

# ASi-5 motor module for 2 x 24 V motorized rollers

## ASi-5 motor module 2M/4I

### New standard ASi-5

#### suitable for

- 2 x 24 V motorized rollers Interroll EC5000 AI (with 20 W/35 W)
- 2 x 24 V motorized rollers Itoh Denki (PM500XC/XK, PM605XC/XK)
- 2 x 24 V motorized rollers Rulmeca (RDR BL-3)


#### Cyclic writing of speed and ramps possible

#### 4 x digital inputs for sensor connection

#### Protection category IP67



(figure similar)

Figure	Drive <sup>(1)</sup>	Number of drives	Line protection fuse <sup>(2)</sup>	Inputs digital	Input voltage (sensor supply) <sup>(3)</sup>	Output voltage (actuator supply) <sup>(4)</sup>	Connection	ASi connection <sup>(5)</sup>	Article No.
	Interroll, Itoh Denki; Rulmeca	2	yes, separately for each motor, 5,0 A (slow-blow fuse)	4	out of ASi	out of AUX	4 x M12 sockets, 5 poles	ASi profile cable	<b>BWU4246</b>

**(1) Type of motor**

**Interroll (EC5000 AI, 24V, 20W/35W):**

Motor module to control 24 V motorized rollers Interroll type EC5000 AI (with 20W or 35W power).

**Itoh Denki (PM500XC/XK, PM605XC/XK):** Motor module to control 24 V motorized rollers Itoh Denki (PM500XC/XK, PM605XC/XK).

**Rulmeca (RDR BL-3):** Motor module to control 24 V motorized rollers Rulmeca (RDR BL-3) (transmission rates 24:1, 36:1, 49:1, 64:1, 96:1, not suitable for transmission rates 12:1, 16:1)

**(2) yes, separately for each motor, 5,0 A (slow-blow 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 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.

**(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.

**(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.

# ASi-5 motor module for 2 x 24 V motorized rollers

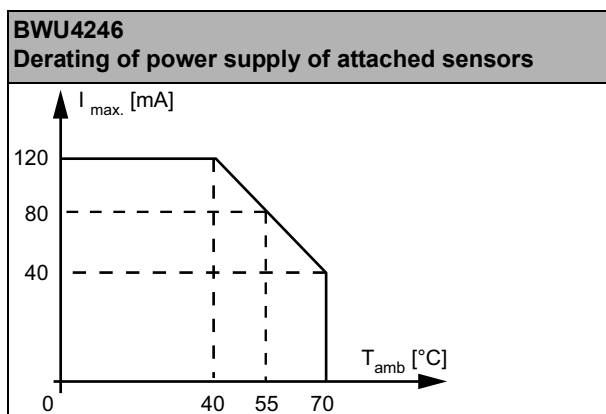
<b>Article no.</b>		<b>BWU4246</b>
<b>General data</b>		
Motorized rollers	2 x Interroll (EC5000 AI, 24V, 20 W/35 W) 2 x Itoh Denki (PM500XC/XK, PM605XC/XK) 2 x Rulmeca (RDR BL-3) <sup>(1)</sup>	
<b>Connection</b>		
ASi/AUX connection	profile cable and piercing	
Periphery connection	M12	
<b>ASi</b>		
Address	1 ASi-5 address	
Required ASi specification of master	ASi-5	
Operating voltage	30 V (18 ... 31.6 V)	
Max. current consumption	200 mA	
<b>AUX</b>		
Voltage	24 V <sub>DC</sub> (18 ... 30 V)	
Max. current consumption	at 20 W: 2,8 A continuously, 6,0 A peak at 35 W: 4,8 A continuously, 11,0 A peak	
<b>Input</b>		
Number	4 x sensor inputs + 2 x motor fault inputs	
Power supply	sensor inputs: out of ASi motor fault inputs: out of AUX	
Power supply of attached sensors	up to +40 °C	120 mA <sup>(2)</sup>
	at +55 °C	80 mA <sup>(2)</sup>
	at +70 °C	40 mA <sup>(2)</sup>
Switching threshold	U <sub>in</sub> < 5 V (low) U <sub>in</sub> > 10 V (high)	
<b>Output</b>		
Number of drives	2	
Power supply	out of AUX (galvanic separation)	
Overload voltage tolerated by reaction (AUX)	35 V-resistant brake resistor compatible	
Max. output current	10 mA per output	
Supply of motors	out of AUX per motor: 1,4 A continuously at 20 W per motor: 2,4 A continuously at 35 W	
Max. current for motor supply	up to +40 °C	per motor: 2,4 A continuously <sup>(3)</sup>
	at +55 °C	per motor: 1,7 A continuously <sup>(3)</sup>
	at +70 °C	per motor: 1,0 A continuously <sup>(3)</sup>
Line protection fuse	yes, separately for each motor, 5,0 A (slow-blow fuse), at 10 A (200%) release between 1 s and 120 s, fuse UL certified <sup>(4)</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>(5)</sup> off: data exchange ok	
LED AUX (green)	on: 24 V DC AUX off: no 24 V DC AUX	
LEDs I1 ... I4 (yellow)	state of inputs I1 ... I4	
LEDs M1, M2 (yellow)	state of motors M1, M2 on: motor on off: motor off	
LEDs ERR1, ERR2 (red)	on: motor M1, M2 is signaling fault condition <sup>(5)</sup>	

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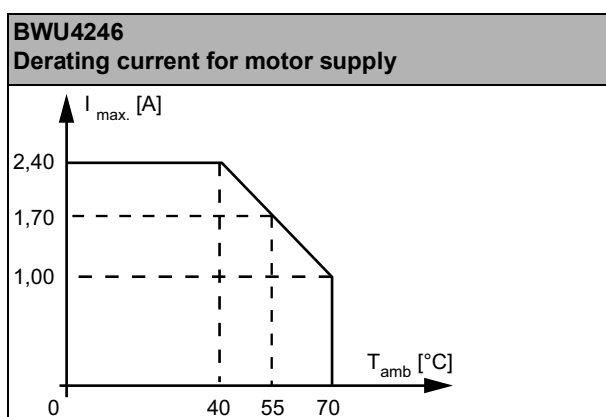
<b>Article no.</b>	<b>BWU4246</b>
<b>Environment</b>	
Applied standards	EN 61000-6-2, EN 61000-6-4, EN 60529
Can be used in passively safe paths up to SIL3/PLe	yes <sup>(6)</sup>
Operating altitude	max. 2000 m
Operating temperature	-30 °C ... +55 °C (up to max. +70 °C) <sup>(7)</sup>
Storage temperature	-25 °C ... +85 °C
Housing	plastic, for DIN rail mounting or for screw mounting <sup>(8)</sup>
Protection category	IP67 <sup>(9)</sup>
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 <sub>pp</sub> /8 ... 500 Hz 6g, acc. EN 61131-2
Isolation voltage	≥ 500 V
Weight	200 g
Dimensions (W / H / D in mm)	45 / 80 / 38 (without substructure module)

(1) suitable for transmission rates 24:1, 36:1, 49:1, 64:1, 96:1 (not suitable for transmission rates 12:1, 16:1)

(2)

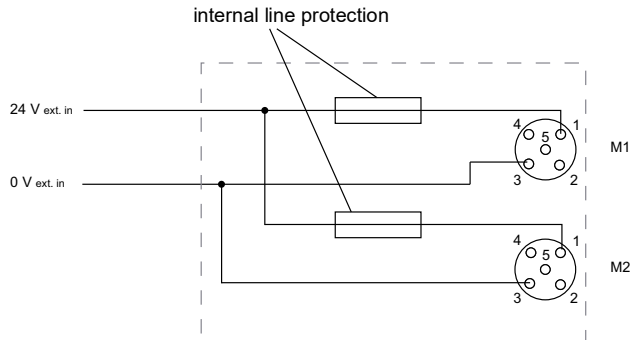


(3)

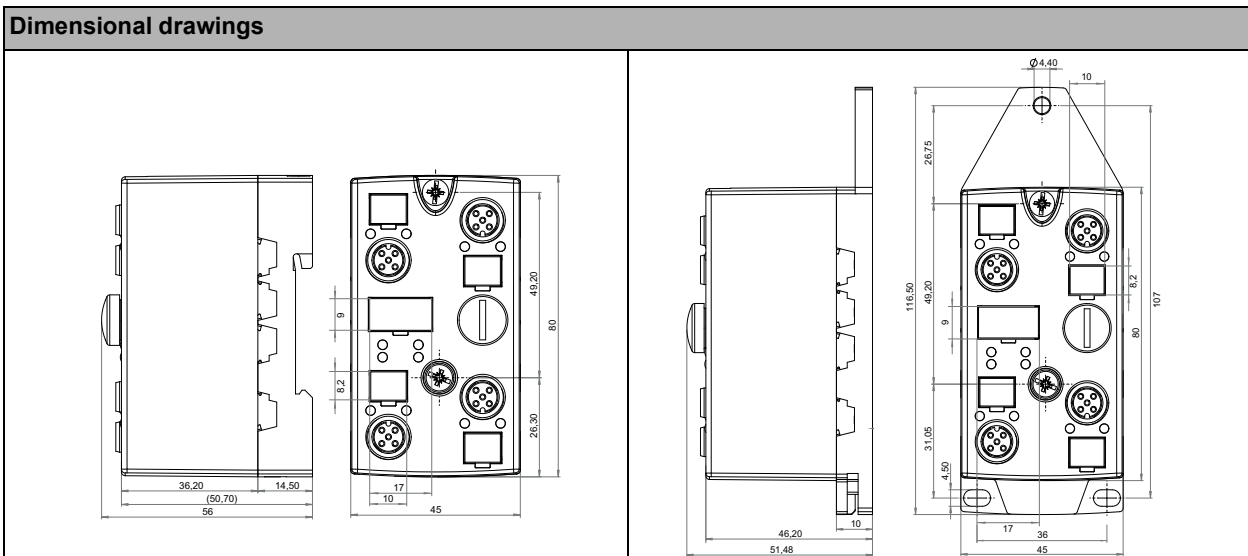


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- (4) In the motor module UL approved fuses are placed before each of the motor supply connections. A short circuit in the motor causes this fuse to blow, protecting the connection cable between the module and motor. After blowing the fuse the module 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 passively safe paths because an exclusion of errors can be assumed for the connection of the two potentials, ASi and AUX.
- (7) Maximum ambient operating temperature +55 °C according UL certificate for the use in the USA and Canada
- (8) Depending on substructure module (see accessories). The substructure module is not included in the scope of delivery.
- (9) Protection category IP67 can only be achieved if all open connections are sealed with suitable end caps fulfilling the same protection category.



UL-specifications (UL508)	
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 or 1 motor in fault condition
BWU4246	•	•	•	•

# ASi-5 motor module for 2 x 24 V motorized rollers

## Programming (ASi bit assignment)

Article no.	Byte	bit							
		D7	D6	D5	D4	D3	D2	D1	D0
		input							
BWU4246	0	Fuse M2	Fuse M1	Error M2 <sup>(1)</sup>	Error M1 <sup>(1)</sup>	I4	I3	I2	I1
	1	reserved	Temperature Error	Voltage Error	reserved			Error M2 <sup>(1)</sup>	Error M1 <sup>(1)</sup>
	2	AUX- voltage (mV), high byte, UINT16							
	3	AUX- voltage (mV), low byte, UINT16							

<sup>(1)</sup> 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							
BWU4246	0	Speed M1 <sup>(1)</sup> (speed motor 1) (- 100 ... 0 ... 100 percent), INT8							
	1	Speed M2 <sup>(1)</sup> (speed motor 2) (- 100 ... 0 ... 100 percent), INT8							
	2	ramp M1 (0 ... 25,5 s), UINT8 <sup>(2)</sup>							
	3	ramp M2 (0 ... 25,5 s), UINT8 <sup>(2)</sup>							

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

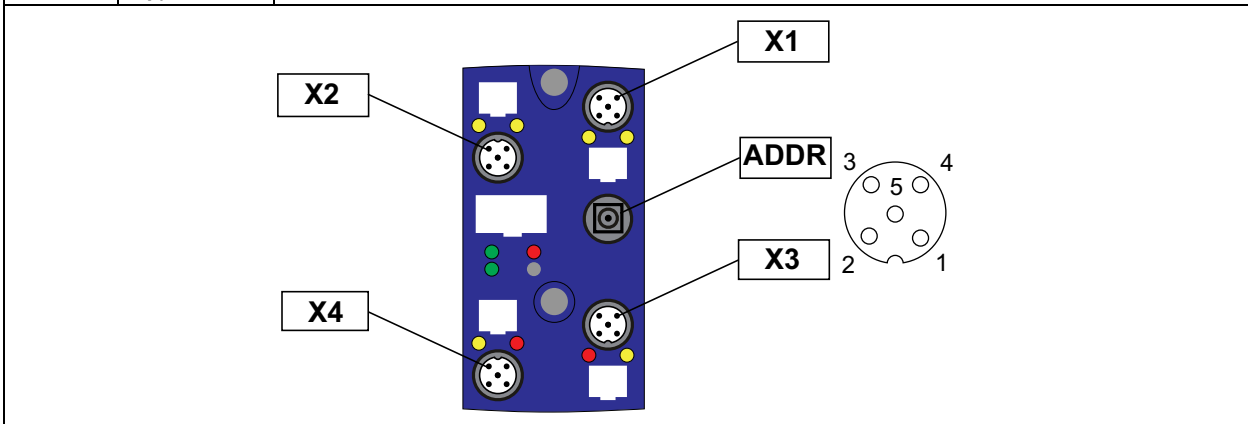
<sup>(2)</sup> time for setpoint step change from 0 ... 100%

## Pin assignment

Signal name	Explanation
Ix	digital input x
CW Mx (clockwise)	Direction of rotation of motor x (CW = 15 V, CCW = 0V)
Error Mx	Indicating error at motor x (error = high impedance; no error = 0 V)
Speed Mx	Speed of motor 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)
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

# ASi-5 motor module for 2 x 24 V motorized rollers

Connections								
Article no.	M12 connection	Name	Function	Pin1	Pin2	Pin3	Pin4	Pin5
BWU4246	X1	I1/I2	input 1, 2	24 V <sub>out</sub> of ASi	I2	0 V <sub>out</sub> of ASi	I1	n.c.
	X2	I3/I4	input 3, 4	24 V <sub>out</sub> of ASi	I4	0 V <sub>out</sub> of ASi	I3	n.c.
	X3	M1/ ERR1	motor 1	24 V <sub>ext</sub> out	CW M1 (0: 0 V; 1: 15 V)	0 V <sub>ext</sub> out	Error M1 (0: 0 V; 1: high impedance)	Speed M1
	X4	M2/ ERR2	motor 2	24 V <sub>ext</sub> out	CW M2 (0: 0 V; 1: 15 V)	0 V <sub>ext</sub> out	Error M2 (0: 0 V; 1: high impedance)	Speed M2
	ADDR (protection cap)	connection for ASi-5 addressing plug						



## Accessories:

- 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)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4708)
- It is recommended to use pre-assembled cables to connect the motors to the module.