

ASi-5 Motor Module for Bonfiglioli DGM/DGM-R, IP67, M12, 1M/4I/2O

ASi-5 Motor Module for Bonfiglioli DGM/DGM-R frequency inverter

Cyclic writing of speed and ramps possible


4 x M12 connectors

High protection class IP67



(figure similar)



| Figure | Type | Drive ⁽¹⁾ | Number of drives | Inputs digital | Outputs digital | Input voltage (sensor supply) ⁽²⁾ | Output voltage (actuator supply) ⁽³⁾ | ASi connection ⁽⁴⁾ | ASi address ⁽⁵⁾ | Art. no. |
|--|----------------------|-----------------------|------------------|----------------|-----------------|--|---|-------------------------------|----------------------------|----------------|
|  | IP67, 4 x M12, ASi-5 | Bonfiglioli DGM/DGM-R | 1 | 4 | 2 | out of ASi | out of AUX | ASi profile cable | 1 ASi-5 address | BWU4388 |

(1) **Drive:**

"Bonfiglioli DGM/DGM-R": Motor module to control geared motors with frequency inverters.

(2) **Input voltage (sensor supply):** inputs are supplied by ASi or by AUX (auxiliary 24 V power). If supplied by ASi, inputs shall not be connected to earth or to external potential.

(3) **Output voltage (actuator supply):** outputs are supplied by ASi or by AUX (auxiliary 24 V power). If supplied by ASi, outputs shall not be connected to earth or to external potential

(4) **ASi connection:** the connection to ASi as well to AUX (auxiliary 24 V power) is made via yellow resp. black ASi profile cable with piercing technology or via M12 socket (in IP20 via clamps).

(5) **ASi address:** AB address (max. 62 AB addresses/ASi network), 2 AB addresses (max. 31 modules with 2 AB addresses), single addresses (max. 31 single addresses/ASi network) ASi-5 address (max. 62 ASi-5 addresses/ASi network), mixed use allowed (upon request, ASi nodes are available with specific ASi address profiles).

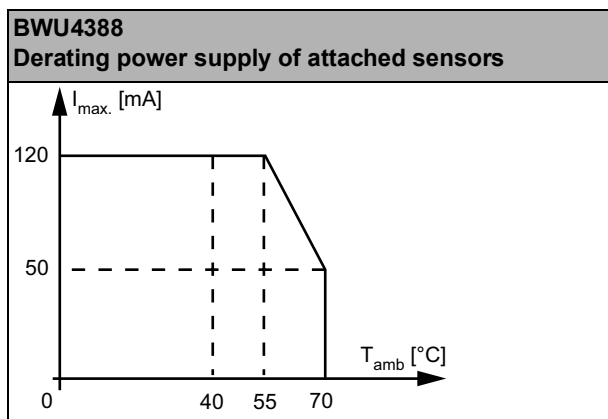
ASi-5 Motor Module for Bonfiglioli DGM/DGM-R, IP67, M12, 1M/4I/2O

| | | |
|--|--------------|--|
| Article no. | | BWU4388 |
| Connection | | |
| ASi / AUX connection | | profile cable and piercing |
| Periphery connection | | M12, Y wiring |
| ASi | | |
| Address | | 1 ASi-5 address |
| Required Master profile | | ≥M5 |
| Since ASi specification | | 5 |
| Operating voltage | | 30 V (18 ... 31,6 V) |
| Max. current consumption | | 210 mA |
| Max. current consumption without sensor/ actuator supply | | 65 mA |
| Process data width | | 6 bytes |
| AUX | | |
| Voltage | | 24 V (18 ... 30 V) |
| Max. current consumption | | 3 A |
| Input | | |
| Number | | 4 |
| Power supply | | out of ASi |
| Sensor supply | | short-circuit and overload protected according to EN 61131-2 |
| Power supply of attached sensors | up to +40 °C | 120 mA ⁽¹⁾ |
| | at +55 °C | |
| | at +70 °C | 50 mA ⁽¹⁾ |
| Switching threshold | | < 5 V (low), > 15 V (high) |
| Output | | |
| Number | | 2 |
| Power supply | | out of AUX |
| Output | | short-circuit and overload protected according to EN 61131-2 |
| Max. output current | up to +40 °C | 1 A per output, $\Sigma(\text{Out})$ 3 A ⁽²⁾ |
| | at +55 °C | |
| | at +70 °C | 0,5 A per output, $\Sigma(\text{Out})$ 1,5 A ⁽²⁾ |
| RS 485 interface | | |
| Number | | 1 |
| Interface | | RS 485 |
| Baud rates | | 38400 Bit/s |
| Power supply | | out of AUX |
| Fuse | | short-circuit and overload protected according to EN 61131-2 |
| Max. current | up to +40 °C | 1 A per motor, $\Sigma(\text{Out})$ 3 A ⁽²⁾ |
| | at +55 °C | |
| | at +70 °C | 0,5 A per motor, $\Sigma(\text{Out})$ 1,5 ⁽²⁾ |
| Visualization | | |
| LED ASI (green) | | on: ASi voltage flashing: ASi voltage on, but peripheral fault ⁽³⁾ or address 0 off: no ASi voltage |
| LED FLT (red) | | on: ASi node offline flashing: peripheral fault ⁽³⁾ off: ASi node online |
| LED AUX (green) | | on: 24 V _{DC} AUX off: no 24 V _{DC} AUX |
| LEDs I1 ... In (yellow) | | state of inputs I1 ... I4 |
| LEDs O1, O2 (yellow) | | state of outputs O1, O2 |
| LED M1 (yellow) | | RS 485 communication active |

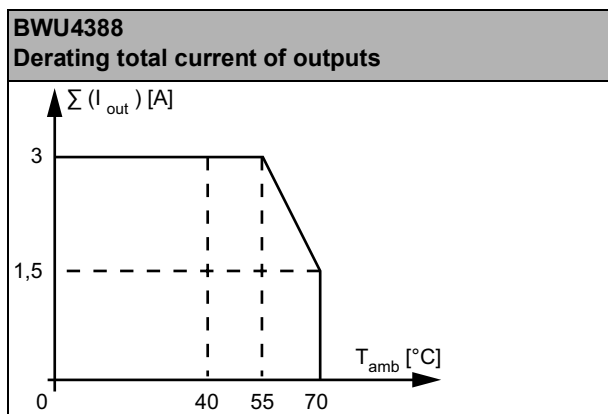
ASi-5 Motor Module for Bonfiglioli DGM/DGM-R, IP67, M12, 1M/4I/2O

| | |
|--|---|
| Article no. | BWU4388 |
| Environment | |
| Applied standards | EN 61000-6-2 EN 61000-6-4 EN 60529 |
| It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe | yes ⁽⁴⁾ |
| Operating altitude | max. 2000 m |
| Ambient operating temperature | -30 °C ... +55 °C (up to max. +70 °C) ⁽¹⁾ ⁽²⁾ ⁽⁵⁾ |
| Storage temperature | -25 °C ... +85 °C |
| Housing | plastic, for DIN rail mounting or for screw mounting ⁽⁶⁾ |
| Protection category | IP67 ⁽⁷⁾ |
| Pollution Degree | 2 |
| Tolerable loading referring to humidity | according to EN 61131-2 |
| Max. tolerable shock load | 30g, 11 ms, acc. EN 61131-2 |
| Max. tolerable vibration stress | 5 ... 8 Hz 50 mm _{pp} /8 ... 500 Hz 6g, acc. EN 61131-2 |
| Isolation voltage | ≥500 V |
| Weight | 100 g |
| Dimensions (B / H / T in mm) | 45 / 80 / 56 |

(1)



(2)



(3) See table "Peripheral fault indication"

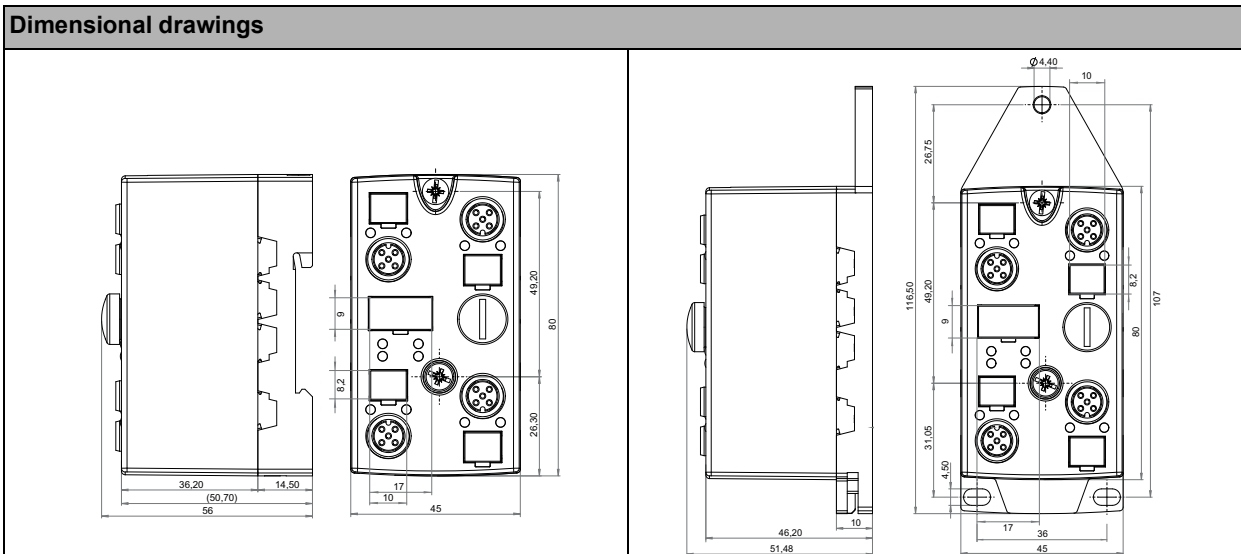
(4) The module is suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors can be assumed for the connection of the two ASi and AUX potentials.

(5) Maximum ambient operating temperature +55 °C according UL certificate for the use in the USA and Canada

(6) Depending on substructure module (see accessories). The substructure module is not included in the scope of delivery.

(7) Protection category IP67 can only be achieved if all open connections are sealed with suitable end caps fulfilling the same protection category.

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| UL-specifications (UL508) BWU4388 | |
|--------------------------------------|---|
| External protection | An isolated source with a secondary open circuit voltage of $\leq 30 V_{DC}$ with a 3 A maximum over current protection. Over current protection is not required when a Class 2 source is employed. |
| In general | UL mark does not provide UL certification for any functional safety rating or aspects of the above devices. |

| Article no. | Peripheral fault indication | | | | |
|-------------|-----------------------------|------------------------|---------------------|---------------------|-------------|
| | Overload sensor supply | Output short circuited | AUX voltage missing | Communication error | Motor error |
| BWU4388 | • | • | • | • | • |

Programming (Bit-setting of ASi process data image)

| Article no. | Byte | Bit | | | | | | | | | |
|-------------|---------------------------------------|--|---------------|--------------|-----------|-------------|----------------------|----------|----|--|--|
| | | D7 | D6 | D5 | D4 | D3 | D2 | D1 | D0 | | |
| BWU4388 | Digital input data | | | | | | | | | | |
| | 0 | reserved | | | | I4 | I3 | I2 | I1 | | |
| | 1 | motor ready | motor running | at reference | direction | motor error | motor specific error | reserved | | | |
| | 2 | actual speed, high byte (0 ... 100%, resolution 0,01%), UINT16 | | | | | | | | | |
| | 3 | actual speed, low byte (0 ... 100%, resolution 0,01%), UINT16 | | | | | | | | | |
| | 4 | actual current (mA), high byte, UINT16 | | | | | | | | | |
| 5 | actual current (mA), low byte, UINT16 | | | | | | | | | | |

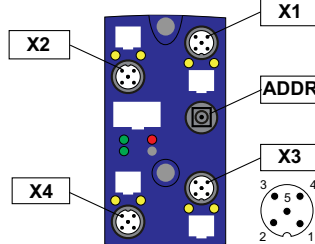
| Article no. | Byte | Bit | | | | | | | | | |
|-------------|-----------------------------|--|------------|--------|-------|-------|------------|----------|----|--|--|
| | | D7 | D6 | D5 | D4 | D3 | D2 | D1 | D0 | | |
| BWU4388 | Digital output data | | | | | | | | | | |
| | 0 | reserved | | | | | | O2 | O1 | | |
| | 1 | enable | start/stop | cw/ccw | brake | reset | free wheel | reserved | | | |
| | 2 | speed setpoint, high byte (0 ... 100%, resolution 0,01%), UINT16 | | | | | | | | | |
| | 3 | speed setpoint, low byte (0 ... 100%, resolution 0,01%), UINT16 | | | | | | | | | |
| | 4 | ramp (ms), high byte, UINT16 | | | | | | | | | |
| 5 | ramp (ms), low byte, UINT16 | | | | | | | | | | |

ASi-5 Motor Module for Bonfiglioli DGM/DGM-R, IP67, M12, 1M/4I/2O

Pin assignment

| Signal name | Explanation |
|----------------------------|---|
| I _x | Digital input x |
| O _x | Digital output x |
| RS 485 TX + | Communication with motor, positive pole (labeling on motor RS485 - B) |
| RS 485 TX - | Communication with motor, negative pole (labeling on motor RS485 - A) |
| 24 V _{ext out} | Power supply, out of external voltage, positive pole (AUX, actuator supply) |
| 0 V _{ext out} | Power supply, out of external voltage, negative pole (AUX, actuator supply) |
| 24 V _{ext in} | Input voltage, positive pole (AUX+) |
| 0 V _{ext in} | Input voltage, negative pole (AUX-) |
| ASi+ | ASi network, positive potential |
| ASi- | ASi network, negative potential |
| 24 V _{out of ASi} | Power supply, out of ASi, positive pole (sensor supply) |
| 0 V _{out of ASi} | Power supply, out of ASi, negative pole (sensor supply) |
| n.c. | not connected |

| Connections | | | | | | | |
|-------------|--------------------------|--------------------------------------|--------------------|-------------|---------------------------|-------------|------|
| Article no. | M12 Connection | Marking | Pin1 | Pin2 | Pin3 | Pin4 | Pin5 |
| BWU4388 | X1 | I1/I2 | 24 V out of ASi | I2 | 0 V _{out of ASi} | I1 | n.c. |
| | X2 | I3/I4 | 24 V out of ASi | I4 | 0 V _{out of ASi} | I3 | n.c. |
| | X3 | O1/O2 | 0 V ext out | O2 | 0 V _{ext out} | O1 | n.c. |
| | X4 | M1 (motor) | n.c. | RS 485 TX - | 0 V _{ext out} | RS 485 TX + | n.c. |
| | ADDR (protection cap) | connection for ASi-5 addressing plug | | | | | |



Notice:

- The RS 485 bus address "1" must be set directly on DGM/DGM-R. For further detailed information, please refer to the manufacturer documentation.

Accessories:

- ASi substructure module for 4-channel module in 45 mm-housing (art. no. BW2349)
- ASi substructure module (CNOMO) 4-channel module in 45 mm-housing (art. no. BW2350)
- Universal protection cap ASi-5/ASi-3 for M12 sockets, IP67 (art. no. BW4056)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)
- It is recommended to use pre-assembled cables to connect the power source with the module.