

# ASi motor module for 24 V motorized rollers, 2M/4I

## ASi motor modules for two 24 V motorized rollers

e.g.  
Interroll (EC200, EC300, EC310) or  
RULMECA (RDR BL-2) or  
Itoh Denki (PM500ME/XE/XP, PM605ME/XE/XP)

### 2 ASi nodes in one module

- 1 Single node with
  - 2 analog outputs 0 ... 10 V
  - 2 digital outputs
  - 2 digital inputs
- 1 AB-node with
  - 4 digital inputs
  - 4 digital outputs




(Figure similar)

### Mixed input and output modules

Suitable for temperature range up to -35°C ... +55°C



Figure	Type	Drive <sup>(1)</sup>	Number of drives	Line protection fuse <sup>(2)</sup>	Inputs digital	Outputs digital	Outputs analog	Input voltage (sensor supply) <sup>(3)</sup>	Output voltage (actuator supply) <sup>(4)</sup>	Connection	ASi connection <sup>(5)</sup>	Art. no.
	IP67, 8 x M12, -35°C... +55°C	Interroll (EC310), RULMECA (RDR BL-2), Itoh Denki (PM500ME/XE/XP, PM605ME/XE/XP)	2	yes	4	—	—	out of ASi	out of AUX	6 x M12 sockets, 5 poles	ASi profile cable	<b>BWU2899</b>

- (1) **Drive:**  
Under certain circumstances also suitable for control of motorized rollers from other manufacturers with the same technical data. Please compare the manufacturer's specifications with the current values and the pin assignment of the motor module.
- (2) **yes, separately for each motor, 3,5 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.

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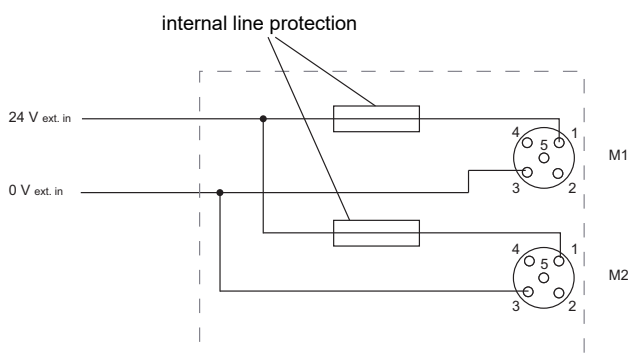
<b>Article no.</b>	<b>BWU2899</b>
<b>General data</b>	
Motorized rollers type	2 x Interroll (EC200, EC300, EC310) or 2 x RULMECA (RDR BL-2) or 2 x Itoh Denki (PM500ME/XE/XP, PM605ME/XE/XP)
<b>Connection</b>	
ASi / AUX connection	profile cable and piercing technology
Periphery connection	M12
<b>ASi</b>	
Profile	digital ASi node S-7.A.7, ID1=7 analog ASi node S-7.5.5, ID1=F
Address	1 AB address + 1 single 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	6 A continuously, 11 A peak
<b>Input</b>	
Number	4
Power supply	out of ASi
Power supply of attached sensors	< 100 mA (sum)
Switching threshold	$U_{in} < 5 \text{ V}$ (low), $U_{in} > 10 \text{ V}$ (high)
<b>Drive</b>	
Number	2 (O1, O3)
Power supply	out of AUX (galvanic separation)
Overload voltage tolerated by reaction (AUX)	35 V-resistant brake chopper compatible
Max. output current	500 mA per digital output, 10 mA per analog output
Supply of motors	out of AUX, per motor: 3 A continuously
Line protection fuse	yes, separately for each motor, 3.5 AT, at 7 A (200%) release between 1 s and 120 s, fuse UL certified <sup>(1)</sup>
<b>Display</b>	
LED ASi (green)	on: ASi voltage on off: no ASi voltage
LED FLT/FAULT (red)	on: no data exchange flashing: AUX voltage missing, overload sensor supply or at least 1 motor fuse is blown
LED AUX (red/green)	green: AUX voltage OK red: AUX voltage < 18 V
LEDs I1 ...In (yellow)	state of inputs I1 ... I4
LEDs M1, M2 (yellow)	state of outputs M1 (O1), M2 (O3)

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<b>Article no.</b>	<b>BWU2899</b>
<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	yes <sup>(2)</sup>
Operating altitude	max. 2000 m
Operating temperature	-35 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C
Housing	plastic, for screw mounting
Pollution degree	2
Protection category	IP67
Isolation voltage	≥500 V
Weight	200 g
Dimensions (W / H / D in mm)	60 / 151 / 31

(1) 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.



(2) BWU2899 from Ident. No. ≥19280; 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.

LEDs		Status	Signal / Description
M1, M2	yellow		State M1/M2
I1, I2, I3, I4	yellow		Input off
			Input on
ASI	green		no ASi address 0, no peripheral fault
			at least 1 ASi node with address 0 or peripheral fault
FLT	red		ASi node online and no peripheral fault
			at least 1 ASi node offline or with address 0
			AUX voltage missing, overload sensor supply or alt least 1 motor fuse is blown

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LEDs		Status	Signal / Description
AUX	red		no AUX voltage
			AUX voltage low (< 18 V)
	green		AUX voltage at limit (18 V ... 22 V)
			AUX voltage OK
LED on               LED flashing               LED off			

UL-specifications (UL508) BWU2899	
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.

Programming:			
Analog ASi node			
Analog output 0 ... 10 V: (0 ... 10 000 dez.)			
AO1: Analog value 1: motor 1 / motor 2 <sup>(1)</sup>	AO2: Analog value 2: motor 1 / motor 2 <sup>(1)</sup>	–	–
Digital outputs			
–	–	D2: AO1 / AO2 Motor 1 (O5) <sup>(1)</sup>	D3: AO1 / AO2 Motor 2 (O6) <sup>(1)</sup>
Digital inputs			
D0: M1 disturbance input (I5) <sup>(2)</sup>	D1: M2 disturbance input (I6) <sup>(2)</sup>	–	–
Object ramp			
adjustable up to 37,5 s from 0 V to 10 V			
Digital ASi node			
Digital input values			
D0: Input (I1)	D1: Input (I2)	D2: Input (I3)	D3: Input (I4)
Digital output values			
D0: M1 start output (O1) <sup>(2)</sup>	D1: M1 rotating direction (O2)	D2: M2 start output (O3) <sup>(2)</sup>	D3: M2 rotating direction (O4)

- <sup>(1)</sup> With bits D2 and D3 of the analog ASi nodes can be controlled, which analog value has an effect on which engine. This function depends on the rotary switch position.
- <sup>(2)</sup> Pin 4 of the M1/M2 connections can be used as start output or alternatively as a disturbance input (depending on the rotary switch position).  
To use the input, the start output (digital ASi node, output D0/D2) must be set to be inactive.

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## Rotary switch position

		Rotary switch SEL2															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
rotary switch SEL1	0	analog ASi node + digital ASi node active															
	1	values of analog ASi node for voltage and ramp															
	2	digital ASi node active only analog ASi node outputs = 0 V															
	3																
	4																
	5																
	6																
	7	digital ASi node active only Selection of preset voltages via SEL1 and SEL2: SEL1 = Motor 1, SEL2 = Motor 2 (for values of voltage see installation instructions)															
	8																
	9																
	A																
	B																
	C																
	D																
	E																
	F																

## Pin assignment

Signal name	Explanation
I <sub>x</sub>	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 AS-</sub>	Power supply, out of ASi, negative pole (sensor supply)
GND	ground earth
n.c.	not connected

## Connections

Article no.	M12 Connection	Marking	Pin1	Pin2	Pin3	Pin4	Pin5		
BWU2899	X1	I1 (input 1)	24 V out of ASi	n.c.	GND	I1	n.c.		
	X2	I2 (input 2)	24 V out of ASi	n.c.	GND	I2	n.c.		
	X3	I3 (input 3)	24 V out of ASi	n.c.	GND	I3	n.c.		
	X4	I4 (input 4)	24 V out of ASi	n.c.	GND	I4	n.c.		
	X5	M1 (motor 1)	24 V ext out	rotating direction	0 V ext out	start output / disturbance input	analog output 0 ... 10 V		
	X6	M2 (motor 2)	24 V ext out	rotating direction	0 V ext out	start output / disturbance input	analog output 0 ... 10 V		
	X7	ADDR (protection cap)	connection for ASi-3 addressing plug						
	SEL1	rotary switch 1	selection of operating mode						
	SEL2	rotary switch 2							

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### Accessories:

- 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 (CNOMO) for 8-channel module in 60 mm-housing (article no. BW2351)
- Universal protection cap ASi-5/ASi-3 for M12 sockets, IP67 (art. no. BW4056)
- Sealing profile IP67 (IDC plug), 60 mm (art. no. BW3282)
- 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 motors to the module.