

ASi motor module for 1 x 24 V DC motors, reversible

2 x 2 connections for profile cable

4 digital inputs

2 digital outputs


1 motor connection for 1 motor, max. 8 A

2 color LEDs per output,
Status (yellow), overload (red) (optional)



(Figure similar)



Figure	Type	Drive	Number of Drives	Inputs digital	Outputs digital	Input voltage (sensor supply.) ⁽¹⁾	Output voltage (actuator supply.) ⁽²⁾	ASi connection ⁽³⁾	ASi address ⁽⁴⁾	Art. no.
	IP67, 8 x M12	24 VDC motor, 2-pole switched, reversible	1	4	2 x electronic	out of AS-i	out of AUX	ASi profile cable	1 single address	BWU3551

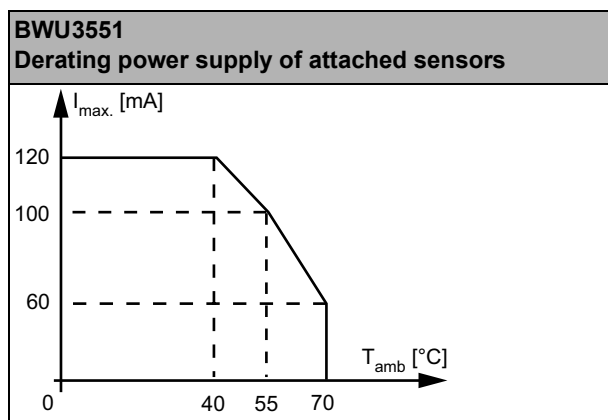
- (1) **Input voltage (sensor supply):**
inputs are supplied by ASi or by AUX (auxiliary 24V power). If supplied by ASi, inputs shall not be connected to earth or to external potential.
- (2) **Output voltage (actuator supply):**
the supply of the outputs is made by AS-i or by AUX (auxiliary 24V power). If supplied by ASi, outputs shall not be connected to earth or to external potential.
- (3) **ASi connection:**
the connection to AS-i as well to AUX (auxiliary 24V power) is made via yellow resp. black ASi profile cable with piercing technology or via M12 socket (in IP20 via clamps).
- (4) **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), mixed use allowed. For modules with two ASi nodes the second ASi nodes is turned off as long as the first ASi node is addressed to address "0". Upon request, ASi nodes are available with specific ASi address profiles.

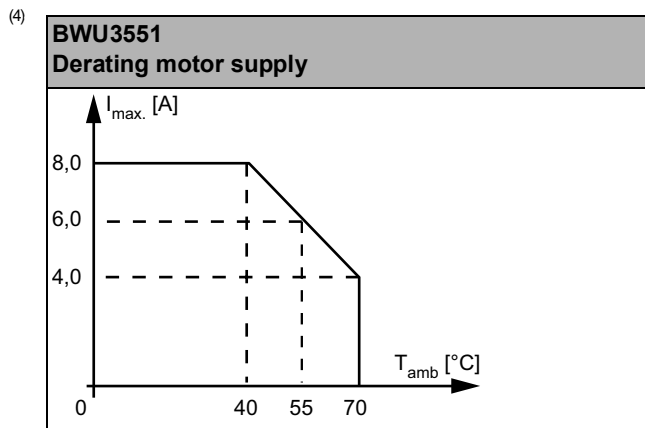
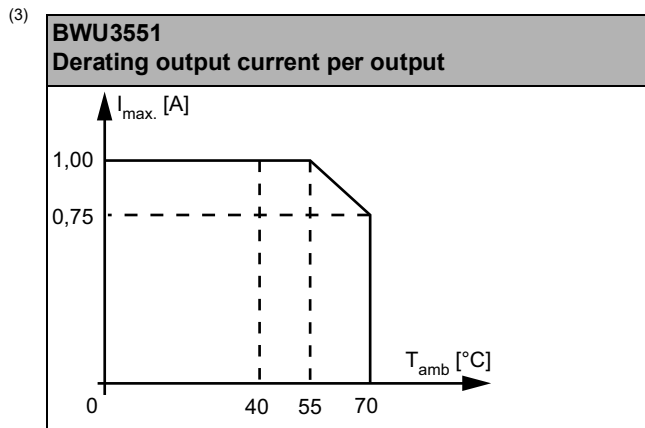
Article no.		BWU3551
General data		
Motor		24 VDC motor, reversible
Connection		
AS-i/AUX connection		profile cable and piercing
Periphery connection		M12
Length of connector cable		unlimited ⁽¹⁾
AS-i		
Profile		S-7.F.E (ID1=7 default)
Address		1 single address
Operating voltage		30 V (18 ... 31.6 V)
Required master profile		≥ M0
As of AS-i specification		2.0
Operating voltage		30 V _{DC} (20 ... 31,6 V)
Max. current consumption		165 mA
Max. current consumption without sensor/actuator supply		45 mA
AUX		
Voltage		24 V (18 ... 30 V)
Max. current consumption		10 A
Input		
Number		4
Power supply		out of AS-i
Power supply of attached sensors	up to +40 °C	120 mA ⁽²⁾
	at +55 °C	100 mA ⁽²⁾
	at +70 °C	60 mA ⁽²⁾
Switching threshold		U < 5 V (low) U > 15 V (high)
Output		
Number		2
Power supply		out of AUX
Max. output current	up to +40 °C	1 A per output ⁽³⁾
	at +55 °C	
	at +70 °C	0,75 A per output ⁽³⁾
Motor		
Number		1 motor, 2-pole switched, reversible
Power supply of motors		out of AUX
Max. output current	up to +40 °C	8 A ⁽⁴⁾
	at +55 °C	6 A ⁽⁴⁾
	at +70 °C	4 A ⁽⁴⁾
Line protection fuse		8 A, electronically limited and 15 A slow blow fuse; fuse is UL certified ⁽⁵⁾
UL-specifications (UL508)		
External protection		an isolated source with a secondary open circuit voltage of ≤30 VDC with a 3 A maximum over current protection. Over current protection is not required when a Class 2 source is employed.

Article no.	BWU3551
Display	
LED ASI (green)	on: ASi voltage on flashing: ASi voltage on, but peripheral fault ⁽⁶⁾ or address 0 off: no ASi voltage
LED FLT/FAULT (red)	an: ASi address 0 or ASi node is offline flashing: peripheral fault ⁽⁶⁾ off: ASi node online
LED AUX (green)	on: 24 V DC AUX off: no 24 V DC AUX
LEDs I1/I2, I3/I4 (yellow)	State of the input pairs I1/I2, I3/I4
LEDs O1/O2 (yellow / red)	yellow: State of the output pair O1/O2 red: overload
LEDs M1 (yellow/red)	state of outputs M1 (O3, O4) yellow on: motor on red on: short circuit at motor ⁽⁶⁾ off: motor in state „STOP“ or state „FREE“
Environment	
Applied standards	EN 61000-6-2 EN 61000-6-3 EN 62026-2 EN 61131-2 EN 60529
Can be used in passively safe paths up to SIL3/PLe	yes ⁽⁷⁾
Operating altitude	max. 2000 m
Operating voltage	-30 °C ... +55 °C (up to max. +70 °C) ^{(2) (3) (4) (8)}
Storage voltage	-25 °C ... +85 °C
Housing	plastic, for screw mounting
Pollution Degree	2
Protection category	IP67
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
Insulation voltage	≥ 500 V
Weight	200 g
Dimensions (W / H / D) in mm	60 / 151 / 31

(1) Loop resistance ≤ 150 Ω

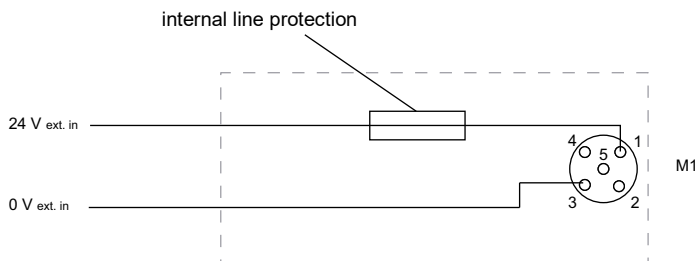
(2)





(5) In the motor module UL approved fuses are placed before each of the motor supply connections. A short circuit in the motor causes this fuse to blow, protecting the connection cable between the module and motor. After blowing the fuse the module is no longer functional and needs to be replaced. The characteristics of the fuse must be checked against the motor data before using the module.

The protection circuit in the module allows a very simple protection of the motor cables. The fuse for the cable protection is a slow-blow one; without short circuit the robust behavior of the module remains.



(6) see table „Peripheral fault indication“

(7) The module is suitable for use in passively safe paths because an exclusion of errors can be assumed for the connection of the two potentials, ASi and AUX.

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

Article no.	Peripheral fault indication		
	Overload sensor supply	Output short circuited	AUX voltage missing
BWU3551	•	•	•

Programming	AS-i bit assignment			
Bit	D0	D1	D2	D3
	Input			
BWU3551	I1	I2	I3	I4
	Output			
BWU3551	O1	O2	O3 ⁽¹⁾	O4 ⁽¹⁾
	Parameter bit			
	P0	P1	P2	P3
BWU3551	0= off / 1= on (Watchdog)	0= on / 1= off (data input filter 128µs)	0= on / 1= off (synchronous I/O mode)	not used

(1) see "Motor control via output bits"

Motor control via output bits

Bit	M1 CW	M1 CCW	M1 STOP	M1 FREE
O1 (D0)	-			
O2 (D1)				
O3 (D2)	1	0	1	0
O4 (D3)	0	1	1	0

Pin assignment

Signal name	Explanation
I _x	digital input x
O _x	digital output x
24V _{ext out}	power supply, out of external voltage, positive pole (AUX, actuator supply)
0V _{ext out}	power supply, out of external voltage, negative pole (AUX, actuator supply)
24V _{out of AS-i}	power supply, out of AS-i, positive pole (sensor supply)
0V _{out of AS-i}	power supply, out of AS-i, negative pole (sensor supply)
AS-i+, AS-i-	connection to AS-i bus
n.c.	not connected

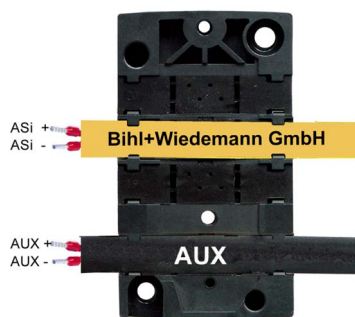
Connections

Article no.	M12 connection	Marking	Pin1	Pin2	Pin3	Pin4	Pin5	
BWU3551	X1	I1/I2	24 V _{out of AS-i}	I2	0 V _{out of AS-i}	I1	n.c.	X1
	X2	O1/O2	0 V _{ext out}	O2	0 V _{ext out}	O1	n.c.	X2
	X3	I3/I4	24 V _{out of AS-i}	I4	0 V _{out of AS-i}	I3	n.c.	X3
	X4 ⁽¹⁾	M1	M+	M-	M-	M+	n.c.	X4
	X5		not used					X5
	X6		not used					X6
	X7		not used					X7
	X8		not used					X8
	ADDR (protection cap)		connection for ASi-3 addressing plug					ADDR

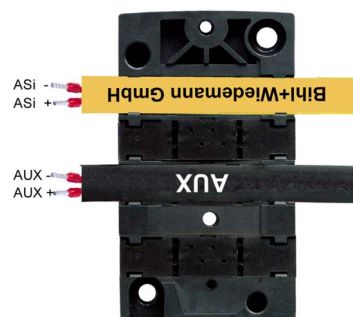
(1) X4 connection:

A maximum of 4 A can pass over each pin. To supply the motor with the maximum possible 8 A, 2 pins must be used in parallel for each connection.

Mounting according to cable direction

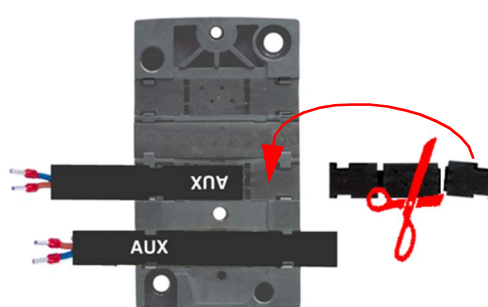
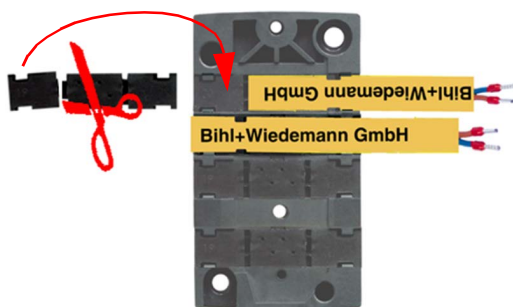
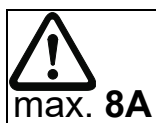


ordinary



turned

Line termination with sealing profiles / as junction



Accessories:

- ASi substructure module (CNOMO) for 8 channel module in 60 mm housing (art. no. BW2351)
- Universal protection cap ASI-5/ASI-3 for M12 sockets, IP67 (art. no. BW4056)
- Sealing profile IP67 (IDC plug) (art. no. BW3282)
- ASi-5/ASI-3 Address Programming Device (art. no. BW4708)