

## ASi modules for two 24 V motorized rollers

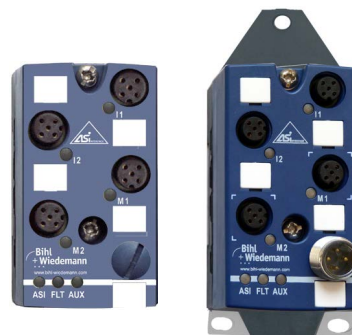
e.g.  
 Interroll (EC200, EC300 or EC310) or  
 RULMECA (RDR BL-2) or  
 Rollex (type 840) or  
 Itoh Denki (PM500XC/XK)

with 2 digital and 2 analog outputs for motor control

Mixed input/output module

Speed setting of ASi parameter

Protection category IP67



(figure similar)



**Article no. BWU2398:** Control module for two 24 V motorized rollers Interroll (EC200, EC300) or Rollex (type 840)

**Article no. BWU2575:** Control module for two 24 V motorized rollers Interroll (EC310) or RULMECA (RDR BL-2) or Itoh Denki (PM500XC/XK)

**Article no. BWU2765:** Control module for two 24 V motorized rollers Interroll (EC310) or RULMECA (RDR BL-2) or Itoh Denki (PM500XC/XK)

**Article no. BWU2958:** Control module for two 24 V motorized rollers Interroll (EC310) or RULMECA (RDR BL-2) or Itoh Denki (PM500XC/XK), ASi via M12

Article no.	BWU2958	BWU2398	BWU2575	BWU2765
<b>General data</b>				
Motorized rollers	up to 2 x Interroll (EC310) or 2 x RULMECA (RDR BL-2) or 2 x Itoh Denki (PM500XC/XK)	2 x Interroll (EC200, EC300) or 2 x Rollex (Typ 840)	2 x Interroll (EC310) or 2 x RULMECA (RDR BL-2) or 2 x Itoh Denki (PM500XC/XK)	
<b>Connection</b>				
ASi/AUX connection	M12 <sup>(1)</sup>	profile cable and piercing		
Periphery connection	M12			
<b>ASi</b>				
Profile	S-7.A.7, ID1 = 7 (fixed)			
Address	AB address			
Required Master profile	≥M4			
As of ASi specification	3.0			
Operating voltage	30 V (18 ... 31.6 V)			
Max. current consumption	200 mA			
<b>AUX</b>				
Voltage	24 V (18 ... 30 V)			
Max. current consumption	4 A	6 A continuously, 11 A peak		

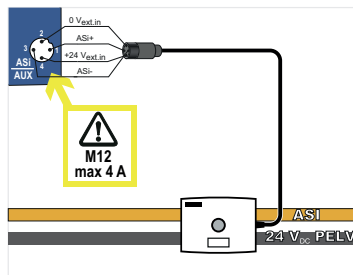
Article no.	BWU2958	BWU2398	BWU2575	BWU2765
<b>Input</b>				
Number	2			
Power supply	out of AUX	out of ASi		
Power supply of attached sensors	120 mA			
Switching threshold	$U_{in} < 5 \text{ V}$ (low) $U_{in} > 10 \text{ V}$ (high)			
<b>Drive</b>				
Number	2			
Power supply	out of AUX (galvanic separation)			
Overload voltage tolerated by reaction (AUX)	35 V-resistant brake chopper compatible			
Max. output current	10 mA per pin			
Supply of motors	out of AUX			
	per motor: 3 A continuously, $\sum(\text{motor}) \leq 4 \text{ A}$	per motor: 3 A continuously		
Line protection fuse	no <sup>(2)</sup>	no <sup>(6)</sup>	yes, separately for each motor, 3,5 AT, at 7 A (200%) release between 1 s and 120 s, fuse UL certified <sup>(9)</sup>	
<b>Display</b>				
LED ASI (green)	on: ASi voltage on off: no ASi voltage			
LED FLT/FAULT (red)	on: no data exchange flashing: peripheral fault <sup>(3)</sup>		on: no data exchange flashing: peripheral fault <sup>(3)</sup>	
LED AUX (green)	on: 24 V DC AUX off: no 24 V DC AUX			
LEDs I1, I2 (yellow)	state of inputs I1, I2			
LEDs M1, M2 (yellow)	state of outputs M1 (O1), M2 (O3)			
<b>Environment</b>				
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	no <sup>(4)</sup>	yes <sup>(7)</sup>	yes <sup>(8)</sup>	yes <sup>(10)</sup>
Operating altitude	max. 2000 m			
Operating temperature	-30 °C ... +70 °C <sup>(5)</sup>			
Storage temperature	-25 °C ... +85 °C			
Housing	plastic, for screw mounting	plastic, for DIN rail mounting		
Protection category	IP67			
Isolation voltage	≥ 500 V			
Weight	100 g			
Dimensions (W / H / D in mm)	45 / 116,5 / 47,5	45 / 80 / 42		

(1) **Line protection:**

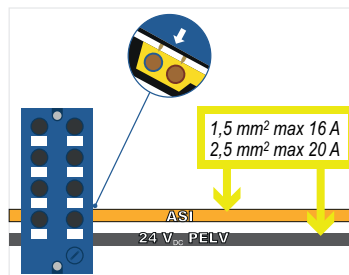
If the module is supplied via a M12 connection with A or B coding, it may only be used with a current load of max. 4 A per pin in acc. with IEC 61076-2-101 and IEC 61076-2-109. A fused tap is recommended. There is no such limitation for modules supplied via piercing contacts.

**Connection to ASi and AUX**

**via M12**



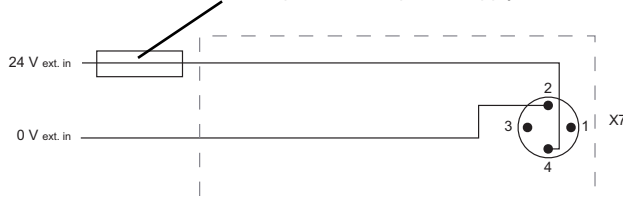
**via piercing contacts**



(2) The motor module is designed to supply the 24 V directly to the motor. At high currents or surges as they occur for example at braking, the module will not be damaged.

The cable protection should be realized outside the motor module with additional measures.

**external line protection at power supply cable**



(3) see table „Peripheral fault indication“

(4) The module is not suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors cannot be assumed for the connection of the two ASi and AUX potentials.

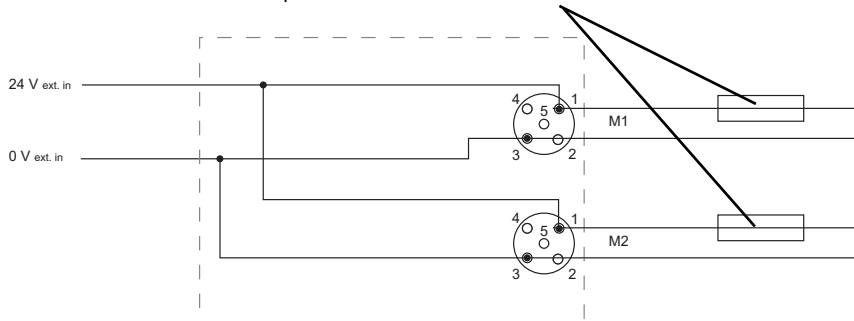
If the module is supplied from an unswitched AUX cable, this has no influence on the safety consideration for the paths with passively safe-switched AUX cable. In an ASi circuit, paths supplied from a passively safe-switched AUX cable and paths supplied from unswitched AUX potential can be used together.

(5) Temperature range up to -30°C from Ident.No. ≥16386 (BWU2958); Ident.No. ≥16387 (BWU2398); Ident.No. ≥16385 (BWU2575); Ident.No. ≥16384 (BWU2765).

(6) The motor module is designed to supply the 24 V directly to the motor. At high currents or surges as they occur for example at braking, the module will not be damaged.

The cable protection should be realized outside the motor module with additional measures.

**external line protection at motor connection cable**

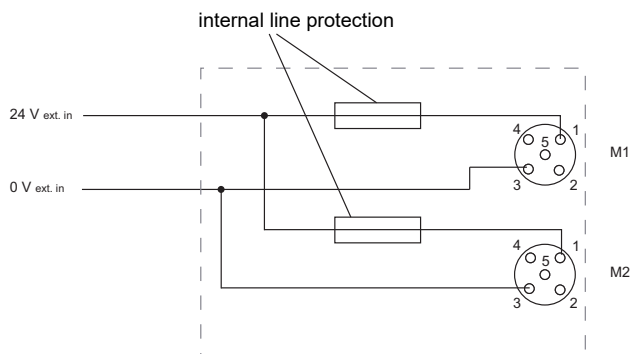


(7) BWU2398 from Ident. No. 17311; the module is suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors can be assumed for the connection of the two ASi and AUX potentials.

(8) BWU2575 from Ident. No. 17308; 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.

(9) 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 not exchangeable fuse the module is no longer functional and the module 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.



(10) BWU2765 from Ident. No. 17309; 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.

Configuration analog-value O1/O3					
				BWU2398	BWU2575 / BWU2765 / BWU2958
P0	P1	P2	O1/O3	Pin 5	Pin 5
0	0	0	0	0 V	0 V
			1	2,42 V	2,3 V
1	0	0	0	0 V	0 V
			1	2,65 V	3,4 V
0	1	0	0	0 V	0 V
			1	2,90 V	4,5 V
1	1	0	0	0 V	0 V
			1	3,24 V	5,6 V
0	0	1	0	0 V	0 V
			1	3,70 V	6,7 V
1	0	1	0	0 V	0 V
			1	4,26 V	7,8 V
0	1	1	0	0 V	0 V
			1	4,98 V	8,9 V
1	1	1	0	0 V	0 V
			1	6 V	10 V

Article no.	ASi bit assignment			
	D3	D2	D1	D0
	input			
BWU2398, BWU2575, BWU2765, BWU2958	Motor Error M2	Motor Error M1	I2	I1
output				
BWU2398, BWU2575, BWU2765, BWU2958	Direction of rotation M2	Start/Stop M2	Direction of rotation M1	Start/Stop M1

UL-specifications (UL508) BWU2398, BWU2575, BWU2765, BWU2958	
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 output	AUX voltage missing	Overload sensor supply	at least 1 motor fuse is blown
BWU2398	•	•	-	-
BWU2575	•	•	-	-
BWU2765	•	•	•	•
BWU2958	•	•	-	-

### Pin assignment

Signal name	Explanation
Ix	Digital input x
24 V <sub>ext out</sub>	Power supply, out of external voltage, positive pole (AUX, actuator supply)
0 V <sub>ext out</sub>	Power supply, out of external voltage, negative pole (AUX, actuator supply)
24 V <sub>ext in</sub>	Input voltage, positive pole (AUX+)
0 V <sub>ext in</sub>	Input voltage, negative pole (AUX-)
ASi +, ASi -	connection to ASi bus
24 V <sub>out of ASi</sub>	Power supply, out of ASi, positive pole (sensor supply)
0 V <sub>out of ASi</sub>	Power supply, out of ASi, negative pole (sensor supply)
n.c.	not connected

Connections							
Article no.	M12 connection	Name	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
BWU2398 BWU2575	X1	I1 (Input 1)	24 V <sub>out of ASi</sub>	I1	0 V <sub>out of ASi</sub>	I1	n.c.
	X2	I2 (Input 2)	24 V <sub>out of ASi</sub>	I2	0 V <sub>out of ASi</sub>	I2	n.c.
	X3	M1 (Motor 1)	24 V <sub>ext out</sub>	O2 (0: 0 V; 1: 24 V)	0 V <sub>ext out</sub>	I3 (0: 0 V; 1: 24 V)	Analog value O1
	X4	M2 (Motor 2)	24 V <sub>ext out</sub>	O4 (0: 0 V; 1: 24 V)	0 V <sub>ext out</sub>	I4 (0: 0 V; 1: 24 V)	Analog value O3
	ADDR (protection cap)	connection for ASi-3 addressing plug					
BWU2765	X1	I1 (Input 1)	24 V <sub>out of ASi</sub>	n.c.	0 V <sub>out of ASi</sub>	I1	n.c.
	X2	I2 (Input 2)	24 V <sub>out of ASi</sub>	n.c.	0 V <sub>out of ASi</sub>	I2	n.c.
	X3	M1 (Motor 1)	24 V <sub>ext out</sub>	O2 (0: 0 V; 1: 24 V)	0 V <sub>ext out</sub>	I3 (0: 0 V; 1: 24 V)	analog value O1
	X4	M2 (Motor 2)	24 V <sub>ext out</sub>	O4 (0: 0 V; 1: 24 V)	0 V <sub>ext out</sub>	I4 (0: 0 V; 1: 24 V)	analog value O3
	ADDR (protection cap)	connection for ASi-3 addressing plug					

Connections							
Article no.	M12 connection	Name	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
BWU2958	X1	I1 (Input 1)	24 V <sub>ext out</sub>	n.c.	0 V <sub>ext out</sub>	I1	n.c.
	X2	I2 (Input 2)	24 V <sub>ext out</sub>	n.c.	0 V <sub>ext out</sub>	I2	n.c.
	X3	M1 (Motor 1)	24 V <sub>ext out</sub>	O2 (0: 0 V; 1: 24 V)	0 V <sub>ext out</sub>	I3 (0: 0 V; 1: 24 V)	analog value O1
	X4	M2 (Motor 2)	24 V <sub>ext out</sub>	O4 (0: 0 V; 1: 24 V)	0 V <sub>ext out</sub>	I4 (0: 0 V; 1: 24 V)	analog value O3
	X5	ASi / AUX	ASi+	0 V <sub>ext in</sub>	ASi-	24 V <sub>ext in</sub>	-

### Accessories for BWU2398:

- ASi substructure module for 4-channel module in 45 mm-housing (article no. BW2349)
- ASi substructure module (CNOMO) for 4-channel module in 45 mm-housing (article no. BW2350)
- Universal protection cap ASi-5/ASi-3 for M12 sockets, IP67 (art. no. BW4056)
- Sealing profile IP67 (IDC plug), 45 mm (art. no. BW3283)
- Passive Distributor ASi/AUX to 2 x M12 socket, internal protection via changeable 4 A slow-blow fuses (art. no. BWU3087)
- 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.
- It is recommended to use pre-assembled cables to connect the motors to the module.

### Accessories for BWU2575, BWU2765, BWU2958:

- Connection cable for ItohDenki Motor Rollers, M12 cable plug, straight, 5 poles to M8 snap-in cable socket, straight, 5 poles, cable length 2 m (art. no. BW2755)
- Connection cable for ItohDenki Motor Rollers, M12 cable plug, straight, 5 poles to M8 snap-in cable socket, straight, 5 poles, cable length 1,2 m (art. no. BW3030)
- ASi substructure module for 4-channel module in 45 mm-housing (article no. BW2349)
- ASi substructure module (CNOMO) for 4-channel module in 45 mm-housing (article no. BW2350)
- Universal protection cap ASi-5/ASi-3 for M12 sockets, IP67 (art. no. BW4056)
- Sealing profile IP67 (IDC plug), 45 mm (art. no. BW3283)
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