ASi Motor Module for Lenze Smart Motor

ASi Motor Module, IP67, M12 for Lenze Smart motor, 1M/3I

1 AB address

ASi/AUX via profile cable or M12

2 x M12 connections compatible with Lenze Smart Motor

2 x M12 connections for up to 3 additional sensors

(Figure similar)

Figure	Type	Drive [1]	Number of drives	Inputs digital	Outputs digital	Input voltage (sensor supply) [2]	Output voltage (actuator supply) [3]	ASi connection [4]	ASi address [5]	Art. no.
	IP67, 4 x M12	Lenze Smart Motor	1	3	–	out of AUX	out of AUX	ASi profile cable	1 AB address	**BWU3115**
	IP67, 4 x M12	Lenze Smart Motor	1	3	–	out of ASi	out of ASi	ASi profile cable	1 AB address	**BWU3886**
	IP67, 4 x M12	Lenze Smart Motor	1	3	–	out of AUX	out of AUX	ASi via M12	1 AB address	**BWU3181**

(1) **Drive**
Lenze Smart Motor: Motor module to control Lenze Smart motors and to control additional sensors.

(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) **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).

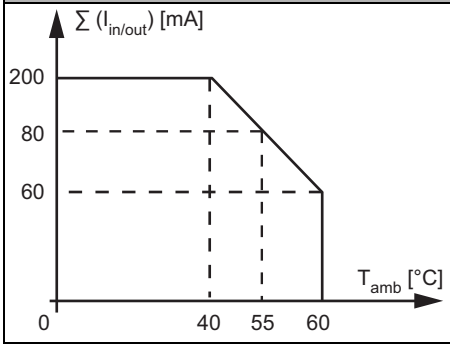
(5) **ASi address:** 1 AB address (max. 62 AB addresses/ASi network), 2 AB addresses (max. 31 modules with 2 AB addresses), Single addresses (max. 31 Single addresses/ASi network), mixed use allowed. For modules with two ASi nodes the second ASi node is turned off as long as the first ASi node is addressed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

Article No.		BWU3886	BWU3115	BWU3181
General data				
Device type		input / output		
Connection				
ASi/AUX connection		profile cable and piercing technology		M12 (7)
Periphery connection		M12		
ASi				
Profile		S-7.A.E, 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		245 mA	35 mA	
Max. current consumption without sensor/ actuator supply		45 mA	35 mA	
AUX				
Operating voltage		–	24 V (18 ... 30 V)	
Max. current consumption		–	max. 2,5 A	
Input				
Number		3 (I2 ... I4)		
Power supply		out of ASi	out of AUX	
Power supply of attached sensors	up to +40 °C	200 mA, ∑ (In/Motor) ≤200 mA (1)	max. 1 A	
	at +55 °C	80 mA, ∑ (In/Motor) ≤80 mA (1)		
	at +60 °C	60 mA, ∑ (In/Motor) ≤60 mA (1)		
Switching threshold		U<5 V (low) U>15 V (high)		
Drive				
Number		1 (I1, O1 ... O3)		
Power supply	up to +40 °C	200 mA, ∑ (In/Motor) ≤200 mA (1)	out of AUX	
	at +55 °C	80 mA, ∑ (In/Motor) ≤80 mA (1)		
	at +60 °C	60 mA, ∑ (In/Motor) ≤60 mA (1)		
Max. output current		200 mA per pin	max. 500 mA per pin	
Display				
LED ASI (green)		on: ASi voltage on flashing: ASi voltage on, but peripheral fault (2) or address 0 off: no ASi voltage		
LED FLT/FAULT (red)		on: ASi address 0 or ASi node offline flashing: peripheral fault (2) off: ASi node online		
LED AUX (green)		–	on: 24 V_{DC} AUX off: no 24 V_{DC} AUX	
LED X1 (yellow)		state of outputs O1 / O2: at least 1 output of output pair is on		
LED X2 (yellow)		state of inputs/outputs I1 / O3: input **or** output is on		
LED I2/I3 (yellow)		state of inputs I2 / I3: at least 1 input of input pair is on		
LED I4 (yellow)		state of input I4		

Article No.	BWU3886	BWU3115	BWU3181
Environment			
Applied standards	EN 61000-2 EN 61000-3 EN 61131-2 EN 60529		
It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe	yes (3)	yes (6)	no (8)
Operating altitude	max. 2000 m		
Ambient temperature	-30 °C … +55 °C (up to max. +70 °C) (4) (5)		
Storage temperature	-25 °C … +85 °C		
Housing	plastic, for DIN rail mounting		plastic, for screw mounting
Protection category	IP67		
Tolerable loading referring to humidity	acc. to EN 61131-2		
Max. tolerable shock load	30*g*, 11 ms, acc. to EN 61131-2		
Max. tolerable vibration stress	5 ... 8 Hz 50 mm_{pp}/8 ... 500 Hz 6*g*, acc. to EN 61131-2		
Insulation voltage	≥500 V		
Weight	100 g		
Dimensions (W / H / D) in mm	45 / 80 / 42		45 / 116,5 / 47,5

(1)

BWU3886
Derating total current of inputs and outputs



(2) **See table "Peripheral fault indication"**

(3) The module is suitable for use in passively safe paths as it has no connection to an AUX potential.

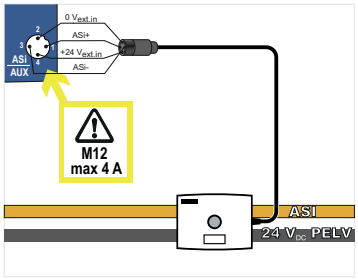
(4) Maximum ambient operating temperature +55 °C according UL certificate for the use in the USA and Canada

(5) Temperature range up to -30 °C from Ident.No. ≥16336 (BWU3115).

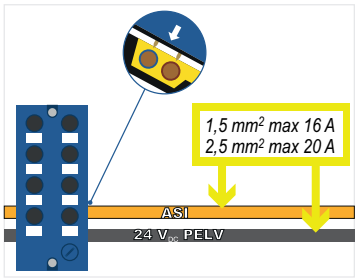
(6) BWU3115 from Ident. No. 18181; the module is suitable for use in paths with a passively safe-switched AUX cable, since an exclusion of errors can be assumed for the connection of the two ASi and AUX potentials.

(7) **Line protection:**
If the module is supplied via a M12 connection with A or B coding, it may only be used with a current load of max. 4 A per pin in acc. with IEC 61076-2-101 and IEC 61076-2-109. A fused tap is recommended. There is no such limitation for modules supplied via piercing contacts.

Connection to ASi and AUX via M12



via piercing contacts



(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.

Article no.	Peripheral fault indication		
	Overload sensor supply	Output short circuited	AUX voltage missing
BWU3115	•	•	•
BWU3181	•	•	•
BWU3886	•	•	–

UL-specifications (UL508) BWU3115, BWU3181, BWU3886	
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.
In general	UL mark does not provide UL certification for any functional safety rating or aspects of the above devices.

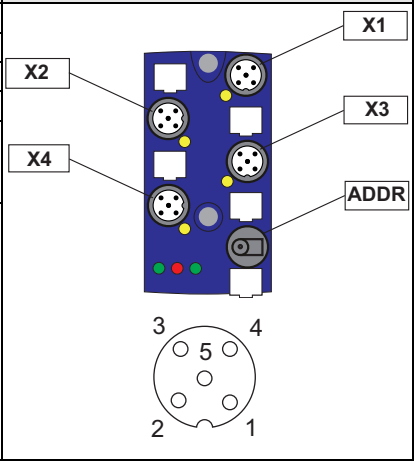
Programming	Parameter bit			
	P0	P1	P2	P3
BWU3115 / BWU3181 / BWU3886	0= off / 1= on (Watchdog)	0= on / 1= off (data input filter 128µs)	0= on / 1= off (synchronous I/O mode)	not used

Pin assignment

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

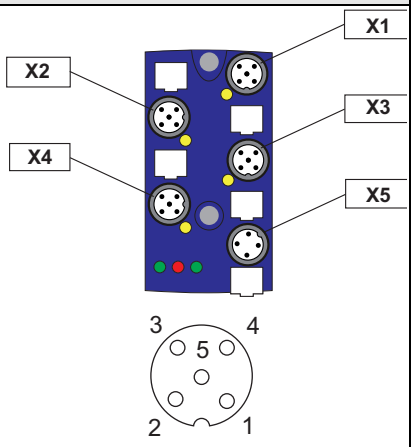
Connections

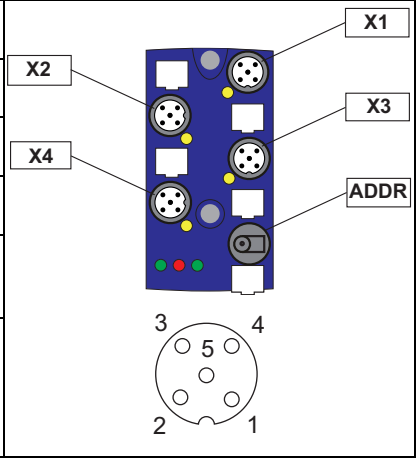
Article no.	M12 connection	Marking	Pin1	Pin2	Pin3	Pin4	Pin5
BWU3115	X1	X1 (1)	n.c.	O2	0 $V_{ext.out}$	O1	n.c.
	X2	X2 (2)	24 $V_{ext.out}$	O3	0 $V_{ext.out}$	I1	n.c.
	X3	I2/I3	24 $V_{ext.out}$	I3	0 $V_{ext.out}$	I2	n.c.
	X4	I4	24 $V_{ext.out}$	n.c.	0 $V_{ext.out}$	I4	n.c.
	ADDR (protection cap)	connection for ASi-3 addressing plug					



Connections

Article no.	M12 connection	Marking	Pin1	Pin2	Pin3	Pin4	Pin5
BWU3181	**X1**	X1 (1)	n.c.	O2	0 $V_{ext.out}$	O1	n.c.
	X2	X2 (2)	24 $V_{ext.out}$	O3	0 $V_{ext.out}$	I1	n.c.
	X3	I2/I3	24 $V_{ext.out}$	I3	0 $V_{ext.out}$	I2	n.c.
	X4	I4	24 $V_{ext.out}$	n.c.	0 $V_{ext.out}$	I4	n.c.
	X5	ASI / AUX	ASi+	0 $V_{ext\ in}$	ASi-	24 $V_{ext\ in}$	–
BWU3886	**X1**	X1 (1)	n.c.	O2	0 $V_{out\ of\ ASi}$	O1	n.c.
	X2	X2 (2)	24 $V_{out\ of\ ASi}$	O3	0 $V_{out\ of\ ASi}$	I1	n.c.
	X3	I2/I3	24 $V_{out\ of\ ASi}$	I3	0 $V_{out\ of\ ASi}$	I2	n.c.
	X4	I4	24 $V_{out\ of\ ASi}$	n.c.	0 $V_{out\ of\ ASi}$	I4	n.c.
	ADDR (protection cap)	connection for ASi-3 addressing plug					





(1) 4 pole connection to X1 of Lenze Smart Motor

(2) 4 pole connection to X2 of Lenze Smart Motor

Accessories:

- **ASi substructure module for 4 channel module in 45 mm housing (art. no. BW2349)**
- **ASi substructure module (CNOMO) for 4 channel module in 45 mm housing (art. no. BW2350)**
- **Universal protection cap ASi-5/ASi-3 for M12 sockets, IP67 (art. no. BW4056)**
- **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 power source with the module.**