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FLM-420-O8I2-S Octo-output Interface Module with 2 Inputs

- **Eight individually switchable semi-conductor outputs**
- **Outputs electrically isolated from LSN loop and short-circuit proof**
- **Max. switchable current per output 700 mA**
- **Individually selectable monitoring functions (EOL or contact) for the two inputs each**
- **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**

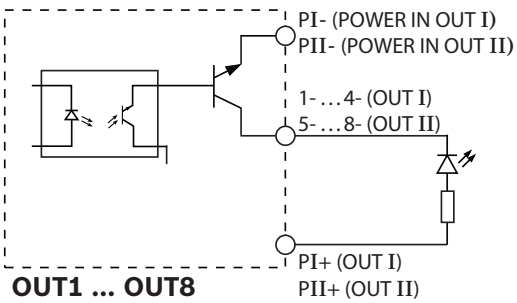
The FLM-420-O8I2-S Octo-output Interface Module is fitted with eight outputs to control external devices and with two monitored inputs.

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.

Functions

Semi-conductor outputs

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



Functionality of the semi-conductor outputs

Output power supply

The power supply for connected loads can be selected individually for blocs 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

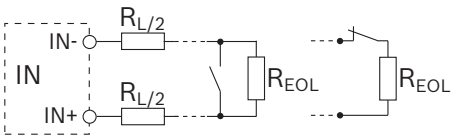
The monitoring functions of the two inputs can be selected individually by setting the corresponding addresses.

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.

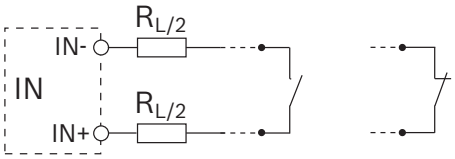


Position	Description
R_Σ	Overall line resistance with $R_\Sigma = R_{L/2} + R_{L/2} + R_{EOL}$
$R_{L/2}$	Line resistance

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.

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.

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.

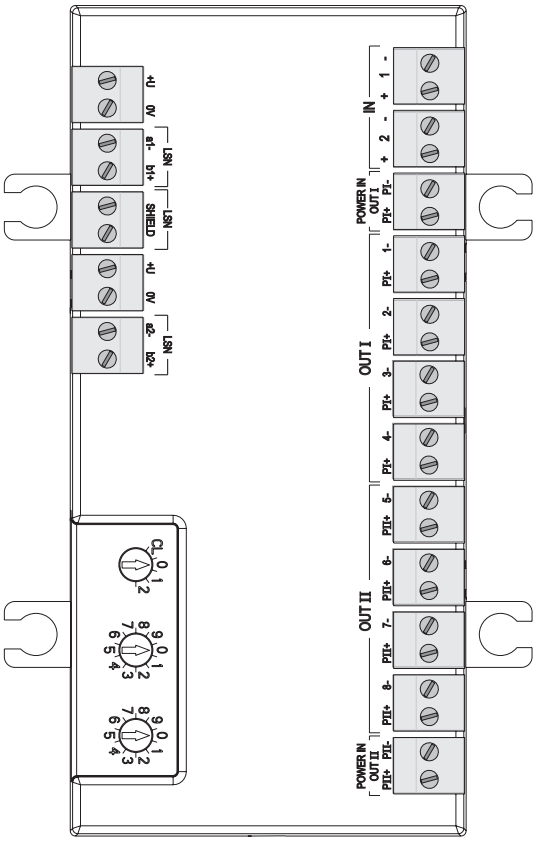
Certifications and Approvals

Complies with

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

Region	Certification	
Germany	VdS	G 209147 FLM-420-O8I2-S
Europe	CE	FLM-420-O8I2-S
	CPD	0786-CPD20795 FLM-420-O8I2-S
Hungary	TMT	TMT-36/2010 szamu FLM-420-O8I2-S, FLM-420-O1I1-E, FLM-420-O1I1-D, FLM-420-RLE-S
	MOE	UA1.016-0070230-11 FLM-420-O8I2-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
POWER IN OUTII	PII+|PII-	Power supply output 5 to 8
OUTII	PII+|8- … PII+|5-	Reference potential (PII+), switched negative potential output 5 to 8
OUTI	PI+|4- … PI+|1-	Reference potential (PII+), switched negative potential output 1 to 4
POWER IN OUTI	PI+| PI-	Power supply output 1 to 4
IN	+ | 2 | - + | 1 | -	Input 2 Input 1

- 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 OUTI/1- to 4- and OUTII/5- to 8- are switched against the negative potential of the interface module (POWER IN OUTI/ PI- and POWER IN OUTII/ PII-). The positive potential for OUTI/PI+ and OUTII/PII+ 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. OUTI/PI + and POWER IN OUTI/PI+ as well as OUTII/PII+ and POWER IN OUTII/PII+ are linked internally.
- External power supplies must be free-of-ground.
- The maximum switchable voltage of the semi-conductor outputs is 30 V DC. The maximum switchable current is 700 mA for each of the ouputs (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.

Parts Included

Type	Qty.	Component
FLM-420-O8I2-S	1	Octo-output Interface Module, 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
Outputs	8, independent
• 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	2, 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 • Short circuit: < 800 Ω • Line interruption: > 12.000 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 with 2 Inputs in housing for surface mounting	**FLM-420-O8I2-S**

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