

ASi-5 cable duct motor modules for 24 V and 48 V motorized rollers EC5000 BI

ASi-5 cable duct motor modules for 24 V and 48 V motorized rollers,

- ASi and AUX via profile cable



(figure similar)

Suitable for

- 4 x 24 V motorized rollers Interroll EC5000 BI with 20 W/35 W/50 W
- 4 x 48 V motorized rollers Interroll EC5000 BI with 20 W/35 W/50 W (BWU5209)

Motor connection via M8 snap-in cable sockets

Cyclic writing of speed and ramps possible

Current consumption and temperature of motorized rollers can be read

8 x digital inputs for sensor connection

Protection category IP54



Figure	Drive	Number of drives	Line protection fuse ⁽¹⁾	Inputs digital	Input voltage (sensor supply) ⁽²⁾	Output voltage (actuator supply) ⁽³⁾	Motor supply	Connection	ASi connection ⁽⁴⁾	Article No.
	Interroll EC5000 BI (20 W/ 35 W/ 50 W)	4	yes, separately for each motor, 5,0 A (slow-blow fuse)	8	out of ASi	–	out of AUX	4 x M8 Snap-in cable sockets, straight, 5 poles, 4 x M8 cable sockets, straight, 4 poles, 1 x addressing cable socket	ASi profile cable	BWU5208
	Interroll EC5000 BI (20 W/ 35 W/ 50 W)	4	yes, separately for each motor, 4,0 A (slow-blow fuse)	8	out of ASi	–	out of AUX (48 V)	4 x M8 Snap-in cable sockets, straight, 5 poles, 4 x M8 cable sockets, straight, 4 poles, 1 x addressing cable socket	ASi profile cable	BWU5209

(1) Line protection fuse:

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.

(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 M8 socket.

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Article no.		BWU5208		BWU5209	
General data					
Motorized rollers		4 x Interroll (EC5000 BI, 24 V, 20 W/35 W/50 W)		4 x Interroll (EC5000 BI, 48V, 20 W/35 W/50 W)	
Connection					
ASi/AUX connection		profile cable and piercing technology			
Periphery connection		M: 4 x M8 Snap-in cable sockets, straight, 5 poles I: 4 x M8 cable sockets, straight, 4 poles 1 x addressing cable socket			
Cable (L in m)		L1 (I5/I6): 0.17 L2 (I1/I2): 1.0 L3 (I7/I8): 1.0 L4 (I3/I4): 0.17 L5 (ADDR): 0,04 L6 (M1): 1.0 L7 (M3): 0.17 L8 (M2): 0.17 L9 (M4): 1.0			
		max. allowed tensile strain 10 N			
ASi					
Address		1 ASi-5 address			
Required ASi specification of master		ASi-5			
Operating voltage		30 V (18 ... 31,6 V)			
Max. current consumption		320 mA			
Max. current consumption without sensor/ actuator supply		80 mA			
AUX					
Voltage		24 V (18 ... 30 V)		48 V _{DC} (45 ... 51 V) ⁽⁷⁾	
Max. current consumption		at 20 W: 5,6 A continuously, 12,0 A peak		at 20 W: 2,8 A continuously, 6,0 A peak	
		at 35 W: 9,6 A continuously, 20,0 A peak		at 35 W: 4,8 A continuously, 11,2 A peak	
		at 50 W: 13,6 A continuously, 20,0 A peak		at 50 W: 6,8 A continuously, 15,2 A peak	
Input					
Number		8			
Power supply		sensor inputs: out of ASi			
Power supply of attached sensors	up to +40 °C	240 mA ⁽²⁾			
	at +55 °C	200 mA ⁽²⁾			
	at +70 °C	160 mA ⁽²⁾			
Switching threshold		U _{in} <5 V (low) U _{in} >10 V (high)			

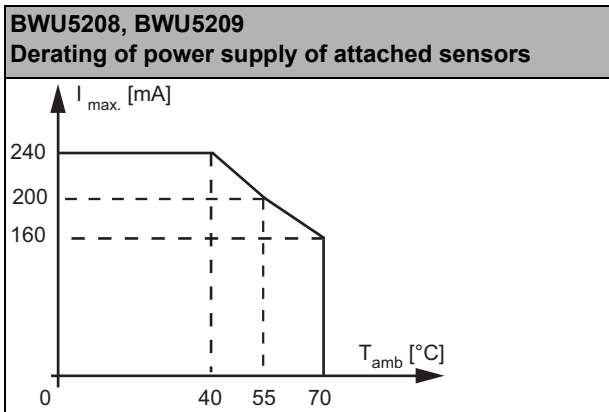
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Article no.		BWU5208	BWU5209
Output			
Number of drives		4	
Power supply		out of AUX (galvanic separation)	out of AUX (48 V) ⁽²⁾ (galvanic separation)
Overload voltage tolerated by reaction (AUX)		35 V-resistant brake chopper compatible	60 V-resistant brake chopper compatible
Supply of motors		out of AUX	out of AUX (48 V) ⁽²⁾
		per motor: 1,4 A continuously at 20 W per motor: 2,4 A continuously at 35 W per motor: 3,4 A continuously at 50 W	per motor: 0,7 A continuously at 20 W per motor: 1,2 A continuously at 35 W per motor: 1,7 A continuously at 50 W
Max. current for motor supply	up to +40 °C	per motor: 3,4 A continuously ⁽³⁾	per motor: 0,7 A continuously ⁽⁸⁾
	at +55 °C	per motor: 3,4 A continuously ⁽³⁾	per motor: 1,2 A continuously ⁽⁸⁾
	at +70 °C	per motor: 2,0 A continuously ⁽³⁾	per motor: 1,7 A continuously ⁽⁸⁾
Line protection fuse		yes, separately for each motor, 5,0 AT, at 14 A (200%) release between 1 s and 120 s, fuse UL certified ⁽⁴⁾	yes, separately for each motor, 4,0 AT, at 8 A (200%) release between 1 s and 120 s, fuse UL certified ⁽⁴⁾
Display			
LED ASI (green)		on: ASi voltage on off: no ASi voltage	
LED FLT/FAULT (red)		on: no data exchange flashing: peripheral fault ⁽⁵⁾ off: data exchange ok	
LED AUX (green)		on: 24 V _{DC} AUX off: no 24 V _{DC} AUX	on: 48 V _{DC} AUX off: no 48 V _{DC} AUX
LEDs I1 ... I8 (yellow)		state of inputs I1 ... I8	
LEDs M1 ... M4 (yellow)		state of motors M1 ... M4 on: communication with motor M1 ... M4 active off: communication with motor M1 ... M4 not active	
LEDs ERR1 ... ERR4 (red) ⁽¹⁾		on: Motor M1 ... M4 is not connected to the module or the fuse of motor M1 ... M4 is blown flashing: Motor M1 ... M4 is signaling fault condition ⁽⁵⁾	
Environment			
Applied standards		EN 61000-6-2, EN 61000-6-4, EN 60529 EN 61131-2	
It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe		yes ⁽⁶⁾	
Operating altitude		max. 2000 m	
Operating temperature		-30 °C ... +70 °C ⁽²⁾ ⁽³⁾	
Storage temperature		-25 °C ... +85 °C	
Housing		plastic, for screw mounting suitable for cable ducts (≥19 mm installation depth)	
Pollution degree		2	
Protection category		IP54	
Tolerable loading referring to humidity		according to EN 61131-2	
Max. tolerable shock load		according to EN 61131-2	
Max. tolerable vibration stress		according to EN 61131-2	
Isolation voltage		≥ 500 V	
Weight		305 g	
Dimensions (W / H / D in mm)		131 / 60 / 28	

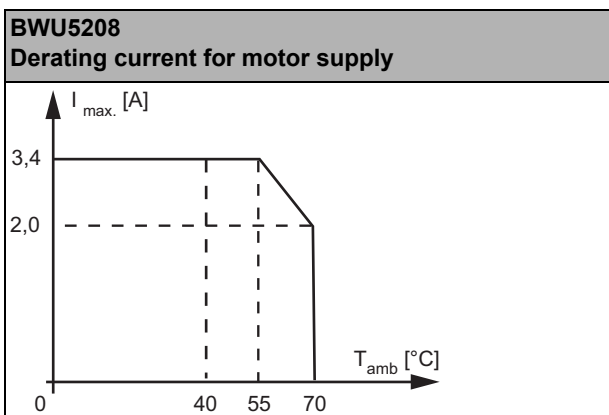
⁽¹⁾ The ERR LED is not controlled when the motor ports are deactivated

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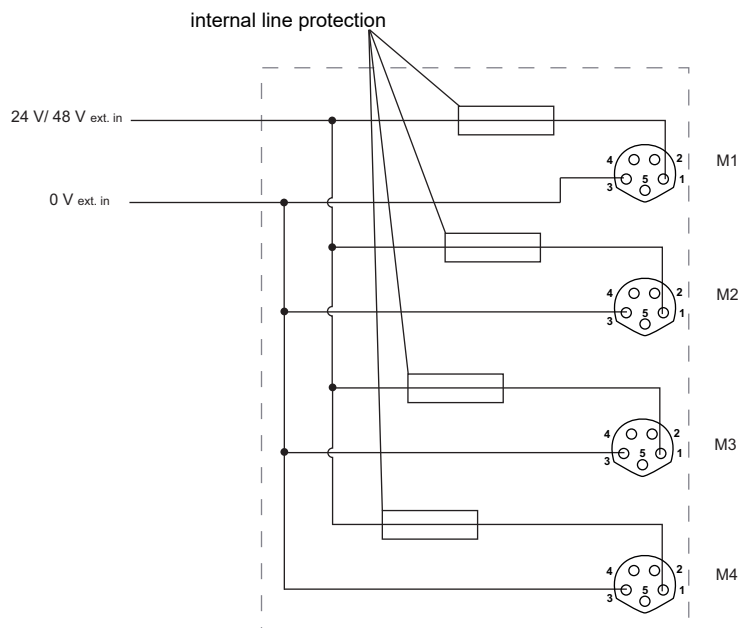
(2)



(3)



- (4) 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.



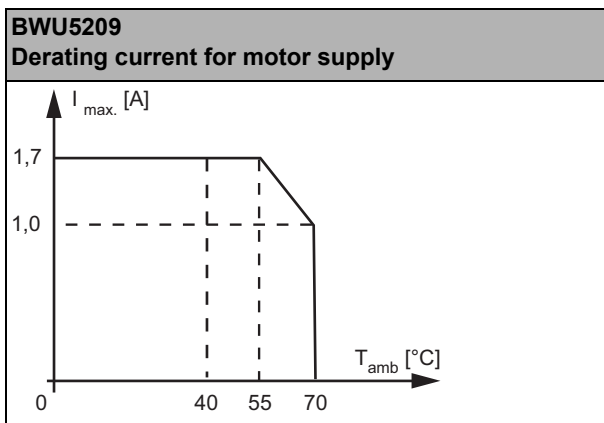
- (5) **see table "Peripheral fault indication".**
- (6) The module is suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors can be assumed for the connection of the two ASi and AUX potentials.

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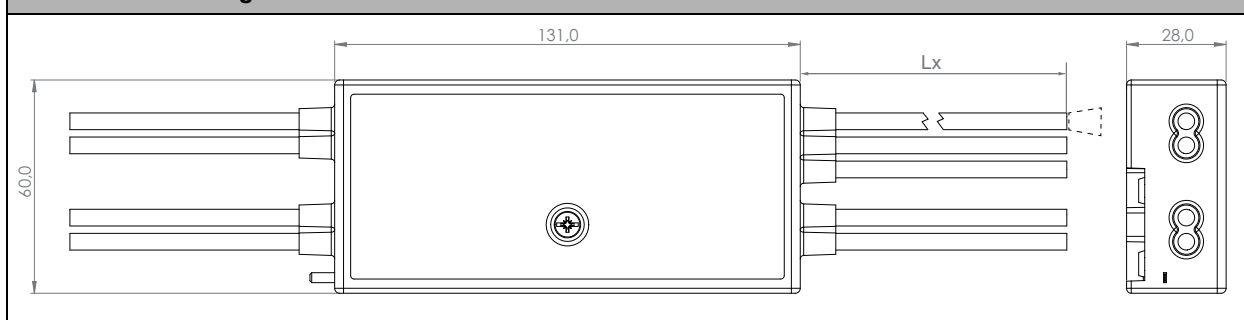
(7)

	Notice 48 V _{DC} must not be connected to: device with 24 V _{DC} operating voltage (see data sheet of the manufacturer) the ASi connection of the device the ASi gateway
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(8)



Dimensional drawings



Article no.	Peripheral fault indication			
	Overload output	AUX voltage missing	Overload sensor supply	at least 1 motor fuse is blown or 1 motor in fault condition or is not connected to the module
BWU5208	-	•	•	•
BWU5209	-	•	•	•

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Programming (ASi bit assignment)

Article no.	Byte	bit							
		D7	D6	D5	D4	D3	D2	D1	D0
		input							
BWU5208, BWU5209	0	I8	I7	I6	I5	I4	I3	I2	I1
	1	reserved				Error M4 ⁽¹⁾	Error M3 ⁽¹⁾	Error M2 ⁽¹⁾	Error M1 ⁽¹⁾
	2	reserved	Temperature Error	Voltage Error	reserved	Fuse M4	Fuse M3	Fuse M2	Fuse M1
	3	reserved							
	4	AUX voltage (mV), high byte, UINT16							
	5	AUX voltage (mV), low byte, UINT16							
	6	Motor current M1 (mA), high byte, UINT16							
	7	Motor current M1 (mA), low byte, UINT16							
	8	Motor current M2 (mA), high byte, UINT16							
	9	Motor current M2 (mA), low byte, UINT16							
	10	Motor current M3 (mA), high byte, UINT16							
	11	Motor current M3 (mA), low byte, UINT16							
	12	Motor current M4 (mA), high byte, UINT16							
	13	Motor current M4 (mA), low byte, UINT16							
	14	Motor temperature M1 (°C), high byte, INT16							
	15	Motor temperature M1 (°C), low byte, INT16							
	16	Motor temperature M2 (°C), high byte, INT16							
	17	Motor temperature M2 (°C), low byte, INT16							
	18	Motor temperature M3 (°C), high byte, INT16							
	19	Motor temperature M3 (°C), low byte, INT16							
	20	Motor temperature M4 (°C), high byte, INT16							
	21	Motor temperature M4 (°C), low byte, INT16							

⁽¹⁾ The motor ports can be deactivated individually using the software ASIMON360 (BW2916) or ASi Control Tools360 (BW2902).

Article no.	Byte	bit							
		D7	D6	D5	D4	D3	D2	D1	D0
		output							
BWU5208, BWU5209	0	Speed M1 ⁽¹⁾ (speed motor 1) (- 100 ... 0 ... 100%), INT8							
	1	Speed M2 ⁽¹⁾ (speed motor 2) (- 100 ... 0 ... 100%), INT8							
	2	Speed M3 ⁽¹⁾ (speed motor 3) (- 100 ... 0 ... 100%), INT8							
	3	Speed M4 ⁽¹⁾ (speed motor 4) (- 100 ... 0 ... 100%), INT8							
	4	ramp M1 (0 ... 25,5 s), UINT8 ⁽²⁾							
	5	ramp M2 (0 ... 25,5 s), UINT8 ⁽²⁾							
	6	ramp M3 (0 ... 25,5 s), UINT8 ⁽²⁾							
	7	ramp M4 (0 ... 25,5 s), UINT8 ⁽²⁾							

⁽¹⁾ The motor ports can be deactivated individually using the software ASIMON360 (BW2916) or ASi Control Tools360 (BW2902).

⁽²⁾ Time for setpoint step by $\pm 100\%$ (acceleration, deceleration).

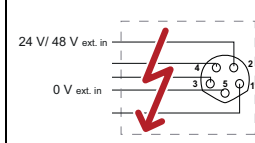
Pin assignment

Signal name	Explanation
Ix	digital input x
CAN-H	communication with the motor, plus pole
CAN-L	communication with the motor, minus pole
48 V _{ext out}	power supply, out of external voltage, positive pole (AUX, actuator supply)
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)
ASi+, ASi-	connection to ASi bus
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

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Connections								
Article no.	M8 connection	Name	Function	Pin1	Pin2	Pin3	Pin4	Pin5
BWU5208	X1	I5/I6	inputs 5, 6	24 V _{out} of ASi	I6	0 V _{out} of ASi	I5	—
	X2	I1/I2	inputs 1, 2	24 V _{out} of ASi	I2	0 V _{out} of ASi	I1	—
	X3	I7/I8	inputs 7, 8	24 V _{out} of ASi	I8	0 V _{out} of ASi	I7	—
	X4	I3/I4	inputs 3, 4	24 V _{out} of ASi	I4	0 V _{out} of ASi	I3	—
	X5	ADDR	connection for ASi-5 addressing plug					
	X6 (1)	M1/ERR1	motor 1	24 V _{ext} out	CAN-H	0 V _{ext} out	CAN-L	n.c.
	X7 (1)	M3/ERR3	motor 3	24 V _{ext} out	CAN-H	0 V _{ext} out	CAN-L	n.c.
	X8 (1)	M2/ERR2	motor 2	24 V _{ext} out	CAN-H	0 V _{ext} out	CAN-L	n.c.
	X9 (1)	M4/ERR4	motor 4	24 V _{ext} out	CAN-H	0 V _{ext} out	CAN-L	n.c.
BWU5209	X1	I5/I6	inputs 5, 6	24 V _{out} of ASi	I6	0 V _{out} of ASi	I5	—
	X2	I1/I2	inputs 1, 2	24 V _{out} of ASi	I2	0 V _{out} of ASi	I1	—
	X3	I7/I8	inputs 7, 8	24 V _{out} of ASi	I8	0 V _{out} of ASi	I7	—
	X4	I3/I4	inputs 3, 4	24 V _{out} of ASi	I4	0 V _{out} of ASi	I3	—
	X5	ADDR	connection for ASi-5 addressing plug					
	X6 (1)	M1/ERR1	motor 1	48 V _{ext} out	CAN-H	0 V _{ext} out	CAN-L	n.c.
	X7 (1)	M3/ERR3	motor 3	48 V _{ext} out	CAN-H	0 V _{ext} out	CAN-L	n.c.
	X8 (1)	M2/ERR2	motor 2	48 V _{ext} out	CAN-H	0 V _{ext} out	CAN-L	n.c.
	X9 (1)	M4/ERR4	motor 4	48 V _{ext} out	CAN-H	0 V _{ext} out	CAN-L	n.c.

(1)



Notice

Incorrect wiring at the motor sockets can cause a device defect.

Accessories:

- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)
- Magnetic holders for substructure Modules (Art. Nr. BW4779)

Accessories especially for BWU5209:

- AUX 48 V profile cable, EPDM, gray, 2 wires, 2.5 mm², 100 m (art. no. BW4243)