

ASi Cable Duct Motor Modules for 24 V Motorized Rollers, 2M/2I

ASi Cable Duct Motor Modules for two 24 V Motorized Rollers, IP54, 2M/2I

- ASi and AUX via profile cable



(Figure similar)

Suitable for:

- 2 x 24 V motorized rollers Interroll (EC310 or EC5000 AI with 20 W/35 W)
- 2 x 24 V motorized rollers Itoh Denki (PM500XC/XK)
- 2 x 24 V motorized rollers Rulmecca (RDR BL-2 or RDR BL-3)

Flat design,
optimized for use in cable channels

Speed setting via ASi parameters



Figure	Drive ⁽¹⁾	Number of drives	Inputs digital	Input voltage (sensor supply) ⁽²⁾	Output voltage (actuator supply) ⁽³⁾	Line protection fuse ⁽⁴⁾	Connection	Flat design, montage in cable duct possible	ASi connection ⁽⁵⁾	Article No.
	Interroll, Itoh Denki, RULMECCA	2	2	out of ASi	out of AUX	yes, separately for each motor, 4,5 A (slow-blow fuse)	2 x M8 snap-in cable sockets, straight, 5 poles + 2 x M8 cable sockets, straight, 4 poles	yes	ASi profile cable	BWU3290
	Interroll, Itoh Denki, RULMECCA	2	2	out of ASi	out of AUX	yes, separately for each motor, 4,5 A (slow-blow fuse)	2 x M8 snap-in cable sockets, straight, 5 poles + 2 x M8 cable sockets, straight, 4 poles	yes	ASi profile cable	BWU4224
	Interroll, Itoh Denki, RULMECCA	2	2	out of ASi	out of AUX	yes, separately for each motor, 4,5 A (slow-blow fuse)	2 x M8 snap-in cable sockets, straight, 5 poles + 2 x M12 cable sockets, straight, 5 poles	yes	ASi profile cable	BW3409

(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) **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) **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.

(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 Cable Duct Motor Modules for 24 V Motorized Rollers, 2M/2I

Article No.	BWU3290		BW4224	
General data				
Roller drives	2 x Interroll (EC310 or EC5000 AI, 24 V, 20 W/35 W ⁽²⁾) 2 x Itoh Denki (PM500XC/XK ⁽²⁾) 2 x RULMECA (RDR BL-2 or RDR BL-3 ⁽²⁾ ⁽³⁾)			
Connection				
ASi/AUX connection	profile cable and piercing technology			
Periphery connection	M: 2 x M8 snap-in cable sockets, straight, 5 poles I: 2 x M8 cable sockets, straight, 4 poles			
Cable	M1, M2: 0,4 m	M1, M2: 1 m		
	I1, I2: 0,06 m	I1, I2: 1m		
	passive distributors: 0,15 m max. allowed tensile strain 10 N			
ASi				
Profile	S-7.A.7, ID1 = 7 (fixed)			
Address	1 AB address			
Required Master profile	≥M4			
As of ASi specification	3.0			
Operating voltage	30 V (18 ... 31.6 V)			
Max. current consumption	200 mA			
Max. current consumption without sensor/ actuator supply	80 mA			
AUX				
Operating voltage	24 V (18 ... 30 V)			
Max. current consumption	up to +40 °C	6 A continuously, 11 A peak ⁽⁴⁾		
	at +55 °C	4,4 A continuously, 8 A peak ⁽⁴⁾		
Input				
Number	2 (I1, I2)			
Power supply	out of ASi			
Sensor supply	short-circuit and overload protected according to EN 61131-2			
Power supply of attached sensors	up to +30 °C	120 mA ⁽⁵⁾		
	at +40 °C	100 mA ⁽⁵⁾		
	at +50 °C	60 mA ⁽⁵⁾		
	at +55 °C	40 mA ⁽⁵⁾		
Switching threshold	U _{in} < 5 V (low) U _{in} > 15 V (high)			
Drive				
Number	2 (I3, I4, O1 ... O4)			
Power supply	out of AUX (galvanic separation)			
Overvoltage tolerated by reaction (AUX)	35 V resistant brake chopper compatible			
Max. output current	up to +50 °C	10 mA per pin, ∑ (Motor) 40 mA ⁽⁶⁾		
	at +55 °C	10 mA per pin, ∑ (Motor) 25 mA ⁽⁶⁾		
Motor supply	up to +40 °C	out of AUX, 3 A continuously, 5,5 A max. ⁽²⁾		
	at +55 °C	out of AUX, 2,2 A continuously, 4 A max ⁽²⁾		
Line protection fuse	yes, separately for each motor, 4,5 A (slow-blow fuse) ⁽⁷⁾ , at 9 A (200%) release between 1 s and 120 s, fuse UL certified ⁽⁸⁾			

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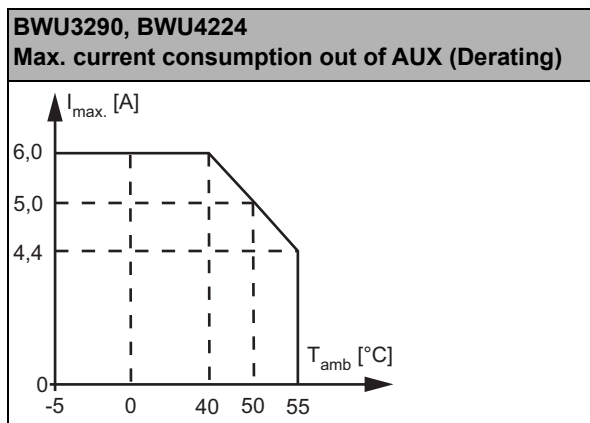
Article No.	BWU3290	BW4224
Display		
LED I1 ...I _x (yellow)	state of inputs I1, I2	
LED M1, M2 (yellow)	state of outputs M1 (O1), M2 (O3)	
LED ASI (green)	on: ASi voltage on off: no ASi voltage	
LED AUX (green)	on: 24 V _{DC} AUX off: no 24 V _{DC} AUX	
LED FLT/FAULT (red)	on: address 0 or offline flashing: AUX voltage is missing, overload output, an output is short circuited, at least one motor fuse has blown or overload sensor off: online	
UL-specifications (UL 61010-1 and UL 61010-2-201) ⁽¹⁾		
External protection	an isolated source with a secondary open circuit voltage of ≤30 V _{DC} with a 3 A maximum over current protection. Over current protection is not required when a Class 2 source is employed.	
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 ⁽⁹⁾	no ⁽¹⁰⁾
Operating altitude	max. 2000 m	
Ambient temperature	-5 °C ... +40 °C (up to +55 °C) ⁽⁴⁾ ⁽⁵⁾ ⁽⁶⁾	
	If the cables are fixed installed, an operating temperature up to -20 °C ... +40 °C is permissible ⁽⁴⁾ ⁽⁵⁾ ⁽⁶⁾	
	no condensing allowed	
Storage temperature	-25 °C ... +85 °C	
Housing	plastic, 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	
Weight	module: 200 g passive distributor: 75 g	
Dimensions (W / H / D) in mm	module: 90 / 60 / 18 passive distributor: 60 / 45 / 19	

(1) Ident. No. = 19130 (BWU3290) and Ident. No. = 19131 (BWU4224) have no UL listing.

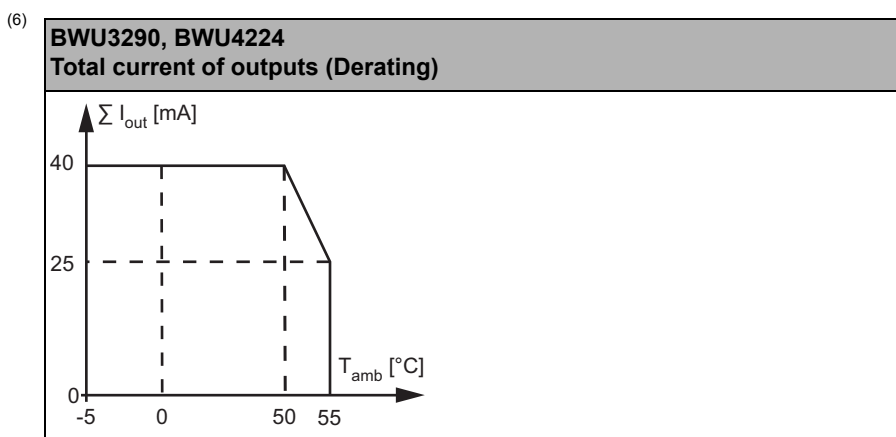
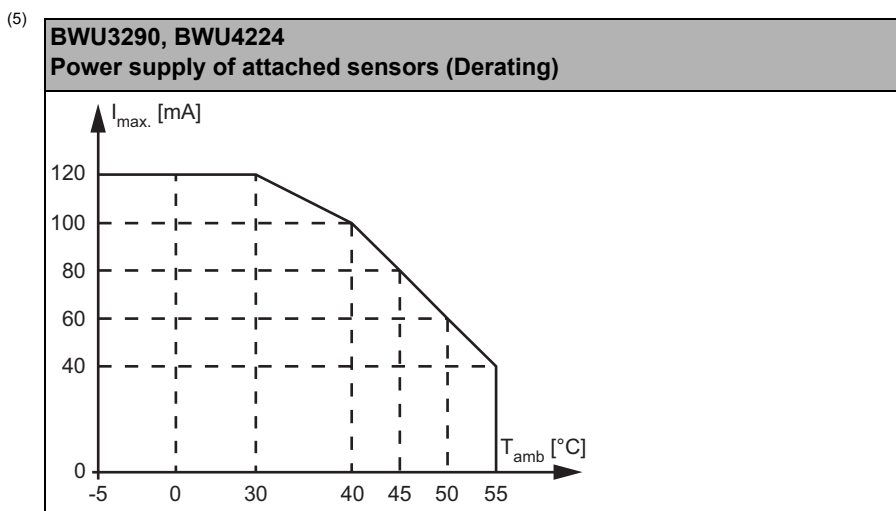
(2) Interroll (EC5000 AI, 24 V, 20 W/35 W), Itoh Denki (PM500XC/XK), RULMECA (RDR BL-3) from Ident. No. ≥18335 (BWU3290), from Ident. No. ≥18338 (BWU4224)

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

(4)



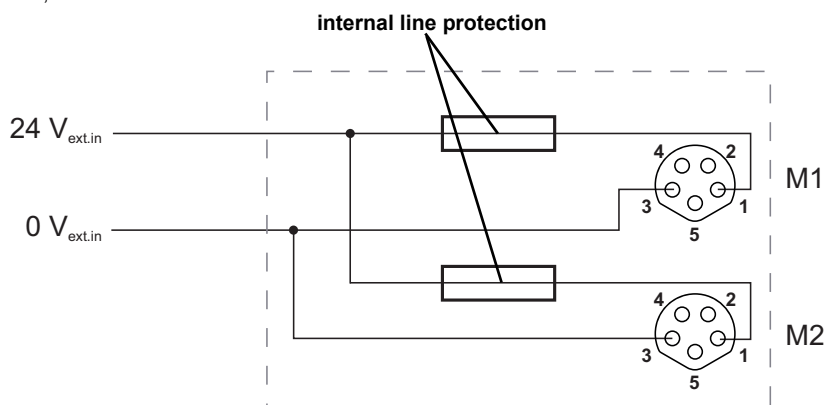
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(7) 4,5 A (slow-blow fuse) from Ident No. ≥18335 (BWU3290), from Ident No. ≥18338 (BWU4224);
3,5 A (slow-blow fuse) for Ident No. <18335 (BWU3290), for Ident No. <18338 (BWU4224)

(8) 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.



(9) BWU3290 from Ident. No. ≥18473; 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.

(10) The module is not suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors cannot be assumed for the connection of the two ASi and AUX potentials.

I f the module is supplied from an unswitched AUX cable, this has no influence on the safety consideration for the paths with passively safe-switched AUX cable. In an ASi circuit, paths supplied from a passively safe-switched AUX cable and paths supplied from unswitched AUX potential can be used together.

ASi Cable Duct Motor Modules for 24 V Motorized Rollers, 2M/2I

Article No.	BW3409	
General data		
Roller drives	2 x Interroll (EC310 or EC5000 AI, 24 V, 20 W/35 W ⁽¹⁾) 2 x Itoh Denki (PM500XC/XK ⁽¹⁾) 2 x RULMECA (RDR BL-2 or RDR BL-3 ^{(1) (2)})	
Connection		
ASi/AUX connection	profile cable and piercing technology	
Periphery connection	M: 2 x M8 snap-in cable sockets, straight, 5 poles I: 2 x M12 cable sockets, straight, 5 poles	
Cable	M1, M2: 0,6 m I1, I2: 1 m	
	passive distributors: 0,15 m	
	max. allowed tensile strain 10 N	
ASi		
Profile	S-7.A.7, ID1 = 7 (fixed)	
Address	1 AB address	
Required Master profile	≥M4	
As of ASi specification	3.0	
Operating voltage	30 V (18 ... 31.6 V)	
Max. current consumption	200 mA	
Max. current consumption without sensor/ actuator supply	80 mA	
AUX		
Operating voltage	24 V (18 ... 30 V)	
Max. current consumption	up to +40 °C	6 A continuously, 11 A peak ⁽³⁾
	at +55 °C	4,4 A continuously, 8 A peak ⁽³⁾
Input		
Number	2 (I1, I2)	
Power supply	out of ASi	
Sensor supply	short-circuit and overload protected according to EN 61131-2	
Power supply of attached sensors	up to +30 °C	120 mA ⁽⁴⁾
	at +40 °C	100 mA ⁽⁴⁾
	at +50 °C	60 mA ⁽⁴⁾
	at +55 °C	40 mA ⁽⁴⁾
Switching threshold	U _{in} < 5 V (low) U _{in} > 15 V (high)	
Drive		
Number	2 (I3, I4, O1 ... O4)	
Power supply	out of AUX (galvanic separation)	
Overvoltage tolerated by reaction (AUX)	35 V resistant brake chopper compatible	
Max. output current	up to +50 °C	10 mA per pin, ∑ (Motor) 40 mA ⁽⁵⁾
	at +55 °C	10 mA per pin, ∑ (Motor) 25 mA ⁽⁵⁾
Motor supply	up to +40 °C	out of AUX, 3 A continuously, 5,5 A max. ⁽³⁾
	at +55 °C	out of AUX, 2,2 A continuously, 4 A max ⁽³⁾
Line protection fuse	yes, separately for each motor, 4,5 A (slow-blow fuse) ⁽⁶⁾ , at 9 A (200%) release between 1 s and 120 s, fuse UL certified ⁽⁷⁾	

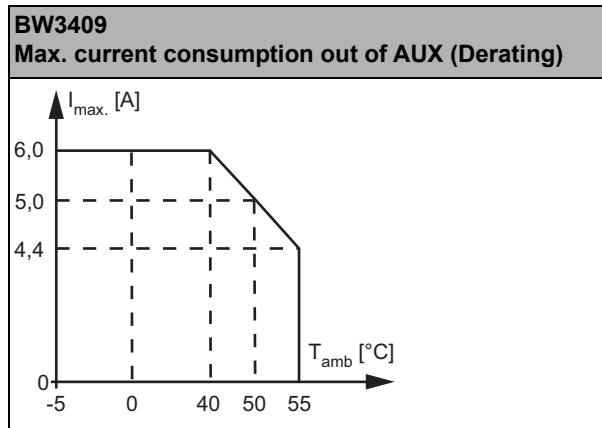
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Article No.	BW3409
Display	
LED I1 ...Ix (yellow)	state of inputs I1, I2
LED M1, M2 (yellow)	state of outputs M1 (O1), M2 (O3)
LED ASI (green)	on: ASi voltage on off: no ASi voltage
LED AUX (green)	on: 24 V _{DC} AUX off: no 24 V _{DC} AUX
LED FLT/FAULT (red)	on: address 0 or offline flashing: AUX voltage is missing, overload output, an output is short circuited, at least one motor fuse has blown or overload sensor off: online
UL-specifications (UL 61010-1 and UL 61010-2-201)	
External protection	An isolated source with a secondary open circuit voltage of ≤ 30 V _{DC} with a 3 A maximum over current protection. Over current protection is not required when a Class 2 source is employed.
Environment	
Applied standards	EN 61000-6-2 EN 61000-6-4 EN 61131-2 EN 60529
It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe	no ⁽⁸⁾
Operating altitude	max. 2000 m
Ambient temperature	-5 °C ... +40 °C (up to max. +55 °C) ^{(3) (4) (5)}
	for fixed installed cables: -30 °C ... +40 °C (up to max. +55 °C) ^{(3) (4) (5)}
	no condensing allowed
Storage temperature	-25 °C ... +85 °C
Housing	plastic, screw mounting suitable for cable ducts (installation depth ≥ 19 mm)
Pollution Degree	2
Protection category	IP54
Tolerable loading referring to humidity	according to EN 61131-2
Weight	module: 200 g passive distributor: 75 g
Dimensions (W / H / D) in mm	module: 90 / 60 / 18 passive distributor: 60 /45 /19

(1) Interroll (EC5000 AI, 24 V, 20 W/35 W), Itoh Denki (PM500XC/XK), RULMECA (RDR BL-3) from Ident. No. ≥ 18336 (BW3409).

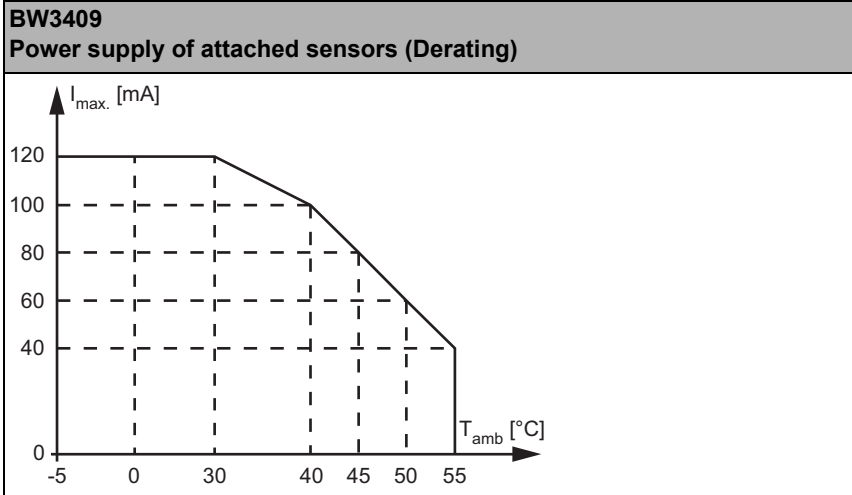
(2) suitable for transmission rates 24:1, 36:1, 49:1, 64:1, 96:1 (not suitable for transmission rates 12:1, 16:1)

(3)

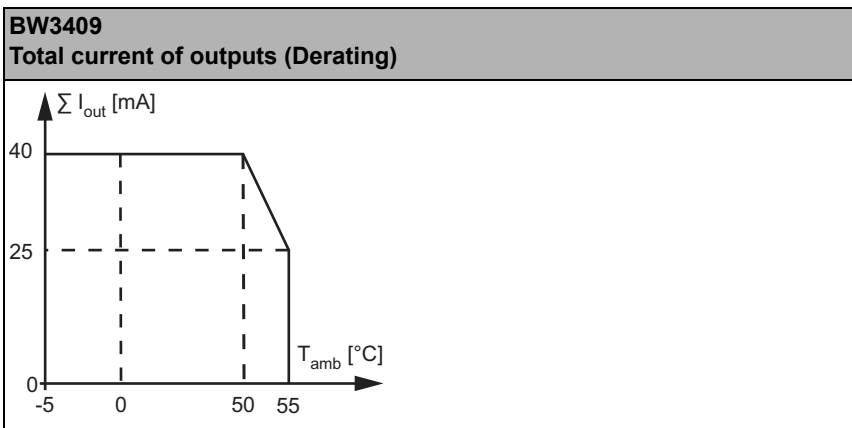


ASi Cable Duct Motor Modules for 24 V Motorized Rollers, 2M/2I

(4)



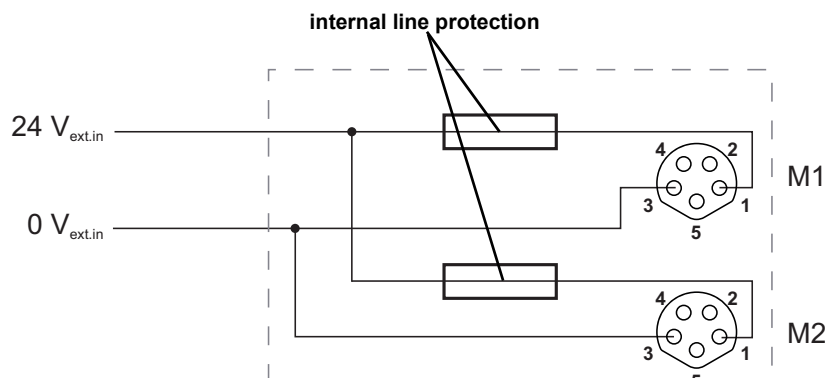
(5)



- (6) 4,5 A (slow-blow fuse) from Ident No. ≥18336 (BWU3409);
3,5 A (slow-blow fuse) for Ident No. <18336 (BWU3409);

- (7) 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.



- (8) The module is not suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors cannot be assumed for the connection of the two ASi and AUX potentials.

If the module is supplied from an unswitched AUX cable, this has no influence on the safety consideration for the paths with passively safe-switched AUX cable. In an ASi circuit, paths supplied from a passively safe-switched AUX cable and paths supplied from unswitched AUX potential can be used together.

ASi Cable Duct Motor Modules for 24 V Motorized Rollers, 2M/2I

Configuration analog value BWU3290, BW3409, BWU4224				
ASi parameters				analog value Pin 5
P2	P1	P0	O1/O3	
0	0	0	0	0 V
			1	2,3 V
0	0	1	0	0 V
			1	3,4 V
0	1	0	0	0 V
			1	4,5 V
0	1	1	0	0 V
			1	5,6 V
1	0	0	0	0 V
			1	6,7 V
1	0	1	0	0 V
			1	7,8 V
1	1	0	0	0 V
			1	8,9 V
1	1	1	0	0 V
			1	10 V

Programming	ASi Bit assignment			
	D3	D2	D1	D0
	input			
BWU3290, BWU3409, BWU4224	Motor Error M2	Motor Error M1	I2	I1
	output			
BWU3290, BWU3409, BWU4224	Direction of rotation M2	Start/Stop M2	Direction of rotation M1	Start/Stop M1

ASi Cable Duct Motor Modules for 24 V Motorized Rollers, 2M/2I

BWU3290, BWU4224

M8 Connection	Name / Number	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
	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
	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
	I1	24 V _{out of ASi}	n.c.	0 V _{out of ASi}	I1	n.c.
	I2	24 V _{out of ASi}	n.c.	0 V _{out of ASi}	I2	n.c.
ADDR (protection cap)		connection for ASi-3 addressing plug				

1 + (brown)
 - (blue) ASi and AUX via profile cable
 2 + (brown)
 - (blue)

BW3409

M8/M12 Connection	Name / Number	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
M8, 5 poles 	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
	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
M12, 5 poles 	I1	24 V _{out of ASi}	I1	0 V _{out of ASi}	I1	n.c.
	I2	24 V _{out of ASi}	I2	0 V _{out of ASi}	I2	n.c.
ADDR (protection cap)		connection for ASi-3 addressing plug				

1 + (brown)
 - (blue) ASi and AUX via profile cable
 2 + (brown)
 - (blue)

ASi Cable Duct Motor Modules for 24 V Motorized Rollers, 2M/2I



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-5/ASi-3 Address Programming Device (art. no. BW4925)