6 LocoNet connections. You can screw it under the layout or into the layout frame with the enclosed front panel.

The LocoNet Distributor works as a LocoNet Power injector, when the additional plug power pack 62270 is connected. Then you have an additional 3 LocoNet sockets on the distributor with a further 500 mA for the LocoNet T. The other connections remain on LocoNet B or T, depending on which LocoNet output of the control center the distributor it is connected to.

Dimensions: 70 x 40 mm, Front plate 90 x 35 mm

Part No. 62 260

LocoNet-distributor



So far our LocoNet cables (62 010, 62 020, 62 030, 62 040, 62 060 and 62 220) with plug/plug and socket/socket were supplied in rotated implementation. This means: Pin 1 was connected with 6, Pin2 with 5 etc. In future they will also be available in un-rotated (1:1) form, i.e. pin 1 connected with 1, pin 2 with 2 etc.

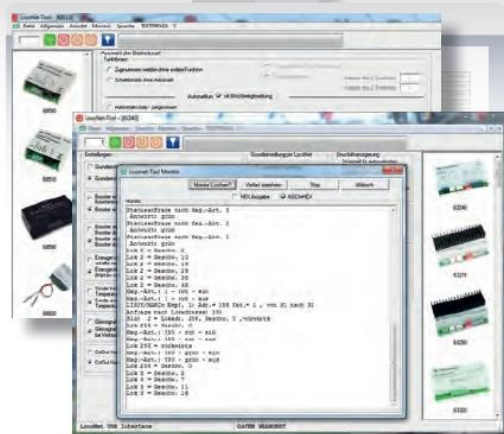
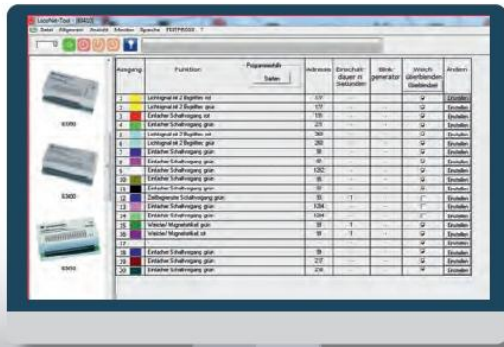
This has become necessary because of a new booster design (Power 4, Power 8). These cables will replace the old cable version.

Only if several Power 2 boosters are to be interconnected by LocoNet are the old rotated cables required. These are supplied with the Power 2.

All other devices supplied so far (except Power 2) can be interconnected with both types of cable. With branching and distributors nothing changes, since these were always supplied in un-rotated implementation.

LocoNet-Tool

Simple configuration of all LocoNet Modules by Computer



- Easy programming of all LNCVs
- With ample explanatory texts
- Backing up of configuration for easy rollback
- With LocoNet Control monitor

With the LocoNet Tool program LocoNet modules LNCVs (LocoNet configuration variables) are easily selected and programmed with a computer.

For most LocoNet modules there are special input masks. You get simple programming support with explanatory text, which describes all adjustment options, so that many situations can be configured without the operating instructions for the

A LocoNet monitor provides monitoring of the LocoNet and for easy error tracing in the programming of automated layouts.

The Licencing is bound to the serial number of your digital center which the software registration was done. It cannot be transferred to another digital center. To use the software with additional centers and additional licence 19 210 must be purchased.

USB-LocoNet Interface

The Connection between LocoNet and Computer



- For programming of LocoNet modules
- For automatic layout control with Win-Digipet
- For Programming DCC Decoders with the IB-MultiControl Software

The LocoNet interface is suitable for all digital centers without a computer interface such as for a DAISY or Märklin control unit with 6021-Infrared & LocoNet adapters

The interface is connected to a USB socket of a computer. It is most suitable for automatic layout control. For control software such as Win-Digipet (see page 30) which can give LocoNet commands, is used.

Note: Feedback from s88 Modules, which are attached to Märklin devices (Memory, interface), cannot be conveyed to the computer.

Recommended Operating System:
Microsoft Windows XP, Windows Vista or Windows 7 or 8

Supplied with: LocoNet interface, "LocoNet Tool" software, LocoNet and USB connecting cables, operating instructions

Part No. 63 120	USB LocoNet Interface with LocoNet-Tool
Part No. 63 030	USB LocoNet Interface
Part No. 61 070	Replacement USB Cable

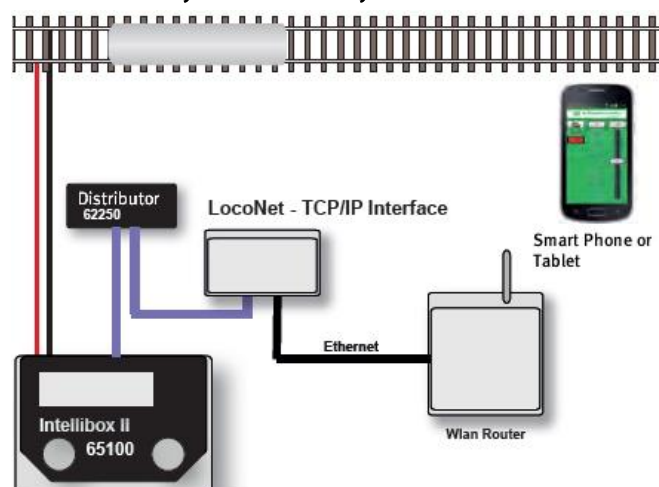


Recommended Operating System:
Microsoft Windows XP, Windows Vista or Windows 7.

Part No. 19 100	LocoNet-Tool
Part No. 19 110	Additional LocoNet-Tool licence

LocoNet-TCP/IP Interface NEW

Model Railway control with your Smart Phone or Tablet



- Direct connection of the LocoNet to your Computer network
- Connects LocoNet with your smart phone or Tablet over a WLAN Router
- Free Android-App to control locomotives and solenoids
- Unchanged transmission of all LocoNet-Messages via the TCP/IP-Protocol
- All technical data is open to invite software developers to develop Android or IOS Apps.
- Power over the LocoNet

Part No. 63 860 LocoNet-TCP/IP Interface



*Not yet available**

XPressNet-Adapter NEW



With the adapter you can connect LocoNet devices like the TrackControl or DAISY to a Lenz center.

The adapter is simply connected to the XpressNet. All LocoNet devices are simply connected to the built-in LocoNet socket.

The built-in power injection supplies the LocoNet with the required power when capacity of the XpressNet is not sufficient. For that the Power Plug Pack 62 270 is used.

A PC can be connected to the built-in USB-LocoNet-Interface and all LocoNet components can be configured with the LocoNet-Tool software.

Part No. 63 850 XPressNet-Adapter



*Not yet available**

Maus Adapter

For the Roco Lokmaus 2 and the Roco *multi*MAUS



The Maus Adapter provides the interface between the Lokmaus and the LocoNet. With the Mouse Adapter it is possible to use the Roco Lokmaus 2 (Part No. 10760) or the Roco multiMAUS (Part No. 10810) together with DAISY, Intellibox, Twin-Center or other centers with LocoNet interface.

The adapter has three input sockets to drive 3 Lokmaus, as well as two LocoNet connectors.

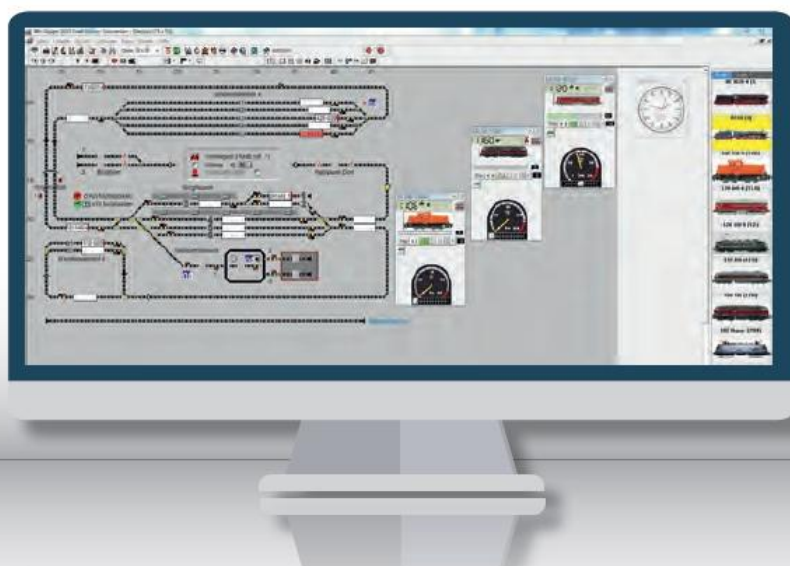
The adapter and attached Lokmaus, are supplied with power by the LocoNet.

Part No. 63 840 Maus Adapter



* The product is currently not available; a delivery time was not fixed at the time of printing. *Voraussichtlicher Availability:* 2016.

Win-Digipet 2015 Small Edition **NEW**



The cost effective Computer Version for entry into the world of digital control of model railways. With Win-Digipet Small Edition up to 20 Locomotives and 50 solenoids can be controlled.

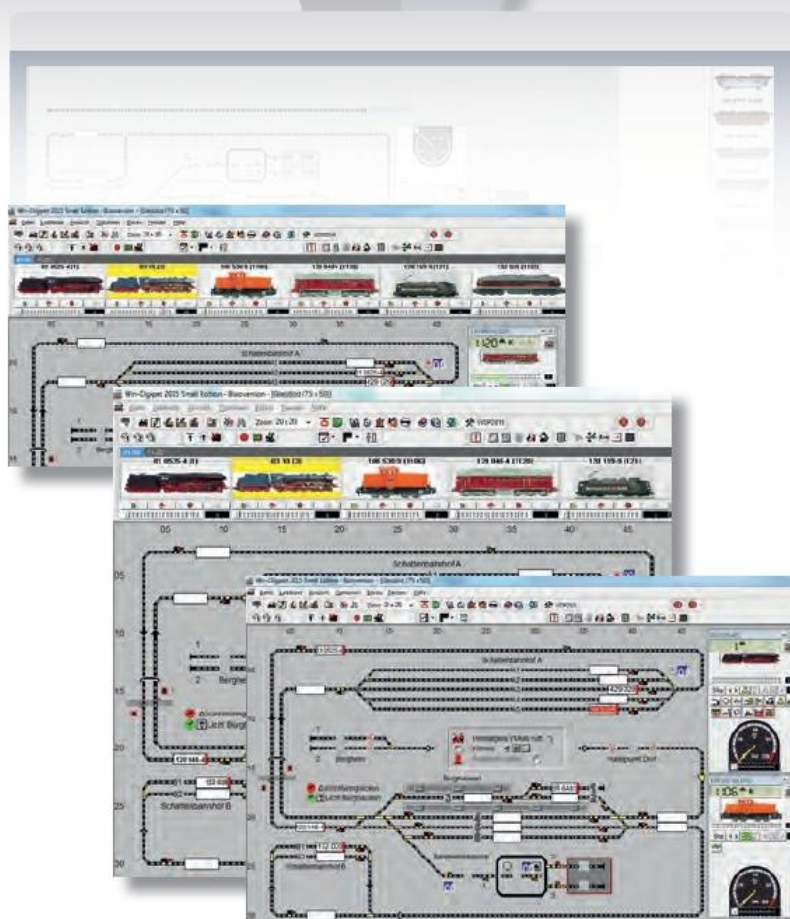
Win-Digipet 2015 Small Edition is provided on a USB-Stick with online manual. An update to the Win-Digipet 2015 Premium Edition is possible at anytime.

Recommended Operating System:
Microsoft Windows XP, Windows Vista,
Windows 7 oder Windows 8

Further Information about Win-Digipet on
www.windigipet.de.



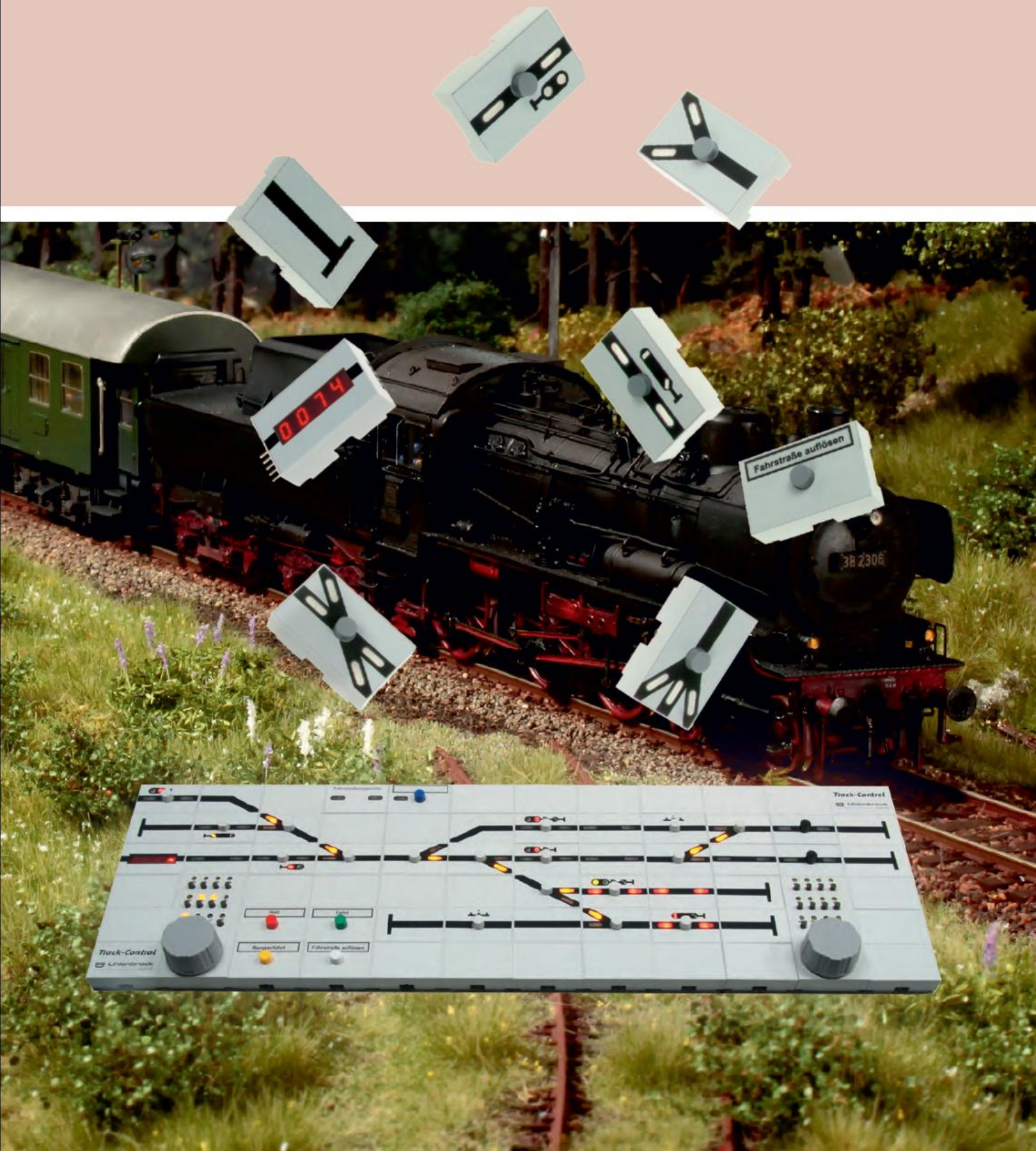
Part No. 19 920 Win-Digipet 2015
Small Edition on USB-
Stick



Track Panel Control Desk

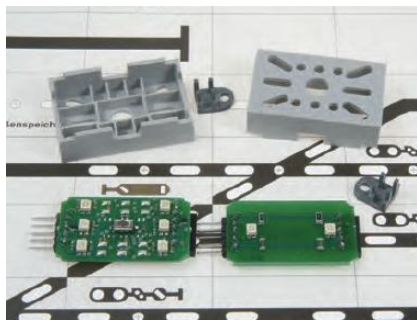


Track-Control the Track Plan Control Desk with the Plugging System



Track-Control – the Uhlenbrock Track Plan Panel

Efficient and Inexpensive



- Maximum flexibility with minimum expenditure: Each track controller's desk can be constructed from only a few different items.
- Frameless bench-mounting, only 12 mm high
- Plug system, no wiring required
- Switches digitized turnouts, signals, Uncouplers etc.
- Call up routes with start/end keys

This is what a completed »wired« Uhlenbrock control desk looks like.

- Illumination of routes
- Occupancy indicator
- Control of multi-function signals on routes
- Pilot signals indicate the state of several multi-function main signals depending on the selected route.
- Includes planning and programming software TC-Edit
- Simple programming and operation
- Includes planning and configuration software
- For connecting with all digital centers with LocoNet support, e.g. DAISY, Intellibox and identically constructed devices.
- Power can be supplied from the LocoNet.
- Segment dimension 40 x 25 x 12 mm

Track-Control – the Start

The Basic set contains all items which are needed for a basic setup and that are only required once per desk: a connecting module, a power lead, a LocoNet cable, CD with the planning program and manual.

In addition there are 30 segments with tinted diffusers and connecting plug, 10 key caps, 3 Turnout PCBs, 3 signal PCBs, 4 cross connection PCBs, 2 connecting PCBs without indicators and a foil set for the structure of a small control desk.

Track-Control analog NEW

It is now also possible to install Track-Control on analogue layouts. On page 82 you can find the instructions for this.

The layout grows – Track-Control too

The expansion set contains 30 segments with tinted diffusers and connecting plug, 32 key caps, four turnout PCBs, four signal PCBs, two cross connection PCBs, four connecting PCBs without indicators and four different foils.

9-Button Control Panel NEW

We offer a new 9-button control panel (Part No. 69 020), with which you can directly switch 9 separate control functions.



The Set consists of the connection module, three 3-Button modules and 15 segments with connector plugs.

This 9-button control panel can be expanded as desired so that for example a complete Keyboard for switching turnouts and signals or a small signal box for an industrial section (see below) can be built.

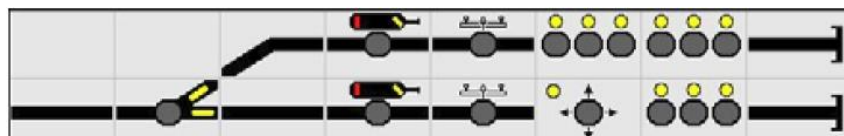
The new inexpensive connection module NEW

makes the TrackControl attractive even with only a few control elements which take their power directly from the LocoNet.

The Track-Control can be expanded at will with new connection module. On a large control panel, as shown on page 36, it can be that the power from one connection module is insufficient. In that case simply use an additional connection module.

Example of a small application: Industrial Section

2 terminal tracks with blocking signal and uncouplers, 1 gantry crane, 9 buttons for switching of, for example, shed doors, conveyor belts, lighting, Water crane, welding light



1.



Plan your control panel on your PC with the included planning Software TC-Edit. Print the track plan, connection plan and parts list.

2.



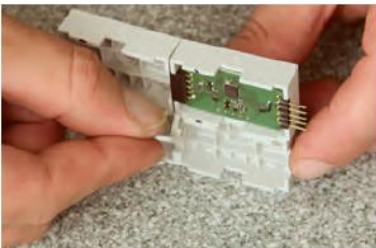
Stick the enclosed symbols to the corresponding track plan plastic segments.

3.



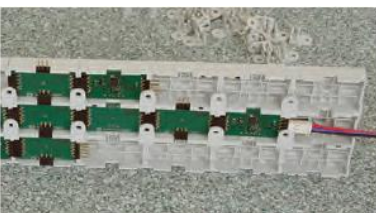
Turn the segments over and put the tinted diffusers, and, if needed, the key caps and PCBs, into the segments.

4.



Plug the segments together and fix them in place with the enclosed connector plug. Connecting PCBs with or without indicators connects turnout or signal PCBs within a segment row. Cross joiners connect the individual segment rows to each other.

5.



Now your track control desk is complete and the cable can be connected to the LocoNet.

Programming: Very simple

What till now, was achieved only via laborious wiring of the individual keys and lamps is very simple and fast with the new control desk.

1. Keep the key of the segment that you wish to program pressed for 8 seconds, until a symbol on the segment flashes.

2. Press the key as often as needed till the desired symbol on the segment lights up.

3. On the digital center operate the turnout or the signal that you wish to control with this segment.

The simple programming of the segment is then complete. When all segments are programmed your desk is operational.

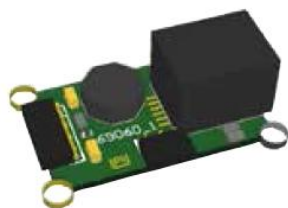
In order to program more complex desk functions use the configuration program. Among these functions are start/end keys for routes, the automatic allocation of a pilot signal to the main signal as a function of the route, as well as setting of multi-function signals with auxiliary keys, occupied messages and route indication.

Videos describing the assembly and programming of the Track-Control are included in the Basic Set and are also available from our internet site for free download.

Example for an Application *The control panel from the parts contained in the Basic Set in operational state*



Track-Control Connection Module NEW



The inexpensive module makes TrackControl attractive even for small systems with few elements that use the power directly from the LocoNet.

To power large control desks you can use a number of Connection Modules with a LocoNet Distributor 62 260 (See page 26) and Power Plug Pack 62 270 combination.

Part No. 69 060

Connection module



Track-Control 3-Button Segment



- For any three switching options
- For switching solenoids or locomotive special functions
- For activation of feedback messages
- For Stop-and-Go switching of the center

With the inexpensive module all ancillary functions on the model railway such as lightings, boom gates, gate motors the lifting magnet of a gantry crane and much more can be controlled. Routes can also be activated with these buttons.

By collecting three buttons in one segment you save space and are more flexible in presenting the control panel.

Part No. 69 260

Track-Control-3-Button segment

Track-Control Joystick



- For controlling functional models
- Uses only one control panel segment
- Replaces a number of button segments



The joystick is used for operating functional models, as for example our gantry crane or the water crane or a functional model from another manufacturer.

The joystick can be moved in all directions and can thereby control the up, down, right and left functions. By pressing down on the joystick certain functions are switched.

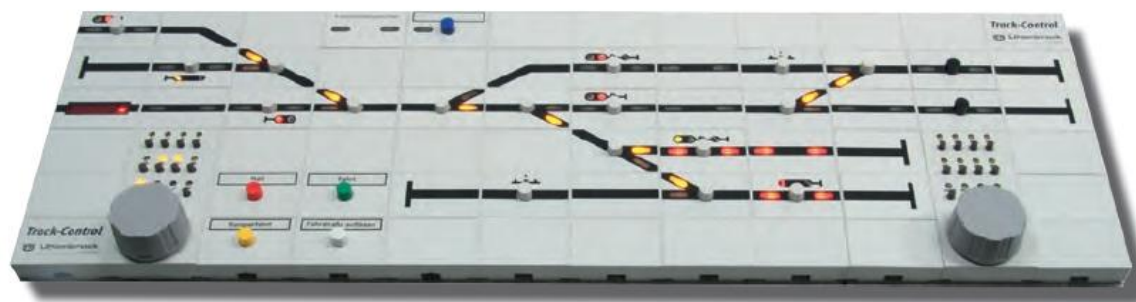
The segment produces instructions for locomotive and solenoid decoders.

Part No. 69 270

Track-Control-Joystick

The TrackControl Control Desk

is modelled after the Siemens Track Plan desk DrS2, which has been used by the DB since the 60's. The functionality is adapted to the model railway operation, so that one does not have to be a signal box operator in order to work the panel.



Track-Control Route Buffer

- Stores over 2000 switching instructions for routes, that can be called from the track plan desk
- Calling of routes with Start/Destination keys
- Calling of routes via the LocoNet as for example from a feedback module



Part No. 69 240 Track-Control Route Buffer

Track-Control Train Number Display

When installing the Individual Locomotive control system »LISSY« or or the modular automation for RailCom »MARCo«, the train numbers are displayed for the trains that pass the sensors of the assigned LISSY or the track section of the MARCo System. That can for example be the exit track of a station.



Part No. 69 250 Track-Control Train number display



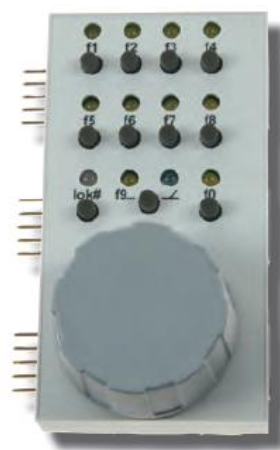
Circled, you can see the LISSY Sensors.

Track-Control Throttle

- Running of locomotives
- Switching of 16 special functions and light function
- With DirectDrive Function
- Up to 9999 locomotive addresses
- Rotary speed controller without end stops, in AC and DC regulator modes.
- Shunting operation (in combination with LISSY)
- Emergency stop for locomotives

The speed controller is as large as three control desk segments and can be easily integrated. Up to 9999 locomotives can be selected and controlled using the numeric keys fo–f9.

The running speed is set with a continuous rotary controller. A press of the control knob changes the direction. The function keys are used for switching the lights and up to 16 special functions.



Part No. 69 300 Track-Control Speed controller

DirectDrive

If you forget locomotive numbers and Names. You do not need them anymore!






Take over the locomotive that has just passed a particular LISSY or MARCo receiver, by pressing the button on the speed controller without entering the address.

The DirectDrive function in combination with LISSY or MARCo provides the highest level of operating comfort that a modern model railway


control can offer. Assign a LISSY or MARCo receiver to the control desk of the Track-Control and you can take over control of a locomotive that has passed this LISSY or MARCo receiver, using your controller, with the simple pressing of a button.

LISSY or MARCo receivers can also be coupled with signal segments so these remember the address of the locomotive which is waiting at the particular signal. Now this locomotive can be taken over by the speed control by pressing the button on the signal segment and a button on the speed controller.

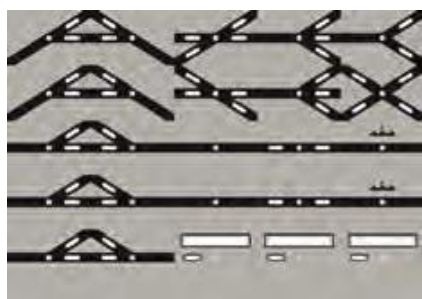
Track-Control Sets

Part No. 69 000	Basis-Set 
Part No. 69 010	Expansion Set
 Part No. 69 020	9-Button Control Desk 
 Part No. 69 030	Basis-Set analogue 
See page 82	

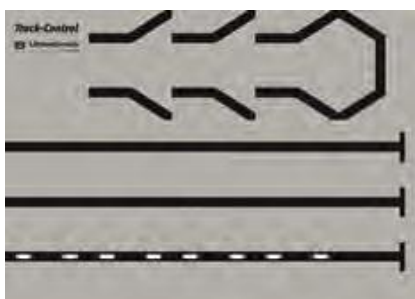
Track-Control Components

Part No. 69 100	6 Plastic segments with diffusers and connectors	Part No. 69 212	4 connecting circuit boards without illumination
 Part No. 69 101	6 closed Plastic segments with connectors	Part No. 69 214	2 connecting circuit boards with illumination
Part No. 69 110	5 colour button caps in blue, yellow, green, red, black and white	Part No. 69 220	turnout circuit boards
Part No. 69 210	2 cross connecting circuit boards with illumination	Part No. 69 230	Signal circuit boards
		Part No. 69 280	Signal circuit boards left hand traffic

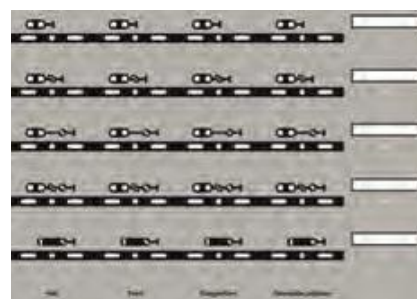
Track-Control Foils



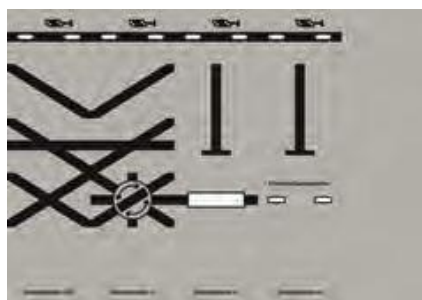
Part No. 69 091
Turnout and Crossing symbols



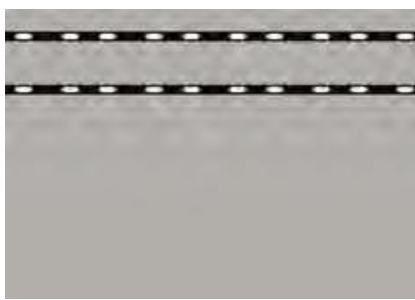
Part No. 69 092
Track symbols



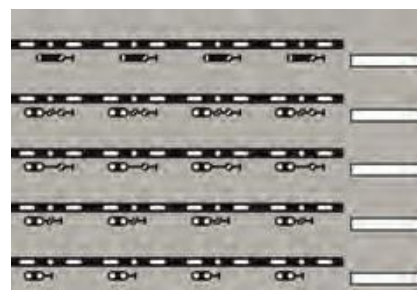
Part No. 69 093
Signals symbols



Part No. 69 094
Crossings, Blanks, Route buffer, Train number display, Turntable



Part No. 69 095
10 Track symbols with lighting and 15 blanks



Part No. 69 096
Signals symbols for left-hand traffic

Application Example

Track-Control from one of our clients



Automation without PC

D

Universal Control - for Block Sections and Shadow Stations

Feedback - for 2 and 3 Rail Tracks

LISSY - the Individual Locomotive Control System

MARCo - control with RailCom



Automation of Trains on a Model Railway

For automation of trains there are a number of systems for model railways. All are triggered by a train and activate various switching sequences and running commands.

Switch or reed contacts

are the simplest building blocks to execute switching commands on a model railway. Without additional components these are only useful on analogue layouts.

Feedback Modules (Occupancy detectors)

are Electronic building blocks that are connected to track sections. They report when a locomotive or wagon containing a power load is located in the track section. In addition, our LocoNet Feedback modules 63 320 and 63 330 can execute switching commands. These feedback modules are a very economical option to realise simple automatic control.

LISSY the individual locomotive control system

With the LISSY System an infrared transmitter is fitted under the vehicles. This constantly transmits the locomotive address and train category (1-4). Small infrared receivers are installed in the track. They enable a precise identification and location of a LISSY fitted vehicle.

The receivers not only pass the locomotive address, train category and location to the digital center, but also numerous switching and locomotive commands, such as instructions to change the speed or a special function. The notification occurs at precisely the point at which the receiver is located. It is all about locational train control [PZB].

RailCom – the bi-directional feedback via the track.

The RailCom System has been in development for many years. Now a fixed specification is available. The vehicles in the RailCom System are fitted with a RailCom transmitter or a RailCom enabled Decoder. This sends the transferred data into the track. A MARCo receiver, which has two RailCom detectors, is connected to the isolated track sections.

RailCom allows information about a locomotive to go to the track for further processing. For this, a corresponding place in the track signal is used, so that the RailCom transmitter can send out the information. The track signal must have a blanking period (Cutout) that can be utilised. The technical cutout must be supported by every Booster, regardless whether it is a stand alone or a digital center. That is the case in our Power 4 and Power 7 boosters. This technique allows the identification and location of the RailCom fitted vehicle.

The MARCo receivers not only pass the locomotive address and location to the digital center, but also numerous switching and locomotive commands, such as instructions to change the speed or a special function. Even Decoder CVs can be read and programmed with RailCom.

Differently to LISSY, the notification does not occur at a particular point but in a section of track. It is therefore a lineal train control [LZB].

Like all our other devices the MARCo receivers are connected to the LocoNet. A specialised RailCom-Bus is not required.

Compatibility of feedback systems

LocoNet feedback modules, LISSY and MARCo can be operated together on a layout. They complement each other and do not interfere with each other.

Train control of the Bundesbahn

The railway has two automation systems in use. On the one hand a non continuous Train Control System [PZB], and on the other hand a continuous Train Control System [LZB].

In the PZB the information transfer and the monitoring point are at a particular point on the track. A well known PZB is the inductive train safety system INDUSI. On the model railway this is emulated by LISSY.

The LZB operates the rail network continuously. In this System a cable is placed between the rails. On the model railway this is emulated by the MARCo System.



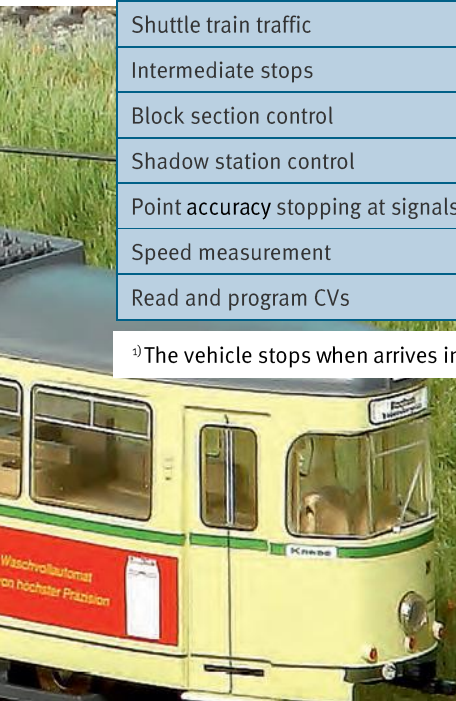
Preparation for installing Feedback systems

	2-Rail Feedback module	3-Rail Feedback module	LISSY	MARCo
Special Locomotive and wagon installation	Fit wagons without power pickup, with low conductive axels or use the conductive lacquer 40 410	none	LISSY-transmitter or LISSY-Mini- transmitter fitted to the locomotive or wagon	Install a RailCom transmitter or RailCom equipped decoder into the locomotive. Wagons fitted with light globes without decoder must be fitted with a rectifier.
Essencial changes to the tracks	Single sided isolation of the track and connection of the isolated section to the module	Isolation of an outer rail and connecting the isolated section to the module or switching track.	3 mm-drill to accept the IR-Sensors in the middle of the rails	Single sided isolation of the track and connection of the isolated section to the MARCo receiver.
Device precondition	None	None	None	Booster with the ability to employ a »Cutout«, e.g. Power 4

Options for the various Systems

	LocoNet-Feedback Universal control	LISSY	MARCo
Data format	As desired	As desired	DCC
Automatic announcement of Locomotives	-	-	x
Train recognition by Locomotive address	-	-	x
Train recognition by train category	-	x	x
Locomotive position indication LokPosi	-	x	With Intellibox II
Indication of locomotive and wagon addresses of a passing train	-	x	x
Switching of turnouts and routes	-	x	Loco addresses
Change the speed of a passing locomotive	X	x	x
Change special functions of a passing locomotive	-	x	x
Switching of routes, changing of locomotive speed and special functions for a specific, programmable, locomotive address	-	x	x
Switching functions (Routes, speed, special functions) for a specific train category	-	x	With Intellibox II
Shuttle train traffic	-	x	x
Intermediate stops	-	x	x
Block section control	X	x	x
Shadow station control	X	x	x
Point accuracy stopping at signals	-	x	x ¹⁾
Speed measurement	-	x	-
Read and program CVs	-	-	x

¹⁾ The vehicle stops when arrives in the second section.



Universal Control

For 2-Rail and 3-Rail Layouts



Part No. 68720

Universal Controller for
2-Rail Track (DCC
Brake generator)

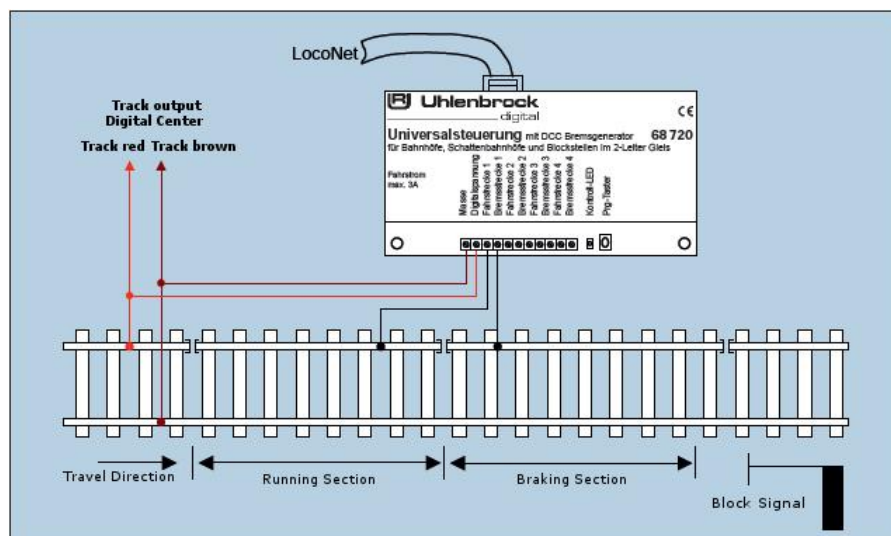


Part No. 68730

Universal Controller for
3-Rail Track (Motorola®
Brake generator)



- For 4 track sections each, in which trains are monitored and stopped
- Expandable as desired with additional Universal Controllers
- Integrated Brake generator for DCC (68 720) or Motorola® (68 730)
- Loads of up to 3A
- Controls stations of up to 12 tracks and 1 passing loop
- Suitable for block section control
- Memory for 13 routes, each with 20 instructions
- Can also be used in conjunction with LISSY and MARCO
- Automatic recognition of locomotives with or without LISSY/MARCO transmitter
- Suitable for any digital center with LocoNet connection



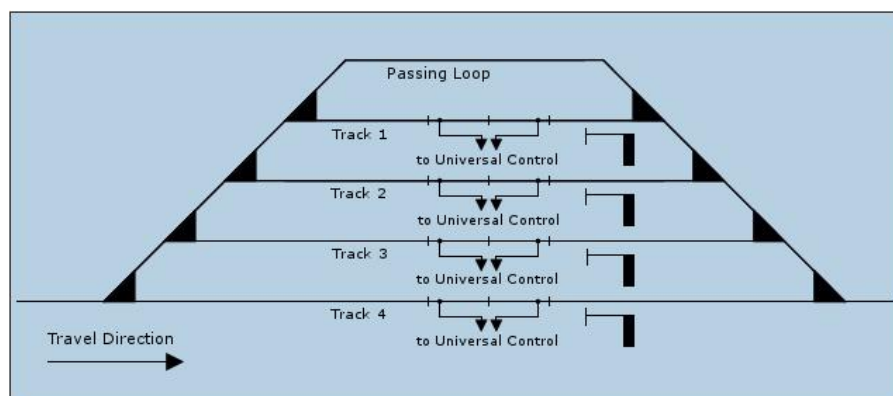
The digital Universal Control can be installed for many automatic control sequences and is connected to the digital center via the LocoNet. The control can monitor 4 track sections and per track section depending on signals slow and stop a train. Each track section has two connections with the control. One connection for running section and one for the braking section. Optionally a stop section (powerless) can be added after a braking section by a third terminal. The outer section must be isolated from the rest of the layout with isolation points.

All control situations can be expanded with addition modules. The station control can have up to 12 tracks and a passing loop.

All routes required for the station control are saved in the module as switching sequences of solenoid and are triggered from the module.

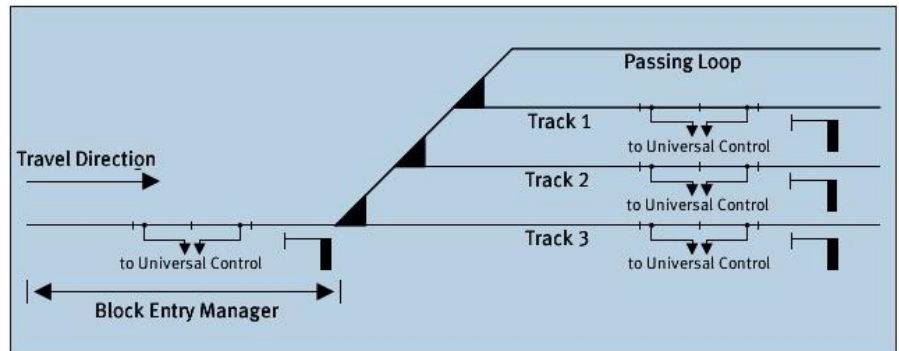
No additional devices are required to switch the routes.

With one Module the following control situation can be realised:

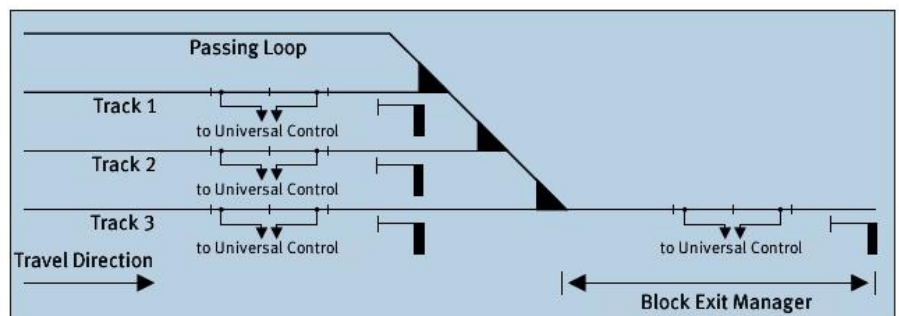


A Station with 4 tracks and a passing loop. Incoming trains are automatically directed to a vacant track or when all tracks are occupied, directed via the passing loop.

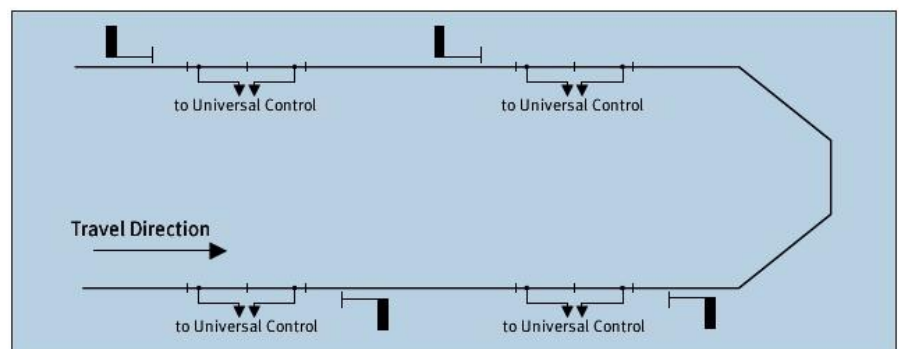
A station with 3 tracks, one passing loop and an entry track. If a train arrives at the entry track it will automatically be directed to a vacant track in the station or via the passing loop when all tracks are occupied. The entry track serves as the station safety control and can be integrated into the block traffic of preceding sections.



A station with 3 tracks, one passing loop and an exit track. If the exit track is vacant then a train will automatically depart from an occupied station track.



A block section system with 4 track sections



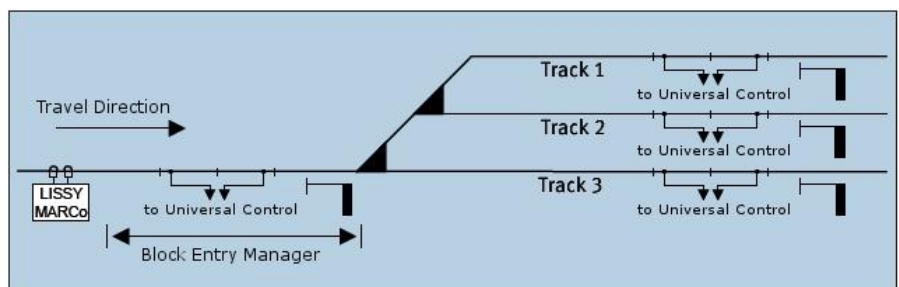
Stations ✓
Shadow Stations ✓
Block Sections ✓

The control can be combined with LISSY/MARCo. For this a LISSY/MARCo receiver is installed in the track prior to the section that is being monitored by the Universal Control. If a locomotive is detected by this receiver the address of the detected locomotive is passed to the Universal Control. The Universal Control assigns the received locomotive address to the track section and can control and stop the locomotive via the digital center in this section with locomotive instructions. The Universal Control uses the same locomotive control for this track section as that used in the LISSY/MARCo System. The locomotive address that originally passed the track section is then forwarded by the Universal Control to other track sections, through which the locomotive will also be handled and controlled.

All track sections report the recognised locomotive address on the LocoNet, so that the locomotive addresses can be shown on the locomotive number display (69 250 like the LISSY/MARCo display in the Intellibox I, II and Basic).

If a track section is combined with a LISSY/MARCo receiver it is automatically recognised if the entering locomotive has a

LISSY/MARCo transmitter or not. Depending on the situation, the locomotive is controlled with locomotive commands or in the event that it does not have a LISSY/MARCo transmitter by a braking generator - (DCC braking generator 68720 or Motorola® braking generator 68730). This information is also forwarded to the following track sections and is used there for control.



LocoNet Feedback module with Automatic Function

Feedback and Switching with one Module

- Connection via the LocoNet
- Select any address in the range 1–2 048
- Delay/response time for each input is individually configurable
- Programmable by programming key, by LocoNet programming from Intellibox or DAISY II Digital Set or by LocoNet-Tool
- Each output can switch 2 solenoid addresses when a train enters the track section and an additional 2 when the train leaves the section

The Feedback Module makes it possible to directly switch solenoid addresses from the module. With this functionality simple switching sequences can be executed directly from the module without the necessity of having routes programmed into another device.

Each track input can switch two solenoid addresses when a train enters the connected track and two further solenoid addresses when the train leaves the track. With this function the feedback module can, for example, operate a boom gate directly, a St.Andrews cross or a signal.

2-Rail Feedback Module



- For 8 track sections
- Occupancy detector, feedback and power monitoring in one building block
- Maximum driving current 3A
- Carry out simple switching tasks

Part No. 63 320 2-Rail Feedback Module



Part No. 40410 10ml Resistive laqueur

3-Rail Feedback Module



- Loads of up to 3A
- Occupancy detector for 16 track sections or keys
- A chassis output for connecting reed or switch contacts
- Carry out simple switching tasks

Part No. 63 330 3-Rail Feedback Module



The Functioning of Feedback Modules

Automatic Operation with the Intellibox II or Computer

Feedback components forward the information from the occupancy detectors, whether there is a train in the monitored track section or not, to the connected devices (e.g. Intellibox II) or a computer control program. These then execute automatic switching sequences which have been reserved for these feedback messages.

This can be the switching of a single solenoid or an entire route.

The 2-Rail feedback building blocks consist of an occupancy detector, a feedback unit and a current monitor.

The occupancy detectors monitor the track inputs. The current monitors register every current flow in the isolated section that is greater than 3 mA. Thereby locomotives, illuminated wagons and conducting axels are recognised.

The power monitor prevents a vacant track being reported when the power is switched off.

The 3-Rail version works with an isolated and separated rail on one side which is connected to the module and bridging it to the chassis with the conducting axels.

The feedback unit reports every state »vacant« or »occupied« to the center or other LocoNet devices via the Loco-Net.

In contrast to other Bus-Systems the LocoNet is extraordinarily reliable for the transmission of information e.g. feedback messages.

The address configuration is done by means of the programming key using the programming menu on the Intellibox, the DAISY II Digital Set, or very simply with the LocoNet-Tool software.

LISSY — the individual Locomotive Control System

MARCo – the Way to automating Layouts with RailCom

Finally, your digital layout can have all the things that have been possible on analog layouts for a long time. LISSY or MARCo fulfils the demands of railway modellers,

who wanted to have simple automatic control of their layout, with block systems and auto reversing, a digital system which up till now needed the aid of a computer.

LISSY or MARCo is the same as the Fleischmann Train Navigation and offers interesting functions.

- Train recognition
- Shuttle train control
- Automatic control of special functions and Locomotive speed
- Switching of solenoids and routs
- Digital Block control

- Shuttle train control
- Locomotive dependent shadow station control
- Speed measurement
- Point accurate stopping
- LISSY Works without track isolation

LISSY uses infrared to transfer its data from the locomotive to the digital system. For this an infrared transmitter is fitted to the vehicle. The infrared sensors for the receiver module are installed in the track.

LISSY and MARCo recognise the trains and displays which train is on track 1 in the station.

LISSY and MARCo control the shuttle traffic in the terminus station of the branch line.

LISSY and MARCo manage your shadow station with passing loop, independently finds an individual track for each train and allows the trains to automatically leave at will. The passing loop can be used by particular locomotives or, with the push of a button, by all locomotives.

LISSY and MARCo are block systems for digital layouts and control the block sections on the layout automatically without installing a computer.

LISSY and MARCo slowly brakes every digital locomotive at a red signal using the decoder's internal braking inertia.

LISSY and MARCo switch the sound of a locomotive according to a situation, for example the whistle before entering a tunnel or the signal horn at a level crossing before the whistle sign.

LISSY and MARCo fade out the sound of an »IntelliSound« equipped locomotive when running in invisible sections (Shadow station, Tunnel).

LISSY and MARCo switch the light of a selected locomotive after a particular time on or off, e.g. when the driver switches the locomotive off.

LISSY and MARCo control the locomotive's speed, e.g. when entering a station or in a slow section.

LISSY measures the speed of passing locomotives true to the scale.

LISSY works without track isolation and can therefore be easily retro-fitted into every model railway layout.

The display is achieved by the Intellibox or TrackControl display or on a connected PC.

LokPosi

LISSY delivers the information for the Loco position display of the Intellibox® II. So that you always know where your Locomotives are

DirectDrive

Control of a locomotive, which passed a defined LISSY or MARCo receiver, can be acquired by the speed controller of an Intellibox or Track-Control speed controller, with a push of a button without inputting of locomotive address or locomotive name.

Automatic Registration of Locomotives

MARCo provides an automatic notification of locomotives to the center. When you first place the locomotive on the track you can enter its characteristics. Then you place your locomotive into the showcase again. The moment it is placed on the track again you can take control of the locomotive from the LISSY/MARCo Menu and all its settings will be available.

Building up a Layout with LISSY or MARCo

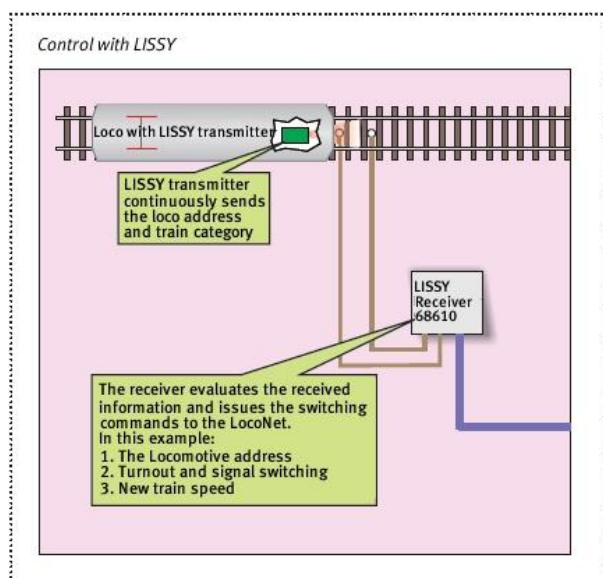
What is required?

For switching functions that depend on the locomotive address, both sensors of the LISSY receiver, or the RailCom detectors of the MARCo receiver, can monitor two different tracks. If the driving direction is to be determined then both sections must be installed in the track behind each other. For a shuttle route a LISSY or MARCo receiver is installed at each endpoint.

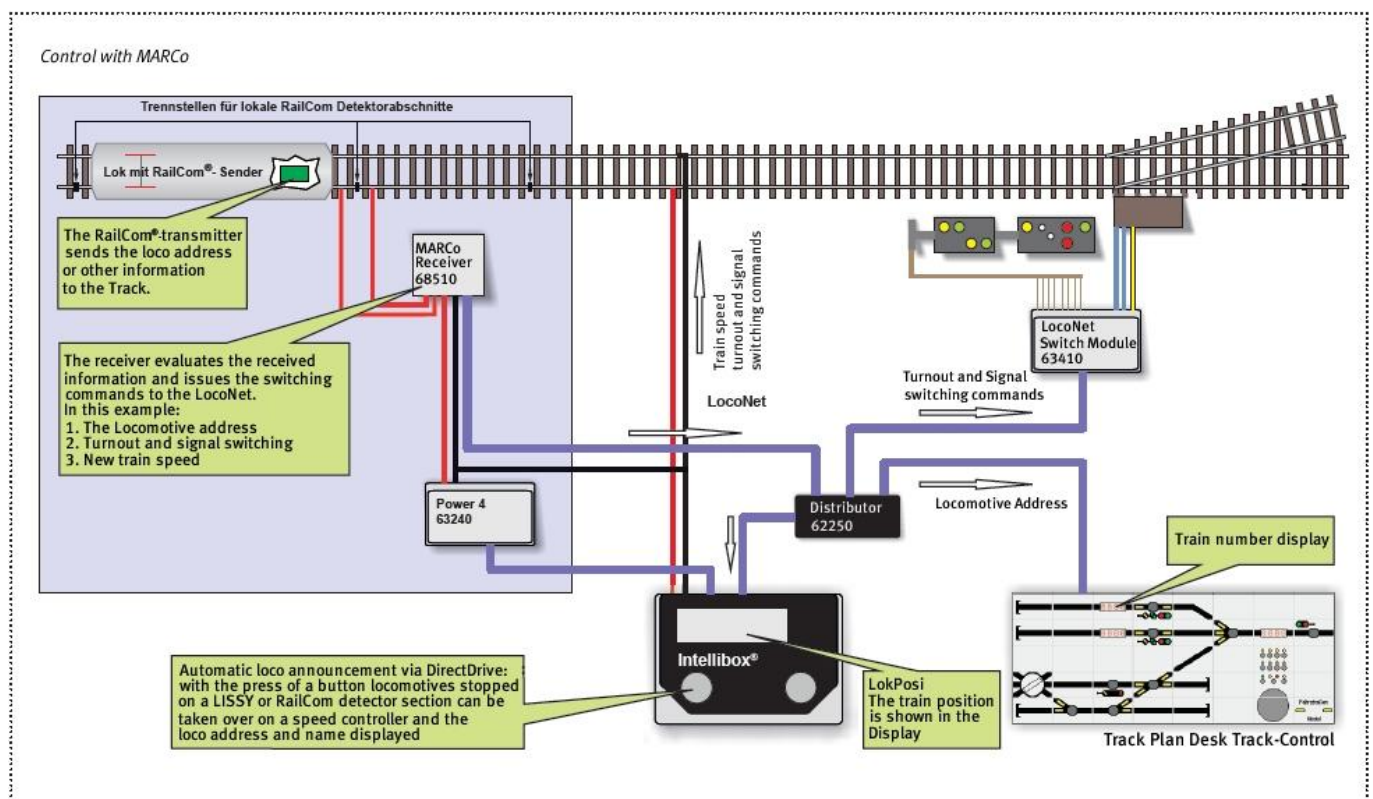
In a block control system each block is fitted with a LISSY or MARCo receiver.

For fully automated control of a shadow station a LISSY or MARCo receiver is required for the exit track, also a LISSY or MARCo receiver per track is required in the shadow station.

To operate a MARCo feedback system, RailCom boosters which support »Cutout« are required, such as e.g. our Power 4.



Barely visible: LISSY receiver sensors installed in the track



MARCo-Empfänger + Rückmelder NEW



- Train recognition
- Reading and programming of CVs
- Affect speed
- Automatic control of special functions and locomotive speed
- Switching of solenoids and routes
- Digital block control
- Shuttle train control
- Locomotive dependent shadow station control with passing loop
- The passing loop can for specific locomotives or all locomotives at the push of a button
- Individualised waiting time for locomotives in automatic operation
- In automatic operation numerous special functions can be switched with separate waiting times
- 2 feedbacks by current sensing
- Switching possibilities for vehicles without RailCom®
- Additional switching of 2 solenoid commands »Occupied« and »Vacant« for both feedbacks
- Separately configurable times for the output of »Occupied« and »Vacant« per feedback

The MARCo receiver contains two RailCom detectors and two feedback units for monitoring of two track sections. It has an intelligence that can carry out independent switching sequences. The connection to the center is via the LocoNet.

If simple switching sequences are to be carried out then module monitor two track sections. Then the address of a passing locomotive is simply forwarded and the switching sequence carried out.

Vehicles without RailCom transmitters can also switch 2 solenoids for »Occupied« and »Vacant« by way of the in-built occupancy detector feedback from each track section.

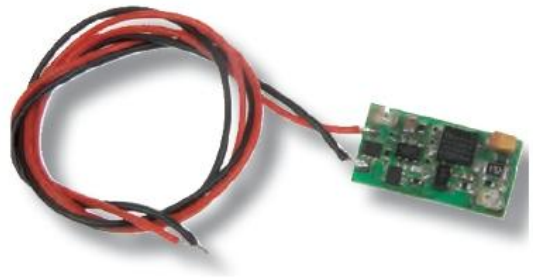
At locations where a direction dependant automatic function is to be carried out, both track sections of the MARCo receiver are installed directly after one another. Then the travel direction will be recognised in addition to the address and the train can be stopped precisely in the second track section.

Part No. 68 510

MARCo Receiver + Feedback



LISSY/RailCom-Sender LN



Dimensions: 13 x 7 x 1.8 mm

Every vehicle that executes an automatic control function or reports its address is fitted with a LISSY/RailCom transmitter if the DCC locomotive decoder does not support RailCom. The transmitter is installed in the locomotive in addition to the locomotive decoder or separately in a wagon (e.g. a control wagon) and is connected to the power pickup of the locomotive or wagon. Just like a DCC decoder it can be programmed with all the short and long addresses. In addition there the option to connect a LISSY Mini transmitter.

Part No. 68 330 LISSY/RailCom Transmitter

Part No. 68 331 LISSY/RailCom Transmitter 5er Pack

MARCo-Set

The quick Entry to the MARCo System

Contains two RailCom transmitters, a MARCo receiver, a LocoNet cable and a manual.

Part No. 68 100 MARCo-Set

Individual Components

Part No. 60 810 MARCo Manual

Part No. 68 330 LISSY/RailCom Transmitter

Part No. 68 331 LISSY/RailCom Transmitter 5-er Pack

Part No. 68 510 MARCo Receiver + Feedback NEW

Part No. 19 300 LISSY/MARCo-Creator

LISSY-Receiver



- Train recognition
- Speed influence
- Auto. control of special functions and locomotive speed
- Switching of solenoids and routes
- Digital block control
- Speed measurement
- Shuttle train control
- Locomotive dependent shadow station control with passing track
- The passing loop can have individual locomotives entered by push of a button
- Selective switching of tracks by Exit Manager e.g. for blocks in a shadow station.
- Up to 15 train categories in conjunction with the Intellibox II
- Individual locomotive stop times in automatic layouts
- In automatic layouts a number of locomotive special functions can be separately switched by delay times.
- Automatic feedback for Block »occupied« and »vacant«
- Startup time for an orderly system startup.

The LISSY receiver is a module with two small, hardly visible IR sensors with a diameter of 3 mm which are installed in the track. Connection to the Intellibox is done using the LocoNet.

If the automatic functions are to be implemented independent of travel direction, the module can supervise two locations. Then only the address and train category of the passing locomotive are conveyed.

In places where a travel direction-dependent automatic function is to be implemented, the two sensors of a receiver are installed in the track. one behind the other. In addition to the address and train category, the speed and travel direction can be determined.

Part No. 68 610 LISSY Receiver including Sensors



Part No. 68 690 LISSY Sensors (2 single pieces)

LISSY Mini Transmitter



Original Size

The LISSY Mini-transmitter module is for connecting to decoders which generate the LISSY-Signal. It is suitable for locomotives, which are equipped with an Uhlenbrock Locomotive or Sound decoder with LISSY output. It constantly sends the decoder address. Equipped with a SUSI plug it can be plugged in directly into H0 decoders, and the N decoders 73400 and 73410 have solder pads for the connection.

With dimensions of only 7 x 5.1 x 1.7 mm it fits under an NEM coupling, for example.

Part No. 68 400 LISSY Mini-transmitter

LISSY-Infrared transmitter



Size: 13 x 7 x 1.8 mm

Each vehicle which is to implement an automatic control function must be equipped with a LISSY Infrared transmitter. The small module sends addresses, within the range 1 to 16382 and four train categories, such as ICE, passenger train or goods train.

The transmitter, like DCC decoders, can be programmed. The address and train category are configured with CVs.

Dimensions: 13.5 x 8.4 x 2.5 mm

Part No. 68 300 Single LISSY Infrared Transmitter

Part No. 68 301 LISSY Infrared Transmitter 5er Pack

LISSY Single Receiver



- Train recognition
- Speed influence
- Auto. control of special functions
- Switching of solenoids and routes
- Sending feedback messages

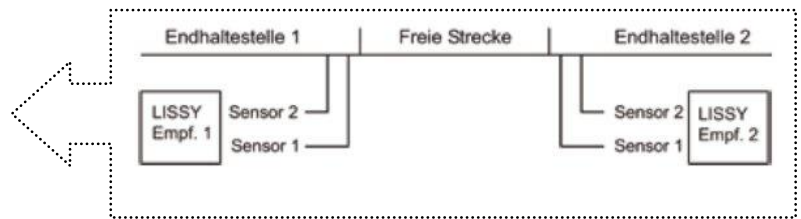
For simple switching functions the new LISSY Infrared receiver is now available. The sensor is integrated into the module. For installation a 4 mm hole is bored into the base plate between the sleepers and the receiver is inserted from underneath. The connection to the digital center is via a LocoNet cable.

Part No. 68 620 LISSY Single Receiver



LISSY Shuttle Train Control

- For single track shuttle tracks
- Pre-configured LISSY receiver for all terminals
- Includes LISSY transmitters for 5 vehicles
- Usable with Intellibox, Twin-Center and Piko Power-Box



The first LISSY Special edition. The modules are pre-configured for a single track shuttle train so it can be installed in the layout without any extra programming. The special edition modules can be reprogrammed for different functions like all other modules.

Shuttle Train control contents:

1 LISSY transmitter, 2 LISSY receivers, 2 LocoNet 2.15m cables, the LISSY Manual and a special guide for the structure and installation of the shuttle train track.

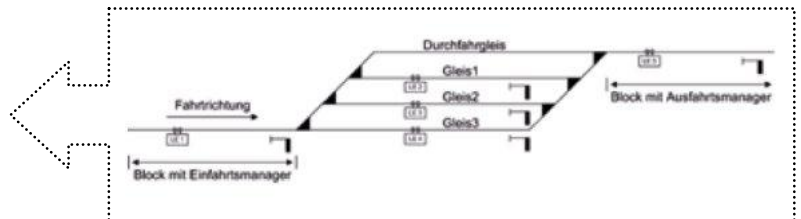
Part No. 68 010

LISSY Shuttle train control



LISSY Station Control

- For stations with digitized turnouts
- Pre-configured LISSY receiver for a 3-track station with a passing loop or as station extension for 5 auxiliary tracks
- Includes LISSY 5 transmitters
- Usable with Intellibox, TwinCenters and Piko Power Box



This special edition LISSY receiver is pre-configured for a 3-track station with passing loop, so that the station can be installed directly in the layout without having to spend any additional time on programming the receivers.

Two receivers have the tasks of entrance and exit manager, three receivers control the different tracks. The receivers can only be reprogrammed for use as a station control, e.g. as station extension for 5 auxiliary tracks.

Contents: 5 LISSY receivers, 5 LISSY transmitters, 2 LocoNet 2.15m cables, 3 LocoNet cables 28 cm, 1 LocoNet 5-way distributor, 1 LocoNet 2.15m extension (1 plug/2 sockets), the LISSY manual and a special guide for the construction and the start-up of the station control.

Part No. 68 020

LISSY Station control



LISSY Component Overview

Complete sets – for a simple Start and for Extensions

Part No. 68 000	LISSY-Set 2 Transmitters, 1 Receiver, LocoNet Cable, Manual
Part No. 68 010	LISSY Shuttle Train Control 1 Transmitter, 2 Receivers, LocoNet Cable, Manual
Part No. 68 020	LISSY Station Control 5 Transmitters, 5 Receivers, 6 LocoNet Cable, 5-way Distributer, Manual

Individual Components

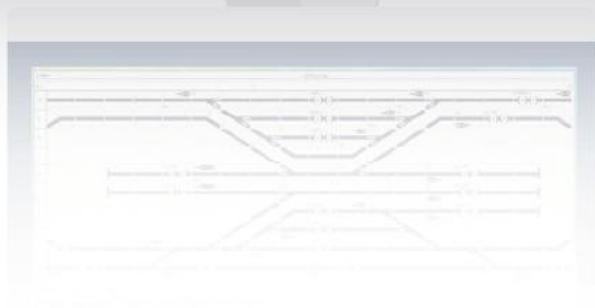
Part No. 68 300	LISSY Infrared transmitter 13.5 x 8.4 x 2.5 mm
Part No. 68 301	LISSY Infrared transmitter 5-er Pack
Part No. 68 400	LISSY Mini transmitter 7.0 x 5.1 x 1.7 mm
Part No. 68 610	LISSY-Infrared Receiver With two Sensors
Part No. 68 620	LISSY Single Receiver
Part No. 68 690	LISSY Sensors, 2 Pieces
Part No. 19 300	LISSY/MARCo-Creator

LISSY/MARCo-Creator

The rapid way to automatic control of layouts with LISSY/MARCo or the Universal Control



- Plan LISSY/MARCo controlled layouts on a PC
- Easy programming of the modules on the layout
- Routes can be configured on the PC and programmed into the Intellibox® II, IB-Control II, SystemControl 7 or TwinCenter
- Switching of turnouts and signals via the graphic track plan direct from the program
- Save and print the layout configuration



LISSY/MARCo-Creator is the PC-program with which you can simply and easily plan a model railway layout using LISSY/MARCo and all LISSY and MARCo receivers with the required programming.

The automation can be designed based on the layout track plan. Whether it is a shuttle line, holding point, shadow station or the switching of locomotive special functions, all automatic control sequences for a desired system can be undertaken with the LISSY/MARCo-Creator.

The program manages all address which are used on the layout, solenoid, feedback units, LISSY and MARCo receivers. Routes needed for station control can also be set and managed by program.

Route in the Intellibox II, IB-Control II and Track-Control route buffer can be directly programmed with the LISSY/MARCo-Creator. All layout data can be backed up and printed.

The licence registration is bound to the serial number of your digital center to which the software is connected. It cannot be transferred to another digital center. To use the software with further digital centers we offer additional licences at a reduced price.

Recommended Operating System:
Microsoft Windows XP, Windows Vista, Windows 7 or Windows 8.

Part No. 19 300 LISSY/MARCo-Creator

Part No. 19 310 LISSY/MARCo-Creator additional licence



Schalt- und Servodecoder, Servos



LocoNet-Schaltmodul – das Universalgenie

Magnetartikel- und Schaltdecoder

Servoantriebe



LocoNet-Switch module – the Universal genius

Cost effective replacement for Solenoid and Switch decoder - many Possibilities



The LocoNet Switch module is a switch and solenoid decoder and switches up to ten turnouts or light signals - also multi-state with slow up and dimming of lights or 20 lights on your layout. And all this mixed in one module!

- With 20 switching outputs at 1A
- Each output can be independently configured for continuous output (for lamps) or momentary output (for turnouts or signals).

- Slow change over between light patterns
- Prototypical control of light signals with up to 4 signal functions
- All outputs can be switched by solenoid addresses or feedback commands



HP0 3 States



HP1 3 States



HP2 3 States



HP0 4 States



HP1 4 States



HP2 4 States



Sh1 4 States



Vr0



Vr1



Vr2

Our LocoNet Switch Module is a clever device. A single module which can achieve all switching processes on your layout. The Switch Module can switch lighting, turnouts, uncoupling tracks, semaphore signals, light signals, level crossings and effect lighting. All these switching tasks can be mixed with a single Module.

We attached particular importance to the prototypical control of light signals. The Switch Module switches up to 4 function main and pilot signals. And the best of the Signal control is the cross fading function. If you wish, the light change between signal states dissolves softly and is not a hard cut-over.

Level crossings (St.Andrews crosses) and other lighting effects are not a problem. With one blink of the generators and the dissolve function you can have a prototypical level crossing light. Or you combine both flashing generators to simulate a faulty street light.

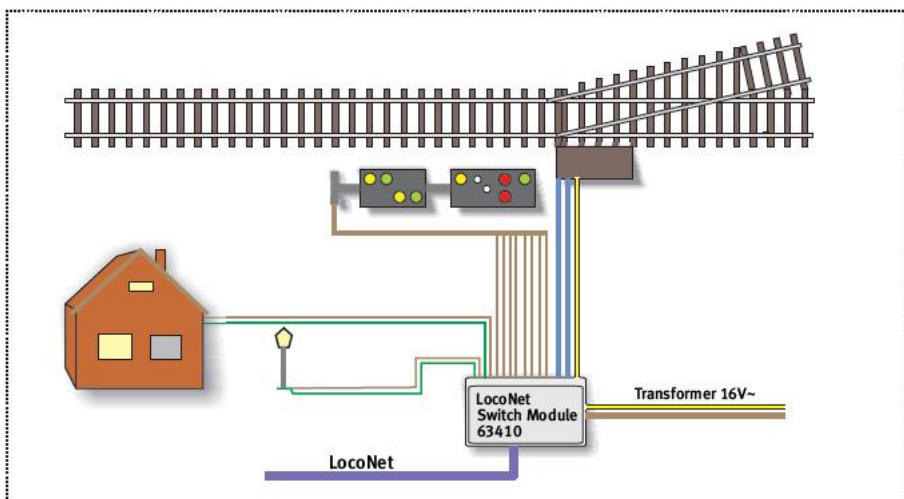
With the module's 20 switching outputs you can switch either 10 turnouts, 5 multi-state signals or 20 switching functions. Each output can be loaded with up to 1A. However, the total power output must not exceed 3A.

The LocoNet Switch Module is powered from a transformer so has no load on the LocoNet or the digital center track supply.

The LocoNet Switch Module has a common positive pole for all loads. Therefore you cannot connect turnout changers with motors or light signals with a common negative pole. Motor type turnout motor requires supply current that can swap their polarity. The solution is provided by the polarity changer. Connected to the LocoNet Sixth Module it provides four outputs with a common negative pole. To this you can connect two light signals. With the polarity swapper a polarity changer. Nothing now prevents the use of motor type turnout motor. Up to five polarity swappers can be used on one LocoNet Switch Module.

Part No. 63 415 Polarity swapper

Part No. 63 410 LocoNet Switch module



Solenoid and Switch decoder



Easy Address assignment without Decoder defaults

Turnouts and signals with a solenoid drive, which are to be controlled digitally, must be connected to a solenoid decoder. Lamps, light signals or track sections, which are to be switched on and off digitally, are connected to a switching decoder.

- For Motorola and DCC Digital systems
- Each according to type for pulse or permanent current
- Large address range
- Free address choice
- address programming with the push of a button
- Potential free relay contacts
- High load: 1 A per output
- Simple connection
- Dimensions: 38 x 32 x 15 mm

Uhlenbrock solenoid and switching decoders can be used in Märklin, Motorola and DCC Digital system. In the Motorola mode addresses 1 to 320 can be addressed by the Intellibox.

With other control centers the addresses 1 to 256 can be addressed. In the DCC operations, addresses 1 to 2040 are possible. The addresses are not preset. They can be selected fully independently of one another.

Each module has two outputs. Depending on the decoder both outputs can be either addressed together under one address or independently with two addresses.

The relay contacts of the switching decoders have potential free outputs and can be connected as desired. Each output can have a 1A load.

Because the decoder is restricted to two connections, the cable runs remain short and the wiring of the layout is easy to manage. The connection is simple to do with screw connectors.

Address programming is extremely simple. First you press the decoder programming key and then the appropriate key at the control desk. The decoder simply notes the appropriate address.

The decoders are supplied with power and control information by the digital control center.

N TT H0 0 I G M M DCC

Solenoid decoder MD2



Pulse drive for solenoids via 2 independent addresses (turnout, signal) or devices are driven by two solenoids (three-way turnout, double crossing switch, signal with pilot signal). The decoder has short circuit protection.

Part No. 67 200 MD2 Solenoid Decoder

Switch decoder SD



Universal switching decoder has two separated two-way potential free contacts, which are addressed by one address. One contact can, for example, switch a light signal and the second, the track power.

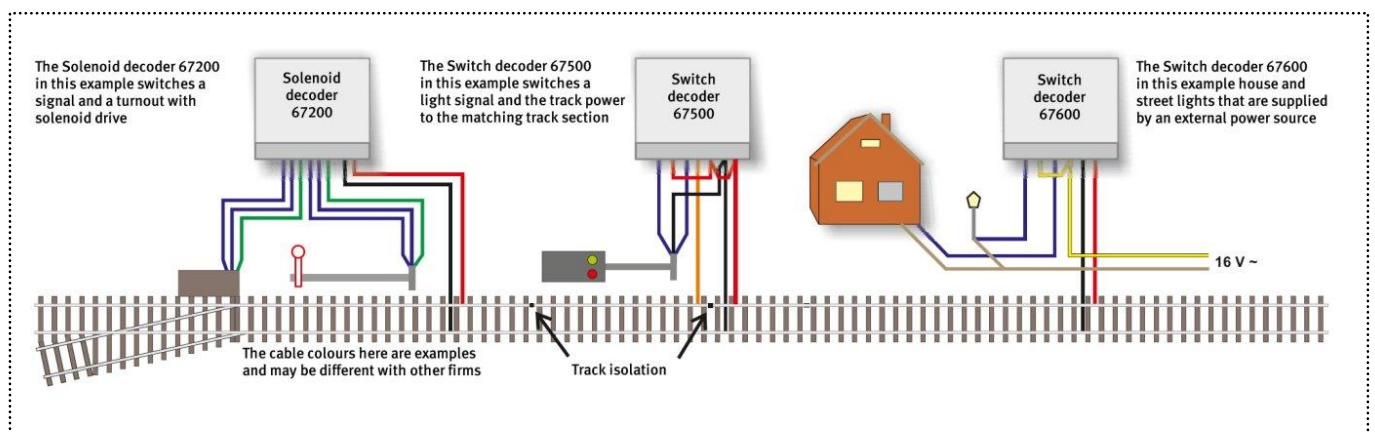
Part No. 67 500 SD1 Switching Decoder

Switch decoder SD 2



A universal switching decoder with two separated, two-way potential free contacts, addressed by two independent addresses. The decoder independently switches two different items, for example lamps or a motor, to operate a turnout.

Part No. 67 600 SD2 Switching Decoder



Servo Driver

For Märklin and DCC Digital Systems

Servo-drives change turnouts, signals and railway crossing booms, swivel a water crane, open or close gates, wagon doors, operate couplings on vehicles.

A servo moves the item which is to be moved via the provided control wire, these include turnout blades, semaphore signal, booms, water cranes or gates. It can be installed in many different situations with the enclosed mounting material.

We are offering you two variations of motorization. The low cost method with servos, which have been employing RC Modeling for decades. For the servos a servo decoder is essential. Our Servo decoder 67800 is designed for connecting four

servos. There is also the 67810 variant with switch outputs, which make it possible to simultaneously have servo motion and carry out an electrical switching process. This can for example be used for polarization of a turnout frog while changing the turnout position.

For installing into vehicles when a small size or high precision is required, we recommend the Digital servo 81310. This also has an integrated digital decoder and is connected directly to the digital power.

The digital servos and motors can also operate connected directly to DC power or with two diodes 1N4001 (Part No. 40 111) to AC power.

Application Example

H0 goods wagon with digital servo which opens the wagon doors and the digital decoder for light and smoke



H0 goods wagon with servo operated coupling



The Digital Motor powers a Windmill.



Digital Servo

Mini-Servo with integrated Digital Decoder

- For Märklin or DCC Digital systems and analogue operation
- No additional servo decoder required
- Switchable with Locomotive functions, via turnout addresses or proportional-to-speed control position
- Configurable rotation speed
- Configurable end positions
- Rotation angle 180°
- Intermediate positions possible
- Configuration by DCC CV programming or by a Motorola digital center
- mounting material, Setting levers and setting wire 2 x 0.4mm und 1 x 0.6mm, each 100mm long
- Torque 2 Ncm

The Digital-Servo can be installed in vehicles and static items. The silent and jerk free operation will spoil even the most fastidious model railroader.

The Servo drives the moving element with the enclosed setting wire. In vehicles, for example. It can be used to move pantographs and doors. Static items possible/available are: driving turnouts, signal arms, booms, water cranes and gates.

The servo can be installed in many varied locations and orientations using the included mounting materials.



The Digital-Servo does not differ in form and size from the Mini-Servo 81410. Inside however, besides the Servo electronics there is also a digital decoder.

Part No. 81 310 Digital Servo

=DC -AC 1/2Mot 1/2DCC

Digital Motor

Motor drive with integrated Digital Decoder

- For Märklin or DCC Digital systems and analogue operation
- 3 operating modes
- Configuration by DCC CV programming or by a Motorola digital center
- With mounting material, setting levers, twine drum and 1m twine
- Torque 2 Ncm
- Dimensions 20.0 x 17.6 x 8.0 mm

The digital motor has no end positions. It is therefore suitable for endless turning motion. With the twine roll many types of twine drives can become reality.

The Digital Motor is controlled either via an analogue DC current, as with a locomotive decoder (the Motor is switched by Special function and the speed by speed control) or like a solenoid decoder (the running direction is selected by key and the speed is configured by CV).



Part No. 81 210 Digital Motor

=DC -AC 1/2Mot 1/2DCC

Operating the Digital-Servo

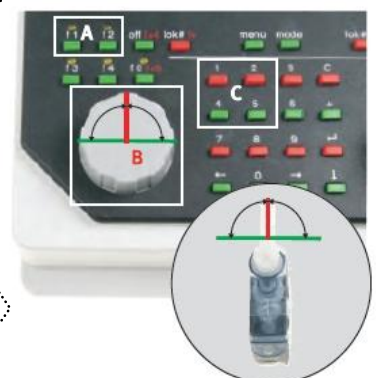
Three possible control methods:

- Using any desired Locomotive function the Digital-Servo can travel toward two different positions.
- The Digital-Servo moves exactly like the speed controller indicates.
- Using the switching keys, the Digital-Servo is controlled like a solenoid. Four different positions can be reached by a key press.

Operating the Digital-Motor

Three possible control methods:

- Using any desired locomotive function the Digital-Motor moves forwards or backward.
- Using the speed controller the speed and the direction of the Digital-Motor can be controlled.
- Using the switching keys, the Digital-Motor can be controlled like a solenoid. It can be moved forwards or backward.



Servo decoder

For Connecting 4 Servos



Up to 4 servos can be connected to a servo decoder

- Configurable switching address
- Configurable End stops
- Configurable rotating speed
- Backlash function
- Configurable with turnout keys or by DCC CV Programming
- Connection to digital power
- Power supply from the track or a separate transformer
- Very low power consumption due to an integrated switching regulator
- Servo outputs with overload protection

With simple key programming, Motorola- and DCC centers can configure the address, end stop and the rotating speed for each servo independently.

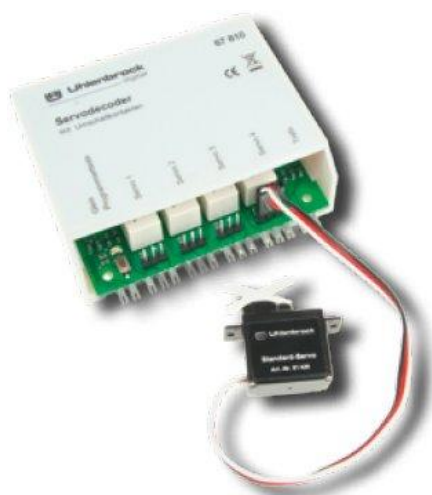
When using a DCC center, e.g. the Intellibox, all parameters can be adjusted by CV programming. So two addresses, their end stops, the rotating speed and the backlash function for each servo can be adjusted independently.

Part No. 67 800 Servodecoder



Servodecoder with Switch outputs – the modern 2-Rail turnout drive

For Connecting 4 Servos



Up to 4 servos can be connected to a servo decoder.

- Switch outputs for frog polarity change loadable to 3A
- Configurable switching address
- Configurable End stops
- Configurable rotating speed

- Configurable with turnout keys or by DCC CV Programming

- Connection to digital power

- Power supply from the track or a separate transformer

Four familiar RC modelling servos can be connected to the new Servo decoder to build a silent and inexpensive basis for many applications. The servos can be used by the railway modeller as drives for turnouts, signals and booms at level crossings, moving a water crane or opening a door.

The additional switch outputs can be used for changing the polarity of a turnout frog.

Using simple key programming, Motorola and DCC Centers can be used to set the address, the end positions and the turning speed for each servo. When using a DCC center such as the Intellibox you can configure all the Parameters with CV programming.

Part No. 67 810 Servo decoder with relay



Application Example

The Standard Servo operates a boom gate



Servos

In two different Variations

Mini Servo

- With Accessories and mounting materials
- With setting wire, 2 x 0.4 mm and 1 x 0.6 mm, 100 mm each

For use in confined spaces and where only low torque is needed.

Dimensions 20.0 x 17.6 x 8.0 mm
Torque 4 Ncm

Part No. 81 410 Mini Servo



Standard Servo

- With Accessories and mounting materials
- With setting wire, 2 x 0.4 mm and 1 x 0.6 mm, 100 mm each

For general use e.g. turnouts.

Dimensions 22.2 x 20.0 x 11.1 mm
Torque 13 Ncm

Part No. 81 420 Standard Servo



Application Example

Here a Servo switches a turnout.

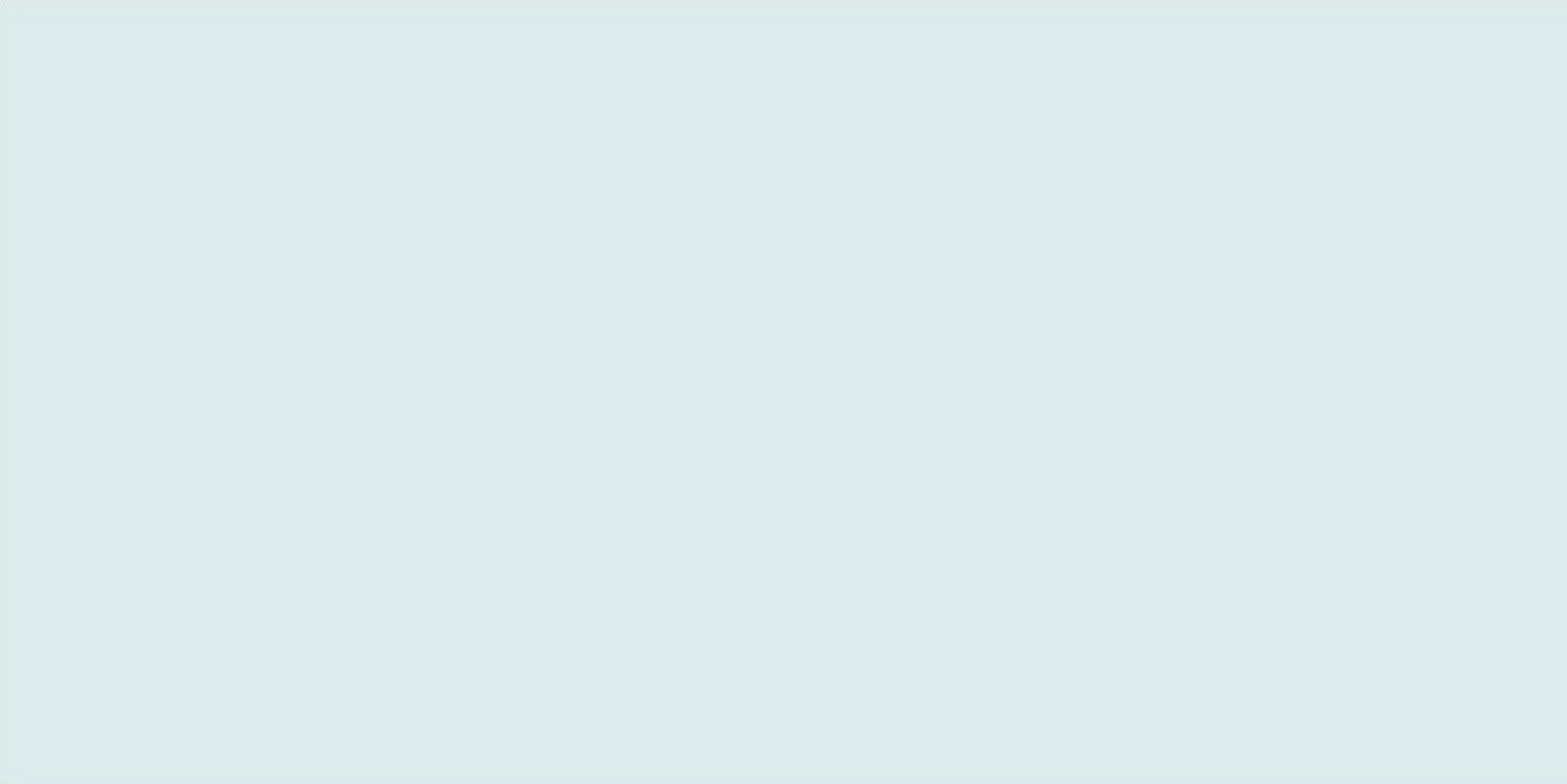


A Mini-Servo moves the locomotive shed doors.



The Digital-Servo opens a garbage skip lid





Model Railway Lighting

F

IntelliLight LED

LED Festoon

LED Effects and House Lighting



IntelliLight — the Model Railway Lighting



With the use of modern power LEDs the very good IntelliLight is even better. Clearer colours and higher brightness as well as a guaranteed longer life. Naturally the IntelliLight LED is compatible with the earlier IntelliLight.

- Change between day and night
- Different lighting situations: clear sky, cloudy appearance, rain and thunderstorm
- With a photo-flash and IntelliSound module: "rain and thunderstorm"
- Usable in analog and digital layouts
- The modular construction can be individually adapted to each layout

Who doesn't know the beautiful model railway layouts which are illuminated by fluorescent or halogen lamps and do not show a correct impression of a landscape in the daylight? With IntelliLight you get realistic lighting for your model railway layout. IntelliLight illuminates your layout taking into account the time of day and the weather.

The day in the model railway layout begins with dawn. The sun then rises after a magnificent morning red. The sun then goes down after an eventful day, and the moon then washes the entire layout in a mysterious silvery light.

According to the weather conditions there is radiantly beautiful or gloomy weather. Now and then it rains or a thunderstorm develops and it flashes and thunders.

The day's routine is started when switching the layout on with an adjustable timer. The type of lighting depends on the time and

cloudy appearance. Thunderstorms and rain appear according to a random number generator or by the push of a button.

Depending upon the programming, a day passes in 24 hours or up to 20 times faster, therefore in approximately 1¼ hours. The lighting can be switched manually or controlled automatically according to time.

All time periods are pre-programmed and can be changed in duration and intensity according to one's own wishes by LNCV programming.

For digital or analogue Layouts

Our IntelliLight lighting system is powered by a separate model railway transformer. In combination with a digitally controlled model railway facility, which is controlled by a digital center, with LocoNet interface (Intellibox, TwinCenter or Piko Power box), it is connected to the LocoNet.

Then the day/night transitions, as well as the meteorological phenomena can be triggered by instruction via LocoNet. The lighting can be controlled by the push of a button from the control center. Furthermore it is possible for IntelliLight to switch the road or house lighting that is installed on the layout, on and off at the correct time.

The configuration of the IntelliLight is programmed from the digital center using LocoNet programming. So all timing can be changed according to one's own wishes.

If IntelliLight is used with a model railway without LocoNet (analog or digital), then it is possible to attach key switches to the system with which it can be controlled. If such layouts are also fitted with LocoNet switch module 63 410 and the light system and the lighting for roads and houses are connected, then these can be switched on and off at the correct time.

Morning or Evening






The simple Assembly

IntelliLight LED consists of a control unit in which the control sequence is integrated, which also initialises the IL-Net, with which the lighting sticks are controlled.

The main lighting stick is connected to the control unit and powered by the power plug pack. To this lighting stick, up to four white lighting sticks can be connected.

In the Starter set you will find all the components for lighting a small layout of up to 1.5 m in length. When a Main lighting stick and four white lighting sticks are not sufficient, you can expand the layout with an additional Main lighting stick plus white lighting sticks. The main lighting sticks are connected with the included cable.

The Components

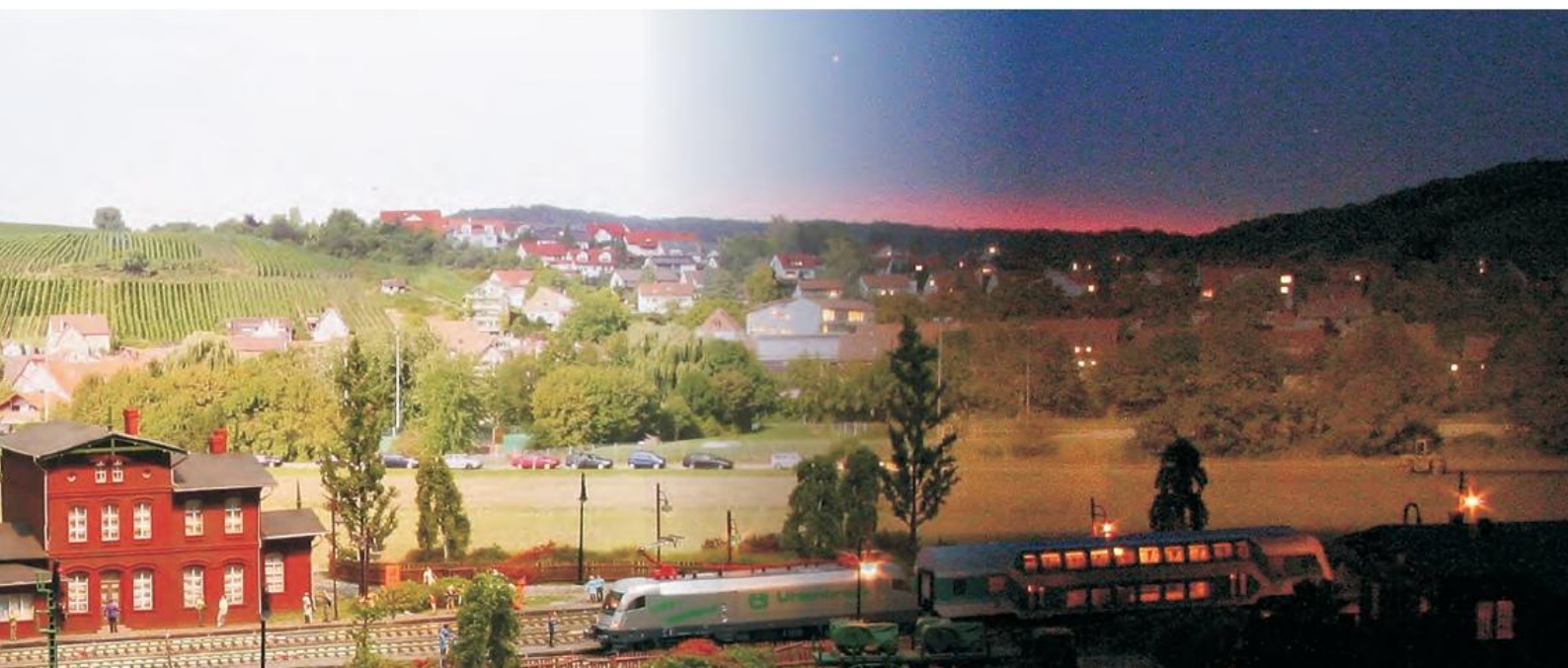
- | | |
|------------------------|---|
| Part No. 28 200 | Starter set: Control Unit, power plug pack, main lighting stick, 2 white lighting sticks, connecting cable
Length of a lighting unit: 1050 mm
 |
| Part No. 28 210 | White lighting stick 350 mm |
| Part No. 28 220 | Main lighting stick 350mm with power plug pack and connecting cable |
| Part No. 28 230 | Expansion unit lightning and Sound:
Flash lamp, loudspeaker and IntelliSound module
»Rain and Thunder« |



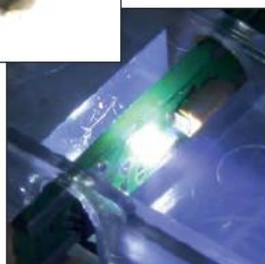
The image still shows the original IntelliLight as lighting unit for the layout photographed below. The method of mounting also applies to the IntelliLight LED. All units were plugged into one another at a height of 1m above the layout at an angle of 45°. That way not only the layout is optimally lit but also the background. For a layout of approximately 2.5 x 1 m Starter set and two additional white lighting sticks with the expansion »Lightning & Sound« can be combined.

Bright Daylight

Atmospheric Night lighting



LED Festoon



- Replacement for 23mm festoon lamps with 12-19V, as used, for example, in Roco, Lima and Ade wagons
- Perfect lighting from 6V
- For digital, DC and AC

The festoon lamps that are fitted in many wagons are no longer available. Our LED festoons, with obvious characteristics, are well suited as replacements.

With the use of LEDs and electronic regulation our LED festoons achieve full brightness from 6V. Gone are the days when the lights in the wagons dim at slow speeds in DC or AC operation and are flood lights at high speeds. With the LED festoons you will have almost even light throughout. The current load is only 15mA as opposed 40mA with the original festoons.

The LED festoons are available in pure white for those prototype wagons that would have been fitted with fluorescent lamps and warm white for the wagons where the prototype used incandescent lamps.

Part No. 29 011 2 LED-Soffitten pure white

Part No. 29 012 2 LED-Soffitten warm white

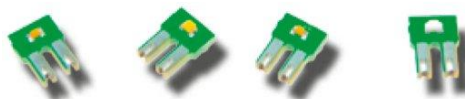
Part No. 29 013 10 LED-Soffitten pure white

Part No. 29 014 10 LED-Soffitten warm white

[=DC](#) [-AC](#) [µMot](#) [µDCC](#)

LED-Effect Lighting

Previously, lighting lamps in houses and layout scenes was very static. With our modern LED technology you can now light up your scenes realistically Aluminum foil can be used as a reflector and for additional lighting effects.



Part No. 67 400 LED Effect lighting with 4 LED PCB warm white
[=DC](#) [-AC](#) [µMot](#) [µDCC](#)

Part No. 67 410 4 LED-PCB white (fluorescent tube)

Part No. 67 411 4 LED PCB warm white (Light globe)

Part No. 67 412 4 LED- PCB blue (welding light)

Part No. 67 413 4 LED PCB red (Fire)

Provides meaningful lighting scenes

- Control electronics with 4 warm-white LEDs
- for digital and analog operation
- 4 outputs for up to 5 LEDs in each case
- each output is separately digitally controlled by solenoid instruction
- DCC and Motorola
- Random number generator for each output

LED Effect Lighting for complete houses or individual windows. Control electronics with four outputs for up to five LEDs. Naturally you can also attach individual lanterns which are equipped with LEDs.

Each output can be separately switched in the DCC/Motorola Digital operations and by a random number generator, a blink generator or a welding light generator. Simple Plug system for connecting the LED boards, in each case populated with one LED, to control electronics.

The LED Effect Lighting is for the lighting of model railway houses, individual office floors or single rooms.

With its high luminosity and thinness the LED Effect Lighting is also well suited for illuminating half relief buildings like those available from JOWI.

- Welding light effect
- Flicker lighting for televisions, fires and fire-place
- Blinking light
- Fluorescent lamp simulation
- Flow control for all outputs
- Also switchable with IntelliLight
- Simple plug system for connection

The electronics, included, switch the lights on and off in random pattern in the individual areas.

With the optionally available auxiliary PCBs with red, blue and white LEDs and the integrated effect generator it is possible to reproduce chimney fire and welding light.

Also the bluish glow of current TV equipment can be represented for the amateur craftsman who will surely think of many more application possibilities.

Aluminum foil can act as a reflector and be used for additional lighting effects.



Energy

G

When the Power goes off



Booster and Transformers for powering the Model Railway layout

A model railway layout with a lot of train traffic quickly reaches the transformer's capacity. In order to operate a larger number of vehicles, a booster which is powered by its own transformer is used.

Power 4

The universal Booster for almost all Digital systems



- Genuine multi-protocol booster for the DCC, Märklin-Motorola, mfx, Selectrix and FMZ data formats
- Compatible with centers from Uhlenbrock, Märklin, Fleischmann, Piko, Lenz, ESU, Viessmann etc.
- Maximum output current 3.5 A
- Switchable to DCC brake generator mode
- With output for reversing loop relay
- LocoNet capability which makes it particularly suitable for modular layouts
- Short circuit overload protected
- Connections: LocoNet B, DCC Booster, Märklin Booster
- Configuration by switches and with LocoNet CV programming

The LocoNet capable power 4 is higher performance multi-protocol booster. Multi-protocol means it can be installed in the 2-rail and 3-rail operations for DCC, Motorola, mfx, Selectrix and FMZ.

It makes a further 3.5 A output current available to the layout. The output of the device is protected against overload.

The Power 4 can be configured with the built-in switches. More options are available when configuring via the LocoNet.

If the Power 4 is operated in conjunction with an Intellibox II, error messages are displayed in the plain language on the Intellibox display.

In DCC systems the Power 4 can be used as a brake generator. Depending upon the preset delay and the decoders used, the locomotives brake in the section true to the prototype. As many brake sections as desired can be connected.

One or more reversing loop modules (presently under development) can be connected to the Power 4.

Part No. 63 240

Power 4



Reversing Loop Relay



To operate several reversing loops you can connect several reversing loop relays to a Power 4 or Power 7. The reversing loops can then also be separately monitored by feedback modules 63320 or 63340.

Part No. 61 080

Reversing Loop Relay



Power 8

The Power pack for large track gauges

- Genuine multi-protocol booster for DCC, Motorola and mfx data format compatible with Centers from Uhlenbrock, Märklin, Fleischmann, Piko, Lenz, ESU, Viessmann etc.
- Maximum output current 7 A
- Configurable to DCC brake generator mode
- With reversing loop output
- LocoNet capable, therefore particularly suited to module layouts
- Short circuit and overload protection
- Connections: LocoNet B, DCC booster, Märklin Booster
- Configured by switches and LocoNet CV programming

The LocoNet equipped Power 8 is a high performance multi-protocol booster for scales O-IIm and is suitable for the DCC, Motorola, mfx data formats.

It provides a further 7A output current for the layout. The device's output has short circuit and overload protection.

The Power 8 can be configured with the built-in switches, but you have greater flexibility, however, when programming the settings via the LocoNet.

If the Power 8 is used in conjunction with an Intellibox II, error messages are shown in the plain text on the Intellibox display.

In DCC systems the Power 8 can be used as a **brake generator**. Depending upon the preset characteristics of the locomotive decoder brake settings, the locomotives will slow and stop in prototypical fashion in the braking section. As many brake sections as desired can be connected.

One or more reversing loop relays can be connected to a Power 8.

We recommend our 150VA Transformer (Part No. 20 150) for powering the unit.

Part No. 63 280

Power 8



Important Notice

Power 7 and the 150VA transformer are only suitable for operating layouts of the large scales O-G and are not to be used with smaller scales under any circumstances!

Locomotives, tracks, wiring, connectors and more can be damaged or destroyed by a short circuit.



70 VA Transformer



- Output voltage 12V~ and 15V~
- Max. 4.66 A
- Reverse voltage protection
- Over temperature and overload protections

Universal transformer for Digital systems and DC or AC layouts. Three quick connect terminals on the low voltage side provide for simple connection.

With electronic protection against feedback to avoid dangerous contact voltages on the primary side.

Part No. 20 075 70 VA Transformer

150 VA Transformer



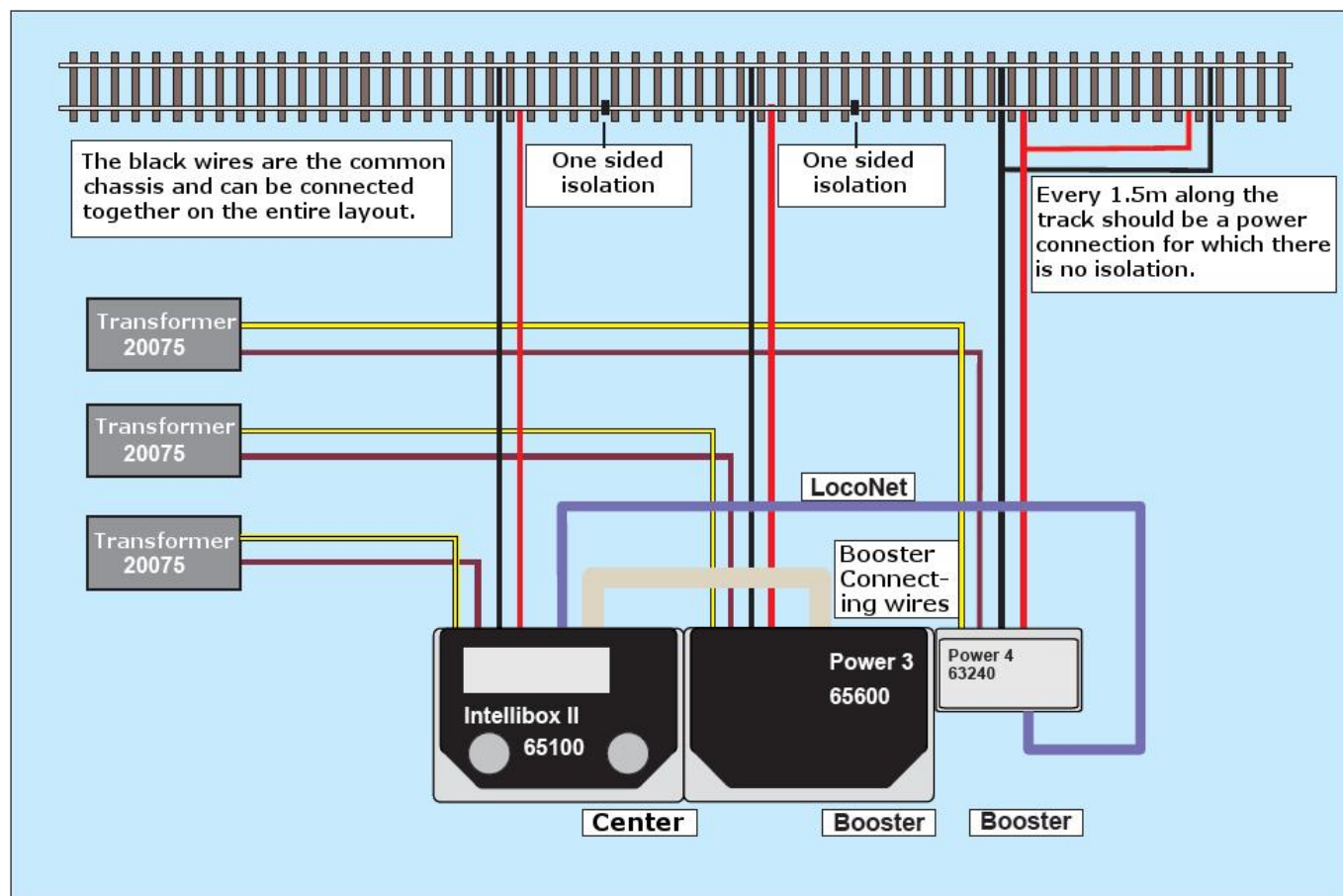
- Output voltage 17V~
- Max. 8.8 A
- Reverse voltage protection
- Electronic over temperature and overload protections
- Power switch with light

Transformer for large Scales, for connecting of Power 6, Power 7, Power 8 and IntelliLight. Connection is done with screw terminals.

With electronic protection against feedback to avoid dangerous contact voltages on the primary side.

Part No. 20 155 150 VA Transformer

Connection example: Digital layout with a number of Transformers



Decoder



Experience pays off!

Intelli Drive



Intelli Drive - Digital decoder



The Decoder 76 425 in a Piko BR 119 DR



The inside of a Hobbytade DE3650 with a 76 330 Decoder

The digital decoder is the brain of your locomotive. It determines the handling characteristics and switching possibilities. A cheap decoder can quickly ruin enjoyment of the train. Intellidrive decoders are at the peak of technology and guarantee you optimal handling characteristics.

In our extensive program you will find a suitable decoder for your locomotive. The pin allocation of the MTC and PluX interfaces are found on page 71 of this catalogue.

Uhlenbrock digital decoders can be used with all manufacturers' DCC centers including all Märklin centers. The exception is the 75 000 decoder which is made specifically for Märklin.

In the DCC operation the decoders can be run with 14, 27, 28 or 128 speed steps. They can be set to long addresses, having an address range from 1 – 9999.

In the Motorola operation the decoders have an address range from 1 – 255, whereas with the Märklin centers 6020 and 6021 only 80 addresses are available.

The decoders are programmable with Motorola and DCC centers in all common programming modes.

The decoders control the locomotive motor with load regulation using a motor voltage modulated with a high frequency of 18.75kHz. This, results in extremely smooth engine running

and makes operation of bell armature motors possible. Minimum speed, maximum speed and starting brake delay are programmable. On some decoders the direction dependent light outputs are dimmable and so are the special function outputs. An adjustable shunting mode makes very fine speed control in the low-speed operating range possible. Ranking mode and start/stop brake inertia can be switched on and off with function keys.

For an automatic deceleration in signal sections, the Märklin brake section or the DCC compliant brake signal can be used, which for examples the Boosters Power 4, Power 7 and Power 8 generate.

All decoders with SUSI interface 4 way mini sockets allow the connection of sound modules and LISSY mini transmitter.

All H0 decoders can be used on analogue DC or AC systems. The DCC data format used conforms to the NMRA DCC standard and is compatible with all NMRA compliant DCC systems.

Address, driving direction and speed are permanently stored in the digital operations. All decoders can be programmed once installed.

Uhlenbrock decoders have updatable Flash Memory. They are protected from overheating and the multi-protocol decoders also have short circuit protection.

The latest chip technology provides for a very low heating factor and for trouble-free running even with short power interruptions such as dirty tracks and on turnouts.



-Digital decoders for N, TT, H0e and small H0 Locos

Our decoder 73400, and connecting cables and 73 410 and the 6-way NEM 651 connector, are suitable for the smallest locomotives.

They are characterised by high efficiency and a small size. With the integrated protection mechanisms these decoders are robust in spite of their small size.

The standard decoder for small rail gauges is the 73 100 series. Additional functions can also be available. A variant with the new PluX-12 interface is also available. This can be used to modify Tillig locomotives, for example.



3 410 with 6 way NEM 651 plug



The 73 410 in a Fleischmann N V 200

Suited for						
Gauge	N-TT-H0e-H0m	N-TT-H0e-H0m	N-TT-H0e-H0m	N-TT-H0e-H0m	N-TT-H0e-H0m	N-TT-H0e-H0m
Data Format	DCC/Mot.	DCC/Mot.	DCC/Mot.	DCC/Mot.	DCC/Mot.	DCC/Mot.
DC operation	yes	yes	yes	yes	yes	Yes
Connection	75mm cable	6 way plug	PluX-12	75mm cable	6 way plug	Next18
Outputs						
Constant current	0.7A	0.7A	0.7A	0.5A	0.5A	0.75A
Motor peak current	1.5A	1.5A	1.5A	1.0A	1.0A	1.0A
Light & Special functions	0.4A	0.4A	0.4A	0.25A	0.25A	0.4A ⁴⁾
Dimmable light outputs	yes	yes	yes	yes	yes	Yes
Additional function outputs	2	no	2	no	no	6
Time controlled function outputs	no	no	no	no	no	no
Function Mapping	no	no	no	no	no	yes
SUSI Sound Interface	Solder pads ¹⁾	Solder pads ¹⁾	Solder pads ¹⁾	Solder pads ¹⁾	Solder pads ¹⁾	On Next18 plug
LISSY Outputs	Solder pads ¹⁾	Solder pads ¹⁾	Solder pads ¹⁾	Solder pads ¹⁾	Solder pads ¹⁾	On Next18 plug
Characteristics						
Addresses DCC/Mot	9999/255 ²⁾	9999/255 ²⁾	9999/255 ²⁾	9999/255 ²⁾	9999/255 ²⁾	9999/255 ²⁾
Speed steps DCC/Mot	128/14	128/14	128/14	128/14	128/14	128/14
Load regulation	yes	yes	yes	yes	yes	yes
Programmable motor characteristics	no	no	no	no	no	no
Shunting gear	yes	yes	yes	yes	yes	yes
Start/brake Inertia	yes	yes	yes	yes	yes	yes
Short circuit protection	yes	yes	yes	yes	yes	yes
Over temperature protection	yes	yes	yes	yes	yes	yes
Updatable	yes	yes	yes	yes	yes	yes
Error buffer	yes	yes	yes	yes	yes	yes
Dimensions	14.7x8.6x2.4	14.7x8.6x3.9 ³⁾	14.7x8.6x3.2 ³⁾	10.8x7.5x2.4	12.5x7.5x2.8 ³⁾	14.7 x 8.6 x 2.9
Part Number	73100	73110	73140	73400	73410	73230
Notes	Solder pads for sound modules and LISSY mini receiver.	Solder pads for sound modules and LISSY mini receiver.	Solder pads for sound modules and LISSY mini receiver.	Super small. With solder pads for sound modules and LISSY mini receiver.	Super small. With solder pads for sound modules and LISSY mini receiver.	New Next18 decoder

¹⁾ SUSI and LISSY can be used

²⁾ With the Märklin centers 6020 and 6021 only 80 addresses can be used










³⁾ Size without connector

⁴⁾ Aux 1 and Aux 2, Aux 3-6 logical outputs

IntelliDrive - Digital decoders for H0-IIm Locomotives

We offer a suitable decoder for all applications. Irrespective of the interface that is used, inexpensive basic decoders are also in the range, like decoders which offer all options of a digital system. Many have SUSI Interface to which a sound module can be connected.

Many Märklin locomotives are fitted with a universal motor which can be recognised by the field coil. These motors can not be driven by a normal decoder without motor conversion. We have two decoders in the range (red columns) which can drive these motors without conversion. The 76 200 is even equipped with load regulation.

Suitable for									
Track gauge	Ho	Ho	Ho	N-TT-Hoe-Hom	N-TT-Hoe-Hom	TT-Hoe-Hom-Ho	N-TT-Hoe-Hom	Ho-o-I-Ilm	o-I-II
Data format	Mot.	DCC/Mot.	DCC/Mot	DCC/Mot.	DCC/Mot.	DCC/Mot.	DCC/Mot.	DCC/Mot.	DCC/Mot.
Motor type	Märklin Universal	Märklin Universal	DC Bell armature	DC Bell armature	DC Bell armature	DC Bell armature	DC Bell armature	DC Bell armature	DC/Bell
Analogue Operation	~	=/~	=/~	=/~	=/~	=/~	=/~	=/~	=/~
Connection	cable	cable	21 MTC	8 way plug	8way plug	PluX 16	PluX 22	Cable	Screw terminal
Outputs									
Motor power load	1.2A	1.2A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	3.0A
Motor Peak current	1.0A	2.0A	1.0A	1.0A	2.0A	2.0A	2.0A	3.0A	50A
Light and Special functions	0.95A	1.0A	0.65A	0.65A	0.4A	0.25A	0.4A	0.4A	1.0A
Dimmable lighting	no	yes	yes	yes	yes	yes	yes	Yes	yes
Aux. special function outputs	no	2	2	no	2	2	7	5	8
Time controlled special function	no	no	no	no	from Ver. 24	no	n.a.	Yes	yes
Function mapping	no	yes	no	no	yes	no	yes	Yes	yes
SUSI connector	no	yes ¹⁾	yes ¹⁾	no	yes	Via Socket ³⁾	Via Socket ³⁾	Yes	yes
LISSY output	no	yes ¹⁾	yes ¹⁾	no	yes	Via Socket ³⁾	Via Socket ³⁾	Yes	yes
Characteristics									
Addresses Märklin/Uhlenbrock	-/255 ²⁾	9999/80 ²⁾	9999/255 ²⁾	9999/255 ²⁾	9999/255 ²⁾	9999/255 ²⁾	9999/255 ²⁾	9999/255	9999/255
Speed steps Motorola/DCC	-/14	128/14	128/14	128/14	128/14	128/14	128/14	128/14	128/14
Load regulation	no	yes	yes	yes	yes	yes	yes	Yes	yes
Programmable motor character.	no	yes	no	no	yes	no	yes	yes	yes
Shunting mode	no	yes	yes	yes	yes	yes	yes	yes	yes
Start/stop inertia	no	yes	yes	yes	yes	no	yes	yes	yes
Switch off train end light	no	no	yes	no	yes	no	yes	no	no
RailCom	no	no	no	no	yes	no	yes	no	no
Motor frequency	normal	high	high	high	high	high	high	high	high
Short circuit protection	no	yes	yes	yes	yes	yes	yes	yes	yes
Updatable Flash memory	yes	yes	yes	yes	yes	yes	yes	yes	yes
Error buffer	yes	yes	yes	yes	yes	yes	yes	no	yes
Dimensions in mm.	35x19x5	33.5x19x5.5	20.5x15.4x5	19x16x5	22x12.5x5	20x11x3.8 ³⁾	22x15x3.8 ³⁾	24x20x5.4	68.5x28 x12
Part Number	75 000	76 200	75 330	76 320	76 425	76 150	76 560	77 100	77 500
Note	Reversing switch and Decoder for the original Märklin motor with field coil.	Decoder with load regulation for the original Märklin motor with field coil.	Low priced. with load regulation. For locos with 21-pin MTC interface	Low priced. With load control.	Small Ho decoder.	Fits on the Pick-up Switch 71 750.		Universal Decoder for old HO locos with higher current use, gauge 0 small gauge 1 and small IIm vehicles	Large train decoder with 8 special functions and built-in shuttle train control.

1) SUSI and LISSY can be used

2) With the Märklin centers 6020 and 6021 only 80 addresses can be used

3) Size without connector

Märklin BR 012 with a 76 200 decoder



IntelliDrive - Energy buffer

For all H0 decoders

The IntelliDrive-Energy Buffer bridges the power interruptions caused by dirty tracks and long turnout frogs. Now you will no longer have jerky running on dirty tracks or when driving across turnout routes. The sound will not have breaks anymore either.

Because of its in-built intelligence the Energy Buffer can be used together with all types of H0 decoders that provide connections to the decoder earth and the +20 Volt rail, post the decoder rectifier.

Programming of the locomotive decoder is problem-free with a built in Energy Buffer.

The Energy Buffer has a charging switch that is controlled by a microprocessor. That way the boosters will not get overloaded even when many Energy Buffers are operating. All parameters configurable by CV programming.

Part No. 71 800 Energy Buffer H0
18.5 x 12.5 x 9.7 mm



Pickup Switch

For Railcars with two Pickups

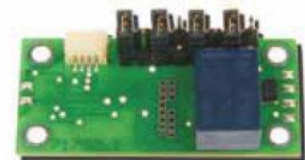
With rail cars that have two pickups it is essential to always take power from the front pickup otherwise the correct stopping at a red signal will not happen.

The Pickup Switch 76 150 ensures that the power always comes from the front pickup, as seen from the travel direction.

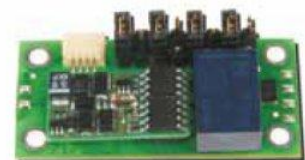
The Pickup Switch is intended for space saving installations in vehicles with solder connections for front and rear pickups, motor, front and rear light and f1, f2.

Decoder 76 150 is used and can be simply fitted onto the pickup switch.

Part No. 71 750 Pickup Switch for
decoder 761 50



Pickup Switch



Pickup Switch with
Decoder 76 150

IntelliDrive -Digital decoders for Locos of Gauge 0, I and IIm

The small strength package

The compact dimensions and high efficiency are its strength. The technical data is in the table on the previous page. Additional features:

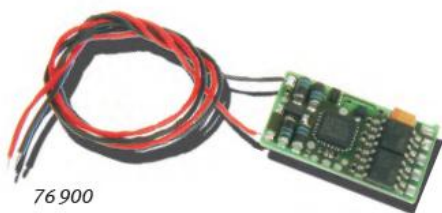
- All Special functions can also be switched with an LGB control device.
- It is also possible to connect older LGB sound modules by the output of the LGB pulse train from output A1

- Shuttle operation and intermediate stop or INDUSI using a locomotive reed contact and track magnets
- Adjustable: travel direction or time limited switching of outputs A1 to A8

Part No. 77 500 Large Gauge Decoder



IntelliDrive Function – Function decoders



76 900



73 800

Uhlenbrock function decoders have 4 function outputs for Motorola and DCC. They support the Function Mapping of 32000 functions.

All outputs can be direction of travel dependent, flash or dimmed. Flash frequency and level of Dimming are adjustable

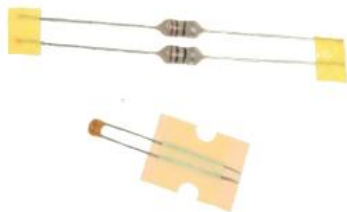
Part No. 73 800 Mini-Function decoder

Part No. 76 900 Function decoder

Intellidrive Function decoder	Function Mini	Function H0
Suitable for		
Data format	DCC/Mot.	DCC/Mot.
Track gauge	N-TT-Hoe H0m-HO	H0-IIm
Characteristics		
Maximum Current load	0.6A	1.2A
Function outputs	4	4
Blink generator	1	1
Addresses DCC/Märklin	9999/80	9999/80
Analog operation	=	=/~
Short circuit protection	yes	yes
Connection	cable	Cable/solder pads
Dimensions in mm	10.8 x 7.5 x 2.4	22 x 12.5 x 5
Part Number	73 900	76 900

Motor Suppressor Kit

To remove motor EMI in digital locomotives



In principle all electric motors cause interference, which can change the data communication in such a way that normal operation is no longer possible.

With new locomotives the motor is screened as a rule. Older makes must be retooled with the appropriate electronics construction units.

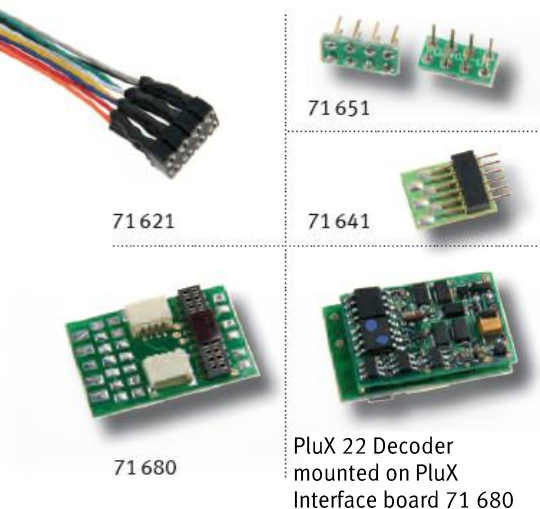
The engine screening kit consists of one capacitor, 2 induction coils and fitting instructions and can be used with all H0 locomotives.

Part No. 71 500 Motor Suppressor kit



Digital-Schnittstelle

For rapid Decoder change



A digital interface turns the digitization of locomotives into child's play.

The sockets are installed into the vehicles. The plugs are soldered on to the module, e.g. a digital decoder or a reversing switch. So later, a repair or the conversion to digital is simple and is literally done in seconds. Our interface plugs and sockets conform to the NEM 652 standard.

For the retrofit of PluX-Decoders the new interface board 71 680 is available. It offers a SUSI socket as well as a PluX-22 socket and pads for soldering the connecting wires.

Part No. 71 641	5 pieces 6-pin plug
Part No. 71 621	5 pieces 8-pin Socket with 175 mm Cables
Part No. 71 651	5 pieces 8-pin plug
Part No. 71 680	PluX-22 interface board

Small Lexikon for Digital Decoders

The Pin assignment of the various Decoder Connectors

Pin	NEM 651 6 way	NEM 652 8 way	MTC 21	Plux 8, 16, 22 (Description of the interface is on page 60)
1	Motor right	Motor right	Hall Sensor 1	General purpose input / output
2	Motor left	Rear light	Hall Sensor 2	Special function output 3
3	Right wheel	Auxiliary or vacant	Hall Sensor 3	SUSI Clock
4	Left wheel	Left wheel	Pickup switch Control	SUSI Data Line
5	Front light	Motor left	SUSI Clock	Decoder GND (behind rectifier)
6	Rear light	Front light	SUSI Data Line	20V (behind rectifier)
7		20V (after rectifier)	Rear light	Front light
8		2 rail:Right Wheel/ 3 rail:Pickup	Front light	Motor Output 1
9			Loudspeaker Terminal A	20V (behind rectifier)
10			Loudspeaker Terminal B	Motor Output 2
11			Not used – Coding	Not used – Coding
12			Controller internal VCC	2 rail: right rail/ 3 rail: pickup
13			Special function output 5	Rear light
14			Special function output 4	2 rail: Left rail/ 3 rail: rails
15			Special function output 3	Loudspeaker Terminal A
16			20V (behind rectifier)	Special function output 1
17			Motor Output 3	Loudspeaker Terminal B
18			Motor Output 2	Special function output 2
19			Motor Output 1	Special function output 4
20			Controller GND (behind rectifier)	Special function output 5
21			2 rail: Left rail/ 3 rail: rails	Special function output 6
22			2 rail: right rail/ 3 rail: pickup	Special function output 7

Analogue Operation

All Uhlenbrock decoders are able to automatically recognize a DC or AC voltage and are therefore able to operate on analog layouts as well. The different vehicles cannot be addressed separately. Functions like e.g. light, smoke, sound or telex coupling cannot be controlled from the control panel.

Acceleration/Braking Delay

On take off and/or during the brake application the inertia control can easily be adjusted. That means that the vehicle accelerates or brakes slowly. The behaviour of the model then simulates real life moving of large masses of trains.

Data format

The data format is the language which the decoder understands.

Märklin uses the »language« Motorola and MFX, whereas in 2-Rail systems (Roco, Fleischmann, Trix, Rivarossi, Arnold, Lenz) the DCC Format is prevalent. Additionally the Data formats FMZ and Selectrix should be mentioned - they were developed and used by Fleischmann and Trix respectively earlier on.

If a decoder understands at least two data formats, it is known as a Multi-protocol decoder.

Digital decoder

Digital decoders are electronic building blocks that are installed inside the vehicles, which receive and decode the digital signal that is sent by a digital control centre via the rail, and then carry out the command. So that you find the best decoder for your model train, our decoders come in various styles and sizes.

Vehicle decoders: are built into locomotives. They control the motor, and in some cases, other functions as well, e.g. light or sound. Function decoders control special functions such as light, sound or smoke.

The selection of a decoder depends on the center used (Motorola or DCC), the motor type used (AC or DC motor) and the current required.

Function decoders: in contrast to vehicle decoders, do not control the movement of the vehicle. They control auxiliary functions like horn, whistle, light, smoke and electrical couplings. The outputs of function decoders can be direction of travel dependant, dimmable or flashing. Newer function decoders support the Function Mapping of 32000 functions.

Stationary decoders are switch or solenoid decoders with which turnouts, crossing barriers or signals can be controlled (see page 32). The selection of a decoder depends on the operating mode used (2- or 3-rail), which center is used (Motorola or DCC), the motor type used (AC or DC motor) and the necessary current.

Speed Steps

The more speed steps a decoder has the finer the speed can be controlled. Märklin Motorola (old and new) always works with 14 speed steps. DCC decoders can be adjusted to 14, 27, 28 or 128 speed steps.

Function Mapping

With older decoders the special function keys are permanently assigned to certain outputs. With the help of Function Mapping individual allocation can be made.

Short Circuit Protection

All Uhlenbrock decoders are protected from overheating and with the multi-protocol decoders all outputs are short-circuit protected.

Load Regulation

Decoders with load control retain locomotives at a constant speed on long runs, independent of upward gradients and track curves or the number of attached railroad cars.

Light and Special function outputs

The light and special function outputs of a decoder are switched by the function keys on the digital center. In DCC Systems up to 32 000 Special functions per locomotive are possible.

Each output may be loaded up to the stated value. However, ensure that the entire load of the special function outputs does not exceed the maximum load of the decoder.

LISSY Output

Decoders with LISSY output produce the signal for the individual locomotive control system LISSY. The LISSY mini transmitter module 68 400 can be directly connected to such decoders.

Motor Current/Track Gauge

The indication of the track gauge is only a general indication. Decoders are not for a gauge but for a particular current load. Small gauge usually also means lower power consumption. Decoders indicated for a certain gauge can also be used in other gauges if the locomotive motor does not exceed the maximum permissible current of the decoder.

Motor type

Universal motors are found in locomotives from Märklin or Hag in the 3-Rail AC systems. The motors possess drum or disk commutators. A change of the motor technology is not necessary with the use of our decoders, because these work with the original field coil.

Direct current motors are distinguished by magnets which produce a constant magnetic field independent of the operating voltage. By a change of the two (DC voltage) potentials in the rails a change of the rotation direction is produced. One finds this type of motor in nearly all 2-Rail systems.

Bell armature motors strictly speaking are DC motors. To optimize performance the iron core of the armature windings was replaced by plastic. Therefore it is also called an "ironless" bell armature engine.

For control of this type of motor, a higher frequency is needed. It therefore runs more quietly and has a longer life.

Programmable Motor Characteristics

Advanced Model railroaders can adapt the locomotive speed control by individually adjusting the motor characteristic as needed.

Shunting Mode

The so-called shunting gear of the locomotive is activated at will by the function key and causes a halving of the speed in the entire control range. Sensitive shunting control is thereby ensured.

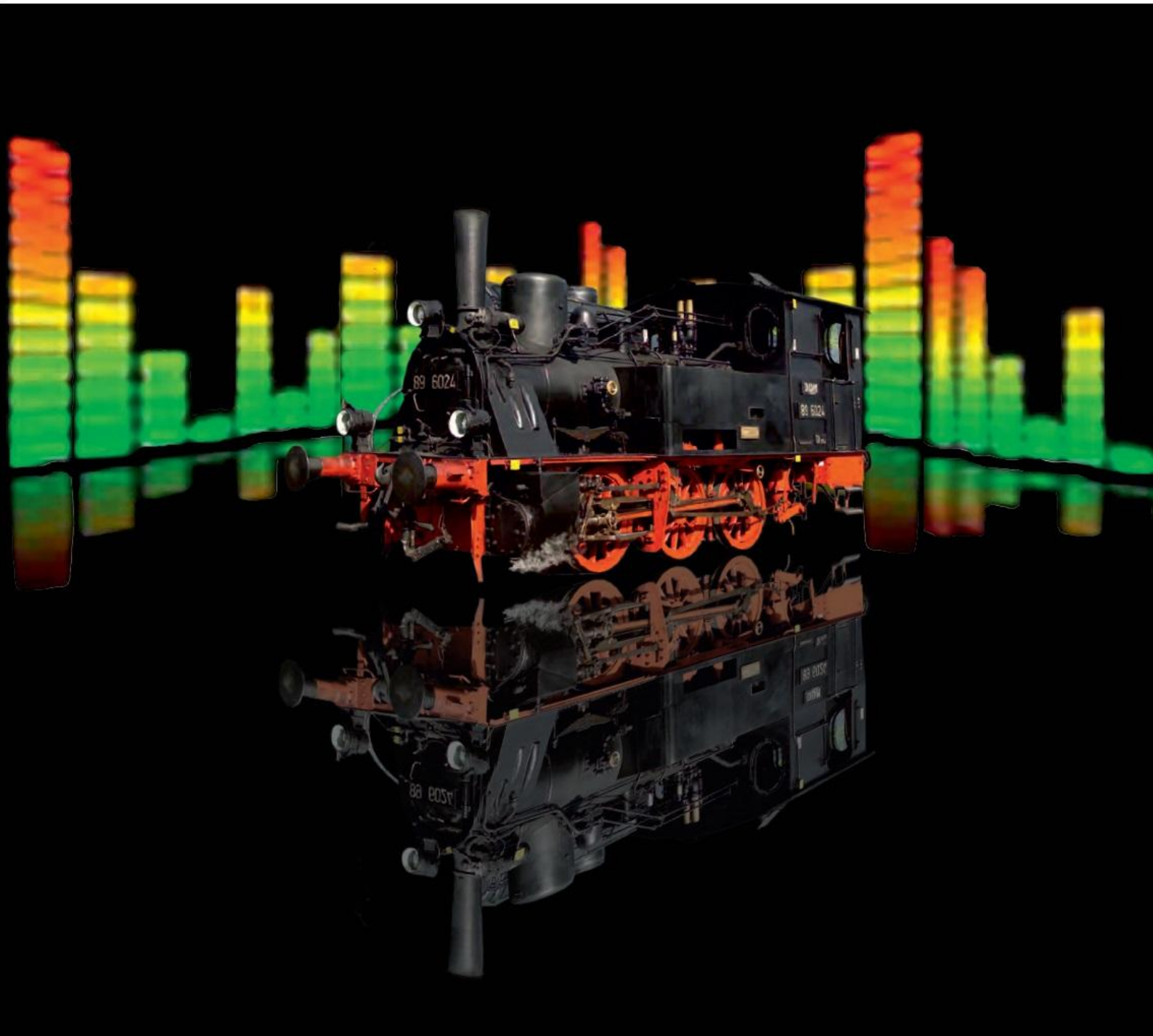
SUSI Interface

Sound modules or modules for auxiliary functions can be connected to a digital decoder with the SUSI interface. The IntelliSound modules can be attached here.

Locomotive Sound



IntelliSound



IntelliSound – how real the train sounds!

IntelliSound is the digital Sound System from Uhlenbrock/DIETZ.



Voith Maxima with PluX22 Decoder
Sound module 32 300 and
Loudspeaker 31 149

IntelliSound is available as digital decoder with integrated Sound module and as Sound module for connecting to a SUSI interface of digital decoders. The separation of decoder and sound into two very small units and in addition the extremely efficient small loudspeaker with metal diaphragm make IntelliSound also suitable in cramped space conditions.

The component technology now allows a digital amplifier with higher output in the smallest space. For optimal tone reproduction our range of loudspeakers should be used. Due to the higher output capability the volume must be reduced through CV programming when the smaller speakers are used.

The noises of the sound module are combined from three independent sound channels. An intelligent sound control gives a rich driving experience, just like a real train, by playing the separately stored original sounds according to the different driving conditions.

Depending upon the situation the correct sounds are played automatically. e.g. on steam locomotives, coal shoveling and while stationary the hissing of steam cylinders and the injector can be heard. When starting, enormous steam chuffs are audible, in the no-load running, the noise of the free running connecting rods is heard. If the locomotive is braked then naturally the brake squeal is heard. When switching the locomotive on and off the start up sounds are played e.g. Railcars with gear changes or E-locomotives with switching steps to sound more realistic.

When switching the locomotive on and off the starting of the engine and/or running out of the engine is heard, for example, with a diesel locomotive.

With each module three further sounds for dynamic driving are switchable. Depending upon vehicle type it could be a whistle, a bell, a horn or a pantograph lifter with an E-Loco.

With the new IntelliSound 4 we fulfil the wish that all sounds can have their volume individually adjusted. The loudness of the conductor's whistle or station announcements can be matched to the desired locomotive sound.

Except for the IntelliSound 3 mini decoder, all modules and decoders have two sound dependant special function outputs which open up new dimensions:

- The engineer shovels then the firebox flickers
- The chuffs work harder then the smoke unit develops more smoke
- The Elok drives over the layout, the pantograph sparks
- The freight train brakes hard, the brakes linings begin to glow

The modules and decoders provide a connection for a Hall sensor, which is useful for wheel synchronization of cylinder chuffs or wheel squeaking in curves.

- 320 Second Sound buffer
- Own sounds can be added
- Sound dependant special function outputs
- 4 Channels can play simultaneously
- Function mapping to F28
- Hall sensor for wheel synchronization of puffs
- With SUSI interface
- Connection for storage capacitor

New in IntelliSound 4 is the capability to play the speed dependent sounds of locomotives on analogue layouts. Also the start-up and switch off sounds are played for the vehicles.

Are you becoming a Sound engineer?

One of the customer pleasing improvements in IntelliSound 4 is the possibility of adding one's own sounds.

Use your own recordings to create your personal locomotive sound, fulfilling all your wishes for a perfect locomotive noise. To assist you is our free PC software »IntelliSound-Creator« with which you can add you desired sound to steam locomotives, diesels, E-locomotives and rail cars and all locomotives. With this software you cannot configure the running sounds.

You can also create all of the other sound events such as random sounds, signal horn and whistle and Station announcements with IntelliSound 4.



Note

When ordering IntelliSound Modules or Decoders with a particular Sound please add the name of the desired Sound to the part number.

Page 78 has a list of currently available Sounds.

If you are looking for sound for a special locomotive, a tram, a tractor or turntable, all you need to do is look at the Sound library on our website www.uhlenbrock.de. There you will find the latest Sound files at your disposal, to test and download at no cost.



Suitable for								
Data Format	Decoder dependant	Decoder dependant	DCC/Mot.	DCC/Mot.	DCC/Mot.	DCC/Mot.	DCC/Mot.	DCC/Mot.
Analogue Operation			=	=	=/~	=	=/~	=/~
Scale	N-IIm	N-IIm	N-TT-H0e-H0m	N-TT-H0e-H0m	TT-H0e-H0m-H0	N-TT-H0e-H0m	TT-H0e-H0m-H0	H0
Motor Type			DC	DC	DC	DC	DC	DC
Connection	SUSI	SUSI	Cable	NEM561 (6 way)	NEM562 (8 way)	PluX 16	NEM562 (8 way)	PluX 22
Outputs								
Continuous Maximum Load			0.7A	0.7A	0.7A	0.7A	1.2A	1.2A
Peak Motor current			1.5A	1.5A	1.5A	1.5A	2.0A	2.0A
Light and Special Functions			0.4A	0.4A	0.4A	0.4A	0.4A	0.4A
Dimmable Light Outputs			yes	yes	yes	yes	yes	yes
Special Function Outputs			2	2	2	2	7	7
Sound dependant Special Function Outputs	2	2	-	-	-	-	2	2
SUSI Sound Interface	Socket	Socket	plug	plug	plug	PluX	plug	PluX
LISSY Output			no	no	yes	no	yes	yes
Sound Characteristics								
Sound Buffer	320s	320s	320s	320s	320s	320s	320s	320s
Simultaneously playable channels	4	4	4	4	4	4	4	4
Function Mapping	yes	Yes	yes	yes	yes	yes	yes	yes
Loading of own sounds	4	4	4	4	4	4	4	4
Analogue Operation	no	Yes	Without Sound	Without Sound	Without Sound	Without Sound	yes	yes
Decoder Characteristics								
Addresses DCC/Motorola			9999/255 ¹⁾	9999/255 ¹⁾	9999/255 ¹⁾	9999/255 ¹⁾	9999/255 ¹⁾	9999/255 ¹⁾
Speed Steps DCC/Motorola			128/14	128/14	128/14	128/14	128/14	128/14
Function Mapping			yes	yes	yes	yes	yes	yes
Load Regulation			yes	yes	yes	yes	yes	yes
Programmable Motor characteristics			no	no	no	no	yes	yes
Shunting Mode			yes	yes	yes	yes	yes	yes
Start/brake Inertia			yes	yes	yes	yes	yes	yes
RailCom			no	no	no	no	yes	yes
Short Circuit Protection			yes	yes	yes	yes	yes	yes
Updatable Flash Memory			yes	yes	yes	yes	yes	yes
Dimensions in mm	17.8 x 11.0 x 4.0	18.4 x 11.5 x 3.3	25 x 11 x 4.3	25 x 11 x 4.3	25 x 11 x 4.3	25 x 11 x 4.4 ¹⁾	30 x 15 x 4.4	30 x 15 x 4.0 ¹⁾
Part Number empty/with Sound	32300/32304	32 500/32 504	33100/33104	33110/33114	33120/33124	33150/33154	35320/35324	36360/36364
Notes	IntelliSound 3 Module	IntelliSound 4 Module	IntelliSound 3 Module	IntelliSound 3 Module	IntelliSound 3 Module	IntelliSound 3 Module	IntelliSound 4 Module	IntelliSound 4 Module

¹⁾ Dimensions without connector pins

²⁾ With the Märklin centers 6020 and 6021 only 80 addresses can be used

The right way to satisfying Sound

Intellisound 3-Modules deliver, with the right loudspeakers, a sound capability and quality, which has no equal.

The selection and especially the installation of the loudspeakers are the deciding factors for the sound quality of the locomotive.

In principle, the larger the loudspeaker the better. Larger membranes reproduce low frequencies better.

A stable installation is important. Ensure that the loudspeaker is firmly mounted in the locomotive and that it can radiate through an opening.

They must not be locked up in the housing as then you cannot hear anything from the outside.

The loudspeaker can be mounted to face downwards for example, through the opening in the bogies. You can also use the ventilator openings of the vehicle. Small holes that are barely visible can be drilled in the coal insert of a tender locomotive.

A further criterion for a good sound is the resonance area behind the loudspeaker membrane. If you enclose a loudspeaker model with a resonance body it must be stuck together with a hermetically sealed resonance body.

Otherwise you could have an acoustic short-circuit which leads to poor sound. If you wish to use a suitable resonator in a locomotive (e.g. the boiler of a steam engine), then the sound resonator should be attached in such a way that the back is hermetically connected with the edge of the resonator.

You should only use a loudspeaker without resonators if the locomotive has provision for fitting a loudspeaker, ex factory, or you provide your own resonance body.

Despite all the tips:

Only when the conversion is completed will you know if it was a success.

IntelliSound - Loudspeaker



Example: Decoder 76 425, Sound module 32 300 and loudspeaker 31 110 installed in a PIKO BR94

For vehicles in which the loudspeakers with a resonance body has insufficient space, we offer flat loudspeakers without resonance bodies. The 23 and/or 28 mm loudspeakers are meant for vehicles which are equipped with a corresponding loudspeaker recess.

In the H0 range we offer a variety of loudspeakers with resonance bodies. When selecting a loudspeaker it means: the larger the loudspeaker the fuller the sound.

For gauges 0 to 11m we have three larger loudspeakers in our selection.

From the 4 Ohm loudspeaker 31 150 two loudspeakers must be connected in series.

										
Suited for	N-TT	N-H0	H0-O	H0-O	N-TT	H0	H0	O-11m	O-11m	O-11m
Scale	N-TT	N-H0	H0-O	H0-O	N-TT	H0	H0	O-11m	O-11m	O-11m
Dimension in mm	16x12x9	20x14x10	40x20x12	28x28x12	13.5x19.5x4	28x5.4	23x3.6	34x34x15.5	46x46x22	57x57x39
Power	0.35W	0.78	1.5W	2W	1W	0.5W	0.4W	3W	3W	10W
Impedance	8Ω	8Ω	8Ω	8Ω	8Ω	8Ω	8Ω	4Ω	8Ω	8Ω
Resonance shell	X	X	X	X	-	-	-	-	-	-
Membrane shape	Rectangle	Rectangle	Oval	Round	Oval	Round	Round	Round	Round	Round
Part Number	31 101	31 102	31 130	31 140	31 180	31 182	31 183	31 150	31 160	31 170

IntelliSound - Loading Adapter

For IntelliSound Modules and Decoders with SUSI Interface

- Loading of sound
- Tests all Sounds and functions
- Running simulation
- Program CV's
- With SUSI interface
- With USB connection

With the sound loading adapter, sounds can be loaded from the PC into the IntelliSound modules. All functions can be tested and with a driving simulation the sound can be heard. In addition, all CV's of the sound modules can be programmed.

The sound loading adapter is connected directly, or with a cable, to the Com port of a PC's (9-pol. Sub D socket) and to 16V~ transformer. The sound module is connected to the strip socket of the adapter.

With the SUSI-SoundManager up to four custom Sounds can be added to the sound data in the Intelli-Sound 3 module. Each Sound is in three parts, the start to begin the

Sound, the Sound loop, (that is repeated many times) and the end which finishes the sound. All three parts can be loaded with the SUSI-Sound manager from one's own samples. For the configuration of the sounds in wav format, the Windows Audio Recorder or other Sound Programs can be used.

The program for the adapter and 16 different sounds of steam, Diesel and Electric locomotives, a tram (streetcar) and tractor are on the provided CD.

Contents:

Sound loading adapter, the program CD for Windows, operating instructions, sound loading cable for IntelliSound Decoder and SUSI/21 way adapters for IntelliSound and decoder with 21 way interface.

Recommended Operating System:

Microsoft Windows XP, Windows Vista, Windows 7 or Windows 8.



- Part No. 31 010 Sound Load adapter
- Part No. 31 020 Sound Load cable 70 mm for Sound decoder
- Part No. 31 030 SUSI/21-way Adapter for IntelliSound Decoder with 21-way Interface



SUSI – The universal Interface

SUSI - Serial User Standard Interface - is the new interface concept for the connection of auxiliary components to digital decoders, and is supported by several manufacturers. Locomotives, which have decoders with SUSI, can be easily fitted problem-free with sound and further special functions.

The separation of locomotive decoder and sound module can make it easier to fit into the (usually) small space in a locomotive.

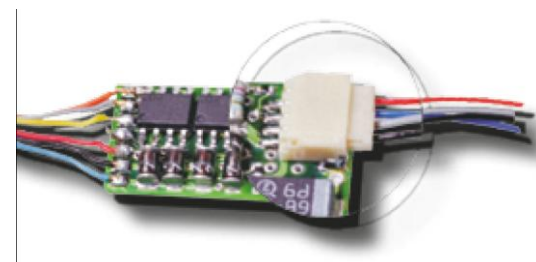
Furthermore a locomotive can be fitted with sound at a later time, without having to change the locomotive decoder.

Our Multi-protocol decoders are fitted with a SUSI interface and are therefore prepared for the connection of the new IntelliSound modules.

SUSI Distributor Cable

A SUSI distributor cable is available with which 2 sound modules can be connected to one Decoder. The distributor can be used also as an extension cable.

- Part No. 71 100 SUSI Distributer
70mm, 2 Plug/1
Socket



SUSI Interface in action: Piko Talent 2

with decoder 76425, Sound module 32 300 and Loudspeaker 31 180





IntelliSound - Sound Library ... also on www.uhlenbrock.de

Identifier	Sound	Land
Steam Locomotives		
DL-001	Steam Loco BR 01	DE
DL-005	Steam Loco BR 05	DE
DL-011	Steam Loco BR 01.10 coal fired	DE
DL-012	Steam Loco BR 01.10 oil fired	DE
DL-023	Steam Loco BR 23	DE
DL-024	Steam Loco BR 24	EU
DL-038	Steam Loco BR 38	EU
DL-041	Steam Loco BR 41	DE
DL-041-OEL	Steam Loco BR 41 oil fired	DE
DL-042	Steam Loco BR 42	DE
DL-043	Steam Loco BR 44 oil fired	DE
DL-044	Steam Loco BR 44 coal fired	DE
DL-050	Steam Loco BR 50	EU
DL-052	Steam Loco BR 52	DE
DL-052-KON	Condenser tender Steam Loco BR 52	DE
DL-055	Steam Loco BR 55	DE
DL-057	Steam Loco BR 57	DE
DL-058	Steam Loco BR 58	DE
DL-064	Steam Loco BR 64	EU
DL-070	Steam Loco BR 70	DE
DL-075	Steam Loco BR 75	DE
DL-078	Steam Loco BR 78	DE
DL-080	Steam Loco BR 80	DE
DL-085	Steam Loco BR 85	DE
DL-086	Steam Loco BR 86	EU
DL-089-T3	T3 Steam Loco BR 89 / T3	DE
DL-091	Steam Loco BR 91	DE
DL-094	Steam Loco BR 94	DE
DL-096	Steam Loco BR 96	DE
DL-018201	Steam Loco 18201	DE
DL-098.7	Steam Loco BR 98.7/BB II bay.. »Zuckersusi«	DE
DL-Challenger	Steam Loco 4-6-6-4 Challenger	US
DL-Climax	Small train Steam Loco	US
DL-EB33	Steam Loco Tigerli SBB	CH
DL-E-DK	Steam Loco type E (Danish Railways)	DK
DL-ELNA-6	Steam Loco ELNA TYP 6	DE/FR
DL-F-SE	Steam Loco type F (Swedish Railways)	SE
DL-Heisler	Small train Steam Loco	US
DL-Mikado F	French Steam Loco 1D1	F
DL-Mikado-US	Steam Loco Tigerli SBB	US
DL-S36	Steam Loco bay. S 3/6	DE
DL-Shay	Small train Steam Loco	US
DL-Shay-Öl	Small train Steam Loco oil fired Shay	US
DL-USA-Holz	Holz Steam Loco holzgefeuert	US
DL-UINTAH	US Mallet Steam Loco Uintah Railway	US
DL-UNI1	Steam Loco, large, european	EU
DL-UNI2	Steam Loco, small, european	EU
DL-USA-wood	Steam Loco "american"	US
DL-USA-oil	Steam Loco wood fired	US
DL-USA	Steam Loco oil fired	US
DL-Wn12	Steam Loco 12 of the "Härsfeldbahn"	DE
99-6001	Steam Loco 99 6001 of the HSB	DE
99-7243	Steam Loco 99 72. of the HSB	DE
99-ELIAS	Steam Loco "Elias"	DE
99-G45	Steam Loco 107/108 RhB Type G4/5	CH
99-HEIDI	Narrow gauge Steam Loco	CH
99-HG23	Narrow gauge Steam Loco	DE
99-IVK	Narrow Gauge Steam Loco IVK	DE
99-Mh3	Pinzgauer Local train	A
99-MH53	Narrow Gauge Steam Loco Ruegen	DE
99-Spreewald	Steam Loco "Spreewald"	DE
99-U43	Steam Loco Zill Valley Railway	AT
99-UNI	Narrow Gauge Steam Loco, universal	EU
99-Xrot	Steam snow plough RhB	CH
99-U43	Steam Loco Zill Valley Railway	A
99-Xrot	Steam snow plough RhB	CH
E-Locos		
EL-101	E-Loco 101	DE

Identifier	Sound	Land
EL-103	E-Loco103 / E03	DE
EL-110	E-Loco110 / E10	DE
EL-120	E-Loco 120	DE
EL-141	E-Loco141 / E41	DE
EL-143	E-Loco 143	DE
EL-150	E-Loco150 / E50	DE
EL-155	E-Loco 155	DE
EL-169	E-Loco 169 / E69	DE
EL-182-V1	E-Loco 182/Taurus	DE
EL-182-V2	E-Loco 182/Taurus	DE
EL-182-V3	E-Loco 182/Taurus	DE
EL-191	E-Loco 191 / E91	DE
EL-194	E-Loco 194 / E94	DE
EL-461	E-Loco Ge 4/6-I of the RhB	CH
EL-662	E-Loco Ge 6/6-II of the RhB	CH
EL-AE47	E-Loco Ae 4/7	CH
EL-AE66	E-Loco AE 6/6 of SBB	CH
EL-GE24	E-Loco 2/4	CH
EL-GE44-2	Rack rail E-Loco Ge 4/4-II	CH
EL-KROKO	E-Loco Ge 6/6-I Crocodile (RhB)	CH
EL-NEU	Modern E-Loco	EU
EL-RE425	E-Loco RE 425	CH
EL-Taurus	E-Loco BR 182 "Taurus"	DE
ETA-176	Limburger Cigar	DE
ETA-515	Akku Rail car ETA 515	DE
ET-ATW	Electro Rail car, historic	EU
ET-ICE	Electro Rail car ICE	DE
Zahnrad E-lok	Rack Rail E-Loco He 4/4-II	CH
ET-STW	Control Wagon	EU
Diesel Locos		
VL-0600DA-V1	Romania Diesel 0600DA KEG 2100	EU
VL-0600DA-V2	Romania Diesel 0600DA KEG 2100	EU
VL-110-HK	Diesel Loco V 100 / 110	DE
VL-120-TT	Diesel Loco 120 "Taigatrommel"	DE
VL-188	Diesel Loco V188	DE
VL-2091-V1	Diesel Loco 2091 ÖBB	AT/DE
VL-2091-V2	Diesel Loco 2091 ÖBB	AT/DE
VL-2095	Diesel Loco 2095 ÖBB	AT
VL-210	Diesel Loco 210 DB	DE
VL-212	Diesel Loco 212 / V 100 DB	DE
VL-218	Diesel Loco 218 / V 160	DE
VL-218-V2	Diesel Loco 218 / V 160	DE
VL-220	Diesel Loco 220 / V 200 DB	DE/CH
VL-220-V2	Diesel Loco 220 / V 200 DB	DE
VL-232	Diesel Loco 232 / Ludmilla BR 132 DR	EU
VL-232 Piko	Diesel Loco 130/132 / Ludmilla DR (230/232 DB AG)	EU
VL-236	Diesel Loco 236 / V 36	DE
VL-251	Narrow Gauge Diesel BR261/ V51	DE
VL-260	Diesel Loco 260 / V60	DE
VL-265	MAK Diesel Loco V 65	DE
VL-270	Diesel Loco V 270 / V 20	DE
VL-290	Diesel Loco V 290 / V 90	DE
VL-320-1M	Diesel Loco 232 / V 320 DB	DE
VL-320-2M	Diesel Loco 232 / V 320 DB (2 Motors)	DE
VL-ALCO-535WP	ALCO Diesel Loco 535	US
VL-ALCO-GREECE	ALCO Diesel Loco	GR
VL-Am44	V 200 SBB	CH
VL-AMTRAK	American Rail car	US
VL-BlueTiger	Diesel Loco "Blue Tiger"	DE
VL-D14	General D 75 BB-SE	AT
VL-Dash9	General Electric Dash 9	US
VL-DR-UNI	Diesel Loco V180 (118) DR	DE
VL-EMD-GP40	EMD/GM GP 40-2	US
VL-F-LKM	Field work Diesel Loco	EU
VL-F-STD	Field work Diesel Loco	EU
VL-G2000	Vossloh Diesel Loco G 2000	DE

Identifier	Sound	Land
VL-GMF44	Diesel Loco Gmf 4/4 (RhB)	CH
VL-GP38-2	EMD GP38	US
VL-GP9	EMD GP9	US
VL-HGm44-2	HGm 4/4	US
VL-KO-2	Diesel Loco Ko II	DE
VL-KOEF3-V1	Diesel Loco 323 / Köf III	DE
VL-KOEF3-V2	Shunting Diesel Loco 323 / Köf III	DE
VL-Koe-II	Diesel Loco Kö 2	DE
VL-Kof-FW	Fire Dept. Diesel Loco LGB	EU
VL-Nohab	Diesel Loco NOHAB	DK/EU
VL-T478-1-CZ	Diesel Loco T478/750 »Taucherbrille«	CZ
VL-T478-2-CZ	Diesel Loco T478/750 »Taucherbrille«	CZ
VL-TM22	Shunting tractor Tm 2/2 RhB	CH
VL-US1	Diesel Loco, large, American	US
VL-US2	Diesel Loco, middle, American	US
VL-V29	Diesel Loco V29 Nagold-Altensteig	DE
VL-V3	Diesel Loco V22 Euskirchener Railway	DE
VL-V60-DR-V1	Diesel Loco V60/BR 362 DR	DE
VL-V60-DR-V2	Diesel Loco V60/BR 362 DR	DE
VL-VR-T	Diesel T-Class Victorian Railways	AU
VT-11.5-GT	Rail Car VT11.5 Gas turbine/ BR 601/BR602	DE
VT-11.5-Piko	Rail Car VT11.5/ BR 601	DE
VT-128	Rail Car "Regio Shuttle"	DE
VL-137	Historic Rail Car	DE
VT-18.16-1M	Rail Car VT18.16	DE
VT-18.16-2M	Rail Car VT18.16	DE
VL-187	Modern Diesel Rail Car	DE
VT-601	Diesel Rail Car VT11.5/ BR 601	DE
VT-602	Diesel Rail Car VT11.5/ BR 602	DE
VT-610	Rail Car "Pendolino"	DE
VT-612	Diesel Rail Car BR 612	DE
VT-628	Diesel Rail Car VT 628	DE
VT-642	Modern Rail Car "Desiro"	DE
VT-646	Diesel Rail Car BR 646/Stadler	DE
VT-648	Diesel Rail Car BR 648, UINT 41	DE
VT-772	Rail Bus VT 772	DE
VT-795	Rail Bus VT 795	DE
VT-798	Rail Bus VT 798	DE
VT-AWS	Shunting Diesel SWITCHER	US
VT-BM35	Motor-Draisine from ÖBB	A
VT-Goose	Rail Bus "Goose"	US
VT-HSB-T3	Diesel Rail Car T3 of the HSB	DE
VT-Ram	Diesel Rail Car VT-Ram	CH/NL
VT-SKL	Red Diesel Wagon SKL	D
VT-TCA	Historical Rail Car TCA (SKLGB)	A
VT-TWISH	Diesel Rail Bus No. 1 Narrow gauge Selters Hachenburg	DE
VT-WSB	Wismarer rail bus	DE
Rail vehicles and turntable		
Brmsgeräusch	Braking noises	EU
Draisine	Motor-Draisine	DE
ET-STW-II.DS3	Control Wagon	-
Hilfswagen	Help vehicle	-
Drehscheibe	Turntable BW Heilbronn	DE
Road vehicles and sundry		
K-MAGIRUS	Magirus LF 16	EU
K-UNIMOG	Unimog	EU
VW-Käfer	VW beetle with Martin horn	DE
Background Sounds		
Am Bahnhof	At the station	
Feuerwehr	Fire engine	DE
Gewitter	Rain and thunder noises	-
Trams		
SB-ALT	Tram, historical	EU
SB-NEU	Tram, modern	EU

Status: August 2015

Layout Sound



Sound-Director

Realistic Sounds complete the Picture

Realistic Sounds



Sound-Director

Sound on the Model Railway Layout is like Salt in Soup

Whether station announcements, traffic noises or church-bells, without everyday noises something is missing.

- Controller, USB stick and 2 Loudspeakers for administration and playing of MP3 files
- Background noises in a continuous loop play
- With 10 contacts for triggering situation-dependant sounds by key, Switching contact or reed contact
- With LocoNet connection, triggering of situation-dependant sounds by feedback, switch instructions or by LISSY or MARCo system
- In combination with LISSY or MARCo each train can trigger its own announcement

Now you can have background sound-scapes on your layout irrespective of it being analogue or digital.

Using your computer, save the relevant MP3 files on the USB stick provided.

As soon as the USB stick is plugged into the Sound-Director the individual sounds can be played.

Background noises, such as station announcements, traffic and building noise or animal 'voices' are played in a continuous loop.

Noises like church-bells, emergency vehicles or station announcements, can be separately triggered by key, switching or reed contact, or by the random event generator or at particular times.

- With random event generator (e.g. for dog barking)
- With model clock (e.g. for the church bells)
- Rendition list for more than 600 files
- USB stick with 68 minutes playing time per 64MB storage space with a sample rate of 128 Kbit/s
- Software for module configuration and administration of the MP3 files on the USB stick
- For analogue and digital model trains
- No interface or Programmer required

When connected to the LocoNet the noises can also be triggered by a driving train with feedback, switch instructions or the LISSY or MARCo system. In the LISSY or MARCo System a train can even do its own station announcement.

With a model railway which is controlled by a LocoNet center, more than 600 sounds from the rendition list can be called up. With all other systems and in analogue operations over 400 sounds are available. These can run in continuous loops or called up by contacts, the random event generator or the model clock.

The Sound-Director is supplied complete with two small loudspeakers. Alternatively PC loudspeaker boxes can be connected directly to the audio jack.

The USB stick provided has a large selection of immediately playable noises.

Included:

Sound-Director, USB stick, 2 loudspeakers and 60 cm a LocoNet cable.

Part No. 38 000 Sound-Director

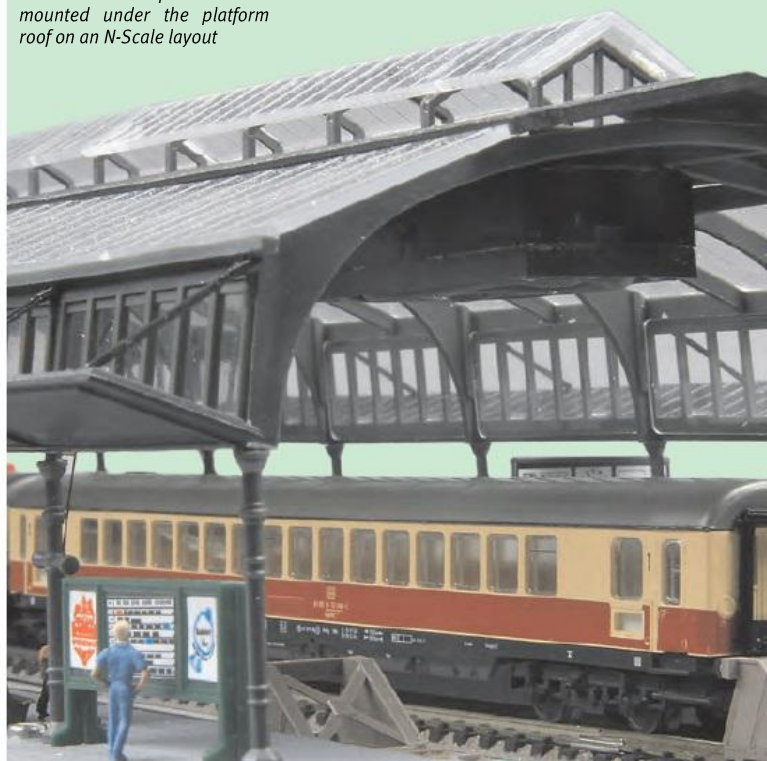


Part No. 38 010 USB-Stick



Application Example

Here the Loud speakers were mounted under the platform roof on an N-Scale layout



Analogue running, switching, feedback

K

Track-Control the Track Plan Desk now also for analogue

Infrared Remote Controller IRIS for 2-Rail and 3-Rail Tracks

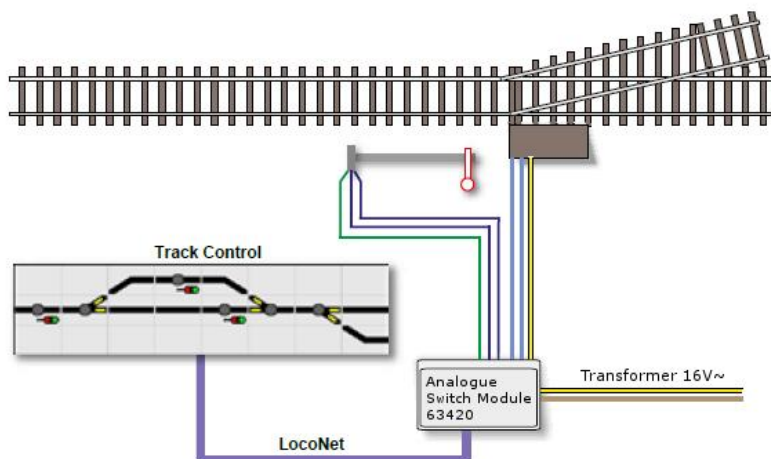
Start-Brake Component ABBS

Occupancy detector GBM

Direction change Switch FRU



Track-Control – the Uhlenbrock Track Plan Desk NEW



- Push buttons for all the model railway enthusiasts for whom digital operation is not an option
- Simple, variable and clear structure
- No wiring required within the control panel
- The plug system allows for easy changes at anytime
- The existing wiring of turnouts and signals can be retained
- LocoNet Switch module makes the installation child's play

NEW **Part No. 69 030** Track-Control Basis-Set analogue

NEW **Part No. 63 420** LocoNet-Analogue Switch module



Unit looks similar to this

The LocoNet-Analogue Switch module

is a Variant of our LocoNet Switch module. An Analogue Switch module can be configured for:

10 turnouts and 2 state signals (momentary contact),
10 light signal (continuous contact),
20 Switch outputs.

Up to 20 Analogue switch modules can be driven from one Track-Control.

TIP

If your model railway layout is already digital but without LocoNet connection then you can install the TrackControl with the LocoNet Analogue Switch Module as shown in the above diagram.

Track-Control – the Start

The Basic Set for the »Track-Control Analog« provides an inexpensive entrance into the control desk technology for analogue model railways. It contains all items required only once for the control desk: a connection module, a LocoNet cable and the manual.

In addition to a LocoNet-Analogue Switch Module, 30 Segments with diffusers and plug connections, 32 Key caps, three turnout circuit boards, three i signal circuit boards, four cross connection circuit boards, two connection circuit boards without lighting and one set of foils for building a small control desk.

Track-Control analog – construction

The modular plugging system allows the control panel to be changed at any time and be expanded as desired. The LocoNet-Analogue Switch Modules can be connected to the existing wiring for the turnouts and signals, and the LocoNet cable connects to the control panel. Therefore the wiring required for the installation is minimized.

The control panel receives its power requirement for a normal 12-16V~ transformer, as for example our transformer Part No. 20 075.

For simplified planning of the control desk you can use our program TC-Edit. This can be found on our website.

A control desk built from components included in the Basic set



Expansion

All expansion items from our Track-Control assortment can be used with the exception of the train number display and the speed controller.

For occupancy display (Red indicator) Märklin AC railroaders use the 63330 feedback module. DC railroaders should use 63330 feedback module in combination with with the 43400 occupancy detector. The LocoNet-Switch Module 63 410 can also be used.

The configuration of additional functions such as routes, occupancy detection ... can be made through the programs LocoNet-Tool and TC-Edit. For this you will need the USB LocoNet interface 63120.

Track Occupation Detector GBM

Have you ever been in a signal tower? On the switchboard every train is represented by a bright strip. On your model railway this is also possible with our track-occupied detector. In a shadow station or on the visible part of the layout, everywhere the question arises: Can I enter this track or is it occupied by another train? The GBM gives you the answer.

- With floating relay contacts
- For a reporting section
- Also for digital layouts Reacts to locomotives or lit cars
- Reacts to locomotives or illuminated wagons
- Very safe indication
- Contact rails are redundant
- High output current
- Up to 1.5A driving current
- Simple installation
- Power supply from the track
- Easy connection with screw terminals
- Simple Block section control



The Operation

The module serves as a reliable detector of stationary and travelling trains on a section of track. In addition it is suitable for use as an electronic switch.

The occupied status is detected from a current flow of 1mA in the section which it monitors. It detects all locomotives and cars with lighting. It can switch lamps, LEDs, signals, turnouts, relays or other modules, e.g. sound modules.

Installation

The most frequent use for this module is to provide a reliable track plan panel so that you know at any time which track is already occupied and which is vacant.

A simple block section can be constructed very quickly, by equipping several sections, one behind the other, with track occupation detectors.

The triggering of switch processes, timers or other modules by another module is a pleasantly simple task.

Connection

The track is divided into sections that can be monitored. The track occupation detector is attached to the rail that is to be monitored, to the AC output of a transformer or to digital power and to the item that is to be switched.

The wires are simply connected to the screw terminals.

This occupation detector monitors a track section and with the integrated relay permits numerous switching possibilities without additional units. So it can directly drive the red/white indicators on a control desk and simultaneously give a vacant signal. The long-life relay has two two-way potential free contacts, which may be loaded with 1A.

Technical Data

max. Driving Current: 1 A
min. Measuring Current: 1 mA
Connection Voltage: 12–16 V ~

Part No. 43 400

Track Occupation
Detector



Things to Note!

Part No. 40 311 20 Coupling resistors
1.5 Kohm for track
sections that can be
turned off

Part No. 40 410 10 ml Resistive
lacquer

For DC operation we recommend that the isolated section be inserted into the common side of the track. Thus you don't only avoid short-circuits, but the individual sections are also independent of the feed of the track power.

The track occupation module 43 500 is not suitable for connection to an s88-Feedback module.

Make it a habit to always have tail lights on the end car then the track occupation detector will be reliable. Also unlighted cars are detected by the GBM, if the wheel isolation is bridged with resistive lacquer.

Acceleration-Brake Component ABBS

To prevent your engine driver from falling out of the compartment when braking.

- Adjustable acceleration and braking distance
- Short-circuit and overload proof
- Simple installation
- Power supply from the track
- Easy connection with screw terminals

Connection made easy

An isolation section of approximately 1m length (with H0) is installed. The module is inserted between signal and rails. The connection is made by a solder-free screw terminal. No electrical changes to the layout are necessary.

The delay is adjustable over a large range by means of a potentiometer. Since the module is powered by the running power, no additional power supply is necessary.

Perfect Technology

The module is fully electronic and with short circuited protection. In a stopping section the drive current is limited to 1.4A, so even in the event of a short circuit on the track the module is safe from damage.

Technical Data

Running voltage: 0-16 V
Max. current: 1.4 A

ABBS 41 200



- Slow stop at a red signal
- Train stop in both directions

For signals on single-track sections, the trains stop in both directions. Acceleration and braking distances are adjustable by a potentiometer.

With an Hp0 acceleration/brake module the train drives slowly and stops before the signal. With GO signal it accelerates slowly again to its adjusted speed. With Hp1 the train passes the signal without change of speed.

With Hp1 the train passes the Signal section without reducing speed.

Part No. 41 200 ABBS

N TT H0 =DC ~AC



Infrared Remote Control IRIS

Enjoy the new freedom!

Easily control your DC or Märklin Model train with our Infrared Controller.

- Infrared remote control for all DC or Märklin locomotives
- Outstanding, realistic running properties
- Range up to 10 m
- Adjustable acceleration and brake inertia
- Shunting gear
- Extremely low speeds are possible by means of pulse width tension
- 10 speed steps are directly selectable by key press
- Up to four different electric circuits are controllable with one remote control
- Simple connection between the transformer's AC output and the rails
- 2A output current
- Automatic shutdown in the event of a short-circuit



26 210/26 310

66 510



With the infrared remote controller DC or AC locomotives can be controlled in conventional model railway layouts, without the annoying wiring to the control desk. The system consists of the infrared remote control IRIS and a receiver.

Each IRIS remote control has four channels. Each receiver can be set up to react only to its special channel or to all channels. It is therefore possible to control four different circuits using four different independent receivers and a single IRIS remote control.

With the IRIS remote control you can change a locomotive's driving direction and speed. The speed can be continuously increased or decreased in 10 different speed steps by pressing keys directly. The increment of the speed steps is adjustable. Pressing a key can engage a shunting gear, with which the locomotive is controlled with particularly fine speed steps, up to half the maximum speed. Hence slow and precise shunting can be implemented.

The increment size of the speed regulation can be configured. The press of a key selects the shunting mode with which the locomotive can be controlled in half steps. That way slow precise stunting driving is possible.

The infrared remote controller has acceleration/brake inertia available, with four different settings.

The stop key on the remote control switches the track power off and stops the locomotive immediately.

For normal operation a transformer 14-16V with 2A is sufficient.

The infrared remote controller is the locomotive controller for all dedicated railway modellers.

Technical Data

Maximum current: 2 A
Effective range: 10 m

Part No. 26 200	Set contains IRIS Remote controller and Receiver for DC
Part No. 26 300	Set contains IRIS Remote controller and Receiver for AC
Part No. 66 510	IRIS Remote controller
Part No. 26 210	Receiver for DC
Part No. 26 310	Receiver for AC
Part No. 20 075	Transformer 70 V <div style="display: flex; justify-content: space-around; align-items: center;"> N TT H0e H0m H0 </div> <div style="display: flex; justify-content: space-around; align-items: center;"> =DC =AC </div>

Reversing switch FRU

Would you like a jerk-free reversing switch without flashing of locomotive lighting?

The uncomplicated installation without additional electronic components makes the change from DC to AC possible for the layman.

- Extremely small
- Safe and jerk-free switching
- Unchanged running properties
- No flashing of locomotive lighting
- No additional modules needed
- Simple installation
- No battery, so unlimited life

With a change-over switch a DC locomotive can be converted to AC.

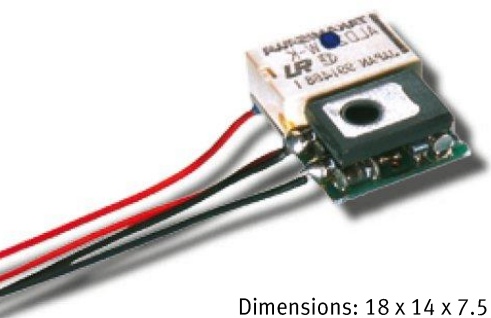
Due to its small dimensions our change over switch fits easily into almost any vehicle.

Technical Data

maximum Current:	0.8 A
short term:	1.5 A
Running voltage:	0–18 V ~
Switching voltage:	22–30 V ~

H0 **~AC**

FRU for DC locomotives



Dimensions: 18 x 14 x 7.5 mm

The extremely small module is for converting DC locomotives to AC power system with guaranteed jerk-free reversing. The locomotive lighting can be connected for direction dependent operation.

By using power transistors there is only a minimum voltage drop and therefore also low heat dissipation. The drive voltage type is irrelevant.

The change over switch is extremely interference-proof against voltage spikes and power interruptions. It's good handling properties permit millimetre-precise shunting.

On the market since 1988 it is still the smallest change over switch available.

Part No. 55 500 with solder connections

Part No. 55 520 with plug interface

FRU-M for All power locomotives



Dimensions: 29 x 20 x 7.5 mm

The FRU-M replaces the mechanical change over switch in AC locomotives. Its size corresponds to that of the mechanical change over switch, so that no mechanical changes need to be made to install the unit into a vehicle.

The integrated electronic transmission makes it possible to reduce the maximum speed output and have slow starting, even when the power is switched on suddenly.

Part No. 55 700 with solder pads



Functional Models & Accessories



Laser-Cut Kit »Uhlenbrock«

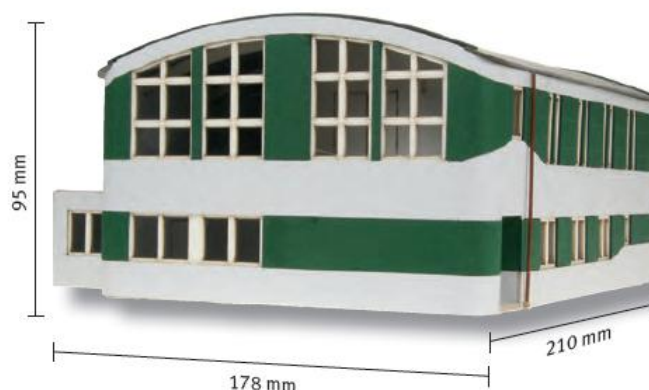
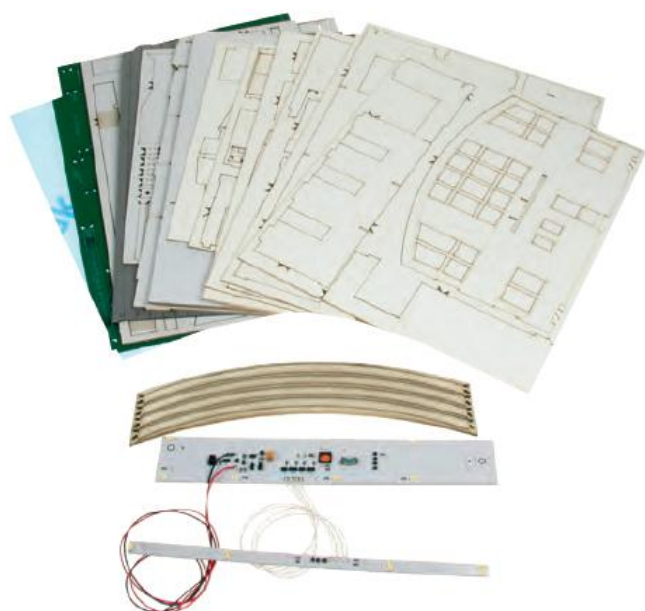
Gantry Crane & Lifting Magnet

Water Crane

Uncoupler



Our Headquarters building in Scale 1:87 NEW



Part No. 80 200

Building model: Uhlenbrock Elektronik

Size (B x H x T): 178 x 95 x 210 mm

The Building modell: scale and true to the original

The original: The Uhlenbrock Headquarters



TIP

Control up to 20 LEDs with our LED lighting (Part No. 67400) for house lighting (Page 60). Use the random generator to switch the LEDs On and Off. Effects like a flashing light, a fluorescent light simulation or flickering of welding

light can also be achieved with the controller.

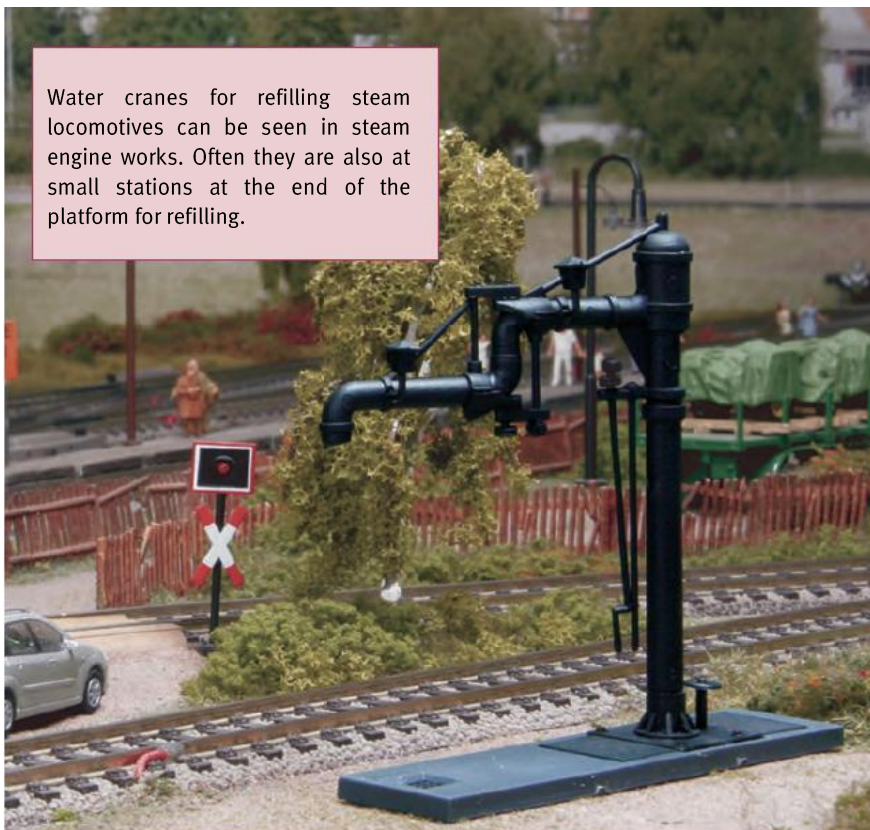
LEDs are available in different colours. All parts of the lighting system can be connected without soldering.



Water Crane

H0-Function model for Analogue and Digital Operation

Water cranes for refilling steam locomotives can be seen in steam engine works. Often they are also at small stations at the end of the platform for refilling.



A finished functional model of the popular Kibri water crane with integrated Digital-Servo 81310 provides a prototypical turning movement.

The Water Crane can be operated in analogue and also with all DCC or Märklin/Motorola Digital centers.

With the LISSY/MARCo system or the new feedback units it is also possible to control it automatically with the locomotive.

With rotation 180° two parallel tracks can be served. The middle position is then the rest position.

The operation is effected as described with the Digital-Servo 81310 (page 37). Different intermediate positions can be set.

Part No. 80 100 Water crane



Gantry Crane in Scale 1 : 87

Functional finished model for Analogue and Digital Operation

The Model

Our finished model is developed in co-operation with the Kibri company. It is based on the finely detailed plastic model of the gantry crane. The drive components are manufactured in metal.

Quiet miniature motors lift and lower the crane hook and move the trolley with safely guided rope drives

The Operation

The model is equipped with a digital decoder.

There are programmable outputs for a lifting magnet or grip and for additional lighting.

All functions can be controlled equally in analogue operations and by all DCC or Märklin/Motorola Digital centers

Dimensions: 128 x 50 x 132 mm

Part No. 80 000

Finished gantry crane



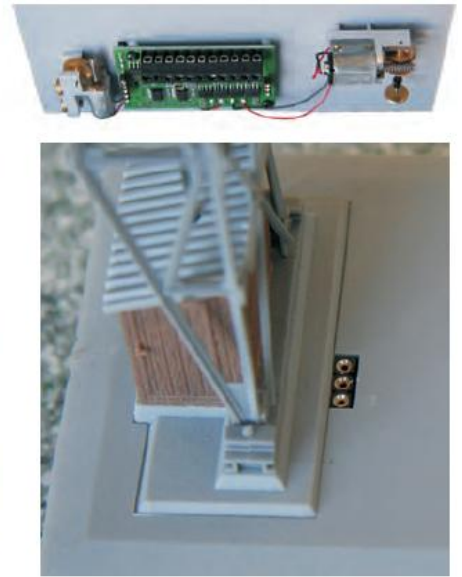


The Prototype

This gantry crane was built in large quantities and is still seen in many loading tracks.



A gantry crane with two motors brings more movement to your layout.



Connecting socket for the lifting magnet or gripper

Load lifting Magnet

True to the Original H0 Function model



Model of Load lifting magnet BvM L34-170 from the J. Braun GmbH Company.

Till now the load lifting magnets on offer for model railways were pure fantasy. For the first we now have an original controlled, functioning model available.

	Original	Model
Diameter	1700 mm	19.5 mm
Weight	7000 Kg	6.5 g
Lifting capacity (Scrap metal)	2700 Kg	75 g
Power	19.0 KW	0.6 VA

The load lifting magnet is powered by 16V DC or AC current. It is fitted with a plug for our gantry crane. Naturally it is also suitable for all other models. It can also be connected to a function output decoder. Thus the load lifting magnet can be universally applied to stationary cranes and crane wagons.

Part No. 80 020 Load Lifting magnet

H0 **=DC** **=AC**



BvM-Round magnets

BvM-Round magnets are used for moving bulk materials e.g. pig iron, splinters, scrap iron and casting scrap, and also for transporting massive loads, such as steel slabs, billets, wrecking balls and steel mats.

They are usually used on mobile cranes and cranes with larger lifting capacity.

REPA Uncoupler



- Uncoupler with magnetic drive for commercial or do-it yourself track
- Problem-free retro-fitting
- Reliable, silent, almost invisible
- The space requirement under the baseplate is only 43 mm.

Part No. 83 100

REPA Uncoupler 2-Rail

For H0 couplings from Trix, Fleischmann, Märklin or Märklin-like, and the new Fleischmann and Roco short couplings. Drill template included.

Part No. 83 200

REPA Uncoupler 3-Rail

For PIKO track, Märklin or Märklin-like couplings. With small uncoupler beam.

Part No. 83 300

REPA Uncoupler TT and narrow gauge

With Uncoupler-beam for TT, H0e, H0m. includes drilling templates for both track widths.

Part No. 83 400

REPA Uncoupler N

With Uncoupler-beam for the international N-coupling and for the short coupling from Fleischmann and Roco.

Replacment Parts

5 replacement beams per packet

Part No. 83 111 Uncoupler beam 2-Rail

Part No. 83 211 Uncoupler beam 3-Rail

Part No. 83 311 Uncoupler beam TT, H0e, H0m

Part No. 83 411 Uncoupler beam N

Part No. 83 611 Uncoupler rods, Fits all uncouplers



Digital Practices for Model Trains



Rolf Knipper
Digitalpraxis für die Modellbahn

160 pages, 2. Actual editions with 245
images and diagrams in full colour,
17 x 24 cm, bound.

**A practice advisor for beginners and the
more advanced!**

Every railway modeller will be confronted with very complex problems during the digitization of his model railway layout. The well known author and layout builder Rolf Knipper brings practical examples and knowledge to these topics. His solutions are shown at fairs. Using the two layout projects Elberfeld (DCC) and Kottenforst (Motorola) the professional digitization of model trains is explained.

Eisenbahn Fachbuch Verlag
ISBN 3-9807748-3-X

Part No. 16 010 Digital Practices,
Volume1

The book provides numerous photographs of building layouts as well as many designs and sketches, so that individual steps can be easily followed. In addition, the author explains the use of digital modules, like Intellibox, IB-Switch, Motorola and DCC decoders, SUSI sound interface and IntelliSound, the standard Digital 2 and decoder installation!

Operating Practices for Digital Model Trains



Harry Kellner
Betriebspraxis für die digitale Modellbahn

152 pages 252 illustrations full colour,
17 x 24 cm Format.

In "Betriebspraxis für die digitale Modellbahn" the author Harry Kellner concerns himself particularly with various components of digital control and their meaningful interaction.

Firstly current centers are discussed, then Intellibox II is described in detail as well as numerous model railway control possibilities. The infrastructure of booster etc. is an important building block in the power supply of a layout. The correct installation of boosters and connection problems, such as earth "binding" problems are discussed. Locomotive decoders and their standardised interfaces, and also actual developments, are treated in the same manner as the basics of the LocoNet and suggested practical solutions. Basics of automatic operation with LISSY are presented.

Eisenbahn Fachbuch Verlag
ISBN 3-9807748-6-4.

Part No. 16 020 Betriebspraxis für die
digitale Modellbahn

Control of a model railway with software interests many model railroaders. On the basis of programmes Railroad & Co (Train-Controller) and WinDigi-Pet, practical solutions are discussed with simple track plans and with many drawings and "Screenshots".

The Book comes with a CD containing Software so that interested model railroaders can try the described possibilities immediately.

Small Model Railway Lexicon

Analog Operation

In the analog layout all locomotives on the track are controlled together via a speed controller. The different vehicles can not be addressed individually. Functions like light, smoke, sound or the telex coupling cannot be operated from the control panel.

CV-Programming

Configurations Variables (CV) determine the characteristics of decoders for digital locomotives, such as address, maximum speed etc. The CV values, and thus the characteristics of the decoder can be changed by CV programming.

Data format – the Language of Digital systems

The data format is the language with which the Digital Center “speaks” with the decoders. Märklin uses the “languages” Motorola and MFX, whereas in 2-rail systems (Roco, Fleischmann, Trix, Rivarossi, Arnold, Lenz) the DCC format is the leader. Additionally data formats FMZ and Selectrix which earlier were developed and used by Fleischmann and Trix should be mentioned.

If a decoder understands at least two data formats it is described as a Multi-protocol decoder.

The most important data formats are:
Motorola: the first digital format on the market. Only used by Märklin.

DCC: the NMRA standardized data format, which became generally accepted with DC trains. Used by Fleischmann, Lenz, Roco and Tillig amongst others.

FMZ: Old Fleischmann data format. Now replaced by DCC.

Selectrix: The data format from Trix.

mfx: The new data format from Märklin.

Decoders, Digital Decoder, Locomotive Decoder

Decoders are built into model train locomotives. They decode the digital information which is sent by digital

centers. They control speed and driving direction of the motor, lighting and special functions of the locomotive.

Digital Operation

In digital systems different locomotives on the same track can be controlled independently from each other. Each locomotive receives its own driving and control instructions, which are conveyed to the inserted decoder by the digital center. Functions like light, smoke, sound or the telex couplings can be controlled from the control desk.

Lamps, light signals or track sections can be switched off by stationary digital decoders. Turnouts and signals with an electromagnetic drive can be controlled digitally.

Digital Centers

These are controllers for digital layouts. They generate the digital signal, which is decoded by the decoders that receive them in the digital system.

Bell Armature Motors

DC motors, which run very quietly and have good handling characteristics. Suppliers are Faulhaber, Escap and Maxon.

Pulse Width Modulation

A kind of driving power in the analog layouts, with which the locomotives have very good slow handling characteristics.

Conventional Locomotive

A locomotive without decoders for driving in the analog systems.

LNCV Programming

As with CV Programming of DCC Decoders, the operating characteristics of many LocoNet devices can be configured by LNCVs (LocoNet Configuration variables).

Programming is done from a special Menu in the LocoNet Digital Center or very simply with our LocoNet-Tool Software.

LocoNet

The LocoNet is a very reliable and inexpensive model railway network. It can be built up quickly and simply.

Memory Function

The feature which durably stores the status.

Multi-Protocol System

A digital system, which understands several data formats (languages). Multi-protocol centers address the different decoders in their respective language. This way, locomotives with decoders from different manufacturers can be used on a track simultaneously.

Multi-Protocol Decoders

understand several data formats. Locomotives with these decoders drive on layouts with different manufacturers' systems.

Register Programming

Whilst with newer decoders the characteristics are programmed using CV programming, with older decoders the values are saved in 8 different registers. This programming type is accordingly called register programming.

Switching Decoders

Stationary decoders with which lamps, light signals or track sections can be digitally switched on and off.

Special Functions

The locomotives' special functions are: light, smoke, sound or the telex coupling.

Solenoid Decoders

Stationary decoders with which turnouts and signals with electromagnetic drive can be digitally controlled.

Our Partners Abroad

Australia

All Aboard Modellbahn

P.O. Box 388
Mittagong, NSW 2575
Tel +61 4871 2966
Fax +61 4872 1183
www.allaboard.com.au
sales@allaboard.com.au

Australia

Frey Import + Export Company

6 Lois Court
Langwarrin, VIC 3910
Tel +61 387 908 765
Fax +61 397 755 335
www.trainsetsonline.com
freymport@bigpond.com

Denmark, Norway, Sweden

HELJAN A/S

Rebslagervej 6
5471 Sønderød
Tel +45 64 89 11 88
Fax +45 64 89 31 61
www.heljan.dk
heljan@heljan.dk

France, Belgium

SAI

36, Route de Sully
FR-45730 St-Benoit-Sur-Loire
Tel +33 238 351 100
Fax +33 238 351 133
www.maquettes-sai.fr
info@maquettes-sai.fr

Great Britain

A&H MODELS

95 High Street, Brackley
Northamptonshire. NN13 7BW
Tel +44 1280701410
www.aandh-models.co.uk
anthony_ellis@btconnect.com

Italy

BLACK STAR S.r.l.
Viale Lombardia, 27
20131 Milano
Tel. +39 02 49630030
Fax +39 02 23951272
www.blackstardistribution.it
corrado.onofri@blackstardistribution.it

Netherlands, Belgium

HobbyTime B.V.

Bornerbroeksestraat 455-B
7609 PK Almelo
Tel +31 546 538 775
Fax +31 546 538 867
www.hobbytime.nl
info@hobbytime.nl

Austria

Kleinbahn

Gatterederstraße 4
1230 Wien
Tel +43 676 843467700
Fax +43 1 8891176
www.kleinbahn.com
office@kleinbahn.com

Austria

modellservice center süd

St. Agathenweg 52
9500 Villach
Tel +43 4242 3725 9
Fax +43 4242 3725 99
www.mobasi.at
mcs.petschar@mobasi.at

Switzerland

KML GmbH
Balgacherstr. 14
9445 Rebstein
Tel. +41 717759010
Fax +41 717759019
www.kml-log.ch
info@kml-log.ch

Spain, Portugal, Andorra

Trenes-Aguilo

Via Augusta 7
08950 Esplugues de Llobregat
Tel +34 93 499 05 29
Fax +34 93 394 09 35
www.trenes-aguilo.com
trenes-aguilo@inTelegocio.com

Czech Republic

Modelářské potřeby

Josefov c. 4
69621 p.Prusánky
Tel +42 07 76 26 43 31
Fax +42 05 18 37 23 42
www.sweb.cz/v.modra
modelymodra@seznam.cz



Fair Dates

10. Märklin days and IMA Göppingen 2015
18.09.2015-20.09.2015

modell-hobby-spiel Leipzig
02.10.2015 – 04.10.2015

Faszination Modellbau Friedrichshafen
30.10.2015 – 01.11.2015

Intermodellbau, Dortmund
20.04.2016 – 24.04.2016

modell-hobby-spiel Leipzig
30.09.2016 – 03.10.2016

IMA Köln 2016
17.11.2016 – 20.11.2016

An up-to-date list of the timetable can be found on website
www.uhlenbrock.de.



UHLENBROCK ELEKTRONIK GMBH
MERCATORSTRASSE 6
D-46244 BOTTRUP
TEL.: 0 20 45/85 83 0
FAX: 0 20 45/85 84 0
E-MAIL: INFO@UHLENBROCK.DE
WWW.UHLENBROCK.DE

