FLM-420/4-CON Conventional Interface Modules 4-wire LSN

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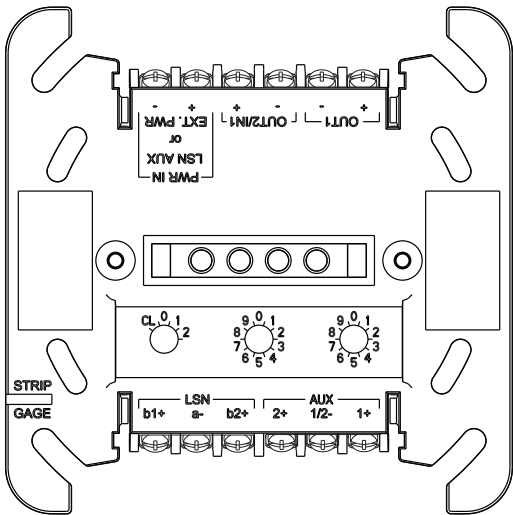
BOSCH
Invented for life

▶ Can be used with a wide range of conventional detectors

▶ Monitoring of primary lines for alarms, short circuits and wire breaks

▶ Conventional detectors can be connected in two stubs or one loop

▶ Individual detector parameters can be programmed for each stub

▶ Maintains LSN loop functions in the event of wire interruption or short-circuit thanks to two integrated isolators

The FLM-420/4-CON Conventional Interface Modules allow conventional detectors to be connected to LSN fire panels via a 4-wire supply network (Local SecurityNetwork LSN with external power supply). The interface modules in the 420 series have been specially developed for connecting to the Local SecurityNetwork LSN improved version and offer the enhanced functionality. In classic mode, selected via the integrated rotary switches, the interface modules can be connected to all classic LSN fire panels.

System Overview

Description	Connection
LSN b1+ | a- | b2+	LSN (in/out)

AUX 2+ | 1/2- | 1+	Output power supply 4-wire detectors
OUT1 + | -	Stub 1 or loop out
OUT2/IN1 - | +	Stub 2 or loop in
PWR IN LSN AUX or EXT.PWR + | -	Input power supply (from LSN or external source)

Functions

Features conventional lines

Individual detector parameters can be programmed for each stub. Within one stub or loop the detector parameters have to be consistent.

Only one EOL resistance can be selected for each interface module.

The detector voltage AUX (supply to 4-wire detectors) can be switched on or off for each line individually. For configurations with only one stub or one loop the two outputs AUX with 200 mA maximum current intensity can be switched in parallel.

If a line has only 2-wire detectors connected, the AUX output of this line might be switched in parallel with the AUX output of the second line (with 4-wire detectors). In this case, both AUX outputs are reset in parallel at once.

If both lines have only 2-wire detectors connected, both AUX outputs are set off.

The detector lines are short-circuit proof. In the event of a short circuit on the line, a fault message is sent to the control panel.

In the event of a line interruption in the loop, the loop is split into two stubs to retain all detectors.

The system detects removal of detectors and indicates a fault message on the fire panel.

The fire panel detects a ground connection for each individual line.

LSN features

Integrated isolators ensure that function is maintained in the event of a short circuit or line interruption in the LSN loop. A fault indication is sent to the fire panel.

Interface module functions

A red flashing LED on the device indicates the alarm of one or both primary lines.

Current values and other parameters can also be displayed.

Address switches

The rotary switches integrated in the interface module can be used to select automatic or manual addressing with or without auto detection.

The following settings are possible:

Address	Operating mode	Fire panel
0 0 0	Loop/stub in LSN mode improved version with automatic addressing (T-taps not possible)	FPA-5000 FPA-1200
0 0 1 - 254	Loop/stub/T-taps in LSN mode improved version with manual addressing	FPA-5000 FPA-1200
CL 0 0	Loop/stub in LSN mode classic	BZ 500 LSN UEZ 2000 LSN UGM 2020

Features of LSN improved version

The interface modules in the 420 series offer all the features of the improved LSN technology:

- Flexible network structures including T-tapping without additional elements
- Up to 254 LSN-improved elements per fire panel loop or stub line
- Rotary switches allow operator to select automatic and manual addressing, either with or without auto detection
- Unshielded cable can be used
- Downwards compatible with existing LSN systems and control panels.

Interface variants

Different versions of the interface module are available:

- FLM-420/4-CON-S for surface-mount installation with housing
- FLM-420/4-CON-D for installation via an adapter on a DIN rail or in a FLM-IFB126-S surface-mounted housing.

Certifications and Approvals

Complies with
- EN54-17:2005
- EN54-18:2005

Region	Certification	
Europe	CE	FLM-420_4-CON/-S/-D
Germany	VdS	G 208010 FLM-420/4-CON; FLM-420/4CON-D
Europe	CPD	0786-CPD-20399 FLM-420/4-CON-S, -D
	MOE	UA1.016-0070268-11 FLM-420-CON-S_FLM-420-CON-D

Installation/Configuration Notes

- Can be connected to the fire panels FPA-5000 and FPA-1200 and the classic LSN fire panels BZ 500 LSN, UEZ 2000 LSN and UGM 2020.
- For compatible devices, please refer to the Compatibility List (document number F.01U.079.455) available for download at www.boschsecurity.com/emea/fire.
- Programming is done with the programming software of the fire panel.
- Within one stub (class B) or loop (class A) the detector parameters have to be consistent (e.g. standby current, alarm resistance).
- Loop wiring of the conventional zone (class A) does not require an EOL resistor as it is already integrated in the interface module.

- The power supply is provided via the two wires on the auxiliary LSN power supply or by an external power supply unit. External power supply units must be free-of-ground.
- The surface-mounted housing has two cable ducts on opposite sides:
  - 2 x 2 pre-punched cable ducts for diameter up to 21 mm/to 34 mm (for conduits)
  - 2 x 4 rubber bushes for inserting cables with diameters of up to 8 mm.
- In addition, there are cable ducts on the base of the surface-mounted housing:
  - 1 x pre-punched cable duct for diameter up to 21 mm (for conduits)
  - 2 x 4 rubber bushes for inserting cables with diameters of up to 8 mm.
- For operating the fire alarm system according to EN 54-13,
  - it is necessary to terminate every conventional zone with EOL modules.
  - conventional 4-wire detectors must be supplied by an external power supply. The FLM-420/4-CON Conventional Interface Module must be supplied by the auxiliary LSN power supply.
- Observe the maximum line resistance of 25 Ω for conventional lines with manual call points or automatic fire detectors.

Parts Included

Type	Qty.	Component
FLM-420/4-CON-S	1	Conventional Interface Module for 4-wire LSN, with surface-mounted housing, cable with EOL resistor (3k92)
FLM-420/4-CON-D	1	Conventional Interface Module for 4-wire LSN, with adapter for installation on a DIN rail in accordance with EN 60715, light pipe, cable with EOL resistor (3k92)
	2	2.2 kOhm resistors

Technical Specifications

Electrical

LSN	
• LSN input voltage	15 V DC to 33 V DC (min. to max.)
• Max. current consumption from LSN	8.5 mA
Primary line	
• Line voltage	21 to 22 V DC (21,5 V DC typ. ±0,5 V DC))
• Max. line current	80 mA per line (±10% at 25 °C)
• Max. line resistance	50 Ω per line (max. 2 x 25 Ω)
Input power supply (PWR IN)	
• Voltage	24 to 30 V DC

• Residual ripple	< 150 mV
Output power supply 4-wire detector (AUX)	
• Voltage	23.5 V DC to 30 V DC (rated voltage 24 V DC)
• Residual ripple	< 300 mV
• Max. current (supply to 4-wire detector)	200 mA per output (can be switched in parallel)
EOL resistor for stub wiring of conventional zone (class B)	
• With calibration value	2,2 kΩ
• Without calibration value	2,2 kΩ / 3,9 kΩ

Mechanics

Display element	1 red LED, flashes at 1 Hz in the event of an alarm
Address setting	3 rotary switches
Connections	12 screw terminals
Permitted wire cross-section	0.6 to 3.3 mm^2
Housing material	
• Surface-mounted housing	ABS/PC blend
• Interface housing and adapter	PPO (Noryl)
Color	
• Surface-mounted housing	Signal white, RAL 9003
• Interface housing and adapter	Off- white, similar to RAL 9002
Dimensions	
• FLM-420/4-CON-S	Approx. 126 x 126 x 71 mm (W x H x D)
• FLM-420/4-CON-D	Approx. 110 x 110 x 48 mm (W x H x D)
Weight	Without / with packaging
• FLM-420/4-CON-S	Approx. 390 g / 590 g
• FLM-420/4-CON-D	Approx. 150 g / 350 g

Environmental conditions

Permitted operating temperature	-20 °C to +55 °C
Permitted storage temperature	-25 °C to +80 °C
Permitted rel. humidity	< 96% (non-condensing)

Classes of equipment as per IEC 60950	Class III equipment
Protection class as per IEC 60529	
• FLM-420/4-CON-S	IP 54
• FLM-420/4-CON-D	IP 30

Ordering Information

FLM-420/4-CON-S Conventional Interface Module 4-wire LSN
with 2 primary lines for 2- or 4-wire conventional detectors, with surface-mounted housing
Order number **FLM-420/4-CON-S**

FLM-420/4-CON-D Conventional Interface Module 4-wire LSN
with 2 primary lines for 2- or 4-wire conventional detectors, type DIN rail
Order number **FLM-420/4-CON-D**

Accessories

FLM-IFB126-S Surface-mounted Housing
as retainer for the interface modules series 420 type DIN rail (-D) or spare housing for type surface-mount (-S)
Order number **FLM-IFB126-S**