SBB4I2O24

Fire damper I/O Module

Benefits

- Ready-to-use junction box housing for fast and easy decentral installation
- One I/O-module can control and monitor two fire dampers
- Fast and easy wiring to the main controller through the Dupline® bus (free topology and long distance capability)
- Up to 60 fire dampers on one Dupline® bus segment
- The system can be interfaced to the main controller via BACnet or Modbus

Description

The module SBB4I2O24 is an I/O module for monitoring and control of two fire dampers.

The module has 4 contact inputs for position feedback and 2 relay outputs for control of fire damper actuators.

The I/O module is implemented in a robust junction box for a decentralized installation near the two fire dampers.

The I/O module is part of the Smart building product range.

Several I/O modules can be multi-dropped via the same Dupline® 2-wire bus and thus the wiring to the controller can be significantly simplified.

Applications

- Control and monitoring of fire damper

Main functions

- Robust I/O module in junction box housing
- 4 x contact input (voltage free)
- 2+SPST relay output (230VAC/3A)
- Smart Dupline® protocol
- 24 VAC Power supply
- 24 VDC Power supply
- Easy installation

Features

▶ **Power Supply**

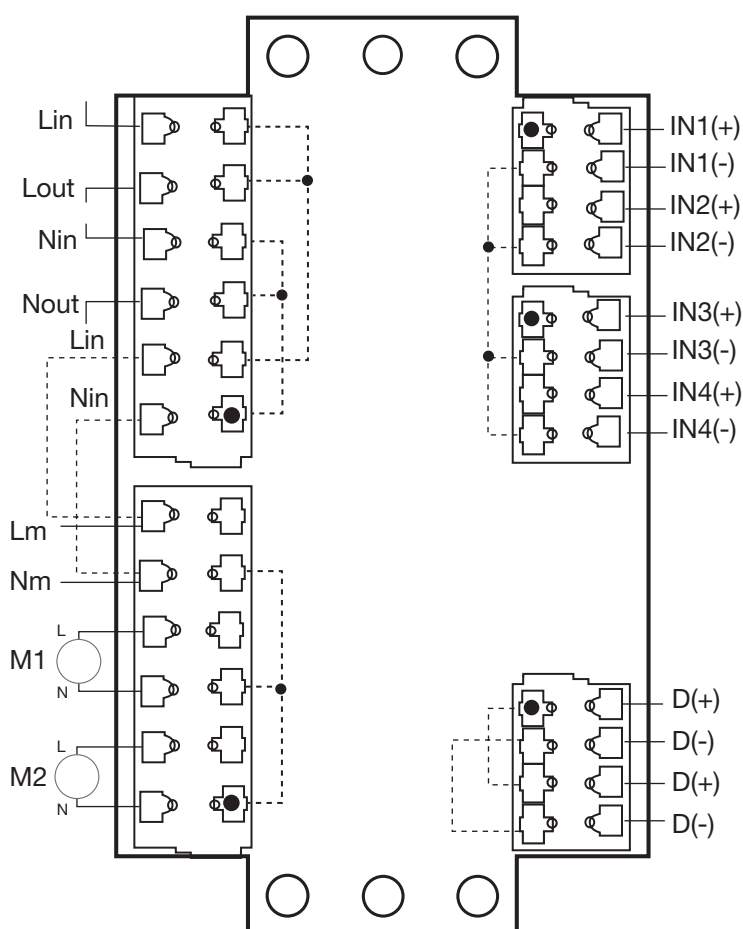| Power supply	24 VAC ±15%	
	24 VDC ±20%, 19.2 VDC to 28.8 VDC	
Max current consumption	3.2 VA	
Max current on Lin-Lout / Nin-Nout Bridge	10 Amp	(Internal bridge on PCB) See fig. 1

Fig. 1 *Dashed lines indicate internal connection on the PCB. Max.10 Amp is allowed.*

▶ **Dupline® bus**

Dupline® voltage rated	8.2 V
Min. Dupline® peak voltage	4.5 V
Dupline® Current consumption	1.1 mA

Inputs

Number of inputs	4
Type	Voltage-free contact
Cable length	< 20 m

Outputs

Number of outputs	2
Type	SPST
AC	
Max. switching voltage	250 VAC
Max. current load	5 Amp (1250 VA)
DC	
Max. switching voltage	30 VDC
Max. current load	3 Amp (90 watt)

Indication

Power supply	Green LED
Bus OK	Yellow LED
Input OK	Yellow LED x 4
Output OK	Yellow LED x 4

The input LEDs indicate when the input is active (taking care of the NO/NC configuration)
The output LEDs indicate when the relay is active and closed (NC) (According to the NO/NC configuration)

Environmental

Pollution degree	2 (IEC 60664-1. Par. 4.6.2)
Operating temperature	0° to 50°C (-4°F to 122°F)
Storage temperature	-50° to 85°C (-58°F to 185°F)
Humidity	20 to 90% (not condensing)
Degree of protection	IP55

EMC

Immunity	EN61000-6-2
Emission	EN61000-6-3

Mechanics

▶ **Housing**

Type	Standard junction box with 10 knockout openings for M12 or M16 cable
Dimensions (HxWxD)	150 x 110 x 70 mm

▶ **Terminal block**

Power supply in / out	4 x Spring terminal
Dupline® bus in / out	4 x Spring terminal
Relay inputs	4 x Spring terminal
Contact inputs	8 x Spring terminal
Cross-section area	Terminal: 2.5 mm^2
Power for Motor 1 and Motor 2	4 x Spring terminal

▶ **Dielectrical strength**

Power supply to Input	
Power supply to Dupline®	
Dupline® to input	
Dupline® to output	4 KVAC for 1 min., 6 KV impulse 1.2 / 50 µS
Input to output	
Power supply to output	
Inputs not insulated from each other	

▶ **Insulation**

Insulation between Power supply and output
If the installer uses the external bridge Lin – Lm / Nin – Nm, the same power supply for PCB and motors must be used.
However, in this case the insulation (Power supply to output) is lost.

Wiring

A	Bus OK	**F**	Dupline® OUT
B	Power OK	**G**	External power to the motors[1]
C	IN	**H**	Green bridge[2]
D	OUT	**I**	Power supply 24 VAC[3] / or 24 VDC
E	Dupline® IN	**J**	24 VAC OUT / or 24 VDC

Note:
[1] Do not use if green bridge is used.

[2] If the green bridge is used, the motors are powered from the module.

[3] The Green bridge can be used ONLY if the same power supply is used for PCB and motors (24 VAC or 24 VDC). If the motors are powered by 230 VAC, the Green bridge must not be used.

Compatibility and conformity

▶ **Approvals**

CE-marking	C E	
cULus	c(UL)us	According to UL 60950

Programming

The fire damper module is programmable by using the configuration tool

Input	N.O. (Default)
	N.C.

Filter ON	From	To
Input	0 ms*	1 s (step of 16 ms)

*(Default filter ON input 0 s)

Output	N.O.
	N.C.
Configuration state	N.O.
	N.C.

Mode of operation

The SBB4I2O24 is a 4 inputs and 2 SPST outputs module designed for monitoring and controlling of two fire dampers.
The I/O module is part of the Smart Building product range, and several I/O modules can be multi-dropped via the same Dupline® 2-wire bus whereby the wiring to the controller is significantly simplified.
The module must be programmed before use by means of the SBWEB configuration tool.
The output relays can be powered with 24 VAC or 24 VDC by the module itself or by external power supply. See relay specification.

References

▶ **Product selection key**

☞ **SBB4I2O24**

Code	Options	Description
SB	-	Smart building
B	-	Box (Housing)
4I	-	4 inputs
2O	-	2 outputs
24	-	Power supply

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