

# ISP-EMIL-120 / ISP-PCBA-EMIL Expansion Modules LSN

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- ▶ Connecting 6 detector zones (conventional detector or monitoring contact inputs)
- ▶ Connecting 4 free control outputs
- ▶ Connecting arming devices (e.g. NBS 10) with associated system components
- ▶ Monitoring the primary lines for alarms, short circuits or wire interruptions
- ▶ Expanded system limiting values in the "improved version" LSNi mode

The LSN expansion modules are used

- for connecting 6 detector zones (conventional detectors or monitoring contact inputs)
- for control purposes (4 control outputs)
- for connecting arming devices (e.g. NBS 10) with associated system components

to the local security network (LSN).

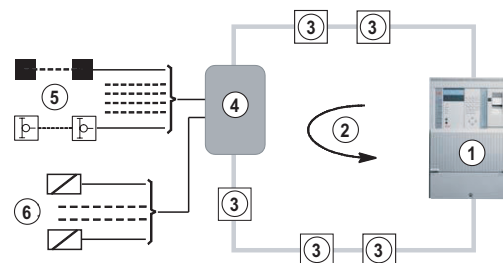
The expansion modules have been developed for connection to LSN control panels, e.g. MAP 5000, and provide the extended functionality of LSN improved technology. The "classic" LSN mode can be selected via an integrated DIP switch, enabling the connection of all classic LSN emergency call detector control panels such as NZ 300 LSN, UEZ 2000 LSN and UGM 2020.

A maximum of 2 IMS-RM Relay Modules can be installed in the expansion module housing version if the high power requirement of the connected control elements results in these becoming impossible to actuate directly from the expansion module, or in order to provide dry contacts. IMS-RM Relay Module with 2 relays, 2 switching contacts per relay for dry contacts.

## System overview

### Connecting conventional detectors and control outputs

In local security networks, detection and control functions are performed via the LSN line. This means additional primary lines in the control panel are not required for control procedures. Conventional detectors such as contact detectors, magnetic contacts or bolt contacts are grouped together on a primary line for one detector zone.



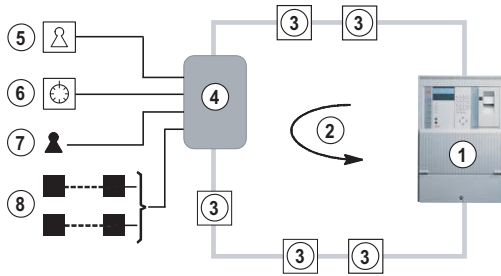
- 1 LSN control panel
- 2 LSN loop
- 3 LSN elements

- 4 LSN Expansion Module
- 5 6 detector zones with conventional detectors or monitoring contacts
- 6 4 control outputs

- PL 1 – PL6 Primary lines PL 1 – PL 6
- S1 – S4 Control outputs S1 – S4
- SP Free connection points e.g. for looping terminal resistors at detector zones
- WT Optional wall tamper contact

**Connecting arming devices and conventional detectors**

In local security networks, arming devices (block-type lock; for example, NBS 10, coded arming device) are connected to the associated system components through the LSN Expansion Module.



- 1 LSN control panel
- 2 LSN loop
- 3 LSN elements
- 4 LSN Expansion Module
- 5 Arming device (for example, NBS 10 block-type lock)
- 6 Code switching unit
- 7 Bolt contact
- 8 2 detector zones with conventional magnetic contacts (for example, door contact)

**Primary lines PL 1 – PL 6**

- Primary lines PL 1 – 6 are used to connect conventional detectors such as contact detectors, magnetic contacts and bolt contacts. The detectors of a primary line are grouped together in one detector zone.
- Detector zones can be programmed as hold-up, intrusion, tamper, closure or entry, as required. The analysis of a message can be programmed in the control panel.
- PL 5 – 6 can be used to connect line-fed glass break detectors.

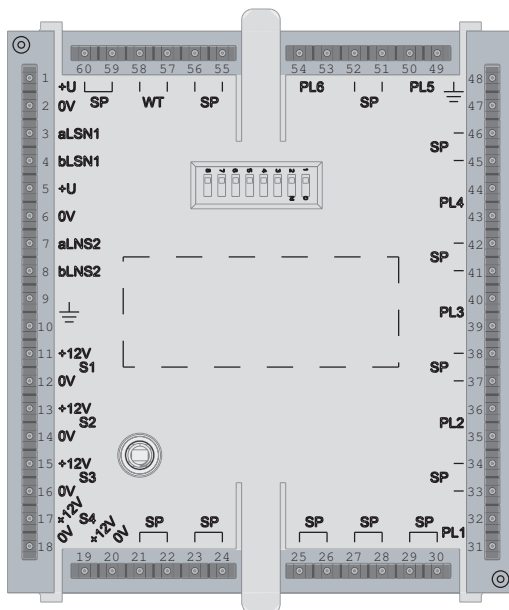
**Control outputs S1 – S4**

- There are 4 free control outputs available, whose use and control depend on the connected detectors.
- In local security networks, detection and control functions are performed via the LSN line. This means additional primary lines in the control panel are not required for control procedures. Control outputs that are not needed can be freely programmed with the panel functions.

**When connecting an arming device (for example, NBS 10), or coded arming device**

- Primary lines PL 1, 2, 5, 6 can be programmed as hold-up, intrusion, tamper, closure, or entry, as required.
- Primary line PL 3 is used to connect a block-type lock or coded arming device.  
Programmable message types: block-type lock, conventional lock, coded arming device, SE 50 GLT, SE 100 GLT.  
Alternatively, it is possible to connect hold-up, intrusion, tamper, closure, or entry message types.
- Primary line PL 4 is used to connect coded arming devices.  
Programmable message type: coded arming device.  
Alternatively, it is possible to connect hold-up, intrusion, tamper, closure, or entry message types.
- Control output S1 (activation of "BLL" block-type lock lamp):  
The BLL block-type lock lamp lights up when the detector or block-type lock area is in arming readiness mode.
- Control output S2 (activation of "BLA" block-type lock lamp):  
The BLA block-type lock lamp lights up when the detection area is disarmed.
- Control output S3 is freely configurable.
- Control output S4 (activation of block-type lock magnet):  
Arming in conjunction with the PL 3 detector zone for block-type locks is carried out only if the magnet is engaged while the block-type lock area is in armed mode.

**Functions**



**Tamper contact/wall tamper contact**

- The expansion module has a tamper contact that, if triggered, sends a unique message and is evaluated as a tamper alert. An integrated buzzer can be used to signal status changes (for example, for tests).
- A wall tamper contact can be installed in the housing version of the expansion module (optional). A tamper alarm is transmitted if the housing is torn off the wall.

**Local Security Network (LSN)**

In the event of wire interruptions or short-circuits, all LSN elements in the LSN loop continue to be monitored. In this case, the system automatically creates two stub lines that continue to monitor from both sides up to the location of the fault.

**Address switch**

Automatic or manual addressing with or without automatic LSN configuration (programming) can be selected via the integrated DIP switch on the expansion module circuit board. The following settings are possible:

Operating mode (mode)	Control panels
"Improved version" LSNi mode with automatic address assignment (T branches not possible)	- MAP 5000
"Improved version" LSNi mode with manual address assignment (T branches possible)	- MAP 5000
"Classic" LSN mode	- NZ 300 LSN - UEZ 2000 LSN - UGM 2020 - MAP 5000

**Features of the "improved version" LSNi mode**

- Up to 254 LSN improved elements per loop or divided into 2 stub lines per LSN gateway can be connected to the MAP 5000.
- Automatic or manual addressing via DIP switch can be selected, in each case with or without automatic LSN configuration.
- Flexible network structures including "T tapping" (T branches) without additional elements.
- Downward compatibility to existing LSN systems and control panels.

**Certifications and approvals**

Region	Certification	
Germany	VdS	G 109078 ISP-EMIL-120
Europe	CE	ISP-EMIL-120
	EN50131	ISP-EMIL-120

**Installation/configuration notes**

**Control panels**

Can be connected to both the MAP 5000 and the classic LSN control panels NZ 300 LSN, UEZ 2000 LSN and UGM 2020. Programming is carried out via the control panel's programming software (PC).

**Power supply**

The outputs are supplied with power via the expansion module's power supply or via an external power supply. External power supply units must be grounded.

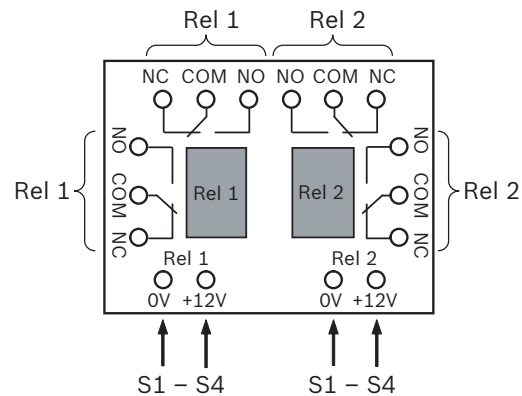
All LSN elements are designed to loop through the power supply (+V, -V) of subsequent LSN elements. The maximum cable length of the separate power supply (+V, -V) depends on the current consumption of the LSN elements to be supplied and their peripherals, if not powered by an external source. The applicable voltage range must be taken into account to ensure correct operation of the expansion module. Possible voltage range: 9 V to 30 V.

**+12 V output**

An output of +12 V / 0 V is available for supplying external 12 V devices (note the max. output current).

**Optional IMS-RM Relay Module**

IMS-RM Relay Module with 2 relays, 2 switching contacts per relay for dry contacts. The IMS-RM Relay Module is installed in the housing version of the expansion module if the high power requirement of the connected control elements results in these becoming impossible to actuate directly from the ISP-EMIL-120 LSN Expansion Module, or in order to provide dry contacts. Up to 2 IMS-RM Relay Modules can be installed in the ISP-EMIL-120 LSN Expansion Module.



**Parts included**

Type	Qty.	Component
ISP-EMIL-120 Housing version	1	LSN Expansion Module with plastic cover in the surface-mount housing, 20 x 3 sets of connection terminals, 12 x EOL resistors (12k1) and 2 x EOL resistors (3k92)
ISP-PCBA-EMIL Flush-mounting version	1	LSN Expansion Module with plastic cover without housing, 20 x 3 sets of connection terminals, 12 x EOL resistors (12k1) and 2 x EOL resistors (3k92)

**Technical specifications****Operating voltage and current consumption**

Operating voltage	
• LSN part	15 V DC to 33 V DC
• Other expansion module functions	9 V DC to 30 V DC
Current consumption	
• LSN part	4.95 mA
• Other expansion module functions	- Max. 370 mA at + 12 V - Max. 180 mA at + 28 V

**Primary lines and control outputs**

Primary lines PL 1 – PL 6	
• Connection options	6 detector zones can be programmed as hold-up, intrusion, tamper, closure, or entry
• Terminal resistance	$R_E = 12.1 \text{ kilohm}$
• Interruption voltage	Approx. 6 V
• Line resistance	Max. 100 Ohm
• Alarm criteria	$\pm 40\%$ of terminal resistance
• Response time	< 200 ms
Control outputs S1 - S3	
• Principle	Open collector, 12 V when active 0 V switching
• Max. voltage	30 V
• Switching voltage	< 1.4 V
• Switching current	Max. 20 mA
Control output S4	
• Principle	12 V switching

• Switching voltage	12.5 V $\pm$ 5%
• Switching current	Max. 100 mA

**Power output +12 V for external devices**

Output voltage	+12.5 V DC $\pm$ 5%
Output current	Max. 100 mA

**When connecting an arming device (e.g. NBS 10)/ coded arming device**

Primary lines PL 1 – PL 6	
• Primary lines 1, 2, 5, 6	see PL 1 – PL 6
• Primary line PL 3	Block-type lock or Code switching unit
• Primary line PL 4	Code switching unit
• End-of-line resistors Block type lock Primary line PL 3	$R_E = 12.1 \text{ kilohm} \pm 1\%$ (armed) $R_E = 12.1 \text{ kilohm} \text{ II } 3.92 \text{ kilohm} \pm 1\%$ (unarmed)
• End-of-line resistors Primary line PL 3 or PL 4 4 coded arming device	$R_E = 12.1 \text{ kilohm} \pm 1\%$ (coded arming device invalid) $R_E = 12.1 \text{ kilohm} \text{ II } 3.92 \text{ kilohm} \pm 1\%$ (coded arming device valid)

**S1–S3 control outputs**

• Principle	Open collector, 12 V when active 0 V switching
• Maximum current	20 mA
• Max. voltage	30 V
• Switching voltage	< 1.4 V
• Max. line resistance	2 x 10 Ohm
• Short-circuit stability	2 s

**Control output S4 (block-type lock magnet)**

• Maximum current	100 mA
• Max. voltage	12 V $\pm$ 5%
• Max. line resistance	2 x 5 Ohm
• Short-circuit stability	2 s

**Environmental conditions/housing**

Permissible operating temperature	0 °C to +55 °C
Permissible storage temperature	-25 °C to +75 °C
Permissible relative humidity	<93%, non-condensing
Protection category	IP 30

Environmental class	II (VdS 2110)
EMC interference immunity	EN 60950, EN 50130, VdS 2110
EMC emitted interference	EN 61000-6-3
Housing material	ABS+PC-FR
Color	Signal white (RAL 9003)
Weight	Approx. 400 g
Dimensions (H x W x D)	200 x 140 x 48 mm

### IMS-RM Relay Module

Reel	
• Reel voltage	12 V DC (max. 18 V)
• Power intake per relay at 12 V	11.7 mA $\pm$ 10%
• Response voltage	> 9 V
• Fall-off voltage	< 1.2 V
Switch contacts	
• Principle	2 dry contacts per relay
• Permanent current	Max. 1 A
• Switching voltage	Max. 110 V
• Switching performance	Max. 30 W

### Ordering information

#### ISP-EMIL-120 Expansion Module LSN

Housing version

For connecting 6 detector zones, 4 control outputs or arming devices (e.g. NBS 10) to the local security network (LSN)

Order number **ISP-EMIL-120**

#### ISP-PCBA-EMIL Expansion Module LSN

Flush-mounting version

For connecting 6 detector zones, 4 control outputs or arming devices (e.g. NBS 10) to the local security network (LSN)

Order number **ISP-PCBA-EMIL**

#### Accessories

##### IMS-RM Relay Module

With 2 relays, 2 switching contacts per relay for dry contacts, for installation (max. 2) in the ISP-EMIL-120 housing version

Order number **IMS-RM**

##### IMS-WTC Wall Tamper Contact

Wall tamper contact for the ISP-EMIL-120 expansion module, mandatory for installations according to EN50131-4 Grade 3.

Order number **IMS-WTC**

#### MAP Accessory Mounting Plate EMIL

Accessory mounting plate which can carry one ISP-PCBA-EMIL and either one relay module IMS-RM or one voltage transformer ICP-MAP0017. It is also suitable for all standard 3-hole accessory modules. Order number **ICP-MAP0021**

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