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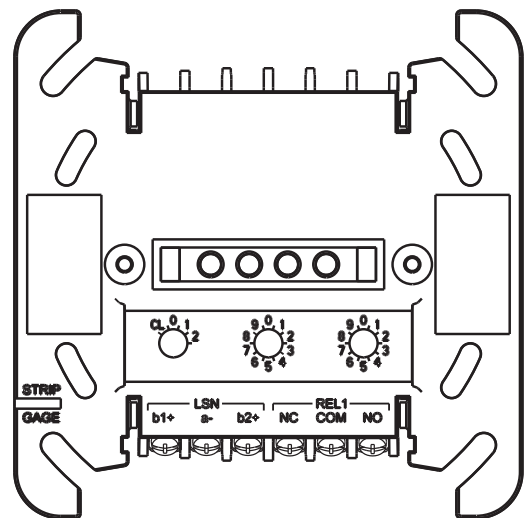# FLM-420-RLV1 Relay Interface Modules Low Voltage

▸ **Maximum switching current of 5 A/30 V DC (type DIN rail), 1 A/30 V DC (type in-built), 0.5 A/42.4 V AC (both variants)**

▸ **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.

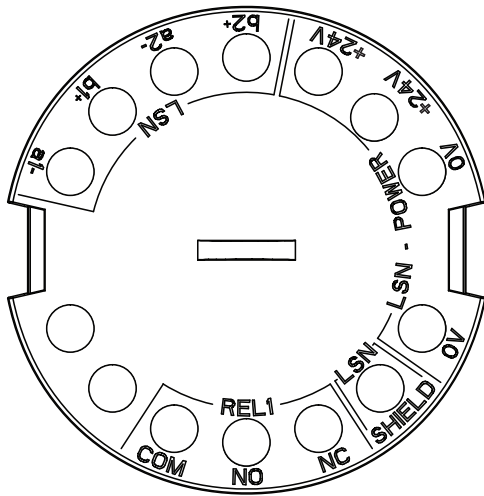## System Overview

FLM-420-RLV1-D

Description	Connection
REL1 NC | COM | NO	Relay (NC, COM and NO contact)
LSN b1+ | a- | b2+	LSN (in/out)

FLM-420-RLV1-E

Description	Connection
REL1 COM | NO | NC	Relay (COM, NO and NC contact)
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)

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 60715 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	
Germany	VdS	G 207077 FLM-420-RLV1-D; FLM-420-RLV1-E; FLM-420-RLV1-W
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
	MOE	UA1.016-0070271-11 FLM-420-RLV1-W_FLM-420-RLV1-E_FLM-420-RLV1-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.
- 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 and voltage	• 1 A / 30 V DC • 0.5 A / 42.4 V AC
• Min. switching current and voltage	• 0.01 mA / 10 mV DC • 0.01 mA / 10 mV AC
• Max. frequency AC	100 Hz

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

• Max. switching current and voltage	• 5 A / 30 V DC • 0.5 A / 42.4 V AC
• Min. switching current and voltage	• 0.1 mA / 100 mV DC • 0.1 mA / 100 mV AC
• Max. AC frequency	100 Hz
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 ℃ to +55 ℃
Permitted storage temperature	-25 ℃ to +80 ℃
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 with 1 relay output, type in-built	**FLM-420-RLV1-E**
FLM-420-RLV1-D Relay Interface Module Low Voltage with 1 relay output, DIN rail type	**FLM-420-RLV1-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)	**FLM-IFB126-S**