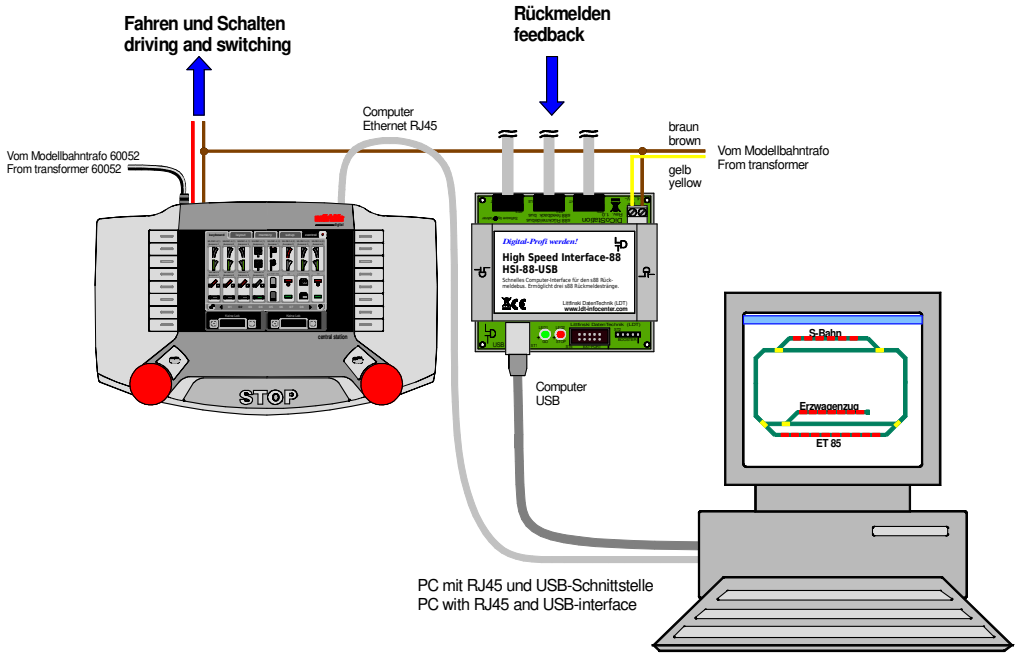
Be a Digital-Professional!

Implementing the Feedback-Reports via the HSI-88 / HSI-88-USB into the Model Railroad-Software TrainController™

The "*HSI-88"* or "*HSI-88-USB"* is a feedback interface from the s88-feedback bus to the serial COM- or USB-interface port of a computer.
The interface contains three s88-bus ports. This offers the advantage of a much faster s88-bus processing and the possibility to implement three bus lines on the layout.
The feedback events will be transmitted at fast speed via the serial COM- or USB-interface to the command station and then directly to the PC without any delay.

The driving and switching can be controlled by any command station. The following picture for example shows the separation of "driving and switching" and "feedback reporting" using the Central Station 2 and "*HSI-88-USB"*.



■ "driving and switching" and "feedback report" with Central Station 2 (page_653)

The central issue of this instruction is the implementation of feedback reports via "*HSI-88"* or "*HSI-88-USB"* into the model railroad software TrainController™.

CONNECTION TO THE PC

As first step please connect your "*HSI-88"* or "*HSI-88-USB"* to the PC by using the supplied interface cable.

HSI-88 FOR THE SERIAL COM-INTERFACE

Connect the "*HSI-88*" to an available serial COM-port of the PC. You can find details at the manual of the "*HSI-88*".

HSI-88-USB FOR THE USB-INTERFACE

Connect the "*HSI-88-USB*" to an available USB-port of the PC. Install the USB-driver as described at the manual of the "*HSI-88-USB*".

Turn on your digital system and start TrainController™.

■ General tip

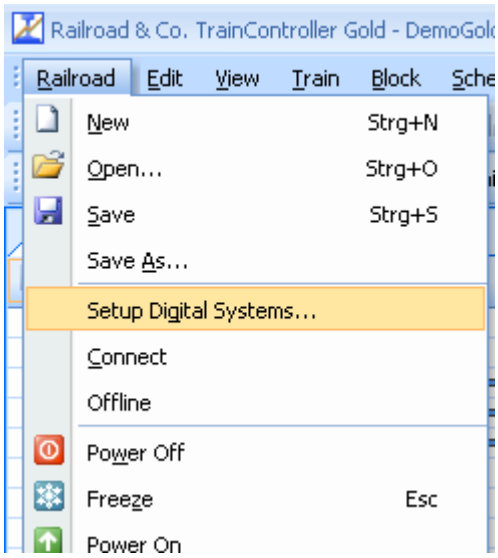
All mentioned details referring to the TrainController™ are related to the version 7.0 ***Gold***. For the differences to the program versions ***Silver*** and ***Bronze*** please get detailed information under https://www.freiwald.com.

Within this instruction the implementation of the "*HSI-88*" / "*HSI-88-USB*" will be described. Further information regarding program instruction can be found at the manual of the TrainController™ and the relevant help function.

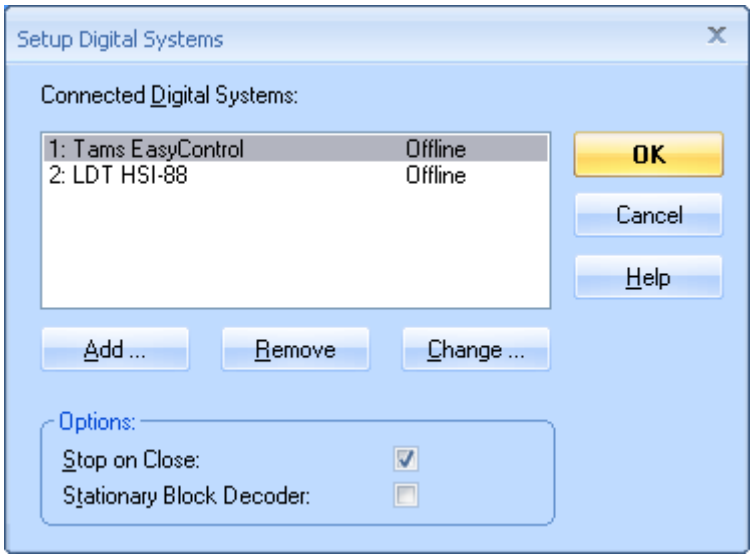
Within the following I will use "*HSI-88*" as common term for both models. If there are differences within the software I refer to each model.

INSTALL *HSI-88* AT THE TRAINCONTROLLER™

At the TrainController™ the "*HSI-88"* will be installed as additional digital system: Select at the menu the command *Railroad* and then the command *Setup Digital Systems…*

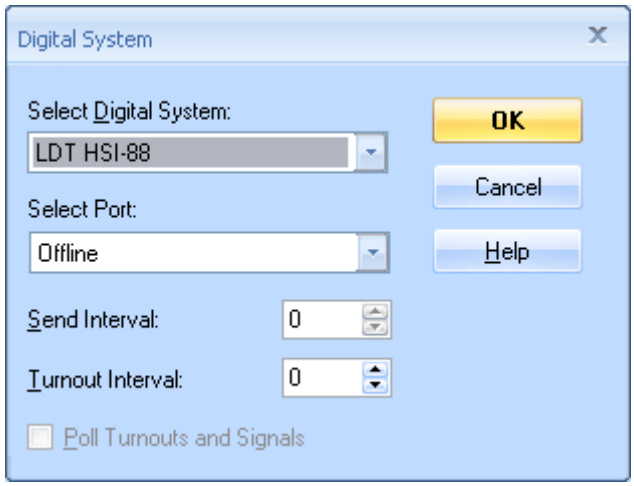


The following dialogue window will be opened now:



Click now on the button *Add...*

Now you get onto the following window:



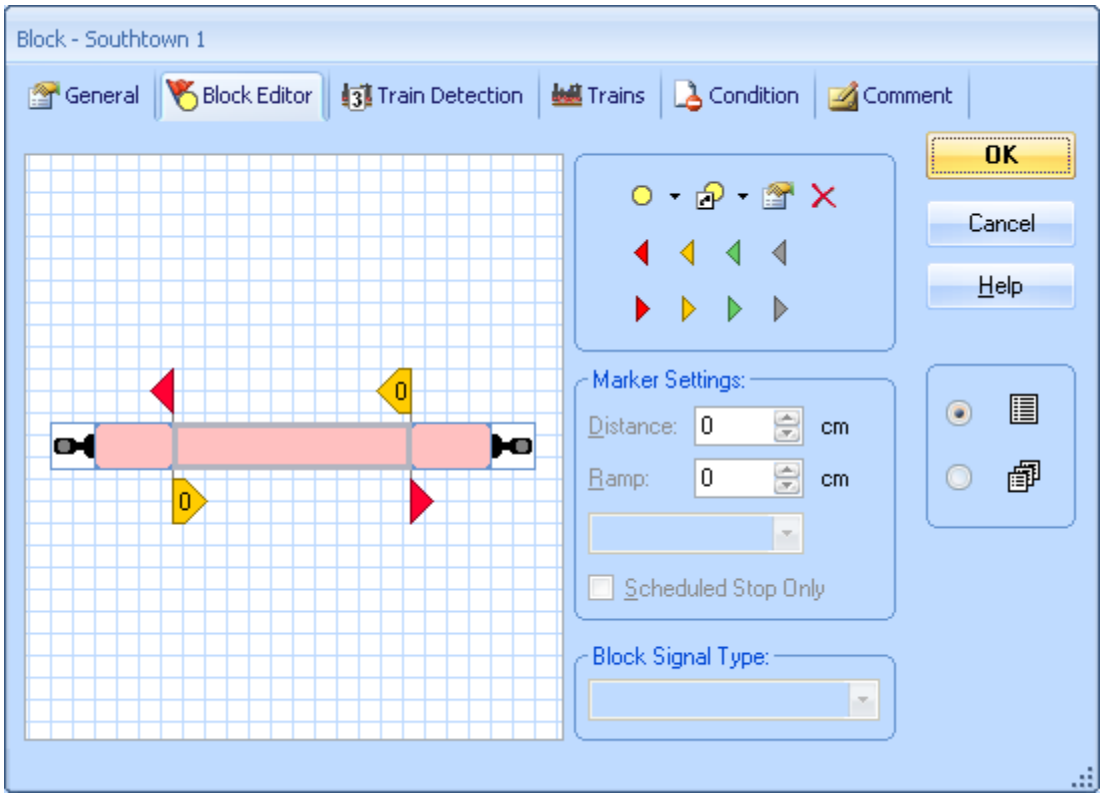
Now select at the field *Digital System* the entry "LDT *HSI-88"* from the list of entries. The entries at the field *Port* are different between the "*HSI-88"* and the "*HSI-88-USB"*:
For the "*HSI-88" please* select the corresponding COM-port of your PC on which you connected the "*HSI-88".*
For the "*HSI-88-USB"* please simply select the entry "USB" from the shortlist. This entry is only visible if the USB-driver is correct installed.

If you use more than one "*HSI-88-USB*" the short-list shows separate entries for each installed "*HSI-88-USB"*:
USB
USB2
USB3
…
Please use for each connected *"HSI-88-USB"* an own separate USB entry from the list. Unfortunately is it not obvious for the PC and therefore for TrainController™ which entry at the list belong to which "*HSI-88-USB".* This will complicate the installation of the feedback contacts a little bit. Helpful will be a test: Connect one feedback section of your layout to a "*HSI-88"* (possibly the first port at the feedback module and the left line of the "*HSI-88"*) and create at the electronic control system of the TrainController™ a contact ( ). For the characteristic of this contact enter as digital system the first set-up of a "*HSI-88*". For the address and the input please enter the value "1". Now activate the contact (e.g. with a locomotive on this section). If the activation of the contact will be indicated at TrainController™ you have selected the correct "HSI-88". If the activation of the contact will not be indicated at TrainController™ you should select another "*HSI-88"* as digital system at the properties of the contact.
The detailed instruction for the set-up of a feedback contact at TrainController™ will follow within the next pages.

Please attend to the following: After installation and set-up of the "*HSI-88-USB"* those should be if possible not be removed at the PC. Especially should be the change of the USB connections avoided. Otherwise is the allocation between the "*HSI-88-USB"* and the USB-connection interrupted and has to be established again.

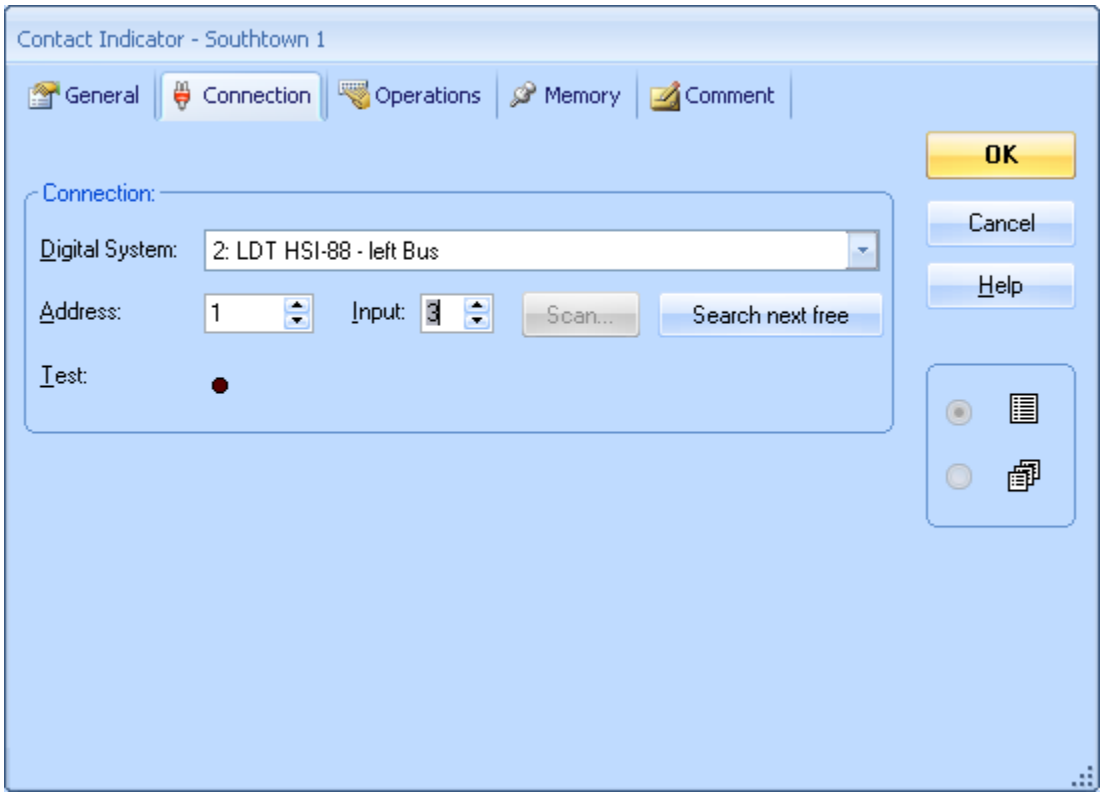
SET-UP OF FEEDBACK CONTACTS AT THE HSI-88 ON TRAINCONTROLLER™

Feedback contacts can be set-up as permanent- as well as moment-contacts. For the set-up at the TrainController™ is this difference not relevant and is therefore irrelevant for this compendium.
The set-up of feedback contacts will be done at TrainController™ directly in the properties of the blocks: At the *Block Editor*:



The three deposited pink squares represent three feedback contacts.
If there are no feedbacks installed at a block you can arrange this with a mouse click on the relative switch-pad with the contact report symbol ( ).
A double click with the mouse onto the required feedback contact or into the pink colored square will open the properties of the feedback contact.
One click onto the icon for object properties ( ) will open the same window.

The most important part is now the section *Connection*:



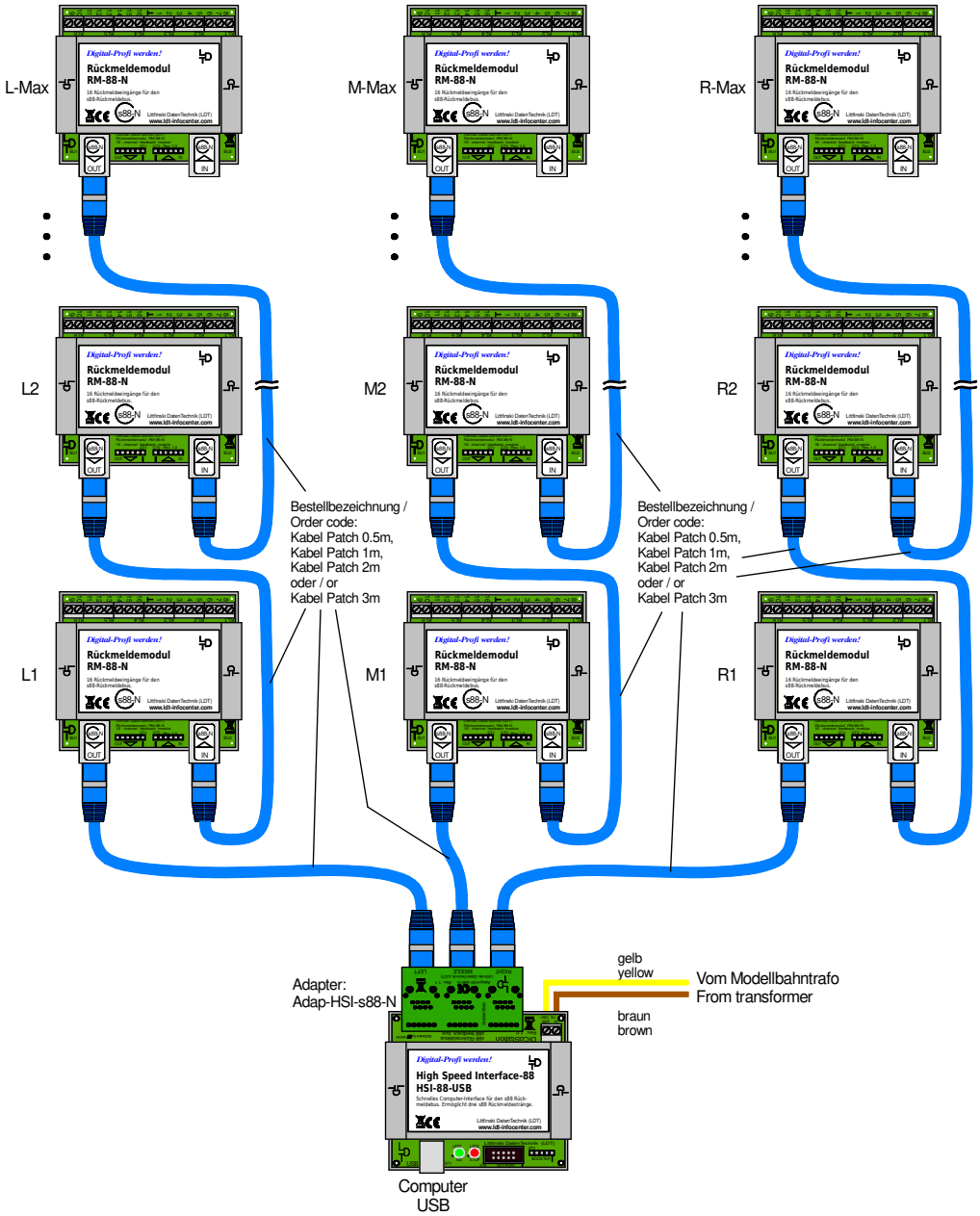
Entries
- to which **String** or **bus** is the contact connected.
- which **address** has the **module** to which the contact has been connected.
- to which **input of the module** has been the contact connected.

IDENTIFICATION OF THE CONNECTIONS OF A CONTACT ON THE HSI-88 AT TRAINCONTROLLER™

As you can see at the above input options that the identification of the connection consist of the three following important components:
String or **Bus:** The HSI offers three strings or busses for the connection of modules. Please start always with the first string at the input *Left (L)*. If you want to create a second string you should use the connection *Middle (M)*. If you need a third string you can use the input *Right (R).*
Even if you use only a few feedback modules on your layout you should divide the modules evenly onto the three strings. You will have the advantage that the feedback reports will be red considerable faster and therefore even faster transmitted to the PC. Further information about creating strings will be available within the manual for the "*HSI-88"*.
Address of the Modules: The "*HSI-88"* can control up to 31 feedback modules with 16 inputs (62 of Type RM-GB-8(-N) with 8 inputs). For each bus string is it possible to connect maximal 31 modules but in summary on all three strings not more than 31 16-fold or 62 8-fold modules.

The numbering of the modules inside TrainController™ occur separate for every bus and starts for each bus with the address 1 (this is different to the instruction at the manual of the "*HSI-88*").

Input: The s88-standard feedback modules such as Märklin s88, "*RM-DEC-88*" and "*RM-88-N*" have as well as the optocoupling-feedbacks "*RM-DEC-88-O*" and "*RM-88-N-O*" 16 inputs with specific numbering printed on the module. The number of the used input shall now be listed at the field *Input* at the TrainController™.



■ Numbering of Feedback Modules RM-88-N (page_1045)

But there are as well the s88-feedback modules "*RM-GB-8(-N)*" with integrated track occupancy reports with more than 8 inputs.

For the input of addresses it has to be to attend to the following: You should use the module always pairwise. The first module of such pair receives the next available address and the input 1 to 8. The second module of this pair will get the same address but the input of 9 to 16.

The quantity of the connected modules on each string of the "*HSI-88*" should be indicated at the "*HSI-88*" for the correct function of the "*HSI-88*" but it is not necessarily required to enter the relative numbers at TrainController™. TrainController™ calculates those data independently on the base of the entered data given into the program and will configure the „*HSI-88*" correspondingly.

SUBSEQUENTLY CONFIGURATION OF THE LAYOUT WITH THE HSI-88

If you extend the digital features of your layout with the "*HSI-88"* you have to attend within TrainController™ about the following: Until now all your feedback reports where connected to the command station and therefore entered with the characteristics of the contacts into the command station as connection. By using the "HSI-88" there will be an additional digital system which you will enter into TrainController™.
After this procedure there are the features of the contacts of the "*HSI-88"* with the relative three strings available. Now you have to select for every single contact including the relative string the digital system. The address and the input will not change (unless you have changed the sequence of the modules).

FURTHER INFORMATION

■ Internet: **www.ldt-infocenter.com** **and** **www.freiwald.com**

Additional information for the implementation of the High Speed Interfaces "*HSI-88"* or "*HSI-88-USB"* you can find at the operation manual of the unit. You can down-load those information as well from our Web-Site at the section "Downloads".
Colored wiring samples can be found at the section "sample connections" and can be down-loaded as PDF-files (e.g. page_653.pdf) and can be printed at A4 format.

Further information about the program TrainController™ can be found at the Web-Site of Freiwald Software. Further detailed information are available at the manual of the program and at the program help function.

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Subject to technical changes and errors.
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