

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

ASi-5 cable duct motor modules for 24 V and 48 V motorized rollers Interroll, IP54, M8, 4M/8I

- ASi and AUX per profile cable

New standard ASi-5

Suitable for

- 4 x 24 V motorized rollers Interroll EC5000 AI with 20 W/35 W/50 W
- 4 x 24 V motorized rollers Itoh Denki PM500XC/XK
- 4 x 24 V motorized rollers Rulmeca RDR BL-3
- 4 x 48 V motorized rollers Interroll EC5000 AI with 20 W/35 W/50 W (BWU4894)



(figure similar)

Cyclic writing of speed and ramps possible

8 x digital inputs for sensor connection

Protection category IP54



Figure	Drive ⁽¹⁾	Number of drives	Line protection fuse ⁽²⁾	Inputs digital	Input voltage (sensor supply) ⁽³⁾	Output voltage (actuator supply) ⁽⁴⁾	Connection	ASi connection ⁽⁵⁾	Article No.
	Interroll, Itoh Denki, Rulmeca	4	yes, separately for each motor, 7,0 A (slow-blow fuse)	8	out of ASi and AUX	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	BWU4893
	Interroll	4	yes, separately for each motor, 4,0 A (slow-blow fuse)	8	out of ASi and AUX (48 V)	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	BWU4894

(1) Drive:

Under certain circumstances also suitable for control of motorized rollers from other manufacturers with the same technical data, e.g. MTA MRA50 or Pulsroller IDC (BWU4893 only). Please compare the manufacturer's specifications with the current values and the pin assignment of the motor module.

(2) 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.

(3) 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.

(4) 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.

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⁽⁵⁾ **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.

Article no.	BWU4893		BWU4894	
General data				
Motorized rollers	4 x Interroll (EC5000 AI, 24 V, 20 W/35 W/50 W) 4 x Itoh Denki (PM500XC/XK) 4 x Rulmeca (RDR BL-3) ⁽²⁾		4 x Interroll (EC5000 AI, 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): 0.07 L2 (I1/I2): 0.17 L3 (I7/I8): 0.17 L4 (I3/I4): 0.07 L5 (ADDR): 0,04 L6 (M1): 0.17 L7 (M3): 0.07 L8 (M2): 0.07 L9 (M4): 0.17			
	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) ⁽⁸⁾	
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 x sensor inputs + 4 x motor fault inputs			
Power supply	sensor inputs: out of ASi motor fault inputs: out of AUX		sensor inputs: out of ASi motor fault inputs: out of AUX (48 V) ⁽⁸⁾	
Power supply of attached sensors	up to +40 °C	240 mA ⁽³⁾		
	at +55 °C	230 mA ⁽³⁾		
	at +70 °C	160 mA ⁽³⁾		
Switching threshold	U _{in} < 5 V (low) U _{in} > 10 V (high)			

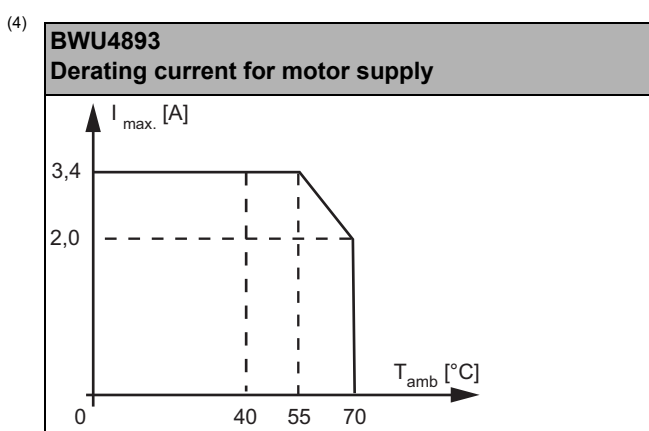
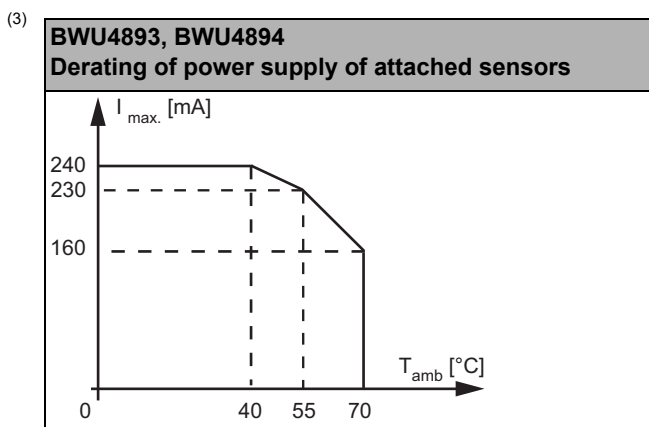
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Article no.	BWU4893	BWU4894
Output		
Number of drives	4	
Power supply	out of AUX (galvanic separation)	out of AUX (48 V) ⁽³⁾ (galvanic separation)
Overload voltage tolerated by reaction (AUX)	35 V-resistant brake chopper compatible	60 V-resistant brake chopper compatible
Max. output current	10 mA per output	
Supply of motors	out of AUX	out of AUX (48 V) ⁽³⁾
	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 ⁽⁴⁾
	at +55 °C	per motor: 3,4 A continuously ⁽⁴⁾
	at +70 °C	per motor: 2,0 A continuously ⁽⁴⁾
Line protection fuse	yes, separately for each motor, 7,0 AT, at 14 A (200%) release between 1 s and 120 s, fuse UL certified ⁽⁵⁾	yes, separately for each motor, 4,0 AT, at 8 A (200%) release between 1 s and 120 s, fuse UL certified ⁽⁵⁾
Display		
LED ASI (green)	on: ASi voltage on off: no ASi voltage	
LED FLT/FAULT (red)	on: no data exchange flashing: peripheral fault ⁽⁶⁾ 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: motor on off: motor off	
LEDs ERR1 ... ERR4 (red) ⁽¹⁾	on: fuse of motor M1 ... M4 is blown ⁽⁶⁾ flashing: Motor M1 ... M4 is signaling fault condition or is not connected to the module ⁽⁶⁾	
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 ⁽⁷⁾	
Operating altitude	max. 2000 m	
Operating temperature	-30 °C ... +70 °C ⁽³⁾⁽⁴⁾	
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	

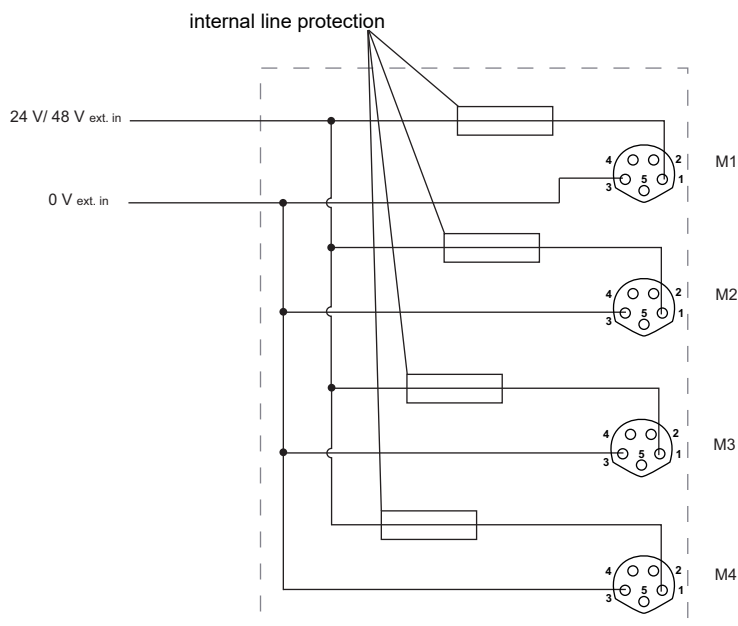
(1) The ERR LED is not controlled when the motor ports are deactivated

(2) Suitable for transmission ratios 24:1, 36:1, 49:1, 64:1, 96:1 (not suitable for transmission ratios 12:1, 16:1).

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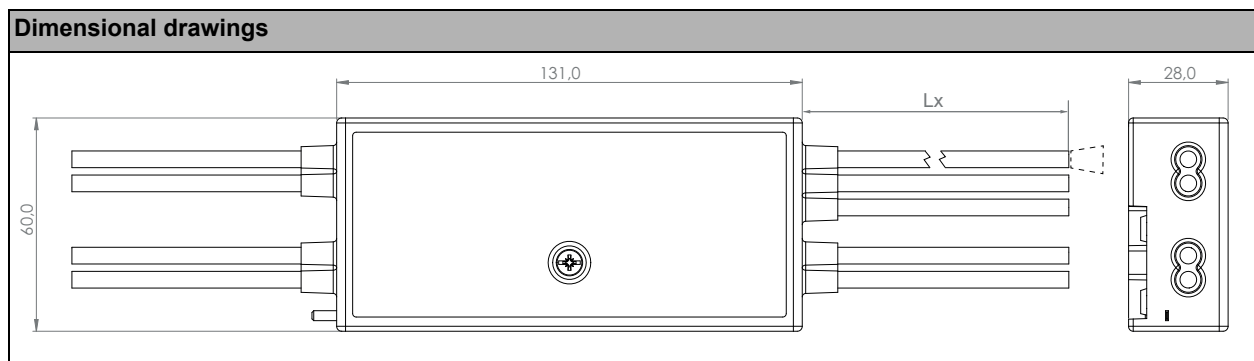
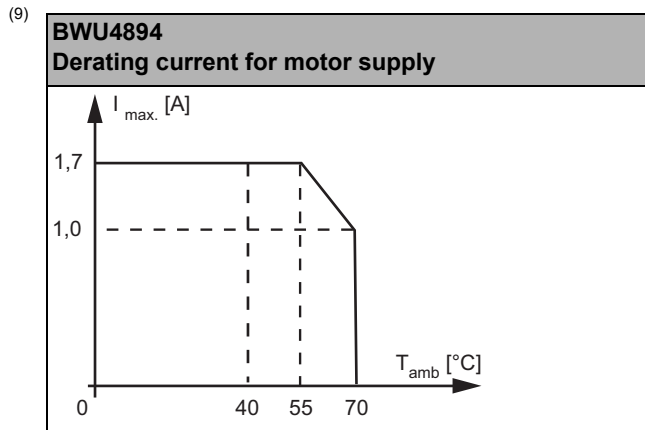
- (5) In the motor module UL approved fuses are placed before each of the motor supply connections. A short circuit in the motor causes this fuse to blow, protecting the connection cable between the module and motor. After blowing the fuse the module is no longer functional and needs to be replaced. 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 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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	<p>Notice</p> <p>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</p>
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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 ⁽¹⁾
BWU4893	•	•	•	•
BWU4994	•	•	•	•

(1) only Interroll

Programming (ASi bit assignment)

Article no.	Byte	bit							
		D7	D6	D5	D4	D3	D2	D1	D0
BWU4893, BWU4894	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	reserved							
	7	reserved							

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

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Article no.	Byte	bit							
		D7	D6	D5	D4	D3	D2	D1	D0
		output							
BWU4893, BWU4894	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).

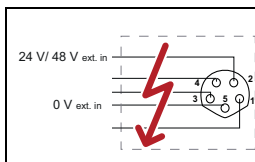
Pin assignment

Signal name	Explanation
Ix	digital input x
CW Mx (clockwise)	direction of rotation of motor x
Error Mx	error at motor x
Speed Mx	speed of motor x
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	
BWU4893	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	CW M1	0 V _{ext} out	Error M1	Speed M1	
	X7 (1)	M3/ERR3	motor 3	24 V _{ext} out	CW M3	0 V _{ext} out	Error M3	Speed M3	
	X8 (1)	M2/ERR2	motor 2	24 V _{ext} out	CW M2	0 V _{ext} out	Error M2	Speed M2	
	X9 (1)	M4/ERR4	motor 4	24 V _{ext} out	CW M4	0 V _{ext} out	Error M4	Speed M4	
BWU4894	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	CW M1	0 V _{ext} out	Error M1	Speed M1	
	X7 (1)	M3/ERR3	motor 3	48 V _{ext} out	CW M3	0 V _{ext} out	Error M3	Speed M3	
	X8 (1)	M2/ERR2	motor 2	48 V _{ext} out	CW M2	0 V _{ext} out	Error M2	Speed M2	
	X9 (1)	M4/ERR4	motor 4	48 V _{ext} out	CW M4	0 V _{ext} out	Error M4	Speed M4	

(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 BWU4894:

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