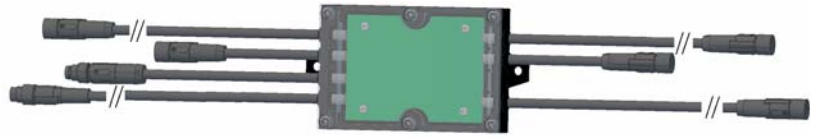
AS-i 3.0 Motor Module

AS-i 3.0 Motor Module for two 24V Itoh Denki roller drives with 4 binary and 2 analog outputs

Mixed input/output slave

Speed setting of AS-i parameter



The BW2834 is a control module for up to 2 roller drives. The module uses an AS-i AB slave for transmitting rotary information. The speed is defined using AS-i parameters.

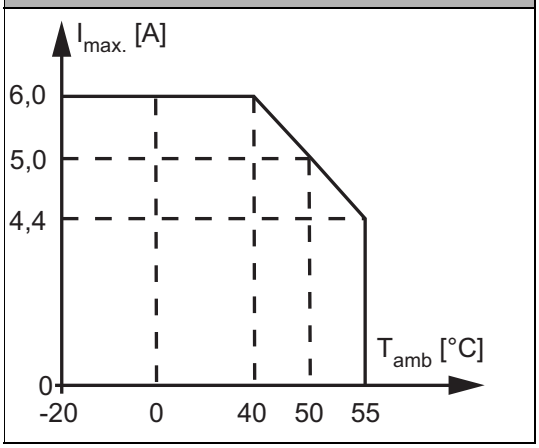
Up to 2 motors and 4 sensors can be connected to the module. The motors are powered by AUX (24 Vext) and the sensors by AS-i. The module is 35 V (AUX) resistant and brake resistor compatible.

Article no.	BW2834	BW2998
Connection		
AS-i / AUX connection	M8	
Periphery connection	M8	
AS-i		
Profile	S-7.A.7, ID1 = 7 (fixed)	
Voltage	18 … 31.6 V	
Max. current consumption	200 mA	
AUX		
Voltage	18 … 30 V	
Max. current consumption	6 A continuously, 11 A peak (1)	
Inputs		
Number	4	
Power supply of inputs	Sensor inputs: AS-i supply	
Input level of sensors	U_{in} < 5 V low, U_{in} > 10 V high	
Power supply of attached sensors	120 mA (2)	
Outputs		
Number of binary outputs	4	
Power supply of outputs	24 V (AUX, galvanical separation)	
Overvoltage tolerated by reaction (AUX)	35 V resistant brake resistor compatible	
Number of analog outputs	2	
Max. output current	10 mA each output in sum: 40 mA up to 50 °C, then 25 mA	
Supply of motors	out of AUX, 3A continuously, 5.5A max.	
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 (3)	
Display		
LED I1 ...I4 (yellow)	state of inputs I1 ... I4	
LED M1, M2 (yellow)	state of output M1 (O1), M2 (O3)	
LED ASI (green)	AS-i voltage on	
LED FLT/FAULT (red)	LED on: no data exchange, slave does not participate in the normal exchange of data, e.g. slave address 0 LED flashing: AUX voltage is missing, overload output, an output is short circuited, at least one motor fuse has blown or overload sensor	
LED AUX (green)	24 V_{DC} AUX on	

Article no.	BW2834	BW2998
Environment		
Applied standards	EN 61000-6-2 EN 61000-6-4	
Operating altitude	max. 2000 m	
Operating temperature	-5 °C ... +55 °C (4) (non-condensing)	
Storage temperature	-25°C ... +85°C	
Housing	plastic, for screw mounting	
Protection class (EN 60529)	IP54	
Weight	200 g	
Dimensions (W / H / D in mm)	90 / 60 / 18	

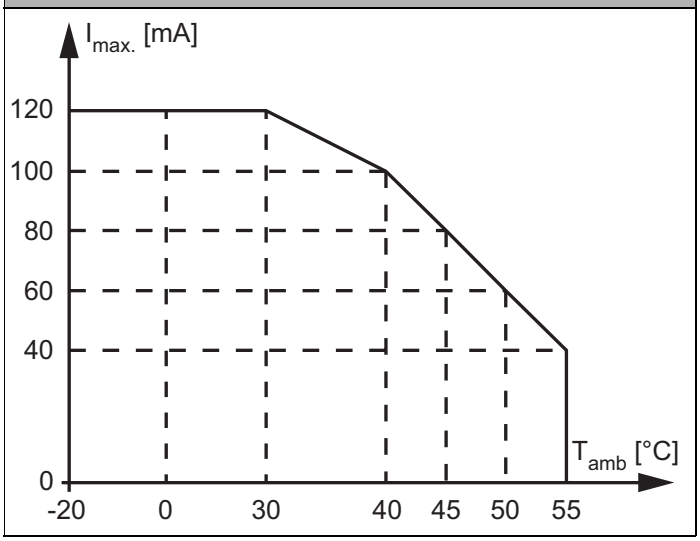
(1)

Max. current consumption (Derating)

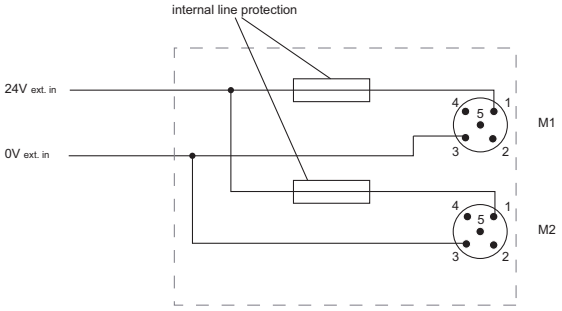


(2)

Power supply of attached sensors (Derating)



(3) 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.



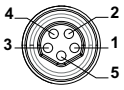
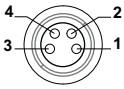
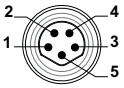
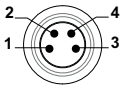
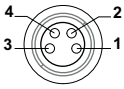
(4) If the wiring is fixed installed, an operating temperature up to -20 °C ... +55 °C is permissible.

Configuration analog-value

AS-i parameter			Analog value Pin 5	
P2	**P1**	**P0**	**DO1=1 (fast)**	**DO1 =0 (slow)**
0	0	0	1,5 V	0 V
0	0	1	3,5 V	1,5 V
0	1	0	4,5 V	2,5 V
0	1	1	5,5 V	2,5 V
1	0	0	6,5 V	3,5 V
1	0	1	7,5 V	3,5 V
1	1	0	8,5 V	4,5 V
1	1	1	10 V	5,5 V

Bit setting

Data bit	Function	
DI0	I1	Input I1
DI1	I2	Input I2
DI2	I3	Input I3
DI3	I4	Input I4
DO0	O1	Motor 1: *start / stop*
DO1	internal	Motors 1+2: *fast (DO1=1) / slow (DO1=0)*
DO2	O3	Motor 2: *start / stop*
DO3	O2, O4	Motors 1+2: *direction*

Connections M8				Pins				
Connection	**Name / Number**	**Cable length BW2834**	**Cable length BW2998**	**1**	**2**	**3**	**4**	**5**
	M1 (Motor 1)	41,5 cm	41,5 cm	$24V_{ext\ out}$	O 2 (0: 0V; 1: 24V)	$0V_{ext\ out}$	O 1 (0: 0V; 1: 24V)	Analog value
	M2 (Motor 2)				O 4 (0: 0V; 1: 24V)		O 3 (0: 0V; 1: 24V)	Analog value
	I1/I3	7,5 cm	7,5 cm	$24V_{out\ of\ AS\text{-}i}$	I3	$0V_{out\ of\ AS\text{-}i}$	I1	-
	I2/I4				I4		I2	
	AUX_{in}	11,5 cm	11,5 cm	$24V_{ext\ in}$	$24V_{ext\ in}$	$0V_{ext\ in}$	$0V_{ext\ in}$	nc
	$AS\text{-}i_{in}$	86,5 cm	10 cm	AS-i+	AS-i+	AS-i-	AS-i-	-
	$AS\text{-}i_{out}$							