W I N - D I G I P E T *Premium Edition*

CONTROL SYSTEM FOR MODEL RAILROADS USING

MÄRKLIN-DIGITAL-COMPONENTS,

UHLENBROCK-INTELLIBOX WITH EXTENDED PROTOCOL, ROCO DIGITAL,

FLEISCHMANN TWIN-CENTER AND LENZ DIGITAL PLUS 2.0 / 3.0

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MANUAL

Program-Version 8.1 - 32 Bit for operating systems Windows 95, 98, ME, XP, 2000 and NT /SP6

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Contents

CONDITIONS OF USE **9**

1 – PROGRAM CONCEPTS **10**

1.1 Main characteristics of WIN-DIGIPET 8.1 10

1.2 Quick start 13

2 - HARDWARE, INTERFACE, LENZ-SYSTEM, INFO-LINE **14**

2.1 Hardware requirements for this program 14

2.2 Interface connection- Märklin 15

2.3 Interface connection- Intellibox 16

2.4 Two-rail-DC-railroads 16

2.5 Lenz-System 17

2.6 Internet -Homepage 18

2.7 Control by keyboard 18

3 - INSTALLATION AND START; HELP **19**

3.1 General 19

3.2 Close all applications 19

3.3 Installation, switching-on sequence, update from version 5.0 19

3.4 Creating several layouts („Projects“), program start 21

3.4.1 „Projects“ 21

3.4.2 Program start – Only one project created 22

3.4.3 Program start - Multiple Projects 22

3.5 Data maintenance 24

3.6 Wave files and AVI-files 25

3.7 Customising symbol bars 26

3.8 Help-functions 27

3.9 Info-Lines 27

4 - SYSTEM SETTINGS **28**

4.1 Settings ‘Digital system’ 28

4.1.1 Digital system connected 29

4.1.2 Connecting the Interface 29

4.1.3 Transfer speed (baud rate) 29

4.1.4 Number of feedback modules connected 30

4.1.5 Interval for reading feedback modules 30

4.1.6 Interval between commands 30

4.1.7 Save the settings 31
4.2 Settings under 'Timetable' 31
4.2.1 Number of lines per timetable 31
4.2.2 Number of lines in the routes buffer 32
4.2.3 Additional control via train number display 32
4.2.4 Model railroad and Real-time 32
4.2.5 Save Settings 32
4.3 Settings under 'Program' 33
4.3.1 Inhibit solenoid device switching in active routes via mouse click 33
4.3.2 Reset all solenoid devices to last saved position during program start 33
4.3.3 Settings under „Train number display" 33
4.3.4 Settings under „Track / road symbols" 34
4.3.5 Save settings 34
4.4 License Collection 34
4.5 License Winicat 36
4.6 CD-ROM-Drive letter/ Sound settings 37
4.7. Settings under Intellibox/Icum 38
4.7.1 External Event Check 38
4.7.2 Switching time of solenoid devices 38
4.7.3 Using mixed loco decoders (Märklin/Lenz....) 39
4.8 Connection of second Interface (Märklin) 39
4.9 "Locomotives" settings 40
4.10 Routes settings 41
4.11 LDT-HSI 88 Interface settings 43
4.12 Settings for HELMO Detection System (Transponding system) 44
4.13 Joystick settings 45
4.14. Exit System Settings 46

5 - LOCOMOTIVE-DATA BASE 47
5.1 General 47
5.2 Determine pictures of locomotives 48
5.2.1 'WIN-DIGIPET-pictures' 49
5.2.2 Collection and Winicat 49
5.2.3 Scanning your own pictures 50
5.3 Description, Class, Brand 51
5.4 Digital address, train number 51
5.5 Decoder-type, locomotive-type 52
5.6 Running properties, starting speed, direction 52

5.7 Functions 55
5.8 Hours of operation, total time, maintenance interval 56
5.9 Location, Help, Save 57
5.10 Locomotives test 57
5.10.1 Loco control panel 58
5.10.2 Display Loco-Decoder 59
5.10.3 Browse, Loco-List, change data files 59
5.10.4 Delete data records 60
5.10.5 Emergency Stop 60
5.10.6 Sort data records 61
5.11 Printing locomotive data base 61
5.12 Programming an Uhlenbrock-Decoder 63
5.13 Closing locomotive data base 64

6 – TRACK DIAGRAM EDITOR 65
6.1 General 65
6.2 Track diagram window 65
6.2.1 Symbol bars, status bar 65
6.2.2 Selecting different grids 66
6.2.3 Splitting the track diagram window 66
6.2.4 Enlarge and Reduce(„Zoom”) 66
6.3 Track symbols window 67
6.3.1 Creating track diagram 67
6.3.2 Insert text in the track diagram 70
6.3.3 Track diagram sections 71
6.3.4 Cut, copy, paste track diagram 72
6.4 Print track diagram 73
6.5 Save Track Diagram 73
6.6 Edit and Delete Track Diagram 73
6.7 Display and print the system settings 74
6.8 Exit Track Diagram Editor 74

7 – SOLENOID DEVICE DATA AND FEEDBACK CONTACTS 75
7.1 General 75
7.2 Recording solenoid device data and test, address display 75
7.3 Virtual Keyboard to test all Solenoid Devices 76
7.4 Recording feedback contacts, display numbers 77
7.5 s88-Monitor 77
7.5.1 FB(s88)-Monitor with already registered contacts 78

7.5.2 Test Monitor of all feedback decoders 78
7.6 Dip switch settings of Decoder k83/84 79
7.7 Register a turntable including addresses in the track layout diagram 79
7.8 Save data 80

8 - ROUTES-EDITOR 81
8.1 General 81
8.2 Recording routes, routes list 81
8.3 Recording routes, release partial routes 83
8.4 Display routes 84
8.5 Modifying, copying, inserting routes 84
8.6 Recording switching conditions, starting and destination contacts 85
8.7 Release conditions 87
8.8 Add-on signal switching (O = OCCUPIED, F = FREE) 89
8.9 Loco type / Button 90
8.10 Route test 91
8.11 Allocation of routes to the virtual keyboard 92
8.12 Searching in routes list 93
8.13 Check recorded routes 93
8.14 Print routes list 94
8.15 Delete routes 94
8.16 Always display feedback contacts 95
8.17 Exit routes editor 95

9 – DIGITAL TURNTABLE 96
9.1 General 96
9.2 Keyboard address 96
9.3 Recording and deleting track connections 97
9.4 Feedback 98
9.5 Programming the turntable 99
9.6 Testing functions 99
9.7 Addresses of track connections and command buttons 100
9.8 Operating the turntable 100

10 – TIMETABLE SYSTEM, TIMETABLE EDITOR 101
10.1 General 101
10.2 Recording the first line in a timetable 102
10.2.1 Time, locomotive, route, arrival time 103
10.2.2 Railroad sound and video sequences 105

10.2.3 Commands to the locomotive and layout 106
10.3 Recording of further timetable lines 111
10.4 Editing aids 112
10.5 Testing timetable lines 112
10.6 Automatic locomotive change in a timetable 113
10.7 Display routes 114
10.8 Timetable notes 114
10.9 Name/re-name and save timetables 114
10.10 Timetable test 114
10.11 Delete timetable 115
10.12 Print timetable 115
10.13 Creating a further timetable 115
10.14 Appending a timetable 115
10.15 Opening timetables 116
10.16 Check and correcting timetables 116
10.17 Merge timetables 118
10.18 Display of isolated locomotives in the timetable editor 119
10.19 Miscellaneous options 120
10.20 Operating timetables 120
10.21 Practical hints on timetable operation 121

11 – DEMAND CONTACTS 122
11.1 System and functions 122
11.2 Planning and precautions 123
11.3 Recording 124
11.4 Recording the demand route list 125
11.5 Sounds when switching routes 126
11.6 Activate demand contacts 128
11.7 Save 128
11.8 Delete 128
11.9 Recording a further demand contact 128
11.10 List of all demand contacts 128
11.11 Example for automatic with demand contacts 129

12 – MODEL RAILROAD OPERATION WITH WIN-DIGIPET 8.1 132
12.1 General 132
12.2 System settings 133
12.3 Switching individual solenoid devices 133
12.4 Basic settings of the solenoid devices 134

12.5 Switching of routes 134
12.5.1 Using Start/Destination function 134
12.5.2 Using virtual keyboard 135
12.6 Quick deletion of routes 135
12.7. Changing zoom settings 136
12.8 Selecting parts of track diagram 136
12.10 Locomotive control 137
12.10.1 Loco selection 137
12.10.2 Locomotive control panels („Loco controls“) 138
12.10.3 Control of locomotives with WIN-DIGIPET 138
12.10.4 Control of locomotives with Märklin and Lenz controllers 140
12.10.5 Multi-tractions 140
12.11 Emergency stop 141
12.12 Miscellaneous options 142
12.13 Train number display 149
12.13.1 General 149
12.13.2 Train number display with feedback contacts 150
12.13.3 Train number display without feedback contacts 150
12.14 Timetable operation 151
12.14.1 Access; Selecting a timetable 151
12.14.2 Checks before starting a timetable 152
12.14.3 Start and normal execution of timetable 153
12.14.4 Contacts activated by train 155
12.14.6 Accidents, operation end, delays 157
12.15 Automatic operation with demand contacts 159
12.16 Terminate railroad operation with WIN-DIGIPET 160

13 – ANSWERS TO FREQUENTLY ASKED QUESTION (FAQ) 161
13.1 „Which contact type should I use for computer controlled layouts?“ 161
13.2 „Where should I position my contacts ?" 161
13.3 „What is the difference between contact free and occupied condition ?" 162
13.4 „Can I switch a signal whilst a train is running ?“ 165
13.5 „What is the purpose of additional control, using train numbers in timetable mode?” 167
13.6 „My train number tracking seems not to work at all or incorrectly ?" 168
13.7 „Why are routes not switched and displayed properly ?“ 169
13.8 „How are levels in the layout displayed (symbolically) ? " 170
13.9 „How are partial routes released in long routes ?“ 171

14 – QUICK START **173**

14.1 First step- program start (see also 3.4) 173

14.2 Second step- system settings (chapter 4) 173

14.3 Third step- controlling a locomotive 176

14.4 Fourth step- create track diagram, record solenoid devices and test, record feedback numbers 179

14.4.1 Create block system (see 6.3.1): 179

14.4.2 Allocation of digital addresses to solenoid devices (chapter 7) 180

14.4.3 Recording feedback numbers (see 7.4) 181

14.5 Fifth step- recording and switching routes 183

14.5.1 Recording the route (see 8.3) 183

14.5.2 Recording switching conditions (see 8.6) 185

14.5.3 Recording release conditions (see 8.7) 185

14.5.4 Recording add-on signal switching (see 8.8) 186

CONDITIONS OF USE

This program is the exclusive property of myself, Dr. Peter Peterlin, Tilsitstrasse2a, D-50354 Hürth, Germany.

The purchase of this program confers to you, the buyer, and only the right to use the program, not the property thereof.

Neither the program nor any program file thereof nor this manual may be altered in whatever manner.

It is strictly prohibited to pass or transmit this program to third parties or persons, not even for testing purposes.

The Demo-version controls not more than 12 solenoid devices and 2 locomotives; only a maximum of 20 timetable lines is possible. The track diagram has a size of 50x30 symbol fields.

Despite utmost care with creating and testing the program, errors therein can unfortunately not be excluded. Should errors caused by the program itself occur, I shall do my level best to eliminate them free of charge.

To do so, the CD-ROM purchased by you should be returned to me.

Errors caused by incompetent handling of the CD-ROM are at buyer‘s charge.

Any liability is expressly excluded for errors, mishaps and faults of any kind in and by the program and its manual.

Copyright covers all and any part of this manual and the program.

1 – PROGRAM CONCEPTS

WIN-DIGIPET is a modern, far-reaching, intelligent and very user-friendly software to control a model railroad, which is equipped with components of Märklin Digital, Uhlenbrock Intellibox, Lenz Digital Plus 2.0 or 3.0 or something equal.

WIN-DIGIPET 8.1 was developed for computers with one of the following operation systems: **WIN** 95, 98, ME, 2000, XP or NT4 / SP6 (**S**ervice-**P**ack 6)

The concept of **WIN-DIGIPET 8.1** is based on the reliable model railroad control software DIGIPET and WIN-DIGIPET 5.0/ 6.0 /7.0, which have been sold several thousand times all over the world.

Version **8.1** of **WIN-DIGIPET**- software offers an comprehensive and comfortable solution to control Digital layouts of any size:

1.1 Main characteristics of WIN-DIGIPET 8.1

- Easy data input and execution, even for computer novices. In case of errors, **WIN-DIGIPET 8.1** indicates incorrect data inputs immediately.
- The handling, the graphical and data input interfaces are very user-friendly and correspond to the current and most modern Windows standards.
- Symbol bars and Pull-Down-Menus of **WIN-DIGIPET 8.1** are corresponding to the modern and up-to-date Office style. Customised symbol bars are easy to create.
- **WIN-DIGIPET 8.1** allows to show and control even the largest model railroads. The WIN-DIGIPET 8.1 Track layout diagram is able to display up to 200 track symbol panels in height and width. This represents a complete expansion of 40.000 track symbol panels.

  Up to nine sections of the track layout can be stored separately and displayed immediately.
- The user enters all commands within the WIN-DIGIPET track layout and watch how they will be carried out. This enables you to control your model railroad very safely.
- Several model railroads can be registered completely (generic term: „**Projects**“), stored and reloaded. Besides this, projects may be printed or be saved to storage media to pass them to others.
- **WIN-DIGIPET 8.1** contains 226 individual symbols to create track diagrams, including right and left slanting points, signals, distant signals, decouplers, tunnel entries, bridges and a turntable.
- **WIN-DIGIPET 8.1** uses for its numerous functions the once registered data of the model railroad and connects them meaningful together. This saves the user complex- and time consuming operations.

- **Locomotives** in **WIN-DIGIPET 8.1:**
  - Controlled Locomotives are not only displayed with their data, but also always with **coloured illustrations**.
  - **200** locomotive illustrations are available to be used in the software. Beside this you may scan your own or import external illustrations from other databases.
  - On a model railroad, locomotives are controlled by several and different control units.
    1. Very comfortable on the screen: **WIN-DIGIPET-Loco-Controls** with scales for *adjusted* and *current* speed, or via **Quick Loco Control**, which enables you to control 10 locomotives directly without opening any Loco-Controls,
    2. via Märklin Digital Control Units or via the Uhlenbrock Intellibox,
    3. via corresponding Lenz – Hand Controls or Roco Lokmaus2,
    4. via a Joystick.
  - Range of locomotive addresses: For Märklin-Digital-System 80; for Lenz-Digital-Plus 2.0 it is 99, in Version 3.0 it is 9999. For the Uhlenbrock Intellibox it is also 9999 addresses, depending on the used decoder type.
  - **Multi tractions** of two or three locomotives can be arranged, controlled and released within seconds.
  - An hour meter for operations with maintenance interval and supervision display is assigned to each locomotive.
  - Automatic link of a **functions-decoder** to a Loco-Control.
  - Link of an individual, loco specific sound directly to a Loco-Control.
- Depending on the **Digital-System**, up to 256 (Märklin), 320 (Intellibox) and 1024 (Lenz) solenoid devices can be switched via mouse click or via an unlimited amount of **routes**.
  Very fast switching of routes via **Start-Destination-Function.**
- **Virtual Keyboard** for routes switching.
- Routes can be expanded at turnouts and signals with up to **10 Follow-On Switches** and locked „occupied“ with up to **10 Follow-On-Switches**. A warning will be given, if routes cross each other and occupied tracks are indicated.

  It is possible to release partial track sections of routes to increase operations on the model railroad more lively.

  Routes can be locked for specific and pre-defined **Loco/Traintypes**.
- Automatic **check of all routes** after changes of the track layout later on.
- Routes, solenoid devices settings and occupied tracks are indicated in colours within the track layout diagram of **WIN-DIGIPET 8.1**.

- **WIN-DIGIPET 8.1** supports **Uhlenbrock/Modeltreno INTELLIBOX** with the extended protocol, which does the following:
  - Transfer speeds (Baud rates) of **2.400 to 19.200 Baud;**
  - Use of all **widely used Loco Decoder types** like Märklin (old and new Motorola format), DCC (Lenz), Selectrix and Uhlenbrock on one single model railroad;
  - Very **fast track occupied messages** using event interrogation;
  - Status feedback of solenoid devices and locomotives by indicating it on the screen.
- **WIN-DIGIPET 8.1** supports **Fleischmann TWIN-CENTER.**
- **WIN-DIGIPET 8.1** supports the **HighSpeed-Interface** of Littfinski Datentechnik **(HSI-88)** for a faster read-back of the feedback contact modules.
- **WIN-DIGIPET 8.1** supports HELMO **Train-Number-Identifying-System** by transponder method.
- **WIN-DIGIPET 8.1** supports the connection of a **second** interface (Märklin) for switching of solenoid devices via a separate COM-Port.
- **WIN-DIGIPET 8.1** supports **external track layout switchboards** via feedback keys.
- **Display of train numbers**, each with a picture of the locomotive: On the screen, you have an overview of all train movements, even in hidden areas.
- Programming and control of the Märklin digital turntable. You can control it directly on the layout.
- **WIN-DIGIPET 8.1 – Timetable – System** for block control, fiddleyard control as well as fully automatic operations. Trains are precisely controlled by routes and time. Signals and isolated track sections (powerless tracks) become obsolete.
- **More than 200** program integrated railroad sounds and various video-sequences are accessible individually or via contact tracks.
- Automatic with demand contacts is accessible **without isolated track sections** (powerless tracks).
- **Tracking-Windows ("Inspectors")** within the timetable system and the automatic with demand contacts to control and track all operations and order of events.
- **Automatic change of locomotives** within a timetable.
- **Initiating** an **emergency stop** via feedback-contact-key at any area of the model railroad.
- **Speed measurements in km/h** for realistic adjusting of model railroad speed settings.
- Automatic **turnout-function-test.**
- **Control display** to monitor all feedback contacts.

- **Multi-channel-sound** for perfect background sounds via manual choice, in timetable operations or within the automatic with demand contacts.
- Changes and expansion of track layouts and routes can be carried out as often as you want, without any problems and really quick.
- **Modern print routines** to document all data in any parts of the program.

1.2 Quick start

Should you want to try some examples of locomotive control, solenoid device and route control on your layout, use chapter **2** and paragraph **3.1** to **3.3** of this manual. Then proceed to chapter **14 „Quick start“.**

Obviously, the **whole manual** should be read in detail. Only when following the detailed instructions, will you benefit of the many functions of WIN-DIGIPET.

2 - HARDWARE, INTERFACE, LENZ-SYSTEM, INFO-LINE

2.1 Hardware requirements for this program

- IBM-compatible computer from Pentium 200; colour monitor,
- Operating system Windows **95, 98, ME , XP, 2000 or NT4 / SP6**
- Main memory **64 MB**, for big layouts **128 MB** recommended,
- Minimum **20 MB** harddisk space free,
- Internet Explorer minimum **Version 4.0** or higher (for Windows **95**)
- Optional soundcard

In Windows select ‘My computer‘ - ‘Control panel’ - ‘Display’ - ‘Settings’ and specify the following:

Desktop area: 800 x 600 Pixel (or more),

Colour palette: High Colour 16Bit (or more),

Font size: Small Fonts - **Important!**

The setting "Large Fonts" distorts graphics. Test the correct setting „**Small Fonts**" using the turntable. Click on the symbol 'Turntable' (chapter **6**). Two shifted turntables indicate the wrong setting. Select **„Small Fonts"**.

2.2 Interface connection- Märklin

The cable from the Märklin-interface (reference no.6050/6051) to the computer has to be connected as follows:

Interface (6-pin DIN-plug) — **Computer** (Cinch DB-**25**-plug)

```
No.1 <---------------------------------------> No.2
No.4 <---------------------------------------> No.3
No.5 <---------------------------------------> No.5
No.3 <---------------------------------------> No.7

Bridge from No.6 <-----> No. 8
Bridge from No.8 <------> No.20
```

Interface (6-pin DIN-plug) — **Computer** (Cinch DB-**9-**plug)

```
No.1 <---------------------------------------> No.3
No.4 <---------------------------------------> No.2
No.5 <---------------------------------------> No.8
No.3 <---------------------------------------> No.5

Bridge from No.6 <-----> No.  4
Bridge from No.1 <------> No. 4
```

The four micro switches on the rear of the Märklin interface are to be set as follows:

No.1 ----------**ON**
No.2 ----------**ON**
No.3 ----------**OFF**
No.4 ----------**OFF**

The four micro switches on the rear of the Märklin-Central unit **6021** are to be set as follows, if the new locomotive decoders 60901 (new Motorola-format) are used:

No.1 ----------**OFF**
No.2 ----------**ON**
No.3 ----------**OFF**
No.4 ----------**OFF**

2.3 Interface connection- Intellibox

The Intellibox has a serial computer interface.

A serial interface can be found on every IBM compatible PC or Laptop. This interface is also called COM port, modem interface, V.24 or RS232 interface.

A normal PC interface cable – used to connect a modem to the PC –or the Uhlenbrock-COM interface cable (Art. -No. 691) can be used.

Having a data transfer rate of max. **19200 baud**, the interface of the Intellibox is up to **8 times** faster than the Märklin-Interface. Additional speed is gained due to the input buffer and the extended commands.

The default value of the Intellibox interface is set for an IBM-compatible PC with a data transfer rate of 2400 baud and 6050-syntax.

Settings can be changed in **WIN-DIGIPET 8.1** under system settings (par. **4.1.3**) or in basic settings menu of the Intellibox under menu „ Interface“.

2.4 Two-rail-DC-railroads

WIN-DIGIPET 8.1 supports not only the Märklin-HO-AC-System, but also the two-rail-DC-system.

The **feedback signals** of two-rail-DC-systems are very similar to the Märklin-H0-system: An analogue message from the track will be transferred to a feedback modul s88. The s88 changes the signal from analogue to digital and sends it to the interface, which passes the signal to the computer. Corresponding feedback modules are available from Märklin (s88) and other manufacturers like Viessmann, Uhlenbrock, Littfinski, etc.

The generation of feedback signals of a two-rail-DC-system is different compared to the (quite simple) Märklin-H0-system: Two-rail-DC-systems requires always a “track-occupied-module”, available from several suppliers; please ask your vendor for details.

If feedback contacts or contact tracks are mentioned in this manual, then it always covers Märklin feedback contacts **and** DC “track-occupied-messages”.

WIN-DIGIPET 8.1 supports the two-rail-DC-system as follows:

- **Lenz**

  All details are explained in the next chapter **2.5.**

- **ROCO DIGITAL**

  uses the Lenz-System; whatever is mentioned about **WIN-DIGIPET 8.1** and Lenz in this manual, is also valid for ROCO-Digital.

- **FLEISCHMANN**

  The Fleischmann-Twin-Center has got the same features like the Uhlenbrock Intellibox, except it does not use the Motorola format. Beside this restriction, everything what is mentioned about the Intellibox in this manual, is also valid for Fleischmann-Digital.

2.5 Lenz-System

WIN-DIGIPET 8.1 also supports Lenz-Digital-Plus versions 2.0 and 3.0. With every program start (see **3.4.2/3**), the Lenz-System will be initialised with these versions. Therefore **WIN-DIGIPET 8.1** demands the current status of all feedback contacts; if the Lenz-System is not ready, an error message appears.

In the system settings/Digital System you select your specific version under “connected Digital System” (see **4.1.1**). The number of feedback contact modules (FB-modules) will be blanked out. In **WIN-DIGIPET 8.1** this number is fixed to**123 Lenz-FB-modules** (not the theoretically possible 127), to ensure that the amount of all addressable feedback contacts does not exceed 3 digits. Therefore it is limited to **992 contacts** to be used in the program.

You can find the especially developed FB-Monitor for the Lenz-System, with all its possible numbers of feedback contacts, in chapter **7.5.2.**

The features of the Lenz-System within **WIN-DIGIPET 8.1** are as follows:

Version 2.0

99 loco addresses (every address greater than 99 will be ignored and will be set to 0!) with 14, 27 and 28 different speed settings, special functions F1 to F4, 256 solenoid devices, 992 feedback contacts.

Version 3.0

9999 loco addresses with 14, 27, 28 and 128 different speed-settings, special functions F1 to F8, 1024 solenoid devices, 992 feedback contacts.

Version 3.0 transmits the special functions in three groups: F – F1 – F2 – F3 – F4 and F5 to F8, in addition also F9 to F12. **WIN-DIGIPET 8.1** supports group one and two, but does not support the third group (F9 to F12).

Please ensure that the function keys of group two (F5 to F8) are not activated in your locomotive database, if the decoders do not support this or if they are not used (because for each group, as several bytes need to be transmitted,therfore

increasing the data stream too much). For the Lenz-System you can only select DCC-Decoders in your loco database, other kind of decoders are locked.

Menu bar:

With the Lenz-System you can check the **status of all locomotives** and the **status of the control unit.**

Besides, you can click on the **COM-port-display** in the menu bar and initialise the Lenz-System and all feedback modules.

Please connect the old Lenz interface **Li 100** in terms of the Lenz manual. This interface just works with a transfer speed of **9600 Baud.** The actual and latest Interface **Li100F** is able to work with a transfer speed of **19200 Baud.**

2.6 Internet -Homepage

If you have access to the Internet, you can click on the symbol in the menu bar or you can open your browser by using the Help-System to get direct access to the **WIN-Digipet-homepage. (www.win-digipet.de).**

There, you will find news, updates or may leave your individual questions in the user forum.

2.7 Control by keyboard

Fundamentally you can enter all data inputs via the keyboard of your computer, but using the mouse is quicker.

In the graphical part of the program you can select all particular symbols by mouse only.

In a menu tray, you can get from panel to panel with the **tab-key** or **arrows-up** and **arrows-down** keys; with the shift-tab-key you can get back to the previous panel. Each active panel will be illuminated. A switch, e.g. “On/Off”, will be operated with the **space-key**.

With the key **F11** you can get from loco-control to loco-control (see **5.10.1**) and may control the locomotives directly via the keyboard.

In the main program and the track layout editor you can close active windows via the **ESC-key**.

Within a window with scroll bars, you can scroll from line to line via the **arrows-up** and **arrows-down** keys. Also with a mouse you may temporarily scroll within a window with roll bars: If you click on the lower horizontal frame bar, it will move forwards, if you click on the top horizontal frame bar, it will move backwards.

The **PgUp**- and **PgDn keys** (page up and page down) will leaf through sidewise.

Even if you prefer to use the mouse you have to enter any text via the keyboard.

The control of the Loco-Controls via keyboard see **5.10.1.**

3 - INSTALLATION AND START; HELP

3.1 General

Knowledge and operation of Windows operating systems is assumed with regards to this manual. Referring to „Windows“ includes Windows95, 98,NT and 3.11 in this manual.

„Click“ and „Double click“ refer to the left mouse key; the „right mouse key“ action is underlined in the text.

Command buttons and command areas are enclosed with ‘apostrophe’.

3.2 Close all applications

Restart your Computer and Windows.

Close all open applications before installing **WIN-DIGIPET 8.1**. This also includes the Microsoft ® Office shortcut. It is advisable to delete all Microsoft ® Office programs from the auto start file.

3.3 Installation, switching-on sequence, update from version 7.0

Insert the CD-ROM, containing **WIN-DIGIPET 8.1** software in the CD-ROM drive.

In the task bar click ‘Start’ - ‘Run’. The window ‘Open‘ to the setup program appears. Default value is **A:** SETUP. Please change the drive letter to your CD-ROM drive, i.e. **D: SETUP.** Confirm with ‘OK’.

INSTALLER. All copied files will be registered in a database. In case of a de-installation, all relevant and program related files will be deleted from your system. Due to this fact the amount of superfluous data files will be very little.

The “windows installer” needs to expand and prepare the installation routine, hence a minimum of **10 MB free diskspace** on your **c:\-harddrive** is required. All files are expanded and copied to a temp directory. These files will be deleted automatically after the installation.

In the beginning of an installation, the Installshield installation routine will check, if the “windows installer” is available on your system; if not, this routine will be installed automatically.

A restart of your computer is eventually necessary. After restart the installation will proceed automatically. Normally you just have to click on “continue” or “OK”, then, the installation will proceed until completion.

First installation: The default installation path for **WIN-DIGIPET 8.1** is **c:\wdigipet**. If you would like to change this, click on **“change”** and overwrite the path c:\wdigipet in the window “select directory” with your favourite harddrive letter and directory name. Confirm with “OK”.

If you already own a previous version of **WIN-DIGIPET 8.1**, you **must** use the existing installation path- and directory where the existing WIN-DIGIPET-Version is installed. Already registered data will not be overwritten.

Existing databases for locomotives, routes, etc. will be **automatically** converted to the new version **WIN-DIGIPET 8.1**. Please confirm with "OK" when prompted.

During the installation five sub directories are created (= folders):

- **\BACKUP** – This folder is used to save your data. The folder is empty after WIN-DIGIPET installation.
- **\OWN PICTURES** (or "Eigene") – Folder for own scanned locomotives
- **\PROJECTS** – saved and non- active layouts (see **3.4.1/3**).
- **\SOUND** – Folder for all ***.WAV**- files (see **3.6**).
- **\VIDEO** – Folder for all ***.AVI**- files (see **3.6**).

At the end of the installation program the following three symbols are created:

A symbol „WIN-DIGIPET 8.0", as the program start-symbol;

A symbol „Data maintenance", allowing you to access maintenance and backup data (see **3.5**);

A symbol „Projects", an additional program to control created and non-active layouts in the folder „Projects" (create, load and delete new projects).

To remove WIN-DIGIPET 8.1, select 'My Computer' - 'Control Panel'- 'Add/Remove Programs'. This is the correct procedure in the 32-bit version.

A symbol "Track Layout Editor" to get direct access to edit your track layout.

During installation, a **project** named "**DEMO** will be copied automatically into the folder "\PROJECTS" on your harddrive. This is in context to the start function of **WIN-DIGIPET 8.1** and will be explained in detail in chapter **3.4.3.**

You are able to uninstall **WIN-DIGIPET 8.1** – as usual for 32-bit-versions – via "Start" – "settings" – "control panel" – "Software". The "Windows Installer" also removes all system-files, which belongs to WIN-DIGIPET and not to other programs.

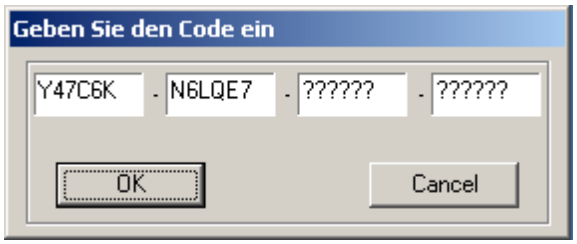
Nevertheless, some files still will be available in your WIN-DIGIPET folder, which were created during the use of the program and have not been recognised by the "Windows Installer". Eventually you have to delete those files on your own.

To delete your individual created projects completely from your system, you should delete those projects with the program part "PROJECTS" before you deinstall the software. This ensures that all entries in the windows-registry are removed.

Important notice:

At the end of the installation, you should reboot your computer, to ensure that all configuration files have been created or updated successfully.

If you start operating your model railroad – even if you just want to make some short tests – please **ALWAYS** start your **COMPUTER FIRST** and then your model railroad.



Only at the very first start of the program, **WIN-DIGIPET 8.1** requires you to enter a 24-digit-code. You will find this code on the CD-ROM or in your user manual. For further program starts, it is not necessary to enter this code again.

Remark for NT-User: Only for the very first start of the program, you should log in as “administrator” into your NT-system, to enter the code!

Remark for WIN-95-User: Internet Explorer **4.0** or later, has to be installed on your system. If Internet Explorer 3.0 is installed on your computer, please install the later version from the original WIN-DIGIPET-CD-ROM **before** you install WIN-DIGIPET.

3.4 Creating several layouts („Projects“), program start

3.4.1 „Projects“

WIN-DIGIPET 8.1 not only offers you to create and comfortably control your own layout, but also a second, third, fourth, etc. They can be printed or copied to any data carrying media.

The second, third fourth, etc., could be a layout in its planning stage, a virtual layout which only appears on the display. Changes can be done on screen and then printed.

On the other hand, those „Projects“ could be real layouts from friends and family, i.e.: your son‘s layout, modules from the railroad club, etc. It is possible to produce a printout and copy the data to removable disk to use remotely in conjunction with WIN-DIGIPET 8.1.

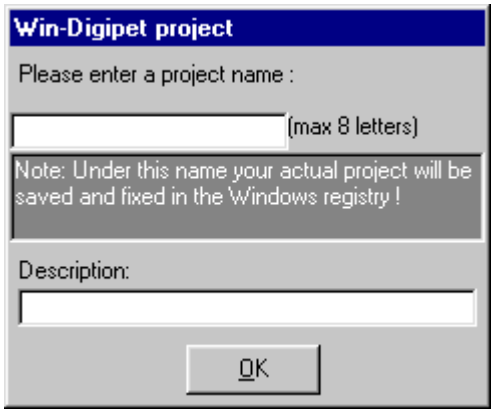
All **real and virtual** model railroad layouts, including your own, are called **„Projects“**

The original WIN-DIGIPET 8.0 CD-ROM must be inserted in the CD-ROM drive at every program start.

3.4.2 Program start – Only one project created

Activating the program for the first time, click on ‘Start’ in the task bar, followed by „Programs“ - „WIN-DIGIPET 8.1“ to ‘WIN-DIGIPET 8.1’ (see **3.3**). Click on it. A window „Win-Digipet-Projects“ opens.

Insert the project name, max. 8 characters. The name can be fictitious. A description of not more than 50 character length must follow. This is **only necessary once**: When data is created for the first time.

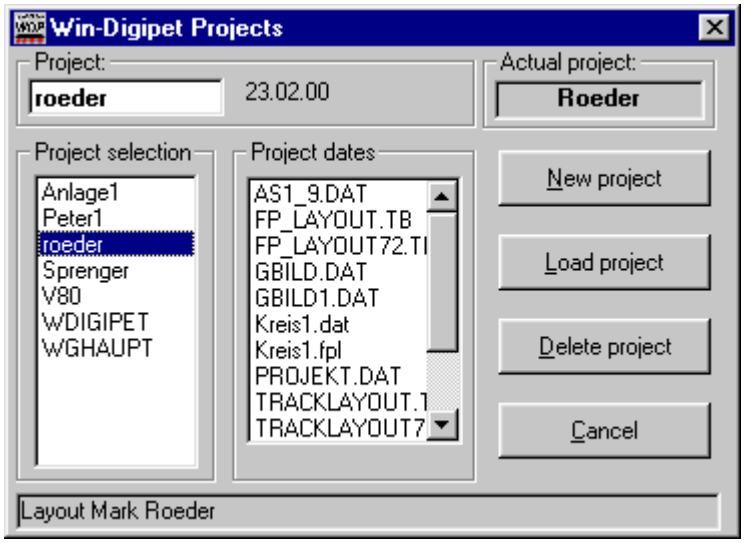


Click on ‘OK’. An empty screen appears. Input all your data, starting with system settings (see chapter **4**).

At further program starts, click on ‘Start’ in the task bar, followed by „Programs“ - „WIN-DIGIPET 8.1“ and click on ‘WIN-DIGIPET 8.1’. This brings you **directly** to the main program.

3.4.3 Program start - Multiple Projects

Only one of the multiple projects can be displayed on the screen (main program), all others are stored in a folder. The program ‘Projects’ and your command can access them.



Assuming that you have created your own layout as the **first** Project and saved it. Now you want to create a further layout, your **second** Project. Close WIN-DIGIPET 8.1 and access **‘Projects’**, click on ‘Start’ in the task bar - „Programs“ – and **not** „WIN-DIGIPET 8.1“. This will access the folder „Projects“.

A window named „Win-Digipet Projects“ opens. This contains the data of your first Project, accessed by a click on the folder ‘Projects‘.

Click on ‘New Project’. The selection window „Win-Digipet Project“ appears again; insert the name and description of the second Project.

The message „New Project created“. The WIN-DIGIPET-Project window closes.

Restart **WIN-DIGIPET 8.1**. An empty screen appears to input the data for the second Project. The same applies for the third, fourth, etc., Projects.

If you create a new project, you will be asked if you would like to transfer the locomotive database (chapter 5) from your previous project into your new project.

During installation, a **project** named "**DEMO** will be copied automatically into the folder "\PROJECTS" on your harddrive. If you would like to have a look at the Demo-data, please load the Demo-Project via "Start" – "Programs" – "WIN-DIGIPET" – "WIN-Projects". Once loaded, you will find a small and clearly arranged track layout with all data, which was taken over from a seminar of the program author. Play around with this data to familiarise yourself with **WIN-DIGIPET 8.1**. If you want to return to your own project, use the same method as described in loading the "DEMO-Project".

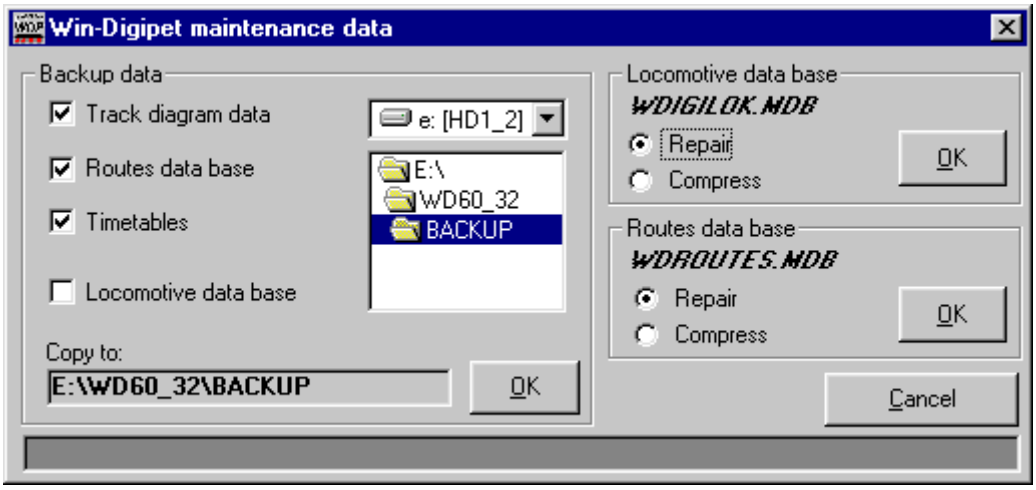
To access another Project in the Project folder from the presently displayed Project, close **WIN-DIGIPET 8.1** and activate it as described above. The currently displayed Project is saved in the folder „Projects" and the window „Win-Digipet Projects" appears. Highlight the Project in „Project-Selection" to make this the current Project. Click on 'Load Project', transferring it to the Win-Digipet-directory. All data is displayed after WIN-DIGIPET 8.1 has been restarted.

The name of the active Project is displayed in the track diagram of the main program in the right hand side of the symbol bar.

'Delete Project', deletes a Project marked in 'Project Selection' on your Hard disk.

3.5 Data maintenance

The program „Data maintenance“ can be started by double clicking ‘Data maintenance’ or with ‘Start’ in the task bar - ‘Programs’ - ‘WIN-DIGIPET 8.1’ - ‘Data maintenance’.



Here your data can be comfortably saved. The database can be repaired and compressed.

All data must have the following extensions, should you want to save your data without using the program:

***.DAT** - ***.FPL** - ***.MDB**

- **Backup data**

  Select the data to be backed up from the left-hand window area.

  Select the destination directory - C:\WDIGIPET\BACKUP (see **3.3**), given as default value – and click ‘OK’.

  The locomotive data base (**WDIGILOK.MDB)** can not be backed up to a diskette as it is to big. A streamer or other suitable media can be used. A warning message will be displayed.

- **Repairing/compressing a data base**

  ‘Repairing’ a database means that you can correct errors in the database if they have occurred. You will then receive the message

  Data base successfully repaired! ‘OK’

  ‘compressing’ a database means that records are definitely deleted.

  Deleted records are „marked as deleted” in the program, but continue to exist internally. The length of the database remains unchanged.

Only when the data base is compressed, the records internally „marked as deleted“ will be removed, and the database shortened correspondingly. You will receive the message: Data base successfully compressed! ‘OK’.

3.6 Wave files and AVI-files

WIN-DIGIPET 8.1 brings more realistic features to the model railroading: sounds- you can produce railroad sound – and even visual ones – you can use video sequences.

Prerequisites are the subdirectories, selected in the window „Select directory path“. This automatically created the subdirectories (= folder) \SOUND and \VIDEO.

- **\SOUND** - All ***.WAV**- files should be in this directory. Some of them are already copied during installation. Sound files you liked and selected on the CD-ROM as well as WAV files created by yourself must be copied into this directory.

- **\VIDEO** - All ***.AVI** files should be in this directory. Video files you liked and selected on the CD-ROM as well as AVI videos must be copied into this directory.

WIN-DIGIPET 8.1 has 160 Wave files and some AVI files integrated.

You can find an overview of their usage in paragraph **10.2.2**.

3.7 Customising symbol bars

Definition:

A symbol bar is „**docked**“, if positioned at the edges of the user window on the screen. „**undocked**“, means that the symbol bar is floating freely as a moveable window in the user window.

How to change a docked symbol bar to a undocked symbol bar:

- Position the mouse pointer to the outer left edge of the symbol bar (two vertical lines).
- Drag the symbol bar in the desired position.

Note: The symbol bar moves back to a docked symbol bar and its previous position, if you double click on an undocked symbol bar in the title bar.

How to move an undocked symbol bar:

- Position the mouse pointer on the title bar of the symbol window.
- Drag the symbol window to the desired position. The undocked symbol bar automatically becomes a docked symbol bar if the symbol window is dragged to the edge of a user window.

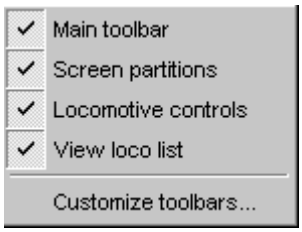
How to change the size:

Drag on any edge of an undocked symbol bar to change its size.

Note: It is not possible to change the size of a docked symbol bar.

How to activate/de-activate symbol bars:

- Right mouse click within the menu bar or symbol bar.



- De- activate the control boxes for the symbol bars not needed.

Note: Each selected symbol bar is either displayed in the standard position or in the position where it was last positioned.

All symbol bars are saved with their position and size at program end.

3.8 Help-functions

Execute all steps provided in chapters 4 - 11 of this manual. These are logical steps, giving you guidance on how to best use all control functions of WIN-DIGIPET 8.1 to control the model railroad layout.

‘Help’ in the menu bar can access additional information needed for a particular program part.

‘F1’ function key displays the help function of the presently used window.

3.9 Info-Lines

Additional help for **WIN-DIGIPET 8.1** is under the following numbers available:

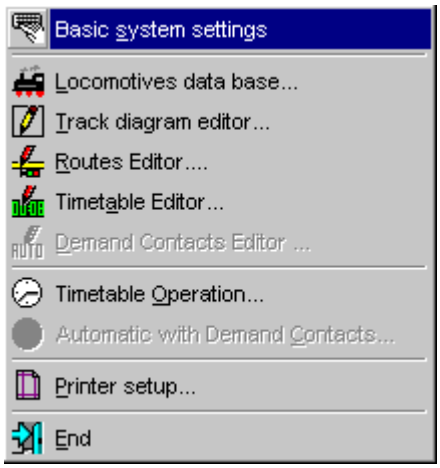
Telephone:	**+49 172-2011009** - Mondays between 20.00-22.00 o‘clock
Fax:	+**49 2233-943923**
Internet e-mail:	**ppeterlin@netcologne.com**
Internet Homepage:	**www.win-digipet.de**

The homepage contains (when necessary) bug fixes for download, seminar dates, a customer forum and program updates.

4 - SYSTEM SETTINGS

In this program part you determine the settings of **WIN-DIGIPET 8.1.**

Important: Before you access „System settings“, insert the **original WIN-DIGIPET 8.0 CD-ROM** into the drive.

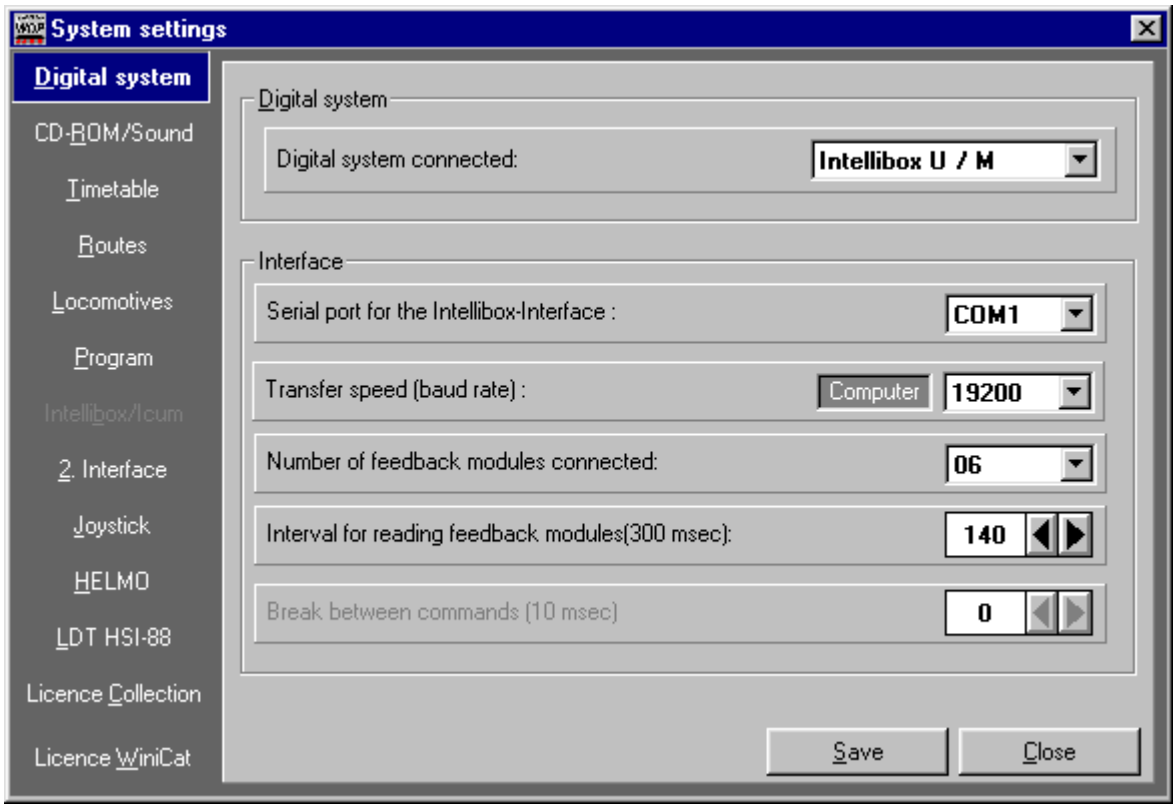


All program parts are loaded after **WIN-DIGIPET 8.1** is started and you are in the main program. The **WIN-DIGIPET symbol bars** appear on the top edge of the screen. „Quick info“, displays the meaning of the individual field when the mouse pointer points to the field. The field is highlighted in yellow. The switches in the symbol bar and all other symbol bars of the program are self-explanatory and therefore not always explained in the manual.

An empty screen appears if you have no data present. Click on ‘File’ in the menu bar, followed by ‘System settings’ or on the switch in the symbol bar. A new window, containing 13 register cards, appears.

4.1 Settings ‘Digital system’

The main basic configuration data of your system is created on the register card.



4.1.1 Digital system connected

Supported are (at present):

- The Märklin system with central unit 6020/6021 and Interface 6050/6051
- The Uhlenbrock/modeltreno-INTELLIBOX,
- The Fleischmann TWIN-CENTER (similar to the Uhlenbrock Intellibox, however without the support of the Motorola- and Selectrix format)
- The ICUM (an ISA-Bus-card of company modeltreno, Bologna).
- Lenz Digital Plus Version 2.0
- Lenz Digital Plus Version 3.0

More details about the LENZ-System for **WIN-DIGIPET 8.1** please have a look at chapter **2.5.**

4.1.2 Connecting the Interface

Eight serial interface connections for connection of the interface are available (COM 1 to COM 8). Normally COM 2 is selected for the interface; COM 1 is then allocated to the mouse. Select your own serial connection from the list and click on it. You will get an error message when saving the settings, should you have selected a non- existent COM port on your system.

NONE serves the purpose of testing the program without the interface connected.

4.1.3 Transfer speed (baud rate)

- **Märklin**

The Märklin digital has a **fixed** baud rate and can not be changed. The baud rate is automatically set to 2400 baud.

- **Intellibox**

The Intellibox allows the following settings:- 2400, 4800, 9600 and **19200** baud. At the maximum setting, the Intellibox is **8 times** faster than the Märklin interface.

The pre-selected baud rate, selected by yourself on the Intellibox, is automatically transferred to the program with „**Pre- select**".

- **ICUM**

The ICUM is an ISA-Bus-card version of modeltreno, Bologna. The present version contains all the functions of the Intellibox. Data transfer is not serial as the card uses the computer bus, therefore no baud rate selection is needed.

- **Lenz Digital Plus V2.0 / 3.0**

For the old interface **Li100** of the Lenz-Digital-Plus System, you had to adjust the transfer speed to a fix rate of **9600 Baud**. With the new interface **Li100F** you may also adjust **19200 Baud**.

4.1.4 Number of feedback modules connected

If you use feedback modules s88 – which should be the normal case -, select the **exact** number of modules. A wrong entry might cause problems when running the program.

If you **do not** use feedback modules s88 or if you will operate your model railroad without feedbacks, select **NONE.**

4.1.5 Interval for reading feedback modules

Here you determine how fast your feedback modules are read out and displayed. Settings between 100 and 1000 milliseconds are possible. The default value is 300 milliseconds indicating that all feedback modules on your layout are read three times per second.

The lower you set this figure, the faster the readouts are performed. A figure too low might jam the interface and/or disturb the displays on the screen.

It is recommended that you carry out some testing to find out which setting suits your system best.

4.1.6 Interval between commands

The Märklin Interface is unable to cope with too short command sequences .Thus, it is possible that in routes switching routines, one or more solenoid devices are „suppressed“ or not correctly switched. This depends a.o. on the type of computer used.

Select between 10 and 100 milliseconds; default value is 10 milliseconds. You should increase the setting, if solenoid devices are incorrectly switched or not switched at all.

This is an overall setting for **all** of your solenoid devices. In addition, you can change the switch time of individual solenoid devices; see paragraph **7.2** for details**.**

Note:

No intervals between commands are necessary when using the Uhlenbrock/ modeltreno Intellibox ! The setting is 0 and can not be changed.

4.1.7 Save the settings

Having carried out all settings, click on ‘Save’.

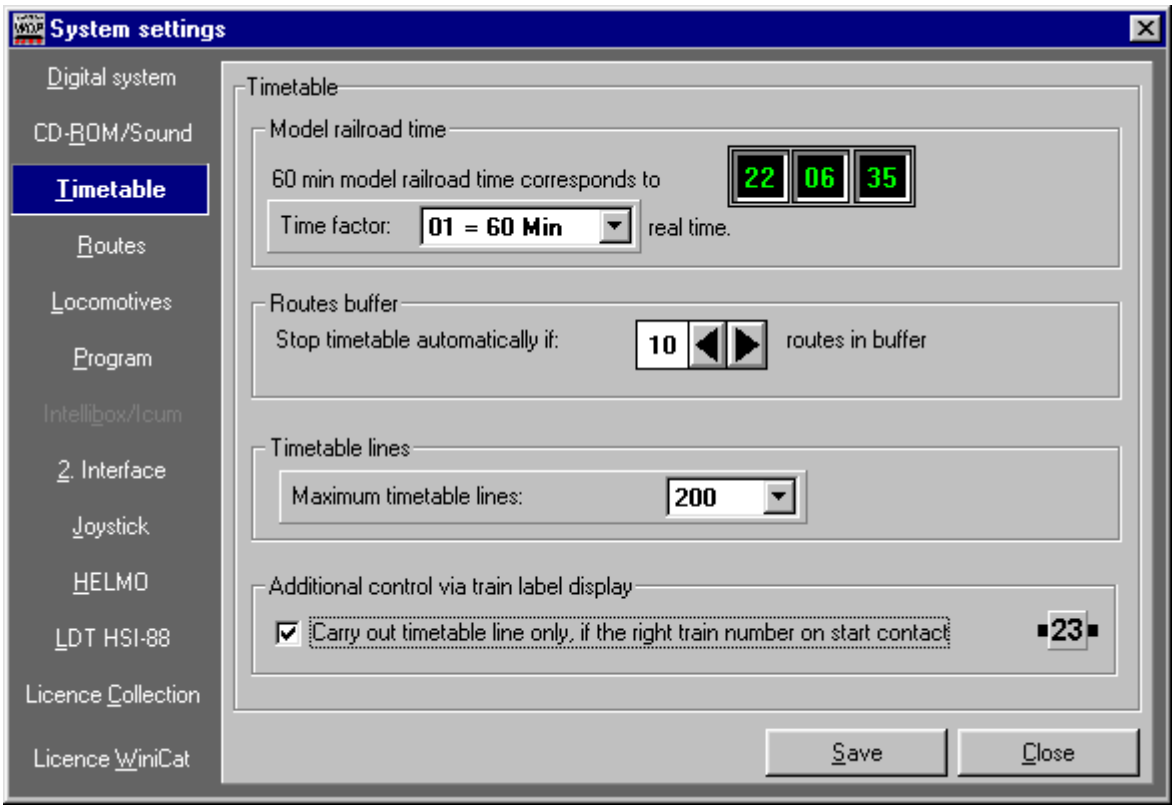
WIN-DIGIPET 8.1 creates a file in the Windows Registry with the name of the active project. All updates and settings are saved here.

Please do not attempt to change, modify and delete values of these files. This should only be attempted after having spoken to the author of the program, in case of difficulties.

A program part is closed without saving data if you click on ‘Close’ instead of ‘Save’. You are returned to the main program.

4.2 Settings under ‘Timetable’

If you intend to operate your digital railroad by the **WIN-DIGIPET Timetable System,** you have to carry out some basic settings first. See also chapters **10** and **12.**



4.2.1 Number of lines per timetable

You can determine a maximum of 100, 200, 300 or 400 lines for each of your timetables. Default value is 200 lines. Further details in paragraph **10.2.**

4.2.2 Number of lines in the routes buffer

Routes which could not be switched in a timetable at the given time, are filed in a „routes buffer“. Details in paragraph **12.14.3** to **12.14.5.**

The timetable stops automatically when the buffer is full. Select the size of the „Routes buffer“ between one and 20 lines; default is 10 lines.

4.2.3 Additional control via train number display

An additional check on the switching conditions in a route is performed, when this switch is ticked. It also checks whether the correct locomotive with the appropriate digital address is assigned in the train number field and its start contact. The timetable line is **not** executed, if the field is empty or a locomotive does not belong to this route.

It is not possible that a locomotive travels on a non- assigned route, even though that there are some routes in the route buffer. See also „Additional control via train number display" at the end of this manual.

Experiment with this special function **before** checking the switch! Activate the time- table editor and execute one timetable line, using the test function. If the locomotive is on a wrong or non- existent start contact, the message „Loco not on start contact". Drag the correct locomotive on the start contact and repeat the test function. The route is switched if all conditions are met.

4.2.4 Model railroad and Real-time

Select the ratio of model railroad to real time under „Time factor“ in the formula:

60 minutes model railroad time are equal, using time factor X, to Y minutes real time.

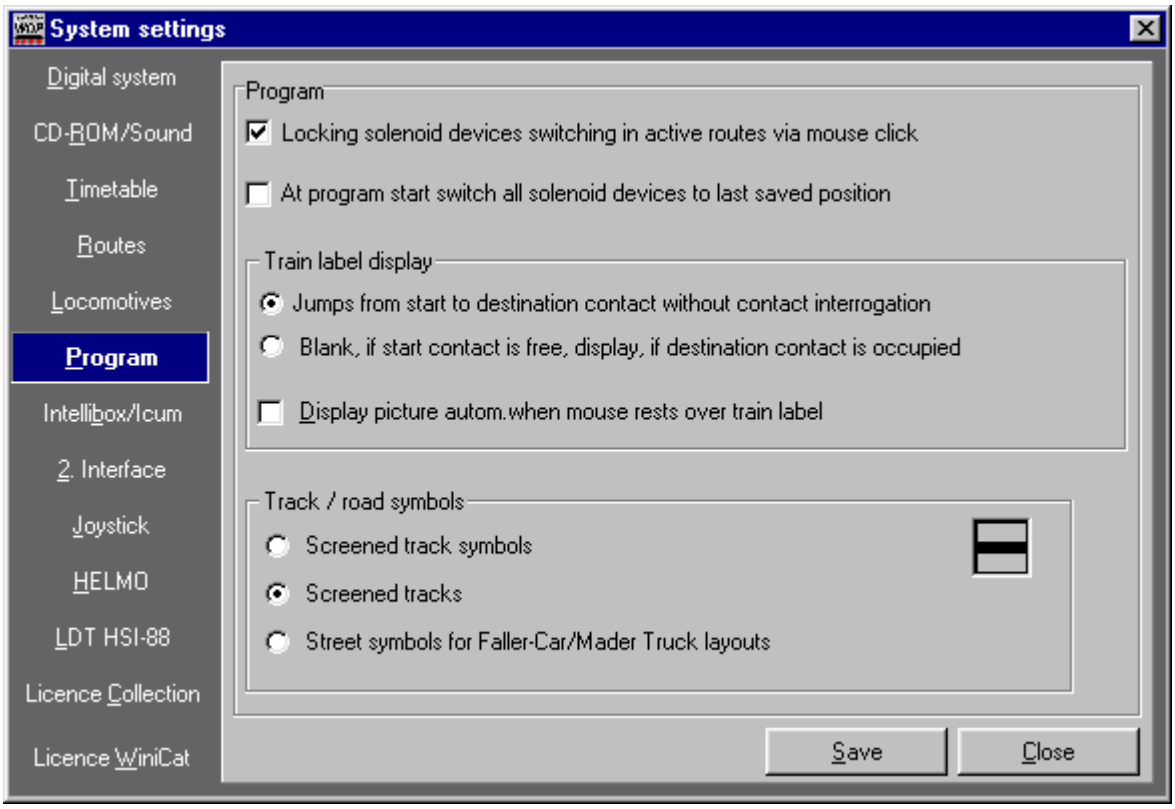
Select „Y“ in **15** steps between 60 and 4 minutes; „X“ changes automatically.

4.2.5 Save Settings

After all settings are finished, click on ‘Save’.

Should you click on ‘Close’, the program part is not saved and you will be returned to the main program.

4.3 Settings under 'Program'



4.3.1 Inhibit solenoid device switching in active routes via mouse click

All solenoid devices, which should be manually switched via a mouse click in an active route, are blocked are in an active route, if the switch is checked. A message is displayed, informing you about the event.

4.3.2 Reset all solenoid devices to last saved position during program start

All solenoid devices are switched to their last saved position at program start and displayed on the screen, if this switch is checked. This is only useful, if you make frequent manual changes on the keyboard while the program is running.

4.3.3 Settings under „Train number display"

Here you define whether the train number display is performed, using feedback contacts or not.

If yes, select 'Blank, if start contact is free, display, if destination contact is occupied'. More details in paragraph **12.13.2.**

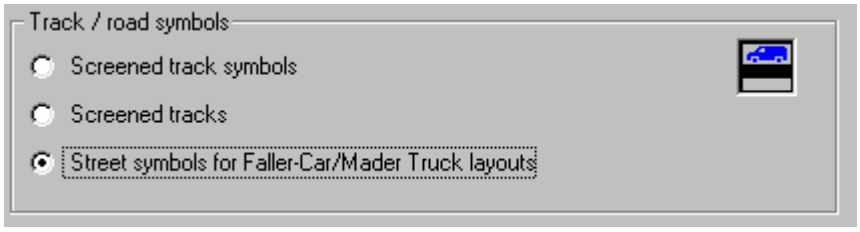
If no, select ' Jump from start to destination contact without contact interrogation '. More details in paragraph **12.13.3.**

If you checked the switch 'Automatically display picture when moving mouse pointer on train number', the train number field in the track diagram, to which the

mouse pointer is pointing, not only displays the train number but also the picture of the locomotive.

4.3.4 Settings under „Track / road symbols“

In the track layout editor (chapter **6**), there are three different kind of track symbol layouts available (see chapter **6.3**):



1. Model railroad with screened track symbols
2. Model railroad with solid track symbols
3. Street- and vehicle- symbols for the “Faller Car” and “Mader Truck” systems in gauge H0.

You determine, which kind of track symbols shall be displayed in the track layout editor. The effect between the different choice of screened (1.) or solid (2.) model railroad track symbols will be seen, if you change the zoom (see **6.2.4**).

The street- etc. – symbols for “Faller Car” and “Mader Truck” (3.) can just be used in pure models of vehicle traffic systems, **NOT** in combination with your model railroad simultaneously in one system, which shows model railroads **AND** vehicle traffic systems. The combination of WIN-DIGIPET-controlled model railroads and model vehicle traffic systems on one screen, is designated for a later expansion of the program.

4.3.5 Save settings

When all settings are finished, click on ‘Save’.

The program part is closed without saving and you are returned to the main program, if you click on ‘Close’.

4.4 License Collection

WIN-DIGIPET 8.1 enables you to represent each of your **locomotives** with its **picture**. For this purpose picture data has to be entered into your system.

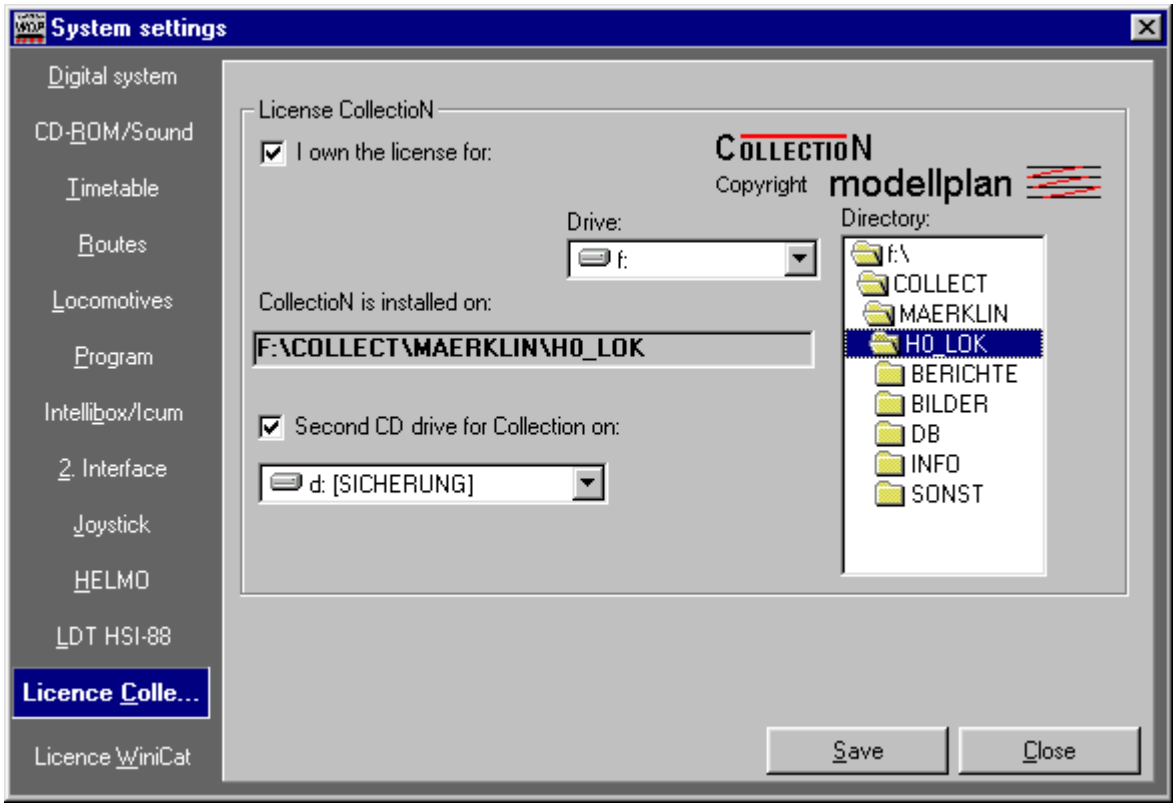
WIN-DIGIPET 8.1 comprises the picture data of all Märklin locomotives with the reference numbers 36xx and 37xx (see paragraph **5.2.1**); this is a database containing more than 160 pictures.

There are also various programs by third parties on the market. Well known are the data bases „Collection“, by Messrs. modellplan in Göppingen and „WiniCat“, produced by a Belgian company.

You can even scan your own pictures into WIN-DIGIPET; for details see paragraph **5.2.3**.

„Collection“ contains the numerical data and picture data of all locomotives in gauge 00- and H0- manufactured by Märklin between 1935 until the end of 1998.

If you purchased the data base „Collection“ by modellplan, insert it into your CD-ROM drive and carry out the installation according to the modellplan manual.



The installation path **C:\COLLECT\MAERKLIN\HO_LOK** is set to default value; if you do not modify it, the executable program (.exe) of „Collection“ will be in this directory.

Note the name of the installation directory and its drive, i.e.\C:.

Click on the index card ‘License Collection’ and tick yourself as licensee in the upper left-hand corner.

Select the drive in the middle of this index card on which „Collection“ was installed, i.e. C:. Click in the right hand column („Directory“) at the file of the drive, search for the sub-directory in which the executable program file (. exe) of Collection is (example above) and double click on it. At the left you will see this message:

Collection is installed on C:\COLLECT\MAERKLIN\HO_LOK

If you modified the installation directory during the installation of „Collection“, you should set the correct directory in which the executable program is stored.

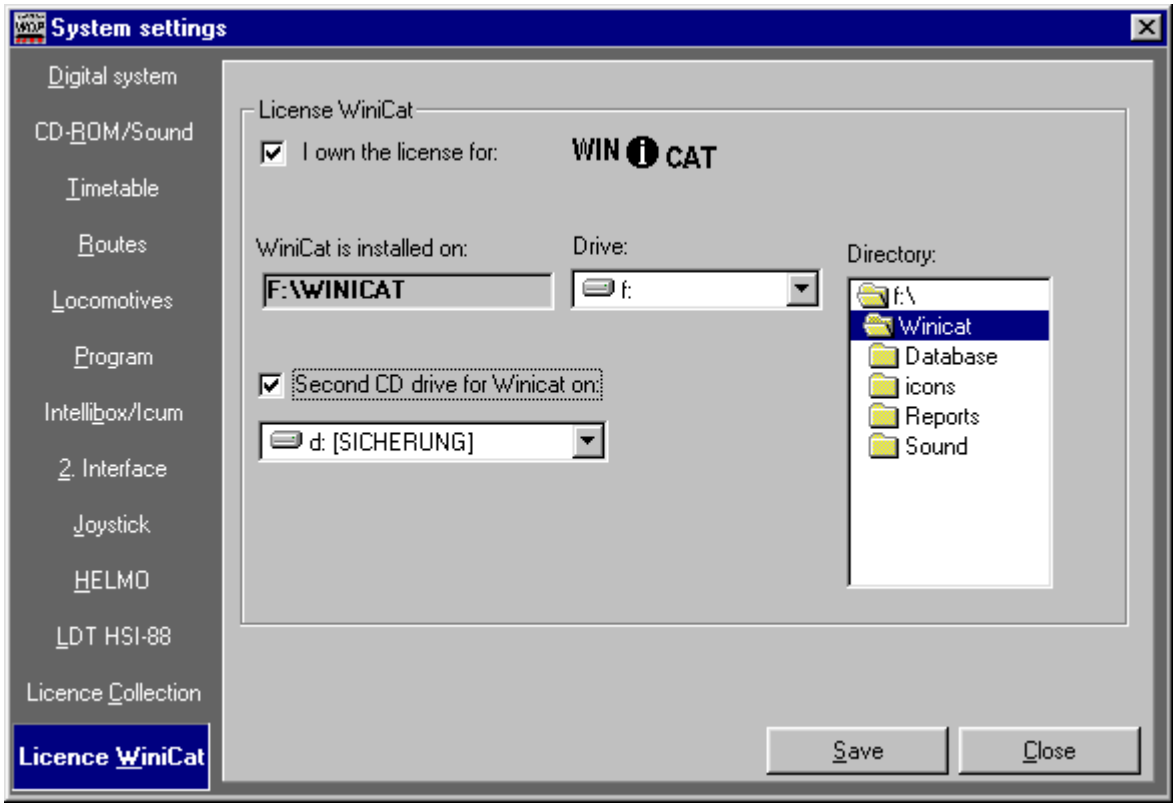
If you have got a second CD-ROM drive, you can select this second drive for your Collection-database. A change of the CD-ROMs for WIN-DIGIPET-database or

Collection-database is not necessary anymore.

Finally click on ‘Save’.

Should the attempt to get access to the database of Collection fail, you will get the message: „Collection (.EXE) not found!“.

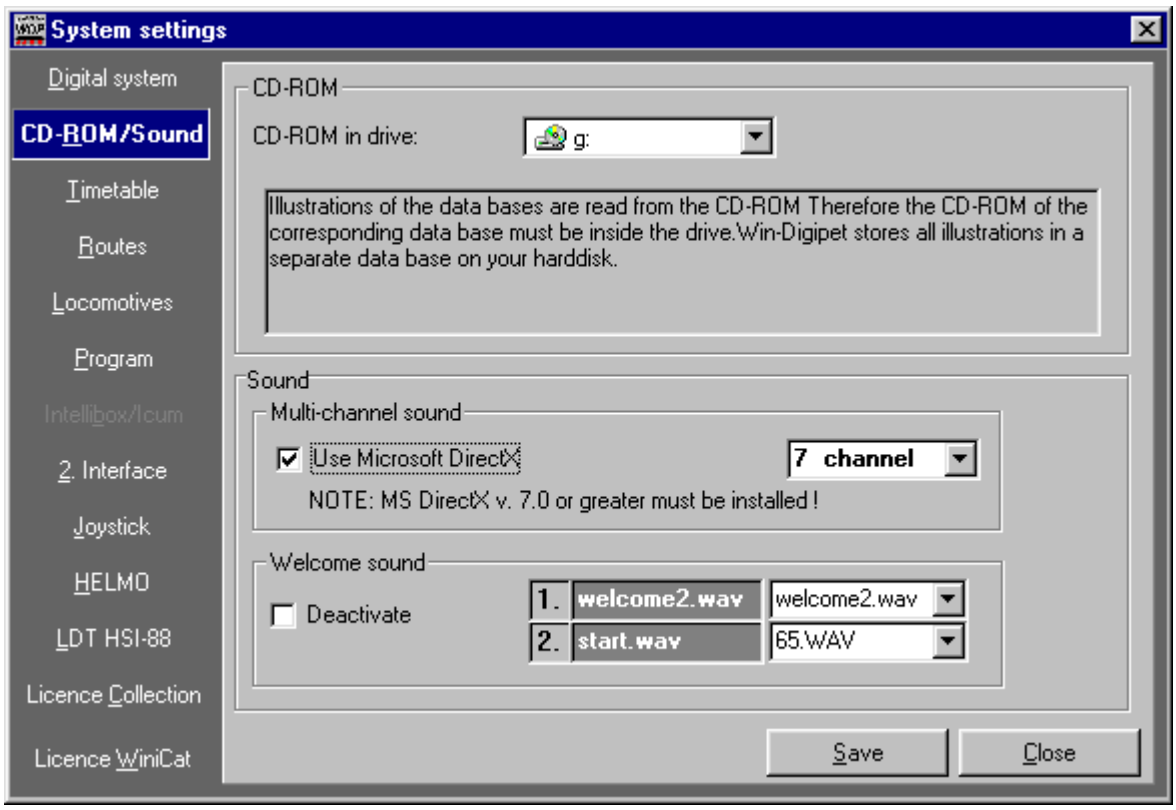
4.5 License Winicat



If the database is installed and inserted in your CD-ROM Drive, proceed as in **4.4**.

Finally click on ‘Save’.

4.6 CD-ROM-Drive letter/ Sound settings



All available drives on your system are displayed on the index card ‘CD-ROM’. Click on the drive letter of your CD-ROM-Drive, followed by ‘Save’.

At the index card “**CD-ROM/Sound”** you have the choice to use Microsoft DirectX for multi-channel sound. Prerequisite: DirektX Version 7.0 or later is already installed on your computer (**not** valid for Windows **95**). Up to **8** channels may be used simultaneously.

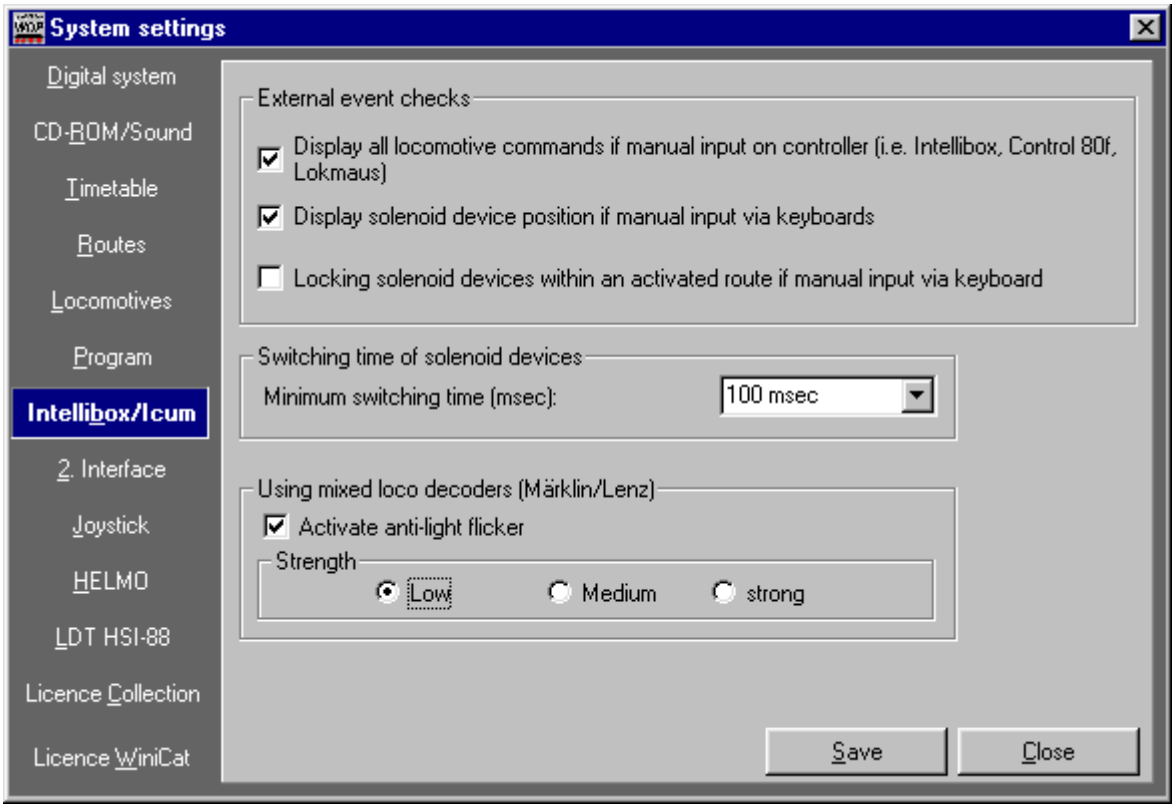
Due to this, a long sound won´t be discontinued, if a new sound will be released by a contact event (see **10.2.2**).

If you experience sound problems (WIN **95**), disable this feature. Then only one sound can be played at one time and a new sound will interrupt the previous one.

You can either disable or select your favourite “**Welcome-Sound**” (“Welcome to WIN-DIGIPET”), which you will hear, when you start **WIN-DIGIPET 8.1** (1st and 2nd sound at program start)

At the end, click on “save”.

4.7. Settings under Intellibox/Icum



Contrary to the Märklin-System, all events on the layout can be fed back to the computer via the Intellibox and the Icum. A real feedback between the system and the computer exists.

4.7.1 External Event Check

All manual inputs on external controllers are displayed on the screen if **„Display all locomotive commands if manual input on controller"** is activated. If you turn the speed control knob on the Intellibox or on a Control 80f, the actual speed is also displayed on the control knob in the loco control field of Win-Digipet Control. Also light, special functions and direction of travel are displayed.

All changes on solenoid devices at manual keyboard input are displayed, if **„Display solenoid device position if manual input on keyboard"** is activated.

An error message is displayed if **„Locking solenoid device within an active route if manual input on keyboard"** is activated. This would be the case if you try to access a solenoid device from the external keyboard, within an active route.

4.7.2 Switching time of solenoid devices

The minimum activation time for all solenoid devices is set here. Values are between 0 to 500 msec. This minimum activation time is adhered to, even when the program has sent a switching-off command. Recommended value is 100 msec.

4.7.3 Using mixed loco decoders (Märklin/Lenz....)

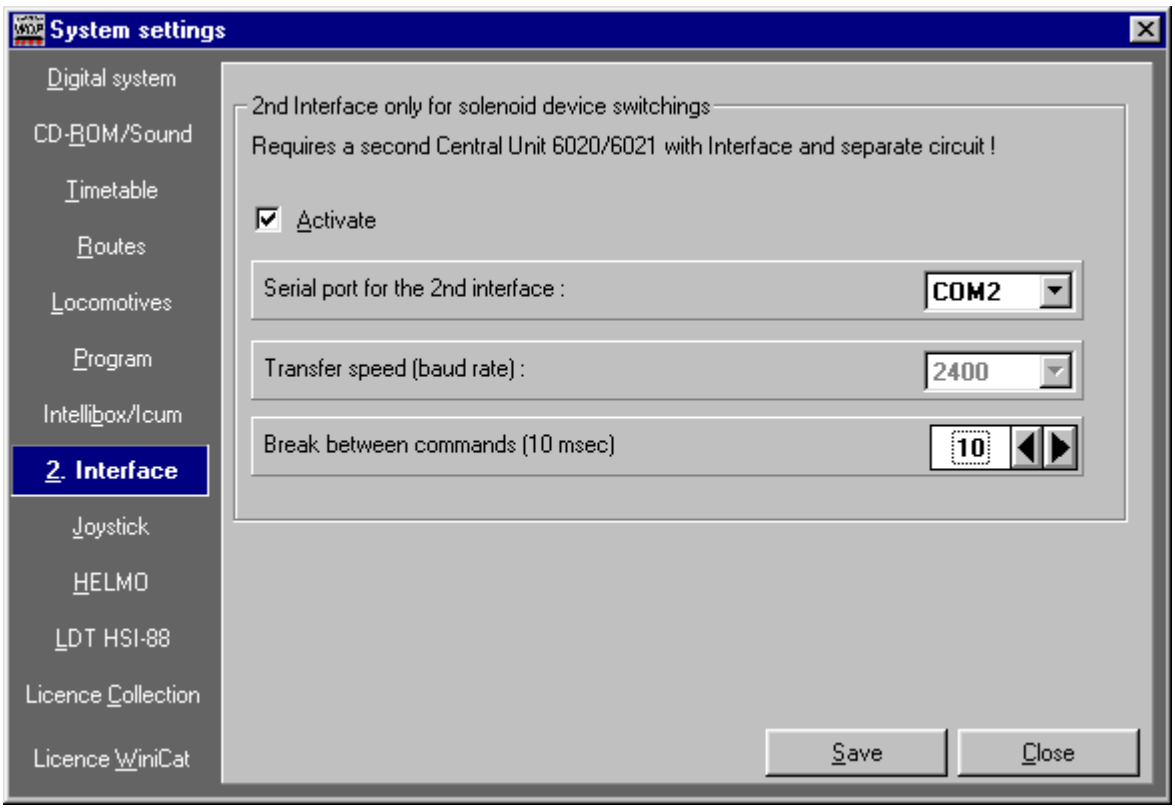
Intellibox and ICUM offer the innovative possibility to use (nearly) all decoder types on one layout simultaneously (Märklin, Lenz, Trix, Uhlenbrock, Digitrax etc.).

Under such conditions – and only then - Märklin-Decoder could show a small problem: -lights on locomotives might flicker.

The option **„Activate anti light flicker“** nearly eliminates completely the flickering of the lights.

Use tests to decide the factor low - medium – strong

4.8 Connection of second Interface (Märklin)



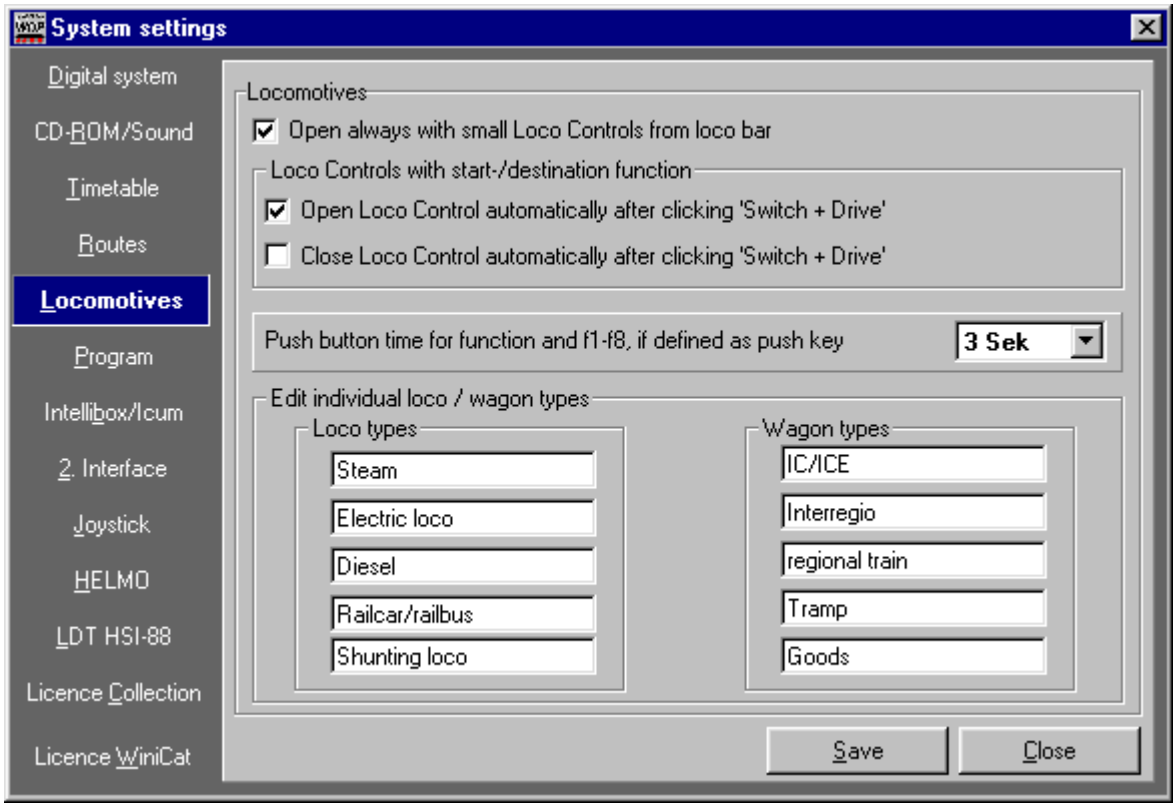
To split the data transfer, a second Interface can be connected to a second central unit 6020/6021.

All solenoid activation is now performed using the second Interface. You require an additional COM Interface, a separate circuit, from which the second Central Unit supplies the solenoid devices.

Only if **'Activate'** is checked, will the second Interface be detected and activated by the program. Also **„Pause between send commands**“ needs to be set, otherwise the Interface might jam.

Intellibox users need not to discard their Märklin Central unit and Märklin-Interface, but use it in conjunction with the Intellibox.

4.9 “Locomotives” settings



At the “Locomotives” index card, you can determine to open the “Loco Controls” (see chapter **5.10.1**) in small size, if you click on the locomotives in the loco selection bar with a left-button-mouse-click (see chapter **12.10.1**), otherwise they will open in large size.

If you switch a route with the “Start-Destination” function (see chapter **12.5.1**) and the digital address of a loco is marked in a train label display on the track layout and this train is available on its start contact, then the button “Switch and Ride” will be activated. On this frame you can determine to open the Loco-Control simultaneously to the start of the train.

If yes, also the feature “Close Loco-Control automatically after “Switch and Ride” will be activated. Depending on your statement, the Loco-Control will be automatically closed (or not), after the train has reached its destination.

Duration of the key-switch for (Loco)-functions and functions F1 – F8

Fundamentally, “definition as key” means, that after switching of a function via mouse click, this switch will be deactivated after a (adjustable) time – the second mouse click for deactivating the function is therefore not necessary. For example, this is meaningful for functions like “Horn” or “Bell”.

In the Locomotive-Database (chapter **5**) you are able to determine, if such functions shall be defined as a push key or not. Are these functions defined as a push key, they will be deactivated (switched off) after the adjusted time.

Edit of individual loco-/ wagon types:

The global settings, which loco-/wagon type you define, will be done and saved here. The first field “no selection” is not changeable; this is to assign the program

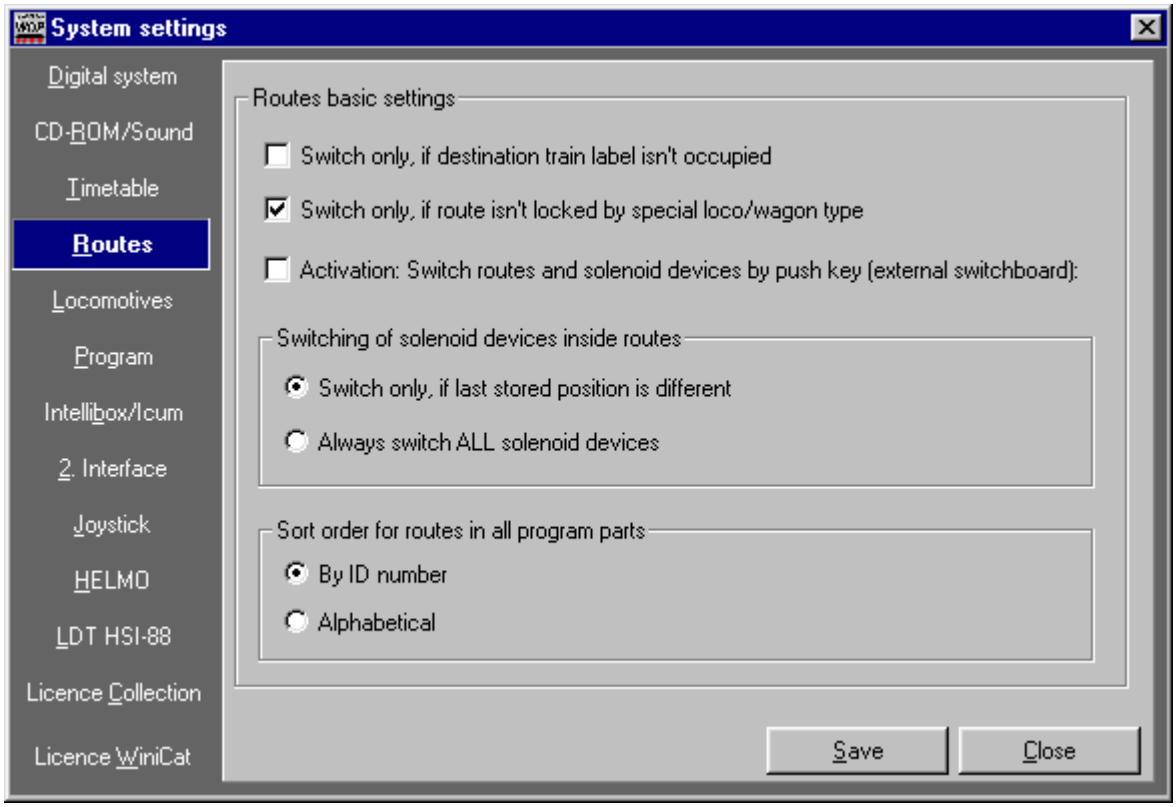
not to check for loco-/ wagon types. Feel free to overwrite the other predefined settings with any inputs you like.

After that, please click on “save”.

You will find the registered Loco-/ wagon types in the locomotive-database (chapter **5**) and the routes-editor (chapter **8**) to release or lock routes for specific loco-/ wagon types.

You can lock routes for specific loco-types, but also for trains, which are (for example) too long for the selected routes.
This is interesting, for example, for fiddleyard tracks: In the Automatic with Demand Contacts (chapter **11**), a too short track will not be occupied by a long train, or a E- loco will not use tracks without power cable.

4.10 Routes settings



Switch only, if destination train-label isn´t occupied:

If you activate this feature, the program checks, whether the destination contact of this route is occupied by a locomotive address shown in the destination train number display, before it will be switched.

Switch only, if the route isn´t locked for a special loco-/wagontype:

If you activate this feature, the program checks, whether the designated route is locked for a specific loco-/ wagon type (e.g. E-Loco is not valid for tracks without power cable). If you do not activate this feature, there will be no check. All entries in the routes-editor or in the locomotive-database will be ignored.

This feature is particularly interesting for switching of routes, for the Switch + Ride function (see **12.5.1**)and the Automatic with Demand Contacts (chapter **11**). In the

timetable-editor, you will get a warning if you try to assign locomotives to routes, which are normally locked for this particular route.

Activation: Switch routes and solenoid devices by push key (external switchboard):

This fundamental switch activates the switching of routes and solenoid devices with an external track layout switchboard by feedback contact keys. The contacts will be defined in the Routes-Editor (chapter **8**).

To register a contact in the Routes-Editor, this feature has to be enabled in general in the system settings.

If you quit the Routes-Editor, all such contacts with its ID-number of the corresponding route will be stored in a separate file.

With one button, you are able to switch several solenoid devices / routes.

The interrogation will be performed every 500 milliseconds, therefore you have to push a button for at least half a second. Switch conditions (see **8.6**) will not be taken into consideration, respectively they are not available, also the release of partial routes (see **8.3**) and the add-on-switching (see **8.8**) are not available as well. The relevant route will be indicated, if a **release**-condition is registered and will be blanked out, if the release-condition is achieved. If no release-condition is registered, the route will just be indicated very shortly.

If you **do not** use an external track layout switchboard, please keep this switch definitely **deactivated**.

Solenoid devices switching within routes:

If you select the function: "**Switch only, if last stored position is different**", only solenoid devices inside selected routes will be switched, if their settings are different to the current settings registered in the program.

With this function, the serial data stream will be decreased tremendously and the performance of other commands will speed up rapidly, because if the switching of the solenoid devices are already in a correct position, it´s not necessary to switch them again.

Caution !

If you switch solenoid devices manually by hand, or routes have just been tested by the program, problems may occur or the program will identify the switch positions in a wrong setting. To ensure, that this won´t happen, please reset the default settings of all solenoid devices (see **12.4**) before you start the timetable operation (see **12.14**) or the automatic with demand contacts (see **12.15**).

Remark for Intellibox-User:

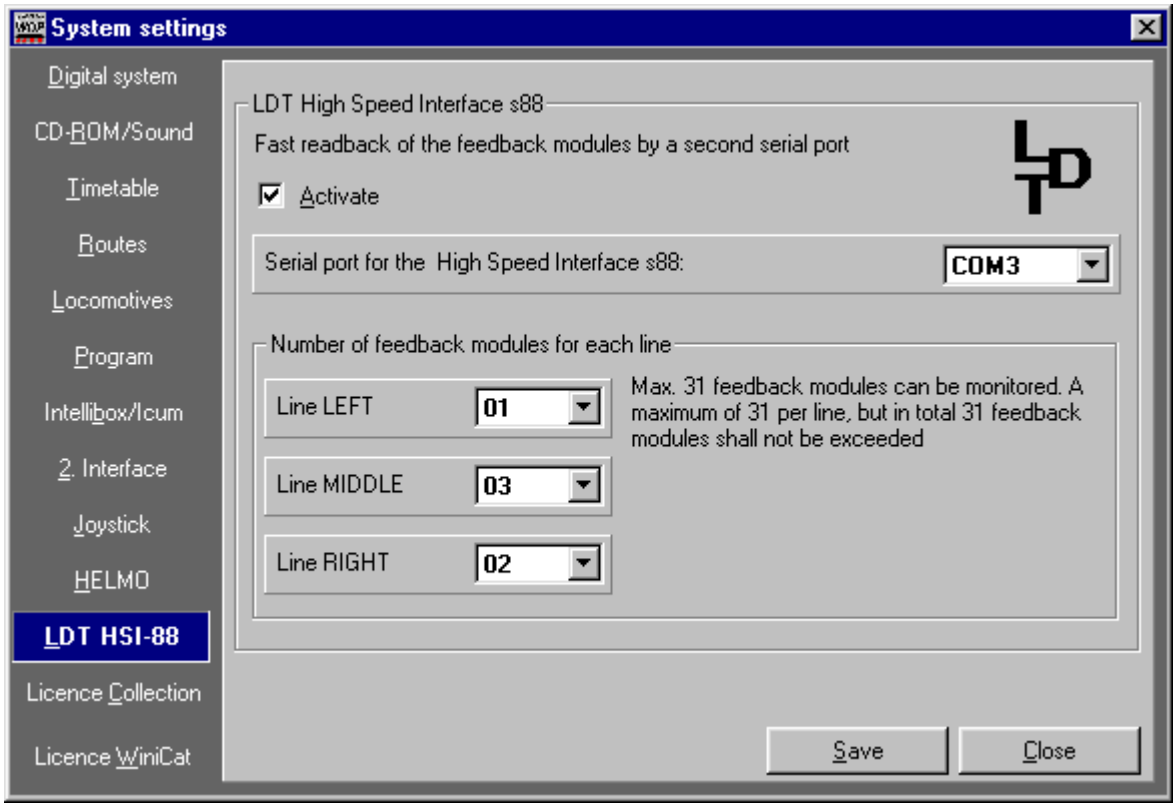
You can also speed up the switching of solenoid devices, if you don´t connect any keyboards to your Intellibox and the **special option 33 is set to zero**. Due to this setting, there will be no feedback from the solenoid devices to the keyboards and this will save time in addition.

Sorting function of routes in all program parts:

Please determine, if either routes shall be sorted and displayed by ID-number or in alphabetical order in all program parts.

At the end, please click on “save”.

4.11 LDT-HSI 88 Interface settings



The company **Littfinski-Datentechnik (LDT)** in 25482 Appen (North of Germany) supplies their **LDT High Speed Interface HSI 88** to accelerate the feedback contact messages to the bus of the s88 feedback modules. All Märklin compatible feedback modules can be connected.

The **HSI-88** is able to transfer the feedback information with a transfer speed of **9600 Baud** and not only 2400 Baud like for the Märklin Interface.

The **HSI-88** can not just only read back one feedback line, but **three at a time**. Therefore there is no need to arrange them all like pearls on a cord like you have to do for the Märklin Interface. You may arrange up to **three lines for the bus** in parallel and you have got the advantage, that these s88-bus lines will be performed quicker.

Remark: You should designate some reserve modules for the left or middle bus line, to be connected to your model railroad later on. With this, you avoid changes in the way to count the feedback contact numbers.

You can arrange 31 feedback modules per line, but summarised you may not exceed 31 together in all three lines. The **HSI-88** requires a separate COM-port on its own.

The **HSI-88** works by event. One or several feedback inputs will be reported **directly** to the PC.

This saves computer capacity and the **feedback time will be shorten**, because the PC needs not check any changes in a cycle (and therefore with delay), but the PC gets all changes reported **active** by the HSI-88.

The Intellibox uses the same principle. If you divide the bus into three lines, an additional acceleration in conjunction with the HSI-88 will be possible for Intellibox-User.

You can activate and configure the **HSI-88** in the system settings of **WIN-DIGIPET 8.1**.

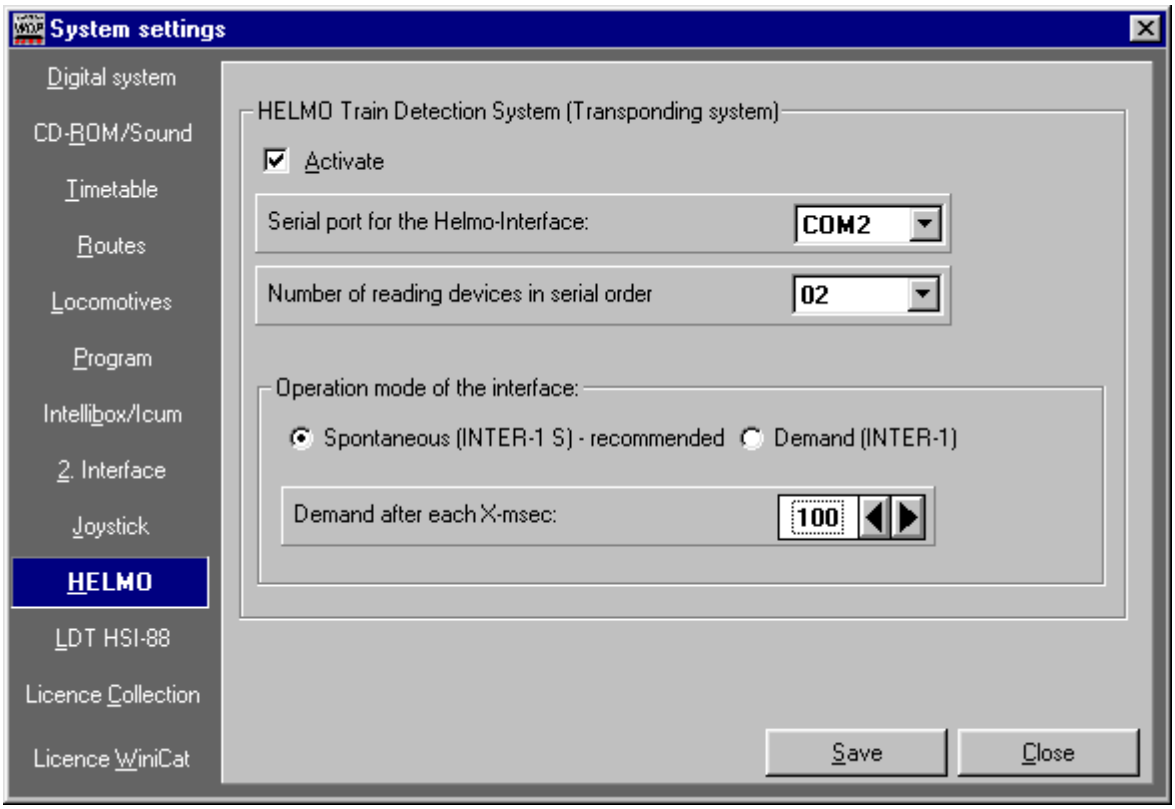
The numbering scheme of all used feedback modules will start with 1 and ends with a maximum of 31, starting at the left bus line from the bottom to the top, after that, from the middle bus line (bottom to top) and the same for the right bus line.

You should connect the amount of feedback modules quite regular to all three bus lines.

You can find examples for the connection and additional information on the homepage of company Littfinski-Datentechnik: www.ldt-infocenter.com

After that, click on “save”.

4.12 Settings for HELMO Detection System (Transponding system)



The HELMO Detection System in conjunction with a transponder mounted at the locomotives makes it possible to identify the exact loco-address if the train rides over this specific reading devices.

A maximum of **30 reading devices** may be installed at your model railroad.

Via an interface and a separate COM-port, the identified addresses will be reported to the program.

Two kinds of HELMO-interfaces are offered, for a different way to identify the loco-addresses:

Inter1-S :

This interface reports directly – without specific demand of the program – any change from the reading devices. This is the faster and recommended method, because additional data, which increases the data stream and slow down the system, are not necessary.

Inter1:

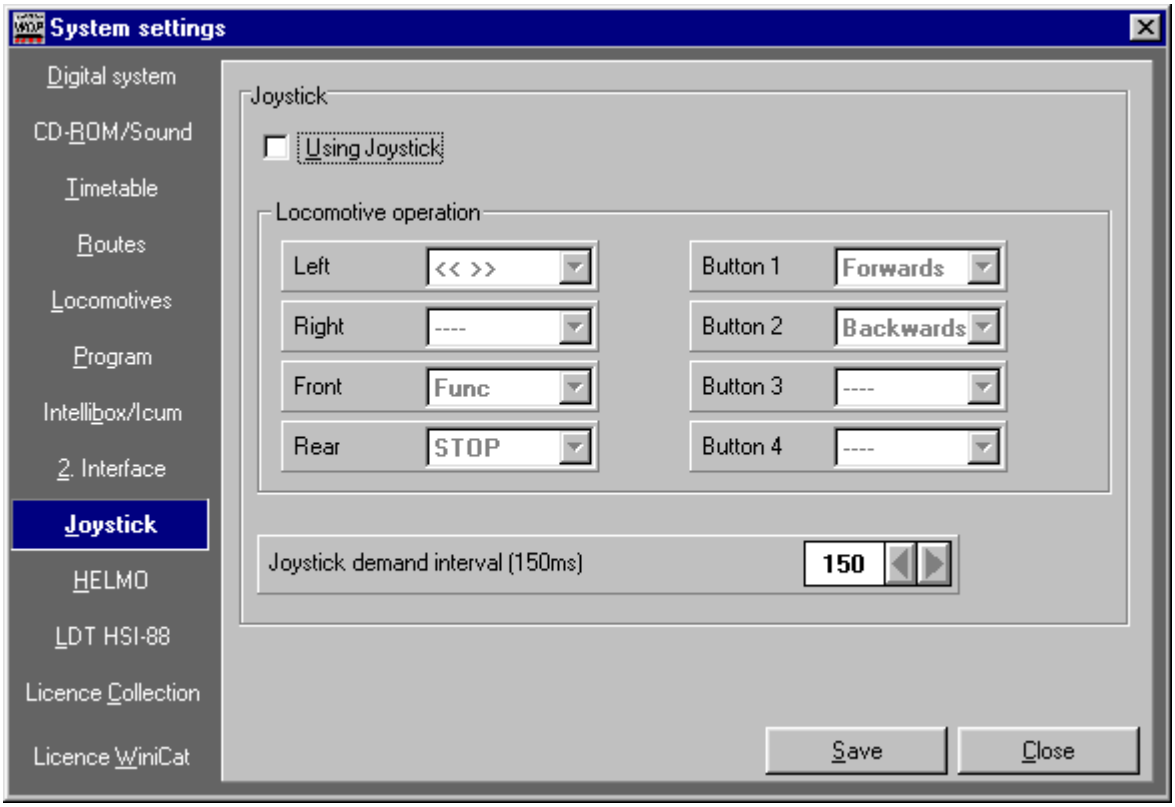
This interface just works on demand by the program. The inquiry time can be individually adjusted.

When you have activated a HELMO-interface, the switch button in the main program will be activated and the amount of reading devices will be displayed and are ready for identifying the addresses (see **12.12.9**).

You can find additional information on the HELMO-homepage: www.helmo.de .

At the end, please click on “save”.

4.13 Joystick settings



You can also use a joystick to control the locomotives.

Here, you can activate a joystick. If a joystick is neither installed on your windows system, nor connected, an error message will occur.

The joystick has to be **calibrated correctly** in your windows-setup for gameports/joysticks, before using the joystick

You can configure all functions for the joystick and its fire buttons individually.

The interrogation interval of the joystick can be adjusted individually as well.

After that, please click on “save”.

4.14. Exit System Settings

All system settings are saved, if you correctly clicked ‘Save’ on all 13 index cards.

The program part is finished with ‘Exit’ .

5 - LOCOMOTIVE-DATA BASE

5.1 General

In this part of the program, all of your locomotives and functionality models will be registered and managed. An unlimited amount of locomotives can be stored, but a maximum of 80 for the Märklin system and 99 for other systems can be controlled simultaneously.

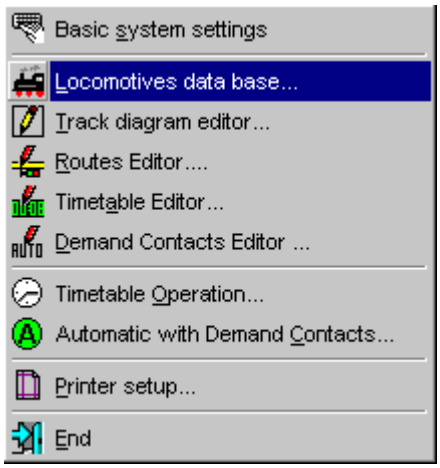
With the controlling concept of **WIN-DIGIPET 8.1** you can also register and switch the special functions F1 to F8.

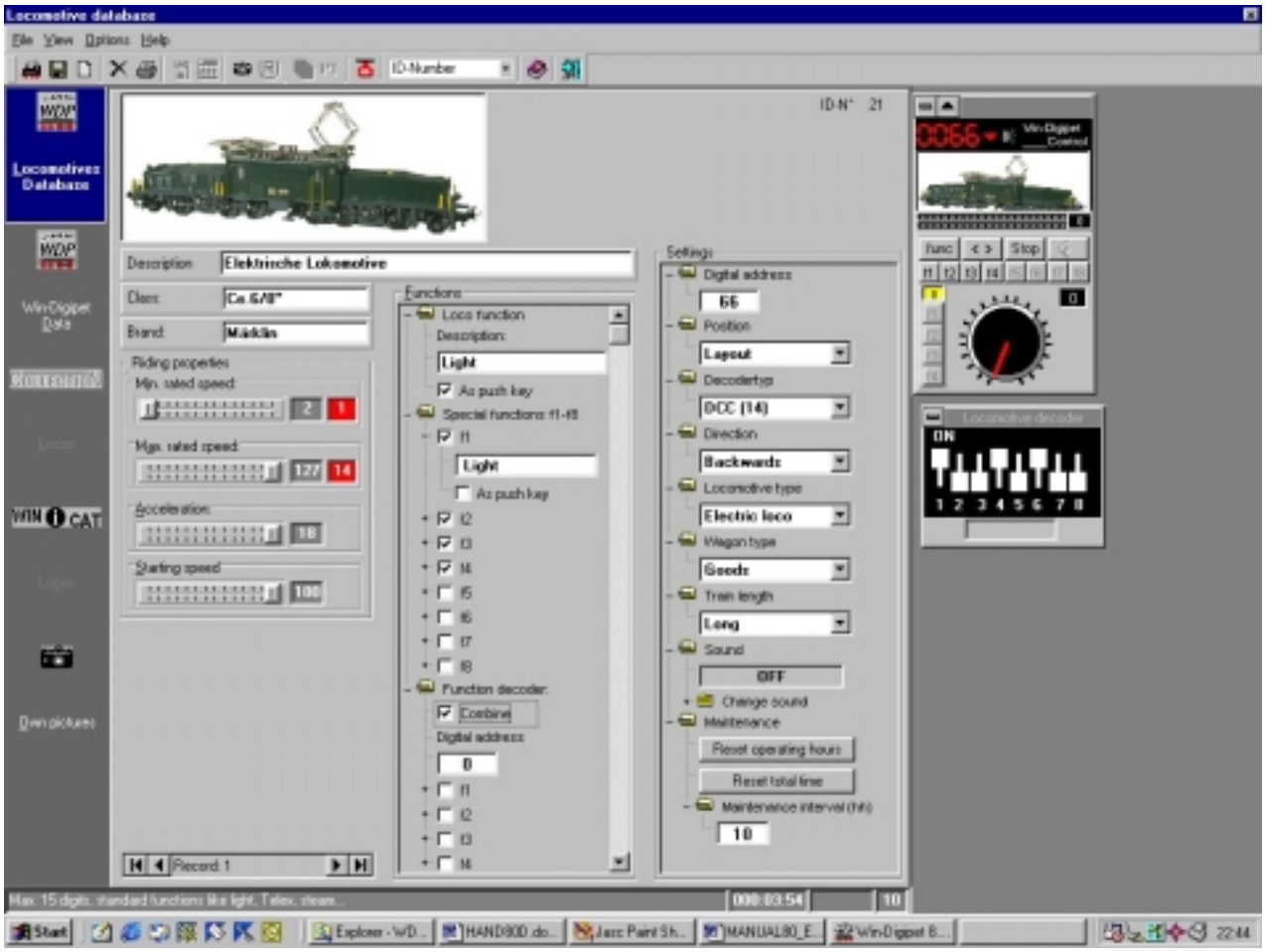
In an impressive way **WIN-DIGIPET 8.1** gives you an outstanding overall control of all events on your layout. Each locomotive with its coloured picture is displayed on the screen.

In WIN-DIGIPET 8.1 locomotives are comfortably controlled through locomotive control panels („Win-Digipet-Controls“, „Loco-Controls“). You can display those two controls in two different sizes on the screen, depending on the operation of the trains.

After the first start, after an update from WIN-DIGIPET version 5.0 or 7.x to **WIN-DIGIPET 8.1**, the locomotive database will automatically be converted. You have to **check** or make a **new entry** for your locomotives, regarding the **decoder-type** (see **5.7**), min. rated speed, max. rated speed, acceleration and starting speed (see **5.5**).

In the menu bar click on ‘File’ and ‘Locomotive Data Base’ or on the switch in the symbol bar.





Under ‘WIN-DIGIPET-Data’ (first index card) the data of your locomotives are stored. To record a new locomotive click on ‘File’ and ‚New‘ (or in the symbol bar on switch . Enter the data of your locomotives into this entry mask.

5.2 Determine pictures of locomotives

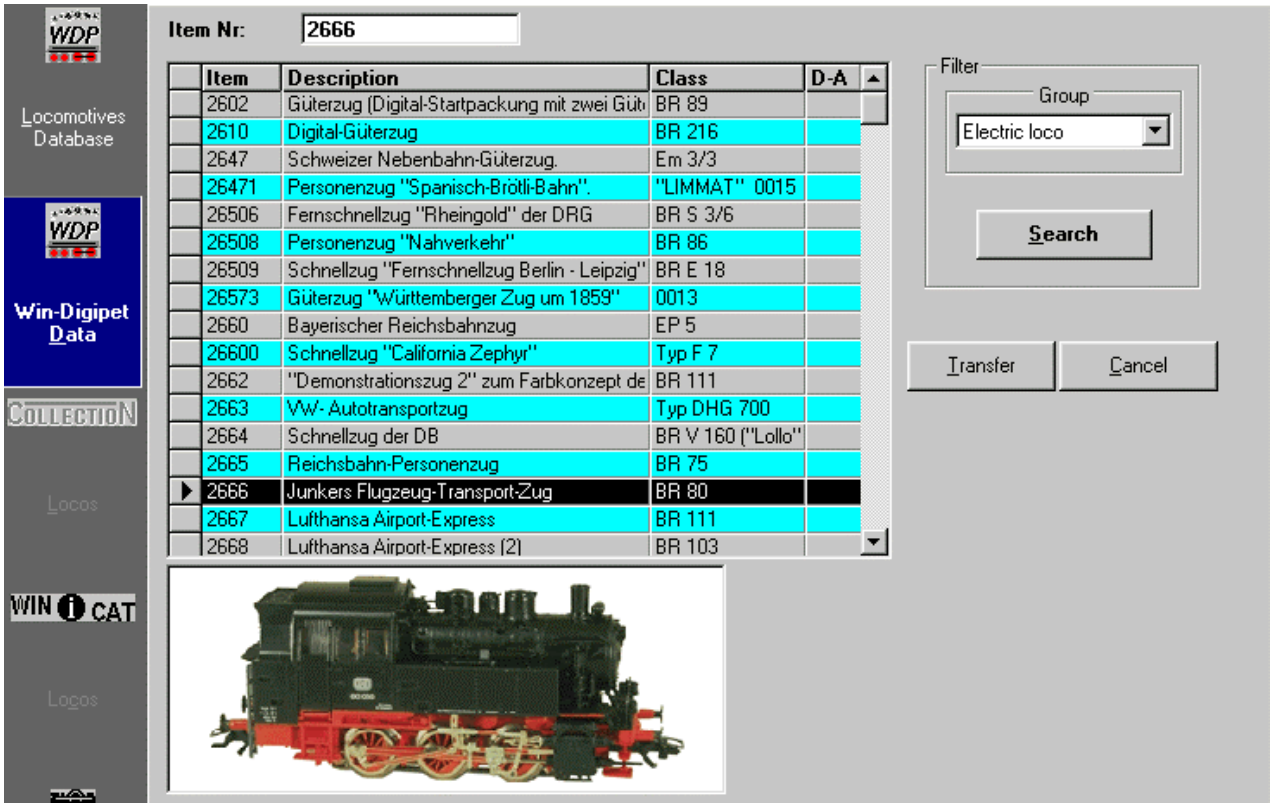
First select a picture matching the locomotive you intend to record; four alternatives are at your disposal:

WIN-DIGIPET pictures, Collection pictures, if you own this program, WiniCat pictures, if you own this program, scanning your own pictures.

5.2.1 'WIN-DIGIPET-pictures'

A list with all Märklin-Digital locomotives of the series 36xx and 37xx opens. With a mouse click select the locomotive you want.

Should you not own „Collection" or „Winicat" and do not find your locomotive in this list, select a locomotive whose picture is very similar to the one you want to record. The same applies if you do not intend to scan pictures of your own into the WIN-DIGIPET database.



Through the „Filter" you can reduce the list to represent only selected types of locomotives. For selection define „Group" followed by a click on 'Search'. You will see the selected group immediately in the list window at the left.

Now click on the line in the list describing your locomotive; at the same time the picture is displayed at the lower left. Click on 'Transfer': The system changes to „WIN- DIGIPET-Data", and the picture appears in the upper left-hand panel.

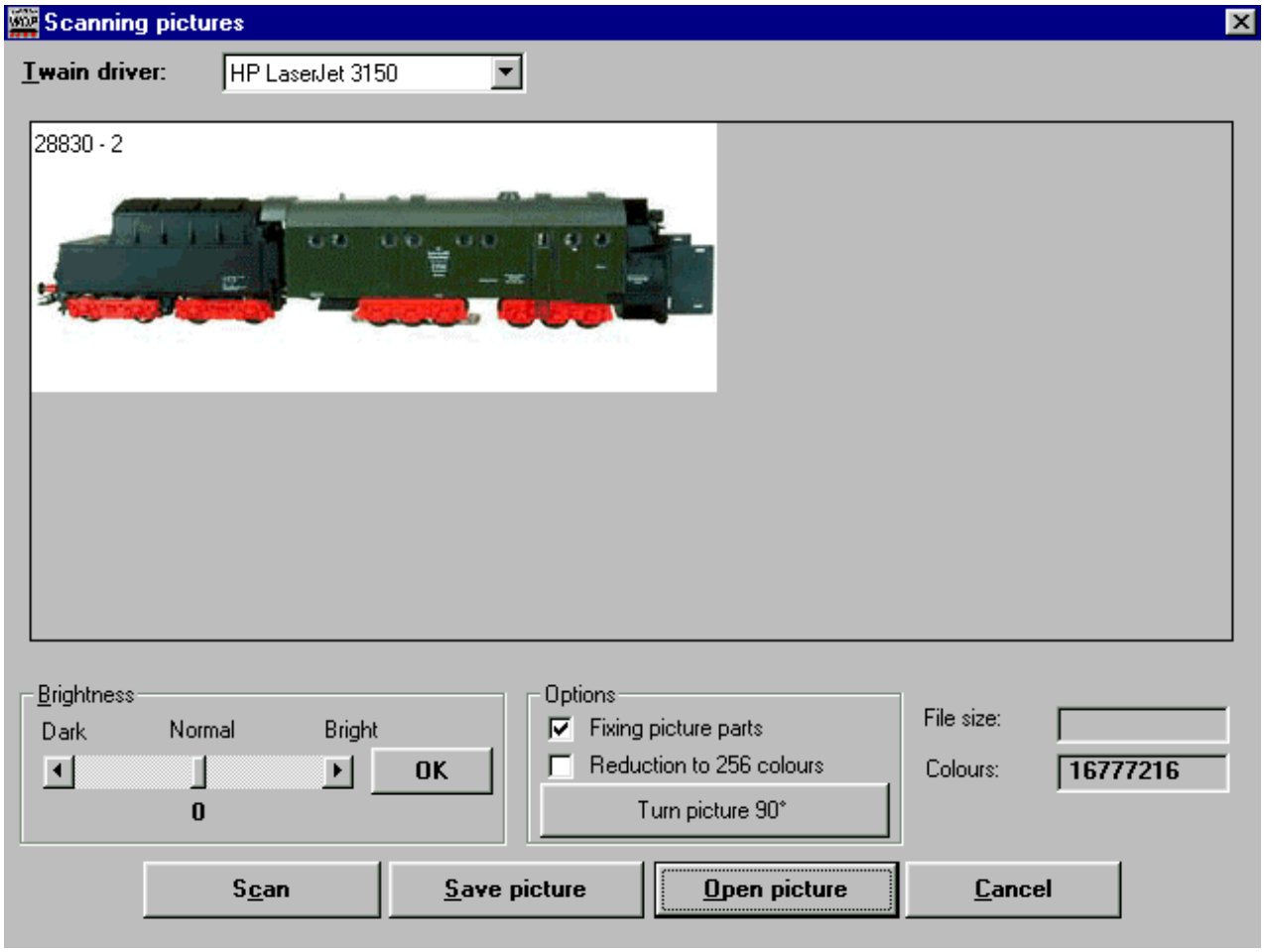
5.2.2 Collection and Winicat

Under 'COLLECTION-pictures' and 'WINICAT-pictures' you will find locomotive listings and search functions as in index card 'WIN-DIGIPET-pictures'. Follow the instruction ad described.

The selected pictures are transferred to the WIN DIGIPET database, using 'Transfer'.

5.2.3 Scanning your own pictures

You reach the window for scanning your own pictures via ‘Options’ - ‘Scanning pictures’ (or via switch in the symbol bar).



If you operate a scanner, a Twain driver has been installed with the scanner on your system. In the selection panel „Twain driver“ all possible and traceable Twain drivers are displayed. Select one of them.

To scan a picture, click on ‘Scan’. Thus, the scanning procedure is initiated, and the typical opening picture for scanning appears.

Pictures should be scanned with **100-dpi max.**!

You can also display an existing picture in the window by clicking on ‘Open picture’. A selection window with file names and directories will be opened.

Search for your own scanned picture or an existing picture with the file name extension .BMP. Double click under ‘File name’ on its .BMP picture, and „Scanning pictures“ appears immediately in the window.

The brightness of the picture can be adjusted with „Brightness“ using a slide controller; confirm with ‘OK’.

Through ‘Fixing picture parts’ you can mark – with the left mouse key pressed- a part of the picture frame. You can either store this picture part or reject it.

By ‘Rotate picture by 90°’ you can change from landscape to portrait.

In „File size“ and „Colours“ the size of the file and picture quality are displayed.

Finally click on ‘Save’; the window „Save picture“ appears. Enter the former file name or a new one and click on ‘OK’ under „File name“. Thus the picture is now saved on your hard disk.

Via ‘Cancel ’ you are returned to the main locomotives database.

Click on ‘Own pictures’. Search under „Drives“ and „File name“ for the corresponding **.BMP** picture – or in version **7.0** also **.JPG** picture – and double click on it: You can see the picture of the locomotive at the bottom.

You can add a description of the picture.

Finally click on ‘Transfer’: The system jumps to ‘WIN-DIGIPET data’, and the picture appears in the upper left-hand panel.

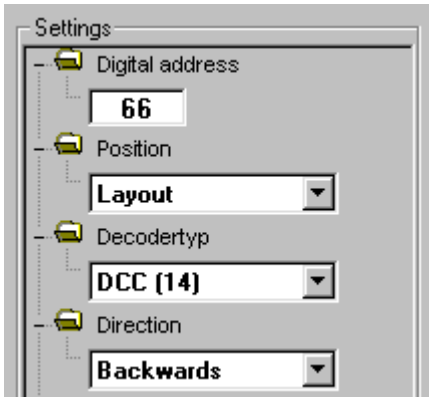
5.3 Description, Class, Brand

The panel „Description“ should contain a description of this locomotive; it is frequently fetched from the databases. You can also enter your own description, e.g. steam locomotive 38 2182 Prussian P 8. Up to 60 characters are allowed.

Next enter the class. Up to 8 characters are allowed e.g. BR 38.10 or E 10.1-3 or V 100.20 etc.

The panel “Brand” should contain the manufacturer of your locomotive. A maximum of eight letters is possible.

5.4 Digital address, train number



Afterwards you register the digital address on the right hand side in the first panel below “settings”: Märklin 01 to 80, Lenz 2.0 from 01 to 99, Lenz 3.0 from 01 to 9999 and Intellibox depending on the type of decoder from 01 to 9999.

You can also enter the address via the keyboard after deleting the number in the address panel.

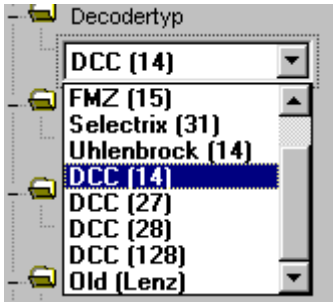
Important – only with Märklin-Digital-System: Digital-Address **68** must not be used as it is reserved for internal use of the program.

In the **Loco control panel** („Win-Digipet-Control“), displayed in the top right hand and its functions, described in **5.10.1**, a red number follows your entries immediately.

The digital address of the locomotive is also the **fixed** train number.

5.5 Decoder-type, locomotive-type

The precise data about the decoder types is necessary and important for all functions and features of WIN-DIGIPET.



Below “settings” click on the arrow near decoder type and a selection list will open. Select the decoder type which is installed in each of your specific locomotives. The numbers in the brackets will show you the amount of different speed-steps.

You are able to select „FMZ“ and „Selectrix“ if you use the Uhlenbrock Intellibox or the Fleischmann Twin-Center.

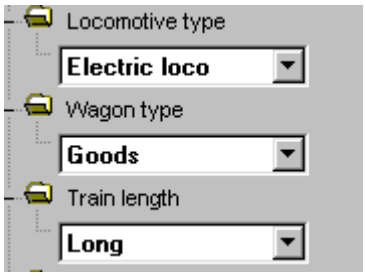
For the Lenz-System you can select DCC (14), DCC (27) , DCC (28), DCC (128) and Old (Lenz). The “old” Lenz-Decoder were installed in former Arnold-locomotives for the DCC-System. If you have selected this type of decoder, speed step one will be transmitted if you turn. This decoders needs speed-step one, otherwise they will not change their direction.

You will find more details in chapter **5.12** about the Uhlenbrock Decoder.

If you make an upgrade to **WIN-DIGIPET 8.1** from a former version 5.0 or 7.x, you **must** re-enter all types of decoder for all your locomotives.

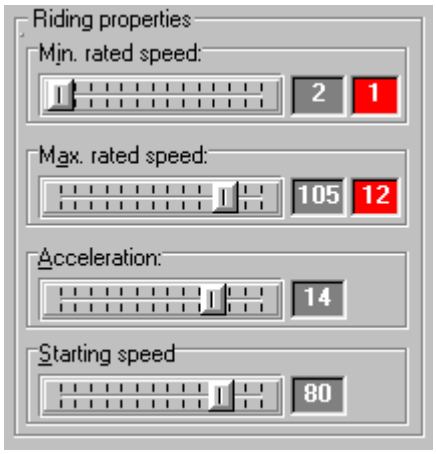
The next step is to click below “settings” at the arrow near “**Locomotive type**” and a selection list will open.

Here you can determine to which loco-/wagon type your train belongs. This list depends directly on your input, which you have done in the system-settings (chapter **4.9**). There, you have also fixed the train length.



You will find the same selection list in the routes-editor. There, you can determine, if individual routes are locked for specific loco-/wagon-types, respectively train length.

5.6 Running properties, starting speed, direction



<u>Important notice:</u> If you have upgraded from a former version 5.0 or 7.x to **WIN-DIGIPET 8.1** you have to check or register completely new all explained functions in this section for all locomotives.

You can adjust the running properties of the locomotive with the sliding switches.

All speed-adjust-ranges are divided in **128** steps. However the amount of speed-steps are depending on the type of decoder, which you have selected (see **5.5**, numbers in brackets).

Under “Running properties” you register the amount of steps for “min. rated speed” and “max. rated speed”; in the red panel on the right hand side, you will find the ordinal number to the related speed-step.

In this example, we have a view on a decoder for Märklin-locomotives with the old Motorola-data format. This decoder has 14 speed-steps, which are – like for all decoder-types – divided into 128 steps.

For the “min. rated speed” we have selected the amount of steps “02”, for the “max. rated speed 105”. On the right hand side, you will find the speed steps “1” respectively “12”.

These figures will be automatically calculated by **WIN-DIGIPET 8.1** and will be represented like in this example.

Minimum rated speed determines at which speed the locomotive just moves and does not stop, e.g. step „2“ for easy moving, step „4“ for „stiffer“ moving locomotives.

Maximum rated speed determines up to which speed the locomotive may be accelerated without derailing in curves, e.g. „11“ = top speed.

Acceleration: The acceleration factor determines whether the locomotive is accelerated fast or slow.

It is recommended that you test your locomotives on your layout to find the best values of minimum/maximum rated speed and acceleration rate.

Starting speed: You can define an individual speed of each locomotive at which it moves off when all locomotives receive a command to start simultaneously. The starting speed is the subtraction: Maximum rated speed minus minimum rated speed, multiplied by the starting speed percentage.

You can select starting speed percentages between 0 (%) and 100 (%) in steps of five percent.

Click in the panel „Starting speed“ at a percentage adequate for the locomotive concerned, e.g. 50 **(= 50 %).** For example: If a maximum rated speed of 10 was recorded and a minimum rated speed step of 2, this locomotive will move off at the speed step of 10 minus 2 = 8 times 50 % = **4** when all locomotives are given the command to start simultaneously.

Important: If you set the value to **0%**, all commands to start, for all automatic operations, will be ignored for this locomotive.

If you want to move a locomotive via its **train number** (= digital address, see **5.4**), in the operation modes “Automatic with Demand Contacts” or “Switch + Ride-function” (see **11.1**, **12.5.1-B** or **12.15**), you **must** enter a starting speed **greater than “0”**. Referring to this starting-speed, the locomotive starts to move from its start contact within the operation modes “Automatic with Demand Contacts” and “Switch + Ride - Function”:

Therefore the adjusted **starting-speed** shall not be **too low**, otherwise the locomotive does not move, even if it has received a start command. (see chapter **8.6**).

In both mentioned operation modes you cannot only start your locomotives referring to the **train number**, but also you can slow them down and stop them on their destination contact. If you just use these two operation modes on your model railroad **and** you move them by train number, isolated track sections (powerless tracks) before signals are not necessary anymore.

It is also possible to send a common starting command to all locomotives – the locomotives will all start to move with their specific registered starting speed.

You will send out a command for a common start for all locomotives, if you click within the main program on “Options” and “All locomotives on starting speed” in the menu bar or you click at the symbol at the symbol bar.

You should use this command only, if you have switchable isolated track sections and you don´t want to ride via train number in the operating modes “Switch + Ride -function” and “Automatic with Demand Contacts”.

You shall **never** use this command within the **timetable operation**. Before execution an attention window will occur.

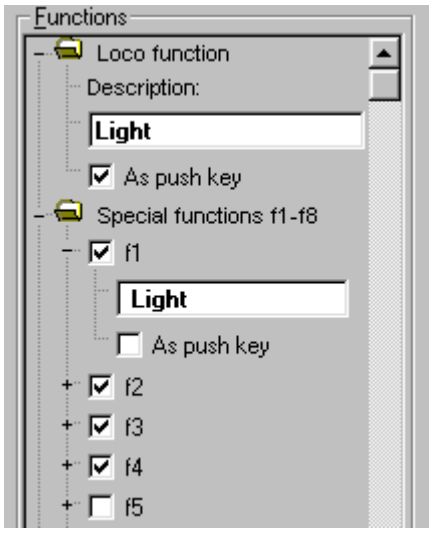
WIN-DIGIPET 8.1 stores the direction **of travel** of the locomotive. In the panel „Direction“ enter the present direction of travel, i.e. forward or reverse. You have to do this once only: after a direction test of the locomotive. The program „remembers“ the direction of travel, displays direction changes and saves it when the layout is switched off.

In the top line of the locomotive control panel, the direction of travel of the locomotive is displayed next to the digital address: red arrow to the right = forward, red arrow to the left = backwards.

If this indication is wrong, pick up the loco from the track, use the reversal command and put the loco back on the track again.

5.7 Functions

The settings below “Functions” are clearly arranged and easy to handle. A click on a “+” – symbol opens additional panels for possible inputs. If the input panels are larger than the size of the window, a scrollbar will appear on the right hand side.

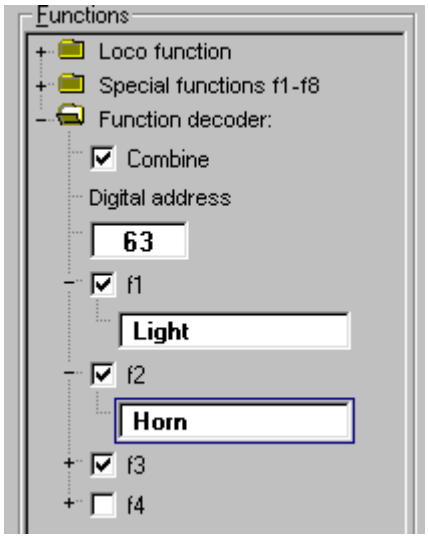


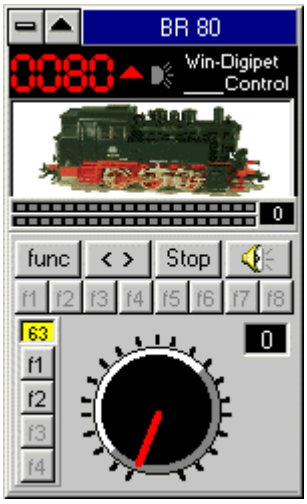
Loco-function: Type in a short description (max. 15 digits); besides, you can also define these function as a push key. The switch duration will be determined in the system-settings (see chapter **4.9**). If you release this function – manually or during timetable operations – it will be automatically switched off, after the registered timeframe.

Special functions: Special functions F1 to F8 are supported. You can enable these functions, if you mark the panel next to the corresponding function. Beside the description, you can also define each of this functions as a push key.

Combine: You can combine a function-decoder directly with the corresponding loco-control of the locomotive. The combination becomes visible on the left side of the loco control next to the control knob as a vertical ledge with 5 panels: A yellow panel with the digital address of the function-decoder, below this, the active or non-active functions F1/F2/F3/F4 (see **5.10.1**).

The combination is visible in the large loco-controls only; only four functions of a function decoder are supported.

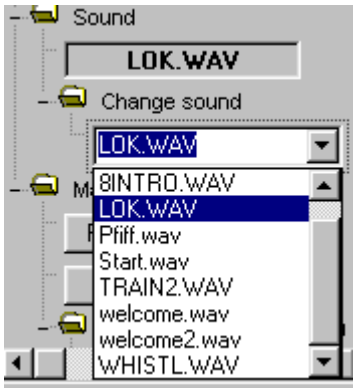




To activate the combination, please set a mark at “Combine” and enter the digital address of the function-decoder. After that, please mark the desired functions and type in a description (max. 15 digits) per function. The combined functions will be indicated immediately on the loco-control and are ready for use.

You can release a combination by deleting the mark at “Combine”.

Loco-sound: This feature enables to combine a specific loco-sound to the corresponding loco-control. If you would like to enter a sound, click below “settings” on the “+”-symbol next to “Change sound”. With a click on the arrow to open a selection list, all available WAV-files will be indicated, which are stored in



the directory WDIGIPET/SOUND. Select a sound: Immediately the sound-button will be activated in the loco-control (see **5.10.1**) and can be switched on and off whenever you want.

If you have defined a specific loco sound, it will also be available for the timetable-editor.

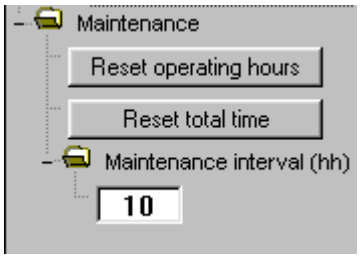
You can delete a defined loco sound, if you select “OFF” in the first line of the list and then click on “save”.

If you move your mouse pointer to a function and wait, a short description will be shown as a tooltip-text. Not available functions will be shown in grey (not active).

Some of the Märklin- and Roco functionality models have to be registered as a locomotive; then they can be easily controlled by **WIN-DIGIPET 8.1**. These are:

- The Märklin-Digital-Crane (turnable, 7651, 16 addresses adjustable). Register this crane in the locomotive-database – a picture can be found in the WIN-DIGIPET directory (**\Eigene\kran.bmp**). Then you are able to control the crane with its own specific loco-control panel.
- You can control the unique digital-special-functionality wagon **Panoramawagen** (4999, fix address 10) and **„Tanzwagen“** (“dance-wagon”; 4998, fix address 20) with individual loco-controls like described above. Pictures can be found in the WIN-DIGIPET-directory, as well (**\Eigene\4999.bmp** and **\Eigene\4998.bmp**).
- Roco-Digital-Crane: Register this crane in the locomotive-database with the DCC (14) protocol; the adjusted address from the manufacturer is 7.

5.8 Hours of operation, total time, maintenance interval



If you maintain your locomotive, click on the “+”-symbol next to “Maintenance”. Here, you can also adjust the maintenance interval; the range is between 1 hour up to 100 hours.

If the hours of operation (display = hours: minutes: seconds) exceeds the pre-set maintenance interval, a **small oil can** appears in the big Loco-Control (see **5.10.1**) to the right of the speed control. The locomotive is also displayed in the bar „Loco selection“ of the main program (see **12.10.1**) **A red frame** alerts you.

After a maintenance (lubrication) of the locomotive, use the arrow next to „Hours of operation“ (<), to reset the counter to **000:00:00**. The hours of operation since the last maintenance are added to the total hours of operation = „Live expectancy of locomotive added to the field „Total hours“ (Display = hours: minutes).

With a click on “total hours” you can reset the display back to **0000:00**.

Operating hours, total hours and maintenance interval for this locomotive will be shown at the lower right border of the locomotive-database-window (see **5.1**).

.9 Location, Help, Save

Here you determine by **„Layout/In display case“** whether the locomotive belongs to the bulk of not more than 80 locomotives actually operating on your layout. **Only** locomotives of the category „**On layout**“ will be activated and included for operation in the main program.

If you point with the mouse pointer to a function, e.g. to line „Minimum rated speed“, a **Help text** is displayed in the bottom status line.

Finally click on ‘File‘ and ‘Save’ or in the symbol bar on the switch . The locomotive and its picture are saved in the WIN-DIGIPET-data base.

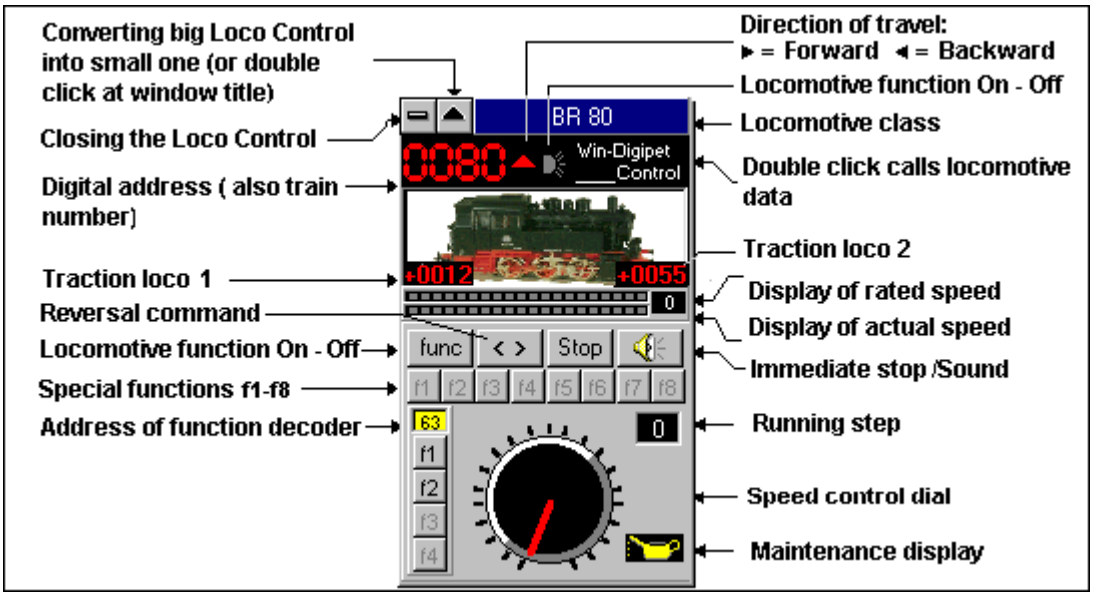
5.10 Locomotives test

The recorded locomotive can now be tested. Use the loco control at the top right hand of the screen.

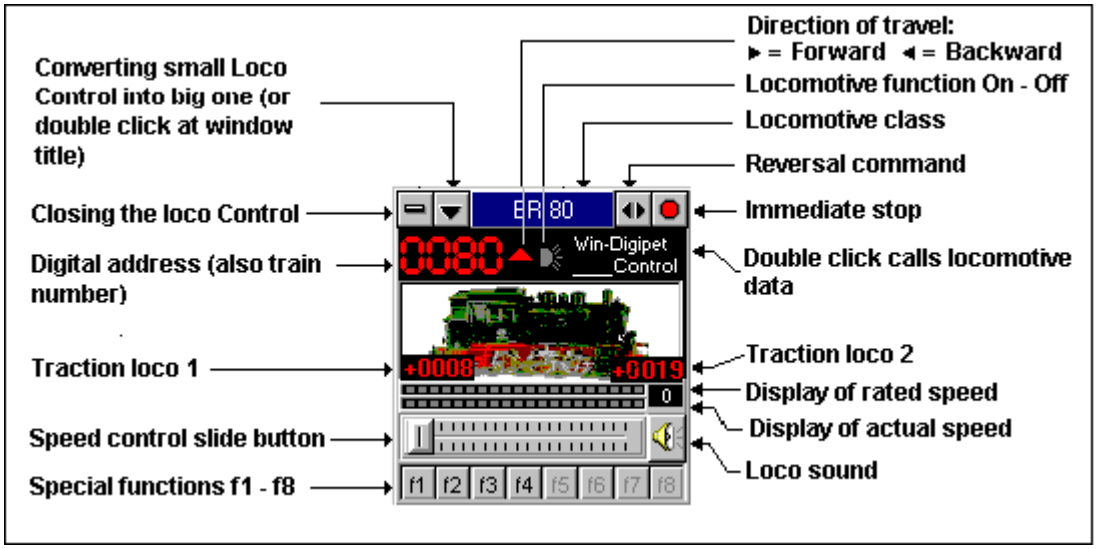
5.10.1 Loco control panel

For the control of your locomotives, **WIN-DIGIPET 8.1 provides** the locomotive control panel in two sizes: „Big Loco Control“, or „Small Loco Control“, the latter as a space saving version to facilitate arranging several locomotive control panels on the screen for model railroad operation with several locomotives at a time.

Big Loco Control panel „Win-Digipet-Control“



Small Loco Control panel „Win-Digipet-Control“



Both illustrations explain all functions. All commands are issued with mouse clicks. To set the rated speed, click on the relevant speed step on the graduated dial/ slide scale, or drag –with the left mouse key depressed- the dial pointer/ the slide button from zero to the desired speed.

Alternative you can also send commands via the keyboard of your computer, for the following functions:

Arrow **right** and arrow **up**	= increase speed
Arrow **left** and arrow **down**	= decrease speed
key **end**	= accelerate to top speed
key **POS 1** and **space**	= Stop
key „**D**“ and key „**R**“	= change direction
key „**F**“	= Loco-function on/off
key „**S**“	= Loco-sound on/off
keys „ **0**“ to „**8**“	= Special functions F1 to F8 on/off
Function key **F11**	= step from loco-control to loco-control

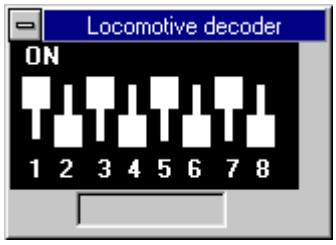
Details on the maintenance display, see **5.8**; please do not forget to reset the operating hour counter after a maintenance of the locomotive to **000.00**. On Multi-**Traction** see **12.10.5**.

A loco control can be moved anywhere on the screen. Click on a title bar, holding the left mouse key, drag it to its new position and release the left mouse key in the new position (Windows – drag & drop).

The locomotive will stop immediately, if you change to browse in data files (see **5.10.3**), during a locomotive test run.

5.10.2 Display Loco-Decoder

You can view in a window the position of the 8 micro switches of the loco decoder of the loco you are controlling with the loco controller, when in **WIN-DIGIPET 8.1**. The window is opened via the menu ‘View’ or using the switch in the symbol bar or by clicking on the address of the locomotive in the loco control.



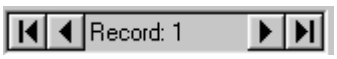
The digital addresses change on the locomotive and in the WIN-DIGIPET data, when you click on the switches. Invalid addresses set on the switches are flagged.

Only valid addresses of the Märklin-Digital-System (**1 - 80**) are correctly displayed. Addresses greater than 80 – as it is possible with the Intellibox – are ignored!

Double clicking on the title bar or clicking on the close symbol, close the loco decoder window. .

5.10.3 Browse, Loco-List, change data files

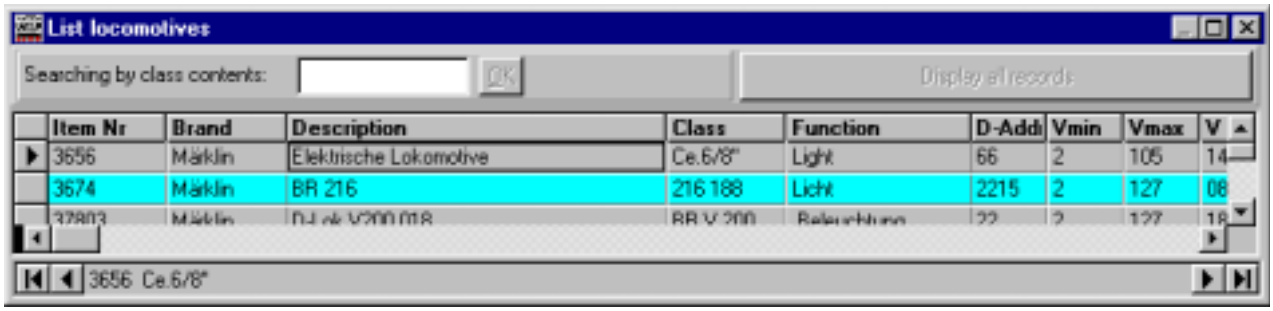
The „Browse“ - function in the lower screen allows you to browse through data files using mouse clicks:



< = One record backwards **|<** = Back to the first record

➢ = One record forwards **>|** = Forwards to the last record

A **list** of all recorded **locomotives** is available via ‘File’, followed by a click on ‘List’ or in the symbol bar using the switch . Here you can **edit the records**.



In the locomotive list, within the panel “Searching by class contains”, you can search locomotives referring to their class. Enter the search-text, click on “OK” or push the return-key on your keyboard. You will get a message, if no locomotive has been found after the search has been performed.

To display all data after a search function, click on “Display all records”.

With a click on a line of this list, this locomotive will be shown immediately in the locomotive-database and its data will be indicated as well.

You can also edit records with ‘Save’ in the window ‘WIN-DIGIPET-Data’ or by overwriting the data.

A digital address can be changed as follows: Click in the column „D-No“ on the current address; it will be marked in black. A second click on the address brings displays the input cursor, ready to overwrite the address.

Speed inputs are changed as follows: Click in the column „Vmin“ or „Vmax“ or „V<>“ (acceleration) or „VStart“ on the relevant number; a small field with lists is displayed. Select a different number.

To save changes, click on a different line.

A „Browse“ function is available at the bottom of the locomotive list, containing the same functions as explained above.

To close the list, double click on the WDP-Symbol to the left of the window header.

5.10.4 Delete data records

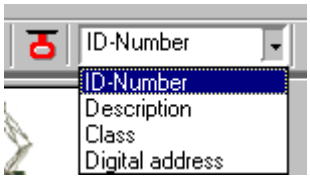
Click on ‘Delete’ or on the switch in the symbol bar if you want to delete a locomotive from the database. The record displayed in the window is deleted. A warning is displayed prior to deletion.

5.10.5 Emergency Stop

At any point in the program the emergency stop can be issued using the **F9** key.

It is also possible to issue the command via ‘Options’ - ‘Emergency Stop’ or using the switch in the symbol bar.

5.10.6 Sort data records

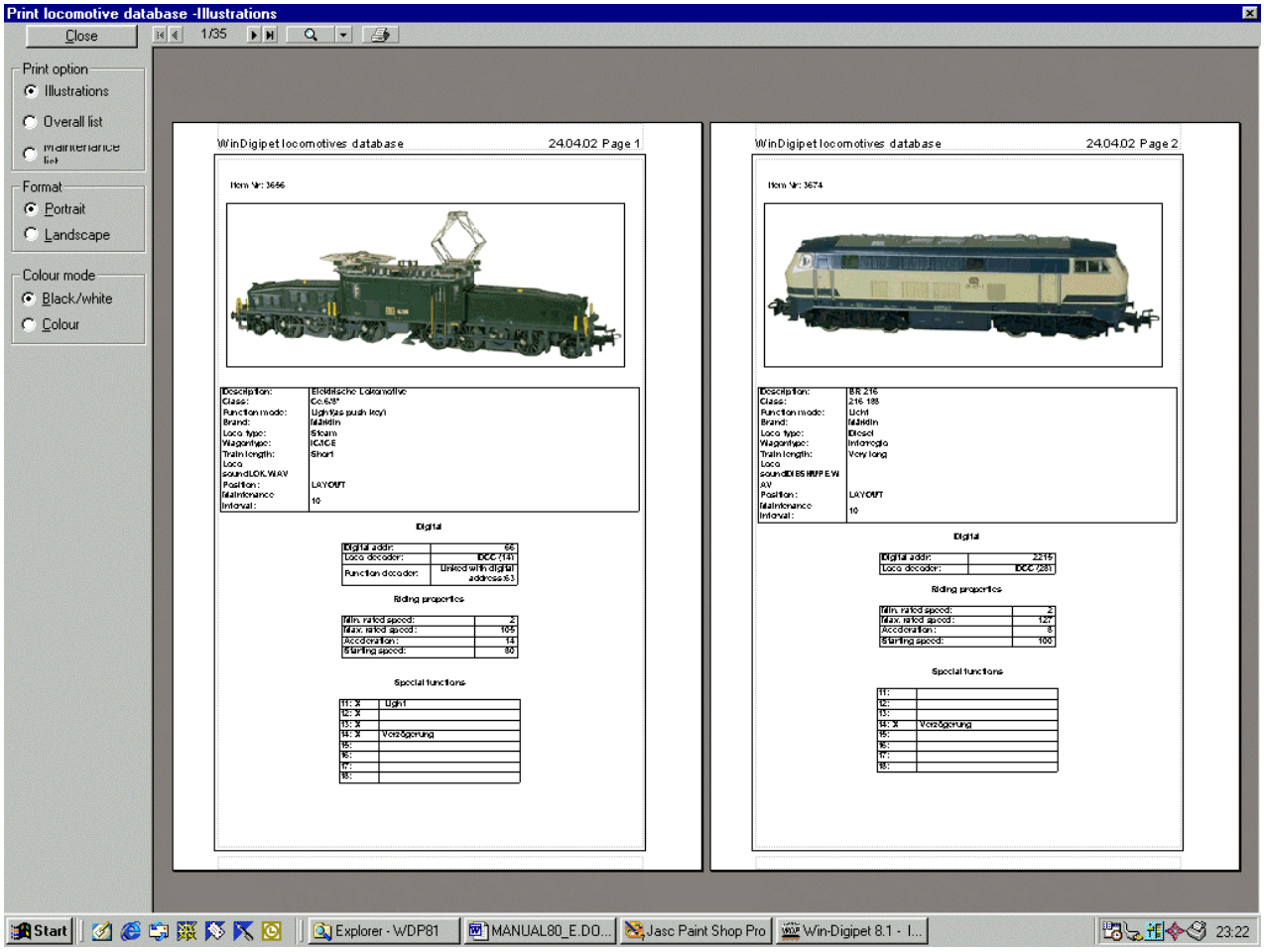


In the upper menu-bar you have the opportunity to sort by “ID-number”, “Description”, “Class” or “Digital-address” via the list arrow. This kind of sort will also be taken to consideration within the loco-panel in the main program. The kind of sort for the multi-tractions will be updated as well.

5.11 Printing locomotive data base

Via ‘File’ - ‘Printer’ you reach the window to input your printer data. Acknowledge with ‘OK’.

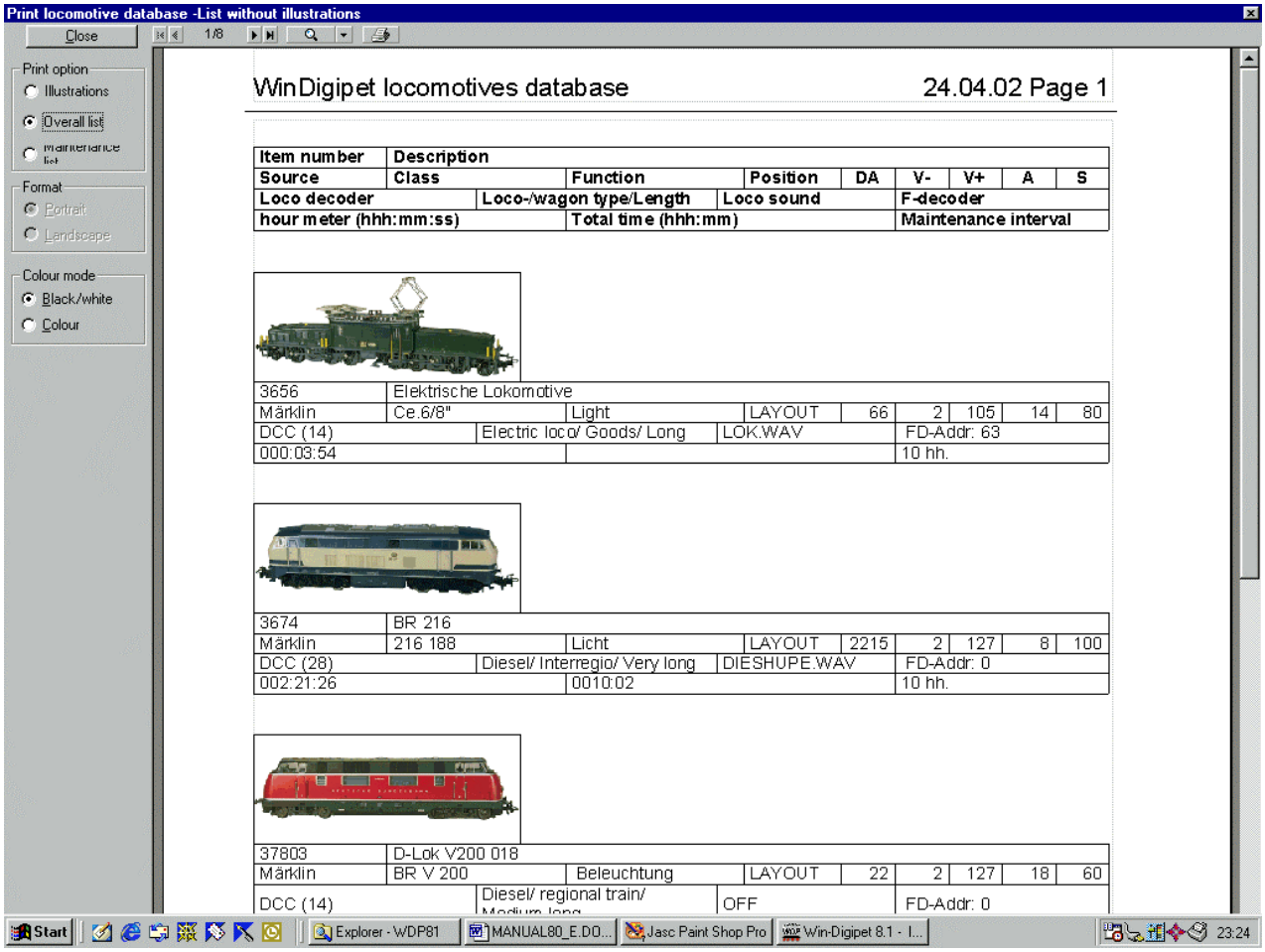
Click on ‘File’ - ‘Print’ or on the switch in the symbol bar to print a record. The window „Print locomotive data base“ appears.



The possible functions are self-explanatory. All commands will be entered by mouse. In the beginning, all locomotives will be shown – depending on how you sorted them – as single pictures on forms in portrait format.

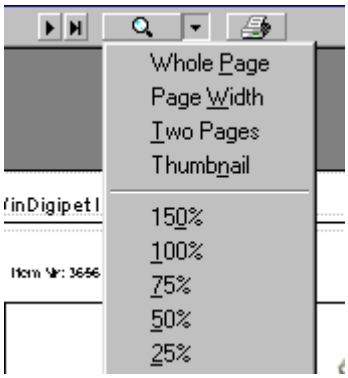
You may also arrange these single pictures on forms in landscape format.

You will get an overall list with all locomotives and all illustrations, when you click on “Overall list”.



The switch “Maintenance list” will print a complete list of all locomotives which are in a queue for maintenance.

At the top edge of the screen, you will find a list arrow next to the magnifying glass for several options to view the printout:



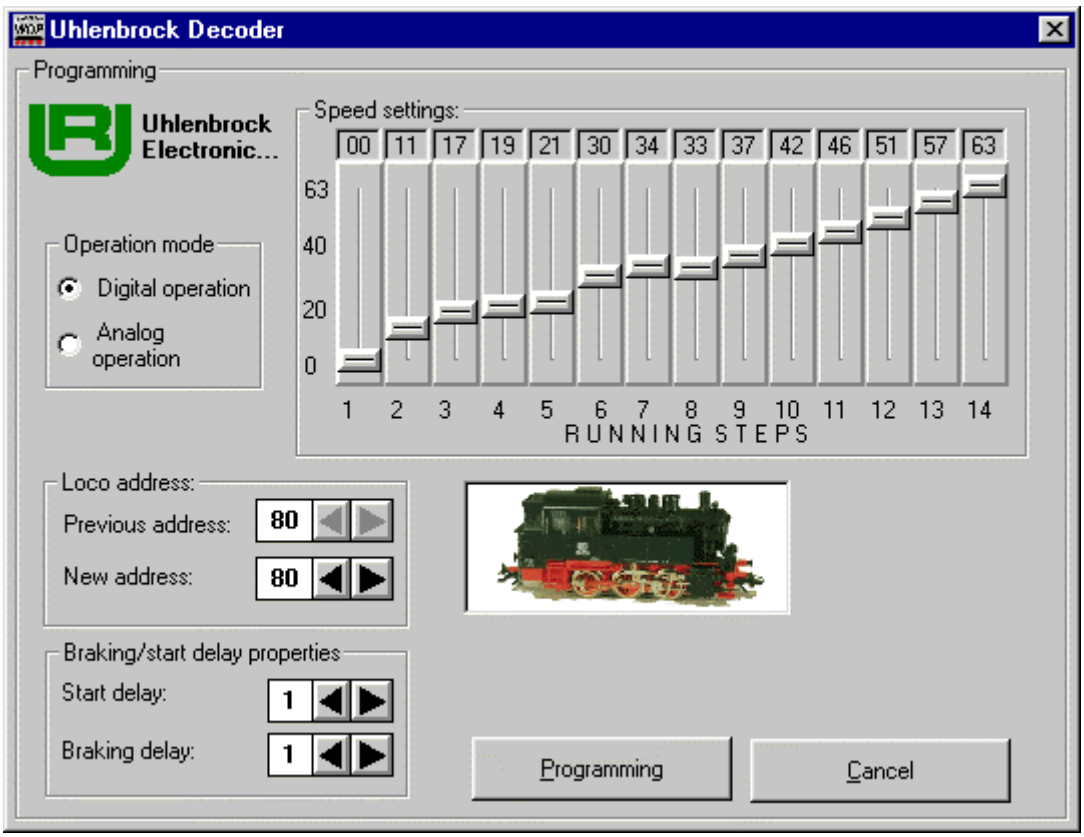
These options are self-explanatory.

With a click on the “printer-symbol” at the top of the screen, you start the printout. “Close” quits the printout.

5.12 Programming an Uhlenbrock-Decoder

If you have entered an Uhlenbrock decoder with the types of locomotive decoders (see **5.7** above), select 'Options' - ' Uhlenbrock-Decoder' (or via the switch in the symbol bar) to open the Uhlenbrock decoder window.

All Uhlenbrock decoders with reference numbers **750**, **751** and **770** can be programmed there. The new Uhlenbrock decoders with load compensation (reference number 755 and 756) cannot yet be programmed under **WIN-DIGIPET 8.1**.



The picture displayed in the window represents the locomotive to be programmed.

With the sliders you set the speed in 63 pitches for every speed step.

Under 'Loco address' you can assign a 'New address' to the locomotive; the 'Old address' saved in the WIN DIGIPET data base will be updated automatically.

Starting and braking delay can be set between 1 and 79 (in steps).

Having completed all the settings, click on 'Programming'. After a confirmation check programming starts and ends with a blinking yellow dot.

Note: Programming should be carried out on a programming track not connected to the layout. Switch off the layout and pull the mains plug from the mains outlet socket for 10 seconds, to eliminate any possible digital signal interference.

If you had programmed an Uhlenbrock decoder and would like to remove it now from the locomotive to install a Märklin decoder instead, click at Märklin next to „Decoder”. A window with the following question appears:

You want to replace a programmed Uhlenbrock decoder with a Märklin decoder - continue? ‘Yes’ - ‘No’.

If your answer is ‘Yes’, the programming of the Uhlenbrock decoder is rejected and the digital address of this locomotive can be freely selected again.

Through ‘Cancel’ you leave the programming of Uhlenbrock decoders.

5.13 Closing locomotive data base

Close the loco database either via ‘File’ - ‘Exit’ or click on the ‘Close’ symbol in the top right hand side or double click on the WIN-DIGIPET symbol in the top left-hand side or on the switch .

The program updates the „Loco select“ bar in the main program (see **12.10.1**) and the train number display in the track diagram (see **12.13**). The displays „Update locomotives“ and „ Update train number display“ inform you about the process.

When you close the locomotive-database, all changes within the locomotive-database will be corrected in the main program.
The locomotive selection bar in the main program will also be updated, if you have put some locomotives into the “showcase” or if you have changed the sorting of the locomotives.

Furthermore all train number displays in the main program will be automatically updated and corrected even in case of changes.

6 – TRACK DIAGRAM EDITOR

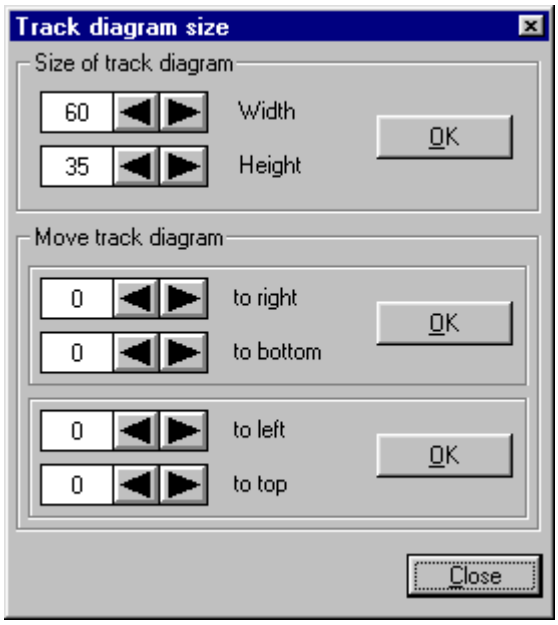
6.1 General

The next step is to create your track diagram, having recorded your system configuration and locomotives. Click on 'File' and then on 'Track diagram editor' or on the switch in the symbol bar.

6.2 Track diagram window

At the first start of the track diagram editor an empty track diagram appears. A track diagram size of 50 symbol panels horizontally and 30 symbols vertically = 1500 symbol panels in total is set as default.

In the menu 'Options', you can define under 'Track diagram dimensions' or click on the symbol bar on the switch , how large your track diagram should be.



Under „Track diagram size" you can vary between **20** and **200** symbol panels in horizontal and vertical arrangement.

Confirm with „OK".

Under „Move track diagram" you can move a complete recorded diagram to all directions in dual steps. Already registered routes will automatically be corrected after movement. However **"add-on-switching"** have to be adjusted manually.

Confirm with „OK".

After moving the track diagram a security message will occur before you save.

If you have already registered a track diagram, it will be automatically displayed after starting **WIN-DIGIPET 8.1**.

6.2.1 Symbol bars, status bar

Below the menu bar the **symbol bar** of the track **diagram editor** appears. It is similar to the symbol bar of the main program (see **3.7**) with one exception: symbol bars can not be customised in this program part.

Three symbol bars are available: a main symbol bar, a symbol bar for track diagram sections and one for the grid selection. At the start, the symbol bar for the grid selection is not visible.

In the **status bar** at the lower screen edge you see the mode in which you are at present, next to it the x- and y-co-ordinates of the mouse pointer the track diagram.

You can mask the symbol bar, either by ‘View’ or with the right mouse key through the corresponding short menu.

6.2.2 Selecting different grids

Three different alternatives are available: „Lines“ (a network), „Dots“ and „No grid“. With „Lines“ it takes some time to display the track diagram as the program has to do a lot of drawing.

You reach the grid setting via ‘View’ - ‘Grid’ or by the right mouse key through the short menu ‘Grid’ or via the symbol bar ‘Grid settings’.

6.2.3 Splitting the track diagram window

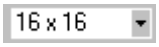
Click on ‘Window’ - ‘Split’ in the menu bar. First you see two identical track diagram halves on the screen. You can now place track symbols into various positions and work on sections.

If you want to return to the normal track diagram mode, click again on ‘Window’ and uncheck ‘Split’.

6.2.4 Enlarge and Reduce(„Zoom”)

Four steps are available: 12 x 12 pixels (small), 16 x 16 pixels, 20 x 20 pixels and 24 x 24 pixels (large).

You reach the zoom setting of the track diagram via ‘View’ - ‘Zoom plus/minus’ or by the right mouse key through the short menu ‘Zoom plus/minus’ or the magnifying glass symbols in the symbol bar.

You can also select the zoom by clicking on the arrow next to the text display of the zoom size. 

6.3 Track symbols window

Please check first, if you have not selected the „street symbols...“ by mistake, in the system-settings (see **4.3.4**). You only get **track symbols for model railroad tracks**, if you select “screened…” / “solid tracks”.

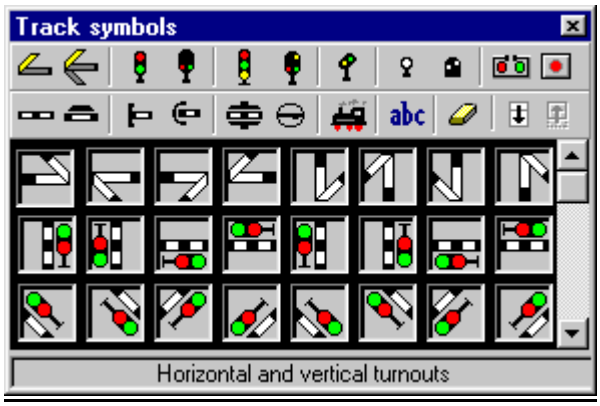
At the top of this window you see a symbol bar of two lines with the types of symbol groups. When you point with the mouse pointer to an individual group panel, a „Quick info“, on a yellow strip tells you what the panel stands for.

If you click at a group symbol, the track symbols belonging to that group are displayed below the symbol bar.

When you rest on an individual symbol the explanatory text in the bottom window tells you what the symbol is/does.

As an example, the illustration shows turnouts in vertical and horizontal position.

Groups of symbols in the symbols bar:



Using the vertical scroll bar at the right allows you to browse through all symbols (forwards and backwards); **226** are available, including the signals for right hand and left-hand traffic, as well as light and warning signals.

You can alter the track symbols window in its height: Click on the second symbol line on the right on the left switch , to enlarge, or on the right switch , to shrink.

For better viewing, you can **mask** the track symbols window (‘Close’- panel left next to title line). To **bring it back**, use menu ‘View’ - ‘Track symbols’ or with the right mouse key: short menu ‘Track symbols’.

6.3.1 Creating track diagram

The **WIN-DIGIPET Track diagram editor** is particularly easy and comfortable to handle. However, it is recommended that you draw up plan of your track diagram beforehand; a simple sketch will suffice, an engineer-like drawing is never necessary.

Click on the symbol bar of the track symbols window at the group to which the individual symbol belongs. Select the symbol, which you want to place into your track diagram. Click on this individual symbol, and the mouse pointer changes to an arrow with the selected symbol.

Example: You want to select the symbol of a horizontally installed three-aspect signal for left hand traffic to place into your track diagram. Click on 'Three-aspect signal' in the symbols bar, then click on the relevant symbol below.

Next, place the symbol, as needed, by pressing the left mouse key again shortly on the desired grid panel of the track diagram.

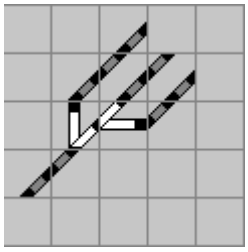
Press the right mouse key: The actual symbol is deactivated, the mouse pointer changes to an arrow, and you can select and place the next symbol. Thus, you proceed quickly through the grid panels gaining experience. You will quickly be able to place a symbol within seconds into the track diagram.

Wherever a symbol is needed several times, e.g. „straight horizontal track" (six straight track pieces), to represent a long track section, press the left mouse key once in six consecutive grid panels, or drag the mouse pointer with the left mouse key pressed over six grid panels.

If you double click on an already placed symbol, it will immediately be attached at the mouse pointer, and you can place it- without having to return to the track symbols window.

Please observe the following points when drawing your track diagram.

- Double- slip turnouts and crossings are composed of two symbols of normal turnouts displayed side by side as pairs in the track symbols window.



- Three-way turnouts (slanted) are composed of one vertical and one horizontal normal turnout.

- In the group panel 'Uncoupler tracks' you will find two individual symbols '**k84**' . Thus, you can activate this decoder e.g. for switching station lighting on or off.

  Decoders k84, however, which carry out the functions of signals are to be placed as home or yard signals.

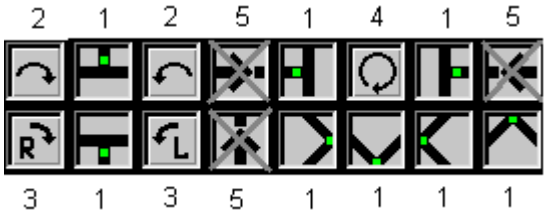
- In the bottom right of the group panel 'Bridges' you will see two particular red symbols . These are **push buttons**. Placed into the track diagram they are considered, in respect of function and connection to the decoder within the solenoid devices, as uncoupler tracks.

  You can use these push buttons for non-digital solenoid devices that react on short impulses (crane, transfer table, turntable etc. without digital decoder).

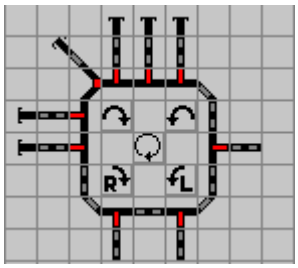
- **Turntable**: Please read **chapter 9** of this manual first – **Digital Turntable** – and carry out the explained sections **9.1** to **9.8**. Please note the addresses of the

track connections – these are **not** the addresses for each of the connection tracks equipped with a contact for feedback, if the track is occupied or not – see chapter **9.7**.

After that, click on the symbol “Turntable” at the track symbols window; The symbols to draw a turntable will be shown, with the following sense (always compare with chapter **9 / 9.6**):



1 = Track connections (marked with a green point after placing, changes to red after placing)
2 = “Step right” and “Step left” (see **9.6**),
3 = “R” / “L” designates the direction of the turntable for a turn.
4 = “Turn”, means turn around for about 180 degrees, depending on the designated direction “R” or “L” (see 9.6),
5 = These symbols do not belong to draw a turntable.



With these symbols, you are able to draw a turntable into your track layout; as sketched in the example on the right side. To enlarge, use suitable symbols for all kind of tracks out of the track symbol window.

After you have drawn the turntable into your track layout diagram, record all addresses of the track connections, which you have registered and noted in section **9.7**, into the drawn turntable track layout.

This addresses can be adopted quite easy out of the turntable graphics, which you can open via “Recording” – “Turntable”; this is similar to the turntable graphics described in chapter **9**.

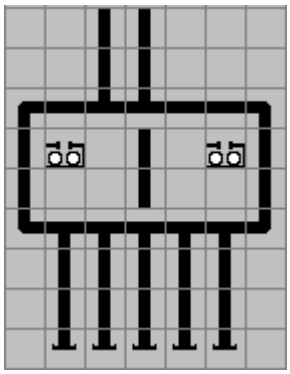
Details are explained in the following chapter **7** (section **7.7**) – “Register a turntable incl. addresses in a track layout”.

With a click on the turntable symbol in the track layout diagram, you can control the turntable really comfortable in the main program.

The turntable bridge is not shown in the layout: A click on a red marked track connection, leads the bridge to the corresponding track; the red indicator will then change to green.

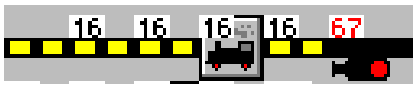
You can find details about all kind of controlling the turntable in Section **9.6**.

- A transfer table can be represented, using parts of the turntable symbols. The transfer table is controlled by 2x K84 decoders. To connect the decoder, refer to the Märklin instruction leaflet.



- The group „Train number panel” serves the **display of train numbers**. Click on it and drag the mouse pointer away from the track symbols window: A tiny locomotive is attached to the mouse pointer.

  Place this symbol, preferably next to a signal symbol, close to the starting and destination point of routes. There is no need, however, to place that symbol in every block section.



  You **must** insert a feedback contact number (see **7.4**) into each train number symbol, regardless whether the train numbers display should work with or without feedback contacts (see **12.13** and under examples „Train number tracking“ at the end of the manual).

- You **delete** track symbols from the track diagram through the group ‘eraser’ . Click on it and drag the mouse pointer away from the track symbols window: A cross and an eraser are attached to the mouse pointer.

  Move that cross to the point of the track diagram where you want to remove symbols etc., and press the left mouse key. If you drag the cross-with the left mouse key pressed- over several track diagram symbol panels, you can remove complete track sections.

  Here, too, you press the right mouse key to continue the session.

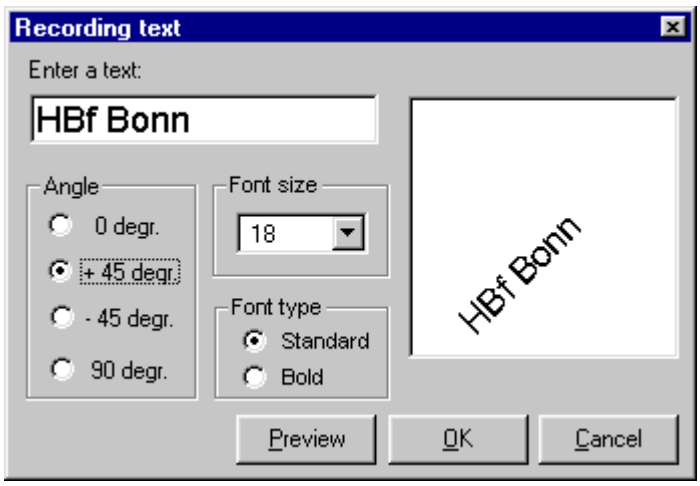
6.3.2 Insert text in the track diagram

Use the group panel ‘abc’ in the symbols bar of the track symbols window for this option. Click on it and drag the mouse pointer away from the track symbols window: A cross with „abc“ is attached to the mouse pointer.

Move the cross to the grid panel where you want the text to begin: it will be framed by a rectangle, and the window „Text input” appears.

Enter your text in the upper panel, e.g. track numbers, station names etc., up to 12 characters max. With longer text, attach the subsequent text parts in groups of not more than 12 characters each.

Four font sizes are available-following the zoom steps of the track diagram.



You can have the text positioned horizontally („0 degree.“), vertically („90 degree.“), diagonally slanting upwards („+45 degree.“) or diagonally right slanting downwards („-45 degree.“), standard or bold text.

If you want to pre-check your text input, click on ‘Preview’. Your text will be placed into your track diagram. Should you be satisfied, click ‘OK’, otherwise ‘Cancel’.

You can now enter more text or deactivate „Text input“ through the right mouse key.

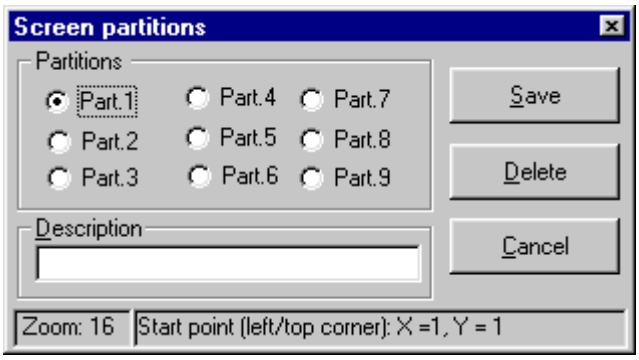
Text can be modified overwriting it in the window „Text input“, and deleted in that window with „eraser“. The beginning of the text has to be found in both cases.

6.3.3 Track diagram sections

WIN-DIGIPET 8.1 makes it possible to define up to nine sections of the track diagram, in various zoom sizes. The sections can also be called from the main program. Sections can be loaded to the screen through a mouse click, e.g. central station, branch line, main line, hidden yard1, hidden yard2, etc.

Such sections of the track diagram have to be determined beforehand.

Click on the menu bar ‘Screen partitions’, then on ‘Determine’ or on ‘Screen partitions’ in the symbols bar on the switch . A new window „Screen partitions“ appears. Set the zoom factor first (see above **6.2.4**). Select the first partition „picture1“.



In the „Description“ panel you name the section e.g. central station (up to 20 chars.).

Next define the track diagram section: This is the part of the track diagram section that you see on the screen. Browse through the whole track diagram, using the scroll bars on the right and bottom until the part you see on the screen

corresponds to your idea. As a reference point, the upper left-hand corner of the section is marked with the co-ordinates „X“ and „Y“.

When you are satisfied with your selection, click on ‘Save’.

In the symbols bar you see the first of nine section symbols marked in black and its name on a yellow bar next to it.

In the same manner you can define further track diagram sections. Through a click on the relevant symbol in the symbol bar you load a section to the screen.

To delete a track diagram section click on ‘Screen partitions’ - ‘Determine’ -, select the section concerned in the window „Screen partitions” window and click on ‘Cancel’.

6.3.4 Cut, copy, paste track diagram

Click on **‘Process’** in the menu bar and then on ‘**Mark’**. The mouse pointer changes to a cross. Keep the left mouse key pressed and move the cross along the edges of the track diagram part you want to work on: It will be enclosed by a frame.

Press the right mouse key and select in the short menu ‘Cut’ or ‘Copy’.

‘**Cut**’ removes the marked track diagram part Press again the right mouse key and select ‘**Insert**’; the mouse pointer changes to an arrow with a rectangle. Use it to fix the position where you want to insert the cut part and press the left mouse key there: The cut part will be inserted at this position. You can undo the insertion only once.

When you are satisfied with the inserting, perform an **intermediate saving**.

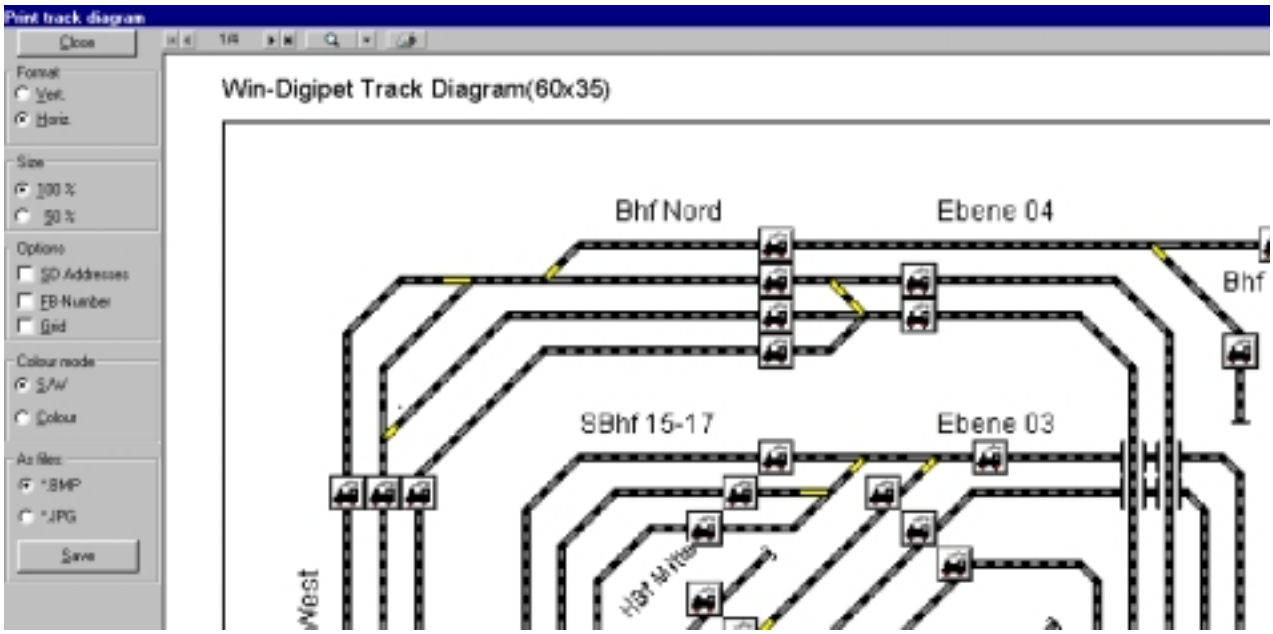
You can also delete the cut out part by returning to the menu after ‘Cut’ instead of pressing the right mouse key.

‘**Copy**’: Press the right mouse key and select ‘**Insert**’; the mouse pointer changes to an arrow with a rectangle. Determine the area into which you want to copy the marked area and press the left mouse key for copying.

To leave the ’Process’ mode, uncheck the ticks in the sub menus mentioned above.

6.4 Print track diagram

Select this function via ‘File’ - ‘Print’ or the switch in the symbol bar in the window „Print Track Diagram“. The window has the same structure as „Print locomotive data base“ (see **5.11**); the possible functions are self-explanatory.



Print size: usually 50% is sufficient.

The „Options“ ‚Solenoid device address’ and ‘Feedback contact number’ will be checked by you as soon as you read chapter **7**.

You have the choice to save the track diagram on the Hard Disk **as files**, using the space saving JPG format or the non-space saving BMP format.

Click on ‘In files’ on a format (*.BMP or *.JPG) followed by ‘Save’.

Up to 4 files are saved in your Win Digipet directory, called track1.bmp **(. jpg)** to **track4.bmp (. jpg)**. You can use any graphics program to make changes to scale the track diagram to the required size before printing it.

6.5 Save Track Diagram

Click on ‘File’ in the menu bar, followed by ‘Save’ or on the switch in the symbol bar. It is recommended to perform this function several times during the generation/ modification of a track diagram. This prevents that changes are lost.

6.6 Edit and Delete Track Diagram

To alter anything on your completed track diagram, select **‘Record’ - ‘Edit Track Diagram’** or click on the symbol in the symbol bar. Do not forget to save the new track diagram.

The complete track diagram will be deleted if you click on ‘File’ and **‘Delete’** or on the switch in the symbol bar. A warning is issued before the delete process.

After the delete, an empty track diagram will be found.

The old track diagram is saved as **GBILD.BAK** and could be re-activated by re-naming it **GBILD.DAT**.

6.7 Display and print the system settings

Via “Help” at the menu bar of the track layout editor or by a click at the symbol with your project name, you will get to “Print project status”: You will see the system settings of your actual project in a clearly arranged list. You can print this list – or you can convert this list via two buttons (upper left side of the window) into a RTF or HTM file. Therefore you can easily forward your actual system settings as part of an email for further problem discussions.

6.8 Exit Track Diagram Editor

Click on ‘File ’ in the menu bar and ‘Close’ or on the switch in the symbol bar: You are returned to the main program WIN-DIGIPET 8.1.

7 – SOLENOID DEVICE DATA AND FEEDBACK CONTACTS

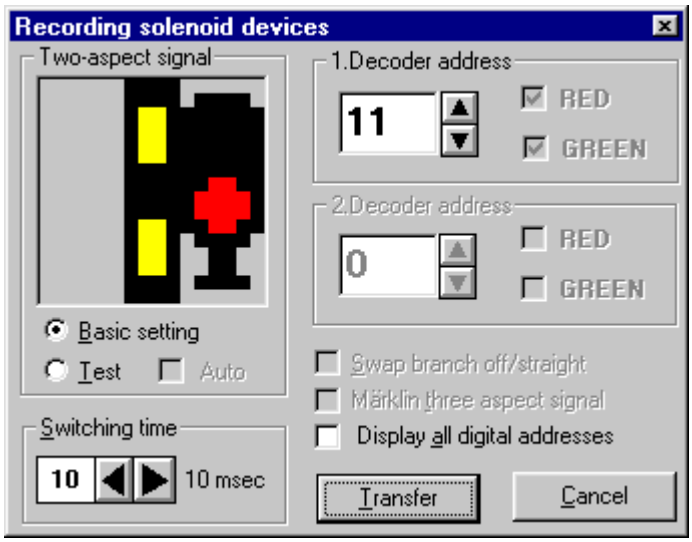
7.1 General

Recording, maintenance and testing of the data is done in the track diagram, thus, you have comprehensive control.

It is advisable that you have an exact list of the solenoid devices on your layout with relevant decoder addresses prepared before you start entering data. A list of the feedback contacts is also helpful for quick, correct data recording.

7.2 Recording solenoid device data and test, address display

Click on the menu ‘Record’ and ‘Solenoid device address’ or on the switch in the symbol bar. The track symbol window disappears and the mouse pointer changes to an arrow with micro switches.



Point to the solenoid device you want to record: It will be framed by a red triangle. Click on it: A window „Recording solenoid devices“ is opened.

At the upper left the solenoid device is displayed as a large symbol, and its type is indicated, e.g. „Three aspect signal“. Enter the address or both addresses of the solenoid device.

The program has already checked/ unchecked the connections „RED“ and „GREEN“ for most of the solenoid devices. Note only the following exceptions.

- Enter the connection for a three-aspect signal i.e. RED or GREEN as well as the second decoder address.

  If it is a Märklin signal, check ‘Märklin three aspect signal’. If it is a non-Märklin signal, uncheck the switch.

  Such signals switch accessories- and track current separately and should be represented in the track diagram by a signal symbol and a „k84“.

- Normal double slip turnouts with one solenoid: Enter first decoder address, followed by second decoder address, value = **0.**

  Address 0 deactivates the symbol, basic setting and testing of the solenoid device.

- Double slip turnouts with 2 solenoids: First and second decoder address to be entered.

- To register a turntable including addresses see chapter **7.7**.

You can determine the **„Switching time**“ individually for each solenoid device. This may be an advantage with uncoupler tracks and older model turnouts.

With **normal turnouts in slanted position**, activate ‘Swap branch off/straight’. This produces the correct symbol display in the program.

Ensure that both turnouts are switched to “straight” prior to any “branch” switching if you have represented three **way turnout in slanted position** in the track diagram by a vertical and horizontal normal turnout (see **6.3.1**). Each must have its own address.

Clicking on the large symbol you determine the basic setting of the solenoid device.

Finally you transfer this recorded solenoid device by ‘Transfer’ to the track diagram; you will see the basic setting there.

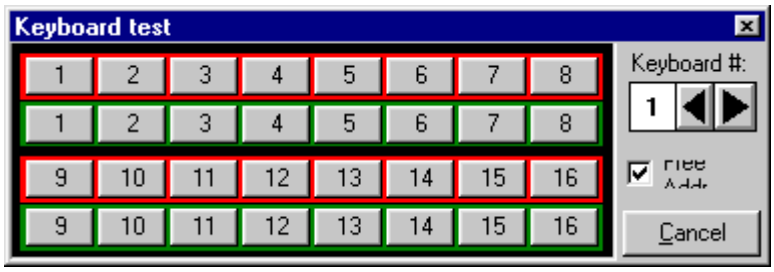
To check your entries, test this solenoid device: select ‘Test’ and click repeatedly on the large symbol.

The solenoid device is tested continually – in 1 sec. intervals- if ‘Test’ and the switch ‘Auto’ is activated. This function enables you to check the function of the solenoid devices – away from the computer- for their correct operation on the layout.

All solenoid devices are highlighted in red in the track diagram, if you have checked ‘Display all addresses’. It can be reversed by unchecking ‘Display all addresses’.

7.3 Virtual Keyboard to test all Solenoid Devices

The Märklin keyboard can be emulated via ‘Options’ - ‘Keyboard Solenoid Device Test’ or using switch in the symbol bar. The following window opens:



Forward and backward pointing arrows allow you to jump from one keyboard number to the next.

This window offers two functions:

- All inactive solenoid devices are not shown in the track diagram, if you checked the switch next to 'Free Addresses'. This shows you the non- allocated addresses (or which solenoid device is not working because of an electrical or mechanical malfunction).

- Also, with a click on the address of the solenoid device, you can check the correct functioning: top key „Red", bottom key „Green". The solenoid device is displayed on the screen, framed in red, and its actual position is indicated.

7.4 Recording feedback contacts, display numbers

Click on the menu 'Record' and then on 'Feedback contacts' or on the switch in the symbol bar. The window „Feedback contacts" appears, and all feedback contacts recorded so far are displayed.

In the „Contact number" panel enter the item number of the contact, either through mouse clicks on the arrows or via the keyboard. Instead of this you can enter in the „s88 module" panel the number of the relevant feedback module and in the „Connection" panel the number of the contact (1 to 16) on this feedback module. The correct item number of that contact appears in the „Contact number" panel.

Move the mouse pointer to the track symbol to which you want to assign the item number of this contact and press the left mouse key. The contact number you entered appears immediately. You can place it in the track diagram as often as you wish by pressing the left mouse key repeatedly or by dragging the mouse pointer with the left mouse key depressed.

If you want to delete a contact number click on 'Delete' and proceed as described above.

There are two track symbol panels with two itineraries each: Two diagonal track sections in one symbol panel. If you want to insert a feedback contact into each panel, a short menu 'Top' - 'Bottom' is opened. Determine by clicking on 'Top' or 'Bottom' to which track section you want to assign the contact number.

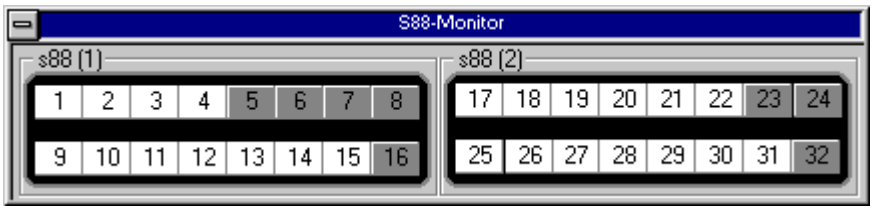
7.5 s88-Monitor

This display allows you to check the correct functioning of the feedback contacts from within the track diagram editor.

If you have selected the Lenz-system, the frames will be titled "FB-monitor", otherwise "s88-Monitor".

7.5.1 FB(s88)-Monitor with already recorded contacts

Click on ‘Options’ and then on ‘s88 Monitor’ or on the switch in the symbol bar.



Displayed are the in the system settings recorded s88 modules and the feedback contact numbers. A maximum of 9 feedback modules are displayed; if there are more than 9, the lower horizontal scroll bar lets you scroll to further s88 modules.

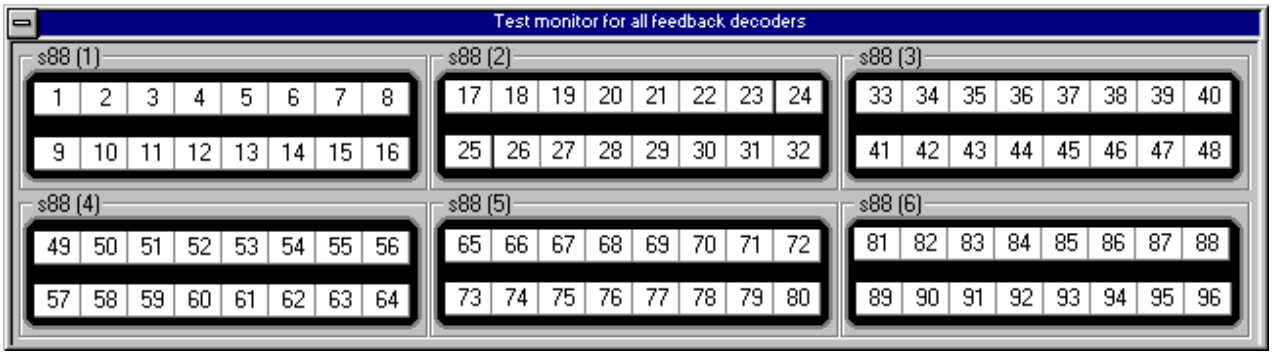
The advantage of this monitor is, all available feedback contacts, which are not registered, respectively not used in the track layout diagram, will be blanked out in **grey**. This will help you to identify which contacts regarding which feedback modules are still available for further expansion.

If you click on a number of an already registered FB-contact, its position will be indicated in the track layout diagram. All symbols which belong to this FB-contact will be framed in **RED**.

If this contact is out of the visible range of the track layout, the diagram will be automatically moved to the appropriate position.

7.5.2 Test Monitor of all feedback decoders

Click on “Options / Test Monitor for all feedback decoders” or on the button at the symbol bar.

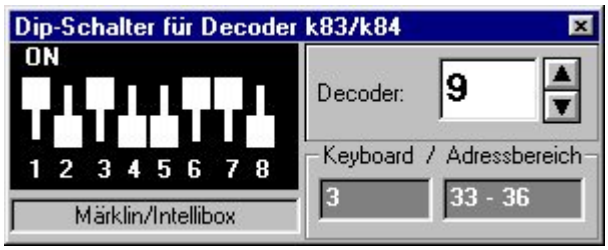


During building a track layout, this monitor has the advantage to show all FB-modules directly, not only the already recorded ones. Quite often you don´t remember - due to missing documentation - , where particular FB-contacts are situated, to record these into the track layout diagram.

If you now move a wagon or a train along a contact, the rectangular symbol of the corresponding contact will change from white (not occupied) to red (occupied) and you will notice, where the train will be on your model railroad.

7.6 Dip switch settings of Decoder k83/84

This section is just valid for Märklin decoders k83/k84.

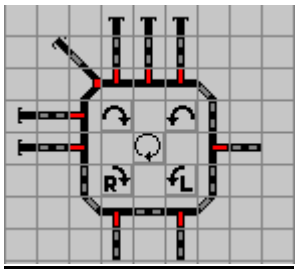


Via “Options” you get to “Dip-Jumper for decoder k83/k84”. Therefore this information is for your disposal in the track layout editor.

You need not search in any other documentation or manuals of other products.

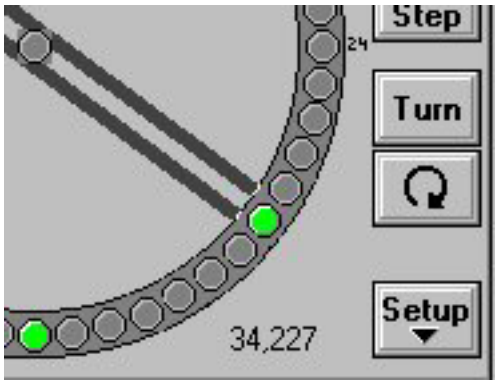
7.7 Recording a turntable including addresses in the track layout diagram

Like already explained in **6.3.1** you should have drawn the turntable into your track layout diagram.



To record please pay attention to the following notes:

- Each track connection and command button is defined as a solenoid device: A click will carry out a function.
- Your turntable should be programmed properly.
- In the right bottom of the turntable graphics (see chapter **9.2 / 9.7** and at the end of chapter **6.3.1**) you will find the addresses of all track connections and command buttons; in the form „33.xxx“ or „34.xxx“. „**33**“ = green, „**34**“ = red and the three digit numbers “**xxx**” means the variable part of the address (in theory derived by Märklin keyboard #15, address-range 225-240, respectively #14, address range 209-224).

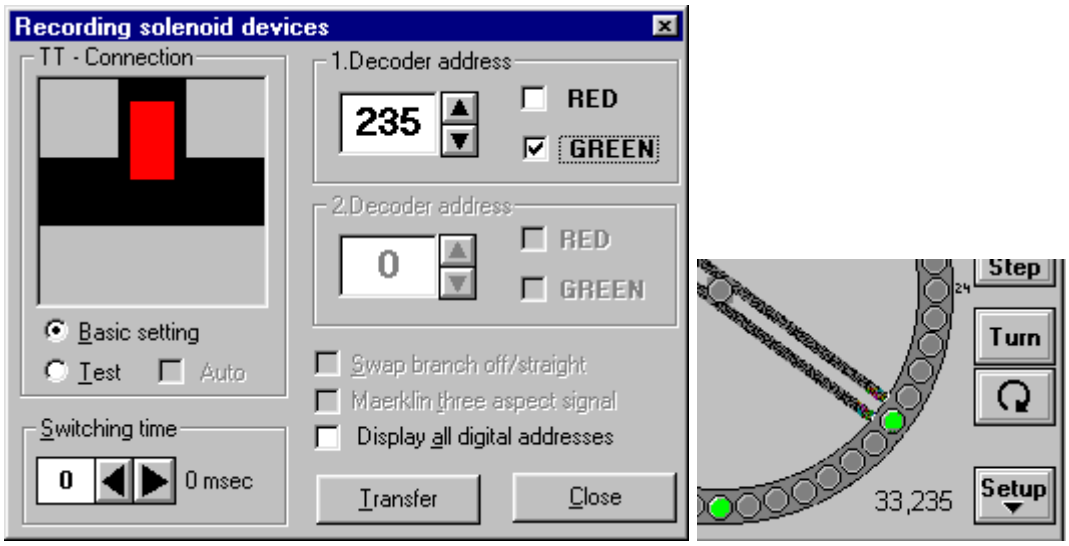


- The addresses of the track connections “**xxx**” will be registered at the first decoder address, if the prerequisite is “**34**”, just click on “**RED**”, if the address is starting with “**33**”, just click on “**green**”.
- The addresses of the five command buttons are **fixed** and will be shown after recording:

  “STEP LEFT” = **33.227 (227 GREEN),**
  ”STEP RIGHT” = **34.227 (227 RED),**

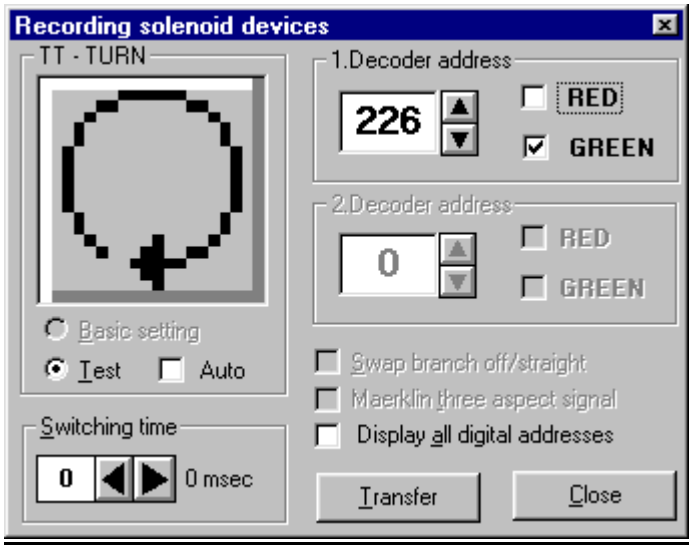
”TURN”	=	**33.226 (226 GREEN),**
”Turning-direction RIGHT”	=	**34.228 (228 RED),**
”Turning-direction LEFT”	=	**33.228 (228 GREEN).**

Click at the turntable layout to register a **track connection**: The window “TT-connection” will appear. Enter the address you see in the lower right corner of the turntable graphics (or which you have already noted) and click either “RED” (34) or “GREEN” (33), depending on the first number. By clicking on “Transfer” this track connection is recorded.



This example shows the record of track connection 235 GREEN.

To register a **command button** click on its symbol at the turntable layout. A corresponding window will open and the appropriate address and the connection “RED” or “GREEN” is given as a pretext; You just need to click to “Transfer”.



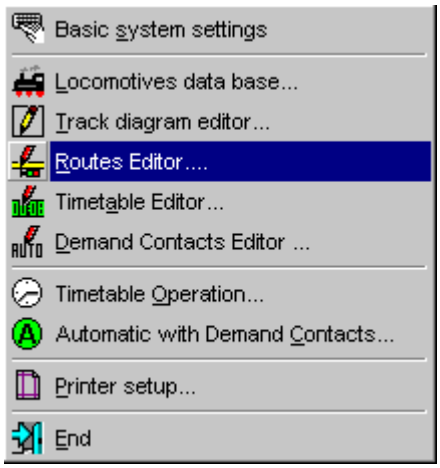
This example shows the recording of a command button “Turn” = 226 “GREEN”.

7.8 Save data

Click on ’File’ in the menu bar followed by ‘Save’ or on the switch in the symbol bar.

8 - ROUTES-EDITOR

8.1 General



Having completed your track diagram and recorded your solenoid devices and your feedback contacts, the next step is to create your routes.

You can define an unlimited number of routes.

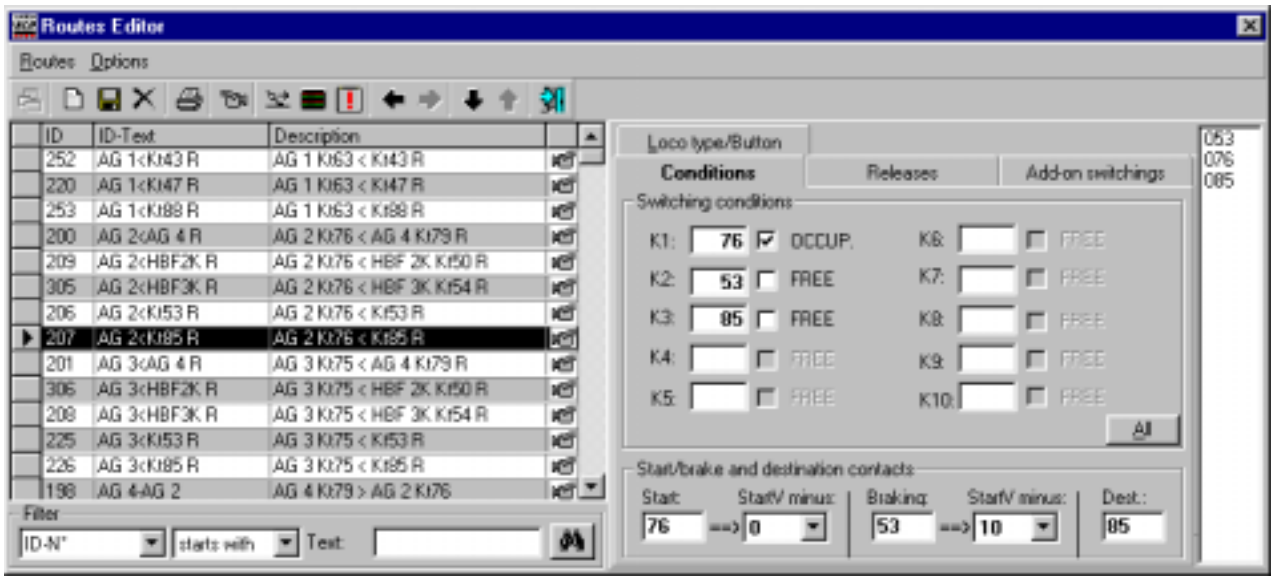
It is advisable that you consider your routes in more detail beforehand and note them down in outline.

Click on ‘File’ in the menu bar and then ‘Routes editor’ or on the switch in the symbol bar.

The “Routes Editor” – window will open, with the pull-down-menu “Routes” and four additional index cards as well as the pull-down-menu “Options”.

In the routes editor you can easily meet the requirements, to ride your locomotives automatically along up to two partial routes of **ONE** route with several and practice-oriented speeds, for example up- or down a hill, winding tracks or other specific situations (“track related fine adjusting”), see chapter **8.7**.

8.2 Recording routes, routes list



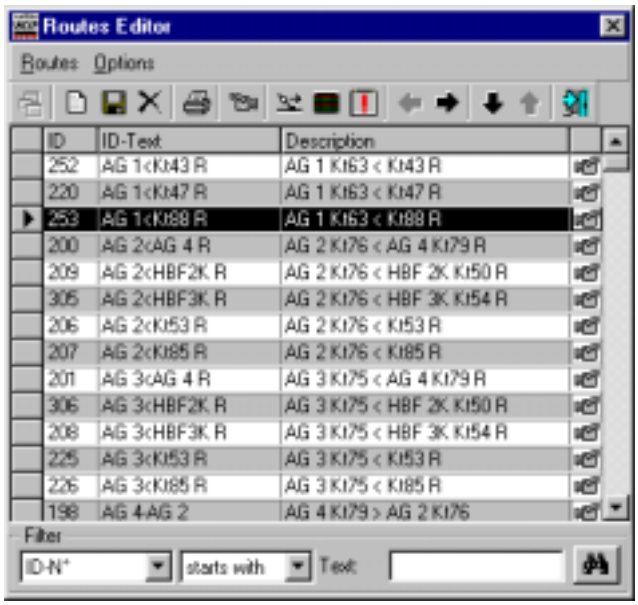
The list of routes is in the left, next to it, in the right, there are four additional index cards. This makes it possible to check the “conditions”, “releases”, “add-on-switching” and “loco type/button” for a recorded and marked route, by clicking on the corresponding index card.

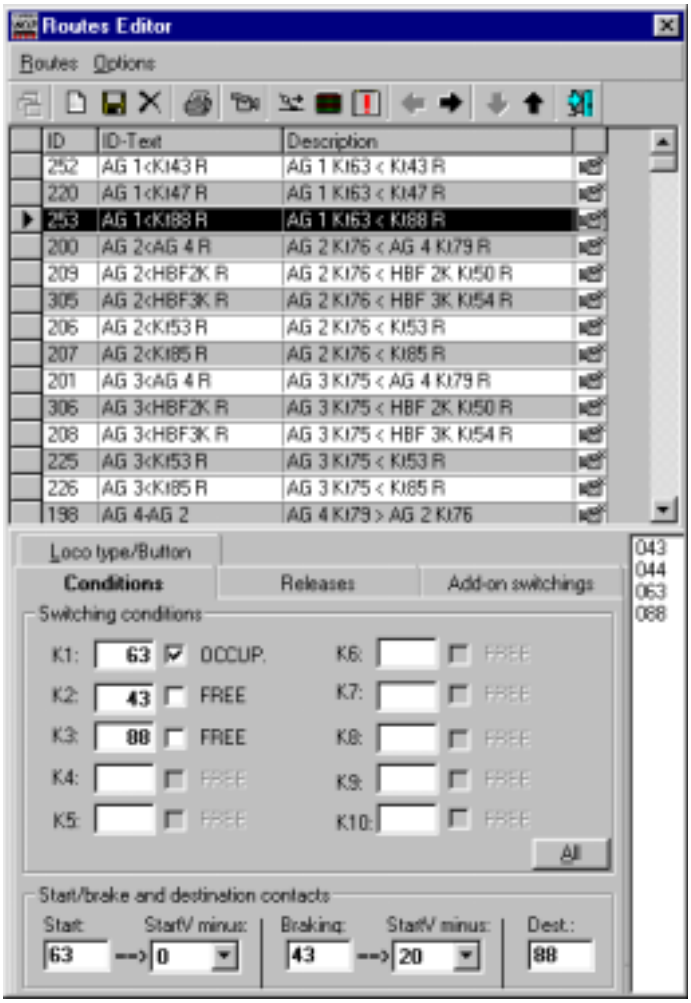
You can fade out the index cards or you can move it to the bottom. To do this, please use the four black direction arrows in the right of the menu bar. Which

movement will be done can easily be noticed via the “tooltip-text” at each arrow.

The feature “Fade out of tab-set”, will reduce the general view. You can use this to get a better overview about your track layout diagram, if you are looking for a specific route in the routes list.

If the tabs (index cards) are arranged at the bottom, it´s not possible to activate the search function (see **8.12**).

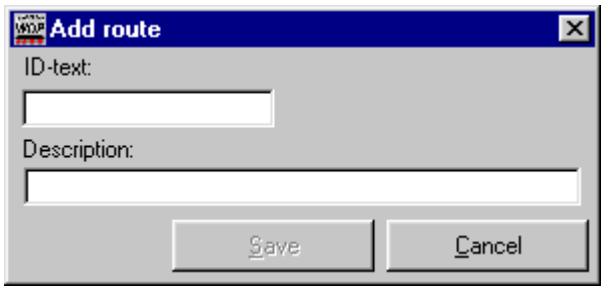




If you open the routes editor for the first time, you will find an example for the first route in the routes list. This data cannot be deleted but can be overwritten.

When you open this program part for the first time you will find an example entry for the first record; it cannot be deleted but only overwritten.

To record a new route click on the menu ‘Routes’ and then on ‘New’ or on the switch in the symbol bar. The window ‘Add route’ appears.



Of course, the program has to identify each individual route. For this purpose it uses the „ID-Text“ (**Identification text**), an entry of not more than 15 chars. of your choice. Enter it here.

For further identification each route receives an ID number which, however, is not displayed in the main program.

In the „Description“ panel enter a text of up to 50 characters.

As soon as the ID text and description are entered, the ‘Save’ switch appears. Click on it: The new route is transferred into the routes list. If a route was already recorded, a camera symbol appears next to the description.

You can edit this list easily. Activate the route concerned by a click at its line in the list- it will be marked by a black bar. A second click, and the relevant list panel opens the input cursor for overwriting.

To save your changes, simply click on another line or on the switch in the symbol bar.

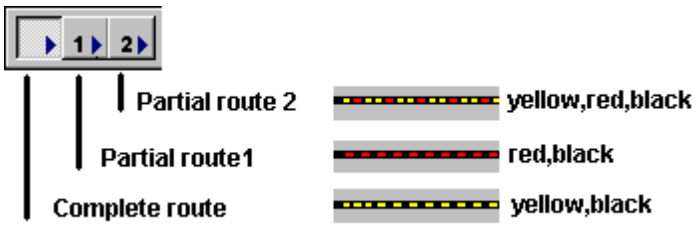
8.3 Recording routes, release partial routes

To determine the itinerary of the route, activate its line in the list- click on it- and then click on ‘Routes’ in the menu and ‘Record’ or on the switch in the symbol bar.

A small window „Recording“ appears with 6 symbols, easily recognisable through „Quick infos“ on a yellow strip. The ID text of the route to be recorded is displayed in the bottom line.

As long as a train travels through a route, all solenoid devices in that route are blocked. A crossover of other trains is not possible. The solenoid devices can only be made available for further train movements, when the train has reached its **Destination** within its route. This is achieved, once the **Destination** contact is activated e.g. „Released“ („Release condition satisfied“, see also **8.7**).

It is possible that the system may slow down, if there are very long routes containing many solenoid devices. To prevent this and also to make the train operations on the layout more interesting, two partial routes within the route can be defined and released, before the train has reached its destination contact in its route.



Three switches are available for this , 1 and 2. Click only on the left switch (main recording), if you create normal routes **without** partial routes and ignore the other two.

Define the release conditions of the partial routes later in the index card ‘Release’ (see **8.7**).

A detailed example on partial route release is shown at the end of the manual in section **13.11**.

Press the left mouse key- a pencil is attached to the mouse pointer- and create the route. Move with the mouse pointer to all track symbols, one by one, which belong to this route, and press the left mouse key at each symbol. The itinerary will light up in yellow.

Click as often as necessary at the symbol solenoid devices, until the desired position of the solenoid device is reached.

With the right mouse key you can delete an itinerary or part of it: Click or drag.

If you click on the „Recording“ window on ‘Start again’ , the complete route recording is rejected and you can start again.

If you are satisfied with the itinerary, click on the small window on ‘Save’ . Thus the route is stored and the window „Track diagram editor“ reappears.

You have to create three identical recordings, matching the track diagram, if you want to create a route containing two partial routes. Each time, you have to start with two clicks.

Complete route: Click on ‘Main recording’ , then on a free screen area, until the pencil is attached to the mouse pointer; now draw the complete route as explained previously. Start contact (example without number) **A**, destination contact **D**.

Partial route1: Click on , then on a free screen area, until the pencil is attached to the mouse pointer; now draw partial route 1 with start contact **A** and ending at intermediate contact **B** of the total route, over the first part of the total route. All solenoid devices are marked with a small **1**.

Partial route 2: Click on then continue as in partial route 1; Start contact is **B**, destination contact is **C**. All solenoid devices are marked with a small **2**. The route of the main recording from **C** to **D** remains.

8.4 Display routes

The route will be displayed in the track diagram, if you click on a line in the routes list, which activates the route. This gives you a good overview of your recordings.

8.5 Modifying, copying, inserting routes

For this purpose, activate the relevant route- click at its line in the list- and click on the menu ‘Routes’ and ‘Record’ or on the switch in the symbol bar. Carry out the changes, using the mouse key, as described above.

If you click at a line in the list with the right mouse key a short menu 'Copy recording' and 'Insert recording' appears.

Through 'Copy recording' you can save the complete route recording (not the text) of this line in the list into the memory. Further, you can activate another line in the list and select it through the right mouse key. 'Insert recording' and copy the complete route recording into the other line in the list by clicking on it.

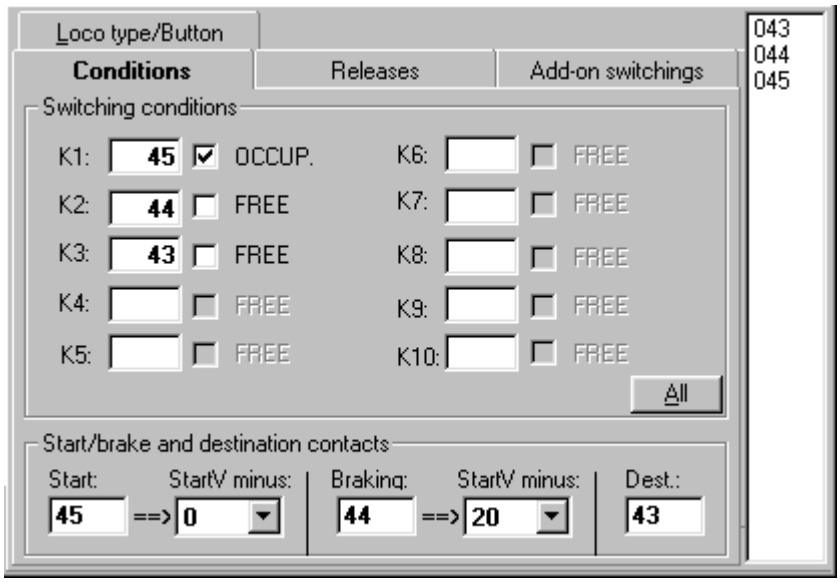
Let us suppose that you have several long routes, all starting at one signal and ending at stop signals of several hidden yard tracks. You only once record the complete route from the starting signal to the stop signal of track 1 of the hidden yard Next, copy the complete recording into the next line in the list and modify only, through 'Recording', the parts for entry into tracks 2,3 etc. of the hidden yard.

8.6 Recording switching conditions, starting and destination contacts

Important notice:

It is mandatory to enter the **switching-conditions**, **start-** and **destination contact** and the **release-conditions** for **every** route, otherwise a smooth operating will **not** be guaranteed. It is optional to enter any **add-on-switching** (see **8.8**).

Next click on 'Conditions'. On this index card you specify under which conditions the recorded route, whose ID text and description appears in the upper line, may be switched.



On the right hand side you see the numbers (sort by number in ascending order) of all contacts recorded in the route. This makes it easier to insert the correct numbers into the input fields.

Click on the contact number you want to enter on the left and/or in the middle of the index card. It will be underpaid with a blue bar. Keep the left mouse key pressed, drag the number to the entries panel and release the left mouse key ("drag and drop").

You can also write the contact number into the entries panel via the keyboard.

Define the locking of this route in the left part „Switching conditions“. „Locking“ means: „The route may only be switched if contact X is free (or occupied)“ (possibly continued: „and if also contact Y is free/occupied, and if also contact Z is free/occupied“ ...etc.). You can define up to **10** locking contacts (C1 to C10).

You can expand the locking to all solenoid devices in the route. This is applied mostly. Or you can only lock signals or turnouts. Details in section **8.7**.

Normally it should be possible to switch a route if all its contacts are free („FREE“, without check), except its starting contact. This is occupied the locomotive which shall travel over this route („OCCUPIED“, checked).

To simplify, you can click at the button “all” and all contacts shown in the right column will be registered in the input panels. Changes, for example “switch route only, if start contact is occupied”, have to be done manually.

The button “all” will be faded out (= not active), if a route contains more than 10 contacts.

Important notice:

It is **mandatory** to enter at the bottom tab – in context with the start-destination-function, see **12.5.1** – the **start**-, **breaking** and **destination contact** numbers of the registered route. This is required for at least the train number labels (see **12.13**) and the “Automatic by demand contacts” (**11.1 ff.**), especially if you would like to use these operations without powerless tracks.

If you do not define a breaking contact, please enter 0 for “breaking” or delete any entries in this panel.

In “StartV minus” you register how much the starting speed of your locomotives – locomotive-database, chapter **5.6** – will be reduced in absolute for starting and breaking. The adjusted value will **always** be **subtracted** of the individual starting speed of a locomotive.

This “route related fine adjusting” makes it possible to assign different speeds for the locomotives at the starting- and breaking contact for each route.

For „StartV minus“ you can select values between **0** and **70** at the starting contact and between **5** and **70** at the breaking contact. Therefore you have to adjust the starting speed of your locomotives in chapter **5.6** always higher than the value registered in the routes for “StartV minus” at “Start” and “Breaking”.

Example: Starting speed of a locomotive registered in the locomotive-database = 50 and StartV minus of a route = 70; result: 50 minus 70 = **minus** 20, the locomotive will **not start** !

Important notice:

After an update to **WIN-DIGIPET 8.1**, user’s of the former version **7.x**, which have

already used breaking contacts, have to check and eventually correct their settings, because the values have changed from percentage to absolute.

If you enter “StartV minus” = **0** for the start (contact), the locomotive will start with an unchanged value of the starting speed, registered in the locomotive database.

The **Automatic with demand contacts without isolated tracks** will be performed by train number displays at the start- and destination contact.

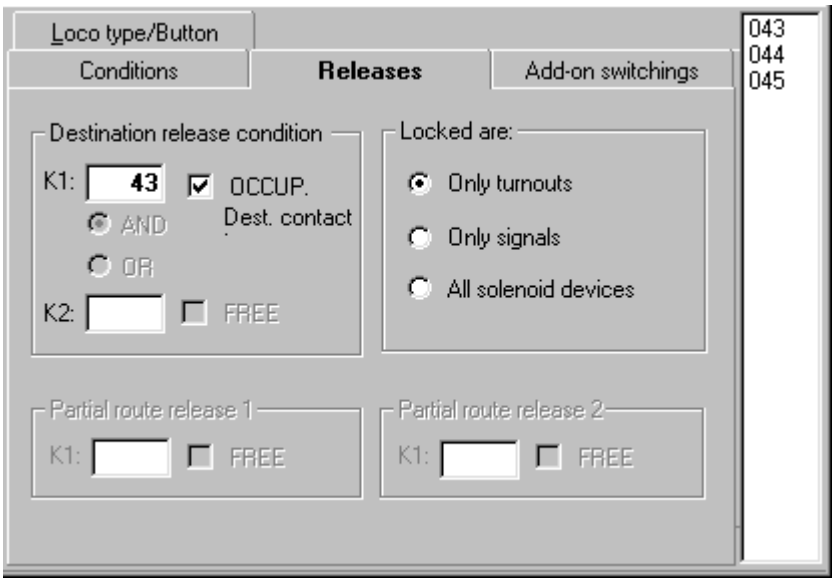
In the automatic window you have to activate “**by train number**” (see **12.15**), otherwise isolated track sections would be necessary. An order of events would look like this (see also **12.5.1-B**):

- The train is on its start contact and the loco address (=train number) is entered respectively visible in the train number display.
- The loco starts to move with its starting speed registered in the loco-database, **minus** the value registered in the routes editor “StartV minus” for this route.
- The behaviour at the breaking contact is similar: If the breaking contact is reached, the loco will slow down in relation to the starting speed registered in the loco-database, **minus** the value registered in the routes editor “StartV minus” for this particular route.
- At the destination contact the loco will stop (speed = **0**).

Having completed all entries on the index card ‘Conditions’, click in the menu ‘Routes’ on ‘Save’ or on the switch in the symbol bar.

8.7 Release conditions

Next click on ‘Release’. On this index card you define the exceptions for the locking of routes and the conditions for their cancellation.



„Locked are:“

Here you define whether or not only signals, turnouts or all solenoid devices are locked. A block system, containing no turnouts, can be individually locked using „All signals only".

„Destination release condition"

Important notice:

It´s absolute necessary to enter the number of the destination contact and mark "OCCUP. Dest. Contact" in the upper left panel, otherwise trouble may occur during operations (routes won´t be released).

Here you define under which conditions the locking is cancelled. „Release" means: „Solenoid devices can be used elsewhere available from that route, if contact X (C1) free (or occupied)" (possibly continued: „and when contact Y also free/occupied"). Up to 2 release contacts (C1, C2) can be defined, possibly with AND/OR function.

Release conditions ensure that the solenoid devices in the route are locked after the route has been switched. This could be all solenoid devices or only all signals or turnouts, depending what you had selected in „Locked are...". Another route (or any other itinerary), which contains a locked solenoid device- even if it is only one – of the switched route, can only be switched, if the release conditions are met.

This is the reason, why it is **necessary**, that each route has its **Release conditions**. Normally they are: If Destination -„Contact (C...) OCCUPIED", e.g. the train or locomotive has travelled through the route correctly.

The route is deleted from the screen after the release conditions were met.

Deactivate the conditions, if you want to switch routes without having trains travelling through the route. See section **12.13.3**.

„Partial route release 1 or **2"**

Recorded partial routes in long routes can be released even though the train has not yet reached the destination release contact, as described above in **8.3**.

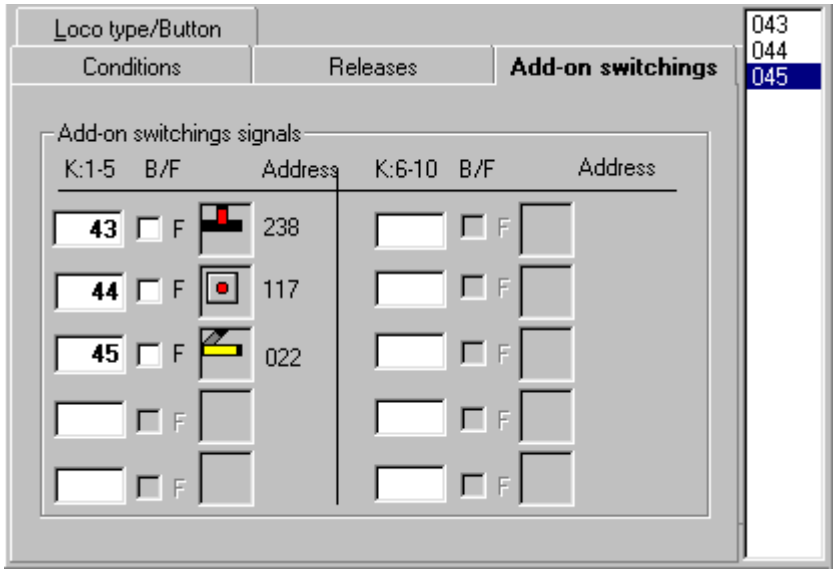
Here you decide under which conditions the partial routes are released.

The route is deleted from the screen once the release conditions of the partial route are satisfied. It will be deactivated and all locked solenoid devices in the partial route are released.

Click on the menu 'Routes' followed by 'Save' or on the switch in the symbol bar when all your inputs are completed on the index card 'Release'.

8.8 Add-on signal switching (O = OCCUPIED, F = FREE)

WIN-DIGIPET 8.1 makes it possible to switch additional solenoid devices, including a turntable (**except** double crossing turnouts), by switched routes. Examples: “Switch the signal at the exit to red, after departure of the train” or, for block operations, “After a train has entered a block section, switch the signal to red, to “protect” the train in the block section, “Switch a signal to green”, “switch turnout #34”, etc.



You can switch up to 10 additional solenoid devices per route.

First enter the number of the contact at which the first add-on switching shall be carried out, e.g. „C1: If contact no.9 FREE (or OCCUPIED), switch the adjoining symbol to red“.

Point the mouse pointer to the symbol of the track diagram where you want to have an add-on switching carried out. Press the left mouse key: The mouse pointer changes to show a hand with a signal symbol.

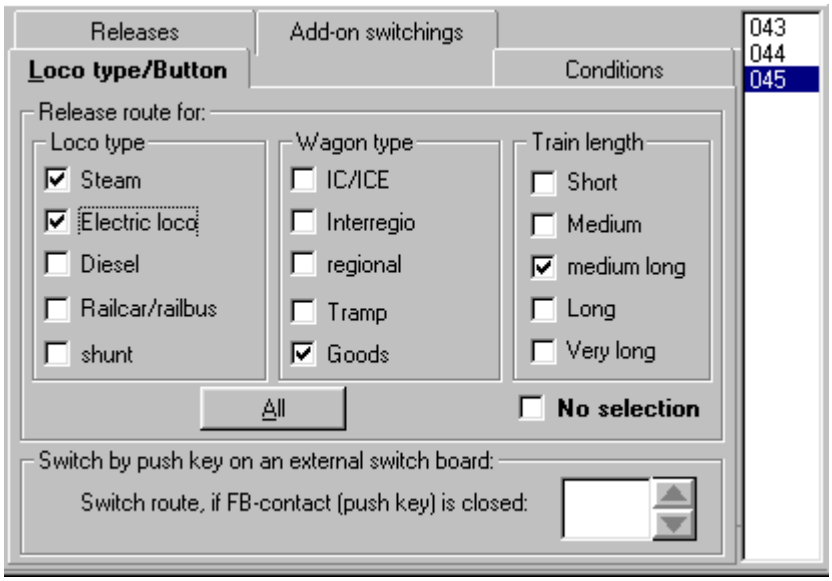
Keep the left mouse key pressed and drag this symbol to the display panel at the right, next to „Contact number FREE/OCCUPIED“ and release the left mouse key. The signal symbol “taken” from the track diagram appears in the display panel. Click on it- the mouse pointer changes to a hand- and sets the add-on switching you want for that signal.

A signal at which an add-on switching is carried out bears a black frame in the track diagram, indicating add-on switching.

Having determined all add-on signal switching of this route, click in the menu ‘Routes’ on ‘Save’ or on the switch in the symbol bar.

A recorded add-on switching of this route can be deleted by deleting the contact number: Mark it (blue bar) and press „Remove“ or the “CR” key.

8.9 Loco type / Button



Locked for Loco-/ wagon type:

You can lock routes for specific locomotives or trains as mentioned in the system-settings (see **4.9**); The input you made in section **4.9** will be displayed next to the selection boxes. You can also lock individual routes for specific train lengths (see **4.9**).

Depending on your settings you have entered here, the route will be locked for this specific loco- train and / or train lengths.

If you enter "**no selection**", a route will not be checked about a specific loco- /train type.

Prerequisites are:

- You have activated the switch "Switch only, if route isn´t locked by special loco/wagon type" in the "system settings / routes" (see chapter **4.10**);

- You have registered up to 10 inputs in the text boxes to define your "rolling stock" as described in the system-settings in chapter **4.9** (if the default definition doesn´t meet your requirements for your model railroad);
- You have assigned a "loco type" to each loco in the locomotive-database (see **5.1**);
- The digital address of the locomotive must be entered in the train number label of the start contact of a route.

The closing will be checked referring to the data in the locomotive-database of the locomotive at the start-contact and the settings in the routes editor for each particular route.

A warning will occur, if you try to switch a route via the "Switch + Ride - function", if the train is not appropriate to the selected route, but nevertheless, this routes can be switched manually (see **12.5.1-B**). During the operation of "Automatic with demand contacts" (see **11.1**), only appropriate routes will be switched by the

system. This means for example: A Diesel-loco will never ride to the coal- or water station for steam-locomotives, if this route is closed for Diesel-locomotives. You will also get a warning if you assign a loco to a route which is not valid for this particular locomotive, in the timetable-editor (chapter **10**), but nevertheless, if selected for your timetable-operation, this line will be carried out.

Switch routes and solenoid devices via external switchboard:

You have to activate the feature “Switch routes and solenoid devices by push key (external switchboard)” in the system settings (see chapter **4.10**)

This provided, you can register the appropriate contacts in the routes editor.

If – for example – only one solenoid device shall be switched, you have to register two routes with each “red” and “green” of this solenoid device and assign it to one contact each.

The interrogation will be done each 500 milliseconds – therefore you have to push the key for half a second. Switching conditions, partial release and add-on-switching will not be taken into consideration, nevertheless a route will be illuminated, if a release-condition is registered and faded out, as soon as this release condition is achieved. If no release condition is registered, the route will just be illuminated for a short time.

If you do **not** use an external switchboard, do **not** mark the corresponding selection box in the system settings.

8.10 Route test

This function serves to check all switching. Mark the route to be tested on the routes list and click on ‘Options’ followed by ‘Test run’ or on the switch in the symbol bar.

The window „Test route“ appears.

Place a locomotive at the starting contact of the route and click ‘Start’. All switching conditions are checked and displayed in the list window. If the route could be switched („executed“), ‘Start’ changes to ‘Report’. Let your locomotive travel to the destination contact of the route and click on ‘Report’.

The displays in the window cover add-on signal switching and the destination (release) contact. As soon as the latter is reached, the route will be masked in the track diagram. In the report text /1means Occupied and /0 means Free.

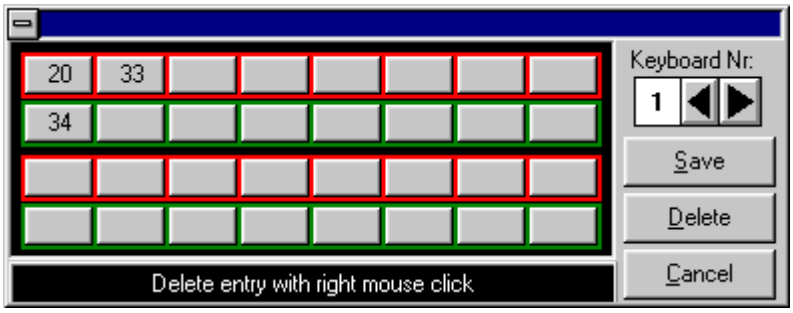
8.11 Allocation of routes to the virtual keyboard

32 frequently used routes can be allocated in the main program to a **virtual keyboard.** The main program will execute them immediately by a mouse click (on assigned buttons) (see **12.2.2**).

The max. 32 routes can be allocated to the command buttons of the virtual keyboard, using the track diagram editor.

This function is only possible if the index card 'Routes' is visible.

Click on ‘Options’ in the menu bar and then on ‘Allocate routes to keyboard’ or on the switch in the symbol bar. A window ‘Allocate virtual keyboard with routes’ opens, containing 32 command buttons.



The **keyboard-no**. in the right hand display window is used in conjunction with the **Intelllibox**; more detailed description below in this section. Should you not owe an Intellibox, select **„1“** as the keyboard number.

Mark the route in the routes list which should be assigned to a command button of the virtual keyboard. Click again on the line in the list and, with the left mouse key pressed, drag it to the command button. Release the mouse key. This is known as „drag and drop“.

The command button shows the **ID** number of the route and a description is displayed in the bottom display line.

For further routes proceed as above.

Having completed all the inputs on the virtual keyboard, click on ‘Save’: The recorded route is saved and available for switching in the main program.

Routes can be **individually** cancelled by clicking on the relevant command button with the right mouse key pressed. The switch ‘Delete’ deletes **all** recorded routes.

Moving the mouse pointer over an assigned button displays the description of the route in the bottom display line.

Additional information for Intellibox users:

A true closed loop between the layout and the computer takes place, using the Intellibox (in contrast to the Märklin–system). Details given in **4.7**.

An existing “real” keyboard, plugged in on the left-hand side of the Intellibox, can be used to switch the first group of 16 routes.

To utilise this function, activate the „Keyboard no.“ and the correct keyboard address in system settings under „Intellibox/Icum“. Check the switch „Switching position of solenoid devices using keyboard as input device" (see **4.7.1**).

8.12 Searching in routes list

Specific routes can be easily found within the routes list by the search functions at the bottom of the routes editor window.

Using the „Filter“, additional search criteria can be defined, e.g. „ID-text of the route“ and „Number of a contact in the route“. The text in the filter fields are self-explanatory.

A click on ‘Search’ starts the function. All routes that satisfy the search criteria are displayed in the list window.

A certain route can be found even **faster**, using the window ‘Routes’.

With the right mouse key click on a Starting point of the route to be found within the track diagram and then on the **Destination** point. This is similar to the switching of routes, using **Start/Destination function**, see also **12.5.1**).

All routes are displayed in the routes list which are searched in this way.

The complete routes list can be reached with ‘Routes’ - ‘Display all routes’ or via the switch in the symbol bar.

8.13 Check recorded routes

It is possible that a symbol may be faulty or the route is not switched correctly when the route is switched. This can happen if changes to the routes were made **later** in the track diagram editor and you forgotten to save those changes.

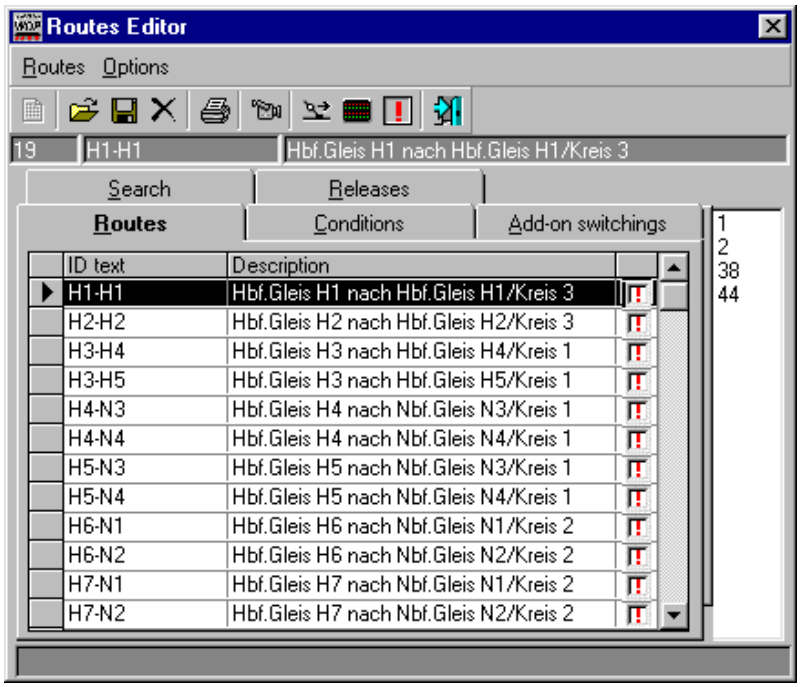
WIN-DIGIPET indicates this as well: A **red exclamation mark** indicates the program parts that are not identical with the recorded routes and the track diagram.

You know immediately that you have to make corrections in the routes editor and where the areas are. The corrected routes have to be saved.

To check **all** recorded routes automatically, click on ‘Options’ and then ‘Check recorded routes’ or on the switch in the symbol bar.

Click on ‘Start’ in the appearing window.

WIN-DIGIPET checks all recorded routes whether they are **identical** to your track diagram. All routes, which need to be corrected, are listed in the routes list after the test. They are marked with a **red exclamation mark** to the **right** of the listing.



Perform all the necessary corrections with 'Record routes' on each route at the indicated places in the track diagram. After completion save the routes.

The message „No corrections necessary!" is displayed if there are no corrections to be made.

The complete routes list is reached by 'Routes' – 'Display all routes' or via the switch in the symbol bar.

8.14 Print routes list

In the menu 'Routes' use 'Print' or click on the switch in the symbol bar. The process is the same as in 5.11 – print locomotive database - and **6.4** – print track diagram - explained. The screen displays are self-explanatory.

8.15 Delete routes

In the index card 'Routes' or on the index card 'Search' mark the route to be deleted with a mouse click. Then click on 'Routes' in the menu, followed by 'Delete' or on the switch in the symbol bar. The first record can not be deleted but only overwritten.

8.16 Always display feedback contacts

Click on the menu ‘Options’ in the routes editor and check ‘Display always feedback numbers’ to display all the feedback contact numbers in the track diagram at **every** start of the routes editor.

Deactivate this check, should not want this function.

8.17 Exit routes editor

Click in the menu ‘Routes’ on ‘Exit’ or on the switch in the symbol bar: You are returned to the main program **WIN-DIGIPET 8.1**.

9 – DIGITAL TURNTABLE

9.1 General

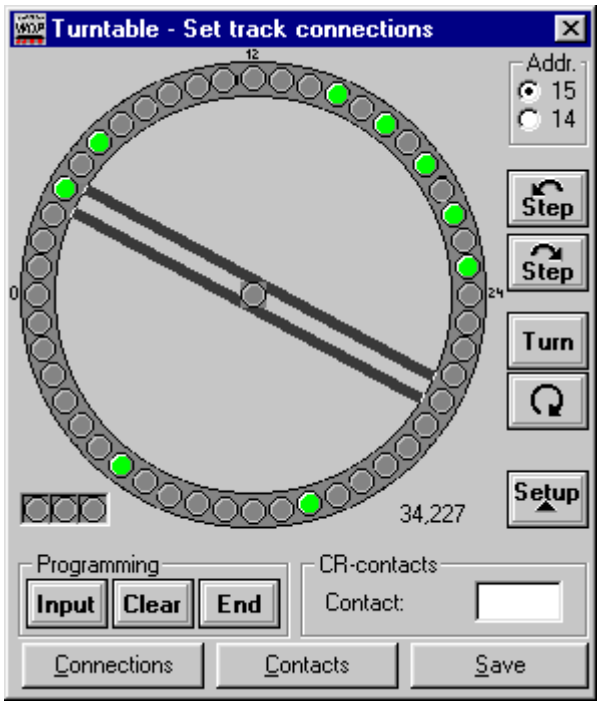
This chapter explains how to control the turntable for Märklin Digital HO (ref. no. 7686 and 7286 + 7687) through WIN-DIGIPET 8.1. This control cannot be used with other types of turntables and power supply systems.

Please note the operating manual by Messrs. Märklin, particularly the paragraphs on electrical connections for the turntable as well as on correcting mechanical and electrical problems.

Turntable control through WIN-DIGIPET 8.1 is not only comfortable, but also **saves** purchasing a Märklin keyboard for the turntable.

9.2 Keyboard address

Click on 'Track diagram aspect' in the menu bar of the main program and 'Turntable' or on the turntable symbol in the symbol bar.



A window with a blank turntable appears with 48 grey, unmarked track sections (spoked tracks), each having a grey circle in the middle. At the right hand side you see 5 command buttons.

In total 48 track connections are possible. Counting of the track connections starts on the left, the horizontal point **00**, proceeds clockwise and ends with **47**.

Opposite **one** connected track there is always **an associated** connected **track**: either a second connected track or a dummy track. Individual connected tracks without opposite connected or dummy track do not exist.

Start by defining the **keyboard** address of your turntable in the upper right hand frame „Addr.". This puts the Märklin turntable receiver „electronic 7686" to the correct function within your system.

Märklin supplies the turntable receivers with a fixed keyboard address no.15 i.e. you operate **one** turntable on your layout.

In this case you need not do anything in the right hand frame: the keyboard address 15 (for the first turntable) is pre-set and checked by the program.

The four command buttons below that frame are deactivated at the beginning. They will be activated after you have recorded and saved your track connections.

Should you, however intend to use **two** turntables, the receiver of the **second** turntable has to be set to keyboard address no.**14 at the Märklin factory**.

First carry out all recordings for the first turntable 15 and click on address no. 14 in the upper right hand frame to record turntable 14. A blank turntable reappears, and you can carry out the recordings for it. You can switch from one turntable to the other by a simple click on the addresses in the upper right hand frame, after both turntables are recorded.

9.3 Recording and deleting track connections

Before using the turntable for the first time and after you have modified, expanded or decreased connected tracks, the positions and numbers of track connections must be recorded.

Click on the switch

, and the window is expanded for recording and programming. The title bar of the window reads now „Recording track connections“. Click on ‘Track connections’ in the lower bar.

Click on the grey circle within the first track connection you want to record: the circle will be coloured green.

In this manner you record all track connections one after another. Dummy tracks may **not be recorded.**

Should you have made a mistake, or should you want to modify your recording, delete the relevant track connection through a click of the right mouse key.

Having terminated your recording, click on ‘Save’. Your recording will be saved immediately.

9.4 Feedback

Using feedback modules s88, interesting feedback at and around the turntable can be obtained.

You can have the occupation of each connected track displayed. For this purpose, click on ‘Contacts’.

Click on an existing, activated track connection (green circle) which is fitted with a contact track. The green circle will be marked by a black triangle, and in the panel „FB Contacts“ appears. Next to „Connection“, the consecutive number of the track connection (clockwise, starting as mentioned above in **9.2**, from left horizontal with „00“). In the contact number panel to the right the fictitious contact number **0** is pre-set. The correct number is keyed in here.

In the same manner, record all other contacts at track connections of your turntable.

Contact numbers can be modified by overwriting and deleting, entering the number **0**.

The circle of the relevant track connection lights up in **red** when a locomotive passes over it, when the turntable is operated on the layout (see **9.8**).

At the left-hand plug connections of the „electronic 7686“ you will find three jacks: **B** = track power (+), **0** = return (-) for the right hand rail of the track, **0** = return (-) for the left-hand rail.

You can utilise **one** of both **0**-jacks for feeding back the deck occupation. Connect to one input jack of the feedback module s88. Click at the centre of the deck and enter the number of the aforesaid s88 input jack in the contact number panel next to „Deck“.

The centre of the deck will light up in **red** when a locomotive passes over it, when you selected the operation of the turntable on your layout (see also **9.8**).

To achieve this, you must, however, remove the return contact springs at the deck and supply digital power to each connected track.

To monitor the functions of the turntable, the receiver „electronic 7686“ is fitted with jacks i.e. red, green and yellow. You can use these jacks to connect monitoring lights. Connect those to the relevant input jack of your feedback module s88. Successively click on the three grey LED circles at the lower left . Enter in the contact number panel at the lower right, the number of each relevant s88 input jack next to „LED...“.

With operation of the turntable on your layout (see **9.8**), the three **LED circles** will light up in the appropriate colours.

Having entered all feedbacks of the turntable, click on ‘Save’.

9.5 Programming the turntable

Prior to the start of programming, **leave** the turntable („X“ in the upper right hand corner). It needs to be closed once for creating its file. Once more load the turntable (‘Track diagram aspect’ - ‘Turntable’) and click on Setup.

Programming the turntable is done, using the computer. Click on ‘Input’. The deck will be shown in the starting position for WIN-DIGIPET.

Pull the **Mains plug** of your layout. **It is not sufficient**, to switch your layout off, using the red button („stop“) on a Märklin controller.

Insert the mains plug and click on ‘Input’ within 5 seconds. The deck will rotate to the starting position last saved and signals this with a “beep”

Click repeatedly at ‘STEP right’ Step or ‘STEP’ left Step, until the starting position of the deck coincides with the starting position as defined on the screen. After each single step a small window appears. You are asked whether the deck has reached its correct starting position, i.e. the one shown on the screen, or not.

As soon as the starting positions of the deck and the turntable graph on the screen are identical, reply to the question by ‘Yes’, and click on Clear, followed by Input You have now fixed this position.

After that, proceed clockwise ‘**Step**’ by ‘**Step**’ to each recorded track connection (up to max.24) and confirm with Input.

Opposite track connections are automatically included in this programming.

You terminate the programming by End. The screen display jumps to the starting position, the deck of the turntable rotates to the programmed starting position, and a “beep” signals the end of the programming procedure.

At the same time the turntable is saved; you do not need to click on ‘Save’.

Finally, close the lower window part by a click on Setup. The turntable is now ready for operation.

9.6 Testing functions

You can now check the correct function of the turntable.

With ‘Step right’ or ‘Step left’ moves to the right or to the left from one track connection to the next.

If you click on Turn, the deck rotates 180 degrees according to the direction set.

Clicking once or twice respectively at the ‘**Sense of rotation button**’ you determine in which direction the deck will rotate with the turn command Turn. This also applies to direct access to specific track connections.

Click on the circle of that track connection if the deck has to move without a stop to a specific track connection (track **pre-selection**).

9.7 Addresses of track connections and command buttons

At the bottom in the right of the “Turntable” window, you will see a small display “33,xxx” or “34,xxx” if you move over a connection track or if you click on a command button 33,227 ; “33” means “green”, “34” means “red” and the three-digit numbers “xxx” means the addresses, which in theory would be assigned to the Märklin keyboard #15 (address range 225 – 240) or keyboard #14 (address range 209 – 224).

The command buttons would have the following addresses, for keyboard #15:

“STEP LEFT”’ = **33.227 (227 GREEN)**
“STEP RIGHT” = **34.227 (227 RED)**
“TURN” = **33.226 (226 GREEN)**
“Turning direction RIGHT” = **34.228** (**228 RED)**
“Turning direction LEFT” = **33.228** (**228 GREEN)**

Same colours are used for keyboard #14, but addresses 210, 211 and 212

9.8 Operating the turntable

You can load the turntable through several commands: Either menu ‘Track diagram aspect’ - ‘Turntable’ or with the right mouse key short menu ‘Turntable’ or symbol ‘Turntable’ in the symbol bar.

Operating the turntable is the same as described above in **9.6** – Function test.

10 – TIMETABLE SYSTEM, TIMETABLE EDITOR

10.1 General

Through the **WIN-DIGIPET Timetable System** a practically unlimited number of train and locomotive movements respectively can take place according to your instructions, the **timetables**.

Absolute perfection and total automation- through tedious programming by the user- are deliberately not aimed at. However, **WIN-DIGIPET 8.1** is apt to create operating conditions virtually in line with those ideal characteristics.

In the WIN-DIGIPET timetable system you can implement various levels of automation on your Digital layout and modify them as you like. It is for instance frequent practice to have train movements controlled by timetables whereas shunting engines are subject to manual control.

On the other hand, shunting operations can also be controlled by or integrated into timetables. There is a wide range of operational possibilities between these two examples.

It is remarkable how fast and easily WIN-DIGIPET timetables are created and how comfortably they are handled.

The system uses the data of your model railroad layout, recorded previously and combines them ingeniously. There, complicated and/or time-consuming preparations are not necessary.

Itineraries are recorded **routes**. WIN-DIGIPET rotes do not only switch their „own“ solenoid devices, but each route is, beyond that, capable to switch up to 10 signals at any place of the model railroad layout. This is one of the advantages, which makes the operation according to WIN-DIGIPET timetables particularly flexible and attractive.

To ensure that **WIN-DIGIPET 8.1** can detect which points of your layout are just reached by trains/locomotives, you have to use feedback contacts connected to feedback modules s88. Routes begin at a **starting** contact and end at a **destination** contact. The relevant entries are entered in the route editor (see **8.6/8.7**).

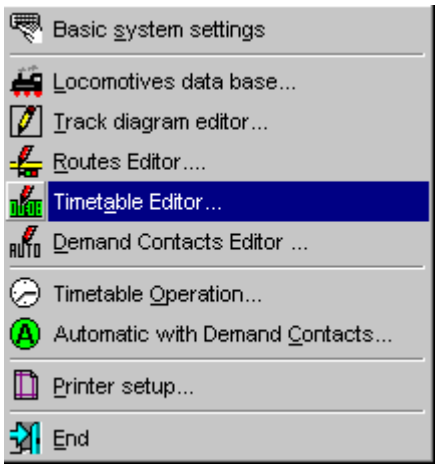
In addition to the starting and destination contact you can define up to **20** intermediary contacts and provide each of them with different commands to different locomotives for every route. Thus you can make each train movement an individual one.

In the WIN-DIGIPET timetable system you write the timetables in tabular form on the screen. One **line** of a timetable stands for the movement **of a train/locomotive** along an **itinerary determined** by a starting and destination contact. The train movement starts at a **time** you determine.

The lines of a timetable are executed automatically one after another. In case of problems, delays or interruptions with timetables-events which happen on the model railroad layout (and in the real world)-, corrective measures for a quick return to normal operational conditions are available in WIN-DIGIPET 8.1.

In summary, the **WIN-DIGIPET timetable system** controls the train movements **precisely** according to time **and itinerary**. Therefore, the stop sections at signals can be omitted/non –operational, in open, well accessible layout sections that are integrated into the operation with timetables. Such signals are only a visual feature.

10.2 Recording the first line in a timetable



Click in the main menu on the 'File' - 'Timetable editor' or on the switch in the symbol bar. The list window of the timetable editor is displayed in the track diagram.

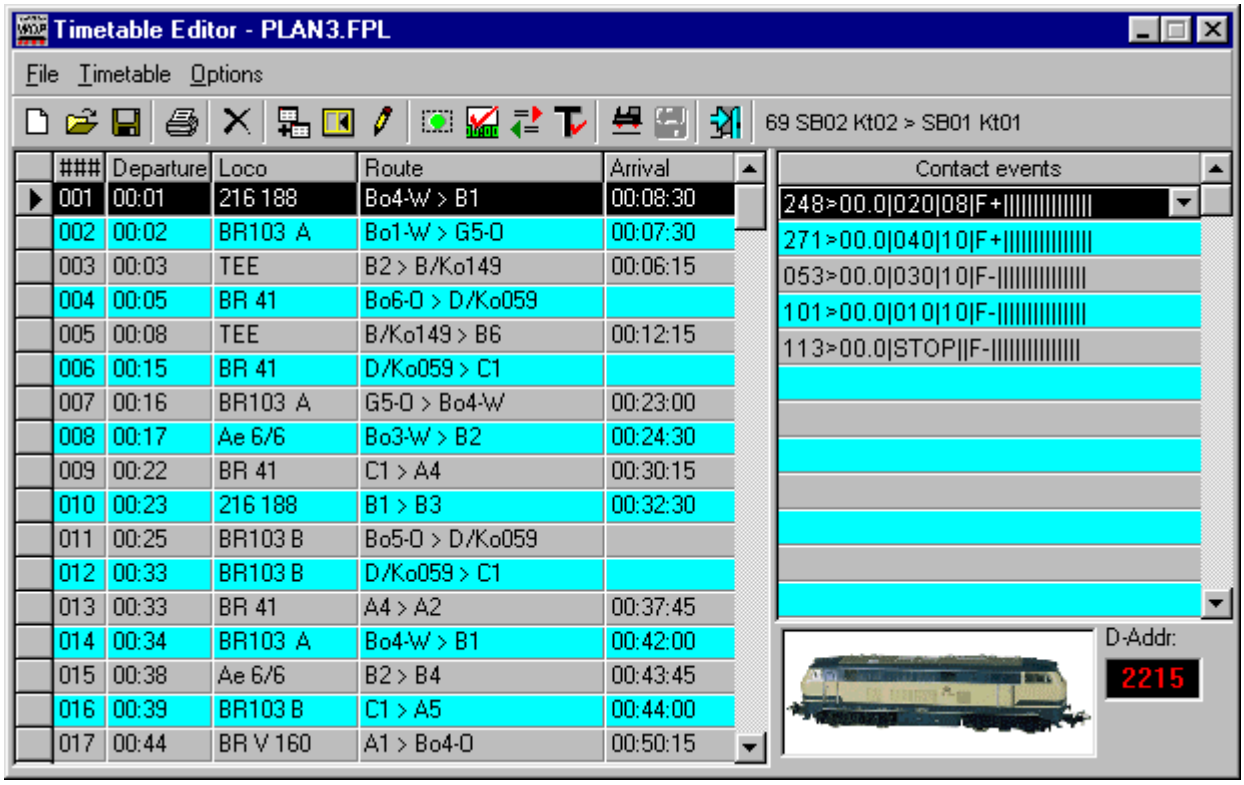
At the screen edge you will see a „Locomotive selection" bar, containing the pictures from your locomotive list (**5.10.3)**. To browse through the loco selection and to position, look in section **12.10.1**.

You can write an unlimited number of timetables, each with up to 400 lines- depending on which maximum number of lines per timetable you had specified in the Basic system settings (see **4.2.1**). Via „Append timetable" (see **10.14**) you can attach each timetable to another timetable. Thus, the length of a sequence of timetables is unlimited.

If you have not yet written a timetable, click under 'File' on 'New' or on the switch in the symbol bar of the timetable editor. A list window titled „?? *.FPL" is opened.

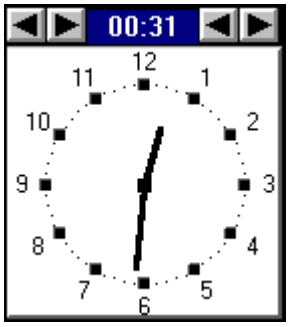
As soon as you click at a line it will get black underlay. If you click at a column within a line, a selection panel with an arrow appears.

10.2.1 Time, locomotive, route, arrival time



The **first** column in the timetable **„###“** gives the consecutive number of the line.

In the **second** column **„Time“**, enter the starting time of the first train movement. Click on the time „00:00“ and then on the selection arrow which appears. A clock to set the desired starting time appears.

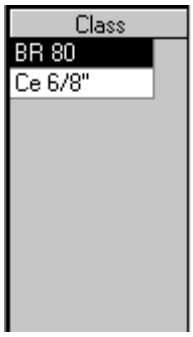


Set the hour hand with the <u>right mouse key</u> and the minute hand with the left mouse key. You can also set the hours and minutes with clicks on the upper left hand/right hand arrows. The starting time set is displayed above the dial and in the second column in the timetable.

The time range extends from 00.00 hours to 23.59 hours. Timetables may not run through midnight, e.g. 22.10 hours to 03.44 hours is not permissible.

The „Model railroad clock“ of a timetable starts running always **one minute prior** to the starting time of the relevant timetable. Therefore, if you want a timetable to begin at midnight, enter the starting time as 00.01hours- not 00.00 hours- in the first line.

Once you have set the starting time, click on the numbers in the second column of the timetable. The clock disappears.

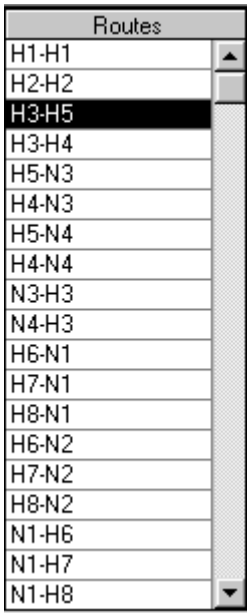


In the **third** column **„Loco“** enter the locomotive of this train. Click on the line below „Loco“ and the selection arrow appears. All locomotives to which you had assigned the category „On layout“(see **5.9**) are displayed with their class designations.

Click once on the class designation: Its picture appears at the bottom right. Double-click on the class designation: It appears in the third column of the timetable.

You can even make **faster recordings** via the locomotive selection, you placed on the screen edges.

Here click on the desired locomotive, drag it, with the left mouse key depressed, into the column „Loco” in your timetable. Release the left mouse key.



In the **fourth** column **„Route**“ you enter the route to be switched for this train movement. Click at the line below „Route“ and at the selection arrow appears. A list with the ID texts of all registered routes appears.

Double-click on the selected route: It appears in the fourth column of the timetable.

An **alternative** to selecting and entering a route is the selection via the **start- and- destination function** (see **12.5.1*)***. Mark the timetable line into which you want to enter a route and execute the start/destination function: Click with the right mouse key on the start and destination contact of the route, one after another, in your track diagram. A window „Start/destination selection“ in a modified form as in **12.5.1**. All routes that the system found are displayed with their ID texts and their internal ID number.

Through a click on its line in the list, select the desired route; it will light up in yellow in the track diagram. Click on ‘Copy for editor’ and then on the marked timetable line. This route will be automatically copied into the timetable line below „Route”.

The **fifth** column **„Arrival“** time time will be automatically allocated into this column after the timetable line has been tested and the arrival time is calculated (see **10.5** below). You can determine when the next departure of a train can be planned, using this function.

You can change the arrival time manually. Just click at the corresponding listing arrow of that column and a clock will appear, similar as for departure.

The timetable will still be operational, even though none or only some timetable lines are present and tested. The list window „Arrival“ will be empty. All entries in the timetable must be correct, otherwise the timetable will not function.

10.2.2 Railroad sound and video sequences

There are about 100 Wave files and some AVI files on the WIN-DIGIPET 8.1 CD-ROM (see also **3.6**).

Wave files – railroad sounds. They can be used without any problems in the WIN-DIGIPET timetable system. All you need in your PC is a sound Blaster card (compatible) 16 Bit and a loudspeaker.

To prepare the application of sound files, proceed as follows.

Insert the CD-ROM in your drive, say E:, select the Windows explorer, and double-click on E: and then on the displayed directory ‘Sound’.

There are 4 sub-directories in ‘Sound’: ‘Steam’ (steam locomotives), ‘Diesel’ (diesel locomotives), ‘E-Locos’ and ‘Others’ (other sounds, e.g. stations, level crossings, etc.).

All files with the extension name .WAV appear in the right hand window when you click on one of these sub-directories. You can listen to them and make your selection by double clicking at these files.

Via ‘Process’ - ‘Copy’ you can copy a selected Wave file into the **sub-directory** C:\WDIGIPET \SOUND of your installation directory C:\WDIGIPET (see **3.3** and **3.4**) or into the sub-directory created by you during the installation.

The program searches for and finds the selected .WAV files only in this sub-directory.

You can have selected Wave files played by entering the relevant commands into the contacts event window (see next paragraph **10.2.3**).

The prerequisites for the application of **AVI files** – video sequences – in the WIN-DIGIPET timetable system are similar to the ones mentioned above (Wave files). In addition, you need „Video for Windows“ from Microsoft, to play AVI files

To use the files, proceed as mentioned under Wave files. Video files have the extension. AVI. Via ‘Process’ - ‘Copy’ you can copy a selected video file into the **sub- directory** C:\WDIGIPET\VIDEO of your installation directory C:\WDIGIPET (see **3.3** and **3.4**) or into the relevant sub-directory, created by you during the installation.

The program searches for and finds the selected .AVI files only in this sub-directory.

You can have the selected .AVI files played by entering the relevant commands into the contacts events window (see next paragraph **10.2.3**).

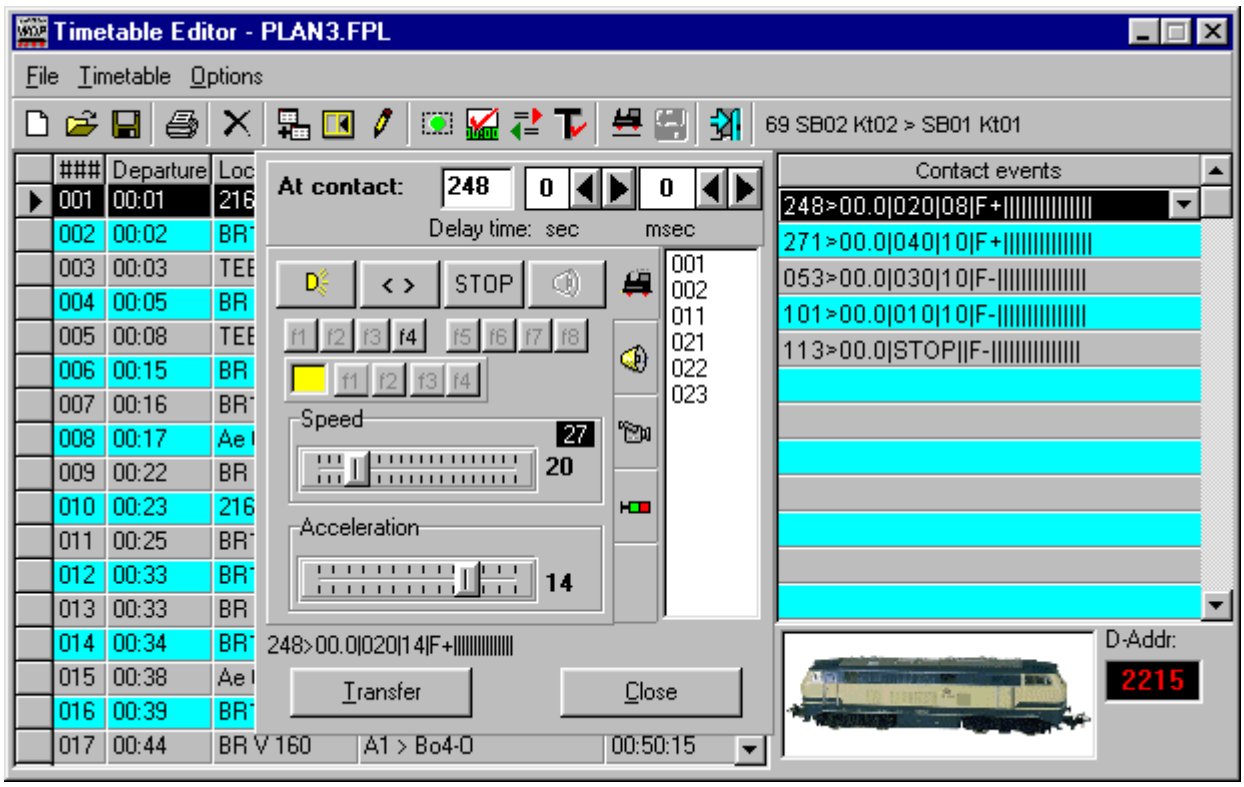
10.2.3 Commands to the locomotive and layout

As the locomotive passes over certain contacts, „Contact events“ are written in a window. It is automatically activated as soon as you have entered „Time“, „Loco“ and „Route“.

Underneath this window, the picture and digital address of the locomotive will be shown. If you click at the picture of the locomotive, its Loco-control will open as described in chapter **5.10.1**.

20 entries are possible for the selected route; in the left-hand column you see the digital address of the locomotive.

Click on the line under „Contact events“ and on the selection arrow which appears. The window „At contact:“ appears. In this window you set which events should take place when a locomotive passes over certain contacts. Four different types of commands are available.



You can see all registered contacts of this route sorted by number in the column in the middle. Select the specific contact number, for which you want to record commands. First enter this number into the panel next to “**at contact**” via either mouse click, drag´n drop or via keyboard.

This procedure has to be repeated every time you want to add a new command line to the frame “contact events”.

You can assign a “delay time” of max. 90 seconds to each contact (the command will be processed **after** the delay time). Each second is subdivided into 1000

milliseconds. To adjust, please use the two arrows next to the panels “sec” and “msec”. This feature offers a great variety for operation modes; these will be described later in the section “**Use of delay time”**.

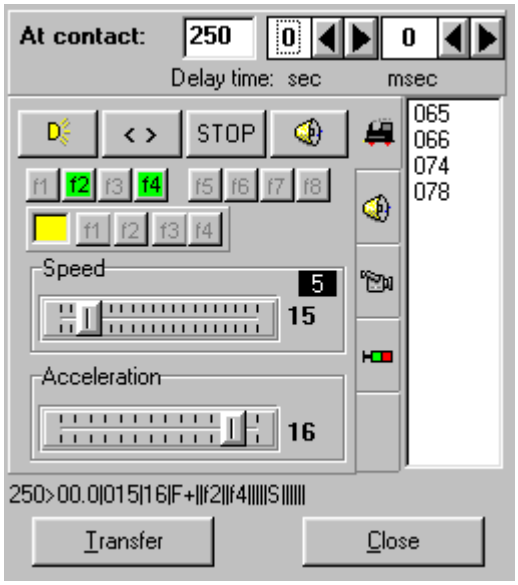
In the following table, all elements of the loco command line are described which will be displayed in the window “contact events”

The detailed explanation of the following example is:

008 > 00.0 I 080 I 10 |F+ I f1 I f2 I f3 I f4 | | | | | S | 80 | f1| f2 | | f4

008	=	Number of contact (three digits)
> and **|**	=	hyphens
00.0	=	Delay time 00. Seconds and 0 tenths of a second
080	=	Speed (in percentage - three digits – of the max. speed at this contact)
STOP	=	Immediately stop, without consideration of a delay factor.
<< >>	=	Change direction of locomotive
10	=	Rated speed (1 = slowly and 18 = fast)
F+	=	Switch on locomotive function
F-	=	Switch off locomotive function, respectively keep function “Off”
MAG	=	Switch a solenoid device – followed by „S“ for signal, „W“ for single turnout or „D“ for a three way turnout (slanted); the designated numbers are codes, which are automatically assigned by the program.
WAV	=	WAVE-file < file name > activate
f1 ...f8	=	Special function f1 etc. = active
S	=	Locomotive-Sound „On“
80...	=	Functions decoder with address 80, as well as the indicated special functions f1, f2 and f4 = active.

Command mode 1: **Locomotive** / running properties



Click at the “Locomotive symbol”. The command buttons are self explanatory, respectively are equipped with yellow marked “quick-infos” and are easy to understand.

If the locomotive function “func” is assigned to the “**Telex**”- coupler, then you normally decide to keep this function “OFF”, except for clearly defined shunting.

You can play the sound which you have recorded for a specific locomotive (see locomotive-database, chapter **5.7**) directly in a timetable line. If you have not registered an individual sound for a locomotive, the panel at the right side of STOP will be blank. If a

sound is assigned, a speaker-symbol will indicate, that a sound is registered to a timetable line. A grey-marked speaker-symbol indicates, a sound is not assigned for playback to that particular line.

Furthermore you can use a functions decoder which is assigned to a locomotive (locomotive-database, chapter **5.7**) in a timetable line. If a functions decoder has been combined with a locomotive in the locomotive-database, a yellow marked panel will show the address in the second “f...”-line and right of it, the corresponding functions f1 to f4 are shown.

The sum of your settings will be shown in the bottom left as a loco command line, see this extensive command for example:

008>00.0l080l10|F+lf1lf2lf3lf4|||S|80|f1|f2||f4.

008 means the number of the contact, **> 00.0** no delay (= no waiting time) at contact 008**, 080** the adjusted speed (80 % of max. rated speed), **10** the adjusted acceleration (0 to 18), **F+** = Loco-function “ON”**, lf1lf2lf3lf4** = special function f1, f2, f3 ,f4 = active, but not f5,f6,f7,f8, **S** = loco sound “ON”, **80** = Digital decoder with address 80 and **f1, f2, f4** = “ON”.

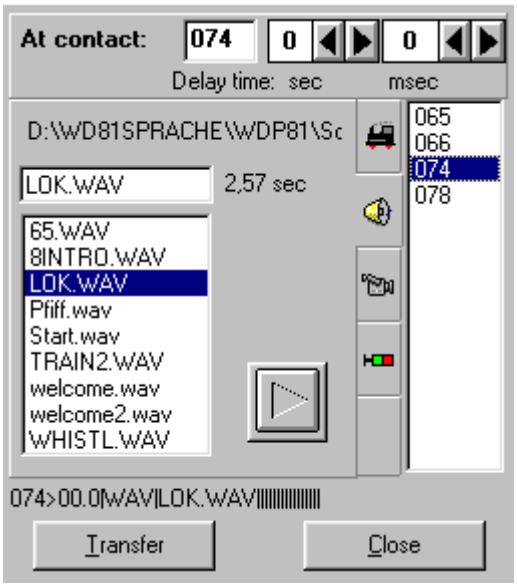
Click at “Transfer” and the locomotive-command line will be recorded in the frame “contact events” and automatically the next command line will be active.

<u>Change of riding direction:</u>

Some loco decoders are just able to switch to the opposite direction tenths of a second later, after the locomotive has stopped. Therefore practically, you use the command for changing directions for the same locomotive, in a separate command line of your timetable, one “model-railroad-minute” after the stop-command.

Command type 2: **Sound**

Click on the ‘Speaker symbol’. All Wave files recorded in the sub-directory SOUND of WDIGIPET are displayed.



Click on the file that you want to have played at the previously defined contact: Its name appears in the upper line panel. Next to it you see the playing time in seconds.

With the big arrow at the bottom right- Quick info: „Play“ – you can immediately test the sound.

The sound command line, similar to the loco command line appears at the lower left. Click on ‘Transfer’. The sound command line will be transferred into the „Contact events“.

Command type 3: **Video sequences**.

Click on the ‘Camera symbol’. All AVI files recorded in the sub-directory VIDEO of WDIGIPET are displayed.

The entries are the same as in command type 2.

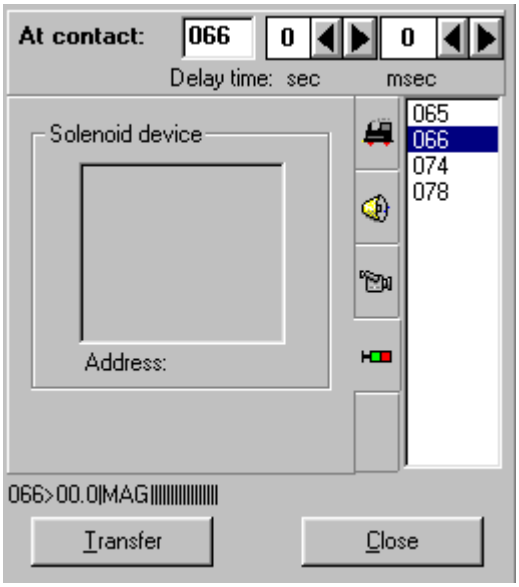
With the big arrow at the bottom right- Quick info: „Play“ – You can test the AVI file. A small window is opened in which you can see the video file.

The video command line, similar to the loco command line, appears at the lower left. Click on ‘Transfer’. The video command line will be transferred onto the „Contact events“ window.

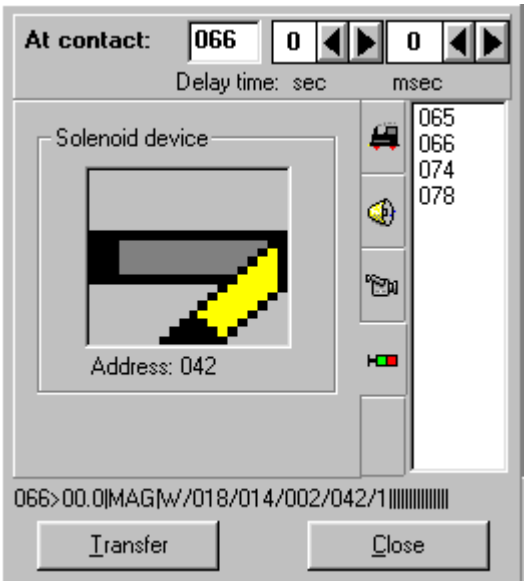
Command type 4: **Solenoid device function**.

Please handle this function similar like the add-on-switching in the routes-editor (chapter **8.8**).

Click at the “Signal-Symbol”. Here, you can switch a solenoid device at a specific contact. Such solenoid devices could be two-, or three-aspect signals, normal turnouts and three-way turnouts, but no double-slip turnouts.



At the beginning of recording a new solenoid device, the rectangular window beyond “Solenoid device” is empty. Pull the corresponding solenoid device via drag and drop from your track layout into this window.



With a click at the solenoid device (click several times if necessary), it will get to the correct adjustment.

In timetable operations, the solenoid devices will be shown in your display with the new adjustment.

Attention ! *Existing contact events for all solenoid devices switching have to be* ***corrected*** *in all timetables after updating to WIN-DIGIPET 8.1 from* ***former versions****.*

At the bottom in the left, the command line for solenoid devices is shown, it is quite similar to the locomotive-command line mentioned before. Click on “Transfer” and the solenoid device command line will be recorded in the frame “contact events”.

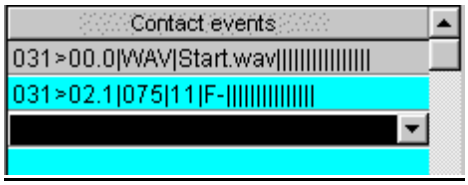
With this command mode you are not just able to switch solenoid devices at specific contacts, but also other functions can be switched, which are controlled by decoders k83 and k84, furthermore even the turntable (see chapter **9.7**).

Use of “delay time”

The following examples will show you, how to use this feature easily for great variety of operations on your model railroad.

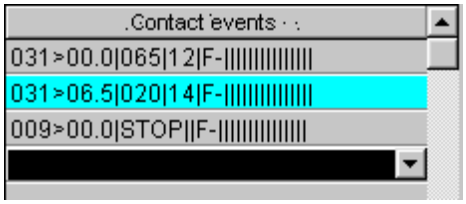
1. You would like to playback a typical announcement of a railway station at the same contact before the train leaves (“Attention at platform 6. The train will depart soon. Doors will close automatically”). The train shall depart, AFTER the sound has finished – this would be the right way.

   Therefore you have to register the following contact-events:

   Play a wave file at contact 31 and in the second line start to move the train with 75% of the max. rated speed and acceleration 11 at the same contact, but release this command **after** 2 seconds and 100 milliseconds (>02.1). You have to check this delay time of course and may correct it manually referring to the length of the announcement you would like to use.

2. You don´t have a breaking contact before a stop contact for a specific track section, because you couldn´t install one (tunnel) or you wanted to save contacts. You can manage this track section with at least 2 contacts (start- and destination contact):

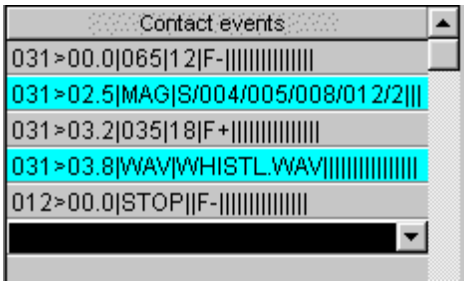
   

   At contact 31, start the locomotive with 65% of the max. rated speed and an acceleration of 12. Also at contact 31, after 6 seconds and 500 milliseconds, slow down the loco (this is a kind of virtual contact). Stop loco at contact 9.

3. You want a locomotive to depart, close a level crossing, slow down the train, and play a sound at the level crossing (bell, horn).

   This all can be programmed at the start contact.

   You have to pay attention, that a command for a solenoid device will NOT be followed by a sound command. A command for a train has to be in between. Correct would be: LOCO – SD – LOCO – SOUND – LOCO and not LOCO – SD – SOUND – LOCO – LOCO.



   This example assigns four commands simultaneously to contact 31:
   Start loco with 65% of max. rated speed – switch a solenoid device after 2.5 seconds – after 3.2 seconds, slow down the loco back to 35% of the max. rated speed – playback a sound after 3.8 seconds.
   The locomotive will be stopped at contact 12.
   Remark: You should use this example just as “expedient” and NOT to save feedback contacts...

As you can see, there are nearly no limitations to use this feature. Further possibilities would be, to schedule a planned stop of a train on a long route and after a break, the train should start riding again. Also it is easy to program to drive on a turntable and a reconstruction of a turntable with additional feedback contacts would not be necessary anymore. On the other hand, for the example with the turntable there is still an insecure factor:
“Warm” locomotives – which are in operation for quite a long time in this session – will have different running properties than “cold” locomotives”.

10.3 Recording of further timetable lines

Double-click on the second timetable line: it will be underlaid with a black bar, and the starting time of the first timetable line plus one minute will appear. Thus, you have to adjust the time setting only slightly in order to enter the starting time of the second timetable line.

Create your timetable, proceeding line by line, as described above in **10.2**. With that, you can attribute the same starting time to several locomotives so that several train movements can begin simultaneously.

If a locomotive has to travel on two (or several) routes successively, you should allow for sufficient time prior to the timetable line with the next route. Testing your locomotives on your layout can help to find out the time interval required for proper sequential switching of several timetable lines.

10.4 Editing aids

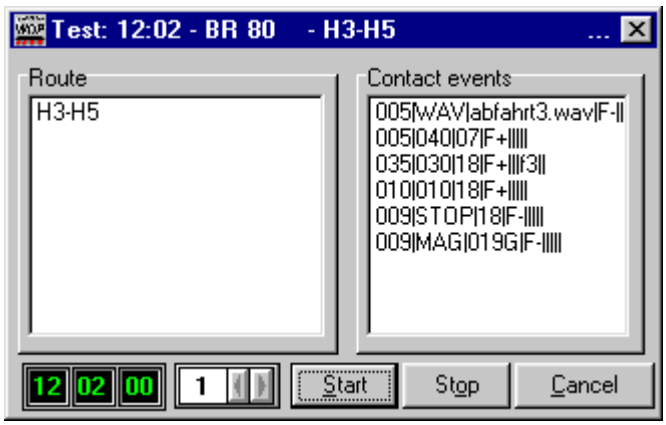
Mark the line you want to edit with a mouse click; it will be underlaid with a black bar. Press the right mouse key: A short menu appears where you can choose between ‘Insert line’, ‘Delete line’ and ‘Copy line’.

If you click on ‘Copy line’ that line will be copied with a mouse click to a different place; this function is, however, not active with the „Contact events“.

Timetable lines can be sorted by **departure time** (right mouse button or F5). Therefore you can record an additional line at the end of the list and sort it afterwards.

10.5 Testing timetable lines

Having made the entries „Time“, „Loco“, „Route“ and „Contact events”, you can test the route at once. Click in the menu ‘Timetable’ at ‘Test timetable line’ or click on the switch in the symbol bar. A window „Test.“ will be opened.



On the left-hand side you see the switching conditions, on the right hand side the contact events of the route belonging to this timetable line. Further down, a digital clock with the starting time of this route appears. Next to it the time factor model railroad time/ real time is displayed which you had selected in the Basic System Settings (see 4.2.4).

Please do not change the time factor whilst the timetable is running, as it can disturb the arrival times.

Put the relevant locomotive on the starting contact and press **‘Start’**. The digital clock starts running, the switching conditions are checked, the route is switched, and the contact events are masked as soon as they have been executed (by the locomotive).

Caution! The message "**Loco not on starting contact**" could be displayed, if you had selected „Additional control via train number display" in ‘Timetable’ under System Settings (see **4.2.3**). This means that the relevant locomotive is not positioned on the starting contact or wrongly positioned. Drag the correct locomotive from the locomotive selection onto the starting contact and repeat the test. The route will be switched if all conditions are met.

The clock stops when the destination contact has been reached and therefore the route release condition is fulfilled. This lets you determine how much time the timetable line took to complete. Use this to adjust the starting time of your following timetable line.

If you have **not** entered a release condition for a route for whatever reason – this would be a mistake – the clock will not start, if you click on “Start”; the route will

not be released if the destination contact is reached. The destination contact must be entered always in the upper panel of the routes editor (see **8.7**) (supplementary marked with “dest. Contact).

This **arrival time** is **automatically** recorded in the **fifth column „Arrival**“ in the list window of the **Timetable editor** (see **10.2.1** above).

Note: The test window has to stay active during the test run, otherwise the arrival time is not recorded.

You will notice, that not all contact events are masked in the contact events window, if you made a mistake. You can make your corrections immediately.

The switch ‘Stop’ stops the locomotive during the test run, should an error occur.

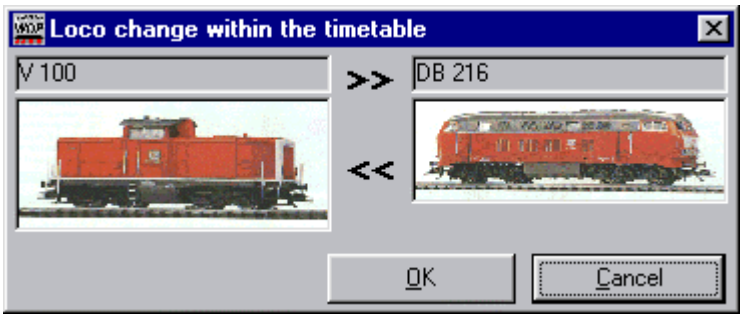
You leave the test program with ‘Cancel’.

10.6 Automatic locomotive change in a timetable

Mark the relevant timetable line, within an existing timetable, and click in the menu ‘Options’ on ‘Loco change’ or on the switch in the symbol bar, if you want to perform an automatic locomotive change.

A window opens. The locomotive **shown on the left** is the one to be changed**.**

Drag a locomotive to be changed from the locomotive selection bar, positioned by you at a screen edge, to the **right hand** picture field.



The left-hand side locomotive is changed to the right hand side locomotive throughout the entire timetable, if you click ‘OK’. In the above example, all timetable lines containing the locomotive V100 are overwritten by DB 216.

This function allows a quick change of locomotives in a timetable. However, please bear in mind, that each locomotive has different running characteristics.

You should therefore test the speed settings on the new locomotive if you are using contact events.

10.7 Display routes

If you want to look in the track diagram at a route described in a given timetable line, click on the line in the list window.

10.8 Timetable notes

If you click in the menu ‘Timetable’ on ‘Timetable notes’ or on the switch in the symbol bar, a small input window opens. There you can insert your own notes about the timetable; they will be also displayed in the main program with the selection of the relevant timetable.

Maximum length of a note: 256 characters; the ”CR” key cannot be used for line spacing.

You leave the „Note“-window, by clicking on a different line in the line window.

10.9 Name/re-name and save timetables

Having carried out all entries- and test, if any-, click on ‘File’ and ‘Save’ or on the switch in the symbol bar. A window appears in which you assign a name to the timetable (max. **25** chars.); Click on ‘OK’, and this timetable will be saved. Timetables with the „Time“ 00 .00 or 0 are being ignored. An appropriate warning is given.

Via ‘File ’ - ‘Open’ you reach the window „Open“ in which all timetables saved so far are displayed with their names. If you want to rename a timetable, select it here, give a new name and save it with ‘Save as’.

10.10 Timetable test

When a timetable is tested, locomotives have to be moved by manual control, for example to travel back to the starting contact of the route. For this purpose you can call a loco control panel within the timetable editor.

Point the mouse pointer to the picture of the locomotive below the „Contact events“: The mouse pointer changes to a hand. Press the left mouse key- the big loco control with all control and display features appears at once (see picture in **5.10.1**).

10.11 Delete timetable

Using ‘File’ - ’Delete’ or the switch in the symbol bar, you can delete a timetable from your Hard disk. Prior to this, you will have to reply to confirmation check.

10.12 Print timetable

You can have the specific, active timetable printed out. For this purpose go to ’File’ - ‘Print’ or via the switch in the symbol bar, to the window „Print timetable“. The window is the same as in routes list (see **8.12**).

The handling is the same as in 5.11 – Print locomotive database - and **6.4** – Print track diagram- explained. The screen displays are self-explanatory.

The timetable will be printed line by line, including the starting positions of the locomotives and the notes to the timetable.

The starting positions can also be printed separately, using ‘Options’ - ‘Display starting positions’ .

10.13 Creating a further timetable

Via ‘File’ - ‘New’ or the switch in the symbol bar, you can start a new timetable. The list window „?? *.FPL“ opens.

10.14 Appending a timetable

Via the menu ‘Timetable’ - ‘Append timetable’ or the switch in the symbol bar, you can enter in a loaded timetable, behind its last line, the name of another timetable, an add**-on timetable**. This means, a just finished timetable calls another timetable.

Instead of another timetable name you can enter the name of the just ended first timetable. It will repeat itself in a loop.

Click in the list window at the first empty line behind the last line of the loaded first timetable. Click on „Append timetable“, and the so named window appears.

On the left you see the names of all timetables recorded so far. Click there at the name of the timetable you want to enter as add-on timetable, then on ‘OK’: In the „Loco“ column of the activated first empty line of the first timetable an arrow **===>** appears in the „Route“ column.

10.15 Opening timetables

The **last created/modified** timetable is automatically opened when the timetable editor is started.

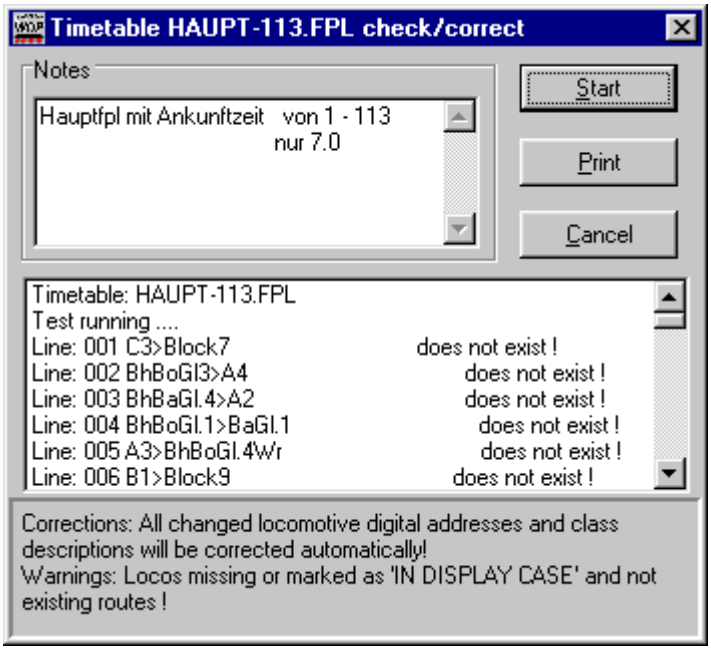
To open another timetable, use ‘File’ - ‘Open’ or the switch in the symbol bar. In the „Open“ window select the timetable you want to open, click ‘OK’- the selected timetable appears in its list window on the screen.

The last four timetables that were last active are displayed with their names under ‘File’. You can load them directly to the screen, bypassing the „Open“ window.

10.16 Check and correcting timetables

You reach this function via ‘Options’ or the switch in the symbol bar.

The window „Checks/correction timetables” appears. This function saves a lot of work if a digital address had been changed after the original entries.



To initiate the checking process, click on ‘Start’. The results of the check will be displayed in the lower text window so that you can take the necessary actions.

Missing locomotives or „In display case“ (see **5.9**) are displayed as a warning, as well as deleted routes. Add-on timetables are checked as to whether they still exist or whether they were inadvertently deleted.

‘Print’ prints the checklist.

During the checking process the system **automatically corrects** subsequently changed digital addresses and class designations; however, there will be no report on that.

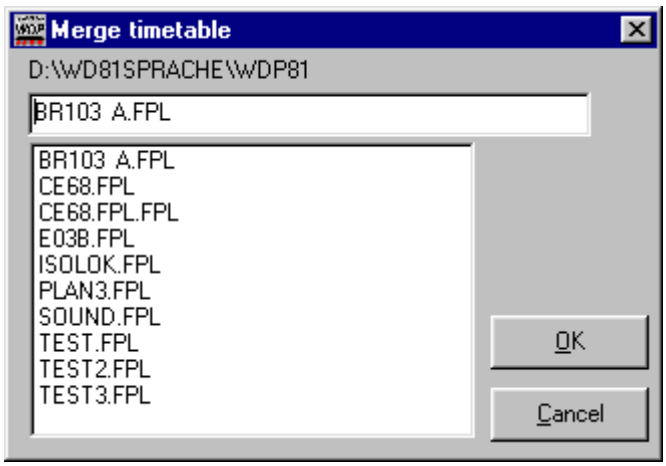
Also the checking about “routes locked for train-/wagon type” will be performed here. (see chapter **4.10**).

Through ‘Cancel’ you leave this program part.

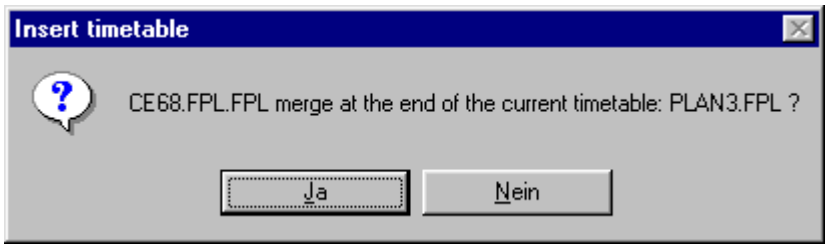
10.17 Merge timetables

Existing timetables can be merged to the current timetable.
At the symbol bar, click at the button “merge timetable” .

The window “Merge timetable” opens and lists all registered timetables by name. Select the timetable you´d like to merge via a click on its name and confirm with “OK”.



After you have confirmed with “OK”, a security message will occur:



The merged timetable will be inserted at the end of the current timetable, in the first empty line after the last line of the actual timetable.

An additional request occurs:

If you confirm with “JA” (JA = YES), the selected timetable will immediately be merged and sorted by departure times to the current timetable. If you reply with “NEIN” (NEIN = NO), you are able to sort by departure time later on (right mouse click or F5).

These feature makes it easy to register lines of existing timetables to an overall timetable. This feature also enables you to merge isolated loco-timetables out of existing timetables. This is described in the following chapter **10.18**.

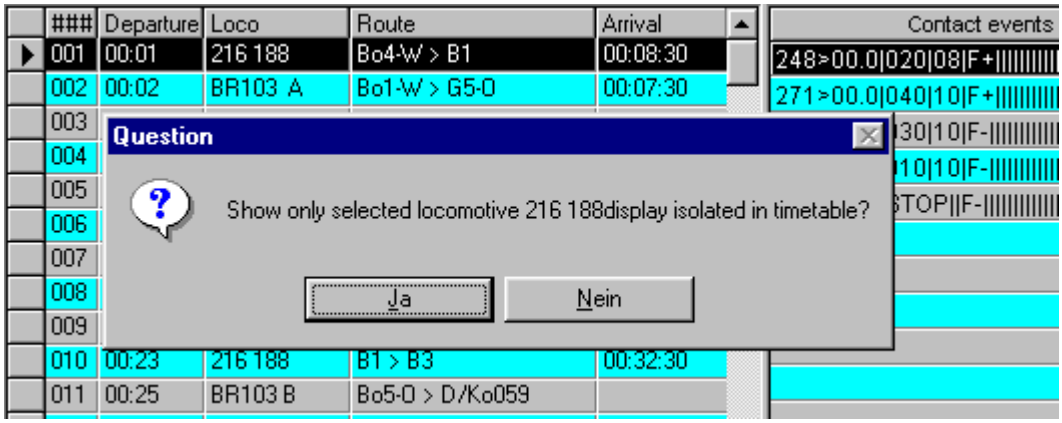
Attention! The departure times have to be corrected manually after merging.

10.18 Display of isolated locomotives in the timetable editor

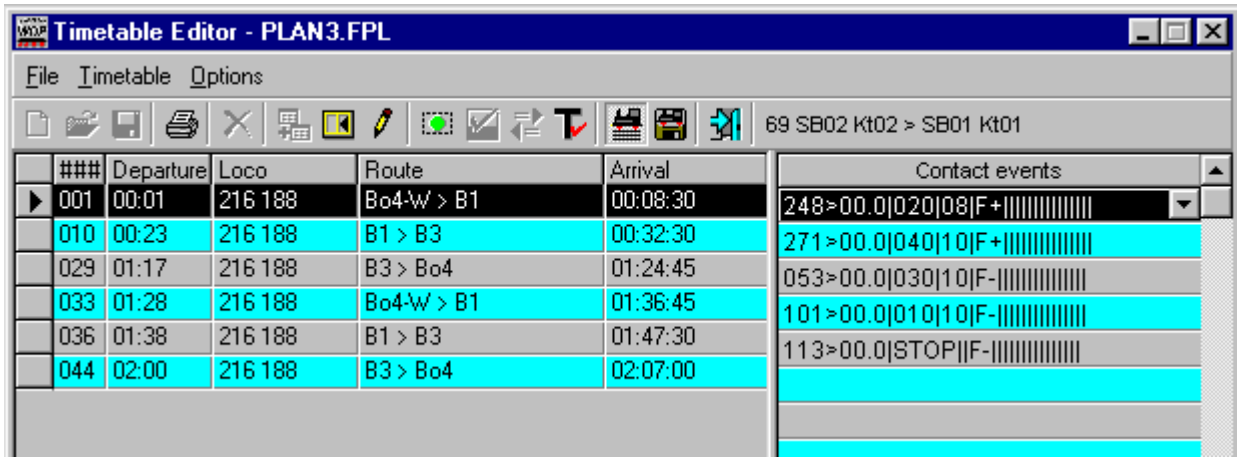
This feature allows you to isolate and show specific locomotives in long timetables, to control or to test each line via the timetable line test.

Therefore click on a line with the corresponding locomotive which you would like to isolate and then click at the button **.**

A security message will occur:



After you have confirmed with “JA”, this specific loco will be isolated out of the timetable and just the lines with this loco will be shown.



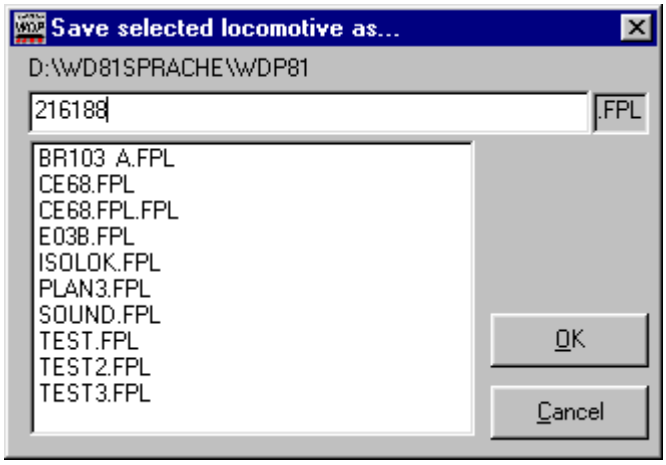
You can **NOT** change the locomotive, but the “routes”, “departure-“ and “arrival times” and “contact events”.

To show the complete timetable again, just click again at the button **.**

You can also save an isolated locomotive as a separate and new timetable. This locomotive could be merged to other timetable later on. Of course you have to correct the departure times again.

The button (next to) is **available only**, if a loco is isolated within a timetable.

If you want to save the currently visible isolated locomotive, as a separate timetable, just click at this button .



Type in a new timetable filename for this isolated locomotive and click at “OK”.

10.19 Miscellaneous options

You can access further functions via ‘Options’.

Display starting position : The contacts on which the locomotives should be placed within a timetable are displayed in this window. This function is inactive as long as no timetable is loaded.

Always display feedback contacts: Always display FB numbers (see **7.4**)

Check this switch to display all feedback contacts in the track diagram at **every** start of the timetable editor.

Display solenoid device addresses: Display solenoid devices addresses (see **7.2**)

A check on this switch displays all recorded solenoid device addresses.

These numbers/addresses are sometimes difficult to read in the track diagram. As soon as you point and hold the left mouse key pressed at the number/addresses, they will be enlarged (zoom function).

Should you not wish to have this function, uncheck the switch.

10.20 Operating timetables

The WIN-DIGIPET timetable system lets you comfortably operate the model railroad layout within **WIN-DIGIPET 8.1**. Details are covered in **12.14**.

All solenoid devices will be updated by **WIN-DIGIPET 8.1**, after you have quit the timetable editor. This ensures, that the correct setting will be shown after you have tested single timetable lines.

10.21 Practical hints on timetable operation

The **WIN-DIGIPET Timetable System** translates essential characteristics of time and dimensions into the model railroading scale. Here are a few proposals for prototypical operation methods.

- Running properties of locomotives do vary „by nature“ from model to model. Those properties depend upon the commands you attributed to the feedback contact in the timetable editor, but they are also conditioned by the maximum and minimum rated speeds you had assigned to your locomotives in the locomotive database.

  In operation with timetables, however, all **main line** locomotives should feature about equal running properties. If it is not like that, adjustments in the locomotive database are advisable, preferably following simple tests.

- Speeds assigned to the feedback contacts in the timetable editor should be such that each main line locomotive runs on your layout at normal railroad speed as required by the given train category – **they should not speed along**.

- For Märklin locomotives with high-efficiency motor, one starting and destination contact with the appropriate entries is sufficient per route.

  A safe, yet sudden halt at the destination contact is ensured by entering „STOP“. If you want a gradual slow down to stop, you should install a deceleration contact in front of the destination contact.

- Conventional locomotives not equipped with the high-efficiency motor may, as well known, display extremely different running characteristics on rising and falling gradients. Quite often, one has to re-adjust train speeds manually.

  You should consider installing speed-adjusting contacts on inclined track sections for operation according to timetables with such locomotives.

  A safe halt at the destination contacts is ensured through „STOP“ with conventional locomotives too.

- It is suggested that you allow sufficient time for execution of each route and for pauses, when writing a timetable. Constant train movements are also not realistic on the real railway network- so, why should it be on the model railroad?

Documentation of your routes, either in hand-written form or as a printout, will ease entering data into your timetables.

11 – DEMAND CONTACTS

11.1 System and functions

The **WIN-DIGIPET demand contact system** enables you to run your trains automatically on your layout, as an alternative to the **WIN-DIGIPET timetable system**, but with different functions to the timetable operation.

A demand contact is a feedback contact (= a contact track area) in WIN-DIGIPET 8.1. The defined feedback contact will operate the routes, defined by you, as soon as the locomotive passes over it.

Each demand contact can have up to **20** routes, which are activated by the contact.

The best way to assign the routes to the demand contact is to write a routes list on the screen. This list (and contacts) is accessed sequentially, once the demand contact has been operated, starting at the top of the list and ending at the bottom.

A route, which does not meet the release or set conditions in the list of **demand routes** is skipped without execution and the next route in the list is checked/executed. The complete list is examined that way.

The appropriate route is executed, if the set and release conditions of that route are met. No further routes are switched.

WIN-DIGIPET demand contact system enables you to control very easily hidden yards, block systems, automatic empty track search and other automatic processes.

All other feedback contacts that do not control routes are used to signalise occupied tracks.

You can use the “Automatic with demand contacts” – which indeed is an order of routes - **without isolated track sections**, if your locomotives will be controlled by train numbers. This means all locomotive movements are controlled from start- to the destination contact of specific routes and all corresponding contacts in between.

For details have a look at chapter **12.5.1** – switch routes by Switch + Ride - function – especially switch-alternative **B**. You can switch this function on and off in the main program, chapter **12.15**.

You can also switch this automatic to random mode, which will arrange events really versatile on your model railroad: The list of demanded routes will not be operated line by line, but the demanded routes will be operated randomised and will be switched not before the switch conditions are true.

A simple example with and without random mode can be find later on in the section **11.11**.

To check the automatic operations, an “Inspector” is for your disposal, which gives you a good overview about all troubles during automatic operations by listing numerous kind of messages, to enable you to fix the problems. Details are

described in sections **12.14.5** and **12.15** of this manual.

Different, compared to the timetable operations, which demands all locomotives to be at their specific and correct start contact, the automatic with demand contacts makes it possible to show visitors an automatic model railroad operations really quick – independent to specific start contacts.

In case of an accident this automatic mode makes it possible to pick up a locomotive from the model railroad and exchange it by another: Stop automatic mode, pick up the (crashed) locomotive from the track, place another locomotive elsewhere at a demand contact (start contact), register the digital address via drag and drop to the train number display (**5.10.3** / **12.10.1**) and switch on again the temporary stopped automatic mode. The exchanged (or new) locomotive will be integrated in the automatic operations directly.

11.2 Planning and precautions

It is advisable to write all the inputs for the demand contacts down before you start with the recording. It is also important to observe the set/release conditions of the routes, which you have set in the track diagram editor and allocated to the demand contacts.

It is possible that you may have to record some additional routes, including the set/release conditions, for this automatic mode.

Before starting the automatic operation with demand contacts (see **12.15**), reset all solenoid devices (see **12.4**).

This will eliminate malfunctions of the automatic, which could occur, if the position of one or another solenoid device was changed manually.

If you do not control by train-number, you have to ensure that every signal of a demand contact has got an isolated track section and each signal of the demand contact is switched to,**, Halt"** after the last axle has left the contact. This is achieved by **"Add-on signal switching"** (see **8.8**) in the routes editor, setting the relevant signal to **„Red"** (contact free), once the contact is cleared.

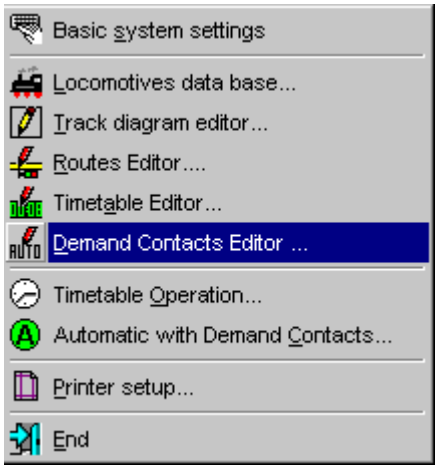
The automatic operation must also be built in such a way, that all locomotives stop in front of a signal, should the automatic stop or the computer fail.

The contact track of the demand contacts must not be too long, as the next train could enter the demand contact track before the first one has cleared it. There would be not enough time between the two trains for the computer to cross check and the automatic would stop.

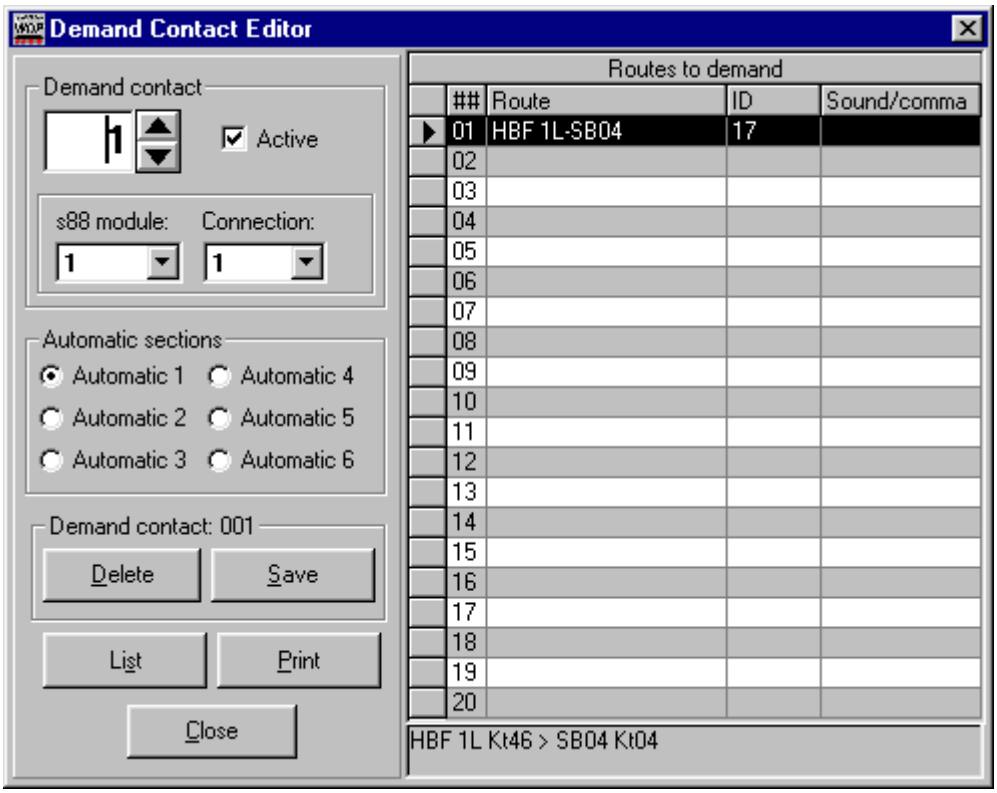
Therefore, it is recommended, that the contact track for demand contacts does not exceed 40 cm.

11.3 Recording

Click in the menu bar on ‘File‘ and then on ‘Demand contact editor’ or on the switch in the symbol bar.



A dialogue window appears.



Select a demand contact in the top left-hand corner. The number can also be selected directly, using the arrows or using „s88-Module“ and „Connection“.

The number is automatically limited by the number of feedback decoders, recorded in ‘System settings’ under ‘Digital system’ (see **4.1.4**).

Up to six different sections can be allocated to demand contacts thus dividing the automatic operation into four groups. These can be switched either on or off.

This is useful for certain big operational sections such as main station, hidden yard1, hidden yard2, etc.

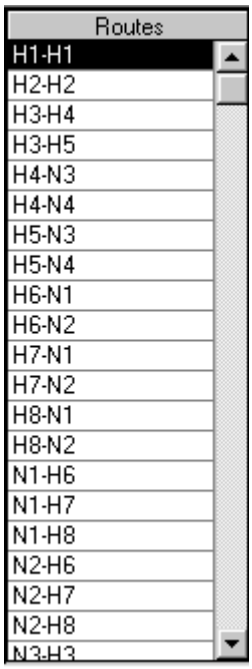
Select the section that should be operated in automatic mode to its corresponding demand contact. This selection is also displayed when the contact has been re-selected (overwrite its number in the top left hand with the new one).

The sections in automatic mode can be switched on or off in the main program when operation with demand contacts is used (see **12.15**).

On the right hand side you see the window,, Demand-routes" and a list. The lines are numbered from 1 to 20 (max. **20** routes per demand contact possible). Insert the routes that you want to assign to the demand contact, as well as the associated sounds.

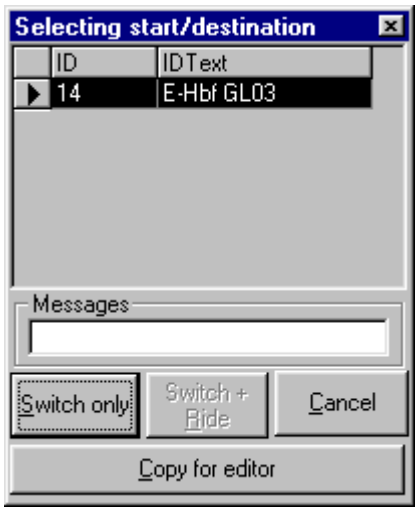
Starting from the top, the first route is activated and then all the other routes in sequence to line 20.

11.4 Recording the demand route list



With a left mouse click select the line in the „Demand routes“ list, where a route should be entered. A selection arrow appears in the column „Route”; click on it and a list of all routes opens. Double click on the required route- it appears in that line.

Another possibility to select and record a route is the selection via **Start/destination function (**see **12.5.1*)***. Mark the line where you want to record the route and perform the start/destination function: Click with the right mouse key on the start and then on the destination contact of that route in the track diagram.



A window „Start/destination selection“ in a slightly different format (see **12.5.1**) appears. A list of all routes with their ID text and internal ID number are, found by the system, are displayed.

Select the route from the list with a click; it appears in the track diagram with a yellow background‘. Click on ‘Copy for editor’ and then on the marked list line. This route is automatically copied to the line under „Routes“.

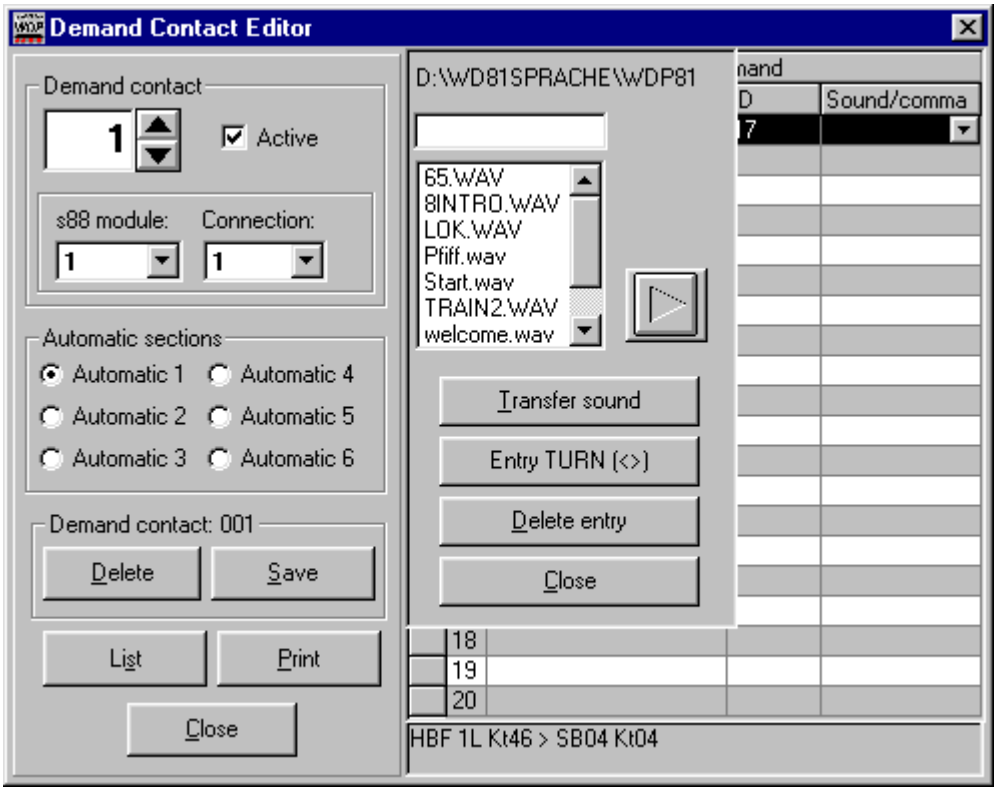
Continue, as described above, for further route entries.

To delete or edit a route from the list, point the mouse pointer to the line and right click on it. Select the appropriate command from the short menu which opens.

11.5 Sounds when switching routes/ Reverse command

A sound effect can be played, if a demand contact can execute a possible demand route. The sound is played immediately **after** the complete route is switched.

Click with the left mouse key on the line in the list of the Demand Contact Editor in the column "Sound" on the route which should play the sound. The route **must** be recorded. The line with a switch and a selection arrow appears. A mouse click opens a window to select a sound.



All Wave files are displayed, contained in the sub directory **\SOUND** of WIN-DIGIPET.

Click on the file that should be played after the route has been switched. The name and the replay time in seconds appear in the top line field.

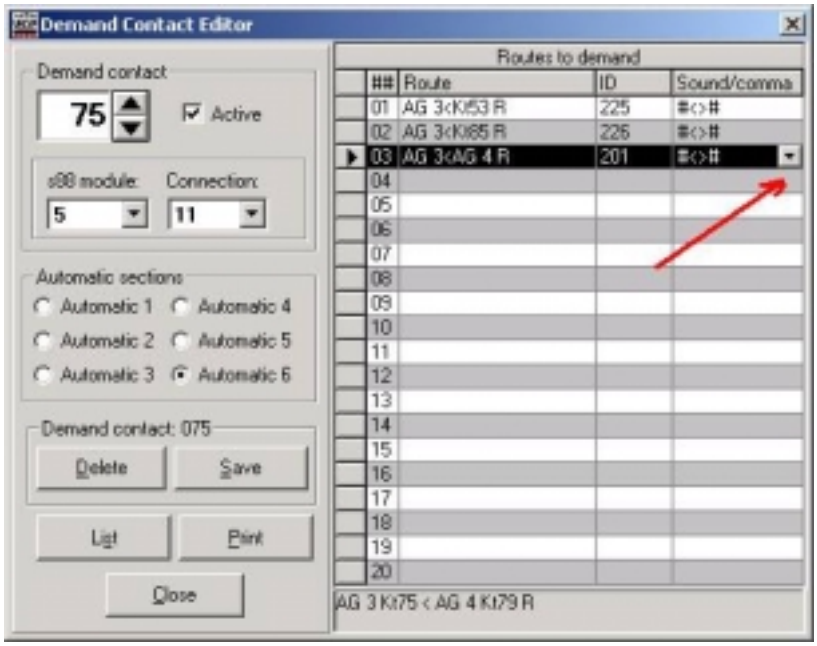
The large arrow at the bottom right- Quick info: „Play" – lets you test the sound.

Clicking on 'Transfer' or double click on the sound file, records the sound into the column "Sound" of that route.

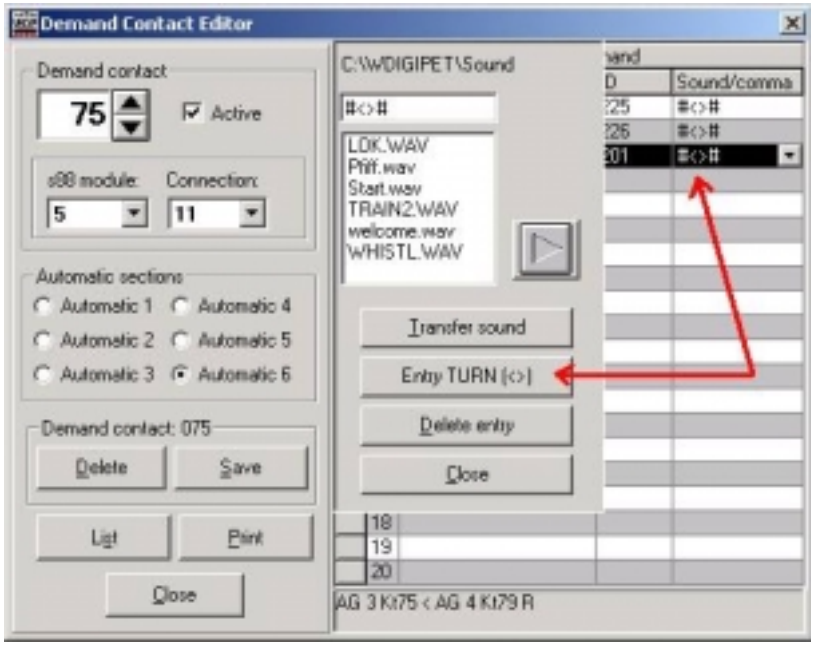
'Delete' deletes the recorded sound files from the list.

In nearly the same way, you are able to reverse the direction of the locomotive.

To change the direction of the train, click on the line of the relevant route and click on the column on the right side **Sound / Command** and activate the switch **Entry TURN (<>)**.



The symbol **#<>#** shows you, that AFTER the switching of the route and BEFORE the train starts to move, the direction of the train will be reversed. You can use the reversal command of course for every feedback contact and every route individually.



Thus it is easy now to configure and establish a shuttle service in your Automatic by Demand Contacts. Therefore there are nearly no limitations anymore in dependence of the release / locking of routes, or which parts and tracks of your model railroad might be involved in your Demand Contact System. It is really fun to see the trains riding in all directions, but of course this requires a sensible planning before...

11.6 Activate demand contacts

Check the switch „Active“ in the top left hand dialogue field, if it is not already automatically checked.

This activates this contact. The main program only checks those contacts during the model railroad operation, if they are marked as „Active“.

11.7 Save

Having completed all the inputs for the demand contact and not forgotten to check the switch „Active“, click on ‘Save’.

All inputs are lost if you change to a different contact or close the dialogue field.

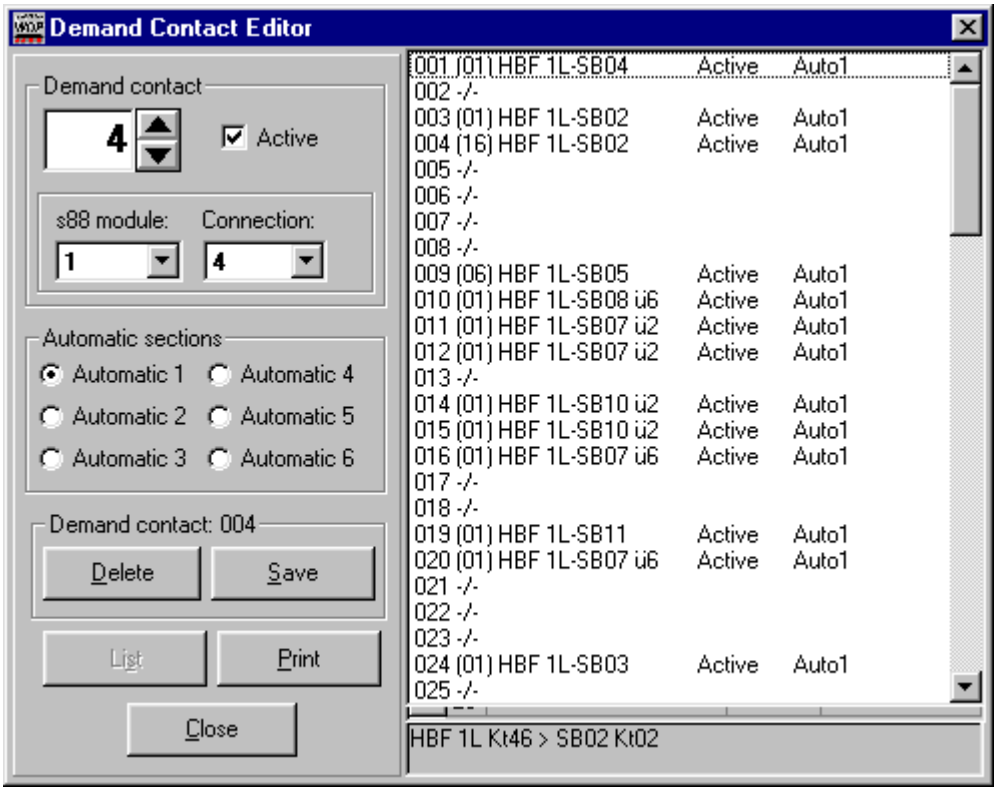
11.8 Delete

Recorded demand contacts can be deleted by clicking on ‘Delete’.

11.9 Recording a further demand contact

Overwrite the contact number in the left-hand dialogue field with the new number of the demand contact and continue as described **11.3**.

11.10 List of all demand contacts



A text window in the right hand side of the dialogue box opens when clicking on ‘List’. The list contains all recorded demand contacts.

Feedback contacts, which are not made as demand contacts, are marked with **-/-**.

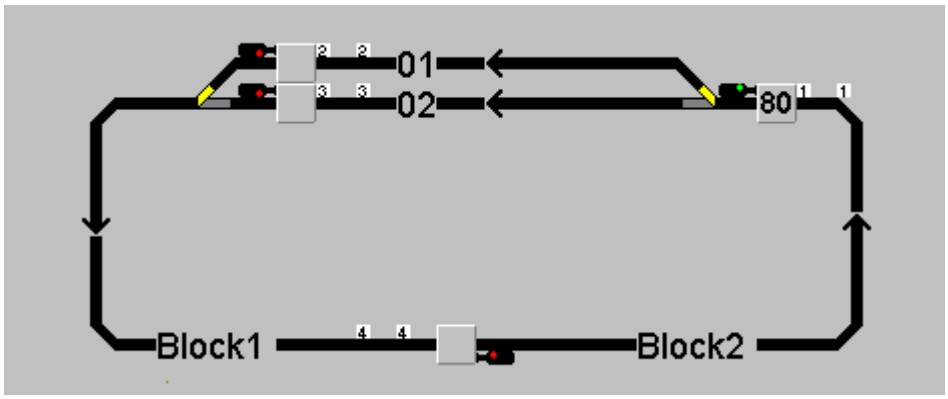
Only the text of the first demand route is displayed. The number in brackets behind the contact number indicates, how many demand routes you have recorded in total at the contact.

„Auto.“ marks that automatic operation area, allocated to the contact.

A double click on a line in the list loads the contact into the dialogue field, ready for changes.

11.11 Example for automatic with demand contacts

This small example should illustrate the automatic mode.



5 routes were recorded for the above track diagram:

	ID-Text	Description	
	A-Hbf GL 01	Dep. track 01 Hbf to block 1 (K2)	
	A-HBf GL 02	Dep. track 02 Hbf to block 1 (K3)	
	BL1 nach BL2	Block 1 to block 2 (K4)	
▶	E-Hbf GL 01	Entry track 01 Hbf (K1)	
	E-Hbf GL 02	Entry track 02 Hbf (K1)	

4 demand contacts must be recorded in the **Demand contact editor**, which execute the appropriate routes.

Demand contact 01:

Demand contact

1 ☑ Active

Routes to demand

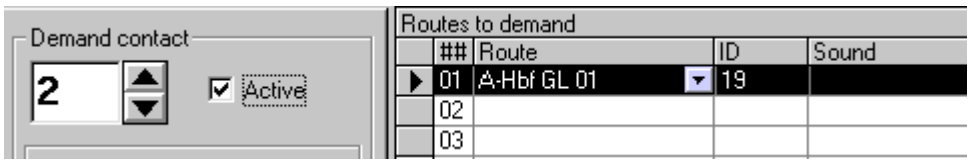
	##	Route	ID	Sound
▶	01	E-Hbf GL 01	17	
	02	E-Hbf GL 02	14	
	03			

Contact 1 demands **2** routes: Entry to track 01 and Entry to track 02.

The switching conditions of the routes are checked. The entry to track 02 is switched, if track 01 is occupied. An entry in to track01 or track 02 is only possible, if one or the other is free.

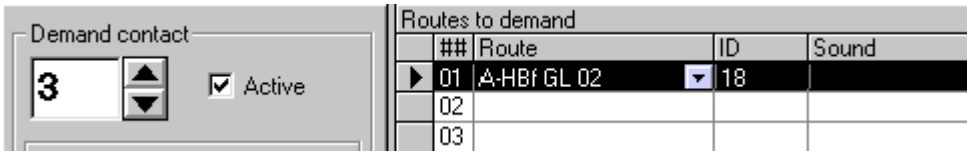
A free track is selected at random if **both tracks are free** and the random generator is **switched on** (track 01 or track 02). If it is **switched off**, routes would be sequentially selected from records 01 to 20 and an available route would be switched. The entry to track 01 would be switched all the time in our small example.

Demand contact 02:



Contact 2 demands only **1** route: Exit from track **01** in block 1.

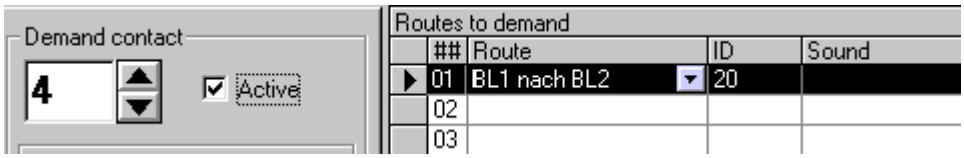
Demand contact 03:



Contact 3 demands only **1** route: Exit from track **02** in block 1.

If contacts 02 and 03 occupied and random generator **switched on**, exit selected at random.

Demand contact 04:



Contact 4 demands only **1** route: Entry into block 2.

In this example, 3 locomotives can operate automatically, as the block has to be free all the time.

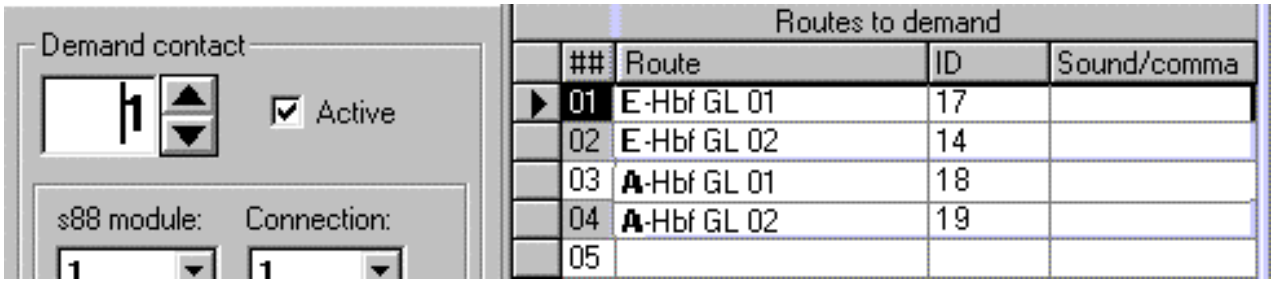
Variant:

If you control by "**train number**", a variant of this example would also be possible:

The demand contact controls not only the entrance to track **01** and track **02**, but also the exit of track 01 and track 02.

Therefore the demand contacts for contacts 02 and 03 could be dropped.

Contact **01** demands **4** routes: **Entrance** to track **01**, **Entrance** to track **02**, exit from track **01** in block 1 and exit out of track **02** in block 1.



If you are going through this variant for a better understanding, the following will happen, if a train is at contact **01** or reaches contact 01:

RM = Random mode

1. Assumption: Track 01 and 02 are **not occupied**

Result **without** RM: Entrance to track 01 will be switched (operation in sequence)
Result **with** RM: Entrance to track 01 **or** track 02 will be switched.

2. Assumption: Track 01 and Track 02 are **occupied** - the following block 1 is **available**.

Result **without** RM: Exit out of track 01 will be switched.
Result **with** RM: Exit out of track 01 **or** track 02 will be switched.

3. Assumption: Track 01 and track 02 are **occupied** – the following block 1 is **occupied**.

Result **without** RM: Wait until block 1 is available again.
Result **with** RM: Wait until block 1 is available again.

4. Assumption: Track 01 is **not occupied** and track 02 **is occupied** – following block 01 is available

Result **without** RM: Entrance to track 01 will be switched (operation in sequence)
Result **with** RM: Exit out of track 02 **or** Entrance to track 01 will be switched

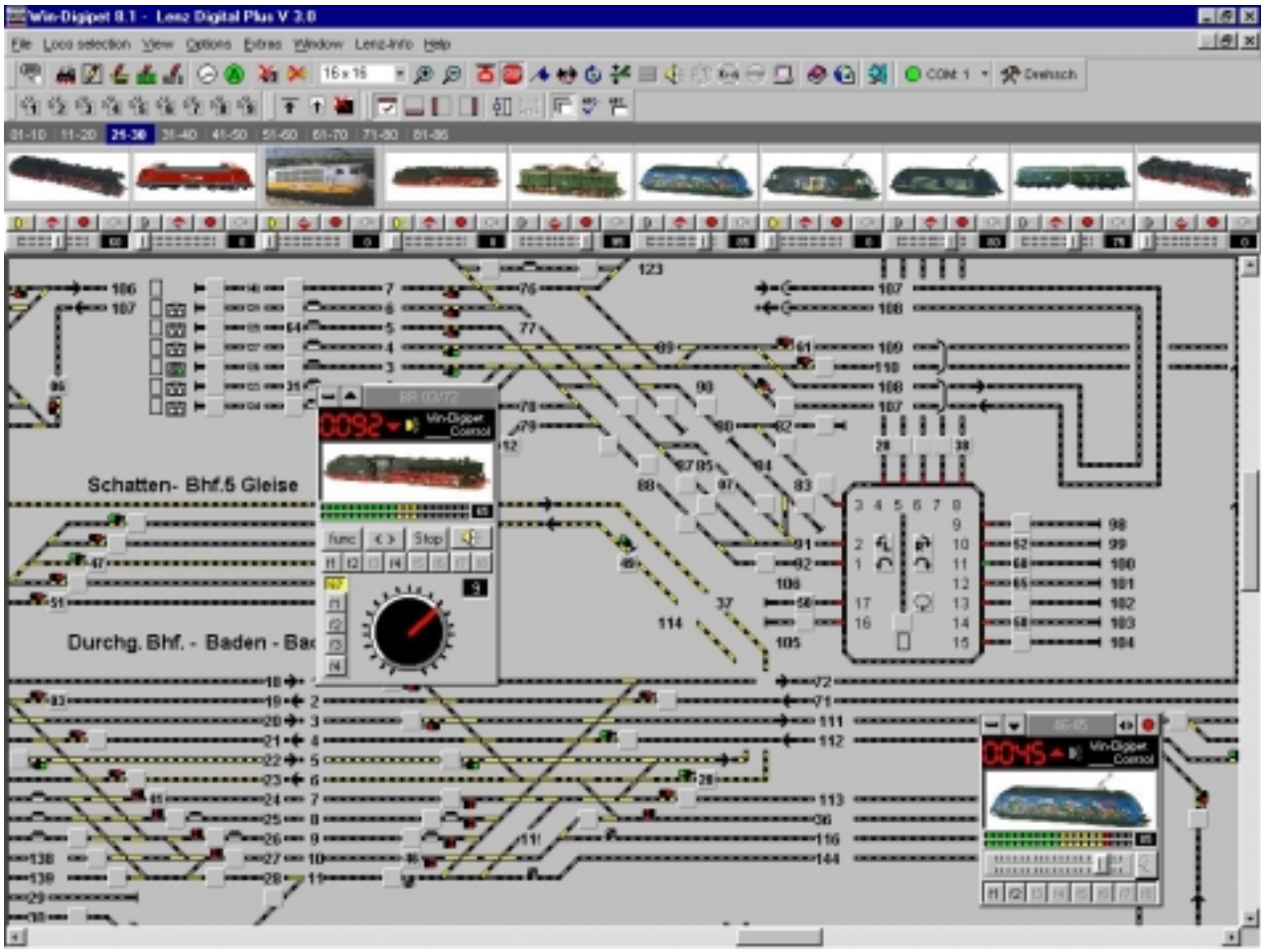
5. Assumption: Track 01 is **not occupied** and track 02 is **occupied** – following block 01 is occupied.

Result **without** RM: Entrance to track 01 will be switched (operation in sequence and only available solution)
Result **with** RM: Entrance to track 01 will be switched (only available solution)

12 – MODEL RAILROAD OPERATION with WIN-DIGIPET 8.1

12.1 General

By now you have recorded all individual data of your Märklin Digital model railroad, created the track diagram, determined the routes and made the recordings for the operation according to timetables or automatic operation, using demand contacts. Thus, the prerequisites are satisfied and you can comfortably and efficiently control your layout through **WIN-DIGIPET 8.1**.

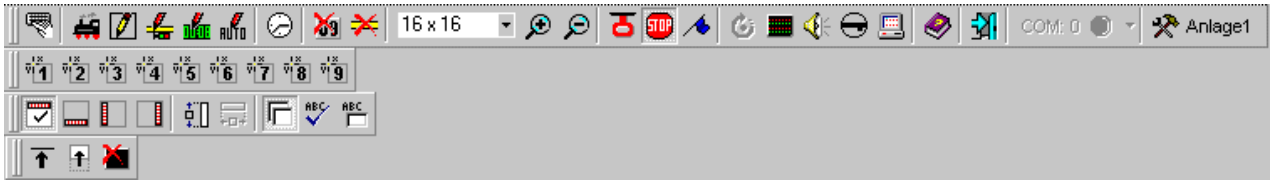


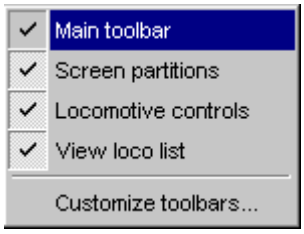
In the WIN-DIGIPET track diagram, your easy-to-handle command centre, you switch and control your model railroad.

In this chapter 12 all control functions and their handling in the model railroad operation are presented. References to other parts of this manual are made (**xx.xx**) to details already given in chapters **4** to **11**.

When you start WIN-DIGIPET 8.1 your track diagram is loaded automatically, and you are in the main program. You see everything as you left it after your previous session: The size of the track diagram **(6.2**), the zoom factor (**6.2.4**), the loco control panels (**5.10.1**), ready to use and the position of the locomotives selection (see below under **12.10.1**).

In **WIN-DIGIPET 8.1** four standard symbol bars are available:





A main symbol bar, a symbol bar for a quick selection of screen sections, a symbol bar to operate the loco control and another symbol bar for the loco selection.

Also user defined symbol bars can exist. A detailed description was presented in **3.7**.

Symbol bars are either visible or not, depending on the settings.

12.2 System settings

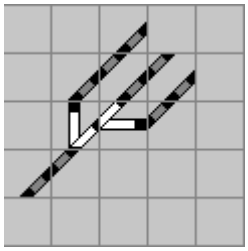
You can access the system settings via ‘File’ - ‘System settings’ or switch in the symbol bar. This program part is described in chapter **4**. Whilst you control your model railroad, you can make changes in the basic system settings.

12.3 Switching individual solenoid devices

Point the mouse pointer in the track diagram at the solenoid device you want to switch: the mouse pointer changes to a hand. Press the left mouse key as often as necessary until the desired position of the solenoid device is reached.

Three-way and double- slip turnouts may require three or four clicks. You can switch an unlimited number of solenoid devices successively.

The switching position of solenoid devices with equal addresses – for example: Two signals at the same decoder input –will automatically be synchronised at the track layout.



If you have represented three-way turnouts in inclined position in the track diagram by one vertical an d horizontal normal turnout (**6.3.1**), each with its own address, you should ensure that both turnouts are switched to „straight“ prior to any “branch” switching (**7.2**).

12.4 Basic settings of the solenoid devices

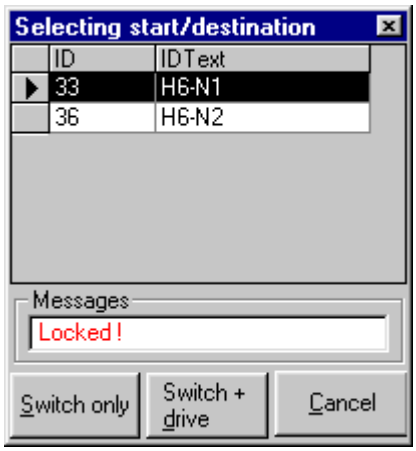
'Options' - 'Execute basic settings' or switch in the symbol bar, switches all solenoid devices to the basic settings determined in the solenoid device recording (**7.2**).

12.5 Switching of routes

12.5.1 Using Start/Destination function

Click with the right mouse key on the **starting** point of the desired route and again with the right mouse key on the **destination** point (**starting** contact, **destination** contact).

The window „Selecting start/destination" appears. All routes that the system found are displayed in a list, with their ID text and their internal ID number.



Under „Messages" you may see special messages: „No route found" (if the desired itinerary was not recorded as a route) and warnings against crossing or locked routes.

Select the route by clicking at its line in the list. It lights up in the track diagram in yellow and blinking, i.e. „Ready to be switched". The switch 'Switch + Ride' is automatically activated, if the locomotive and its digital address is in the train number display field of the start contact. Details about the train number display will be explained later on in section **12.13**.

You have now two possibilities:

- **A:)** Click on 'Switch only'; the route is switched and stops blinking. The route can be manually used by a locomotive/train.

- **B:)** If the switch 'Switch + Ride' is activated, i.e. a digital address is contained in the train number display field of the start contact of this route, the 'Win-Digipet-Control' opens when clicked and the locomotive moves off automatically. The values for acceleration and starting speed are fetched from the locomotive database. It is therefore necessary that these had been recorded earlier and the starting speed is greater **0** (see **5.6**).

  Beneath "messages" you will get a warning, if you have locked this route for a specific train- / loco type (see **4.9** and **8.9**) and the loco number at the train number panel corresponds exactly to this closed type. But nevertheless this route can be switched.

  If you have defined a breaking contact for this route, the loco will be slowed down at the breaking contact before it reaches the stop contact. For details

about the breaking contact please see section **8.6**. Details about the “virtual breaking contact” and the “Use of delay time” have a look at section **10.2.3** in the routes editor.

As soon as the loco has reached the destination contact, it will be **halted automatically**.

For this operating mode **B)** isolated track sections (powerless tracks) at signals, etc. are not necessary – all movements of the locomotives will be controlled by train numbers and contact tracks.

If the destination contact is reached, the route will be faded out in the track layout.

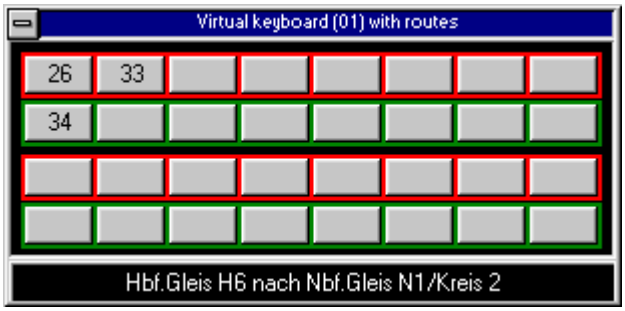
You activate/deactivate the contact checks via ‘Options’ - ‘Check with start-and-destination function’.

If you want to switch routes without locomotives/trains movements, it is recommended to deactivate this check.

Usually this function should always be marked, otherwise the routes won´t be checked (switch- and release condition, follow-on-switching) and operation would not be proper.

Depending on your configuration of the “system settings “ – “Locomotives”, the corresponding loco control will automatically be opened for “switch and ride” mode and if necessary closed again if the destination contact is reached (see chapter 4.9).

12.5.2 Using virtual keyboard



The most frequently used **32** routes can be switched extremely fast; the preparations are described in **8.10**.

Click in the menu on ‘Options’ - ‘Virtual keyboard with route assignment’ or on the switch in the symbol bar: The virtual keyboard appears. Point to the command key with the ID number of the route you want to switch: Its description is displayed in bottom display line. Click on the command key. The route is switched, if all the switching conditions are met and checked. If not, a message will be displayed.

12.6 Quick deletion of routes

You delete all routes by the short menu of the right mouse key, selection: ‘Delete all routes’ or by the function key **F7** of your computer or with the switch in the symbol bar.

This function deletes all switched routes (just at the track layout, of course NOT in the routes editor) and resets the release conditions of the active routes. This means, all eventually locked solenoid devices will be released again. Sometimes you can use this function as a test function, if – for example – it has come to a stop during the automatic by demand contacts operation.

If the automatic mode operates fine again after using this function, the error was caused probably by one or more solenoid devices, which were not released by a release condition of a route. Because of this, you should check the release condition and route records in the routes editor.

You delete an individual route by clicking twice successively with the right mouse key on the start-and-destination function, followed by a click on 'Cancel' in the window „Selecting Start/destination".

12.7. Changing zoom settings

The zoom settings of the track diagram are reached via 'View' - 'Zoom plus/minus' or with the right mouse key through the short menu 'Zoom plus/minus' or the magnifying glass symbols in the symbol bar.

A zoom setting can also be changed directly by clicking on the arrow next to the text display 16 x 16 in the symbol bar.

12.8 Selecting parts of track diagram

Sections of the track diagram, recorded in the track diagram editor (**6.3.3**), can be fetched onto the screen by clicking on the symbol 'Screen sections' in the symbol bar or via the short menu with the right mouse key.

12.9 Turntable operation

You can load the turntable through several commands: Either 'Track diagram view' - 'Turntable' or with the right mouse key short menu 'Turntable' or the switch in the symbol bar. Operating the turntable see **9.6**.

12.10 Locomotive control

12.10.1 Loco selection

All locomotives recorded in the locomotive database with the category „On layout“ (**5.9**) are displayed in the „Loco selection“. This is a bar at the lower/upper/left/right screen edge with pictures of your locomotives list (**5.10.3**).

Max. **10** locomotives are recorded – similar to an index card- for faster access. The index card is automatically updated when new locomotives are added/deleted or they are temporarily put into ‘Display case’.

A click on the index card, above the picture, displays the locomotives for your selection.

You can change this bar via ‘Loco selection’ - ‘Position’ or in the symbol bar ‘View loco bar’.

There you can select: ‘Horizontal bottom’ or ‘Horizontal top’ or ‘Vertical left’ or ‘Vertical right’.

Through ‘Loco selection’ - ‘View’ you can change the kind of display in the picture panels: ‘Pictures only’ or ‘Text only (these are class designations)’ or both: ‘Pictures and text’.

It is possible that the locomotive selection bar becomes very small, if the screen resolution is set high. You can adjust the locomotive bar with ‘Adjust height of locomotive bar’ or ‘Adjust width of locomotive bar’. This is done in steps to your own taste.

To mask/unmask the picture bar, check/uncheck in the menu ‘Loco selection’ - ‘Loco bar’.

Select the locomotives, which you intend to use on your layout and to control through **WIN-DIGIPET 8.1** by clicks, with the **left** mouse key pressed, at the corresponding picture panel of the loco selection.

Each time the big locomotive control panel („Big loco control“) - **5.10 –** of the selected locomotive appears immediately in the track diagram, with corresponding data, such as digital address, loco class, etc.

Click on a picture field, hold the **right** mouse key pressed and drag the relevant locomotive in a train number display field (see **12.13.2**).

Clicking on a field, containing a digital address in a train number display field 08, with the left mouse key pressed, activates the loco control immediately („Big loco control“). The appropriate loco is called.

12.10.2 Locomotive control panels („Loco controls“)

Position and size of these panels can be modified via the menu ‘Window’ or the symbol bar ‘Loco controls’.

‘Minimise all controls’ : All control panels displayed in the track diagram are reduced to „Small loco controls“ (**5.10.1**). The same is achieved with the function key **F3** on your computer.

‘Place all controls at top’ : All control panels displayed in the track diagram are shifted to the upper edge of the screen and reduced. The same is achieved with the function key **F2** on your computer.

‘Close all controls’ : All control panels are masked and closed. The same is achieved with the function key **F4** on your computer.

With the drag/drop function you can position the loco control panels anywhere on the screen (**5.10.1**).

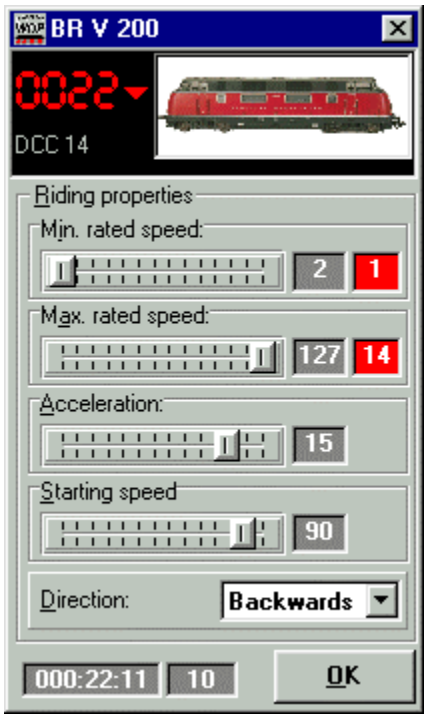
12.10.3 Control of locomotives with WIN-DIGIPET

Available and described as follows are:

- **Loco-Controls** (WIN-DIGIPET Controls) and alternative
- the **Quick-Loco-Bar** for locomotives

A) Loco-Controls (WIN-Digipet Controls)

All features and the functionality of this comfortable and extensive control panel is described at **5.10.1**.



Particular attention is drawn to the window „Quick-action change of running properties“ which you reach by a double click on the header ‘Win-Digipet control’ (**5.10.1**).

Minimum rated speed, maximum rated speed, acceleration, starting speed and direction of travel can be modified there at once (confirm with ‘OK’) without having to access the locomotive database. This is an advantage with all conditions of operation.

Owners of the Uhlenbrock-Intellibox can use the switch ‘Direction’, which is the saved direction of

travel, to co-ordinate with the 'Win-Digipet control' direction.

In the bottom left hand corner the number of operating hours and the maintenance interval are displayed.

Simultaneous start of all locomotives: **Prior** to issuing the command in the menu 'Options'- 'All locos on **starting speed**' or clicking on the switch in the symbol bar, you should make sure that you have taken all precautionary measures. They are described in **5.6** under starting speed.

Through 'Options' - 'Auto-zoom active loco' you can see the locomotive just being controlled in a large picture. Each time you activate a loco control panel the locomotive concerned will then be displayed enlarged in the window „Zoom active locomotive".

B) Quick-Loco-Bar for locomotives

The Quick-Loco-Bar makes it possible to control up to **10** locomotives directly, depending on which register you have selected (locomotives 21-30 in this example). You are able to control the basic functions: (from left) LIGHT, TURN, STOP and SOUND, as well as the speed, incl. the display at the right of speed in percent (0 to 100) referring to the settings in the loco database (see **5.6**).

Special functions, functions-decoder and graphical display of the speed are not available.

The Quick-Loco-Bar is available **only** in horizontal arrangement (top and bottom). It will automatically be faded out, if you select the vertical display arrangement (left/right).

You can also switch it off completely and select it via menu "Loco selection – Command bar":

Changed data of a locomotive at the Quick-Loco-Control will be updated at an open Loco-Control immediately and vice versa.

Multi traction (see below, chapter **12.10.5**) can be controlled via the Quick-Loco-bar as well. Combined locomotives in a traction are closed for **STOP** AND **TURN** (not controllable): The corresponding buttons are grey = not active. Only **LIGHT** AND **SOUND** are available at the Quick-Loco-Bar for locomotives combined in a multi traction.

12.10.4 Control of locomotives with Märklin and Lenz controllers

Transferring a locomotive from a WIN-DIGIPET loco control panel to a Märklin control unit: Enter the address at the Märklin control unit (6021/80f) and control the locomotive from there. Clear the loco control panel.

Important – only with Märklin-Digital system: You must not use locomotive address **68** as it is reserved for internal program use.

Transferring a locomotive from its Märklin controller to WIN-DIGIPET: Activate the loco control panel of the locomotive concerned and enter a different address at the Märklin controller.

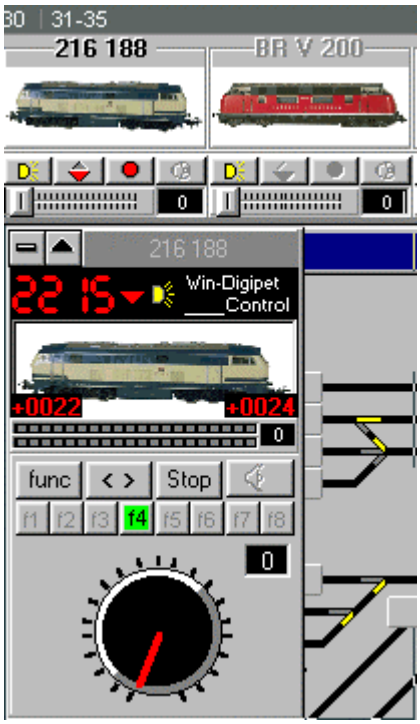
You will get a short message “Loco already under control”, if you try to control a loco by a WIN-DIGIPET Loco-Control and this loco is already selected and controlled by the Lenz-System-Control Unit.

12.10.5 Multi-tractions

Double traction: 1st loco = leading loco, 2nd loco = traction loco;

Triple traction: 1st loco = leading loco, 2nd and 3rd = traction locomotives.

Such multi tractions can be easily and safely realised in **WIN-DIGIPET 8.1**.



Drag the loco control panel of the leading locomotive (1st loco) from the locomotive selection panel to the screen. Then drag the 2nd loco from the locomotive selection panel (with the right mouse key pressed) **on top of the picture of the leading locomotive** in the loco control panel: the digital address of the 2nd locomotive is displayed in **red** in the bottom left of the picture. This is the indicator that a double traction has been established.

The 2nd locomotive is masked in the loco selection panel. This means, that the locomotive can not be accessed until the double traction has been cancelled.

The class description of a loco in multi traction is shown in grey, embedded by 2 “+” signs, as a mark for a multi traction. Only LIGHT and SOUND can be activated for a loco in multi traction (see picture).

If you rest your mouse pointer at the leader loco, a tooltip-text will be shown, which loco is in traction with this traction leader loco.

A message is displayed if the direction of travel in the leading locomotive is different to the direction of travel in the traction locomotive. Change the direction of travel in the traction locomotive and repeat the action described above for double traction.

If a 3rd loco is connected to the leading locomotive (triple traction), its digital address is displayed in **red** at the bottom **right** of the picture.

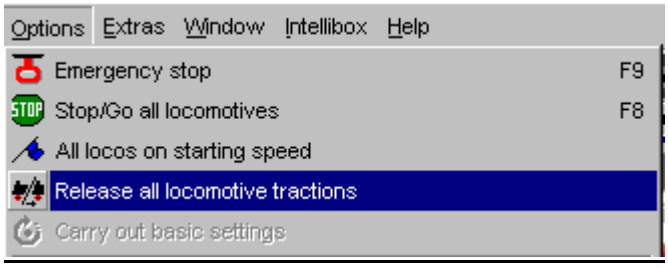
The traction locomotives are controlled by the leading locomotive's control panel. This also applies to the timetable operation.

Traction combinations are automatically saved at program end and restored at program start.

The control panel („Win-Digipet control") of a traction locomotive opens if you click on the red digital address. The locomotive can not be controlled, but you are able to check whether or not the speed of the traction loco is equivalent to the speed of the leading loco. The speed is displayed on the speed steps to the right of the control knob. To adjust the speed double click on the white writing „Win-Digipet control". This is the data window for the leading traction locomotive. Make your changes /adjustments for min./max. speed.

A click- with right mouse key pressed- on the **red** digital address in the control panel of a traction locomotive cancels the traction (after a warning has been displayed). The locomotives are then freely available for individual control.

All existing multi-tractions can be released quick and easy, by selecting the corresponding line at the "Options" menu or you click at the button of the symbol bar.



12.11 Emergency stop

12.11.1 Emergency stop via F9, menu or symbol bar

At any point of the program you can perform an emergency stop by pressing the function key **F9** of your computer.

You can reach the emergency stop also via 'Options' - 'Emergency stop' or the switch in the symbol bar.

An "emergency stop" window will open.

After an accident, you can adjust the speed of all involved locomotives to zero at the Loco-Control-Bar, before you click at "OK". However all operation of solenoid devices is closed, until the "emergency stop" window is closed again.

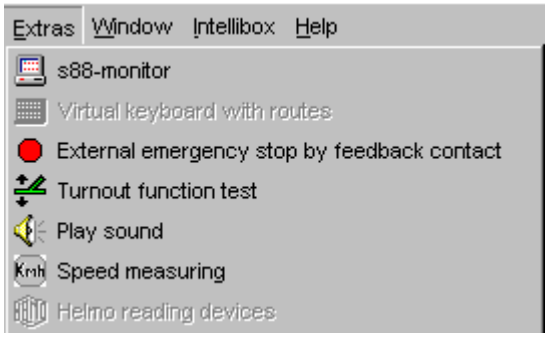
You have got two options to continue after an emergency stop:

"Start slowly to last stored speed" – all locomotives will be adjusted to their last stored speed with their registered acceleration delay.

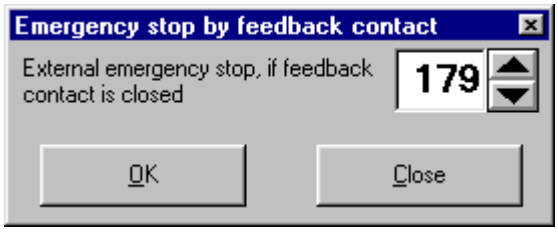
"Stop all locomotives" – If you click at "OK", all locomotives will be stopped and you have to control their speed manually again.

12.11.2 External emergency stop by feedback contact (key)

You can register this contact in the menu below "Extras" – "external emergency stop by feedback contact".



Here, you can register the feedback contact number for the emergency stop key.



You can install a key-button for the external emergency stop at any place you like on your model railroad. This key-button will cause the emergency stop by a designated contact of a s88 to your PC. In case of emergency this will save long ways.

12.12 Miscellaneous options

12.12.1 Stop/Go all locomotives

Under the menu "Options" – as well as by the symbol bar – you can stop or start all locomotives Stop/Go all locomotives F8. Your layout is not switched off, contrary to the emergency stop, but all locomotives are switched to speed 0 (STOP symbol then RED) or acceleration to the pre-determined speed (STOP symbol then GRÜN).

At any point of the program you can initiate this function by pressing the function key **F8** on your computer.

12.12.2 How to open the s88 Monitor

Under the menu "Options" – as well as by the symbol bar – you can open the s88-Monitor (see chapter **7.5**).

12.12.3 Display feedback contact numbers

Under the menu “Options” you can display all feedback contacts

. You can check this switch to briefly check the recorded feedback contacts. All feedback contact numbers in the track diagram are displayed, but not the track occupied. This function is temporarily switched off. Once the switch has been unchecked, everything works as before, including the track occupied function.

Sometimes the numbers are not readable. As soon as point to a number, left click the mouse. The number is enlarged (Zoom function).

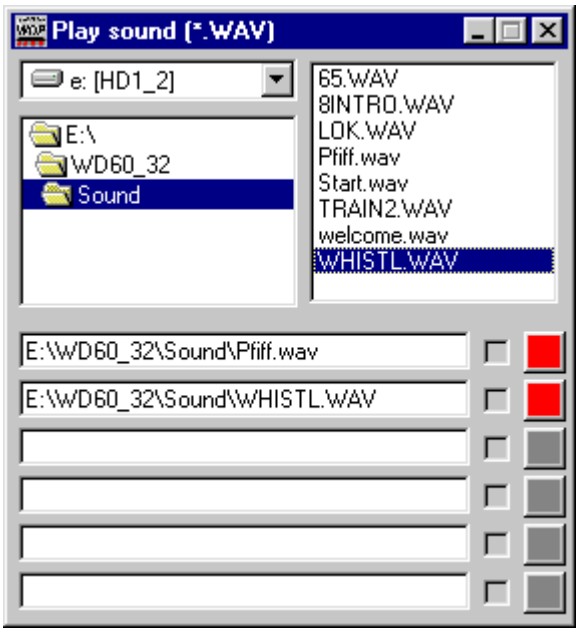
12.12.4 Display solenoid devices addresses or feedback contact numbers under mouse pointer

To show this, you find switches below the menu “Options”:

If these are marked (active), all addresses of the solenoid devices and / or of the feedback contacts will be shown, if you rest the mouse pointer over it at the track layout diagram.

12.12.5 Individual background sound

Under the menu “Extras” you get to the function Sound effects



During the model railroad operation several sounds can be played or activated (sounds).

All files ending in *.WAV are displayed in the right list field which are stored in the WIN-DIGIPET directory **\SOUND**. However, any WAV file on your Hard Disk can be used.

Double clicking the file in the list plays the file.

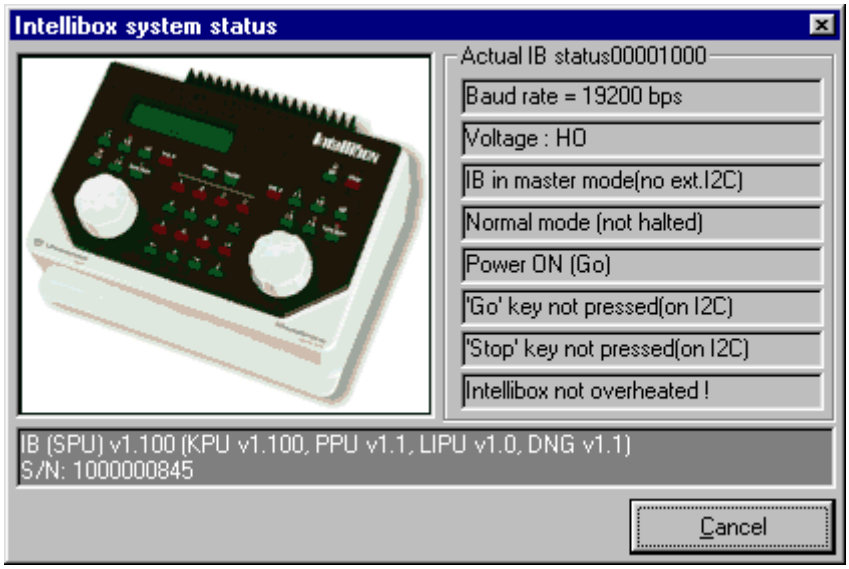
Up to 6 files can be permanently saved in a file. Drag a file –with the left mouse key pressed- from the list field of the WAV files to the fields below the list .The file can be cleared with a double click on the fields and the left mouse key pressed.

The red button, when pressed, plays the file once. A check in the box to the left plays the file continuously (Auto-Repeat). All files are saved when the window is closed and restored when reloaded.

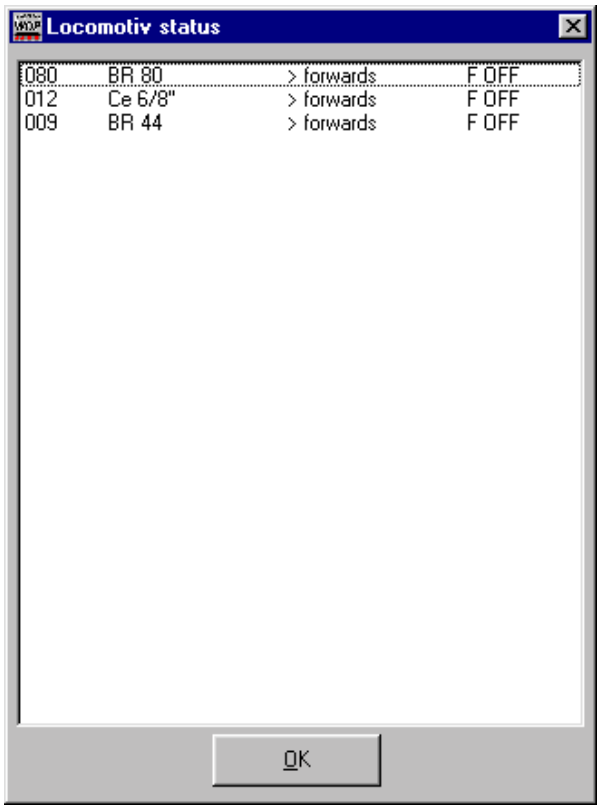
12.12.6 Intellibox: Display and printouts

If you have selected the Intellibox / Icum in the system settings (see chapter **4.7**) an additional panel “Intellibox” will appear in the task bar. If you click at this panel, you will get to the following displays or functions:

- Status display of the Intellibox Status Intellibox: A new window displays the system status of the Intellibox including the baud rate, version number, etc.



- Present status of all locomotives Status of all locomotives: A new window opens displaying all present addresses of all locomotives, their direction of travel and the functions.



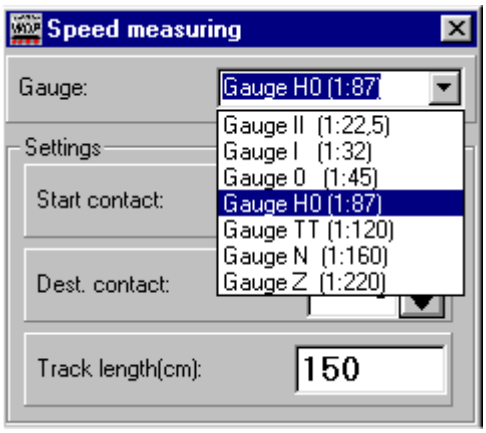
- Clicking on ‘COM x ‘ in the symbol bar resets **the Intellibox** via the Computer.

12.12.7 Running speeds true to scale

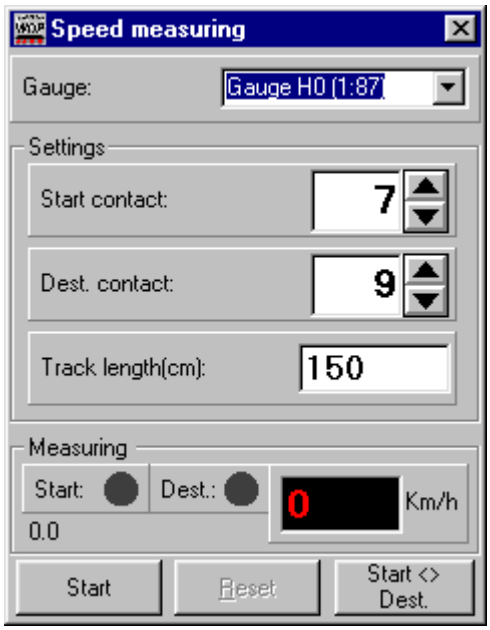
The function “Speed measuring” makes it possible to measure the speed of your locomotives shown in km/h (true to scale). Probably you will be astonished how (too) fast your locomotives will ride (race?) over your model railroad. This function makes it possible to check the maximum speed of your locomotives. If necessary you have to adjust (not mandatory) the max. speed of your locomotives again.

Under menu “Extras” click at “Speed measuring” or at the button of the symbol bar.

First, select your specific scale.



Select a start- and a destination contact of your model railroad and take the exact distance between both contacts in **cm**. Please select a straight track section if possible and enter the data.



Click at “Start” (= Measuring active).

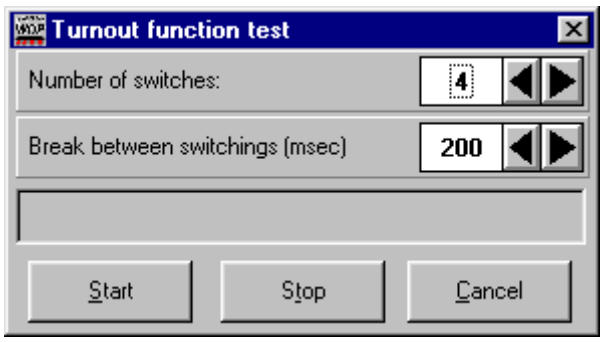
Open the Loco-Control of the loco you would like to measure. Select the corresponding speed and let your loco ride from the start- to the destination contact.

As soon as the loco passes the start contact, the measuring starts; it will be ended, if the loco reaches its destination contact.

The speed in **kilometres per hour** will be shown then.

12.12.8 Test of all turnouts after a long operations break

You will get to this function by menu “Extras” or via the button at the symbol bar.



The function “Turnout function test” makes it possible, to “shake up” all normal turnouts, three-way-turnouts and double slip turnouts on your model railroad after a long operations break (or before operations) and “wake” them up again, so that they are switch able again.

You can freely adjust the amount of switching (2 – 10) and the break between two switching (100 – 2000 msec). However, a three-way-turnout will always be switched six times fix, to guarantee to show the correct setting at your track layout after switching. All switching can be watched at your display (track diagram).

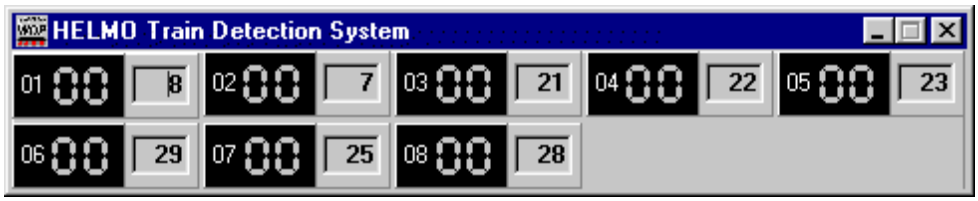
12.12.9 Helmo-Trainnumber-Identifying-System

You can get to the Helmo-System via menu “Extras” or by switching the button of the symbol bar.

The system is active, as soon as you have marked “active” at the Helmo-System in the system settings, section **4.12**.

To use the Helmo-System, you have to activate it at the menu bar (loading). To have a better overview, you can minimise the Helmo-window (click at the minimise button at the top of the window) and it will be moved to the task bar.

A window opens to show the Helmo-Trainnumber-Detection:



The Helmo-COM-port, registered as described in section **4.12**, will be activated after starting the system,.

Only the amount of reading devices will be shown, which have been registered in the system settings (Helmo, see **4.12**). In this example the entry was **8** reading devices (01 to 08) out of a maximum of 30.

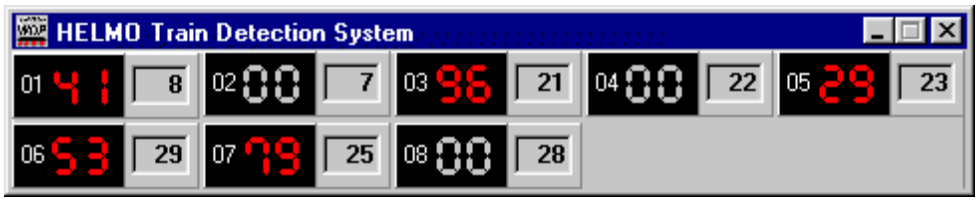
The small white number in the left of the digital display is the current number of the reading device.

The black numbers in the grey input panels are free to define and combines the

train number display on your track layout with the Helmo system.

Enter the correct feedback number of the train number panel (from your track layout), which then will be automatically transferred out of the Helmo-system.

If the Helmo-system has recognised a locomotive address (max. 99 addresses are possible), it will be transferred directly to the train number panel of the corresponding track layout position.



The recognised locomotive addresses will be shown as red digital numbers.

The feedback contacts at the grey panels effects also an additional function:

The locomotive address displayed at the Helmo system will at least be updated, if **an other** loco will be recognised during passing the reading device. To improve this, the Helmo address will be deleted by the program (= grey, digital **00**), if the corresponding contact (= the feedback contact of the train number panel at the track layout) at the grey panel in the right will be reported as “cleared” (free) from your model railroad.

12.12.10 COM-Display at the symbol bar

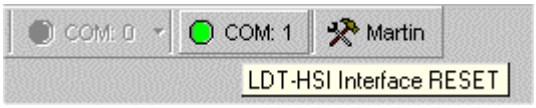
A click at this display offers the possibility to reset the digital system for the following systems:

Uhlenbrock–Intellibox, ICUM-Modelltreno and Lenz-Digital Plus.

For the Lenz-Digital-Plus System, also for all demand contact modules the actual values will be demanded.

12.12.11 HSI – Display at the symbol bar

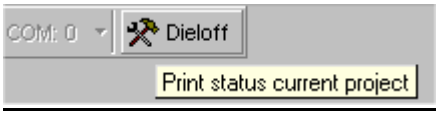
If the LDT-HSI 88 Interface is activated (system settings, chapter **4.11**), next to the 1st COM-port display for the main digital system, a 2nd COM-port display appears for the HSI-Interface:



Once the HSI s88 has been initialised and you start **WIN-DIGIPET 8.1** again, without having switched off the power supply to the HSI before, faulty measurements may happen, caused by remaining data in the HSI. A clear-function during initialising of the HSI doesn´t exist.

With a click at the button “COM 2”, you can initialise the HSI again, until the correct values of the connected feedback modules are shown.

12.12.12 Project symbol at the symbol bar



A click at the name of your actual project (example “Project 1”) opens the print routine for your current settings (see chapter **3.4.3**).

12.12.13 Service-homepage via the symbol bar:

A click at the button opens your Internet-Browser, to get a direct connection to the WIN-DIGIPET Service Homepage (see chapter **2.6**).

12.13 Train number display

12.13.1 General

Prerequisites for the train number displays are as follows:

- You have placed train numbers symbols within the track diagram (**6.3.1**);
- You have entered a feedback contact number into **each of these symbol panels** (**6.3.1** and **7.4**);
  If **0** has been entered as feedback contact number to a train number panel, a loco address can not be entered via drag and drop. A feedback contact number (greater than “0”) has to be assigned to a train number panel (mandatory):
- You have entered in the routes editor, per route, one feedback contact number as a number of the starting contact, and another feedback contact number as a number of the destination contact (**8.6**).

The train numbers display works correctly if trains/locomotives run through **routes** switching, i.e. with the route switched by the start-and-destination function or with operation according to timetables or in automatic mode using demand contacts.

On the other hand, if you set a train/locomotive in motion after you had set the solenoid device of its itinerary by **individual** switching, the train number display will not work properly or not work at all.

If you quit the locomotive database, the train numbers at the train number panels will be updated automatically, even if you have changed the sorting within the loco database or you have moved some locomotives to the “showcase”.

A peculiarity is the display of train numbers with four digits. Due to the fact, that four digits do not match to the train number panel (or the size of the types would be too small / not visible), the first digit of the address will be characterised with a colour code, equal to the international colour code for resistors.

Therefore the meaning for the first digit is:

1 = brown
2 = red
3 = orange
4 = yellow
5 = green
6 = blue
7 = violet (purple)
8 = dark grey
9 = white

If – for example – the loco address is 4234, the number 234 will be displayed at the train number panel, with the colour code YELLOW at the top and the bottom of the panel.

TIPP: You can cover two different train number panels of your track layout with the same feedback contact number. Train numbers which you enter in one panel will also be displayed in the other panel; they also will be deleted both, if one of both panels receives the deleting command. This could be advantageous for certain operations situation, for example:

Train number panels of fiddleyard sections, which are not visible at the usual display range of the track layout, can be placed in addition as a “duplicate” train number panel in the visible range. You can then notice if a train has reached its destination in a not visible section.

12.13.2 Train number display with feedback contacts

Ensure that masked: “starting contact free and displayed: destination contact reached” is selected with „Train number display“ in the basic system settings.

Click in the loco selection (**12.10.1**) you want to control. Keep the left mouse key pressed, drag the mouse pointer to the relevant train number symbol and release the left mouse key. The digital address of the locomotive- which is also the train number- appears at once in the train number panel.

If **this** train number is already available at your track layout, you will get a message “train number already exists” and the current position of the train number will be marked **red** at your track layout and the new position is marked **green**. This eases the finding of an already existing entry of a train number.

Put the train/locomotive onto the train number panel that is also the starting contact of the desired route.

If you have ticked ‘Display picture autom. when mouse moves over train label’ (**4.3.3**) in the basic system settings, the picture of the locomotive appears at once when you point to the train numbers panel with the mouse pointer, otherwise the digital address or the class of the loco will be shown as a tooltip-text.

The entry into a train number panel can be deleted through <Shift> + right mouse key.

All entries in the train number symbols can be deleted via ‘View’ - ‘Delete all train numbers’ or the switch in the symbol bar.

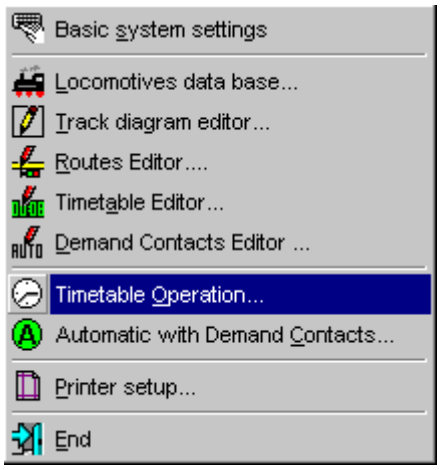
Switch the route and run a train over it (**12.5**): The train number will be masked in the starting train numbers panel the moment the train leaves it. It will be **displayed** in the destination train numbers panel the moment the train reaches the destination contact. The same happens automatically in the operation with timetables and automatic mode with demand contacts.

12.13.3 Train number display without feedback contacts

Ensure that ‘Jump from start to destination without feedback contacts’ is selected with „Train numbers display“ in the basic system settings.

Proceed as described in **12.5**: Upon the command 'Switch route', the train number jumps from the starting contact panel to the destination contact panel of this route. The same applies for operation with timetables and automatic mode with demand contacts.

12.14 Timetable operation

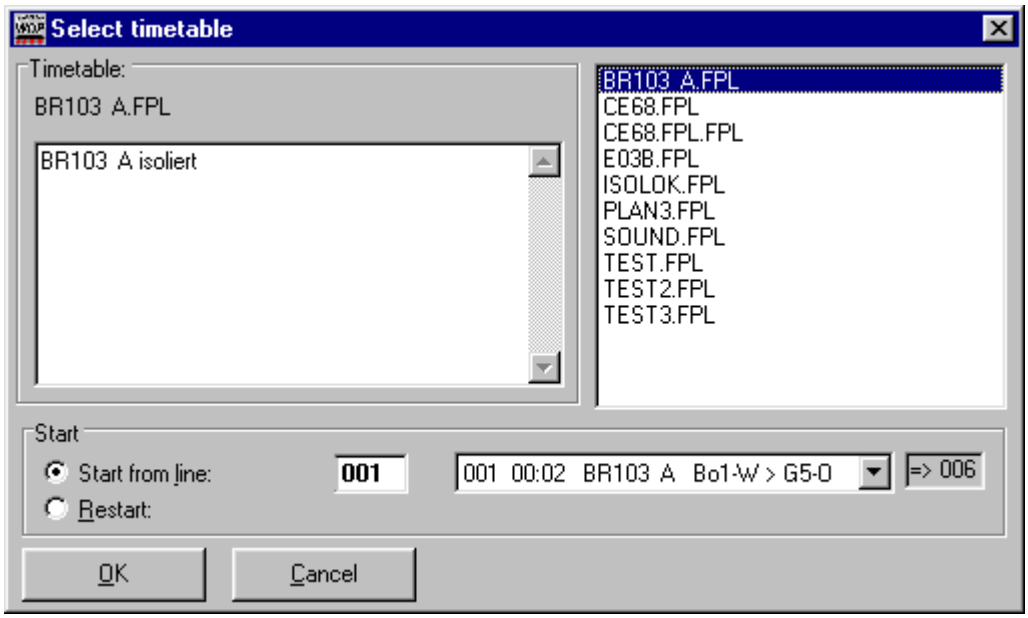


12.14.1 Access; Selecting a timetable

Click on 'File' - 'Timetable operation' or on the switch in the symbol bar: This is how you reach the operation according to timetables.

The necessary recordings and other prerequisites are detailed in chapter **10** – Timetable system, Timetable editor.

A window „Select timetable" appears containing the names of all timetables recorded so far.



For selection click at the name of the timetable you want to have executed.

The line will be shown with a blue background and the name of the timetable will be displayed in the upper left. Below this the belonging remarks (if existing) will be shown.

If you would like to start this timetable from the first line, please select "Restart". In the panel right next to "Start from line" and the number "001" will be shown. In the listing panel right next to it you can see the departure time, the locomotive and the route for this starting line.

In the grey panel next to it, the total amount of lines for this timetable (**4.2.1**) will be shown.

Confirm with 'OK'.

If, however, this timetable had previously been interrupted and stored as of a given line number, this will automatically appear in the right hand rectangle. In such a case you can let the timetable proceed as of that line number through „Start as of line". In the grey panel next to it you see the maximum number of lines of this timetable (**4.2.1**). Confirm with OK.

You can start each selected timetable as of any desired line number.

Here you have two possibilities:

To do so, select „Start as of line". Activate, by a mouse click the right hand rectangle and overwrite the contents, via the keyboard, with the line number from where you want the timetable to be executed. Confirm with OK.

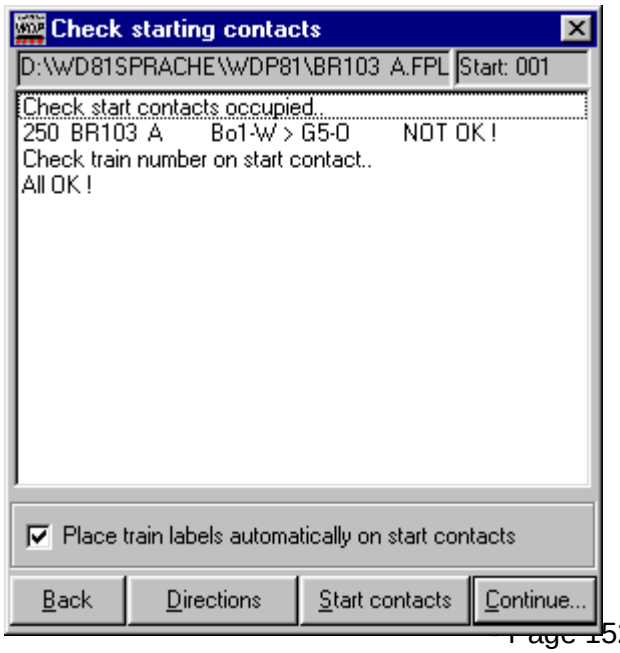
Or – for a better view – you click at the down arrow of the listing panel and you will get all timetable lines of this timetable for a free selection. With a click at one of these lines you can select the starting line of this timetable.

12.14.2 Checks before starting a timetable

Checks carried out by the program before you start the timetable ensure that you have placed each locomotive concerned in its specified starting position, i.e. on its correct starting contact.

In this context, the **check of starting contact** function is of particular importance and the window „Check starting contact" opens automatically after every timetable selection- 'OK'. All contacts that are not occupied by a locomotive are displayed 'NOT OK'. If all contacts are occupied by a locomotive the message 'All OK' is displayed in the window.

This is not possible in some timetable structures; examples: Different locomotives move off at different starting times, but use **one** starting contact. **One** locomotive moves off at different starting contacts at different times, etc. In this case ignore the messages „NOT OK".



To correct this you will use all displayed non-occupied starting contacts („NOT OK") to occupy with locomotives (if it does not interfere with the timetable structure). Click again on 'Starting contacts'. As a result of this check the message „All OK" is displayed.

Furthermore the program already checks at this stage, if all train number panels for the start of this timetable are covered by the correct train numbers. Due to the outcome of this check, you can change some

locomotives manually to their correct position.

The correct occupation of the starting contacts is also checked before the new start of the same timetable, before the start of another timetable and before passing to an add-on or self- repeating timetable („Appending a timetable“, see **10.14**).

If a timetable should start with a subsequent line instead of the first one („Start as of line...“, etc.), the system checks the correct occupation of all contacts which have to be regarded as starting contacts of that line.

All locomotive addresses are **automatically** transferred into the train number display fields of the starting contacts, by clicking) ‘Continue’ and if the switch „Set train numbers automatically on starting contacts“ is activated (checked) You do not have to concentrate on the correct occupation of the train number display fields.

You have to select the digital addresses of locomotives from the locomotive selection and transfer them to the train number symbols (as described in **12.13.2**) at the beginning of each timetable time, if the timetable structure does not allow the above function or you have deactivated it.

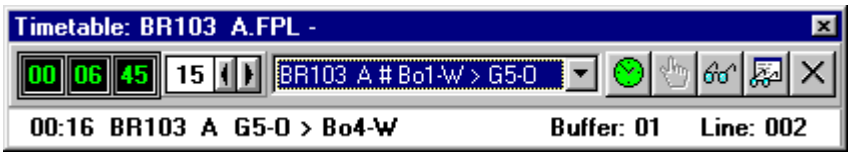
Only with the **Digital system Uhlenbrock-Intellibox and Lenz Digital Plus** can you check automatically with the switch ‘Loco directions’ whether or not in this timetable the locomotives are facing in the right direction. A new listing field appears displaying all locomotives of this timetable, including their direction of movement. A manual check as in the Märklin digital system (see **12.14.3**) is not necessary due to the true feedback from your model railroad to the Intellibox.

You return to the selection of another timetable- without starting the selected timetable- via ‘Back’.

12.14.3 Start and normal execution of timetable

Click on ‘Next’ in the window „Check starting contacts“.

The timetable command panel appears at the upper right hand side of the screen.



On the outer left you see the model railroad clock (displaying hours: minutes: seconds). It starts running one minute prior to the starting time of the first timetable line.

Next to it, the white panel displays the time factor (1...15) you had determined in the basic systems settings (**4.2.4**).

You can alter it **temporarily** with the arrows at its right, even while the timetable is running. This, however, does not influence the setting of the time factor in the basic system settings, and the latter will appear in the time factor panel each time the main program is loaded. The arrival times do not correspond anymore if they are temporarily changed, as explained in **10.5**.

In the comment panel with the selection arrow, next to the time factor panel, the contents of the route buffer are indicated (see below in **12.14.5**). Its maximum size was defined in the basic system settings (**4.2.1**).

Every line of the routes buffer, shows the loco and the route (separated by #).

You will see the actual processed route next to the headline of the timetable window.

Further to the right you see the „Start switch“ in form of a clock (green = Start command, red = Stop command), followed by a „hand“ (switching routes manually from the buffer), „glasses“ (display of contacts not reached) and „cross“ (cancel).

In the lower bar of the timetable command panel, you find the execution display. At the left you can see the timetable line executed next, followed by the number of routes in the routes buffer and the item number of the „line“ displayed to the left.

At first, ensure that **all** locomotives of the selected timetable are positioned in the correct **direction of travel**, avoiding that they move off inadvertently backwards at timetable start. Make certain, that **no** locomotive of the selected timetable is called at a Märklin **control unit**.

Start the timetable by a click on the starting switch. It changes its colour from red to green, and the timetable starts running.

You can also use the function key **F12** on your computer to start and stop the timetable.

As soon as the model railroad time is equal to the starting time of the timetable, that line will be executed. The turnouts and signals of the relevant itinerary are switched, the relevant locomotive starts, moves along its itinerary, performs the given commands at intermediary contacts (if any) and stops at the end of the itinerary.

This operating sequence is subjected to certain conditions.

- A timetable line will only be executed, if the condition to switch, stipulated for the relevant route are fulfilled. If they are not, the route will not be switched.

- A timetable line will only be executed after the relevant locomotive has correctly made/switched all contacts assigned to the preceding route. As long as this is not complied with, the route will not be switched.

- An additional check to the setting conditions of the route is performed, if the switch ‘Additional control via train number display’ in the ‘Basic system settings’ - ‘Timetable’ (see **4.2.3**) is checked. This control involves the checking of the train number field of the start contact. It checks for the correct digital address of

the locomotive. The line will **not** be executed, if this field is empty or the wrong digital address of the locomotive has been recorded.

- All routes which for the above – mentioned reasons could not be switched as per specification at a given time, are stored in the „Routes buffer“ (see below **12.14.6**).

In this way the system executes the first timetable line. At the same time the next timetable line is shown in the execution display. It will be executed as soon as the model railroad time is equal to the starting time of the second timetable line.

Thereafter, display and execution of the third timetable line will follow, etc.

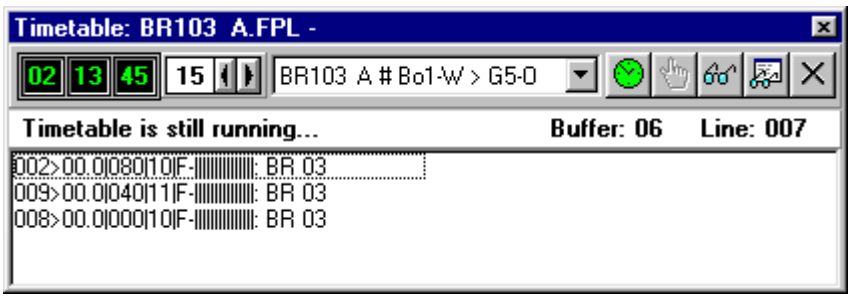
You can stop the operation with timetables at any time by clicking at the green starting switch; it changes to red. A second click puts the starting switch back to green, and the operation with timetables is resumed.

After the last line of a timetable or of an add-on timetable respectively has been completely executed, the message „End of timetable“ appears in the execution window.

Thereafter, you can start the timetable again via the starting switch, or you can return to the main program via ‘Cancel’ and select another timetable.

12.14.4 Contacts activated by train

You can display which contacts were not yet made/switched. Click on „Glasses“: The timetable command panel expands in the lower half, displaying all contacts still to be processed.



12.14.5 The “Inspector” of timetable operations

The Inspector supports you to check the order of events and to find bugs.

Click at the button with the document and the glasses in the timetable command center. The “Inspector” window will open then.

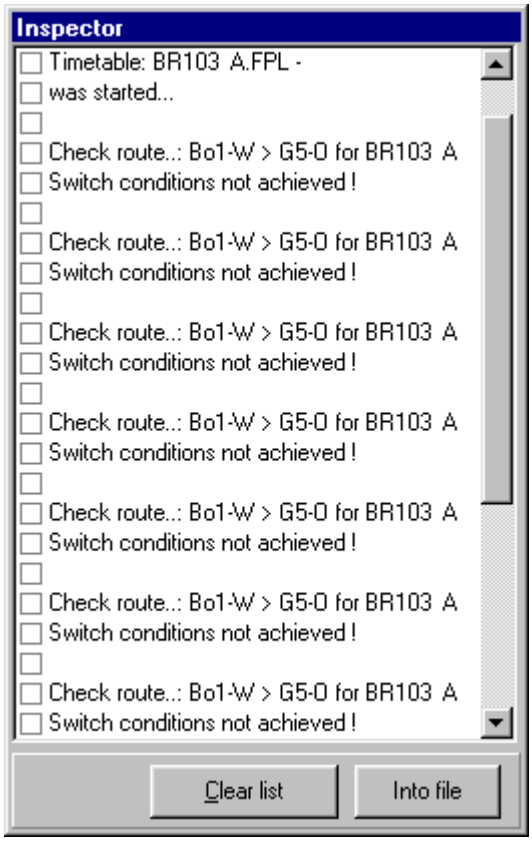
You can **close** the Inspector by clicking at the **same symbol** or by ending the timetable operations.

The Inspector should just be used for fault detecting. It is not recommended to use the Inspector during a correct and smooth operation. Due to additional messages and queries timely delays would affect timetable operations.

(During “automatic with demand contacts”, the inspector could be active, because

there it is not urgent to pay attention to time and processing speed.)

The Inspector provides you with important messages in case of irregular operations within a timetable. He just provides you with messages, during active timetable operation (green clock), the queries and messages will stop immediately, if you stop the timetable (red clock).



The Inspector is very useful for fault detecting. You can also divert the content of the inspector to a text file. With this, you have the possibility to check this file in detail later on.

To do that, click at “Into file” and a window will open “Save as...”. Enter any name and click at “Save”.

Messages of the Inspector

Timetable filename “was started...”

Timetable filename “was stopped...”

"STOP ! BUFFER overflow ..."

“check route...:” (timetable filename) “for “ (loco class)

The next two messages just occurs, if you have marked “Carry out timetable line only, if the right train number on start contact” in the system settings – timetable at **4.2.3**:

“No loco at start contact:” (start contact)
“Wrong loco at start contact:” (start contact)

The following message will only occur, if you have marked “Switch only, if train destination label isn´t occupied” in the system settings – routes at **4.10**:

“Destination contact is blocked by an other train: “ (destination contact)

The switching conditions of a route are not true:

“Switching conditions are not true !”

The release condition of an other route has not been achieved and there are still

locked / closed solenoid devices existing for the route which should be switched:

“Route is not released yet !”

The locomotive has not processed all contact events of the former route yet:

“Loco is active !”

else:

“All OK ! Route will be switched!”

12.14.6 Accidents, operation end, delays

The system helps you to resume quickly to the correct operation on your layout, in the event of operating problems.

If an **accident** occurs, e.g. a derailment or a collision, you can simply stop the operation with timetables by a click at the green starting switch or press the function key **F12** on your computer; the green clock changes to red and the timetable is stopped.

Having removed the cause of the accident, you resume operation at the same point of the timetable by clicking once more at the (red) starting switch.

If you want to **leave** the **operation of timetables**, because of an accident or for any other reason, **before** the **timetable has reached its last line correctly**, click on ‘Cancel’. The timetable stops and you are questioned:

Timetable not yet ended! Cancel anyway?
Current state of operation will be saved automatically!

On ’Yes’ the actual timetable line will be saved and displayed later when this timetable is selected again.

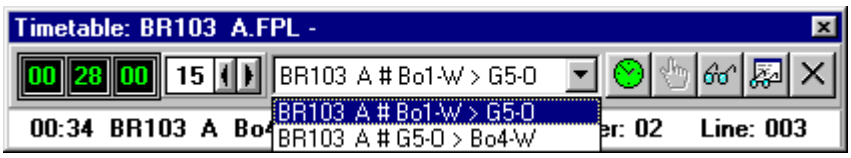
A timetable can only be ended- display „End of timetable“ -, after all its contacts were correctly made/switched. If this is not the case you get the message:

Not all contacts made/switched! Cancel anyway?

On ‘Yes’ the timetable will be ended without all contact events having been carried out.

If you stop the timetable (the starting switch changes from green to red), the actual timetable line will be automatically saved and displayed later when the timetable is selected again.

The system files all routes which, due to **train delays** and other **operating troubles,** could not be switched as per specification at the given time, in the routes buffer. The routes buffer display tells you how many routes and which ones are therein.



Through the “hand“ you can carry out or begin the actions for emptying the buffer. It is your decision, how the operation of timetables should continue.

Routes which are switched manually out of the buffer (hand) will be deleted, if they have achieved their release conditions. Follow-on-switching will also be carried out.

If you want to terminate a timetable and the buffer is not yet empty, you get the message:

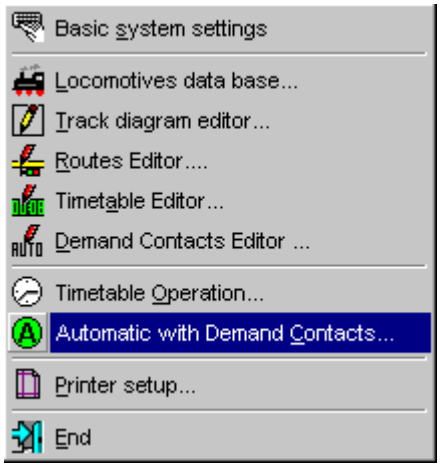
Routes buffer not yet processed.

When the maximum number of buffer lines is reached (**4.2.2**), the operation with timetables stops automatically and you get the message:

Stop! Buffer full!

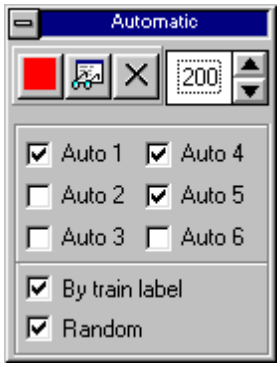
Manual intervention is needed in both cases.

12.15 Automatic operation with demand contacts



Click on 'File' - 'Automatic operation with demand contacts' or on the switch in the symbol bar. In this way the automatic functions are accessed as described in chapter **11**.

Please also note the technical and planning prerequisites, detailed in **11.1** and **11.2**.



A control field appears after you have accessed the automatic operation. Click on the red square in the top left hand side, to start the automatic operation. It changes to green. Clicking on the switch a second time, stops the automatic.

If you switch the button "**by train number**", this automatic will be controlled by train numbers at the start contacts (see **11.1** and **12.5.1**, part **B**). Isolated track sections (powerless tracks) are not necessary anymore.

Important note: If you ride by train number, but there is no loco address registered at the train number panel of the start contact, routes will not be switched and the automatic may stop.

If this switch is **not marked**, isolated track sections have to be available on your model railroad.

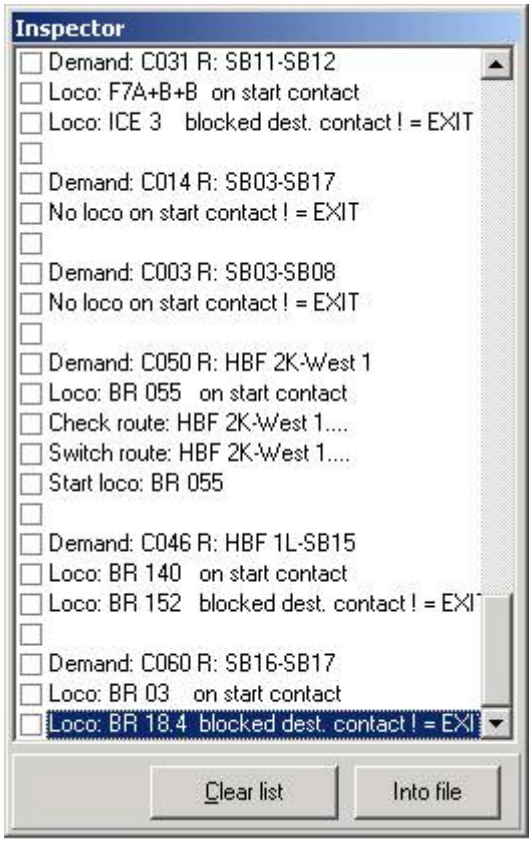
The automatic operation will be very varied, if you mark the switch "Random"; please see sections **11.1** and **11.11** for details.

The interrogation speed (in milliseconds) is changed with the arrow keys 'Up' and 'Down'. As the default value you see 500 milliseconds, e.g. the demand contacts are checked twice per second on a possible switching of a route.

Partial areas of your layout can be operated in automatic mode with demand contacts. The automatic mode can be switched on/off (see **11.3**), even during the execution of the automatic mode.

Inspector:

With a click at the button which shows a document and glasses at the control panel, the window of the Inspector will open for checking the order of events, etc.. This functions is nearly similar compared to the Inspector of the timetable – have a look at section **12.14.5** for details.



Messages of the Inspector:

(**C** = contact number, **R** = route, **EXIT** = check next demand contact)

"Demand: C xxx R: yyy"

"Loco: xxx on start contact"

"No loco on start contact ! = EXIT" (No loco address at the train number panel)

"Loco: xxx no stop command ! = EXIT"

"Loco: xxx blocked dest. contact ! = EXIT"

"Route locked for loco: xxx ! = EXIT" (Loco- train type locked for this route)

"Check route: xxx…."

"Switch route: xxxx…."

"Start loco: xxx"

"Loco: xxx no starting speed…!"(starting speed, registered in the loco database,=0)

"Route xxx release conditions are not true ! = EXIT"

A click at the switch "**X**" of the command panel quits the automatic by demand contacts operation and all settings will be saved.

12.16 Terminate railroad operation with WIN-DIGIPET

Via 'File' and 'Close' or with the switch in the symbol bar.

13 – ANSWERS TO FREQUENTLY ASKED QUESTION (FAQ)

13.1 „Which contact type should I use for computer controlled layouts?“

There are two types of contacts: Transient and permanent contacts.

Let us deal here with the Märklin HO system.

Transient contacts are **switch tracks** (activated by the loco pick-up), **Reed contacts** (activated by a magnet attached under the rolling stock/locomotives) and infrared activation.

All the above are **not very suitable** for computer control as they only issue a short pulse. To receive a feedback, two emitters/transmitters and a relay are necessary at each feedback point to achieve a longer feedback. This is not visible on a model railroad layout with computer control, as quite a number of feedback points are required.

Computer control requires **permanent** contacts, known as contact track (not to be confused with switch track). A piece, a „track“, with both outer tracks electrically insulated from each other and connected to the input of a s88.

As a locomotive/carriage passes with its metal wheels/axles over the contact track, they connect the outer rail to ground. Contact tracks are closed (making contact) as long as a train passes over it or stops on it. Therefore, these contact tracks are very suitable and can easily be achieved in the Märklin H0 system.

When using **K-track** by Märklin, cut **one** track to the desired length and connect it to the s88.

It is as simple with **C-track** by Märklin: Disconnect the ground connector on one side of the track connectors.

Using **M-track**, **M**- contact track and extension by Märklin has to be used (or possibly other track occupation detectors from different manufacturers).

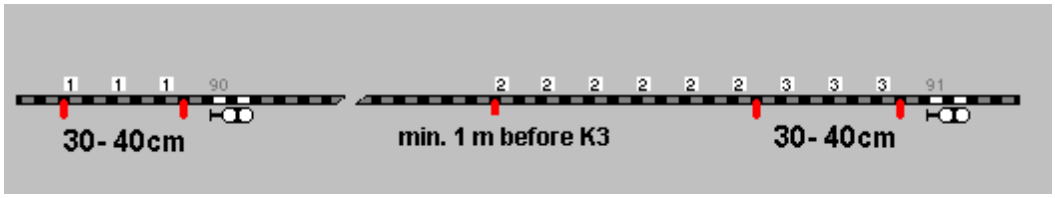
13.2 „Where should I position my contacts ?"

As a rule, an approx. 30-40cm long contact area should exist in front of each signal on the layout. This is known as the stop contact. Commands are sometimes not correctly transmitted to the locomotives, if the contact area is too short.

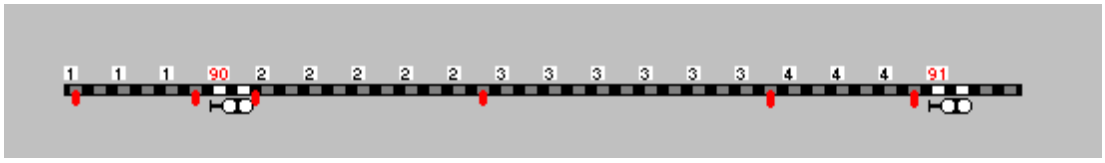
A contact area must be present at the place where you like an event should take place (light, Telex, deceleration, acceleration, etc.).

A Block consists of a minimum of 3 contact areas:

Start contact – Deceleration contact – Stop contact.



It is safer in the model railroad operation to allocate contacts to the whole block. An accident can occur, if carriages stop on the track that does not have sufficient contacts.



The input for the switching conditions of the route is:

Switch, if **K2**, **K3** and **K4 FREE** and **K1 Occupied**,

Release, if **K4 Occupied**.

In addition, several contact events could be recorded in the timetable editor.

13.3 „What is the difference between contact free and occupied condition ?"

(see also **8.6** and **8.7**)

SWITCHING condition

A route can only be switched, if its switching conditions are met. If the conditions are not fulfilled in timetable automatic operation, the route is saved in the routes buffer. A warning is issued when in manual operation with start/destination function.

Release condition

All turnouts, three way points and crossovers are **locked** in the route, as soon as the conditions of the route are met and it is switched. Another route, containing some of the solenoid devices, can not be switched until the release conditions of the other route are fulfilled and the solenoid devices are unlocked.

Routes are only automatically cleared from the screen after their release conditions are met.

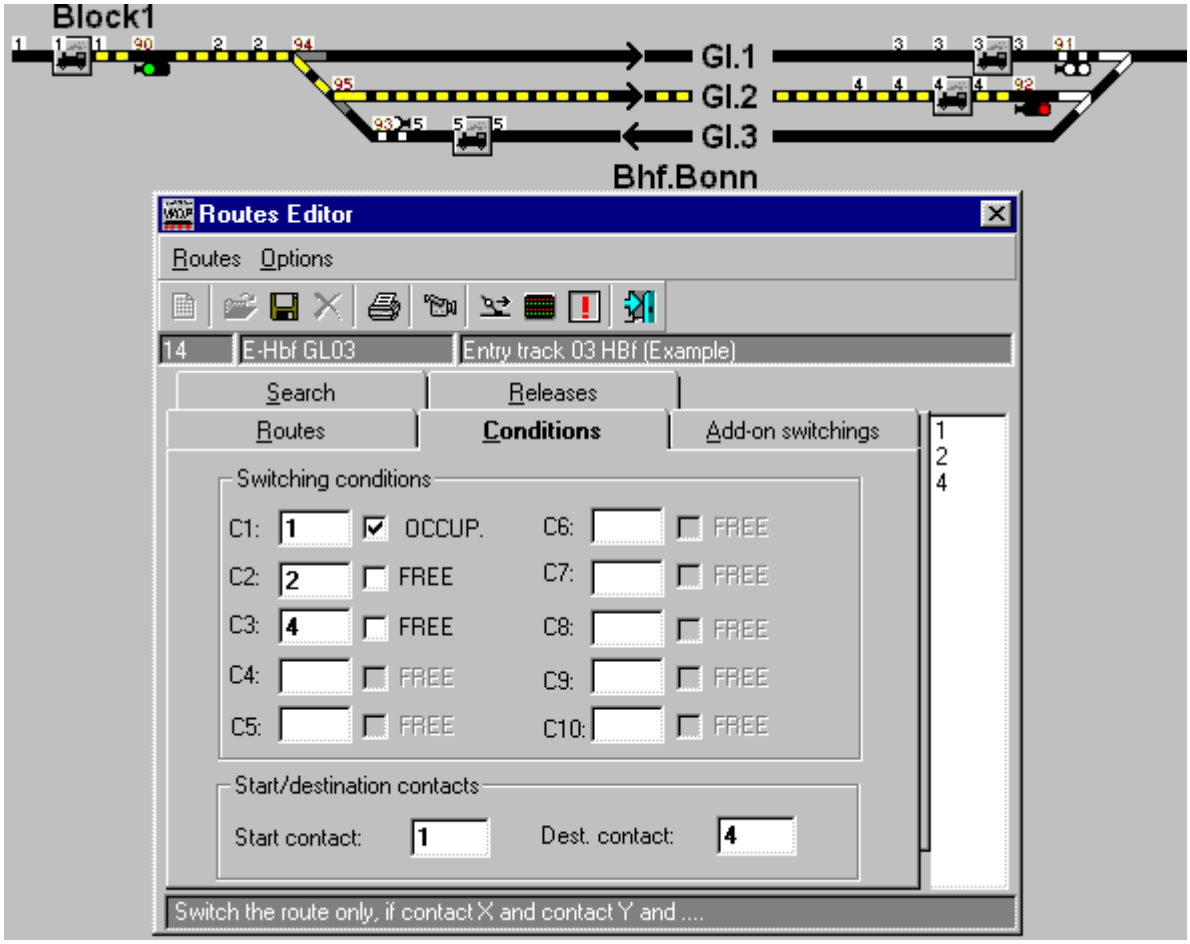
START/DESTINATION contacts

Each route has a start and destination contact. The start contact is positioned in front of the entry signal and the destination contact at the signal at the end of the route. These contacts are used for the **train number display**. The train number is transferred from the start to the destination contact, depending on the mode you have recorded in '*System settings'* under '*Program'* (direct jump or via contact checks).

The destination contact of the first route can also be the starting contact of the follow-on route.

Routes **should** and **must** contain switching and release conditions!

An example for switching and release conditions: A train should travel from contact **1** to track **2** to contact **4**.



In **switching conditions** of the routes editor, record the following:

Switch if contact **2** and contact **4 FREE** and contact **1 OCCUPIED**,

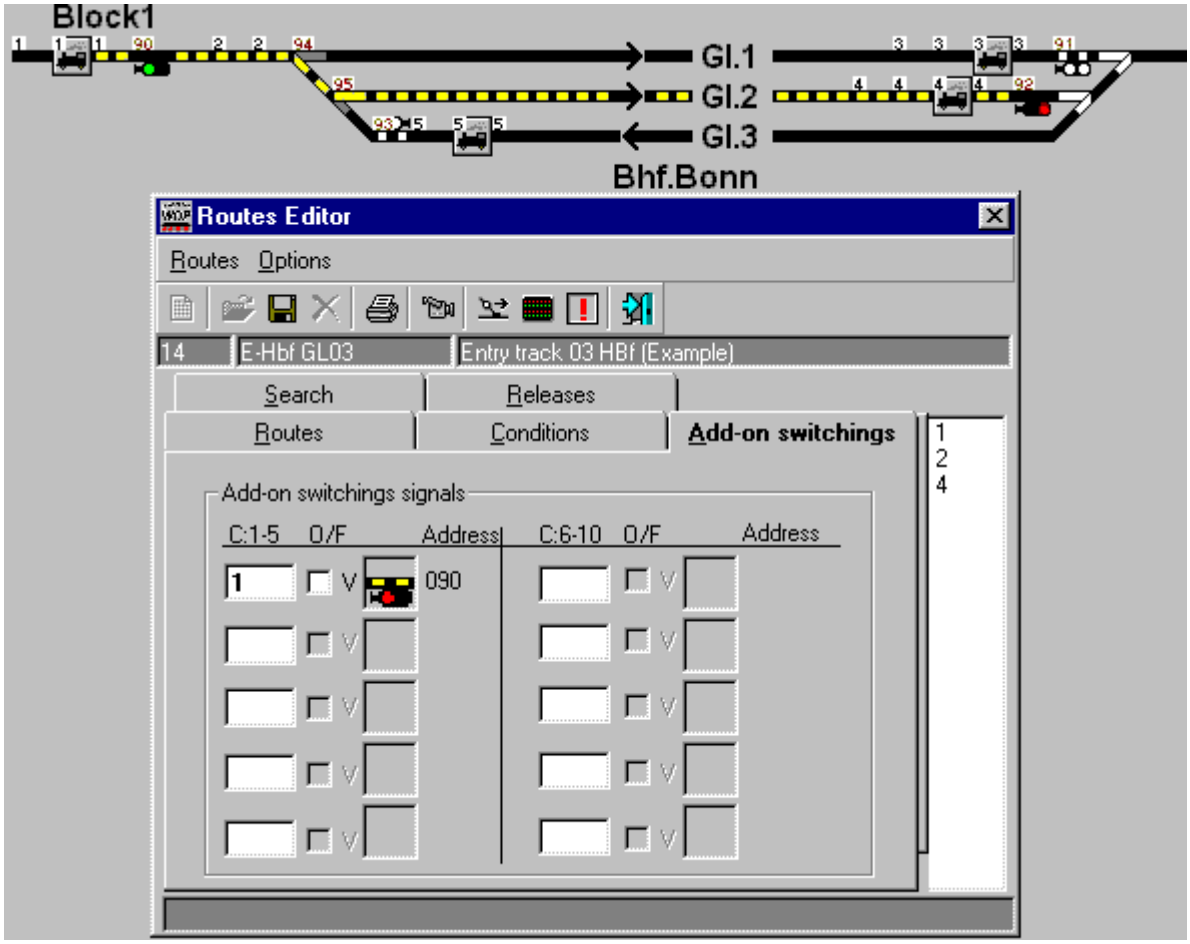
Release if contact **4 OCCUPIED**.

Start contact : **1,** Destination contact: **4.**

A train, waiting on contact 5 on track **3**, leaving via W94 and W95, can only leave, if the train for track **2** has reached contact **4**.

Only then is the locking of W94 and W95 cancelled.

Follow-on switching of signal 90:



Signal 90 is switched to red, if contact **1 FREE**, e.g. the last carriage has passed contact 1.

Two further examples of follow-on switching of signals are given in **13.4**.

13.4 „Can I switch a signal whilst a train is running ?“

Example 1:

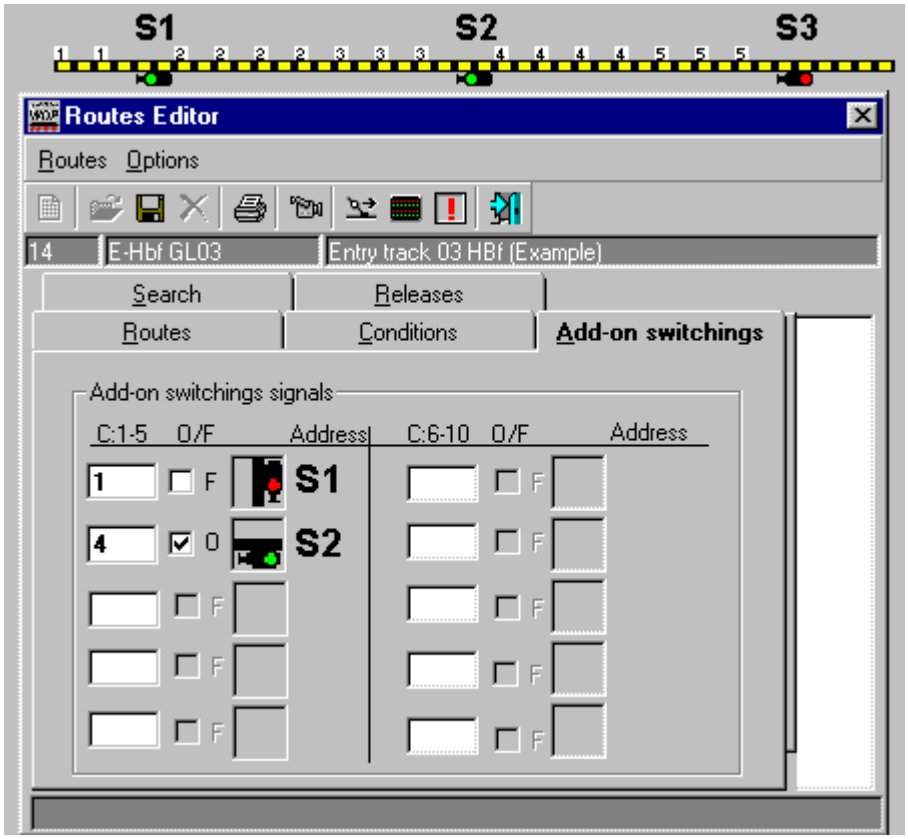
Assuming your route runs in 2 blocks, from signal 1 via signal 2 to signal 3.

You have recorded the route with S1 GREEN, S2 **GREEN** and S3 RED.

The entry signal S1 should be switched to RED after contact 1 is cleared.

Signal S2 should also be switched to RED, once the train has passed it.

It is possible to realise this with **Follow-on switching of routes**:



All recorded contacts in the route are listed in the list window to the right. Transfer contact 1 by dragging it from the list window and dropping it in the contact field next to **K1**. You can also make the inputs to the contact field, using the keyboard.

Check (tick) „F“ (=Free).

In the track diagram click on signal S1and drag to the picture field next to „F“ (=Free). Drop it into the field. The signal still shows GREEN. Click on the signal in the picture field until position RED is displayed. Done !

It now reads: Switch signal **S1**to **RED**, if contact **1** is **FREE**.

Proceed in the same manner as described above for S2. Remember that the signal should be switched to RED, once contact 4 behind the signal is reached.

Switch signal **S2** to **RED**, if contact **4 OCCUPIED**.

Example 2:

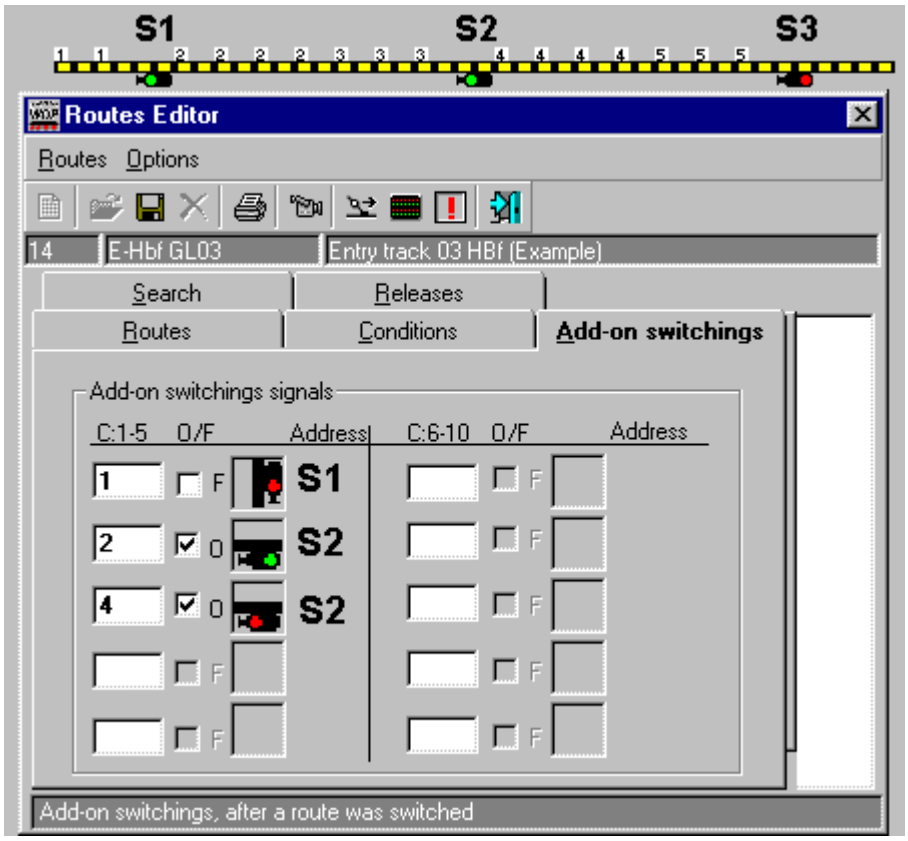
Assuming your route runs in 2 blocks from signal 1 via signal 2 to signal 3.

You have recorded the route with S1 GREEN, S2 **RED** and S3 RED.

The entry signal S1 should be switched to RED after contact 1 is cleared.

Signal S2 should by switched to GREEN after the train has passed contact 2 and back to RED after the train has passed contact 4.

It is possible to realise this with **Follow-on switching of routes**:



These entries are:

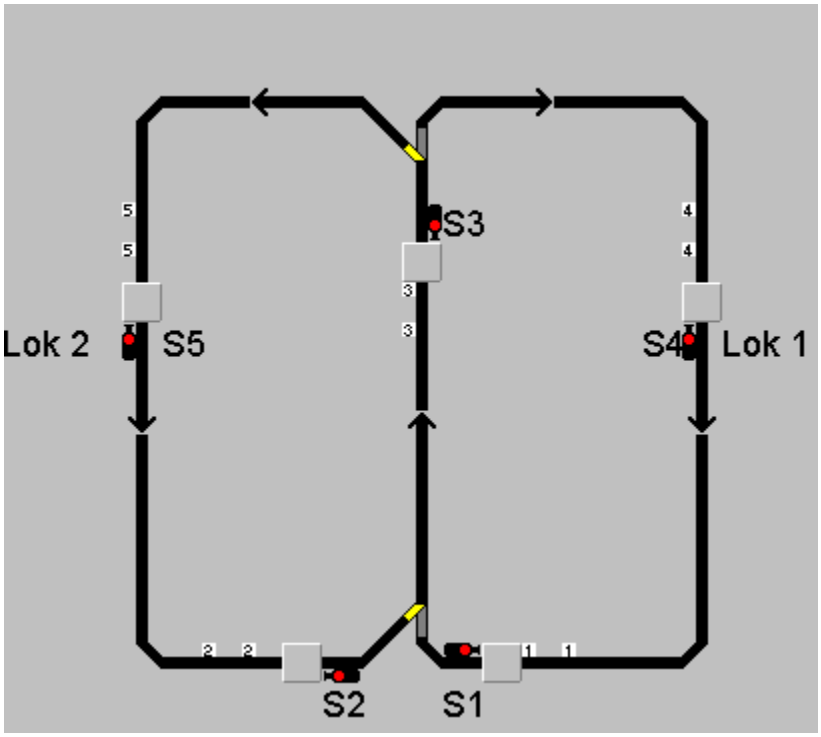
Switch signal **S1** to **RED**, if contact **1 FREE** („F“).

Switch signal **S2** to **GREEN**, if contact **2 OCCUPIED** („O“).

Switch signal **S2** to **RED**, if contact **4 OCCUPIED** („O“).

13.5 „What is the purpose of additional control, using train numbers in timetable mode?"

This example should illustrate what could happen, if the switch "Additional control via train number display" under ' System settings' - ' Timetable' is not checked.



Recorded routes:

S1 to **S3** / **S2** to **S3** / **S3** to **S4** / **S3** to **S5** / **S4** to **S1** / **S5** to **S2**

Timetable section:

00:01	loco**1**	S4 - S1
00:03	loco**2**	S5 - S2
00:05	loco**1**	S1 - S3
00:08	loco**1**	S3 - S4
00:09	loco**2**	S2 - S3
00:12	loco**2**	S3 - S5

Loco1 leaves at 00:01late(for whatever reason). The routes of loco1 at 00:05 and 00:08 are saved to the buffer.

As loco1reaches contact 1, loco2 is already on the way to contact 3. Loco 2 takes the routes S3 to S4 from the buffer when contact 3 has been reached. This should not happen, as the loco should travel to contact 5 (S3 to S5).

No check takes place whether or not a locomotive belongs to the route to be executed, e.g. only a **contact related** execution.

This is inhibited if the switch "**Additional control via train number display**"is checked!

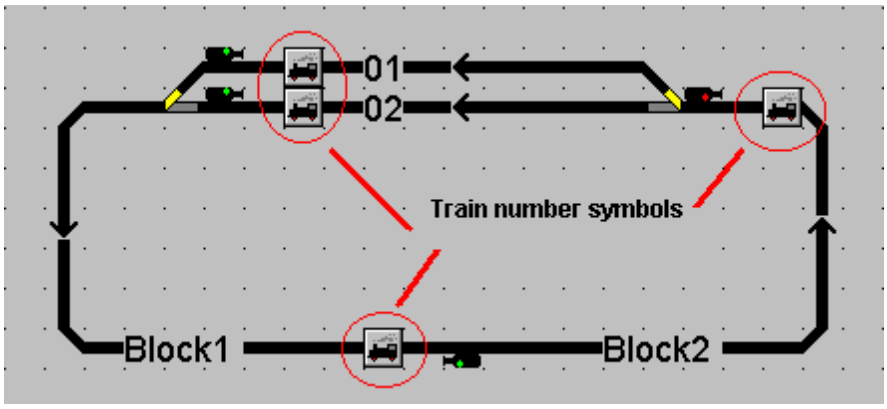
Before the execution of a route the train number display field of the starting contact is checked. It must contain the correct digital address of the locomotive belonging to the route.

In the above example, loco 2 reaches contact 3. The routes in the buffer belong to loco 1, e.g. no wrong routing of loco2, as it travels to contact 5 (S3 to S5). Only when loco 1 has reached contact 3, and after contact 4 has been reached, is the route from the buffer correctly switched (S3 to S4).

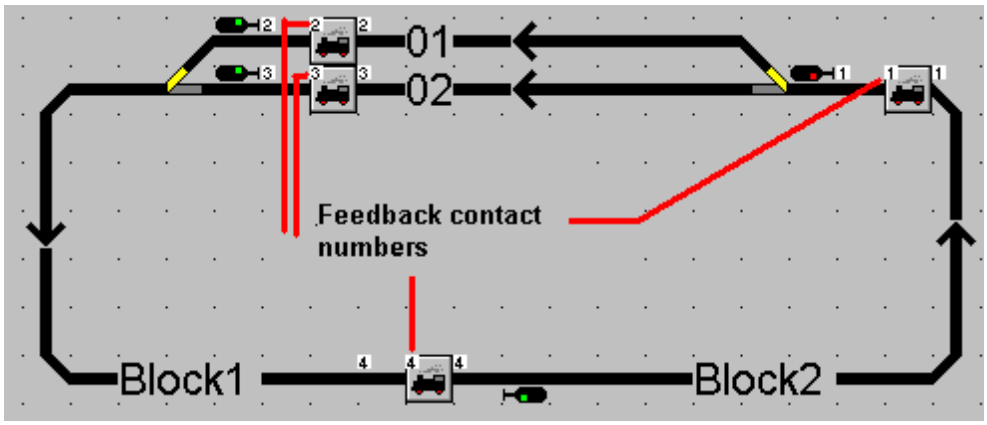
13.6 „My train number tracking seems not to work at all or incorrectly ?"

Prerequisites for train number display are:

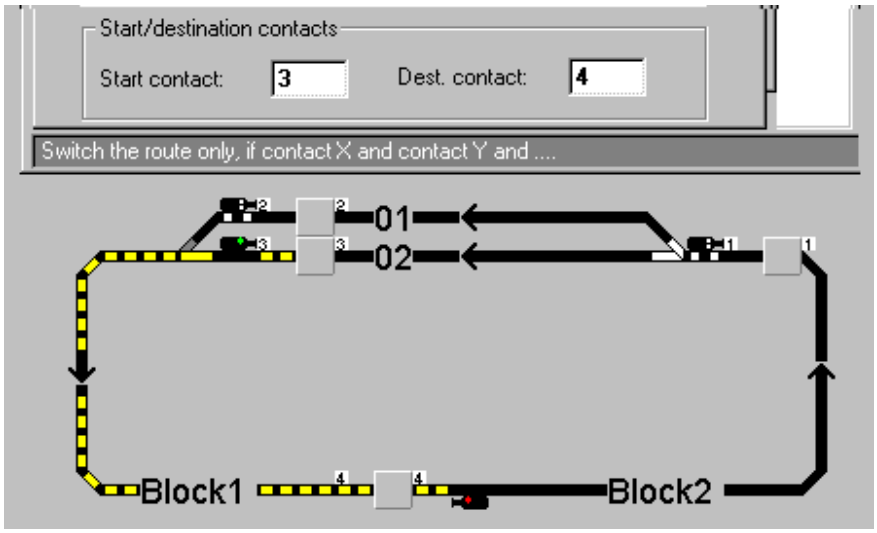
- You have placed train number symbols in the track diagram ;



- You recorded a feedback contact number in **each of these fields**;

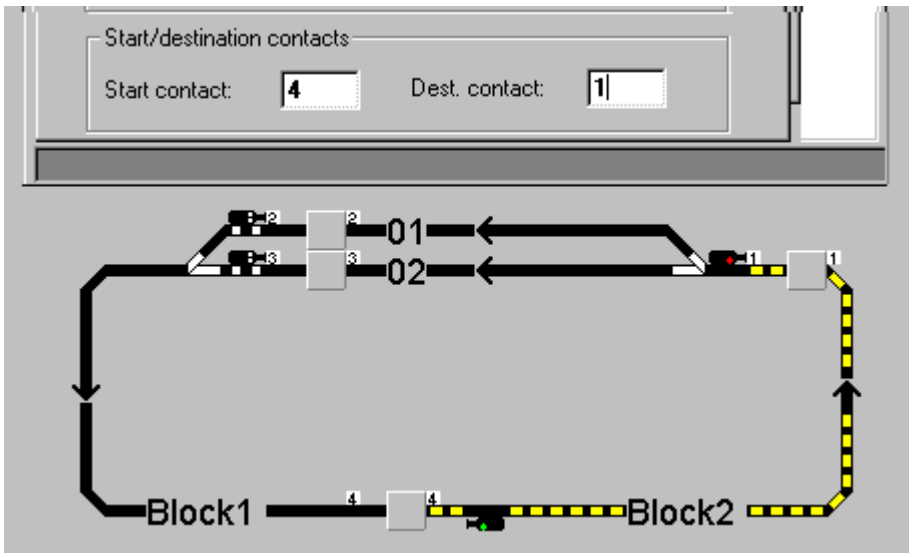


- You have recorded a feedback contact number as the start contact and another feedback contact number as the destination contact for each route in the routes editor.



Start contact : 03 destination contact : 04

The destination contact 04 is also the starting contact for the follow-on route:



Routes a therefore **logically linked with each other.** An error can only occur if the destination contact is not the starting contact of the follow-on route.

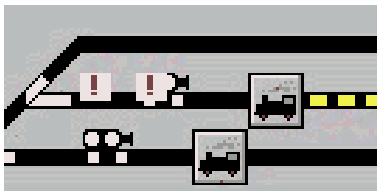
The train number display only works when trains/locomotives **switch routes** or switching routes with start/destination contacts (Start/destination function), in timetable- or automatic mode with demand contacts.

13.7 „Why are routes not switched and displayed properly ?“

You could have made additional changes in the track diagram !

All routes which operate via changed symbols must be **corrected**, if you have made additional changes to the track diagram, using the ‘*Track diagram editor*’.

An automatic warning is issued in Win-Digipet when displaying a route. A **red exclamation mark** indicates a mismatch between the track and route symbols.



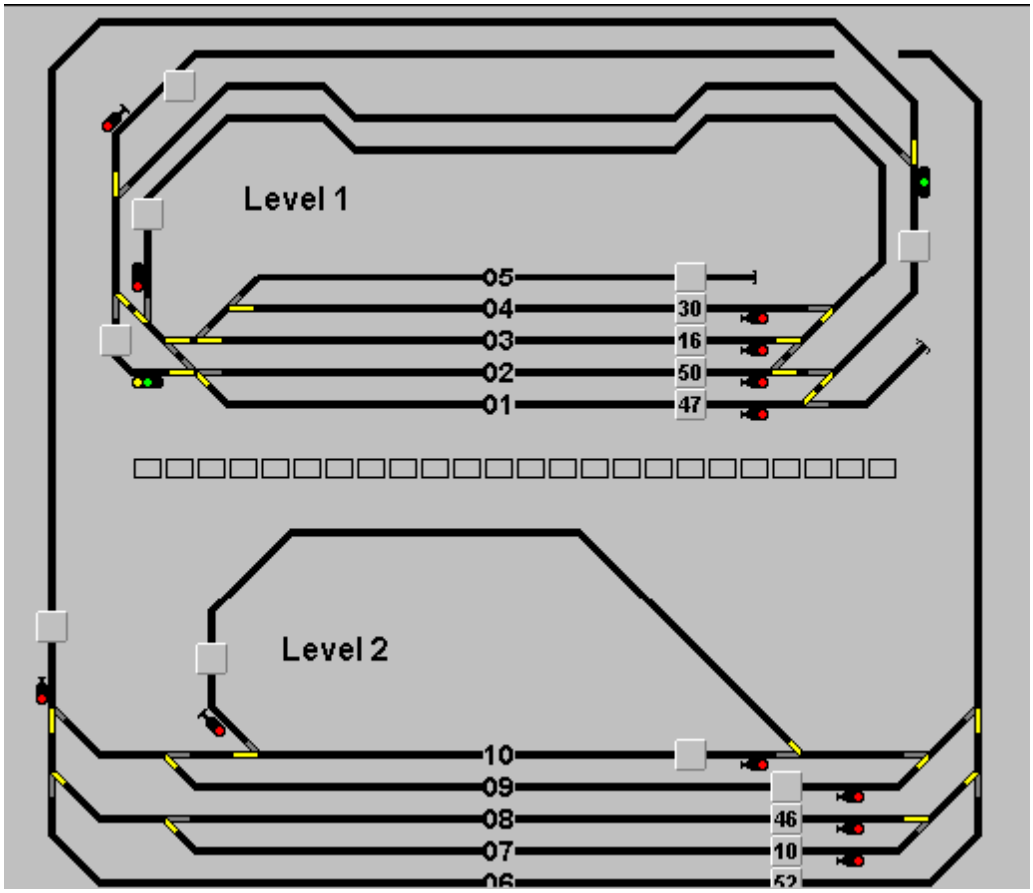
In this case change to the *Routes editor* and select the appropriate routes. Click on **Record**, sweep over the areas in the route to be corrected, and save the changes.

Click in the menu bar of the routes editor on 'Options' and 'Check route recording' or on the switch in the symbol bar (see **8.12**), to automatically **check all recorded** routes.

Please also observe, whether or not possible **follow-on switching** of signal and conditions has to be re-recorded !

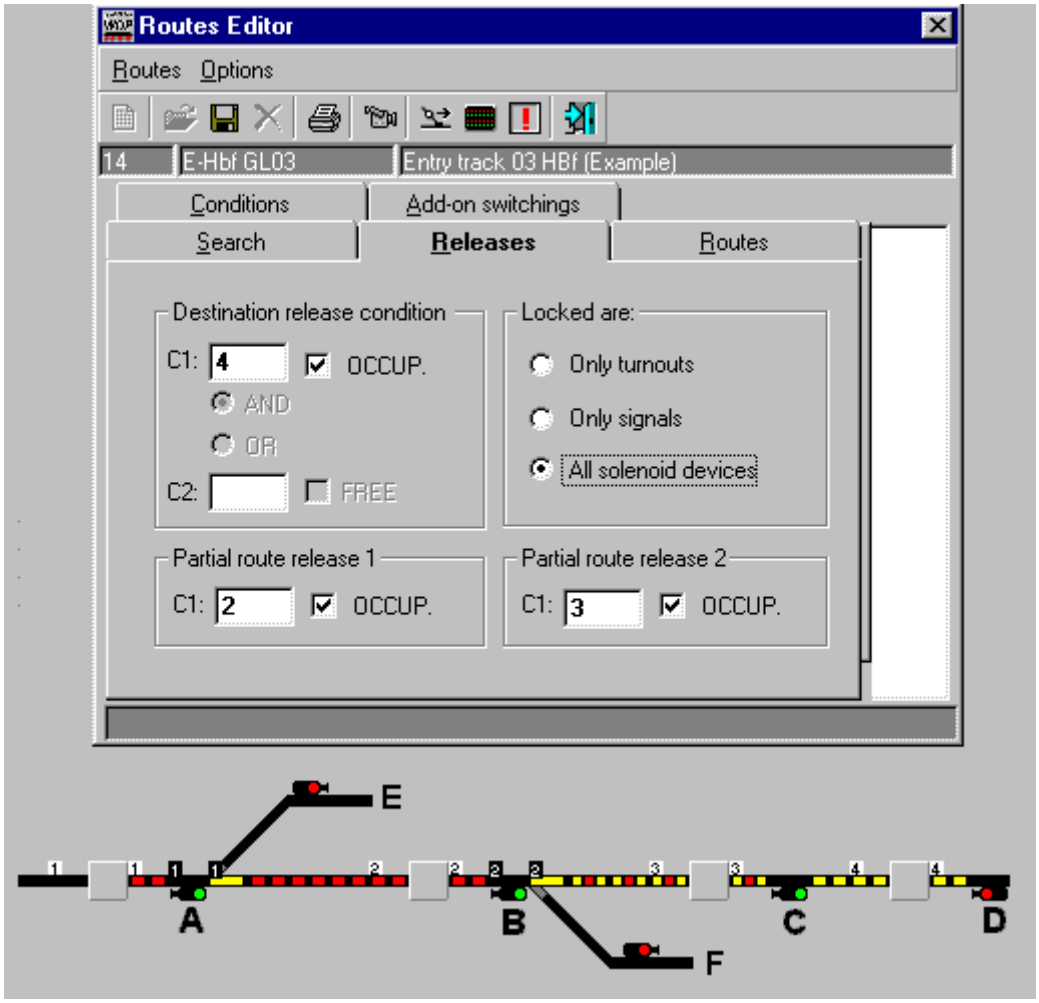
13.8 „How are levels in the layout displayed (symbolically) ? "

This small example demonstrates how this problem is solved and overcome. We have no track-planning program with different levels available. All train movements and routes must be clearly visible.



13.9 „How are partial routes released in long routes ?“

This example shows a way to make the model railroad operation even more interesting. Define one or two partial routes within a long route and release them before the train has reached the destination of that route.



A train should travel along a long route **A** (start) to **D** (destination). After the execution of the route, all solenoid devices contained within that route are locked, which you had selected in **„Locked are:“**.

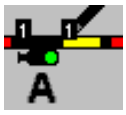
Without partial route release, trains, which possibly wait at **E** and **F** in front of a signal, have to wait until the train from **A** to **D** has reached its destination (destination release condition: contact **4 OCCUPIED**). Only then are the locked solenoid devices released.

A more varied operation is achieved with partial route release.

Define a partial route 1 from **A** to **B** and a partial route 2 from **B** to **C** in a long route in the routes editor under ‘Record route’ (see **8.3**).

For the partial route 1 (**A** to **B**) set the conditions in the partial route release 1: release if contact **2 OCCUPIED**;

For the partial route 2 (**B** to **C**) set the conditions in the partial route release 2: release if contact **3 OCCUPIED** (see above).



If the train travelling from **A** to **D** reaches contact **2**, the signal and the turnout in **A** are released.

A train, waiting at **E**, can already start, even though the train travelling from A to **D** has not yet reached its destination.

The same applies to partial route2. A train, travelling from **A** to **D**, reaching contact **3**, releases the turnout and signal in **B**, as in the above example.

A train, waiting at **F**, can start.

14 – QUICK START

You owe a digital model railroad layout and just purchased **WIN-DIGIPET 8.1**. You are eager to see whether or not something will „move“ on your layout under the control of the program.

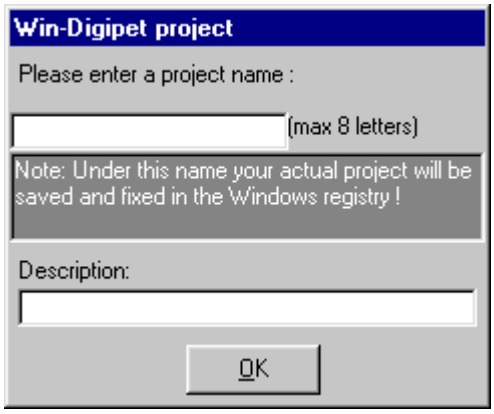
For people with little time on their hands, a **quick start** – step by step- is described here. However, it is necessary to study the complete manual- **from start to finish**- to understand **all** functions and possibilities of WIN-DIGIPET 8.1.

This quick start will illustrate how to create the basic system settings, switch two solenoid devices, control one locomotive, display feedback contacts and create and switch a route.

The original WIN-DIGIPET 8.1 CD-ROM must be in the CD-ROM drive at <u>every program</u> <u>start</u>.

14.1 First step- program start (see also 3.4)

Initially click on ‘Start’ in the task bar - ‘Programs’ - ‘WIN-DIGIPET 8.1’ on ‘WIN-DIGIPET 8.1’



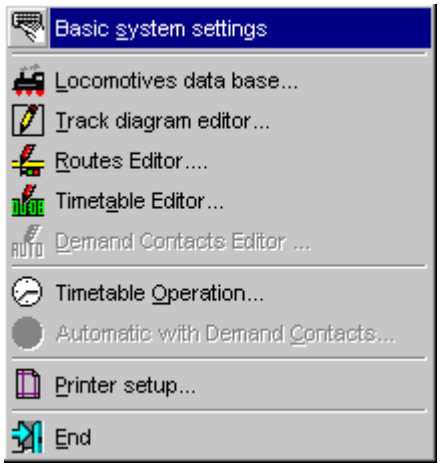
A selection window opens „Win-Digipet project“.

Enter the project name, not more than 8 characters long and below a description, not more than 50 maximum character long. You only need to do this **once**: when you. The project is saved under this name and recorded in the Windows registry.

Further projects can be created later.

You are now in the main program of WIN-DIGIPET 8.1**.**

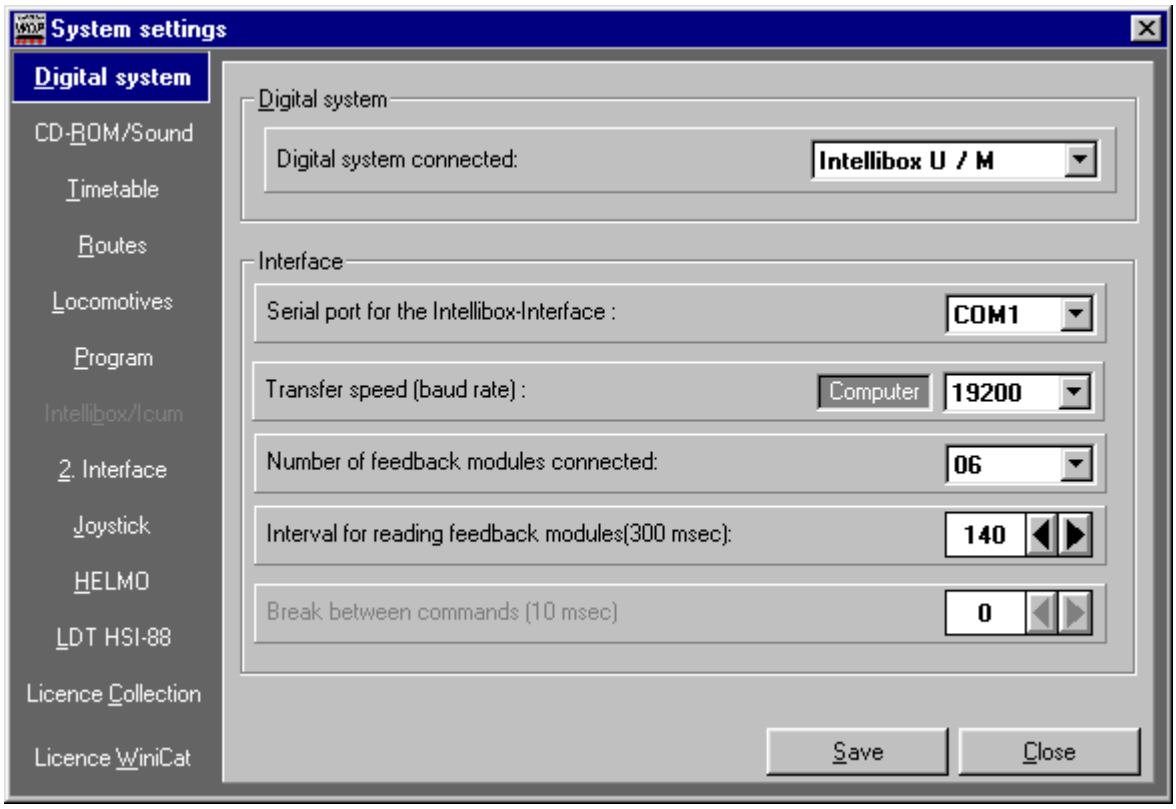
*14.2 Second step- system settings (chapter **4**)*



The number of feedback modules, the serial COM-interface and the connected digital system need to be recorded in the program for it to function correctly.

Click in the menu bar on ‘File’ and then on ‘System settings’ or on the switch in the symbol bar. A new window with the first index card ‘Digital system’ appears (see **4.1**).

Record the presently important settings on that index card:



- **Digital system connected:**

  supported are:

  - The Märklin System with central unit 6020/6021and Interface 6050/6051
  - The Uhlenbrock/modeltreno INTELLIBOX
  - The Fleischmann TWIN-CENTER (similar to the Uhlenbrock Intellibox, however without the support of the Motorola- and Selectrix format)
  - The ICUM (an ISA-Bus-card of company modeltreno, Bologna).
  - Lenz Digital Plus Version 2.0
  - Lenz Digital Plus Version 3.0

- **Interface connection**:
  Eight serial com-port connections (COM 1 to COM 8) are catered for. Normally COM 2 is selected for the Interface; COM 1 is then for the mouse. Select your own com-port from the list. An error message will be displayed, if you select a non-existent com-port when you attempt to save the setting.

  NONE is only for test purposes of the program without interface.

- **Number of connected feedback modules:**

  Select the **correct number** of feedback modules if you are using s88, which is usually the case. The max. number is 31. A wrong input could lead to errors in the function of the program.

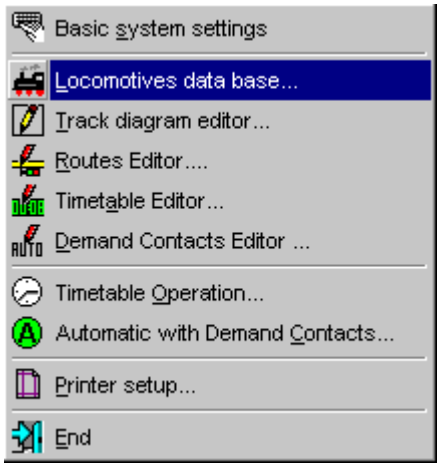
Should you **not use** feedback modules s88 or you want to run your model railroad without feedback contacts, you must **use none**.

The possibility to enter data into this panel will be blanked out for the Lenz-System. In this case the maximum amount of feedback modules for WIN-DIGIPET and the Lenz-System (123 – means 992 contacts) will be automatically assigned by the program (see chapter **2.4**).

Leave **all** other values on this and all other index cards and accept the **default values**.

Having completed all entries, click on ‘Save’ and to close the window on ‘Cancel’.

14.3 Third step- controlling a locomotive

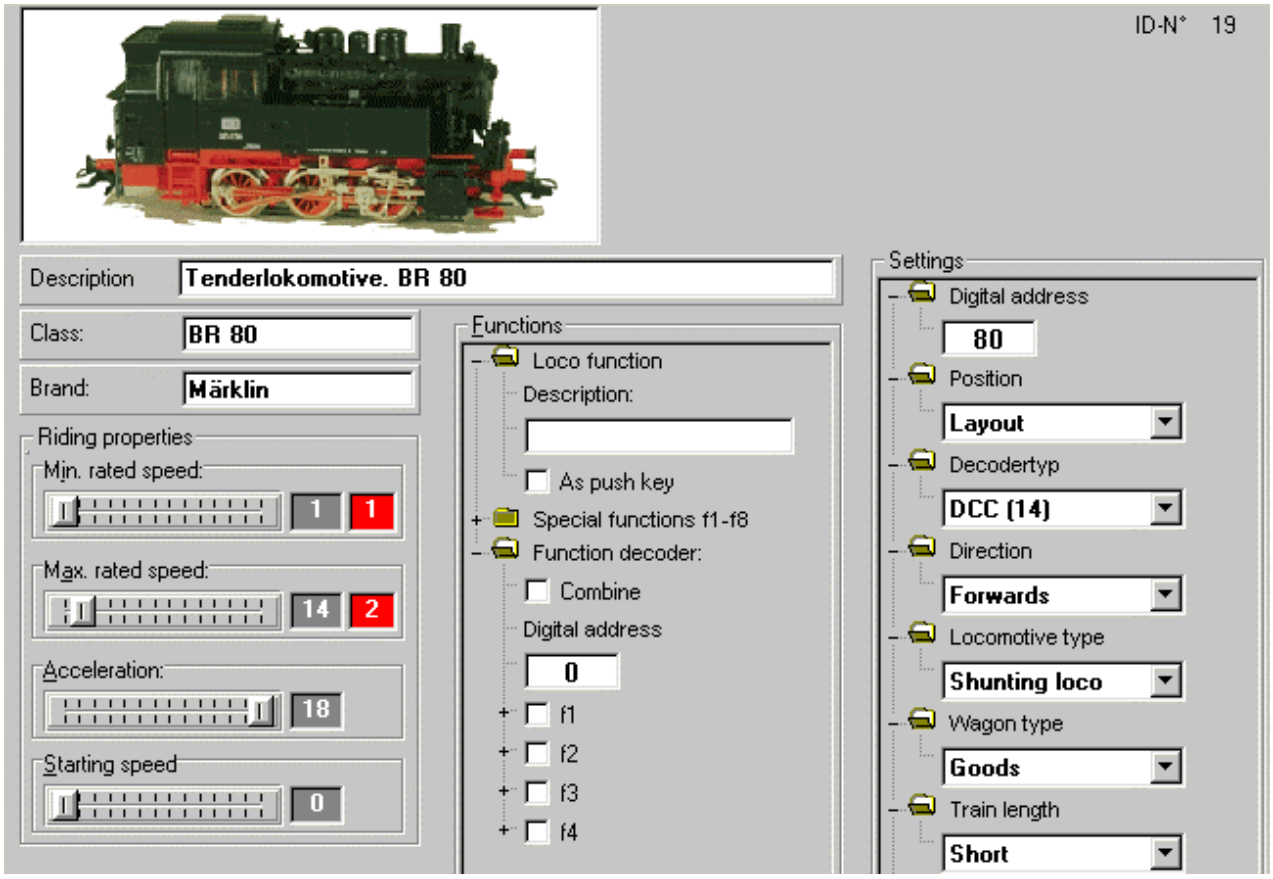


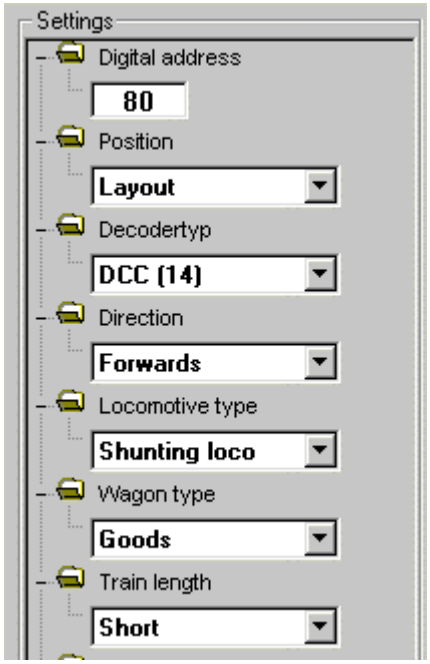
In the menu bar click on 'File' and on 'Locomotive-database' (chapter **5**) or on the switch in the symbol bar.

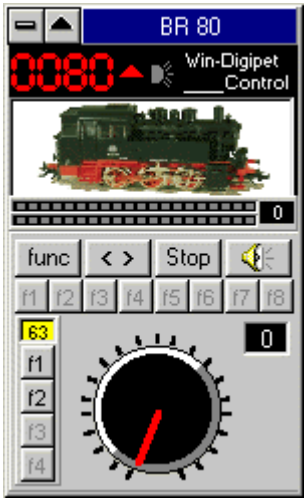
The data of your locomotive is stored in 'WIN-DIGIPET-Data' (first index card). Record the data of your locomotive in the input mask which appears.

Two locomotives are given as default by Win-Digipet 8.1: a BR 80 and a Crocodile. For the quick start select the BR 80 for test purposes of one of your digital locomotives.

Read more about the scanning of own pictures and recording of your own locomotives in the manual under **5.2**.







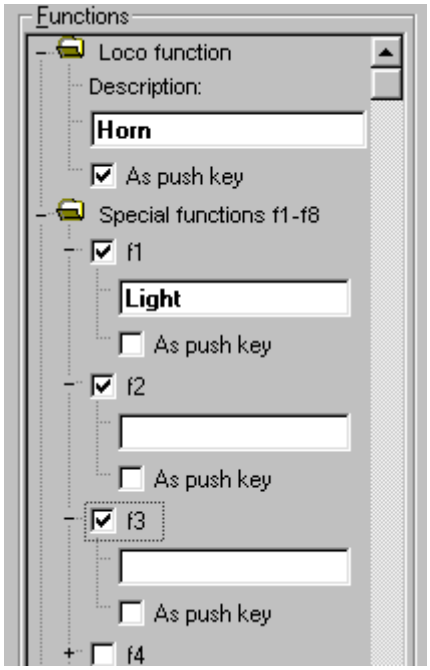
Change the default address 80 to the digital address of the locomotive you want to test in the input window 'Digital-address'.

Determine the correct setting for the corresponding type of decoder for your locomotive and adjust the min. – and max. rated speed.

The locomotive should move, once you have clicked on the rotary button in the top right hand of the loco control.

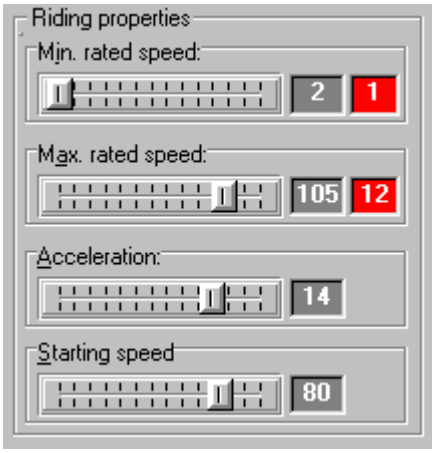
The top light bar indicates the speed the loco should be at and the bottom one displays the actual speed.

Now test all other functions with a mouse click on the loco control. Click on **Function**, **Reverse** and **Stop**.



If your digital locomotive has special functions, check a switch (f1 – f8) in the 'Special functions' Click on the relevant switch in the loco control.

Please note, that the special functions in the new Motorola format (decoder 60901and 60902) require a dip switch setting of: **OFF - ON - OFF - OFF** on the central unit **6021**.



Experiment with the locomotive settings and running properties (see **5.5**):

All speed-adjust-ranges are divided in **128** steps. However the amount of speed-steps are depending on the type of decoder, which you have selected (see **5.5**, numbers in brackets).

Under “Running properties” register the amount of steps for “min.rated speed” and “max. rated speed”; in the red panel on the right hand side, you will find the ordinal number to the related speed-step.

Minimum rated speed determines at which speed the locomotive just moves and does not stop, e.g. „2“ for easy moving locomotives, „4“ for “stiffer” locomotives.

Maximum rated speed determines up to which speed the locomotive may be accelerated without derailing in curves, e.g. step „11“ = highest speed.

Acceleration: The acceleration factor determines whether the locomotive is accelerated fast or slow. Range of setting: 1 = slow up to 18 = fast.
Note: These settings are independent to the decoder settings of your locomotive.

It is recommended to exercise riding tests with your locomotives at your model railroad to find out practice oriented values for min.- / max. rated speed and acceleration.

The locomotive characteristics can be directly checked with the loco control after each change in the input fields.

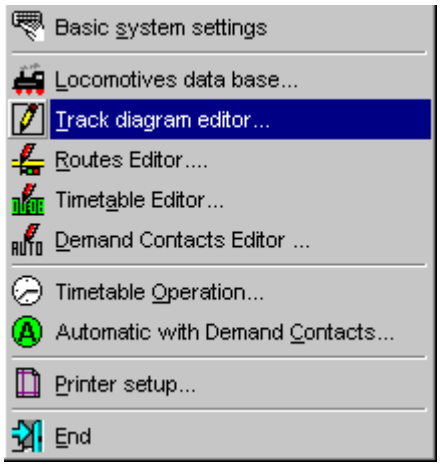
All functions of the „big“ and „small“ locomotive control are described in **5.10.1**.

To close the locomotive database click on ‘File’ - ‘Cancel’ or on the ‘Close’ symbol in the top right hand or double click on the WIN-DIGIPET symbol in the top left or on the switch .

The modified test locomotive is directly available in the main program.

The locomotive selection bar in the loco control opens when clicking with the left mouse key on this locomotive.

14.4 Fourth step- create track diagram, record solenoid devices and test, record feedback numbers

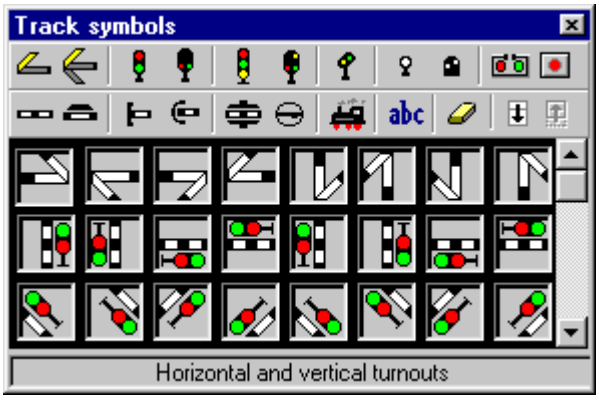


At first you will find an „empty“ track diagram. After you have recorded your locomotives and the system settings, create a track diagram. Click in the main menu on ‘File’ and ‘Track diagram editor’ or on the switch in the symbol bar.

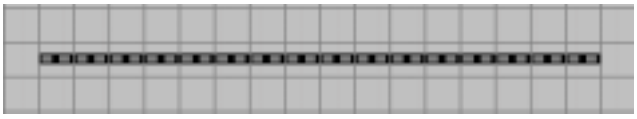
The track diagram editor (chapter **6**) and its track symbols window appear.

A small block system (signal to signal) should demonstrate the handling in the quick start.

14.4.1 Create block system (see 6.3.1):



Click on the type field ‘straight track’ in the symbol bar of the symbols window. Click on the individual symbol. The mouse pointer changes from the pointer to an arrow with the selected symbol.



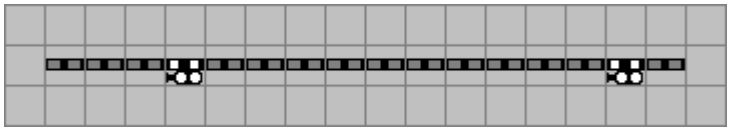
Place the symbol where needed in the track diagram and press the left mouse key a second time.

Drag the mouse pointer-with the left mouse key pressed- over the whole length of the block, if a symbol appears more than once, e.g. here „straight track“.

Then press the right mouse key: the present symbol is deactivated, the mouse pointer changes to an arrow and you are able to select the next symbol and place it.

The symbol is attached to the mouse pointer if you double click on an already placed symbol- ready to be placed- without selecting it from the track symbols window.

Now place the two block signals as described above:



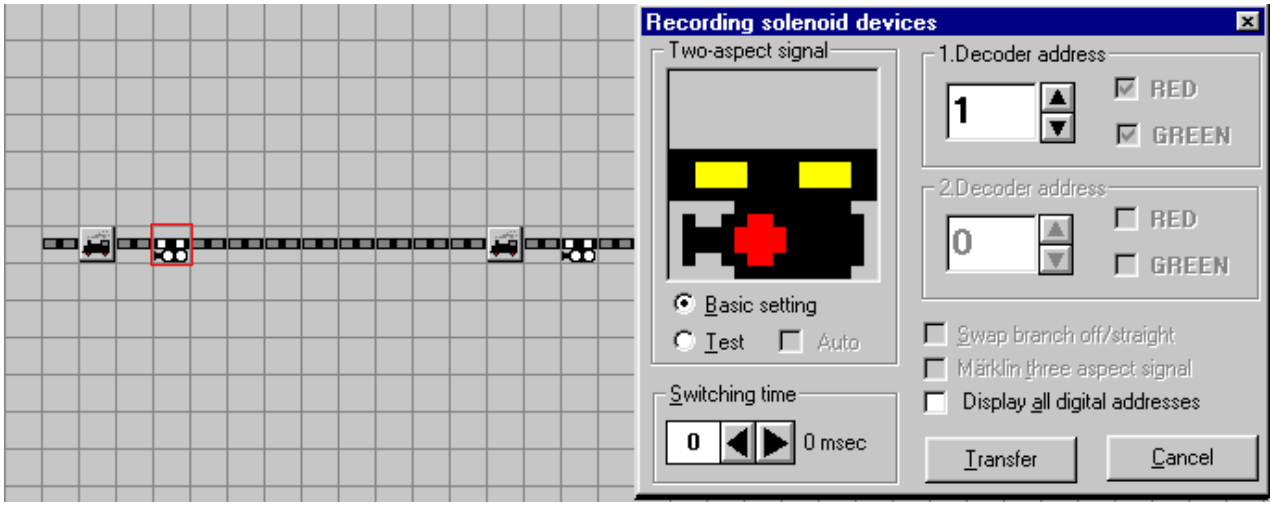
They are white, as they have no digital address assigned yet.

Also the train number symbols for the train number display have to be placed, if possible always one field in front of a signal.

14.4.2 Allocation of digital addresses to solenoid devices (chapter 7)

Click on the menu 'Record' and on 'Solenoid devices' or on the switch in the symbol bar. The track symbol window disappears and the mouse pointer changes to an arrow with micro switches.

Point to the **left**-hand signal: It will be framed in red. Click on it: the window „Recording solenoid devices" appears.



The signal is displayed as a big symbol in the top left hand. It also bears its type, e.g. „Two aspect signal". Record its address.

Here, address1 is recorded, i.e. the signal is connected to the first solenoid device decoder, input 1 (1 of 4).

The status „RED" and „GREEN" for most solenoid devices is already checked/unchecked by the program.

The **„switching time**" can be adjusted for each individual solenoid device. This might be useful for decouplers and older points. Normally it should be set to 0 msec for speed reasons.

The **Reset position** of the solenoid device is determined by a click on the big symbol.

To check your inputs, test the solenoid device: select '**Test**' and click repeatedly on the big symbol. The device should switch without fault.

The solenoid device will be continuously switched every second, if you have activated the switch '**Auto'** next to '**Test**'. This function enables you to check the

solenoid devices on the layout for their correct switching, even if they are distant from the computer.

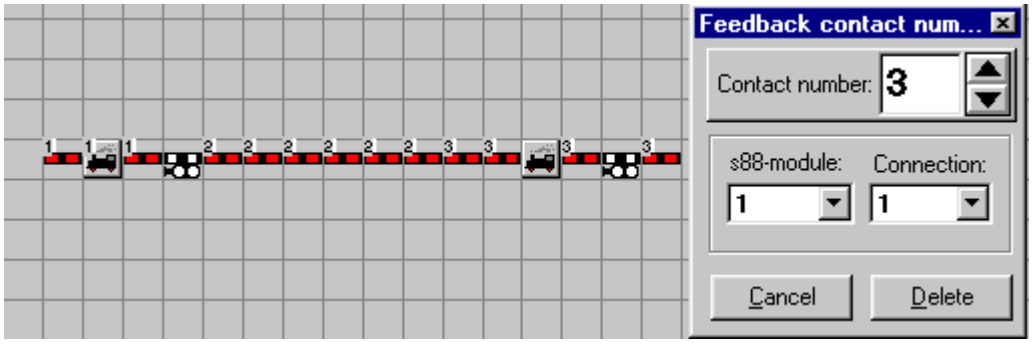
All solenoid addresses are displayed in red in the track diagram if you have checked ‘Display all addresses’. It can be reversed by unchecking ‘Display all addresses’.

Finally, use the command ‘Transfer’ to place the solenoid devices into the track diagram.

Proceed in the same as above described for the left signal.

14.4.3 Recording feedback numbers (see 7.4)

Click on the menu ‘Record’ and on ‘Feedback contacts’ or on the switch in the symbol bar. The window „Feedback contacts“ opens.



In the field „Contact number“ record the number of the contact, using mouse clicks (or the keyboard) on the arrows. You can also record the number of the relevant feedback contact in the field „s88 module“. Under „Connection“ allocate the input number (1 to 16) at this feedback module: the correct number of the contact will be displayed in the field „Contact number”.

Point the mouse pointer to the track symbol to which you want to assign the contact number and press the left mouse key. The correct contact number is displayed at this place. You can place the number as often as required in the track diagram by pressing the left mouse key several times or by dragging it with the mouse pointer.

Only 3 contact numbers are placed in our small example. At the left signal contact 1, at the right signal contact 2 and the remainder of the block contact 3.

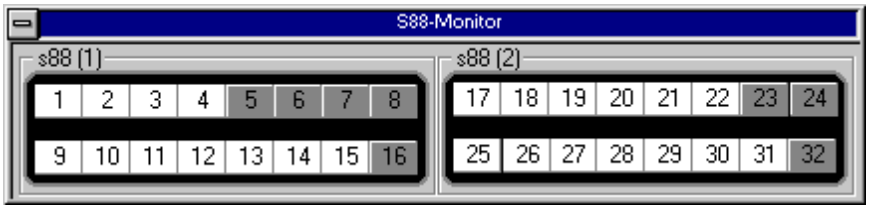
A block always consists of a minimum of three contacts: start contact (C 1), destination contact (C 2) and a deceleration contact (C 3).

Please always **observe** that the train number fields contain the contact numbers. This is very important, as it is needed for the correct train number display.

Click on ‘Delete’ to erase a contact number.

The correct indicator display for track occupation in the track symbols can only be checked, once you have left the track diagram editor and you are in the main program.

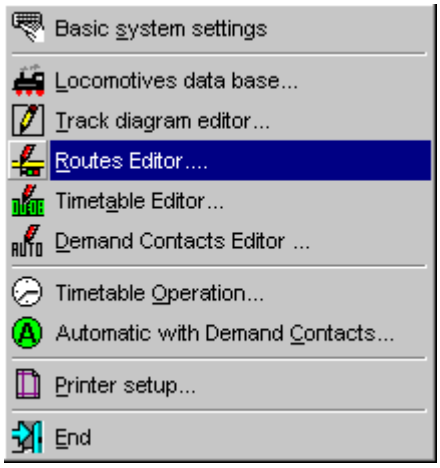
As a replacement to check the correct functioning of a feedback contact, use s88 monitor (see **7.5**). Click on the switch in the symbol bar.



Finally click in the menu bar on 'File' and 'Save' or on the switch in the symbol bar and leave the track diagram editor.

You can now already control locomotives in the main program, change both signals with a mouse click and observe track occupation.

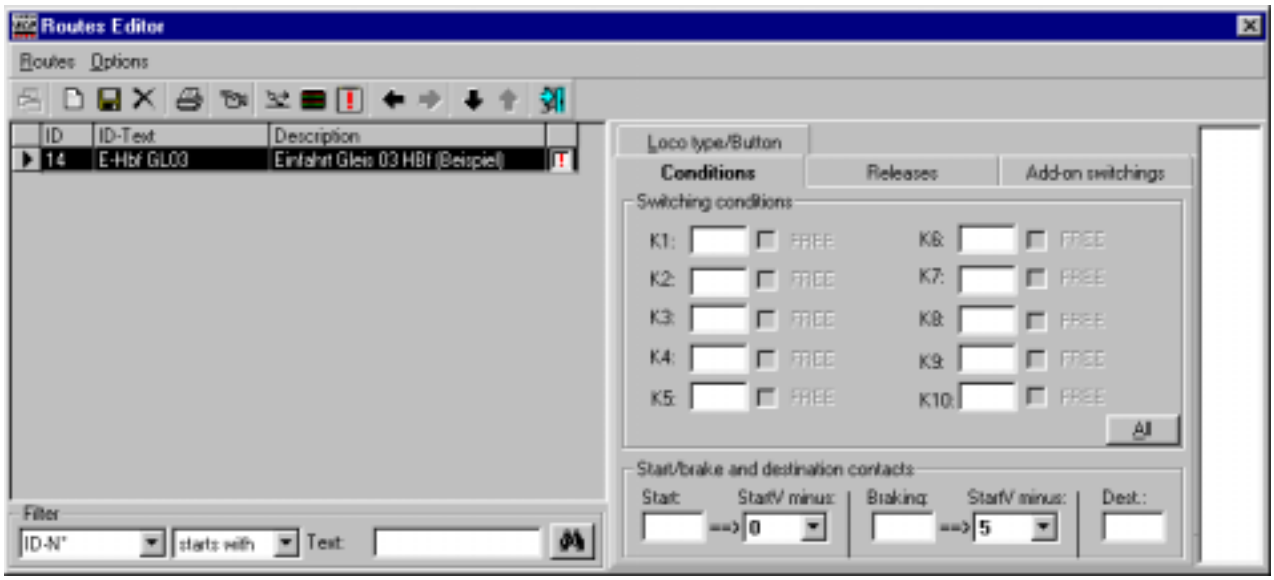
14.5 Fifth step- recording and switching routes



Next define a route for the drawn block.

You can define an unlimited number of routes.

Click in the menu bar in the main program on ‘File’ and on ‘Routes editor’ or on the switch in the symbol bar. A window “Routes editor“ (chapter **8**) opens, containing five index cards. The index card ‘Routes’ contains an example entry.



14.5.1 Recording the route (see 8.3)

We want to use the default value to record our route of the block. The exclamation mark- to the right of the description- indicates that the route has not been recorded or it is not correct.

How we define the new route is described in the manual in **8.2**.

Click in the menu ‘Routes’ on ‘Record’ or on the switch in the symbol bar.

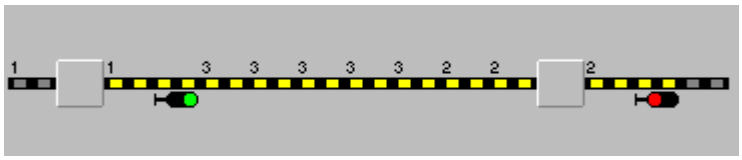
A small window „Record“, containing 6 symbols, opens. Their meaning is easily recognised as the symbols are underlaid in yellow „Quick info’s “. The footer contains the ID text of the route to be defined.

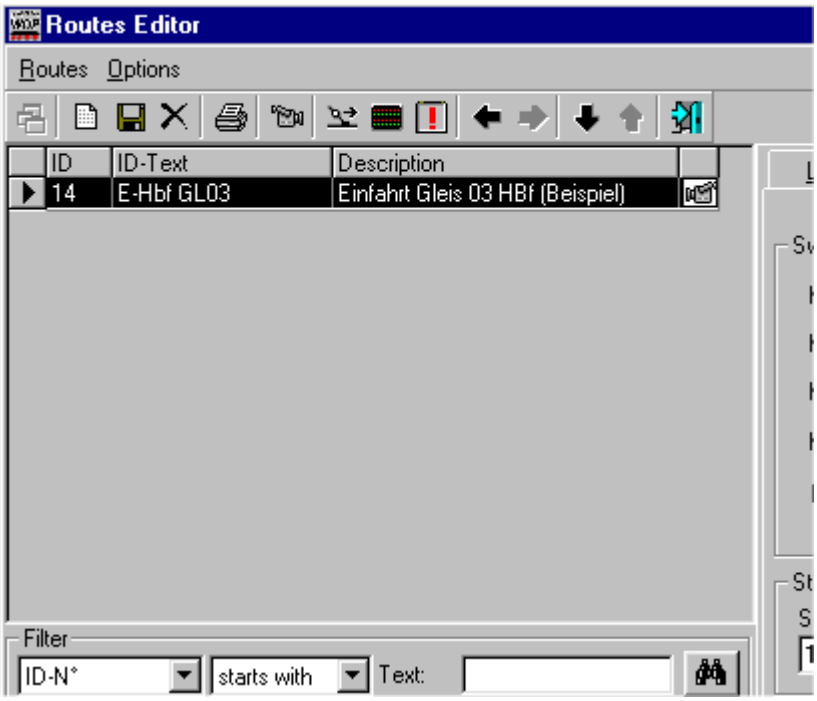
Press the left mouse key -a pencil is attached to the mouse pointer- and create the route. Move with the mouse pointer to all track symbols, one by one, which belong to that route, and press the left mouse key at each symbol. . You can also drag the mouse pointer with the left mouse key pressed. The itinerary will light up in yellow.

Click as often as necessary on the solenoid device symbol until the desired position has been reached. The left hand signal to GREEN, the right hand signal to RED.

With the right mouse key you can delete an itinerary or part of it: Click or drag.

If you are satisfied with the itinerary, click on ‘Save’ . The route is saved and the „Routes editor“ reappears.



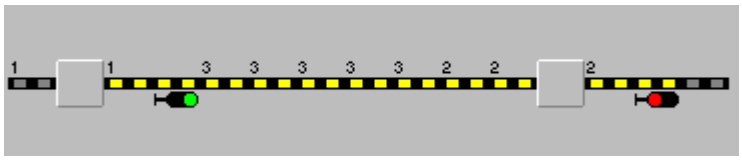


The exclamation mark is replaced by a small camera, indicating that the route has been recorded correctly. The list field on the right displays all contact numbers of the recorded route automatically.

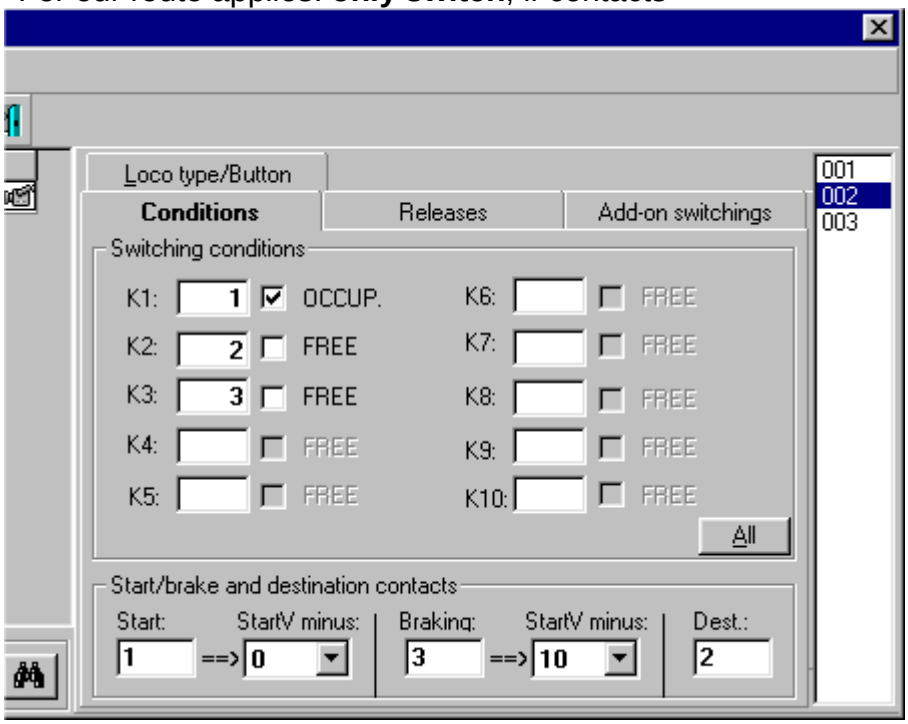
TIP: In the above example you can see that the route recording started one symbol before the left-hand signal. The contact number 1 in the right list field would not have been displayed, had you started directly on the left signal.

14.5.2 Recording switching conditions (see 8.6)

Next click on ‘Switching conditions’. On the index card note the conditions under which the route can be switched.



For our route applies: **only switch**, if contacts



1 = Occupied,

2 = FREE and

3 = FREE

start contact: **1**
destination contact: **2**

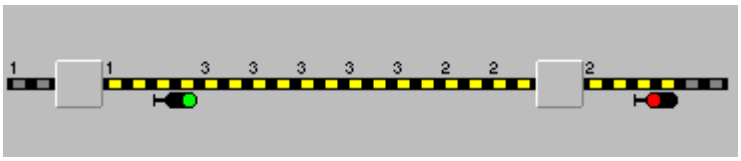
braking contact : **3**

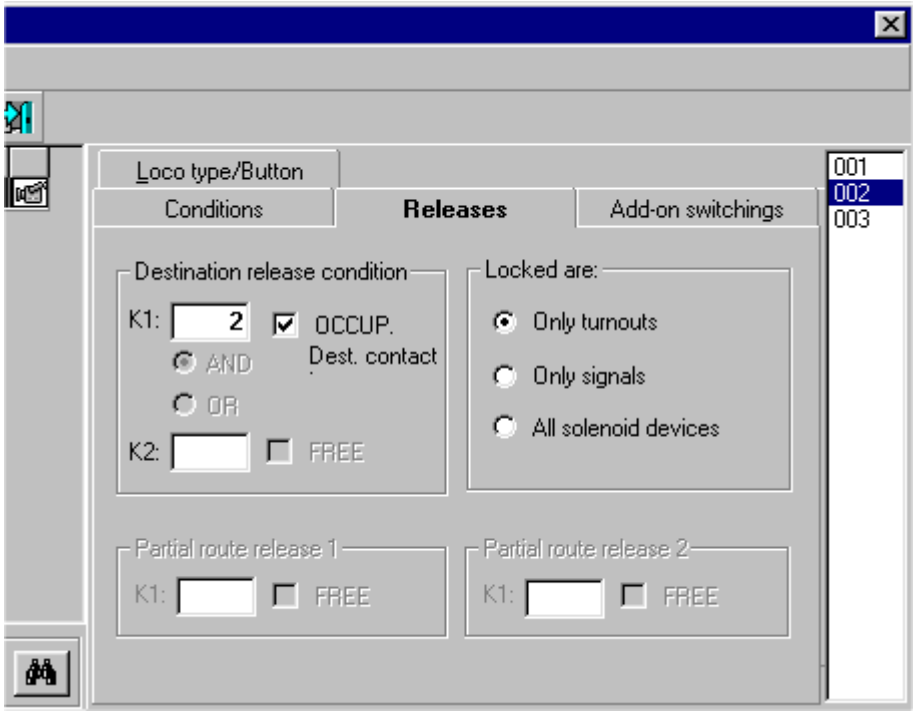
14.5.3 Recording release conditions (see 8.7)

Next click on ‘Release’. Define the exceptions for locking and the conditions for the release on this index card.

All solenoid devices in this route will be **locked**, as soon as the conditions are fulfilled and the route was switched. Another route, containing one or more solenoid devices of this route, can only be switched after the release conditions of the route have been met.

Routes are only automatically deleted from the screen if the release conditions were recorded.





The route in our example is released and deleted from the screen if contact **2** has been reached, e.g. contact

2 = Occupied

14.5.4 Recording add-on signal switching (see 8.8)

In **WIN-DIGIPET 8.1** an established route is capable to carry out add-on switching at signals. In our example: „Switch the left hands block signal to RED after the train has departed contact **1**“.

An add- on switching should not be recorded in the quick start. Detailed information about this function are presented in **8.8** of this manual.

The correct switching of the two signals can be checked by letting a train/locomotive travel over the route.

To check the above, click on ‘Options’ - ‘Routes test’ or on the switch in the symbol bar.

Position a locomotive on contact **1** (according to the condition = occupied) and click in the test window on ‘Start’. The test run start and the route is switched.

Put a wagon on contact 3 and repeat the test run. The message: „Route not switched! contact 3 occupied“ must appear.

Leave the routes editor by clicking in the menu ‘Routes’ on ‘Close’ or the switch in the symbol bar. You are returned to the main program WIN-DIGIPET 8.1.

In the main program you can also execute the recorded route via Start**/destination function** (see **12.5**).

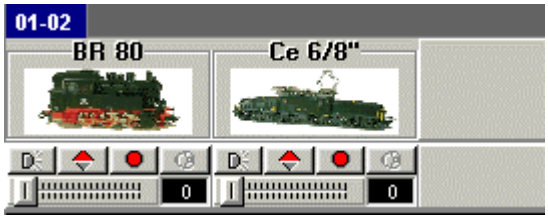
Click, with the right mouse key pressed, alternately on the left signal and then on the right signal.

The window „Start/destination selection“ appears. All routes, the system found, are displayed in a list, containing their ID text and internal ID numbers.

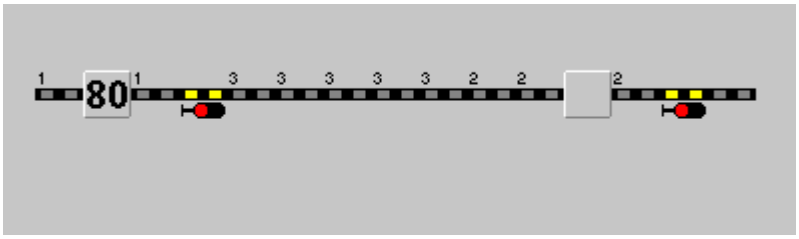
In our example only one- the block.

Click on ‘Switch’. The route is switched; stops blinking and a train/locomotive can travel over it.

Now test the train number display (see **12.13**):



With the right mouse key pressed, drag a locomotive number from the locomotive selection bar, on to the train number field next to the left-hand signal at contact 1.



Switch the route again, using the start/destination function. The train number is transferred directly to the train number field next to the right hand signal (start contact 1 – destination contact 2), as soon as the route is switched, if you selected a direct jump to start/destination contact in the system settings.