The FLM‑420‑O8I2‑S Octo-output Interface Module is fitted with eight outputs to control external devices and with two monitored inputs.

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.

**System overview**

**Functions**

**Semi-conductor outputs**
The outputs can be switched independently. They are electrically isolated from the LSN loop and protected against short circuits.

**Output power supply**
The power supply for connected loads can be selected individually for blocks of four outputs each:
- Auxiliary power supply (AUX) from the fire panel
- External power supply units.

**Monitoring functions of the inputs**
The FLM‑420‑O8I2‑S Octo-output 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 two 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.

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
</tr>
</thead>
</table>

Functionality of the semi-conductor outputs
The overall line resistance with \( R_L/2 + R_L/2 + R_{EOL} \) is denoted as \( R_\Sigma \).

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

<table>
<thead>
<tr>
<th>Line condition</th>
<th>Overall line resistance ( R_\Sigma )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby</td>
<td>1500 ( \Omega ) to 5500 ( \Omega )</td>
</tr>
<tr>
<td>Short circuit</td>
<td>&lt; 800 ( \Omega )</td>
</tr>
<tr>
<td>Interruption</td>
<td>&gt; 85000 ( \Omega )</td>
</tr>
</tbody>
</table>

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

In case of 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.

<table>
<thead>
<tr>
<th>Address</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 0 0</td>
<td>Loop/stub in improved version LSN mode with automatic addressing (T-taps not possible)</td>
</tr>
<tr>
<td>0 0 1... 2 5 4</td>
<td>Loop/stub/T-taps in improved version LSN mode with manual addressing</td>
</tr>
<tr>
<td>CL 0 0</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 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

**Regulatory information**

Complies with:
- EN 54-17: 2005

<table>
<thead>
<tr>
<th>Region</th>
<th>Regulatory compliance/quality marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morocco</td>
<td>CMIM FLM-420-O8I2-S</td>
</tr>
<tr>
<td>Germany</td>
<td>VdS G 209147 FLM-420-O8I2-S</td>
</tr>
<tr>
<td>Europe</td>
<td>CE FLM-420-O8I2-S</td>
</tr>
<tr>
<td></td>
<td>CPD 0786-CPD20795 FLM-420-O8I2-S</td>
</tr>
<tr>
<td>Hungary</td>
<td>TMT TMT-36/2010 szamu FLM-420-O8I2-S, FLM-420-O1I1-E, FLM-420-O1I1-D, FLM-420-RLE-S</td>
</tr>
<tr>
<td>Ukraine</td>
<td>MOE UA1.016.0070230-11 FLM-420-O8I2-S</td>
</tr>
</tbody>
</table>
**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.
- 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 outputs OUT\_I/1- to 4- and OUT\_II/5- to 8- are switched against the negative potential of the interface module (POWER IN OUT\_I/PI- and POWER IN OUT\_II/P\_II-). The positive potential for OUT\_I/P\_I+ and OUT\_II/P\_II+ is either supplied by the auxiliary power (AUX) from the fire panel or by one or two external power supply units or a combination of both. OUT\_I/P\_I+ and POWER IN OUT\_I/P\_I+ as well as OUT\_II/P\_II+ and POWER IN OUT\_II/P\_II+ are linked internally.
- External power supplies must be free-of-ground.
- The maximum switchable voltage of the semiconductor outputs is 30 V DC. The maximum switchable current is 700 mA for each of the outputs (depending on the external power supply).
- The activation of the inputs IN 1 and 2 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 he 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.
Fire Alarm Systems - FLM-420-O8I2-S Octo-output interface module, 2-input

### Parts included

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Octo-output Interface Module, in housing for surface mounting</td>
</tr>
</tbody>
</table>

### Technical specifications

#### Electrical

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

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

**Inputs**
- **Line monitoring with EOL**
  - **EOL resistor**: Nominal 3.9 kΩ
  - **Overall line resistance** $R_{L}$ with $R_{L} = R_{L/1} + R_{L/2} + R_{EOL}$
    - **Standby**: 1500 Ω to 5500 Ω
    - **Short circuit**: < 800 Ω
    - **Line interruption**: > 85000 Ω

**Contact monitoring**
- **Max. current strength (current pulse)**: 8 mA
- **Minimum activation time of the inputs IN 1...2**: 3.2 s

#### Mechanical

**Connections**
- 30 screw terminals

**Permissible 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 54

### 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-O8I2-S Octo-output interface module, 2-input**
in housing for surface mounting

**Order number**
- FLM-420-O8I2-S | F.01U.033.255

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