Uhlenbrock Elektronik

Feedback module for 3-rail layouts 63 350

DIGITAL 2

The new dimension of digital feedback

Why use a feedback module?

Feedback modules provide information about "block occupancy": whether a piece of track (a block) is occupied by a train or whether it is free. In some cases, e.g. in case of a shadow station, this is valuable information since the blocks are not "visible".

However, the full value of feedback is appreciated as soon as automatic layout operation with or without PC support is desired: the feedback information is used to tell which routes can be activated (are free) and which ones are still "blocked".

Description

Each 63 350 feedback module for 3-rail features 16 inputs for connecting switches, contact-tracks, reed-contacts and other devices. Each input can be "activated" by connecting it to ground (brown wire). This can be done automatically, by a travelling train (through some sort of switch or even through non-isolated axles) or by hand.

The feedback module verifies the status of each input and sends the corresponding information reliably and fast to all devices connected to LocoNet

The feedback modules can be used with the Intellibox or Daisy System by Uhlenbrock, with the Fleischmann TwinCenter or with any Command Station featuring LocoNet. The feedback information can be displayed by the LCD display of the Intellibox and TwinCenter ("s88 Monitor" mode) and it can be forwarded to a PC through the interface of the Intellibox and TwinCenter.

The feedback information can also be used to automatically operate a layout with the aid of IB-Switch devices (Uhlenbrock Art.-No. 65 800).

The module is powered through LocoNet.

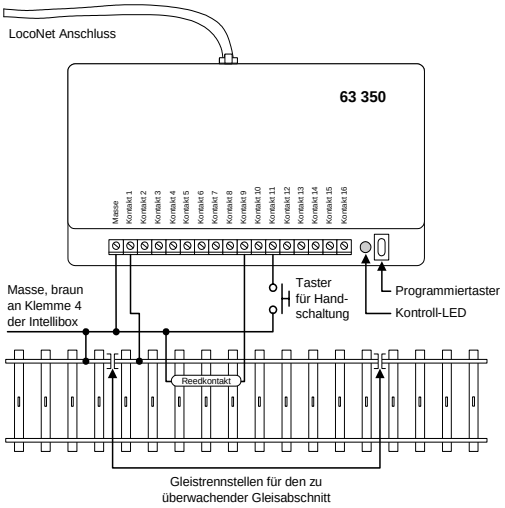
By default configuration, the sixteen inputs are reported as feedback addresses 1 through 16.

The configuration of these modules can take place during normal layout operation. The Intellibox (starting from software version 1.3) features a new submenu of the "Basic Settings" menu that allows comfortable module configuration.

Connection

Using the provided LocoNet cable, connect the module to a LocoNet connector - e.g. the LocoNet-T or LocoNet-B connector of the Intellibox or TwinCenter or the LocoNet connector of the Daisy System.

If you wish to monitor the occupancy status ("occupied" or "free") of a block of Märklin C or K track, cut both ends of one of the rails of that block and connect the double-gapped rail to one of the module inputs.



If there is a train in the block, its axles shall connect the double-gap isolated rail to the other rail (which is connected to the system Ground, i.e. to the brown wire), thus connecting that module input to ground - and activating it ("on").

If using Märklin M tracks, you can use "Schaltgleise" ("circuit" tracks) in order to have block occupancy similar to C and K tracks.

Other devices which can be connected are reed-contacts: these are small glass tubes holding a "magnetic-sensitive" switch: a switch which gets closed by small magnets placed on the bottom of locos and/or wagons.

Of course, also hand-operated switches can be connected and "read" by the 63 350 feedback modules. These switches must be wired so as to make or break a connection between one module input and ground - the brown wire of the Command Station.

Booster operation

If the module is fed from a Booster, instead of directly from the Command Station, then it is very important, in order to get reliable operation, that the "brown" (Ground) of the Booster be connected to the "brown" of the Command Station (e.g. the Intellibox).

Programming

In order to monitor the various inputs present on a layout, these inputs need to be numbered - so as to be identifiable. There are two ways to do that:

The simple setup procedure allows to choose the address of the 1st input. All subsequent inputs shall automatically receive the subsequent 15 addresses.

The expanded setup procedure takes advantage of the "LocoNet Prog" menu available starting from version 1.3 of the Intellibox software. This menu allows setting all parameters (called LocoNet-CV's) of the feedback module. Each input of each module can receive its own address. And, it is possible to change every configuration parameter of each feedback module.

Simple setup procedure

- Press the Programming Key on the module. The control LED starts blinking.
- Using any suitable device (such as Intellibox, IB-Switch, etc.), issue a switch command (closed or thrown, "red" or "green") to the turnout with the same address as the address you wish to assign to the 1st input of the module. The LED on the module shall stop blinking.
- Subsequent inputs (2nd through 16th) are automatically assigned to the subsequent 15 addresses.

Please note that if you configure the 1st input for, e.g. address 9, also addresses 10 through 24 shall be automatically assigned (to the remaining blocks).

This results in a maximum address range of 1 through 2033 (i.e. 2048 minus 15). For reliable operation it is best not to have duplicate address assignments. Therefore, please do not "overlap" block addresses across two different modules.

Important

By using the "simple setup procedure", all configuration parameters eventually modified through the Intellibox "LocoNet Prog" menu are reset to their default values!

Expanded setup procedure through the Intellibox programming menu

This kind of setup procedure is only available starting from Intellibox software version 1.3. Each input of each module can receive its own address. And, it is possible to change every configuration parameter of each feedback module.

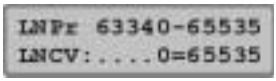
First time recall of a LocoNet module for setting the module address

Since more than one feedback module is present on a layout, there must be a way to identify (number) each module, so that the Command Station may tell them apart. This number is what is called a "Module address".

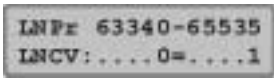
Please note that a Module Address must not be related to the addresses of its inputs. You are free to number your modules as you wish, independently of how you numbered the blocks of each module. Think of a Module Address as a "label" identifying each module among a specific module type. It may of course be convenient to number the modules according to the order of the addresses of their inputs - thus labeling as, e.g. "Module 1" (Module address = 1) the module featuring the inputs with the lowest addresses (e.g. blocks 1 through 16), etc. The default Module Address of each module is 65535.

This is how to proceed when you connect a module for the 1st time and you wish to configure it using the Intellibox "LocoNet Prog" menu:

- Connect the module to LocoNet.
- On the Intellibox, press the [menu]- and then the [mode]-key. This gets you to the "Basic Settings" menu.
- Using the [↓]-key, scroll down through this menu until you'll get to the "LocoNet Prog" item.
- Press the programming key on the feedback module. The control LED must now start blinking.
- Now press the [→]-key in order to enter the "LocoNet Prog" submenu of the Intellibox. This prompts the Intellibox to read out the modules article number (e.g. 63350) and Module Address from any module on which the programming key had been pressed.
  The display shall show:



  Press the [→]-key to go to the right edit field (the value of the LNCV) and type the Module Address you wish to assign to this module (e.g. 1).

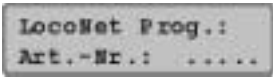


- Press the [↵]-key in order to program that value into the module.

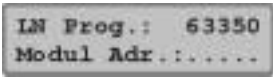
You can now use this Module Address in order to read or change the configuration of this module.

LocoNet-CV programming

- Connect the module to LocoNet.
- On the Intellibox, press the [menu]- and then the [mode]-key. This gets you to the "Basic Settings" menu.
- Using the [↓]-key, scroll down through this menu until you'll get to the "LocoNet Prog" item.
- Now press the [→]-key in order to enter the "LocoNet Prog" submenu of the Intellibox.
  The Intellibox display shall show:

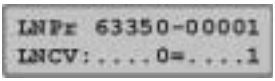


- Input the Art.-No. of the module you wish to read or configure (e.g. 63350) and press the [↵]-key.



- Input the Module Address of the module (e.g. 1) and press the [↵]-key.

  The display shall show "?" if no such module can be found. Conversely if there is such a module, the display shall show:



  The top row shows the Art.-No. and the module address. The bottom row shows the currently selected LocoNet-CV (e.g. LocoNet CV #0, which holds the module address) and its value (e.g. 1).
- Input the LocoNet-CV number in the left input field, then press the [↵]-key.
- The Intellibox reads the value of that LocoNet-CV and shows it in the right edit field.
- Move the cursor to the right by pressing the [→]-key and input the new value you wish to assign to this LocoNet-CV.
- Press the [↵]-key in order to program that value into the module.

Reset

By using the "simple setup procedure", all configuration parameters eventually modified through the Intellibox "LocoNet Prog" menu are reset to their default values.

Description of the available LocoNet-CV's

The module can be configured (programmed) by changing the values of some parameters. These parameters are known as "LocoNet Configuration Variables" (LocoNet-CV's or LNCV's). Each LNCV has a number. This number is to be used in order to identify the LNCV you wish to review or edit.

A feedback module 63 340 features these LNCV's:

LNCV #0 - The Module Address

Each module must be configured so as to have a unique Module Address so that the Command Station may unambiguously identify and read/program it.

The allowed value range is 0 through 2047.

LNCV #1-16 - The feedback addresses

Each input can be assigned to any feedback address. The Intellibox as well as the TwinCenter support up to 2048 feedback addresses. This corresponds to 128 modules with 16 addresses (inputs) each.

LNCV #17 - The report address

The feedback module only reports status changes of the inputs it is monitoring. In order to have the module report the current complete status of all of its inputs, you can send a "dummy" command to a turnout address. That address (that is that number) has to be programmed into this LNCV.

LNCV #20 – Module configuration

Bit # 0 = 0 - Value 0 (default value)

The address of the 2nd through 16th input is automatically assigned by the module starting from the address of the 1st input.

Input # 1 = address from LNCV 1
Input # 2 = address from LNCV 1 + 1
Input # 3 = address from LNCV 1 + 2
Input # 4 = address from LNCV 1 + 3
Input # 5 = address from LNCV 1 + 4
Input # 6 = address from LNCV 1 + 5
Input # 7 = address from LNCV 1 + 6
Input # 8 = address from LNCV 1 + 7
Input # 9 = address from LNCV 1 + 8
Input # 10 = address from LNCV 1 + 9
Input # 11 = address from LNCV 1 + 10
Input # 12 = address from LNCV 1 + 11
Input # 13 = address from LNCV 1 + 12
Input # 14 = address from LNCV 1 + 13
Input # 15 = address from LNCV 1 + 14
Input # 16 = address from LNCV 1 + 15

Bit # 0 = 1 - Value1

The addresses of the sixteen inputs are determined by the values of LNCV #1 through #16:

Block # 1 = address from LNCV 1
Block # 2 = address from LNCV 2
Block # 3 = address from LNCV 3
Block # 4 = address from LNCV 4
Block # 5 = address from LNCV 5
Block # 6 = address from LNCV 6
Block # 7 = address from LNCV 7
Block # 8 = address from LNCV 8
Block # 9 = address from LNCV 9
Block # 10 = address from LNCV 10
Block # 11 = address from LNCV 11
Block # 12 = address from LNCV 12
Block # 13 = address from LNCV 13
Block # 14 = address from LNCV 14
Block # 15 = address from LNCV 15
Block # 16 = address from LNCV 16

Bit #1 = 0 - Value 0 (default value)

The LNCV #21 and #41 delays for "occupied" and "free" reporting hold for all inputs.

Bit #1 = 1 - Value 2

Each input has its own delay for "occupied" and for "free" reporting, as specified by LNCV's #21-36 and LNCVs #41-56.

Bit #2 = 0 - Value 0 (default value)

No status information is automatically reported by the module when LocoNet power is turned on.

Bit #2 = 0 - Value 4

Full status report is automatically sent upon turning on power to LocoNet.

Important: the value of LNCV #20 is to be determined by adding the values (as stated nearby the “Bit #X = Y” labels) of the desired configuration and then programming that value into LNCV #20.

For example:

- Automatic numbering (address assignment) for inputs #2 through #16 (value 0).
- Delays as per LNCV #21 and #41 (value 0).
- No automatic status reporting upon LocoNet power up (value 0).

The sum of these “values” is 0. This is the number to program into LNCV #20.

LNCV #21-48 - "On" and "Off" time delays

Each time delay tells how much to wait, since a change of state (occupied/on to free/off or vice-versa) before actually reporting that status change on LocoNet.

Each delay is specified in 10 ms (milliseconds) units.

The allowed value range is 1 through 255.

LNCV’s #21-36 tell, for each input (check also LNCV #20, Bit #1) the delay for the "off" to "on" status change.

LNCV’s #41-56 tell, for each input (check also LNCV #20, Bit #1) the delay for the "off" to "on" status change.

Having a delay is often useful so as to avoid reporting erroneous status changes, or avoid reporting spurious status changes due to poor electrical contact between wheels and rails.

The default values for these LNCV’s specify an "off" to "on" delay of 30 ms and an "on" to "off" delay of 300 ms.

This is how to compute the desired value:

Delay in seconds x 100 = LNCV value
Value of the LNCV/100 = delay in seconds

Table of the LNCV’s available on 63 350 LocoNet feedback modules

LocoNet-CV	Description	Value range	Default value
0	Module address	1 through 65535	65535
1-8	Feedback addresses for blocks 1 through 8	1 through 2048	1 (for block #1)
17	Report address	1 through 2048	1017
20	Module configuration: Bit #0 = 0 Automatic address assignment Bit #0 = 1 Individual block address assignment Bit #1 = 0 All delays from LNCV #21 and #41 Bit #1 = 1 Individual block delays Bit #2 = 0 No status reporting upon LocoNet power-up Bit #2 = 1 Automatic status repair upon LocoNet power-up	 0 1 0 2 0 4	0
21-28	"On" time delay for input 1 through 16	0 through 255	3 (for block #1)
41-48	"Off" time delay for input 1 through 16	0 through 255	30 (for block #1)

Uhlenbrock Elektronik

These are your advantages:

Two years’ warranty

from date of purchase

Service

In case of an eventual failure please return the defective item to us for repair.
Please include purchase proof and a short description of defect,
as well as stating moduls address setting.

Hotline

In case of questions, we are ready to answer them for you!

Directly contact our technician: **(49) 2045 858327**

Mo - Fr except Wed 14:00-16:00 hrs CET, Wed 16:00 - 18:00 hrs CET

4 033405 633524

Uhlenbrock Elektronik GmbH
Mercatorstr.6
D-46244 Bottrop
Made in Germany

The figure 2 at the end of the item no. means that this article is delivered with an english discribtion.

Item no. 63 352 09.02 Be