

Interface and EOL Modules

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LSN Interface Modules Serie 420

**FLM-420/4-CON****FLM-420-NAC****FLM-I 420-S**

Interface type	Conventional Interface Module 4-wire LSN	Signaling Device Interface Module	Short Circuit Isolator
Function	Connecting conventional detectors to LSN fire panels	Connecting signaling devices	Isolating alarm zones with short circuit
Wiring type	4-wire	4-wire	2-wire
Input voltage LSN	15 V DC to 33 V DC	15 V DC to 33 V DC	15 V DC to 33 V DC
Max. current consumption from LSN	8.5 mA	6.06 mA	0.25 mA (after initialization)
Potential-free outputs	–	–	–
Maximum contact load	–	–	–
Maximum switching load	–	–	–
Protection category	-S: IP 54; -D: IP 30	-S: IP 54; -D: IP 30	IP 54
Permissible operating temperature	-20°C to +55°C	-20°C to +50°C	-20°C to +50°C
Connectable to LSN classic fire panels	•	•	–
Design			
- E: in-built	–	–	–
- W: wall-mount	–	–	–
- D: DIN rail	•	•	–
- S: with surface-mounted housing	•	•	•

LSN Interface Modules Serie 420

**FLM-420-RHV****FLM-420-RLV1****FLM-420-RLV8-S**

Interface type	Relay High Voltage Interface Module	Relay Interface Module Low Voltage	Octo-relay Interface Module Low Voltage
Function	2 change-over contact relays with feedback lines	1 change-over contact relay	8 change-over contact relays
Wiring type	2-wire	2-wire	2-wire
Input voltage LSN	15 V DC to 33 V DC	15 V DC to 33 V DC	15 V DC to 33 V DC
Max. current consumption from LSN	17.15 mA	1.75 mA	3.55 mA
Potential-free outputs	•	•	•
Maximum contact load	10 A/120 V AC 10 A/230 V AC 10 A/24 V DC 6 A/30 V DC	-D: 5 A/30 V DC -S: 2 A/30 V DC	2 A/30 V DC
Maximum switching load	–	–	–
Protection category	-S: IP 54; -D: IP 30	IP 30	IP 43
Permissible operating temperature	-20°C to +50°C	-20°C to +55°C	-20°C to +65°C
Connectable to LSN classic fire panels	•	•	•
Design			
- E: in-built	–	•	–
- W: wall-mount	–	–	–
- D: DIN rail	•	•	–
- S: with surface-mounted housing	•	–	•

LSN Interface Modules Serie 420

**FLM-420-I2****FLM-420-O2****FLM-420-I8R1-S**

Interface type	Input Interface Module	Output Interface Module	Octo-input Interface Module with Relay
Function	Monitoring of up to 2 inputs	2 semi-conductor outputs for controlling external devices	Monitoring of up to 8 inputs
Wiring type	2-wire	2-wire	2-wire
Input voltage LSN	15 V DC to 33 V DC	15 V DC to 33 V DC	15 V DC to 33 V DC
Max. current consumption from LSN	10.4 mA	4.9 mA	5.5 mA
Potential-free outputs	–	•	•
Maximum contact load	–	–	2 A/30 V DC
Maximum switching load	–	700 mA/30 V DC	–
Protection category	IP 30	IP 30	IP 43
Permissible operating temperature	-20°C to +65°C	-20°C to +65°C	-20°C to +65°C
Connectable to LSN classic fire panels	–	–	•
Design			
- E: in-built	•	•	–
- W: wall-mount	•	•	–
- D: DIN rail	•	•	–
- S: with surface-mounted housing	–	–	•

LSN Interface Modules Serie 420

**FLM-420-01I1**

Interface type	Output-input Interface Module
Function	1 semi-conductor output for controlling external devices and 1 monitored input
Wiring type	2-wire
Input voltage LSN	15 V DC to 33 V DC
Max. current consumption from LSN	1.9 mA
Potential-free outputs	•
Maximum contact load	–
Maximum switching load	700 mA/30 V DC
Protection category	IP 30
Permissible operating temperature	-20°C to +65°C
Connectable to LSN classic fire panels	–
Design	
- E: in-built	•
- W: wall-mount	–
- D: DIN rail	•
- S: with surface-mounted housing	–

FLM-420/4-CON Conventional Interface Modules

4-wire LSN



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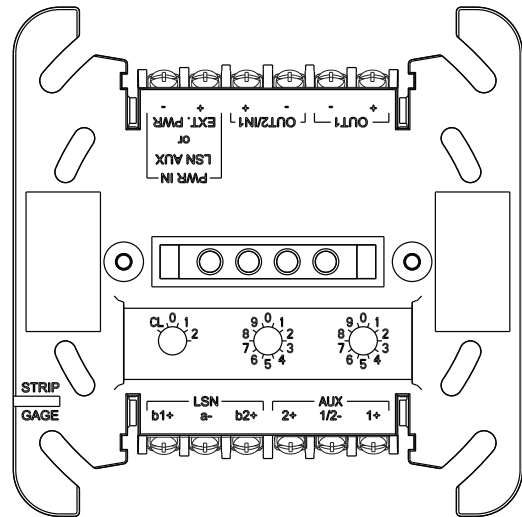
Features

- ▶ 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
- ▶ Expanded system limiting values of LSN improved technology

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

LSN b1+ | a- | b2+
 AUX 2+ | 1/2- | 1+
 OUT1 + | -
 OUT2/IN1 - | +
 PWR IN
 LSN AUX or EXT. PWR + | -

Connection

LSN (in/out)
 Output power supply 4-wire detectors
 Stub 1 or loop out
 Stub 2 or loop in
 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

The interface module has a red LED for displaying alarms. 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
	CPD	0786-CPD-20399 FLM-420/4-CON-S, -D
Germany	VdS	G 208010 FLM-420/4-CON; FLM-420/4CON-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 LSN additional voltage 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 operation of the fire detection system according to EN 54-13, it is necessary to terminate every conventional zone with EOL modules.
- 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 5000022, light pipe, cable with EOL resistor (3k92)

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 VDC (21,5 VDC typ. $\pm 0,5$ VDC)
- Max. line current 80 mA ($\pm 10\%$ at 25 $^{\circ}$ 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 mm²

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 **FLM-420/4-CON-S**
with surface-mounted housing

FLM-420/4-CON-D Conventional Interface Module 4-wire LSN **FLM-420/4-CON-D**
type DIN rail

Accessories

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

FLM-420-NAC Signaling Device Interface Modules



Features

- ▶ **Rotary switches for automatic or manual address setting**
- ▶ **Control of signaling device line by pole reversal**
- ▶ **Synchronized activation of all signaling devices connected to a LSN module via FLM-420-NAC Signaling Device Interface Module**
- ▶ **Ten different output signals via LSN selectable**
- ▶ **Maintains LSN loop functions in the event of wire interruption or short-circuit thanks to two integrated isolators**
- ▶ **Available with surface-mounted housing or DIN rail adapter**

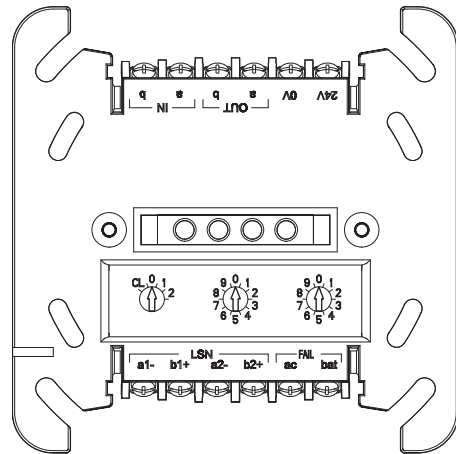
FLM-420-NAC Signaling Device Interface Modules make it possible to monitor and activate a group of signaling devices (NAC = Notification Appliance Circuit) in the Local SecurityNetwork LSN.

Each interface module offers one monitored primary line. This means one signaling device line can be connected to LSN fire panels.

The following can be connected:

- Sounders
- Strobes
- Horns.

System Overview



Description

b IN / a IN
b OUT / a OUT
0 V / 24 V
a1- / b1+
a2- / b2+
FAIL ac
FAIL bat

Connector

NAC zone input
NAC zone output
Ext. power supply
LSN in
LSN out
Trouble ext. voltage
Trouble ext. battery

Functions

Interface module variants

Two different versions of the interface module are available:

- FLM-420-NAC-S for surface-mounting with housing
- FLM-420-NAC-D for installation on a DIN rail with adapter.

Functions

The functions of the signaling device interface module are:

1. Activation of signaling devices in the event of an alarm
2. Monitoring the signaling device line
3. Monitoring the ext. power supply
4. Status display via LEDs

When activated signaling devices connected to FLM-420-NAC zones are synchronized through the LSN module they are connected to.

The control of the signaling device line is performed through polarity reversal.

The status of the NAC zone is shown by a red and a green LED.

Rotary switches

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

The following settings are possible:

- | | |
|-------------|--|
| 0 0 0 | Loop/stub in LSN mode improved version with automatic addressing (T-tap system not possible) |
| 0 0 1 - 254 | Loop/stub/T-tap system in LSN mode improved version with manual addressing |
| CL 0 0 | Loop/stub in classic LSN mode |

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.

Features of LSN improved version

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.

Certifications and Approvals

Complies with

- EN54-17:2005
- EN54-18:2005

Region	Certification	
Europe	CE	FLM-420-NAC-/S/-D
	CPD	0786-CPD-20375 FLM-420-NAC
Germany	VdS	G 207052 FLM-420-NAC-S; FLM-420-NAC-D
Hungary	TMT	TMT-24/2006 FLM-420-NAC, FLM-I420-S
Russia	GOST	POCC DE.C313B06300

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.
- National standards and guidelines must be taken into account during the planning stage.
- An external power supply is required for the FLM-420-NAC interface module.
- 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.

Parts Included

Type	Qty.	Components
FLM-420-NAC-S	1	Signaling Device Interface Module with surface-mounted housing
FLM-420-NAC-D	1	Signaling Device Interface Module for installation on a DIN rail with adapter

Technical Specifications**Electrical**

Input voltage	15 V DC to 33 V DC
Max. current consumption	
• from LSN	6,06 mA (normal operation and alarm)
• from external power supply	15 mA (normal operation) + output current
External power supply	20,4 V DC to 29 V DC
Max. output current	3 A (during an alarm, from ext. power supply)
EOL resistance	3.9 kΩ

Mechanics

Display elements	
• Red LED	Alarm
• Green LED	Normal operation
LSN/Address setting	3 rotary switches for
	• Mode LSN "classic" or LSN improved version
	• Automatic or manual addressing
Connections	12 threaded clamps
Max. wire diameter for terminals	3.3 mm ² (12 AWG)
Housing material	
• Interface module	PPO (Noryl)
• Surface-mount housing	ABS/PC-Blend
Housing color	
• Interface module	Off-white, similar to RAL 9002
• Surface-mount housing	Signal white, RAL 9003
Dimensions	
• FLM-420-NAC-S	Approx. 126 x 126 x 71 mm (4.96 x 4.96 x 2.8 in.)
• FLM-420-NAC-D (with DIN rail adapter)	Approx. 110 x 110 x 48 mm (4.33 x 4.33 x 1.89 in.)
Weight	
FLM-420-NAC-S	Approx. 390 g (13.8 ounces)
FLM-420-NAC-D (with DIN rail adapter)	Approx. 150 g (5.3 ounces)

System limits

Number of zones per signaling device interface module 1

Further characteristics

Output signals	Steady BS 5839 March Time March Time 120 California Coded Synchronization protocol (Wheelock, Gentex)
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Environmental conditions

Permitted operating temperature	-20 °C to 50 °C (-4 °F to 122 °F)
Permitted storage temperature	-25 °C to 80 °C (-13 °F to 176 °F)
Permitted relative humidity	< 96%
Classes of equipment as per IEC 60950	Class III equipment
Protection class as per IEC 60529	
• FLM-420-NAC-S	IP 54
• FLM-420-NAC-D	IP 30

Ordering Information

FLM-420-NAC-S Signaling Device Interface Module with surface-mounted housing	FLM-420-NAC-S
FLM-420-NAC-D Signaling Device Interface Module for installation on a DIN rail with adapter	FLM-420-NAC-D

FLM-I 420-S Short Circuit Isolator



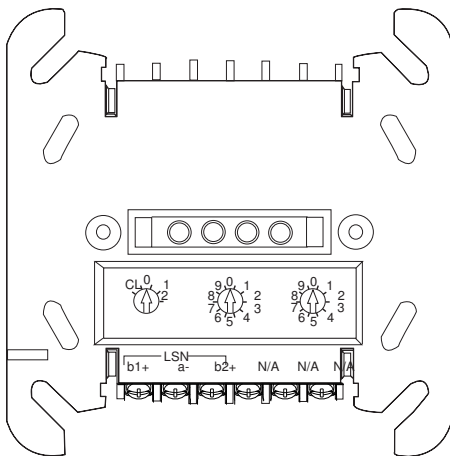
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Features

- ▶ Rotary switch for automatic and manual address setting
- ▶ Preservation of LSN loop functions in the event of a short-circuit by two integrated isolators
- ▶ Power supply via LSN
- ▶ Three free screw terminals

The Short Circuit Isolator isolates alarm zones in which a short circuit has occurred. This means the functionality of the remainder of the network remains preserved.

System Overview



Description Connector

b1+ / a- / b2+	LSN
N/A (3 x)	free terminals, e.g. for looping through ext. auxiliary voltage and for shielding

Functions

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

Address switch (rotary switch)

The address of the Short Circuit Isolator is set using the rotary switches.

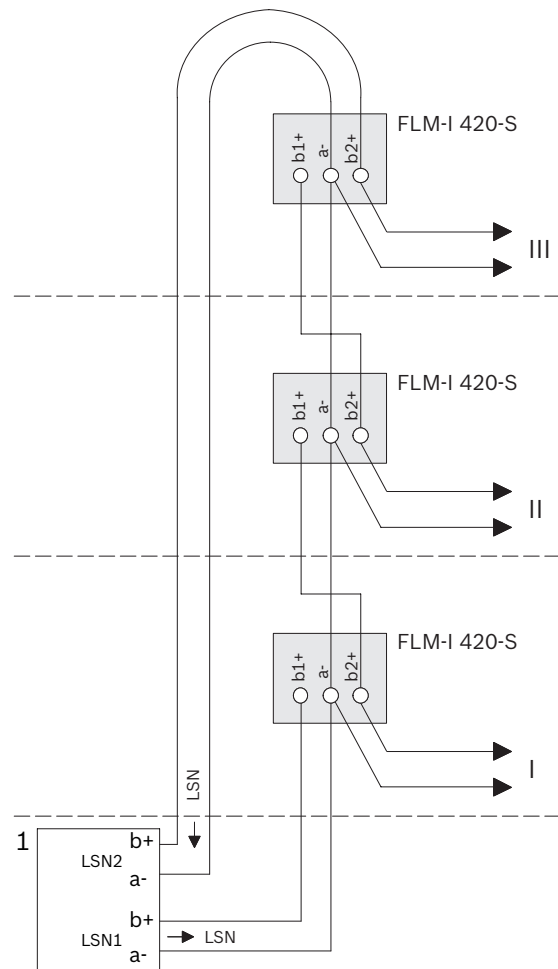
The following settings are possible:

0 0 0	Loop/stub in LSN mode improved version with automatic addressing (T-tap system not possible)
0 0 1 - 254	Loop/stub/T-tap system in LSN mode improved version with manual addressing
CL 0 0	Loop/stub in classic LSN mode

Configuration

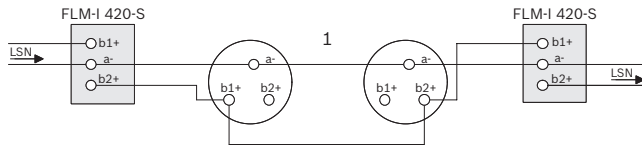
The Short Circuit Isolator isolates alarm zones in which a short circuit has occurred. The following illustrations show typical configurations of the isolator module.

Wiring example: Isolation of separate floors



Pos. Description

1	Fire panel
I, II, III	Floors

Typical wiring in a T-Tap

Pos.	Description
1	Alarm zone / device group with LSN elements

Certifications and Approvals

Complies with EN54-17:2005

Region	Certification
Europe	CE FLM-I 420-S
	CPD 0786-CPD-20374 FLM-I 420-S
Germany	VdS G 207045 FLM-I 420-S; FLM-I 420-D
Hungary	TMT TMT-24/2006 FLM-420-NAC, FLM-I 420-S
Russia	GOST POCC DE.C313B06300

Installation/Configuration Notes

- National standards and guidelines must be taken into account during the planning stage.
- The surface-mounted housing has two cable ducts on opposite sides:
 - 2 x 2 pre-punched 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 ducts for diameter up to 21 mm (for conduits)
 - 2 x 4 rubber bushes for inserting cables with diameters of up to 8 mm.
- Connectable to the fire panels FPA-5000 Modular and FPA-1200 with LSN technology improved version.

Parts Included

Qty.	Components
1	Short Circuit Isolator with surface-mounted housing.
1	DIN rail adapter

Note Alternatively to the use of the surface-mounted housing, the Isolator can be mounted on a DIN rail with the included adapter.

Technical Specifications**Electrical**

Input voltage 15 V DC to 33 V DC

Max. current consumption

- During initialization < 0.4 mA
- Following the initialization < 0.25 mA

Mechanics

LSN/Address setting 3 rotary switches for

- Mode LSN classic or LSN improved version
- Automatic or manual addressing

Connections 6 threaded clamps

Housing material

- Isolator module PPO (Noryl)
- Surface-mount housing ABS/PC-Blend

Housing color

- Isolator module Off-white, similar to RAL 9002
- Surface-mount housing Signal white, RAL 9003

Dimensions Approx. 126 x 126 x 71 mm (4.96 x 4.96 x 2.8 in.)

Weight Approx. 150 g (5.3 ounces)

Environmental conditions

Permitted operating temperature -20 °C to 50 °C (-4 °F to 122 °F)

Permitted storage temperature -25 °C to 85 °C (-13 °F to 176 °F)

Permitted relative humidity < 96%

Classes of equipment as per IEC 60950 Class III equipment

Protection class as per IEC 60529 IP 54

Ordering Information

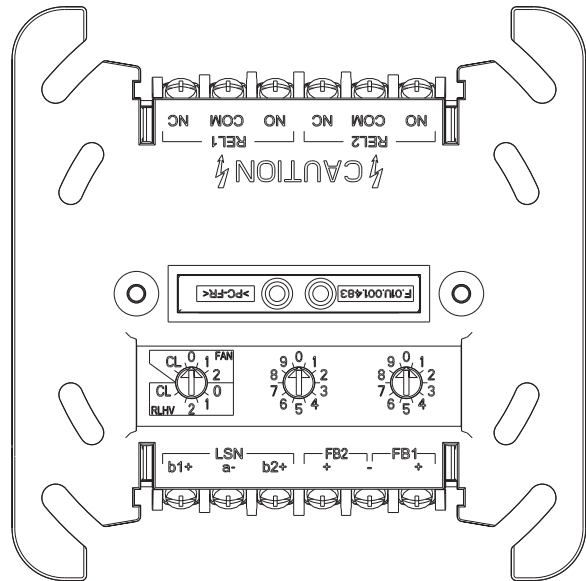
FLM-I 420-S Short Circuit Isolator
with surface-mounted housing

FLM-I 420-S

FLM-420-RHV Relay High Voltage Interface Modules



System Overview



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Features

- ▶ Relay function or fan control function selectable
- ▶ Rotary switches for automatic or manual address setting
- ▶ LED display for operating state (can be deactivated with LSN)
- ▶ Power supply via LSN
- ▶ Maintains LSN loop functions in the event of wire interruption or short-circuit thanks to two integrated isolators
- ▶ Available with surface-mounted housing or DIN rail adapter

The FLM-420-RHV Relay High Voltage Interface Modules are used to control the activation of external elements, e. g. smoke dampers or fans (FAN function), via the Local SecurityNetwork LSN.

Description

NO / C / NC
NO / C / NC
b1+ / a- / b2+
FB2+
FB1/FB2-
FB1+

Connector

Relay 1
Relay 2
LSN
Relay 2, feedback +
Relay 1 and 2, feedback -
Relay 1, feedback +

Functions

Interface module variants

Two different versions of the interface module are available:

- FLM-420-RHV-S for surface-mounting with housing
- FLM-420-RHV-D for installation on a DIN rail with adapter.

Relay and FAN function

The interface modules have two change-over contact relays (Form C) for the controlled activation of external elements. The relay contacts are protected with 10 A fuses which are built into the module.

The maximum relay contact loads are (values apply to resistive load):

- 10 A at 120 V AC / 230 V AC / 24 V DC
- 6 A at 30 V DC.

Rotary switches

The rotary switches can be used to select either the relay function (RLHV) or the fan control function (FAN) as well as to define the address of the interface module.

The following settings are possible:

Function selection (rotary switch 1)

RLHV Relay function used to control external elements

FAN Fan control function

Address setting (rotary switches 1-3)

0 0 0 Loop/stub in LSN mode improved version with automatic addressing (T-tap system not possible)

0 0 1 - 254 Loop/stub/T-tap system in LSN mode improved version with manual addressing

CL 0 0 Loop/stub in classic LSN mode

Features of LSN improved version

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.

Further performance characteristics

The status of the two relays is shown via a red and a green LED.

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.

The power is provided via the LSN loop.

Certifications and Approvals

Complies with

- EN54-17:2005
- EN54-18:2005

Region	Certification	
Europe	CE	FLM-420-RHV/-S/-D
	CPD	0786-CPD-20376 FLM-420-RHV
Germany	VdS	G 207053 FLM-420-RHV-S; FLM-420-RHV-D
Russia	GOST	POCC DE.C313B06300

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.
- National standards and guidelines must be taken into account during the planning stage.
- It is not permitted
 - to operate the relays with different voltages (high voltage and low voltage)
 - to place two different AC line voltage phases on the relay contacts.
- The monitoring function is deactivated at the time of delivery, and can be activated via the panel software.
- 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 ducts for diameter up to 21 mm (for conduit)
 - 2 x 4 rubber bushes for inserting cables with diameters of up to 8 mm.
- For a fire system operation according to EN 54-2, the interface modules used for the activation of fire protection equipment and whose outputs are not monitored, must be installed directly next to or within the device which shall be activated.

Parts Included

Type	Qty.	Components
FLM-420-RHV-S	1	Relay High Voltage Interface Module with surface-mounted housing
FLM-420-RHV-D	1	Relay High Voltage Interface Module for installation on a DIN rail with adapter

Technical Specifications**Electrical**

Input voltage	15 V DC to 33 V DC (min...max)
Max. current consumption	17.15 mA (normal operation and activated)
Max. contact load	10 A at 120 V AC 10 A at 230 V AC 10 A at 24 V DC 6 A at 30 V DC
Max. bounce period of NC contact	9 ms
Feedback current	1 mA (EOL resistance R=3.9 kΩ)
Feedback voltage	Max. 30 V DC
Fuses (F1, F2)	10 A / 250 V

Mechanics

Operating/display elements	2 LEDs (1 x red, 1 x green)
Function selection and address setting	3 rotary switches for <ul style="list-style-type: none"> • FAN/RLHV function • Mode LSN "classic" or LSN „improved version“ • Automatic or manual addressing
Connections	12 threaded clamps
Housing material	<ul style="list-style-type: none"> • Interface module PPO (Noryl) • Surface-mount housing ABS/PC-Blend
Housing color	<ul style="list-style-type: none"> • Interface module Off-white, similar to RAL 9002 • Surface-mount housing Signal white, RAL 9003

Dimensions

- | | |
|--|---|
| • FLM-420-RHV-S | Approx. 126 x 126 x 71 mm
(4.96 x 4.96 x 2.8 in.) |
| • FLM-420-RHV-D (with
DIN rail adapter) | Approx. 110 x 110 x 48 mm
(4.33 x 4.33 x 1.89 in.) |

Weight

- | | |
|-----------------|-----------------------------|
| • FLM-420-RHV-S | Approx. 390 g (13.8 ounces) |
| • FLM-420-RHV-D | Approx. 150 g (5.3 ounces) |

Environmental conditions

Permitted operating temperature	-20 °C to 50 °C (-4 °F to 122 °F)
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Permitted storage temperature	-25 °C to 85 °C (-13 °F to 176 °F)
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Permitted relative humidity	< 96%
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Classes of equipment as per IEC 60950	Class II equipment
---------------------------------------	--------------------

Protection class as per IEC 60529	
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- | | |
|-----------------|-------|
| • FLM-420-RHV-S | IP 54 |
| • FLM-420-RHV-D | IP 30 |

Ordering Information

FLM-420-RHV-S Relay High Voltage Interface Module with surface-mounted housing	FLM-420-RHV-S
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FLM-420-RHV-D Relay High Voltage Interface Module for installation on a DIN rail with adapter	FLM-420-RHV-D
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FLM-420-RLV1 Relay Interface Modules Low Voltage



Features

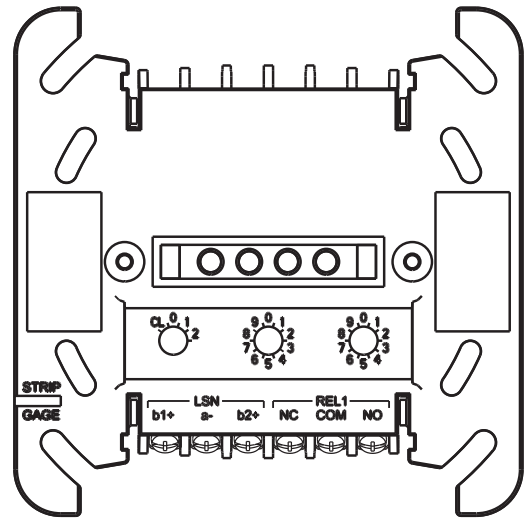
- ▶ **Maximum switching current of 5 A (type DIN rail) / 1 A (type in-built)**
- ▶ **Low current consumption**
- ▶ **Maintains LSN loop functions in the event of wire interruption or short-circuit thanks to two integrated isolators**

The FLM-420-RLV1 Relay Interface Modules Low Voltage feature a changeover contact relay for providing a potential-free output contact.

They are 2-wire LSN elements. When connected to the fire panels FPA-5000 and FPA-1200, the interface module offers the enhanced functionality of LSN improved technology.

System Overview

FLM-420-RLV1-D



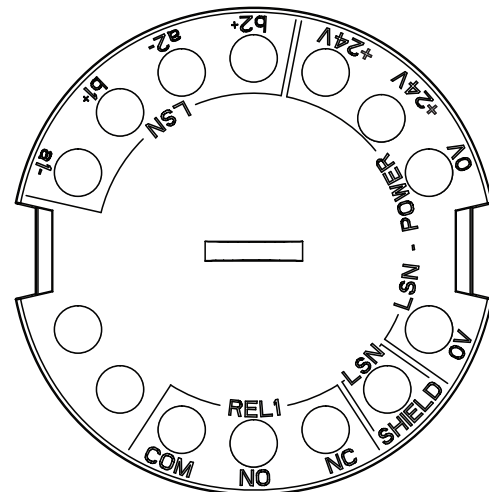
Description

REL1 NC | COM | NO
LSN b1+ | a- | b2+

Connection

Relay (NC, COM and NO contact)
LSN (in/out)

FLM-420-RLV1-E



Description

REL1 COM | NO | NC
LSN SHIELD
LSN POWER
0 V | 0 V | +24 V | +24 V
LSN a1- | b1+ | a2- | b2+

Connection

Relay (COM, NO and NC contact)
Shielding cable (if available)
LSN power supply (supports for looping through)
LSN (in/out)

Functions

Address switches

The addresses of the interface modules are set using:

- DIP switches for FLM-420-RLV1-E
- Rotary switches for FLM-420-RLV1-D.

When connecting to the FPA-5000 Modular Fire Panel (LSN mode improved version), 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

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.

Features of LSN improved version

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-RLV1-E type in-built:
 - Can be built in to standard device boxes in accordance with EN 60670
 - For space-saving installation in devices
- FLM-420-RLV1-D type DIN rail:
 - For installation on a DIN rail in accordance with EN 500022 with included adapter
 - Can be built in to a FLM-IFB126-S surface-mounted housing.

Certifications and Approvals

Complies with

- EN54-17:2005
- EN54-18:2005

Region	Certification	
Europe	CE	FLM-420-RLV1-E
		FLM-420-RLV1-D
	CPD	0786-CPD-20291 FLM-420-RLV1 0786-CPD-20292 FLM-420-RLV1-W, -E
Germany	VdS	G 207077 FLM-420-RLV1-D; FLM-420-RLV1-E; FLM-420-RLV1-W
Russia	GOST	POCC DE.C313B06300

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.
- Programming is done with the programming software of the fire panel.
- The connected device must have a minimum activation time of 20 ms.
- The LSN connection is established via the two wires on the LSN line.
- The in-built (-E) version is fitted with terminals to allow a second wire pair to be looped through to the LSN power supply of subsequent elements.
- For a fire system operation according to EN 54-2, the interface modules used for the activation of fire protection equipment and whose outputs are not monitored, must be installed directly next to or within the device which shall be activated.

Parts Included

Type	Qty.	Component
FLM-420-RLV1-E	1	Relay Interface Module Low Voltage, type in-built
FLM-420-RLV1-D	1	Relay Interface Module Low Voltage, 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	1.75 mA

Relay (low voltage)	Normally closed, common and normally open contact (NC/COM/NO)
---------------------	---

Contact load (ohm resistive load) FLM-420-RLV1-E

• Max. switching current	1 A
• Max. switching voltage	30 V DC
• Min. switching current	0.01 mA
• Min. switching voltage	10 mV DC

Contact load (ohm resistive load) FLM-420-RLV1-D

• Max. switching current	5 A
• Max. switching voltage	30 V DC
• Min. switching current	0.1 mA
• Min. switching voltage	100 mV DC

Minimum activation time of the connected device > 20 ms

Mechanical

Connections

• FLM-420-RLV1-E	12 screw terminals
• FLM-420-RLV1-D	6 threaded terminals

Permitted wire cross-section

• FLM-420-RLV1-E	0.6 to 2.0 mm ²
• FLM-420-RLV1-D	0.6 to 3.3 mm ²

Address setting

• FLM-420-RLV1-E	8 DIP switches
• FLM-420-RLV1-D	3 rotary switches

Housing material

• FLM-420-RLV1-E	ABS/PC blend
• FLM-420-RLV1-D with adapter	PPO (Noryl)

Color

• FLM-420-RLV1-E	Signal white, RAL 9003
• FLM-420-RLV1-D	Off-white, similar to RAL 9002

Dimensions

• FLM-420-RLV1-E	Approx. 50 mm x 22 mm (Ø x H)
• FLM-420-RLV1-D with adapter	Approx. 110 x 110 x 48 mm (W x H x D)

Weight

	Without / with packaging
• FLM-420-RLV1-E	Approx. 35 g / 130 g
• FLM-420-RLV1-D	Approx. 150 g / 235 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	IP 30

Ordering Information

FLM-420-RLV1-E Relay Interface Module Low Voltage type in-built	FLM-420-RLV1-E
FLM-420-RLV1-D Relay Interface Module Low Voltage DIN rail type	FLM-420-RLV1-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

FLM-420-RLV8-S Octo-relay Interface Module Low Voltage



8

Features

- ▶ **Maximum switching capacity of the relays 2 A / 30 V DC**
- ▶ **Low current consumption**
- ▶ **Maintains LSN loop functions in the event of wire interruption or short-circuit thanks to two integrated isolators**
- ▶ **Easy wiring thanks to pluggable terminal blocks**

The FLM-420-RLV8-S Octo-relay Interface Module Low Voltage features eight changeover contact relays for providing potential-free output contacts.

It is a 2-wire LSN element. When connected to the fire panels FPA-5000 and FPA-1200, the interface module offers the enhanced functionality of LSN improved technology.

Functions

Relay function

The eight changeover contact relays of the FLM-420-RLV8-S allow for a separate connection of up to eight single external elements.

The maximum contact load (resistive load) is 2 A / 30 V DC.

Address switches

The addresses of the interface modules are set by rotary switches.

In case of a connection to the Local SecurityNetwork LSN improved version, 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	Mode
0 0 0	Loop/stub in improved version LSN mode with automatic addressing (T-taps not possible)
0 0 1 ... 2 5 4	Loop/stub/T-taps in improved version LSN mode with manual addressing
CL 0 0	Loop/stub in LSN mode classic

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.

Features of LSN improved version

The interface modules of the 420 Series have all features of the 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.

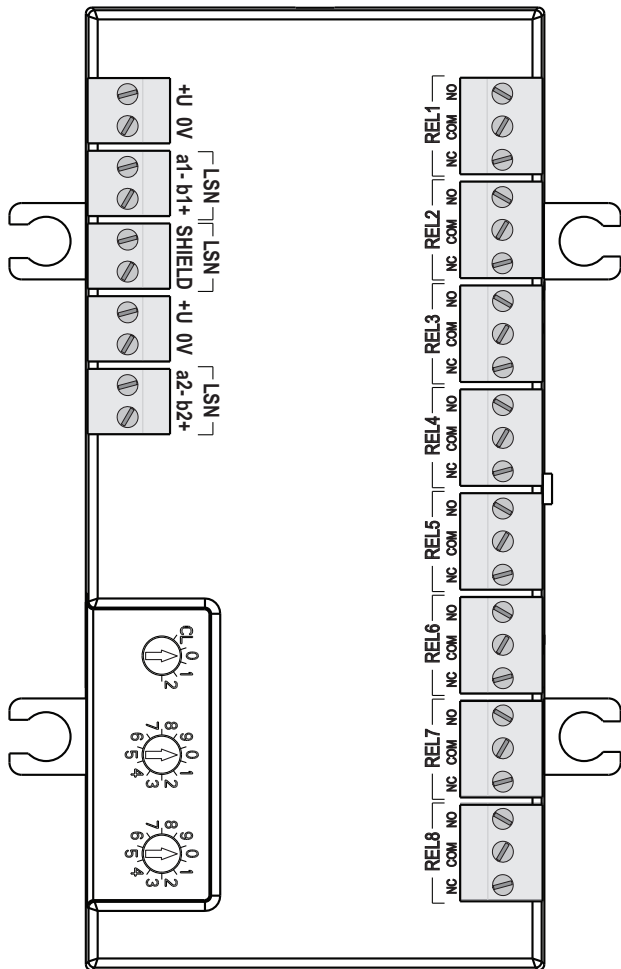
Certifications and Approvals

Complies with

- EN54-17:2005
- EN54-18:2005

Region	Certification	
Europe	CE	FLM-420-RLV8-S
	CPD	0786-CPD-20559 FLM-420-RLV8-S
Germany	VdS	G 208183 FLM-420-RLV8-S

Installation/Configuration Notes



Description		Connection
	+U 0V	Auxiliary power supply (support points to loop through)
LSN	a1- b1+	LSN incoming
LSN	SHIELD	Cable shielding (if available)
LSN-POWER	+U 0V	Auxiliary power supply (support points to loop through)
LSN	a2- b2+	LSN outgoing
REL1 ... REL8	NC COM NO	Relay 1 to relay 8 (NC contact / COM / NO contact)

- 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.
- Programming is done with the programming software of the fire panel.
- The LSN connection is established by the two wires of the LSN line.
- The interface module has terminals blocks to allow a second pair of wires to be looped through to an auxiliary power to supply downstream connected elements.
- The cables are fed through rubber bushings or PG cable glands
- The pluggable terminal blocks allow for an easy wiring even if the interface module is built in.
- Use included spacers when mounting on uneven surface.

- For a fire system operation according to EN 54-2, the interface modules used for the activation of fire protection equipment and whose outputs are not monitored, must be installed directly next to or within the device which shall be activated.

Parts Included

Type	Qty.	Component
FLM-420-RLV8-S	1	Octo-relay Interface Module Low Voltage, in housing for surface mounting

Technical Specifications

Electrical

LSN

- LSN input voltage 15 V DC to 33 V DC (min. to max.)
- Max. current consumption from LSN 3.55 mA

8 relays (low voltage) (NC contact / COM / NO contact)

Contact load (resistive load)

- Max. switching current 2 A
- Max. switching voltage 30 V DC
- Min. switching current 0.01 mA
- Min. switching voltage 10 mV DC

Mechanical

Connections	Screw terminals
Wire diameter	0.6 to 3.3 mm ²
Address setting	3 rotary switches
Material	ABS + PC-FR
Housing color	Signal white, RAL 9003
Dimensions	Approx. 140 x 200 x 48 mm (W x H x D)
Weight (without/with packing)	Approx. 490 g / 810 g

Environmental conditions

Permissible operating temperature	-20 °C to +65 °C
Permissible storage temperature	-25 °C to +80 °C
Permissible rel. humidity	< 96% (non-condensing)
Classes of equipment as per IEC 60950	Class III equipment
Protection class as per IEC 60529	IP 43

Ordering Information

FLM-420-RLV8-S Octo-relay Interface Module Low Voltage

FLM-420-RLV8-S

2-wire LSN element with eight changeover contact relays for providing potential-free output contacts, in housing for surface mounting

FLM-420-I8R1-S Octo-input Interface Module with Relay



8

Features

- ▶ Individually selectable monitoring functions (EOL or contact) for the eight inputs each
- ▶ Maximum switching capacity 2 A / 30 V DC
- ▶ Maintains LSN loop functions in the event of wire interruption or short-circuit thanks to two integrated isolators
- ▶ Easy wiring thanks to pluggable terminal blocks

The FLM-420-I8R1-S Octo-input Interface Module with Relay allows the monitoring of up to eight inputs. Additionally, it features a change-over contact relay for providing a potential-free output contact.

It is a 2-wire LSN element. When connected to the fire panels FPA-5000 and FPA-1200, the interface module offers the enhanced functionality of LSN improved technology.

Functions

Monitoring functions of the inputs

The FLM-420-I8R1-S Octo-input Interface Module provides two monitoring functions:

1. Monitoring of a line by an EOL resistor
2. Monitoring of a potential-free contact

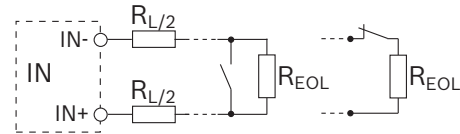
The monitoring functions of the eight inputs can be selected individually by setting the corresponding addresses.

Line monitoring with EOL resistor

The monitoring with EOL resistor can be activated individually for each of the inputs. The EOL resistor has a standard resistance of 3.9 kΩ.

The interface module detects

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



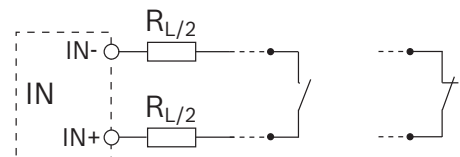
Position Description

R_{Σ}	Overall line resistance with $R_{\Sigma} = R_{L/2} + R_{L/2} + R_{EOL}$
$R_{L/2}$	Line resistance

The following line conditions will be reliably detected if the overall line resistance is within the specified range:

Line condition	Overall line resistance R_{Σ}
Standby	1500 Ω to 6000 Ω
Short circuit	< 800 Ω
Interruption	> 12 000 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 has a pulse intensity of 8 mA.

Change-over contact relay

The maximum contact load (resistive load) is 2 A / 30 V DC.

Address switches

The addresses of the interface modules are set by rotary switches.

In case of a connection to the fire panels FPA-5000 and FPA-1200 (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	Mode
0 0 0	Loop/stub in improved version LSN mode with automatic addressing (T-taps not possible)
0 0 1 ... 2 5 4	Loop/stub/T-taps in improved version LSN mode with manual addressing
CL 0 0	Loop/stub in LSN mode classic

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.

Features of LSN improved version

The interface modules of the 420 series have all features of the 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.

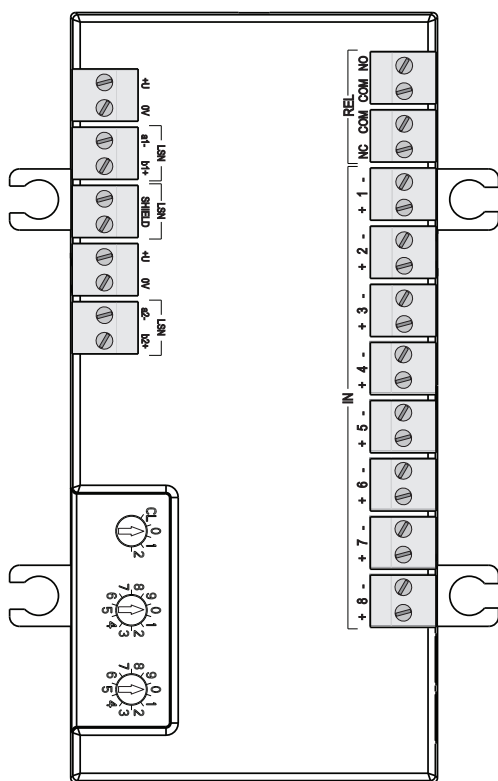
Certifications and Approvals

Complies with

- EN54-17:2005
- EN54-18:2005

Region	Certification	
Europe	CE	FLM-420-I8R1-S
	CPD	0786-CPD-20560 FLM-420-I8R1-S
Germany	VdS	G 208184 FLM-420-I8R1-S

Installation/Configuration Notes



Description	Connection
+U 0V	Auxiliary power supply (support points to loop through)
LSN a1- b1+	LSN incoming
LSN SHIELD	Cable shielding (if available)
+U 0V	Auxiliary power supply (support points to loop through)
LSN a2- b2+	LSN outgoing
IN 1 ... 8: + -	Input 1 to input 8
REL NC COM COM NO	Change-over relay (NC contact / COM, COM / NO contact)

- Can be connected to the fire panels FPA-5000 and FPA-1200 and the classic LSN control panels BZ 500 LSN, UEZ 2000 LSN and UGM 2020.
- Programming is done with the programming software of the fire panel.
- The LSN connection is established by the two wires of the LSN line.
- The activation of the inputs IN 1...8 has to be carried out electrically isolated from LSN (e. g. with relay contact, pushbutton, etc.).
- The inputs must have a minimum activation time of 3.2 s.
- The maximum cable length of all inputs connected to the loop or stub is 500 m in total. Additionally, all outputs which are not electrically isolated from LSN must be included in the total line length calculation (e.g. peripherals connected via C points). With UEZ 2000 LSN and UGM 2020, the limitation to 500 m applies to each Network Processing Converter (NVU).
- The interface module has terminals blocks to allow a second pair of wires to be looped through to an auxiliary power supply.
- The cables are fed through rubber bushings or PG cable glands.
- The pluggable terminal blocks allow for an easy wiring even if the interface module is built in.
- Use included spacers when mounting on uneven surface.
- For a fire system operation according to EN 54-2, the interface modules used for the activation of fire protection equipment and whose outputs are not monitored, must be installed directly next to or within the device which shall be activated.

Parts Included

Type	Qty.	Component
FLM-420-I8R1-S	1	Octo-input Interface Module with Relay, in housing for surface mounting

Technical Specifications

Electrical

LSN

- LSN input voltage 15 V DC to 33 V DC
- Max. current consumption from LSN 5.5 mA

Inputs 8, independent

Line monitoring with EOL

- EOL resistor Nominal 3.9 kΩ
- Overall line resistance R_{Σ} with $R_{\Sigma} = R_{L/1} + R_{L/2} + R_{EOL}$
 - Standby: 1500 Ω to 6000 Ω
 - Line interruption: > 12.000 Ω
 - Short circuit: < 800 Ω

Contact monitoring

- Max. current strength (current pulse) 8 mA

Minimum activation time of the inputs IN 1...8 3.2 s

Relay (low voltage) (NC / COM / NO contact)

Contact load (resistive load)

- Max. switching current 2 A
- Max. switching voltage 30 V DC
- Min. switching current 0.01 mA
- Min. switching voltage 10 mV DC

Mechanical

Connections	Screw terminals
Wire diameter	0.6 mm ² to 3.3 mm ²
Address setting	3 rotary switches
Material	ABS + PC-FR
Housing color	Signal white, RAL 9003
Dimensions	Approx. 140 x 200 x 48 mm (W x H x D)
Weight (without/with packing)	Approx. 480 g / 800 g

Environmental conditions

Permissible operating temperature	-20 °C to +65 °C
Permissible storage temperature	-25 °C to +80 °C
Permissible rel. humidity	< 96% (non-condensing)
Classes of equipment as per IEC 60950	Class III equipment
Protection class as per IEC 60529	IP 43

System limiting values

Maximum cable length of all inputs and outputs which are connected to the loop or stub and not electrically isolated from LSN 500 m in total

Ordering Information

FLM-420-I8R1-S Octo-input Interface **FLM-420-I8R1-S**

Module with Relay

2-wire LSN element, allows the monitoring of up to eight inputs, with a change-over contact relay for providing a potential-free output contact, in housing for surface mounting

FLM-420-I2 Input Interface Modules



Features

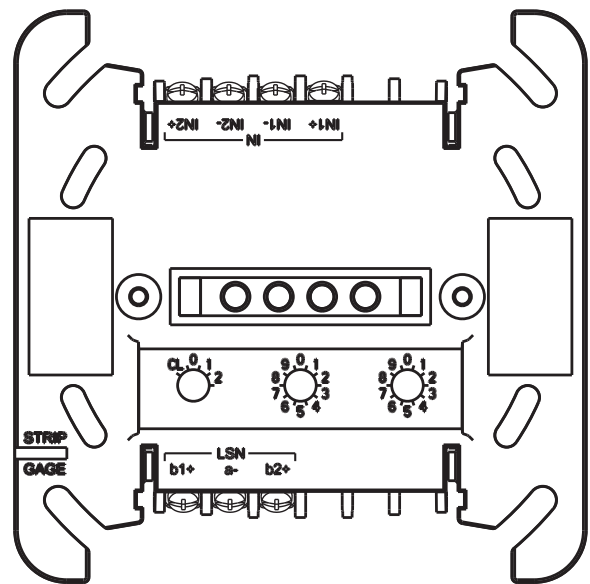
- ▶ Line monitoring when operating with EOL resistor
- ▶ Contact monitoring
- ▶ Voltage monitoring
- ▶ Individual monitoring of the two inputs
- ▶ Maintains LSN loop functions in the event of wire interruption or short-circuit thanks to two integrated isolators

The FLM-420-I2 Input Interface Modules monitor up to two inputs.

They are 2-wire LSN elements for connection to the Local SecurityNetwork LSN improved version with the enhanced functionality.

System Overview

FLM-420-I2-D



Description

IN1+ | IN1-

IN2+ | IN2-

LSN b1+ | a- | b2+

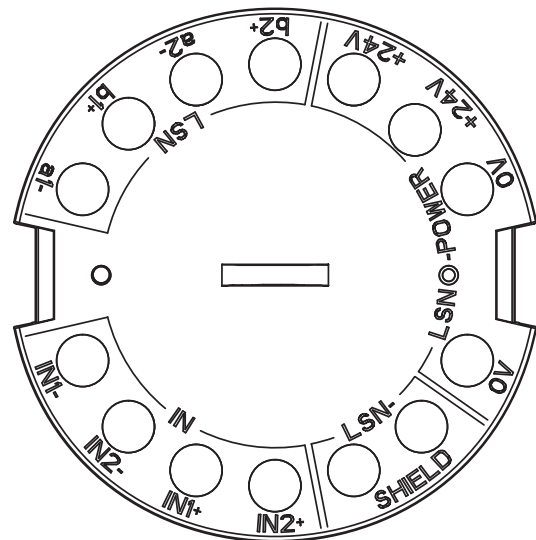
Connection

Input 1

Input 2

LSN (in/out)

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



Description

IN1- | IN1+

IN2- | IN2+

LSN-SHIELD

LSN POWER

0V | 0V | +24V | +24V

LSN a1- | b1+ | a2- | b2+

Connection

Input 1

Input 2

Shielding cable (if available)

LSN power supply (supports for looping through)

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

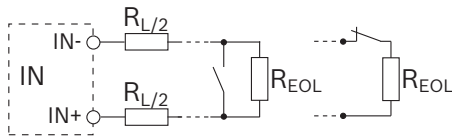
The monitoring functions can be selected for the two inputs individually by address setting via the programming software.

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.

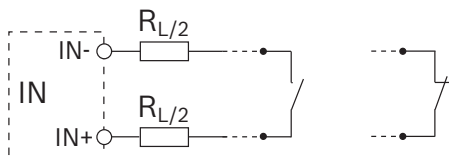


Position	Description
R_{Σ}	Overall line resistance with $R_{\Sigma} = R_{L/2} + R_{L/2} + R_{EOL}$
$R_{L/2}$	Line resistance

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

Line condition	Overall line resistance R_{Σ}
Standby	1500 Ω to 6000 Ω
Interruption	> 12.000 Ω
Short circuit	< 800 Ω

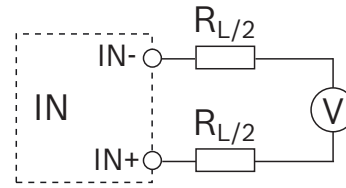
Contact monitoring



Position	Description
$R_{L/2}$	Line resistance with $R_{L/2} + R_{L/2} \leq 50 \Omega$

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



Position	Description
$R_{L/2}$	Line resistance with $R_{L/2} + R_{L/2} \leq 50 \Omega$

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.

In improved version LSN mode, the operator can select automatic or manual addressing with or without auto-detection.

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

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.

Features of LSN improved version

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

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

Complies with

- EN54-17:2005
- EN54-18:2005

Region	Certification	
Europe	CE	FLM-420-I2-W/-E FLM-420-I2-D
	CPD	0786-CPD-20288 FLM-420-I2-D 0786-CPD-20287 FLM-420-I2-W, -E
	VdS	G 207076 FLM-420-I2-D; FLM-420-I2-E; FLM-420-I2-W
Germany	VdS	G 207076 FLM-420-I2-D; FLM-420-I2-E; FLM-420-I2-W
Russia	GOST	POCC DE.C313B06300

Installation/Configuration Notes

- Can be connected to the fire panels FPA-5000 and FPA-1200.
- Programming is done with the programming software of the fire panel.
- 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
- Max. current consumption from LSN 10.4 mA

Inputs 2, independent of each other

Line monitoring with EOL

- EOL resistor Nominal 3.9 kΩ
- Overall line resistance
 - During standby: 1500 to 6000 Ω
 - Interruption: > 12.000 Ω
 - Short circuit: < 800 Ω

Contact monitoring

- Max. current (current peak) 8 mA

Voltage monitoring

- Voltage range 0 to 30 V DC
- Input resistance $\geq 50 \text{ k}\Omega$
- Selectable threshold values
 - 0.8 V DC ($\pm 0.3 \text{ V DC}$)
 - 3.3 V DC ($\pm 0.3 \text{ V DC}$)
 - 10.2 V DC ($\pm 0.5 \text{ V DC}$)
 - 21.2 V DC ($\pm 0.5 \text{ V DC}$)

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

- Without / with packaging
- FLM-420-I2-E Approx. 35 g / 130 g
- FLM-420-I2-W Approx. 55 g / 155 g
- FLM-420-I2-D 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)
Classes of equipment as per IEC 60950	Class III equipment
Protection class as per IEC 60529	IP 30

System limiting values

Max. cable length per input	3 m
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Ordering Information

FLM-420-I2-E Input Interface Module flush-mount type	FLM-420-I2-E
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FLM-420-I2-W Input Interface Module wall-mount type, with cover	FLM-420-I2-W
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FMX-IFB55-S Interface Box Surface-mount	FMX-IFB55-S
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FLM-420-I2-D Input Interface Module DIN rail type	FLM-420-I2-D
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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
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FLM-420-O2 Output Interface Modules



Features

- ▶ **Two semi-conductor outputs, can be switched independently of each other**
- ▶ **Outputs are electrically isolated from LSN loop and short-circuit proof**
- ▶ **Max. switchable current per output 700 mA**
- ▶ **Maintains LSN loop functions in the event of wire interruption or short-circuit thanks to two integrated isolators**

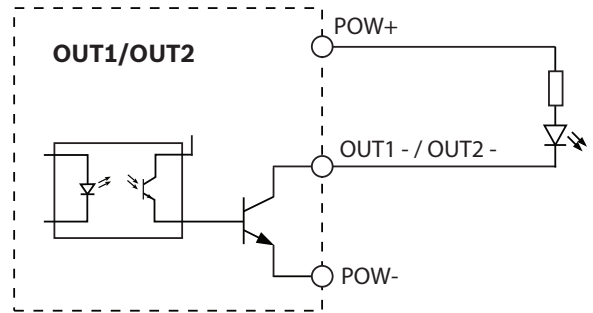
The FLM-420-O2 Output Interface Modules have two outputs to control external devices.

They are 2-wire LSN elements for connection to the Local SecurityNetwork LSN improved version with the enhanced functionality.

Functions

Semi-conductor outputs

The two semi-conductor outputs can be switched independently of each other. They are electrically isolated from the LSN loop and protected against short circuits.



Functionality of the semi-conductor outputs

Power supply

The loads' power supply can be selected for each output:

- Power supply of the interface module
- External power supply.

Address switches

The addresses of the interface modules are set using:

- DIP switches for FLM-420-O2-E and FLM-420-O2-W
- Rotary switches for FLM-420-O2-D.

In improved version LSN mode, the operator can select between automatic or manual addressing with or without auto-detection.

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

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.

Features of LSN improved version

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

Interface module variants

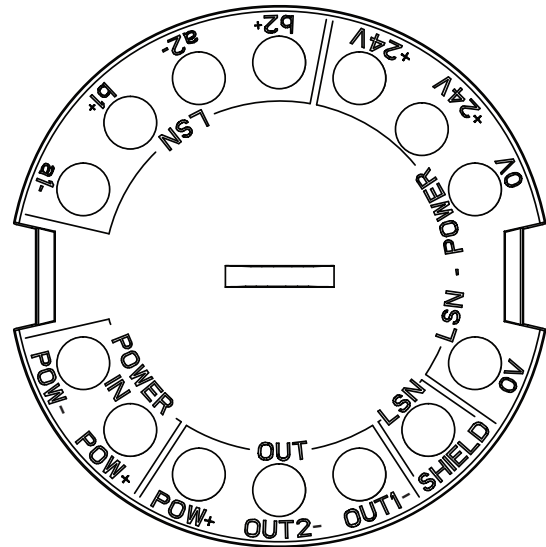
The Output Interface Modules are available in various designs:

- FLM-420-O2-E type in-built:
 - Can be built in to standard device boxes in accordance with EN 60670
 - For space-saving installation in devices
- FLM-420-O2-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-O2-D type DIN rail:
 - For installation on a DIN rail in accordance with EN 50022 with included adapter

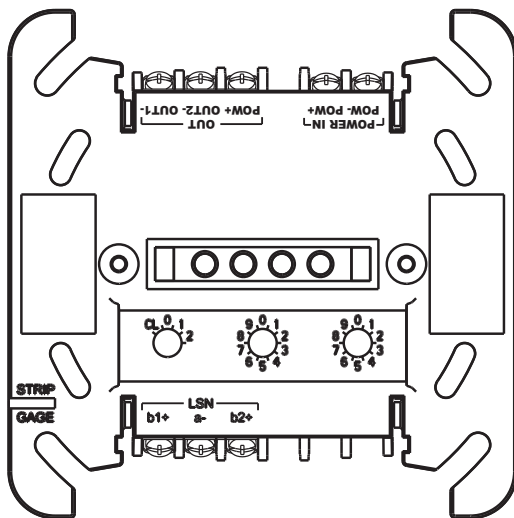
- FLM-420-O2-E / FLM-420-O2-W**

Complies with

- | Region | Certification | |
|---------|---------------|--|
| Europe | CE | FLM-420-02/-W/-E |
| | | FLM-420-02-D |
| | CPD | 0786-CPD-20290 FLM-420-02-D
0786-CPD-20289 FLM-420-02-W, -E |
| Germany | VdS | G 207075 FLM-420-02-D; FLM-420-02-E; FLM-420-02-W |
| Russia | GOST | POCC DE.C313B06300 |



FLM-420-O2-D



Description	Connection
POWER IN: POW- POW+	Power supply (LSN and outputs)
POW+	Reference potential (+)
OUT2-	Output 2 (switched negative potential)
OUT1-	Output 1 (switched negative potential)
LSN b1+ a- b2+	LSN (in/out)

Description	Connection
POWER IN POW+ POW-	Power supply (LSN and outputs)
POW+	Reference potential (+)
OUT2-	Output 2 (switched negative potential)
OUT1-	Output 1 (switched negative potential)
LSN SHIELD	Shielding cable (if available)
LSN POWER 0 V 0 V +24 V +24 V	LSN power supply (supports for looping through)
LSN a1- b1+ a2- b2+	LSN (in/out)

- Can be connected to the fire panels FPA-5000 and FPA-1200.
- Programming is done with the programming software of the fire panel.
- The LSN connection is established via the two wires on the LSN line.
- The power supply for the outputs can be provided by the power supply of the interface module or an external power supply. External power supply units must be free-of-ground.
- The loads are switched against the negative potential of the interface modules (OUT1- or OUT2-). The positive potential is provided by either the power supply of the interface module (POW+) or an external power supply unit.
- The maximum switchable voltage to the semi-conductor outputs is 30 V DC. The maximum switchable current is 700 mA per output.
- A maximum cable length of 3 m is permitted per output.
- 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.
- For a fire system operation according to EN 54-2, the interface modules used for the activation of fire protection equipment and whose outputs are not monitored, must be installed directly next to or within the device which shall be activated.

Parts Included

Type	Qty.	Component
FLM-420-02-E	1	Output Interface Module, type in-built
FLM-420-02-W	1	Output Interface Module, type wall-mount, with cover and accessories
FLM-420-02-D	1	Output Interface Module, type DIN rail, with adapter and light pipe

Technical Specifications**Electrical**

LSN

- LSN input voltage 15 V DC to 33 V DC
- Max. current consumption from LSN 4.9 mA

Outputs 2, independent of each other

- Max. switching voltage of semi-conductor outputs 30 V DC
- Max. switchable output current 700 mA per output
- Bounce period (when initializing the system) < 2 ms

External power supply 5 to 30 V DC (min. to max.)

Mechanical

Connections

- FLM-420-02-E / -W 14 screw terminals
- FLM-420-02-D 8 screw terminals

Permitted wire cross-section

- FLM-420-02-E / -W 0.6 to 2.0 mm²
- FLM-420-02-D 0.6 to 3.3 mm²

Address setting

- FLM-420-02-E / -W 8 DIP switches
- FLM-420-02-D 3 rotary switches

Housing material

- FLM-420-02-E / -W ABS/PC blend
- FLM-420-02-D with adapter PPO (Noryl)

Color

- FLM-420-02-E / -W Signal white, RAL 9003
- FLM-420-02-D with adapter Off-white, similar to RAL 9002

Dimensions

- FLM-420-02-E Approx. 50 mm x 22 mm (Ø x H)
- FLM-420-02-W Approx. 76 mm x 30 mm (Ø x H)
- FLM-420-02-D with adapter Approx. 110 x 110 x 48 mm (W x H x D)

Weight Without / with packaging

- FLM-420-02-E Approx. 35 g / 130 g
- FLM-420-02-W Approx. 55 g / 155 g
- FLM-420-02-D 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)

Classes of equipment as per IEC 60950 Class III equipment

Protection class as per IEC 60529 IP 30

System limits

Max. cable length per output 3 m

Ordering Information

FLM-420-02-E Output Interface Module type in-built	FLM-420-02-E
FLM-420-02-W Output Interface Module type wall-mount, with cover	FLM-420-02-W
FMX-IFB55-S Interface Box Surface-mount	FMX-IFB55-S
FLM-420-02-D Output Interface Module DIN rail type	FLM-420-02-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

FLM-420-O1I1 Output-input Interface Modules



8

Features

- ▶ **Semi-conductor output electrically isolated from LSN loop and short-circuit proof**
- ▶ **Max. switchable current per output 700 mA**
- ▶ **Individually selectable input monitoring functions (EOL or contact)**
- ▶ **Maintains LSN loop functions in the event of wire interruption or short-circuit thanks to two integrated isolators**

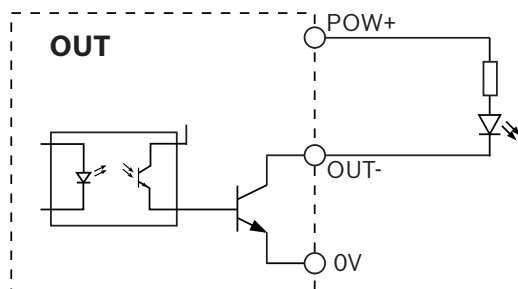
The FLM-420-O1I1 Output-input Interface Modules are fitted with one output to control external devices and with one monitored input.

They are 2-wire LSN elements for connection to the fire panels FPA-5000 and FPA-1200 and offer the enhanced functionality of LSN improved technology.

Functions

Semi-conductor output

The semi-conductor output is electrically isolated from the LSN loop and protected against short circuits.



Functionality of the semi-conductor output

Output power supply

The power supply for loads connected to the output can be selected as:

- Auxiliary power supply from the fire panel
- External power supply units.

Input monitoring functions

The FLM-420-O1I1 Output-input-Interface Module provides two monitoring functions:

1. Monitoring of a line by an EOL resistor
2. Monitoring of a potential-free contact

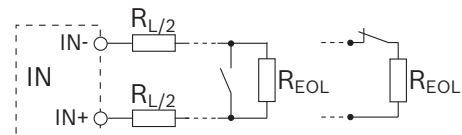
The input monitoring functions can be selected by setting the corresponding addresses.

Line monitoring with EOL resistor

The EOL resistor has a standard resistance of 3.9 kΩ.

The interface module detects

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



Position

R_{Σ}

Description

Overall line resistance with $R_{\Sigma} = R_{L/2} + R_{L/2} + R_{EOL}$

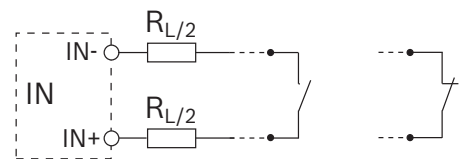
$R_{L/2}$

Line resistance

The following line conditions will be reliably detected if the overall line resistance is within the specified range:

Line condition	Overall line resistance R_{Σ}
Standby	1500 Ω to 6000 Ω
Short circuit	< 800 Ω
Interruption	> 12.000 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 has a pulse intensity of 8 mA.

Address switches

The address of the interface module is set using:

- DIP switches in case of the FLM-420-O1I1-E
- Rotary switches in case of the FLM-420-O1I1-D.

In improved version LSN mode, the operator can select automatic or manual addressing with or without auto-detection.

Address rotary switches	Address DIP switches	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

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.

Features of LSN improved version

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

Interface variants

The Output-input Interface Modules are available in various designs:

- FLM-420-O1I1-E in-built version:
 - Suitable for standard device boxes according to EN 60670 and
 - For a space-saving installation in all devices.
- FLM-420-O1I1-D DIN-rail version:
 - Suitable for installation on a DIN-rail according to EN 50022 with included adapter and
 - For the FLM-IFB126-S surface-mounted housing.

Certifications and Approvals

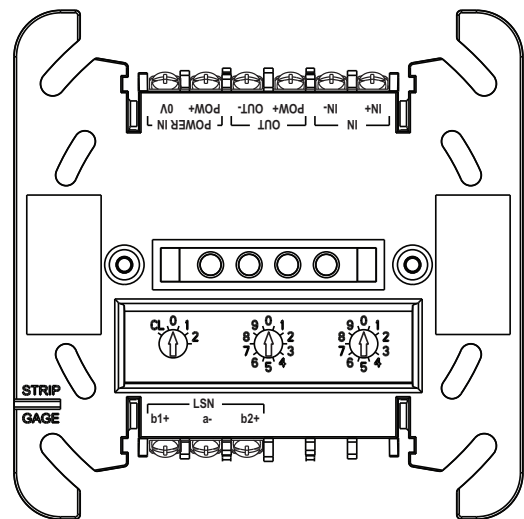
Complies with

- EN 54-17: 2005
- EN 54-18: 2005

Region	Certification	
Europe	CE	FLM-420-O1I1-E FLM-420-O1I1-D

Installation/Configuration Notes

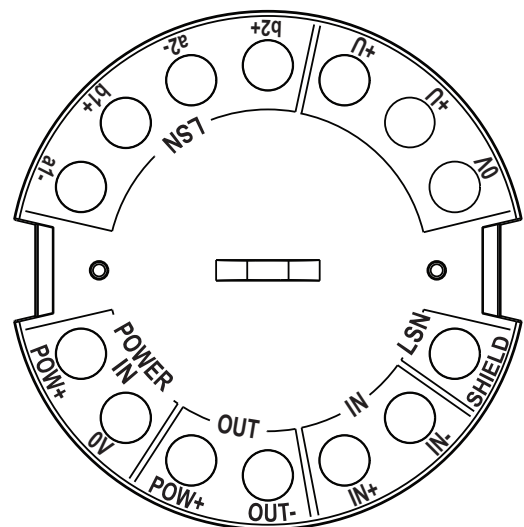
FLM-420-O1I1-D



Description

IN	IN- IN+	Input 1
OUT	POW+	Reference potential (+)
	OUT-	Output (switched negative potential)
POWER IN	POW+ 0V	Power supply output
LSN	b1+ a- b2+	LSN (incoming / outgoing)

FLM-420-O1I1-E



Description

POWER IN	POW+ 0V-	Power supply (interface module and output)
OUT	POW+	Reference potential (+)
	OUT-	Output (switched negative potential)
IN	- +	Input
LSN	SHIELD	Cable shielding (if available)
	0V +U +U	Auxiliary power supply (support points to loop through)
LSN	b2+ a2- b1+ a1-	LSN (incoming / outgoing)

- Can be connected to the fire panels FPA-5000 and FPA-1200.

- Programming is done with the programming software of the fire panel.
- The LSN connection is established by the two wires of the LSN line.
- The power supply for the output is either fed by the auxiliary power supply from the fire panel or by an external power supply unit. External power supplies must be free-of-ground.
- The outputs OUT/OUT- are switched against the negative potential of the interface module (POWER IN/OV). The positive potential (OUT/POW+) is either supplied by the auxiliary power (AUX) from the fire panel or by an external power supply unit.
- The maximum switchable voltage of the semi-conductor output is 30 V DC. The maximum switchable current is 700 mA (depending on the external power supply).
- The activation of the input IN has to be carried out electrically isolated from LSN (e.g. with relay contacts, pushbutton, etc.).
- The input must have a minimum activation time of 3.2 s.
- A maximum cable length of 3 m is permitted per input and output.
- The maximum cable length of all inputs connected to the loop or stub is 500 m in total. Additionally, all outputs which are not electrically isolated from LSN must be included in the total line length calculation (e.g. peripherals connected via C points). With UEZ 2000 LSN and UGM 2020, the limitation to 500 m applies to each Network Processing Converter (NVU).
- The interface module has terminals blocks to allow a second pair of wires to be looped through to supply the downstream connected elements with LSN power.
- For a fire system operation according to EN 54-2, the interface modules used for the activation of fire protection equipment and whose outputs are not monitored, must be installed directly next to or within the device which shall be activated.

Parts Included

Type	Qty.	Component
FLM-420-01I1-E	1	Output-input Interface Module, in-built version
FLM-420-01I1-D	1	Output-input Interface Module, DIN-rail version, with adapter and light pipe

Technical Specifications

Electrical

LSN

- LSN input voltage 15 V DC to 33 V DC
- Max. current consumption from LSN 1.9 mA

Output

- Max. switchable voltage of semi-conductor output 30 V DC
- Max. switchable output current 700 mA (depending on external power supply)
- External power supply 5 V DC to 30 V DC

Input

Line monitoring with EOL

- EOL resistor Nominal 3.9 kΩ
- Overall line resistance R_{Σ} with $R_{\Sigma} = R_{L/1} + R_{L/2} + R_{EOL}$
 - Standby: 1500 Ω to 6000 Ω
 - Short circuit: < 800 Ω
 - Line interruption: > 12.000 Ω

Contact monitoring

- Max. current strength (current pulse) 8 mA

Minimum activation time of the input 3.2 s

Mechanical

Connections

- FLM-420-01I1-E 14 screw terminals
- FLM-420-01I1-D 12 screw terminals

Permissible wire diameter

- FLM-420-01I1-E 0.6 mm² to 2.0 mm²
- FLM-420-01I1-D 0.6 mm² to 3.3 mm²

Address setting

- FLM-420-01I1-E 8 DIP switches
- FLM-420-01I1-D 3 rotary switches

Housing material

- FLM-420-01I1-E ABS/PC blend
- FLM-420-01I1-D incl. adapter PPO (Noryl)

Housing color

- FLM-420-01I1-E Signal white, RAL 9003
- FLM-420-01I1-D incl. adapter Gray white, similar to RAL 9002

Dimensions

- FLM-420-01I1-E Approx. 50 mm x 22 mm (Ø x H)
- FLM-420-01I1-D incl. adapter Approx. 110 x 110 x 48 mm (W x H x D)

Weight

- FLM-420-01I1-E Without/with packing Approx. 35 g / 170 g
- FLM-420-02-D Approx. 95 g / 390 g

Environmental conditions

- Permissible operating temperature -20 °C to +65 °C
- Permissible storage temperature -25 °C to +80 °C
- Permissible rel. humidity < 96% (non-condensing)
- Classes of equipment as per IEC 60950 Class III equipment
- Protection class as per IEC 60529 IP 30

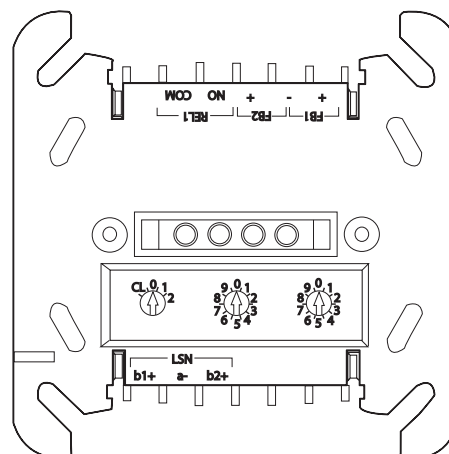
System limiting values

- Maximum cable length input 3 m
- Maximum cable length output 3 m

Ordering Information

FLM-420-01I1-E Output-input Interface Module in-built version	FLM-420-01I1-E
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FLM-420-01I1-D Output-input Interface Module DIN-rail version	FLM-420-01I1-D
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Certifications and Approvals

Complies with EN 54-17:2005, EN 54-18:2005 and VdS 2496

Region	Certification	
Europe	CE	FLM-420-RLE-S
	CPD	0786-CPD-20725 FLM-420-RLE-S
Germany	VdS	G 209085 FLM-420-RLE-S

Installation/Configuration Notes

- Can be connected to the fire panels FPA-5000 and FPA-1200 and the classic LSN control panels BZ 500 LSN, UEZ 2000 LSN and UGM 2020 (from WinPara SW version 4.83).
- The FLM-420-RLE-S can be surface-mounted with the provided housing, or mounted on a DIN rail without the housing. A DIN rail adapter is included in the delivery.

Parts Included

Quant.	Component
1	FLM-420-RLE-S Extinguishing Interface Module
1	Surface-mount housing
1	DIN rail adapter

Technical Specifications

Electrical

Input voltage	15 V DC to 33 V DC
Max. current consumption	7.9 mA
Activation extinguishing system	
• after initialization / during standby	3.3 kOhm
• during alarm	680 Ohm
Max. monitoring voltage	6 V
Max. monitoring current	1.5 mA (line short-circuit)

Mechanics

Operating/display elements	2 LEDs (1 yellow, 1 red)
Address setting	3 rotary switches for
	• LSN classic mode or LSN improved version
	• Automatic or manual addressing
Connection	8 screw terminals
Material	
• Interface module	PPO (Noryl)
• Surface-mount housing	ABS/PC blend
Color	
• Interface module	Gray white, similar to RAL 9002
• Housing	Signal white, RAL 9003

Dimensions

• with housing	Approx. 126 x 126 x 71 mm (4.96 x 4.96 x 2.8 in.)
• without housing (with DIN rail adapter)	Approx. 110 x 110 x 48 mm (4.33 x 4.33 x 1.89 in.)

Weight

• with housing	Approx. 390 g (13.8 ounces)
• without housing	Approx. 150 g (5.3 ounces)

Environmental conditions

Permitted operating temperature	-20 °C to 50 °C (-4 °F to 122 °F)
Permitted storage temperature	-25 °C to 85 °C (-13 °F to 176 °F)
Permitted relative humidity	< 96%
Classes of equipment as per IEC 60950	Class III equipment
Protection class as per IEC 60529	IP 30

Ordering Information

FLM-420-RLE-S Extinguishing Interface Module

The FLM-420-RLE-S is used for the supervised monitoring and activation of extinguishing systems.

FMX-IFB55-S Interface Box Surface-mount



The FMX-IFB55-S Interface Box Surface-mount acts as a retainer for interface modules of wall mount type in the 420 series.

Parts Included

Type	Qty.	Component
FMX-IFB55-S	1	Interface Box Surface-mount
Note A compatible cover is included in the scope of delivery for interface modules of wall mount type in the 420 series (FLM-420-...-W).		

Technical Specifications

Mechanics

Material	ABS
Color	Signal white, RAL 9003
Weight	Approx. 30 g
Dimensions (Ø x H)	76 x 33 mm

Ordering Information

FMX-IFB55-S Interface Box Surface-mount **FMX-IFB55-S**

FLM-IFB126-S Surface-mounted Housing



The FLM-IFB126-S Surface-mounted Housing acts as a retainer for interface modules type DIN rail or as a spare housing for the type surface-mount in the 420 series.

Installation/Configuration Notes

- 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 ducts for diameter up to 21 mm (for conduit)
 - 2 x 4 rubber bushes for inserting cables with diameters of up to 8 mm.

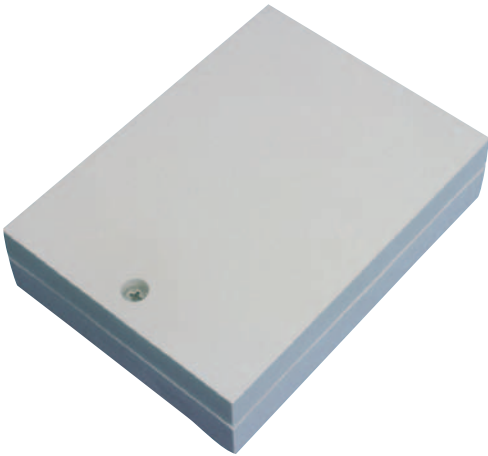
Technical Specifications

Material	ABS/PC Blend
Color	Signal white (RAL 9003)
Dimensions	Approx. 126 x 126 x 70 mm
Weight	Approx. 235 g

Ordering Information

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

NAK 100 LSN Branch Interface

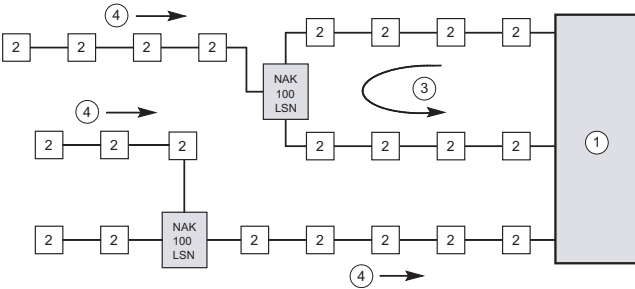


Features

- ▶ Connection of up to 32 LSN elements on a stub
- ▶ Tamper surveillance of the branch expansion

NAK 100 LSN Branch Interface can also be used to switch stubs with other LSN elements to loops/stubs.

System Overview



Pos.	Description
1	Fire panel
2	LSN element
3	Loop
4	Stub

Functions

The NAK 100 LSN has a device contact (tamper contact), which if triggered sends a signal that is transmitted as a separate message.

Certifications and Approvals

Region	Certification	
Europe	CE	NAK 100 LSN
Germany	VdS	G 293018 NAK 100 LSN
Hungary	TMT	TMT-50-7/2004 FK 100 LSN, NAK/NBK/NKK/NSB/NTK 100 LSN
Russia	GOST	POCC DE.C313.B06297

Installation/Configuration Notes

- Maximum 32 LSN elements can be connected to a stub.
- The power supply of the LSN part in the NAK 100 LSN occurs via the two wires of the LSN line.
- A second wire pair can be looped through to provide a separate power supply for subsequent LSN interface.

Installation/configuration notes in accordance with VdS/VDE

- In accordance with VdS, automatic detectors may not be mixed with manual call points in a stub.
- VdS allows a maximum of 10 manual call points per stub.

Parts Included

Qty.	Components
1	Interface housing for surface mounting
1	Interface circuit board NAK 100 LSN
1	Bag with connection accessories

Technical Specifications

Electrical

Operating voltage	+10 V DC .. +33 V DC
Current consumption	2.5 mA

Mechanics

Housing

• Material	Plastic, ABS Terluran
• Color	Light-gray, RAL 9002
• Dimensions (W x H x D)	100 x 135 x 35.7 mm

Weight	Approx. 140 g
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Environmental conditions

Protection class as per EN 60529	IP 30
Permissible operating temperature	0 °C ... +50 °C

Planning

Connection	Branch for loop or stub lines
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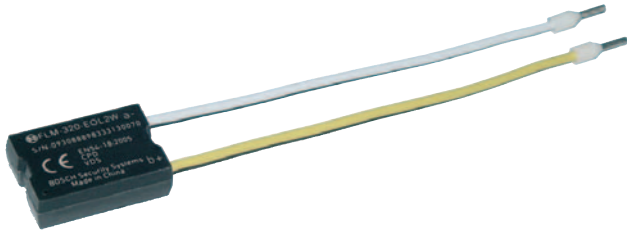
Ordering Information

NAK 100 LSN Branch Interface

To connect additional stubs to further LSN elements on the loops or stubs

NAK 100-AP

FLM-320-EOL2W Conventional EOL Module 2-Wire



Ordering Information

FLM-320-EOL2W Conventional EOL Module 2-Wire **FLM-320-EOL2W**
for EN 54-13 compliant termination of conventional lines

The EOL module terminates conventional lines according to EN 54-13.

It detects faults of the conventional line according to EN 54-13 and reports them to the fire panel. The reports are displayed on the panel controller.

For wirings according to EN 54-13 a maximum of 32 automatic fire detectors or 10 manual call points can be used.

Installation/Configuration Notes

- Max. 32 automatic fire detectors in a conventional line.
- Max. 10 manual call points in a conventional line.

Parts Included

Qty.	Components
1	FLM-320-EOL2W Conventional EOL Module

Available from end of 2009.

Technical Specifications

Electrical

Operating voltage	9 V DC to 30 V DC
Current consumption	< 2.0 mA

Mechanics

Housing material	Thermelt 861
Housing color	black
Dimensions (H x W x D)	25 x 17 x 8 mm
Weight	7 g

Environmental conditions

Permissible operating temperature	-25°C to 70°C
Permissible storage temperature	-25°C to 85°C
Permissible relative humidity	<96%, non condensing
Protection class as per IEC 60529	IP 30

FLM-420-EOL2W-W EOL Module LSN



Environmental conditions

Permissible operating temperature	-20°C to 55°C
Permissible storage temperature	-25°C to 85°C
Permissible relative humidity	<96%, non condensing
Protection class as per IEC 60529	IP 40

Ordering Information

FLM-420-EOL2W-W EOL Module LSN
for EN 54-13 compliant termination of LSN
stubs or T-taps

FLM-420-EOL2W-W

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The EOL module terminates LSN stubs or T-taps according to EN 54-13.

It detects LSN line faults according to EN 54-13 and reports them to the fire panel via LSN. The reports are displayed on the panel controller.

For wirings according to EN 54-13 a maximum of 32 automatic fire detectors or 10 manual call points can be used in a LSN stub or T-tap.

Installation/Configuration Notes

- Max. 32 automatic fire detectors in a LSN stub or T-tap.
- Max. 10 manual call points in a LSN stub or T-tap.

Parts Included

Qty.	Components
1	FLM-420-EOL2W-W EOL Module LSN

Available from end of 2009.

Technical Specifications

Electrical

Operating voltage	15 V DC to 33 V DC
Current consumption	< 1.5 mA

Mechanics

Housing material	ABS + PC Blend
Housing color	Signal white (RAL 9003)
Dimensions (Ø x D)	76 x 30 mm
Weight	50 g