



# FLM-420-O1I1 Output-input Interface Modules



- ▶ **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**

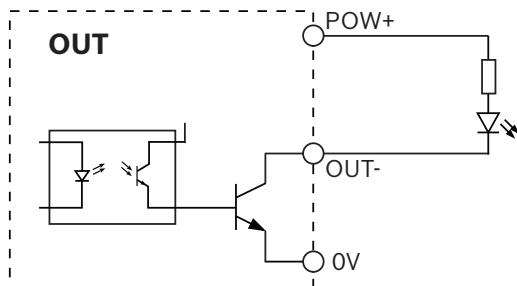
The FLM-420-O1I1 Output-input Interface Modules are fitted with one output to control external devices and with one monitored input.

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

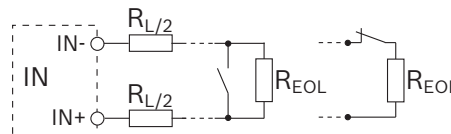
The input monitoring functions can be selected by setting the corresponding addresses.

### 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.

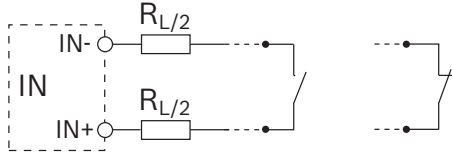


Position	Description
$R_{\Sigma}$	Overall line resistance with $R_{\Sigma} = R_{L/2} + R_{L/2} + R_{EOL}$
$R_{L/2}$	Line resistance

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

Line condition	Overall line resistance $R_L$
Standby	1500 $\Omega$ to 6000 $\Omega$
Short circuit	< 800 $\Omega$
Interruption	> 12.000 $\Omega$

**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 60715 with included adapter and
- For the FLM-IFB126-S surface-mounted housing.

**Certifications and Approvals**

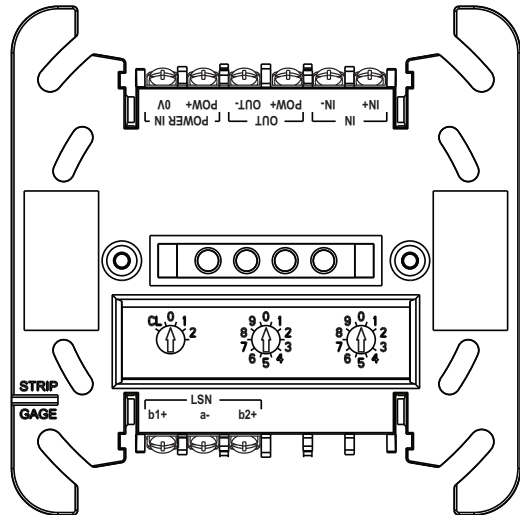
Complies with

- EN 54-17: 2005
- EN 54-18: 2005 + AC:2007

Region	Certification
Germany	VdS G 209070 FLM-420-O1I1-E
	G 209069 FLM-420-O1I1-D
Europe	CE FLM-420-O1I1-E
	FLM-420-O1I1-D
	CPD 0786-CPD-20714 FLM-420-O1I1-E
	0786-CPD-20715 FLM-420-O1I1-D
Hungary	TMT TMT-36/2010 szamu FLM-420-O8I2-S,
	FLM-420-O1I1-E, FLM-420-O1I1-D,
	FLM-420-RLE-S
	MOE UA1.016-0070232-11 FLM-420-O1I1-E
	UA1.016-0070263-11 FLM-420-O1I1-D

**Installation/Configuration Notes**

**FLM-420-O1I1-D**



Description	Connection
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)



**Mechanical**

## Connections

- |                  |                    |
|------------------|--------------------|
| • FLM-420-O111-E | 14 screw terminals |
| • FLM-420-O111-D | 12 screw terminals |

## Permissible wire diameter

- |                  |  |
|------------------|--|
| • FLM-420-O111-E | 0.6 mm <sup>2</sup> to 2.0 mm <sup>2</sup> |
| • FLM-420-O111-D | 0.6 mm <sup>2</sup> to 3.3 mm <sup>2</sup> |

## Address setting

- |                  |                   |
|------------------|-------------------|
| • FLM-420-O111-E | 8 DIP switches    |
| • FLM-420-O111-D | 3 rotary switches |

## Housing material

- |                                |              |
|--------------------------------|--------------|
| • FLM-420-O111-E               | ABS/PC blend |
| • FLM-420-O111-D incl. adapter | PPO (Noryl)  |

## Housing color

- |                                |                                 |
|--------------------------------|---------------------------------|
| • FLM-420-O111-E               | Signal white, RAL 9003          |
| • FLM-420-O111-D incl. adapter | Gray white, similar to RAL 9002 |

## Dimensions

- |                                |                                       |
|--------------------------------|---------------------------------------|
| • FLM-420-O111-E               | Approx. 50 mm x 22 mm (Ø x H)         |
| • FLM-420-O111-D incl. adapter | Approx. 110 x 110 x 48 mm (W x H x D) |

## Weight

Without/with packing

- |                  |                      |
|------------------|----------------------|
| • FLM-420-O111-E | Approx. 35 g / 170 g |
| • FLM-420-O2-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 &lt; 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-O111-E Output-input Interface Module****FLM-420-O111-E**

with 1 open collector output and 1 monitored input, in-built version

**FLM-420-O111-D Output-input Interface Module****FLM-420-O111-D**

with 1 open collector output and 1 monitored input, DIN-rail version

**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)

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