LW120 Input Board
LW120 is the interface between tower cab LW100 and the keys on your display control panel

+ It only works in connection with tower cab LW100

Information
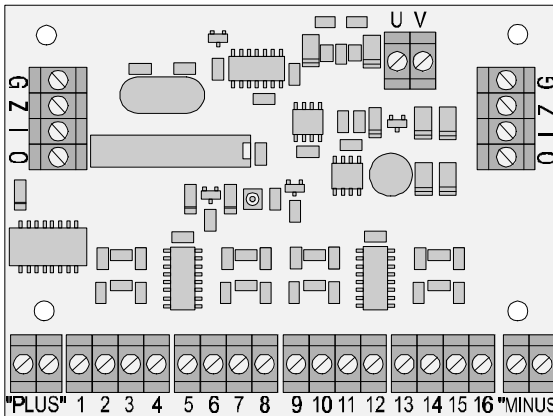# LW120

Version 1.0

Art. No. 25120

Digital *plus*

by Lenz ™

August 2000

What can LW120 do:

Use as a turnout throwing module:

A pair of keys or a single key in connection with a group key directly throws a turnout, sets a signal, activates an uncoupler or other device.

What can LW120 do in the future:

Use as train path module:

Pressing a single key calls up a switching chain on the tower cab. This option is of special interest for setting multi-display signals.

Use as start-goal module:

Two keys are pressed after each other; the first key is the "start" key, the second is the "goal" key. This key combination then calls up the associated switching chain in the tower cab. In this setup, any key can be both start and goal key. The logic always evaluates the key pressed first as the "start" one and the following key as the "goal" one.

Installation

LW120 has 4 holes for installation using the included screws. Use the plastic tubes as spacers. Make sure that you do not damage or bend any components when attaching the module. If you use screws different from the ones included, please ensure that the maximum diameter of 3mm (1/8") is not exceeded. Similarly, the screw heads must not touch traces or components on the circuit board.

Switches 5 to 8 on SW1 are reserved for future use and must all be set in position "OFF"!

1	2	3	4	Turnout from-to
0	0	0	0	1-16
1	0	0	0	17-32
0	1	0	0	33-48
1	1	0	0	49-64
0	0	1	0	65-80
1	0	1	0	81-96
0	1	1	0	97-112
1	1	1	0	113-128
0	0	0	1	129-144
1	0	0	1	145-160
0	1	0	1	161-176
1	1	0	1	177-192
0	0	1	1	193-208
1	0	1	1	209-224
0	1	1	1	225-240
1	1	1	1	241-256

Table 1: Setting the group address

On the next page you will see an example.

You want to throw turnouts 33 to 48 from the key module, you program the DIP-switch as follows:

1	2	3	4	Turnout from-to
0	1	0	0	33-48
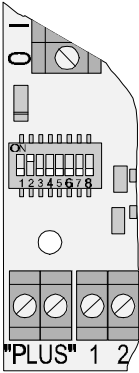
Input 1 of the key module (in the picture to the right next to the two "PLUS" terminals) activates turnout address 33, input 2 address 34 and so on to input 16 that activates turnout address 48.

Connecting keys

There are two different possibilities here, differing in operation and the number of keys needed.

Version 1:

You use one pair of keys for each magnetic device. You press one key for "diverge" ("stop"), the other for "straight" ("Go").

Refer to the wiring example in the picture below for this version. The example shows wiring of connections 1 and 4 of LW120. 2 keys each (in boxes) serve the setting of a magnetic device.
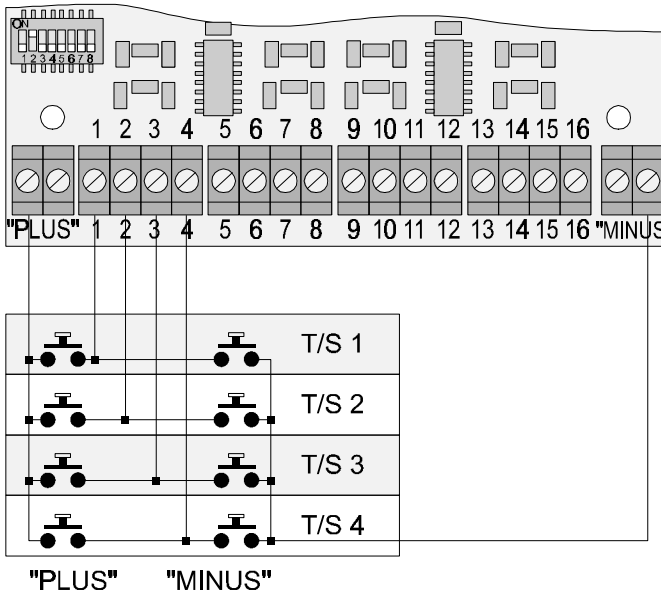
Example:

The key-module is programmed for turnout addresses 33 to 48.

Now when you press the left key T/S 1, this activates the "**+**" terminal of output 1 of the LS100/110 programmed for turnout addresses 33 to 36.

If on the other hand you press the right key, then this activates the "**-**" terminal of output 1 of the LS100/110 programmed for turnout addresses 33 to 36.

The terminals labeled "PLUS" and "MINUS" are designed as double terminals, in case you need to connect several wires.

Please note that you must not connect the "PLUS" and "MINUS" terminals of one key module with the same terminals of another key module!
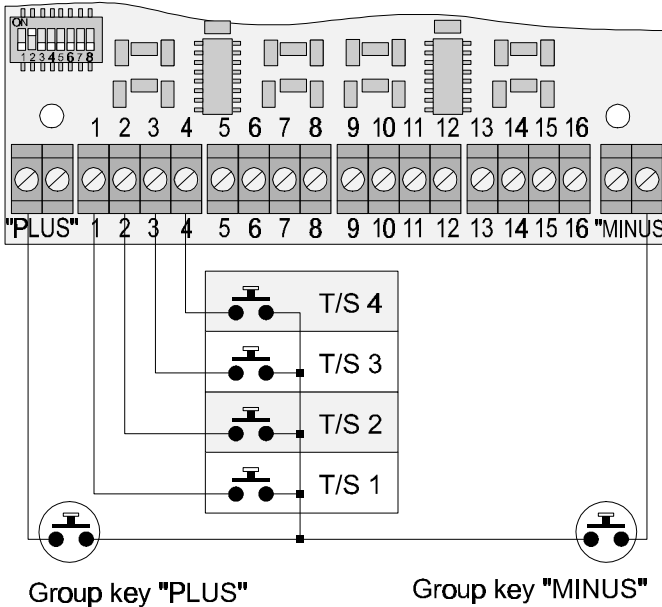

Version 2:

You first choose "Diverge" ("Stop") or "Straight" ("Go") with a group key. Keeping this key pressed, you then also press a single key at the turnout (signal). This version uses fewer keys total.

This wiring setup is shown in illustration 2. The two keys circled are group keys, the boxed keys identify the turnout.

Example:

Group key "PLUS"   Group key "MINUS"

The key module is programmed for turnout addresses 33 to 48.

If you now press the "PLUS" group key and in addition key T/S1, then the "+" terminal of output 1 of the LS100/110 that is programmed for turnout addresses 33 to 36 is activated.

If you press the "MINUS" group key and in addition key T/S1, then the "-" terminal of output 1 of the LS100/110 that is programmed for turnout addresses 33 to 36 is activated.

The terminals labeled "PLUS" and "MINUS" are designed as double terminals, in case you need to connect several wires.

Please note that you must not connect the "PLUS" and "MINUS" terminals of one key module with the same terminals of another key module! If you need several key modules in your graphic display control panel, then you will need separate group keys for each module!

Elements for display control panels

If you want to use ready made elements for building your graphic display control panel, you must take note of this:

The keys for throwing turnouts and setting signals must be electrically insulated from the displays (lightbulbs or LED's)!

Among the systems familiar to us this is the case with elements from these manufacturers:

S.E.S. Schmidt in Berlin.

ROCO GBS Standard

HEKI: here only elements 9023D and 9024D.

Registration section

Fill in and return to: Lenz Agency of North America
                                          PO Box 143
                                          Chelmsford, MA 01824

My first update for this LW120 with the serial number is free:

_____

(Please enter the serial number of your
LW120. You find this number on a sticker on
the circuit board of LW120)

Please include me in your registry of DIGITAL plus users, so that you can notify me when the update is available.

My address:

_____

_____

_____   _____
                                            Signature

Phone Number: _____

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