AS-i 3.0 motor modules

AS-i 3.0 4I/4O modules for two 24 V motorized rollers

(figure similar)

e.g.
Interroll (EC200, EC300 or EC310) or
RULMECA (RDR BL-2) or
Rollex (type 840)

with 2 binary and 2 analog outputs

Mixed input/output slave

Speed setting of AS-i parameter

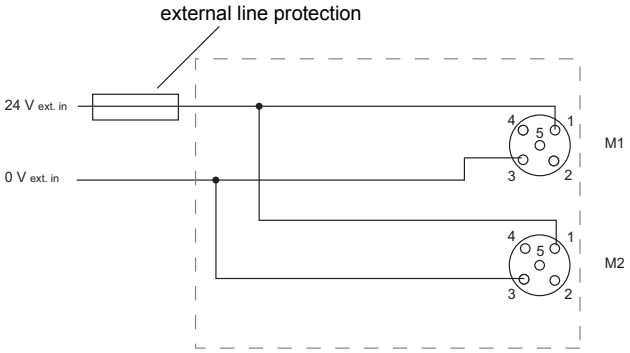
Protection category IP67

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)**
Article no. BWU2765:	**Control module for two 24 V motorized rollers Interroll (EC310) or RULMECA (RDR BL-2)**
Article no. BWU2958:	**Control module for two 24 V motorized rollers Interroll (EC310) or RULMECA (RDR BL-2), AS-i via M12**

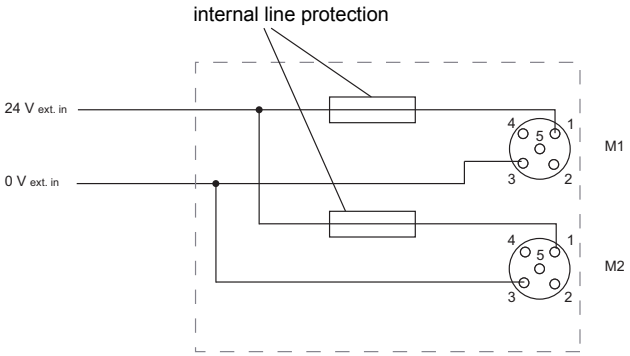
Article no.	**BWU2958**	**BWU2398**	**BWU2575**	**BWU2765**
General data				
Motorized rollers	2 x Interroll (EC310) or 2 x RULMECA (RDR BL-2)	2 x Interroll (EC200, EC300) or 2 x Rollex (Typ 840)	2 x Interroll (EC310) or 2 x RULMECA (RDR BL-2)	
Connection				
AS-i/AUX connection	M12	profile cable and piercing		
Periphery connection	M12			
AS-i				
Profile	S-7.A.7, ID1 = 7 (fixed)			
Address	AB slave			
Required Master profile	≥M4			
As of AS-i specification	3.0			
Operating voltage	30 V (18 … 31.6 V)			
Max. current consumption	200 mA			
AUX				
Voltage	24 V (18 … 30 V)			
Max. current consumption	6 A continuously, 11 A peak			

Article no.	BWU2958	BWU2398	BWU2575	BWU2765
Input				
Number	2 x sensor inputs + 2 x motor fault inputs			
Power supply	sensor inputs: out of AUX motor fault inputs: out of AUX	sensor inputs: out of AS-i motor fault inputs: out of AUX		
Power supply of attached sensors	120 mA			
Switching threshold	U_{in}<5 V (low) U_{in}>10 V (high)			
Output				
Number (digital)	2			
Number (analog)	2 (depending)			
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, 3 A continuously, 5,5 A max.			
Line protection fuse	no (1)			yes, separately for each motor, 3,5 AT, at 7 A (200%) release between 1 s and 120 s, fuse UL certified (2)
Display				
LED ASI (green)	on: AS-i voltage on off: no AS-i voltage			
LED FLT/FAULT (red)	on: no data exchange flashing: AUX voltage missing, overload output			on: no data exchange flashing: AUX voltage missing, overload output, overload sensor supply or at least 1 motor fuse is blown
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)			
Environment				
Applied standards	EN 61000-6-2 EN 61000-6-4 EN 60529			
Operating altitude	max. 2000 m			
Operating temperature	0 °C ... +70 °C			
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) 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.



(2) 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.



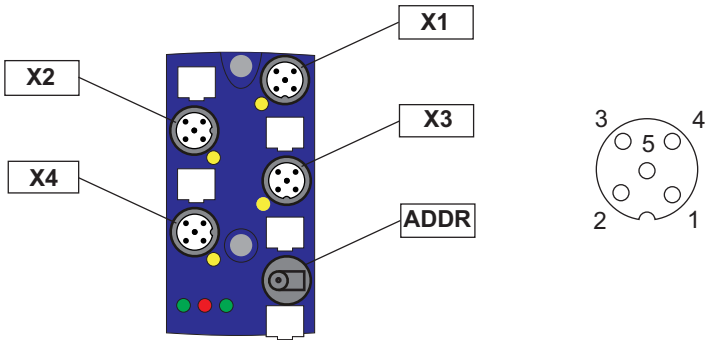
Configuration analog-value O1/O3					
				BWU2398	BWU2575 / BWU2765 / BWU2958
P0	**P1**	**P2**	**O1/O3**	**Pin 5**	**Pin 5**
0	0	0	0	0 V	0 V
			1	2,42 V	2,3 V
1	0	0	0	0 V	0 V
			1	2,65 V	3,4 V
0	1	0	0	0 V	0 V
			1	2,90 V	4,5 V
1	1	0	0	0 V	0 V
			1	3,24 V	5,6 V
0	0	1	0	0 V	0 V
			1	3,70 V	6,7 V
1	0	1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

Bit assignment		
Data bit		**Function**
DI0	I1	Input I1
DI1	I2	Input I2
DI2	I3	State of (motor-fault) motor 1
DI3	I4	State of(motor-fault) motor 2
DO0	O1	Start/Stop motor 1
DO1	O2	Direction of rotation motor 1
DO2	O3	Start/Stop motor 2
DO3	O4	Direction of rotation motor 2

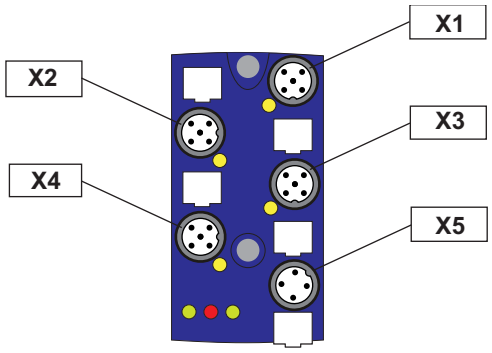
Pin assignment

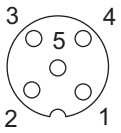
Signal name	Explanation
Ix	Digital input x
24 $V_{ext\ out}$	Power supply, out of external voltage, positive pole (AUX, actuator supply)
0 $V_{ext\ out}$	Power supply, out of external voltage, negative pole (AUX, actuator supply)
24 $V_{ext\ in}$	Input voltage, positive pole (AUX+)
0 $V_{ext\ in}$	Input voltage, negative pole (AUX-)
AS-i+, AS-i-	connection to AS-i bus
24 $V_{out\ of\ AS-i}$	Power supply, out of AS-i, positive pole (sensor supply)
0 $V_{out\ of\ AS-}$	Power supply, out of AS-i, 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 $V_{out\ of\ AS-i}$	I1	0 $V_{out\ of\ AS-i}$	I1	n.c.
	X2	I2 (Input 2)	24 $V_{out\ of\ AS-i}$	I2	0 $V_{out\ of\ AS-i}$	I2	n.c.
	X3	M1 (Motor 1)	24 $V_{ext\ out}$	O2 (0: 0 V; 1: 24 V)	0 $V_{ext\ out}$	I3 (0: 0 V; 1: 24 V)	Analog value O1
	X4	M2 (Motor 2)	24 $V_{ext\ out}$	O4 (0: 0 V; 1: 24 V)	0 $V_{ext\ out}$	I4 (0: 0 V; 1: 24 V)	Analog value O3
	ADDR (dummy plug)	connection for AS-i addressing device					
BWU2765	**X1**	I1 (Input 1)	24 $V_{out\ of\ AS-i}$	n.c.	0 $V_{out\ of\ AS-i}$	I1	n.c.
	X2	I2 (Input 2)	24 $V_{out\ of\ AS-i}$	n.c.	0 $V_{out\ of\ AS-i}$	I2	n.c.
	X3	M1 (Motor 1)	24 $V_{ext\ out}$	O2 (0: 0 V; 1: 24 V)	0 $V_{ext\ out}$	I3 (0: 0 V; 1: 24 V)	analog value O1
	X4	M2 (Motor 2)	24 $V_{ext\ out}$	O4 (0: 0 V; 1: 24 V)	0 $V_{ext\ out}$	I4 (0: 0 V; 1: 24 V)	analog value O3
	ADDR (dummy plug)	connection for AS-i addressing device					



Connections							
Article no.	**M12 connection**	**Name**	**Pin 1**	**Pin 2**	**Pin 3**	**Pin 4**	**Pin 5**
BWU2958	**X1**	I1 (Input 1)	24 $V_{ext\ out}$	n.c.	0 $V_{ext\ out}$	I1	n.c.
	X2	I2 (Input 2)	24 $V_{ext\ out}$	n.c.	0 $V_{ext\ out}$	I2	n.c.
	X3	M1 (Motor 1)	24 $V_{ext\ out}$	O2 (0: 0 V; 1: 24 V)	0 $V_{ext\ out}$	I3 (0: 0 V; 1: 24 V)	analog value O1
	X4	M2 (Motor 2)	24 $V_{ext\ out}$	O4 (0: 0 V; 1: 24 V)	0 $V_{ext\ out}$	I4 (0: 0 V; 1: 24 V)	analog value O3
	X5	AS-i / AUX	AS-i+	0 $V_{ext\ in}$	AS-i-	24 $V_{ext\ in}$	–





Accessories:

- **AS-i substructure module for 4-channel module in 45 mm-housing (article no. BW2349)**
- **AS-i substructure module (CNOMO) for 4-channel module in 45 mm-housing (article no. BW2350)**
- **Passive Distributor AS-i/24 V to 1 x M12, 2 m line (article no. BW3246)**
- **Protection caps for not used M12 sockets (article no. BW2368)**
- **Sealing profile IP67 (IDC plug), 45 mm (art. no. BW3283)**
- **It is recommended to use pre-assembled cables to connect the motors to the module.**