



FLM-420-I2 Input interface modules



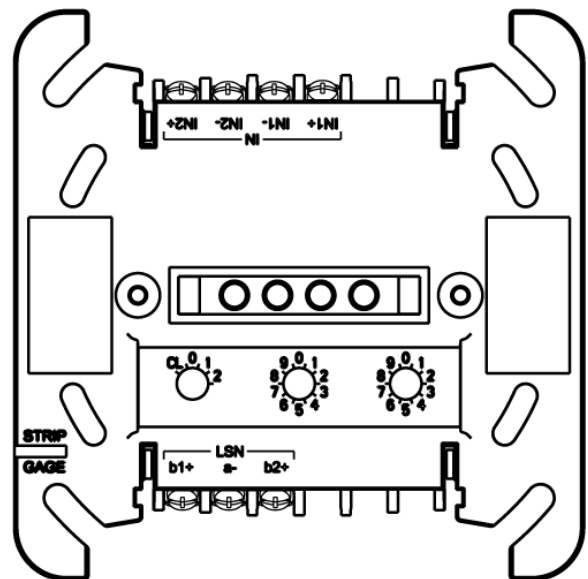
- ▶ Line monitoring when operating with EOL resistor
- ▶ Contact monitoring
- ▶ Voltage monitoring
- ▶ Individual monitoring of the two inputs
- ▶ Fault message sent to control panel in the event of a short circuit or line interruption in the LSN loop

The FLM-420-I2 input interface modules monitor up to two inputs.

They are 2-wire LSN elements and are compatible with all LSN fire panels. When connected to the 5000 series modular fire panel, they offer the enhanced functionality of LSN-improved technology.

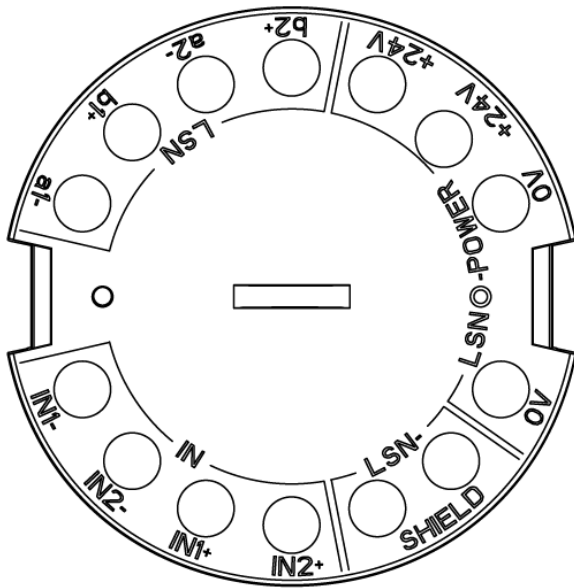
System Overview

FLM-420-I2-D



Description	Connection
IN1+ IN1-	Input 1
IN2+ IN2-	Input 2
LSN b1+ a- b2+	LSN (in/out)

FLM-420-I2-E / FLM-420-I2-W



Description	Connection
IN1- IN1+	Input 1
IN2- IN2+	Input 2
LSN-SHIELD	Shielding cable (if available)
LSN POWER	LSN power supply (supports for looping through)
0 V 0 V +24 V +24 V	
LSN a1- b1+ a2- b2+	LSN (in/out)

Functions

Monitoring functions

The FLM-420-I2 input interface modules offer three monitoring functions:

1. Monitoring of a line with EOL resistor
2. Monitoring of a potential-free contact
3. Voltage monitoring

The monitoring functions can be selected for the two inputs individually by address setting via the programming software.

Line monitoring with EOL resistor

Operation with EOL resistor can be programmed for each input individually. The standard EOL resistor is 3.9 kΩ.

The interface module detects

- Standby
- Triggering in the event of line interruption
- Triggering in the event of a short circuit.

The following line conditions will be definitely detected if the overall line resistance is within the specified ranges:

Line condition	Overall line resistance
Standby	1500 Ω to 6000 Ω

Line condition	Overall line resistance
Interruption	> 12.000 Ω
Short circuit	< 800 Ω

Contact monitoring

The interface module evaluates the operating conditions "open" or "closed". The normal operating condition can be programmed for each input. Contact monitoring is carried out with a pulse intensity of 8 mA. The module detects signals from a duration of 300 ms.

Voltage monitoring

Voltage monitoring is carried out between 0 V DC and 30 V DC. The programming software can be used to select two threshold values.

Address switches

The addresses of the interface modules are set using:

- DIP switches for FLM-420-I2-E and FLM-420-I2-W
- Rotary switches for FLM-420-I2-D.

When connecting to the FPA-5000 modular fire panel ("improved version" LSN mode), the operator can select automatic or manual addressing with or without auto-detection. In LSN mode "classic", connection to the fire panels BZ 500 LSN, UEZ 2000 LSN and UGM 2020 is possible.

Address rotary switches	Address DIP switches	Operating mode
0 0 0	0	Loop/stub in "improved version" LSN mode with automatic addressing (T-taps not possible)
0 0 1 - 2 5 4	1 - 254	Loop/stub/T-taps in "improved version" LSN mode with manual addressing
CL 0 0	255	Loop/stub in LSN mode "classic"

Features of improved LSN

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

- Flexible network structures including "T-tapping" without additional elements
- Up to 254 LSN-improved elements per loop or stub line
- Unshielded cable can be used
- Downwards compatible with existing LSN systems and control panels.

Interface variants

The input interface modules are available in various designs:

- FLM-420-I2-E type in-built:
 - Can be built in to standard device boxes in accordance with EN 60670 (e.g. below standard switch programs)
 - For space-saving installation in devices
- FLM-420-I2-W type wall-mount (with cover):

- Can be built in to standard device boxes in accordance with EN 60670
- For surface mounting in conjunction with the FMX-IFB55-S interface box.
- FLM-420-I2-D type DIN rail:
 - For installation on a DIN rail in accordance with EN 50022 with included adapter
 - Can be built in to a FLM-IFB126-S surface-mounted housing.

Certifications and Approvals

VdS certification No.: applied for

CE compliant

Fulfills EN 54-18

Installation/Configuration Notes

- Can be connected to the 5000 series modular fire panel (LSN 0300 and LSN 1500 modules) and the classic LSN control panels BZ 500 LSN, UEZ 2000 LSN and UGM 2020.
- Programming is carried out via RPS or WinPara.
- The LSN connection is established via the two wires on the LSN line.
- A maximum cable length of 3 m is permitted per input.
- When mounting the in-built type interface module below a switch, a minimum depth of the device box of 60 mm is recommended.
- The in-built (-E) and wall-mount (-W) versions are fitted with terminals to allow a second wire pair to be looped through to the LSN power supply of subsequent elements.

Parts Included

Type	Qty.	Component
FLM-420-I2-E	1	Input interface module, type in-built
FLM-420-I2-W	1	Input interface module, type wall-mount, with cover and accessories
FLM-420-I2-D	1	Input interface module, type DIN rail, with adapter and light pipe

Technical Specifications

Electrical

LSN

- LSN input voltage 15 V DC to 33 V DC (min. to max.)
- Max. current consumption from LSN 10.7 mA

Inputs 2, independent of each other

Contact monitoring

- EOL resistor Nominal 3.9 kΩ
- Overall line resistance
 - During standby: 1500 to 6000 Ω
 - Interruption: > 12.000 Ω
 - Short circuit: < 800 Ω
- Max. current (current peak) 8 mA

Voltage monitoring

- Voltage range 0 to 30 V DC
- Input resistance ≥ 50 kΩ
- Selectable threshold values
 - 0.8 V DC (± 0.3 V DC)
 - 3.3 V DC (± 0.3 V DC)
 - 10.2 V DC (± 0.5 V DC)
 - 21.2 V DC (± 0.5 V DC)

Mechanical

Connections

- FLM-420-I2-E / W 14 screw terminals
- FLM-420-I2-D 7 screw terminals

Permitted wire cross-section

- FLM-420-I2-E / W 0.6 to 2.0 mm²
- FLM-420-I2-D 0.6 to 3.3 mm²

Address setting

- FLM-420-I2-E / W 8 DIP switches
- FLM-420-I2-D 3 rotary switches

Housing material

- FLM-420-I2-E / W ABS/PC blend
- FLM-420-I2-D with adapter PPO (Noryl)

Color

- FLM-420-I2-E / W Signal white, RAL 9003
- FLM-420-I2-D with adapter Off-white, similar to RAL 9002

Dimensions

- FLM-420-I2-E Approx. 50 mm x 22 mm (Ø x H)
- FLM-420-I2-W Approx. 76 mm x 30 mm (Ø x H)
- FLM-420-I2-D with adapter Approx. 110 x 110 x 48 mm (W x H x D)

Weight

- FLM-420-I2-E Without / with packaging Approx. 35 g / 130 g
- FLM-420-I2-W Without / with packaging Approx. 55 g / 155 g
- FLM-420-I2-D Without / with packaging Approx. 150 g / 235 g

Environmental conditions

Permitted operating temperature	-20 °C to +65 °C
Permitted storage temperature	-25 °C to +80 °C
Permitted rel. humidity	< 96% (non-condensing)
Safety class	II (in accordance with IEC 60950)
Protection class	IP 30 (in accordance with IEC 60529)

System limiting values

Max. cable length per input	3 m
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Ordering Information

FLM-420-I2-E Input interface modules flush-mount type	FLM-420-I2-E
FLM-420-I2-W Input interface modules wall-mount type, with cover	FLM-420-I2-W
FMX-IFB55-S Interface box surface-mount	FMX-IFB55-S
FLM-420-I2-D Input interface modules DIN rail type	FLM-420-I2-D
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)	FLM-IFB126-S

Europe, Middle East, Africa:
Bosch Security Systems B.V.
P.O. Box 80002
5600 JB Eindhoven, The Netherlands
Phone: + 31 40 2577 284
Fax: +31 40 2577 330
emea.securitysystems@bosch.com
www.boschsecurity.com

Americas:
Bosch Security Systems, Inc.
130 Perinton Parkway
Fairport, New York, 14450, USA
Phone: +1 800 289 0096
Fax: +1 585 223 9180
security.sales@us.bosch.com
www.boschsecurity.us

Asia-Pacific:
Bosch Security Systems Pte Ltd
38C Jalan Pemimpin
Singapore 577180
Phone: +65 6319 3450
Fax: +65 6319 3499
apr.securitysystems@bosch.com
www.boschsecurity.com

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