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)

- 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
FLM-420-RLV1-E

**Description**

- REL1 COM | NO | NC
- LSN SHIELD
- LSN POWER
  - 0V | 0V | +24V | +24V
  - 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.

<table>
<thead>
<tr>
<th>Address rotary switches</th>
<th>Address DIP switches</th>
<th>Operating mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 0 0</td>
<td>0</td>
<td>Loop/stub in improved version LSN mode with automatic addressing (T-taps not possible)</td>
</tr>
<tr>
<td>0 0 1</td>
<td>1 - 254</td>
<td>Loop/stub/T-taps in improved version LSN mode with manual addressing</td>
</tr>
<tr>
<td>CL 0 0</td>
<td>255</td>
<td>Loop/stub in LSN mode classic</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Region</th>
<th>Certification</th>
<th>FLM-420-RLV1-E</th>
<th>FLM-420-RLV1-D</th>
<th>FLM-420-RLV1-W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>VdS</td>
<td>G 207077</td>
<td>FLM-420-RLV1-E</td>
<td>FLM-420-RLV1-W</td>
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<tr>
<td>Europe</td>
<td>CE</td>
<td>FLM-420-RLV1-E</td>
<td>FLM-420-RLV1-D</td>
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<td></td>
<td>CPD</td>
<td>0786-CPD-20291</td>
<td>FLM-420-RLV1</td>
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<tr>
<td></td>
<td>MOE</td>
<td>UA1.016-0070271-11</td>
<td>FLM-420-RLV1-W</td>
<td></td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLM-420-RLV1-E</td>
<td>1</td>
<td>Relay Interface Module Low Voltage, type in-built</td>
</tr>
<tr>
<td>FLM-420-RLV1-D</td>
<td>1</td>
<td>Relay Interface Module Low Voltage, type DIN rail, with adapter and light pipe</td>
</tr>
</tbody>
</table>

### Technical Specifications

**Electrical**

<table>
<thead>
<tr>
<th>LSN</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LSN input voltage</td>
<td>15 V DC to 33 V DC (min. to max.)</td>
<td></td>
</tr>
<tr>
<td>Max. current consumption from LSN</td>
<td>1.75 mA</td>
<td></td>
</tr>
</tbody>
</table>

**Relay (low voltage)**

<table>
<thead>
<tr>
<th>Normally closed, common and normally open contact (NC/COM/NO)</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>Max. switching current and voltage</th>
<th>1 A / 30 V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. switching current and voltage</td>
<td>0.01 mA / 10 mV DC</td>
</tr>
<tr>
<td>Max. frequency AC</td>
<td>100 Hz</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Max. switching current and voltage</th>
<th>5 A / 30 V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. switching current and voltage</td>
<td>0.1 mA / 100 mV DC</td>
</tr>
<tr>
<td>Max. AC frequency</td>
<td>100 Hz</td>
</tr>
</tbody>
</table>

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 mm²
- FLM-420-RLV1-D: 0.6 to 3.3 mm²

**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: 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: Approx. 110 x 110 x 48 mm (W x H x D)

### Weight

- 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** with 1 relay output, type in-built
- **FLM-420-RLV1-D Relay Interface Module Low Voltage** with 1 relay output, DIN rail type

### 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)