AS-i Safety Module to Monitor Damper Actuators up to SIL 2

AS-i Module for monitoring damper actuators and for detecting the damper position

Runtime monitoring of the damper motor in master possible

Connection by external flat cable terminal via insulation penetration technology: „click and go“

Ideal for smoke dampers with ventilation function

Certified motor control module SIL 2

AS-i Specifications 2.1/3.0

Article no. BW3005: AS-i Safety Module to Monitor Damper Actuators up to SIL 2

The AS-i module to monitor damper actuators meets the requirements of the AS-i Specifications 2.1/3.0. It is used to control the damper actuator and detect the damper position **„damper open“** and **„damper close“** (**up to SIL 2**) as well as the intermediate position „damper opens“ or „damper closes“.

The connections are short-circuit -and overload protected. A watchdog function, which switches the outputs to their current-less switching state if there is no communication on the AS-i circuit, is integrated. The transfer function is permanent monitored in the integrated AS-i Slave and in the AS-i Master.

The damper's runtime can be monitored and logged automatically on the AS-i Master.

This module can be connected using ready to plug via Belimo compatible AMP connectors.

The module is certified according IEC / EN 61508 SIL 2; EN 62061 SIL 2 and complies with the highest security level typical for this application.

Article no.	BW3005
Connection	
Connection to damper actuator	Belimo-compatible connectors
AS-i connection	cage clamp terminals
Length of connector cable to motor	≤ 30 m[1]
AS-i	
Profile	S-7.B.E
Address	1 single slave
Required Master profile	≥ M3
Since AS-i specification	2.1/3.0
Operating voltage	26,5 ... 31,6 V_{DC}
Quiescent current (Inputs = 0, Outputs = 0)	≤ 75 mA
Max. current consumption incl. motor	≤ 575 mA
Input	
Number	4
Power supply	out of AS-i
Switching threshold	≤ 0,8 mA (low); ≥ 5 mA (high)

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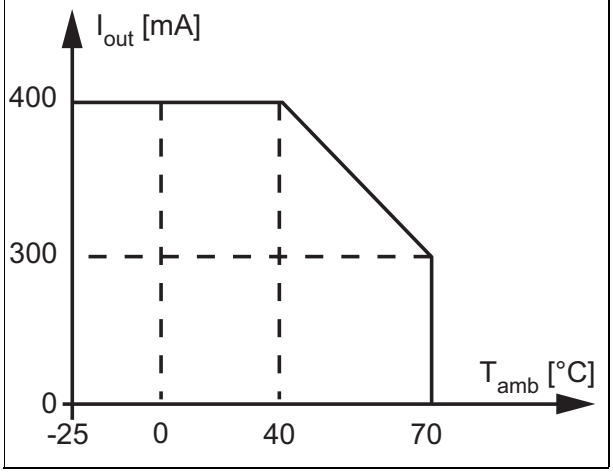
Article no.	BW3005
Output	
Number	2
Power supply	out of AS-i
Max. output current	400 mA[2]
Output function	electrical
Short-circuit proof	yes
Loading capacity	400 mA per output [2] (∑ outputs ≤ 400 mA)
Display	
Operating	LED green
Function	LED yellow
Error	LED red = AS-i fault; flashing = peripheral fault
Inputs 1 ... 4	4 x LEDs yellow
Outputs 1 ... 2	2 x LEDs yellow
Environment	
Applied standards	EN 61000-6-2 EN 61000-6-4 EN 61326-3-1 EN 50295 EN 62061 SIL 2
Operating altitude	max. 2000 m
Ambient temperature	-25 °C ... +70 °C
Storage temperature	-40 °C … +80 °C
Housing	plastic, for screw mounting
Protection category (EN 60529)	IP40
Weight	250 g
Dimensions (W / H / D in mm)	90 / 160 / 55

1 Loop resistance ≤ 150 Ω

2

Derating output current



AS-i Safety Module to Monitor Damper Actuators up to SIL 2

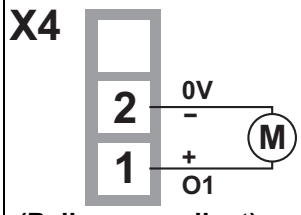
Programming instructions:

- **Address 0 preset, changeable via bus master programming devices.**

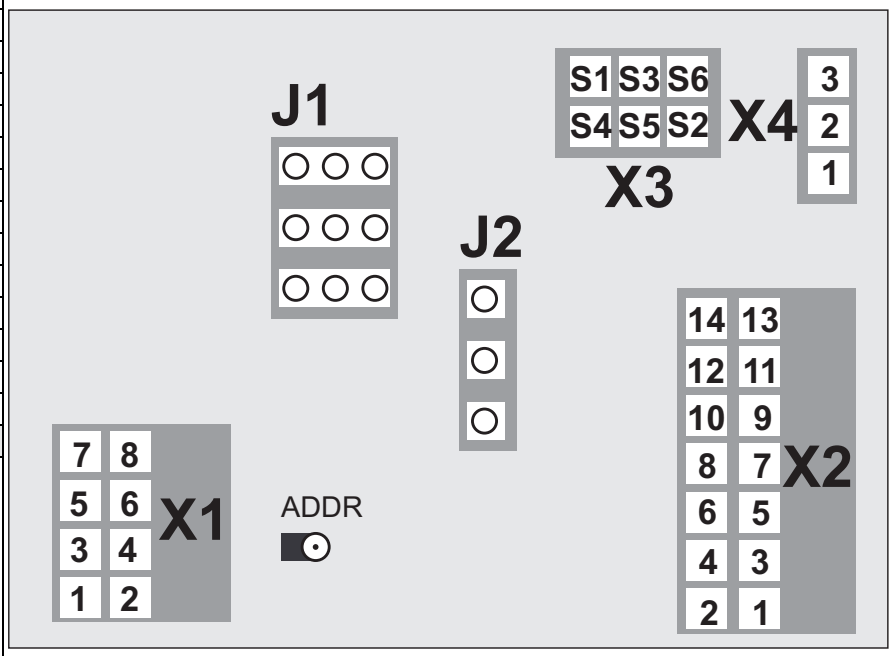
Terminal assignment::

	X1	X2	X4
1	AS-i +	not used	O1
2	AS-i +	0 V	0 V
3	AS-i –	I3	O2
4	AS-i –	not used	
5		not used	
6		not used	
7		not used	
8		+24 V	
9		I4	
10		+24 V	
11		O1	
12		0 V	
13		O2	
14		0 V	

Conncetion diagram



(Belimo compliant)



Programming instructions:

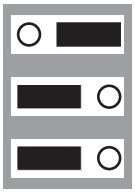
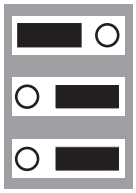
- **Address 0 preset, changeable via bus master programming devices**

Bit assignment			
D0	**D1**	**D2**	**D3**
I1	**I2**	**I3**	**I4**
safe code sequence Bit 0	safe code sequence Bit 1	safe code sequence Bit 2	safe code sequence Bit 3
O1	**O2**	**O3**	**O4**
damper open up	reserved	–	–

AS-i Parameter			
P0	**P1**	**P2**	**P3**
write function			
watch dog 0: off 1: on	not used	not used	not used
read function			
input I1 (end switch S1/S3) 0: end switch activated 1: end switch not activated	input I2 (end switch S4/S6) 0: end switch activated 1: end switch not activated	input I3 0: contact closed 1: contact open	input I4 0: contact closed 1: contact open

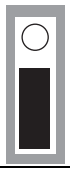
Jumper J1

Jumper J1 is used to select the safety related end switch.

End switch	S1 / S2 / S3	S4 / S5 / S6
Jumper position		 (factory setting)

Jumper J2

Jumper J2 enables the operation of the safety function exclusively with NO contacts.

Jumper position	Function
	Normal operation mode with changeover contacts (factory setting)
	Special function: Operation with NO contacts only. **Notice!** **SIL 2 is not achievable in this operation mode.**

Accessories:

- **AS-i passive distributor to round cable (BW2890) or**
- **Connecting cable 40 cm with M12 plug (art. no. BW2065)**
- **AS-i passive distributor, AS-i flat cable to M12 (art. no. BW1239)**
- **AS-i passive distributor, AS-i/24 V to M12 (art. no. BW1976)**