

ASi Module for safe control of Damper Actuators up to SIL 2

ASi Module for control of damper actuators and for detecting the damper position

Runtime monitoring of the damper motor in master possible

Ideal for smoke dampers with ventilation function

Certified motor control module SIL 2

ASi Specifications 2.1/3.0



(figure similar)

Article no. BW4917: ASi Module for safe control of Damper Actuators up to SIL 2

The ASi module to control damper actuators meets the requirements of the ASi Specifications 2.1/3. 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 currentless switching state if there is no communication on the ASi circuit, is integrated.

The transfer function is permanent monitored in the integrated ASi node and in the ASi Master.

The damper's runtime can be monitored and logged automatically on the ASi Master or via the host controller.

This module can be connected using ready to plug via Belimo compatible AMP connectors or via spring type terminal blocks.

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.

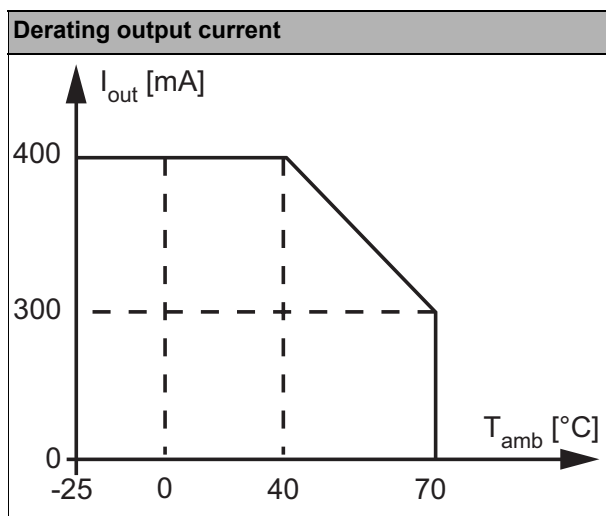
| | |
|---|--|
| Article no. | BW4917 |
| Connection | |
| Connection to damper actuator | Belimo-compatible plugs or spring-type terminals |
| ASi connection | spring-type terminals |
| Length of connector cable to motor | ≤ 30 m ⁽¹⁾ |
| ASi | |
| Profile | S-7.B.E |
| Address | 1 single address |
| Required Master profile | ≥ M3 |
| Since ASi specification | 2.1/3 |
| 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 ASi |
| Switching threshold | ≤ 0,8 mA (low); ≥ 5 mA (high) |

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| | |
|------------------------------|---|
| Article no. | BW4917 |
| Output | |
| Number | 2 |
| Power supply | out of ASi |
| Max. output current | 400 mA ⁽²⁾ |
| Output function | Transistor PNP |
| Short-circuit proof | yes |
| Loading capacity | 400 mA per output ⁽²⁾ , $\Sigma (\text{Out}) \leq 400 \text{ mA}$ |
| Display | |
| LED ASi (green) | on: ASi voltage on flashing: ASi voltage on, but peripheral fault ⁽³⁾ or address 0 off: no ASi voltage |
| LED AUX (green) | on: 24 V _{DC} AUX off: no 24 V _{DC} AUX |
| LED ERR (red) | on: address 0 or offline flashing: peripheral fault ⁽³⁾ off: online |
| LEDs DI 0, 1, 2, 3 (yellow) | state of inputs I1 ... I4 |
| LEDs DO 0, 1 (yellow) | state of outputs O1, O2 |
| Environment | |
| Applied standards | EN 61000-6-2 EN 61000-6-4 EN 61326-3-1 EN 62026-2 EN 62061 SIL 2 EN 60529 |
| Operating altitude | max. 2000 m |
| Ambient temperature | -25 °C ... +70 °C |
| Storage temperature | -40 °C ... +80 °C |
| Housing | plastic, for screw mounting |
| Protection category | IP40 |
| Weight | 250 g |
| Dimensions (W / H / D in mm) | 90 / 160 / 55 |

(1) Loop resistance $\leq 150 \Omega$

(2)



(3) See table "Peripheral fault indication"

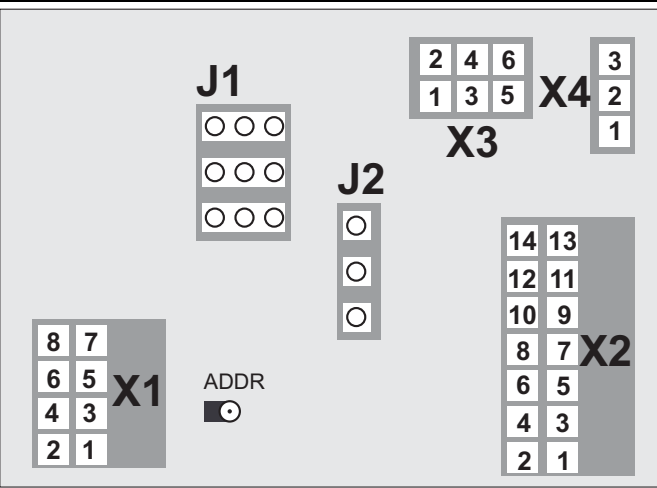
| Article no. | Peripheral fault indication | | |
|-------------|-----------------------------|------------------------|---------------------|
| | Overload sensor supply | Output short circuited | AUX voltage missing |
| BWU4917 | - | • | • |

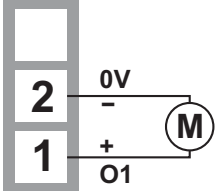
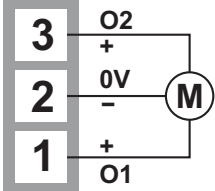
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Terminal assignment

| Signal name | Explanation |
|-------------|---------------------------------|
| Ix | digital input x |
| Ox | digital output x |
| Sx | end switch x (Belimo compliant) |

| Terminal assignment ⁽¹⁾ | | | | |
|------------------------------------|-------|-----------------------|-----------------------|-------------------|
| | X1 | X2 | X3 ⁽²⁾ | X4 ⁽²⁾ |
| 1 | ASi + | O1 | U _{out} (S1) | O1 (3) |
| 2 | ASi + | +24 V | U _{out} (S4) | 0 V (1) |
| 3 | ASi - | I3 | NC1 (S2) | O2 (2) |
| 4 | ASi - | I4 | NC2 (S5) | |
| 5 | | NC1 (S2) | NO1 (S3) | |
| 6 | | NC2 (S5) | NO2 (S6) | |
| 7 | | NO1 (S3) | | |
| 8 | | NO2 (S6) | | |
| 9 | | U _{out} (S1) | | |
| 10 | | U _{out} (S4) | | |
| 11 | | O1 | | |
| 12 | | 0 V | | |
| 13 | | O2 | | |
| 14 | | 0 V | | |



| Connecting spring return actuators ⁽²⁾ | Connecting non-spring return actuators ⁽²⁾ |
|---|--|
| X4  | X4  |

(1) The indications in brackets correspond to the Belimo designations.

(2) Connection via Belimo-compatible plug possible.

| Double-deck terminal block, 2 x 4/5/6/7 poles (pitch 5 mm) | |
|--|--|
| General | |
| Nominal cross section | 2.5 mm ² |
| Conductor cross section | |
| Conductor cross section solid | 0.8 ... 2.5 mm ² |
| Conductor cross section flexible | 0.8 ... 2.5 mm ² |
| Conductor cross section flexible, with ferrule | without plastic sleeve: 0.25 ... 2.5 mm ² |
| | with plastic sleeve: 0.25 ... 1.5 mm ² |
| 2 conductors with same cross section, stranded, with TWIN ferrules | – |
| AWG | 28 ... 12 |
| Stripped insulation length | 6 mm |

Programming instructions:

- Address 0 preset, changeable via bus master programming devices

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| 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 | damper closing | – | – |

| ASi 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 NO1 resp. S1/S3) 0: end switch activated 1: end switch not activated | input I2 (end switch NO2 resp. 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 | | |

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:

- Passive Distributor ASi to 1 x round cable/connecting wires (art. no. BW3186 or BW2890)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)