Uhlenbrock Elektronik

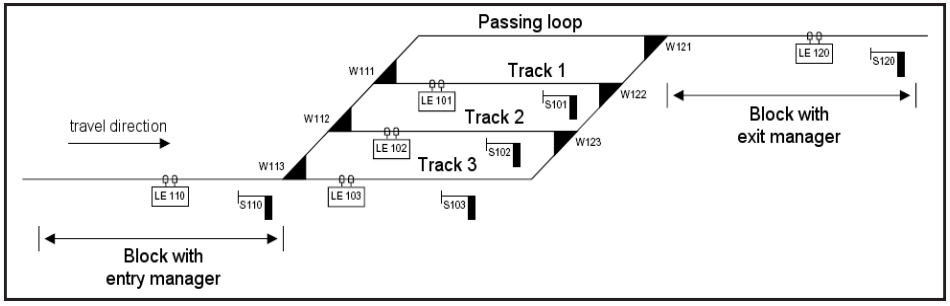
LISSY Special Edition 68 020

Station control for 3 tracks and a passing loop

Description

The individual locomotive control system LISSY consists of Infrared transmitters that are mounted under the vehicle and receiver modules whose Infrared sensors are installed in the track. Track occupation modules and track isolation are not required.

The receivers are configured so they control a (shadow) station with 3 tracks and a passing loop.



For locomotives located in the block at the entrance of the station the entry manager automatically locates a vacant track and switches the corresponding route and signals and drives the train into the selected track.

The exit manager cyclically selects a train, switches the corresponding route and sets the exit signal to green so that the train leaves the station.

If all tracks in the station are occupied the train waits at the entry manager until the exit manager vacates a track.

All trains that are programmed for the passing loop – in a preconfigured package that is train category 4 – are directed via the passing loop.

The turnout address 100 that is programmed into LNCV 13 of the entry manager serves to allow all trains to run via the passing loop.

Using solenoid addresses 130 and 131 the entire station control can be turned off, e.g. for manual operation.

Prerequisites on the layout

- You have a station with a maximum of 3 tracks and an optional passing loop.
  Note : *The passing loop can not be used as an additional station track.*
- The digitized turnouts and signals must be programmed to the addresses indicated in the track diagram.
  Note : *Signals may, but don't have to be, physically present on the layout.*

- The simplest is to set up the turnout and signal addresses to match the programming of the station control system. If different addresses are to be used the receiver modules must be reprogrammed with those addresses.

Track		LISSY receiver	Signal outgoing	Loco address	Train category
Block with entry manager		110	S110	all	all
Station	**Track 1**	101	S101	all	all
	Track 2	102	S102	all	all
	Track 3	103	S103	all	all
	Passing loop	-	-	-	4
Block with exit manager		120	S120	all	all

- If the passing loop is to be used by locomotives of train category 4 their LISSY transmitter must be programmed appropriately (LNCV 114 = 4).
- The routes that are to be switched must be programmed into either the Intellibox or IB-Switch.

Installation of the Transmitters and Receivers

- The LISSY transmitters are fixed under the vehicles and connected as outlined in Chapter 3.2 of the LISSY Manual.
- The LISSY receivers with their Infrared sensors are installed as double sensors, as shown in the station diagram, and connected to the LocoNet. The precise method of installation is described in Chapters 4.2 to 4.4 of the LISSY Manual.
- The distance between a sensor and matching hold point, e.g. at a signal, must be long enough for the vehicle fitted with the transmitter to come to a stop within that distance. In a 'push' operation the total length of the train must be considered.

Programming the transmitters

Every LISSY transmitter is shipped with the factory default address 3. Chapter 3.3 of the LISSY Manual describes how to program the transmitter with the desired address.

Programming the Receivers

The 5 LISSY receivers for the shadow station control are already fully programmed. Only the individual signal addresses in the subsequent blocks must still be registered. The appropriate entries are marked by asterisks (*) and grey backgrounds.

If a second 68 020 pack is used to expand the station to 8 tracks plus passing loop, all 5 LISSY receivers must be programmed according to the tables for station expansion.

The programming is outlined in Chapter 5 of the LISSY Manual.

Programming of Routes

The routes to be switch must be programmed into either the Intellibox or an IB-Switch. The LISSY receivers programmed to active routes in the Intellibox (from Software version 1.55).

When using an IB-Switch the programming must be changed according to the receiver tables in "Reprogramming of the receiver modules for the IB-Switch".

Program the Routes in the Intellibox (from Software version 1.55)

Route Group and number	3/1	3/2	3/3	3/4	3/5	3/6	3/7	3/8
Route function	**Entry Track 1**	**Entry Track 2**	**Entry Track 3**	**Exit Track 1**	**Exit Track 2**	**Exit Track 3**	**Passing loop**	**Station sig. red**
Solenoid	20170	20171	20180	20181	20190	20191	20200	20201
Step 0	113 R	113 R	113 G	122 R	123 R	123 G	113 R	101 R
Step 1	112 G	112 R	110 G	121 R	122 G	122 G	112 G	102 R
Step 2	111 R	110 G		101 G	121 R	121 R	111 G	103 R
Step 3	110 G				102 G	103 G	121 G	
Step 4							110 G	

Program the Routes in the Intellibox (from Software version 1.55)

Route number	1	2	3	4	5	6	7	8
Route function	**Entry Track 1**	**Entry Track 2**	**Entry Track 3**	**Exit Track 1**	**Exit Track 2**	**Exit Track 3**	**Passing loop**	**Station sig. red**
Routes set for feedback	1 set	2 set	3 set	4 set	5 set	6 set	7 set	8 set
Step 0	113 R	113 R	113 G	122 R	123 R	123 G	113 R	101 R
Step 1	112 G	112 R	110 G	121 R	122 G	122 G	112 G	102 R
Step 2	111 R	110 G		101 G	121 R	121 R	111 G	103 R
Step 3	110 G				102 G	103 G	121 G	
Step 4							110 G	

First use of the control system

- All station signals are set to red
- All the trains that are to use the station must be placed on the track before the block with the entry manager.
- The first locomotive is manually driven into the block with the entry manager.
- This switches route 1 to track 1 and the locomotive enters track 1.

  Note: *this applies to all locomotives that are not in train category 4.*
- Further trains can be driven into the entry manager. This then fills all available tracks in the station.
- Then a route must be selected manually for exiting the station. The train stops in the exit manager's block ahead of the red signal (in our track plan S120).
- The exit manager's signal must then be switched to "green" and after the train has left the block it is switched back to "red".
- The LISSY receivers in the individual blocks now have all the necessary information to run the automatic operation.

Turning off the automation

The modules are programmed so that actual operating status, e.g. turnout and signal states and train location, are saved when the layout is switched off. For that it is vital that the trains are stopped. Follow the following procedure for shutting down the layout:

- The exit manager is deactivated with the Intellibox by manually switching address solenoid 131 to "red".
- As trains can now no longer leave the station it will fill up.

- Once all trains are stopped the layout can be turned off.
- The actual operating state will be saved.

Operating after restarting the layout

- The exit manager is reactivated with the Intellibox by manually switching solenoid address 131 to “green”.
- Manually activate any of the station’s exit routes.
- The exit manager’s exit signal must then be switched to “green” and after the train has left the block switch it back to “red”.

Reset

If a receiver is to be reset to factory defaults then set LNCV to a value of 100.
Every module, including its module address is then returned to factory default setting. This is described in “Factory resetting a receiver module”

Tip: Leave the sticker (e.g. LE 101) on the module so that you know which values the unit is being reset to. Alternatively you can use the universal address 65535 to read the value in LNCV 0.

Note: *The LISSY receivers in the special edition “Shadow station control” can be programmed to function as Entry manager, Exit manager and Block section. All other modes are not possible.*

Factory resetting a receiver module

Note: *The routes to be switched must be saved in the Intellibox!*

Default programming of LNCVs 0-15 of all five LISSY receivers

LE	LNCV / Function	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
110	**Entry manager**	110	0	8	0	0	2	110	0*[1]	0*[2]	0	0	130	0	100	0	9
101	**Block section**	101	0	23	0	0	2	101	1100	0*[3]	0	0	130	0	0	0	9
102	**Block section**	102	0	23	0	0	2	102	1100	0*[3]	0	0	130	0	0	0	9
103	**Block section**	103	0	23	0	0	2	103	1100	0*[3]	0	0	130	0	0	0	9
120	**Exit Manager**	120	0	9	0	0	2	120	20201	0	0	0	131	0	100	0	9

If the station control is to be integrated into an existing system the LNCVs indicated by the asterisks must be programmed with the following values:

**[1] Address of the exit signal of the previous block, ending in 0 for “red”.*
**[2] Address of the entry signal of the previous block, ending in 1 for “green”.*
**[3] Address of the entry signal of the entry manager, ending in 1 for “green”.*

Programming of LISSY receiver LE 110 (Entry manager)

	LNCV	... 0	... 1	... 2	... 3	... 4	... 5	... 6	... 7	... 8	... 9
Track 1	**2...**	101	20170	20000	0	0	0	0	0	0	0
Track 2	**3...**	102	20171	20000	0	0	0	0	0	0	0
Track 3	**4...**	103	20180	20000	0	0	0	0	0	0	0
Passing loop	**12...**	100	0	20004	0	0	0	0	0	0	0

Programming of LISSY receiver LE 120 (Exit manager)

	LNCV	... 0	... 1	... 2	... 3	... 4	... 5	... 6	... 7	... 8	... 9
Track 1	**2...**	101	20181	20000	0	0	0	0	0	0	0
Track 2	**3…**	102	20190	20000	0	0	0	0	0	0	0
Track 3	**4…**	103	20191	20000	0	0	0	0	0	0	0
Passing loop	**12…**	100	20200	1100	0*[3]	0	0	0	0	0	0

**[3] Address of the entry signal of the entry manager, ending in 1 for "green".*

Reprogramming of the receiver modules for the IB-Switch

The identifiers of the routes to be switched in the IB-Switch can be distinguished from those in the Intellibox. Therefore if the routes are stored in an IB-Switch the LNCV indicated by the grey fields must be changed.

Default programming of LNCVs 0-15 of all five LISSY receivers

LE	LNCV / Function	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
110	**Entry manager**	110	0	8	0	0	2	110	0*[1]	0*[2]	0	0	130	0	100	0	9
101	**Block section**	101	0	23	0	0	2	101	1100	0*[3]	0	0	130	0	0	0	9
102	**Block section**	102	0	23	0	0	2	102	1100	0*[3]	0	0	130	0	0	0	9
103	**Block section**	103	0	23	0	0	2	103	1100	0*[3]	0	0	130	0	0	0	9
120	**Exit Manager**	120	0	9	0	0	2	120	83	0	0	0	131	0	100	0	9

**[1] Address of the exit signal of the previous block, ending in 0 for "red".*
**[2] Address of the entry signal of the previous block, ending in 1 for "green".*
**[3] Address of the entry signal of the entry manager, ending in 1 for "green".*

Programming of LISSY receiver LE 110 (Entry manager)

	LNCV	... 0	... 1	... 2	... 3	... 4	... 5	... 6	... 7	... 8	... 9
Track 1	**2...**	101	13	20000	0	0	0	0	0	0	0
Track 2	**3…**	102	23	20000	0	0	0	0	0	0	0
Track 3	**4…**	103	33	20000	0	0	0	0	0	0	0
Passing loop	**12…**	100	0	20004	0	0	0	0	0	0	0

Programming of LISSY receiver LE 120 (Exit manager)

	LNCV	... 0	... 1	... 2	... 3	... 4	... 5	... 6	... 7	... 8	... 9
Track 1	**2...**	101	43	20000	0	0	0	0	0	0	0
Track 2	**3…**	102	53	20000	0	0	0	0	0	0	0
Track 3	**4…**	103	63	20000	0	0	0	0	0	0	0
Passing loop	**12…**	100	73	1100	0*[3]	0	0	0	0	0	0

**[3] Address of the entry signal of the entry manager, ending in 1 for "green".*

Programming the modules for station expansion

If a second 68 020 pack is used to expand the station to 8 tracks plus passing loop, the 5 LISSY receivers can be programmed as outlined in Chapter 5 of the LISSY Manual.

Tip: *Remember to mark the receiver modules with the changed addresses.*

The programming of these five receivers then looks as follows:

LE	LNCV / Function	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
104	**Entry manager**	104	0	23	0	0	2	104	1100	0*[2]	0	0	130	0	0	0	9
105	**Block section**	105	0	23	0	0	2	105	1100	0*[3]	0	0	130	0	0	0	9
106	**Block section**	106	0	23	0	0	2	106	1100	0*[3]	0	0	130	0	0	0	9
107	**Block section**	107	0	23	0	0	2	107	1100	0*[3]	0	0	130	0	0	0	9
108	**Exit Manager**	108	0	23	0	0	2	108	1100	0	0	0	130	0	0	0	9

**[3]* *Address of the entry signal of the entry manager, ending in 1 for "green".*

Programming of LISSY receiver LE 110 from the second kit

	LNCV	... 0	... 1	... 2	... 3	... 4	... 5	... 6	... 7	... 8	... 9
Track 1	**2...**	0	0	0	0	0	0	0	0	0	0
Track 2	**3…**	0	0	0	0	0	0	0	0	0	0
Track 3	**4…**	0	0	0	0	0	0	0	0	0	0
Passing loop	**12…**	0	0	0	0	0	0	0	0	0	0

Programming of LISSY receiver LE 120 from the second kit

	LNCV	... 0	... 1	... 2	... 3	... 4	... 5	... 6	... 7	... 8	... 9
Track 1	**2...**	0	0	0	0	0	0	0	0	0	0
Track 2	**3…**	0	0	0	0	0	0	0	0	0	0
Track 3	**4…**	0	0	0	0	0	0	0	0	0	0
Passing loop	**12…**	0	0	0	0	0	0	0	0	0	0

Note: *The routes in the Intellibox or IB-Switch must be expanded to match the expanded station.*

Uhlenbrock Elektronik

Our contact Details:

Service

In the event of a defect or failure send the unit together with the invoice and a short description of the fault back to us for repair.

Hotline

We are available if you have any questions!

Your direct line to a technician: **0 20 45 - 85 83 27**

Mon - Tue - Thu – Fri, 14:00~16:00 and Wed 16:00~18:00