

ASi Motor Module for Volta24 BLDC drives, IP67, M12/M8, 1I



Active Distributor ASi Motor Module for Volta24 BLDC drives with external commutation

2 x connectors for profile cables ASi and AUX

Periphery connection via
 1 x M12 cable socket, straight, 8 poles +
 1 x M8 cable socket, straight, 4 poles

Safe isolation of outputs up to PLe



(figure similar)



Figure	Type	Number of Drives	Inputs digital	Outputs digital	Input voltage (sensor supply) (1)	Output voltage (actuator supply) (2)	ASi connection (3)	Connection (4)	ASi address (5)	Special function	Art. no.
	IP67, depth 35 mm	1	1	-	out of AUX	out of AUX	ASi profile cable	1 x M12 cable socket, straight, 8 poles + 1 x M8 cable socket, straight, 4 poles	1 AB address	controlling BLDC drives with external commutation	BWU3907

- (1) **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.
- (2) **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
- (3) **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 M12 socket (in IP20 via clamps).
- (4) **Connection:** further connection options are available on request.

M12 cable socket, angled	M12 cable socket, straight	M8 cable socket, straight	round cable / connecting wires	Push in terminals
PUR line: oil resistant				

- (5) **ASi address:** AB addresses (max. 62 AB addresses/ASi network), 2 AB addresses (max. 31 modules with 2 AB addresses), Single addresses (max. 31 Single addresses/ASi network), ASi-5 address (max. 62 ASi-5 addresses/ASi network), mixed use allowed. Upon request, ASi-3 nodes are available with specific ASi node profiles. For modules with two ASi-3 nodes the 2nd ASi-3 node is turned off as long as the 1st ASi-3 node is addressed to address "0".

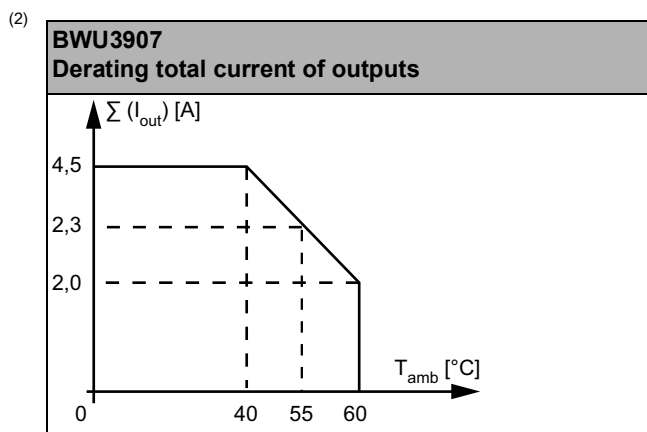
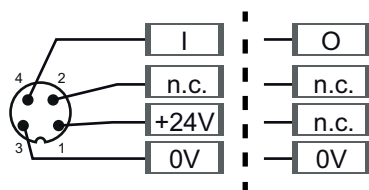
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Article No.		BWU3907
General data		
Device type	input/output	
Connection		
ASi/AUX connection	profile cable and piercing	
Periphery connection	1 x M12 cable socket, straight, 8 poles (motor) + 1 x M8 cable socket, straight, 4 poles (sensor)	
M8 wiring ⁽¹⁾	single wiring	
Length of connector cable	1 m	
	max. allowed tensile strain 10 N	
ASi		
Profile	S-7.A.0 (ID1=7 default)	
Address	1 AB address	
Required Master profile	≥M4	
As of ASi specification	3	
Operating voltage	30 V (18 ... 31.6 V)	
Max. current consumption without sensor/actuator supply	45 mA	
AUX		
Operating voltage	24 V (18 ... 30 V)	
Max. current consumption	4,7 A	
Input		
Number	1	
Power supply	out of AUX	
Power supply of attached sensors	120 mA	
Switching threshold	U < 5 V (low)	
	U > 15 V (high)	
Output		
Number	1 BLDC drive	
Power supply	out of AUX	
Output	short-circuit and overload protected according to EN 61131-2	
Max. output current	up to +40 °C	4,5 A ⁽²⁾
	at +55 °C	2,3 A ⁽²⁾
	at +60 °C	2 A ⁽²⁾
Display		
LED ASi (red/green)	green: ASi voltage on, participant online red: ASi voltage on, but participant offline yellow/red flashing: address 0 red/green flashing: peripheral fault ⁽³⁾ off: no ASi voltage	
LED AUX (green)	on: 24 V AUX off: no 24 V AUX	
LED I1 (yellow)	state of input I1	
LED M1 ERR (red)	motor error	
LED M1 RUN (yellow)	on: motor running off: motor stopped	
LED M1 CW (yellow)	on: rotational direction CW off: rotational direction CCW	
LED M1 FAST (yellow)	on: motor speed fast off: motor speed slow	

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Article No.	BWU3907
Environment	
Applied standards	EN ISO 13849-1 PLe EN ISO13849-2 EN 62026-2 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	yes ⁽⁴⁾
Operating altitude	max. 2000 m
Ambient temperature	-30 °C ... +60 °C ^{(2) (5)}
Storage temperature	-25 °C ... +85 °C
Housing	plastic, screw mounting, suitable for cable ducts (installation depth ≥35mm)
Pollution Degree	2
Protection category	IP67
Tolerable loading referring to humidity	according to EN 61131-2
Maximum tolerable shock and vibration stress	≤15g, T≤11 ms 10 ... 55 Hz, 0,5 mm amplitude
Insulation voltage	≥500 V
Weight	100 g
Dimensions (W / H / D) in mm	60 / 45 / 35

(1) **M8 wiring**
Single-wiring



(3) **see table "Peripheral fault indication"**

- (4) 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.
- (5) Down to -25 °C with flexibly mounted cable, -30 °C only with fixed mounted cable.

Article no.	Peripheral fault indication		
	Overload sensor supply	Output short circuited	AUX voltage missing
BWU3907	•	-	•

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Programming	ASi bit assignment			
	D3	D2	D1	D0
	input			
BWU3907	–	–	ERR (motor error) ⁽¹⁾	I1 (Sensor)
	output			
BWU3907	–	FAST: 0= motor speed slow 1= motor speed fast	CW: 0= rotational direction CCW 1= rotational direction CW	START: 0= motor stop (hold position) 1= motor start

- (1) Motor error can be:
- motor overcurrent
 - AUX undervoltage
 - commutation error / no motor connected / invalid wiring
 - module overtemperature

After a single error condition, the module tries to restart the motor after 1 second. If it fails to restart 5 times in a row it will stay in locked error state. To unlock, ASi bit DO 0 has to be cleared (motor stop command).

Configuration analog-value

BWU3907				
ASi parameter			Speed (rpm)	
P2	P1	P0	fast = 1	slow = 0
0	0	0	37,14	0 (free run)
0	0	1	74,29	37,14
0	1	0	111,43	55,71
0	1	1	148,57	74,29
1	0	0	185,71	92,86
1	0	1	222,86	111,43
1	1	0	260,00	130,00
1	1	1	297,14	148,57

Pin assignment

Signal name	Explanation
Ix	digital input x
Ox	digital output x
24V _{ext out}	power supply, out of external voltage, positive pole (AUX, actuator supply)
0V _{ext out}	power supply, out of external voltage, negative pole (AUX, actuator supply)
24V _{out of ASi}	power supply, out of ASi, positive pole (sensor supply)
0V _{out of ASi}	power supply, out of ASi, negative pole (sensor supply)
ASi +, ASi -	connection to ASi bus
n.c. (not connected)	not connected

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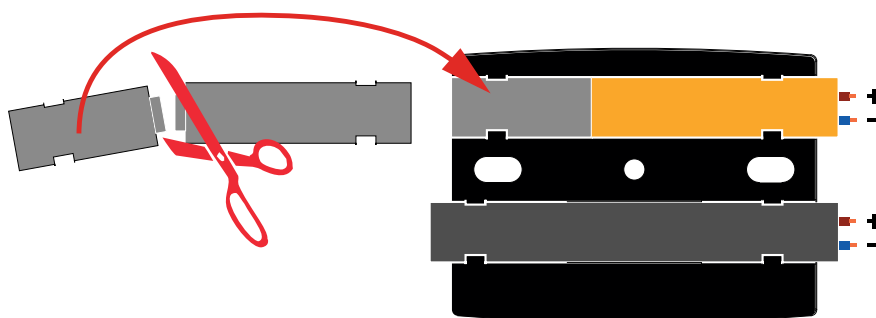
Connections:

Article no.	M12, 8 poles	Pin1 (WH)	Pin2 (BN)	Pin3 (GN)	Pin4 (YE)	Pin5 (GY)	Pin6 (PK)	Pin7 (BU)	Pin8 (RD)	
BWU3907	X1 (Motor)	motor phase 3	motor phase 2	Hall sensor 1	Hall sensor 2	5 V ext.out	Hall sensor 3	0 V ext.out	motor phase 1	
	M8, 4 poles	Pin1	Pin2	Pin3	Pin4					
	X2 (Sensor)	24 V ext.out	n.c.	0 V ext.out	I1					

Line termination with sealing profile



max. IP54



Accessories:

- Sealing profile IP67 (IDC plug), 60 mm (art. no. BW3282)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4708)