

# ASi-5 Motor Module for NORD frequency inverter, IP67, M12, 1M/4I/2O

## ASi-5 Motor Module to control NORD frequency inverter

### suitable for

- NORDAC FLEX
- NORDAC BASE
- NORDAC LINK

### Cyclic writing of speed and ramps possible


### 4 x M12 connectors

### High protection class IP67



(figure similar)



Figure	Type	Drive <sup>(1)</sup>	Number of drives	Inputs digital	Outputs digital	Input voltage (sensor supply) <sup>(2)</sup>	Output voltage (actuator supply) <sup>(3)</sup>	ASi connection <sup>(4)</sup>	ASi address <sup>(5)</sup>	Art. no.
	IP67, 4 x M12, ASi-5	NORD frequency inverter	1	4	2	out of ASi	out of AUX	ASi profile cable	1 ASi-5 address	<b>BWU4371</b>

- (1) **Drive:**  
"NORD frequency inverter": Motor module to control geared motors with frequency inverters.
- (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:** 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) ASi-5 address (max. 62 ASi-5 addresses/ASi network), mixed use allowed (upon request, ASi nodes are available with specific ASi slave profiles).

Article no.	BWU4371
<b>General data</b>	
Frequency inverter	NORDAC FLEX NORDAC BASE NORDAC LINK
<b>Connection</b>	
ASi / AUX connection	profile cable and piercing
Periphery connection	M12, Y wiring
<b>ASi</b>	
Address	1 ASi-5 address
Required Master profile	≥M5
Since ASi specification	5
ASi process data width	6 byte
Operating voltage	30 V (18 ... 31,6 V)
Max. current consumption	210 mA
Max. current consumption without sensor/ actuator supply	65 mA
<b>AUX</b>	
Voltage	24 V (18 ... 30 V)
Max. current consumption	3 A

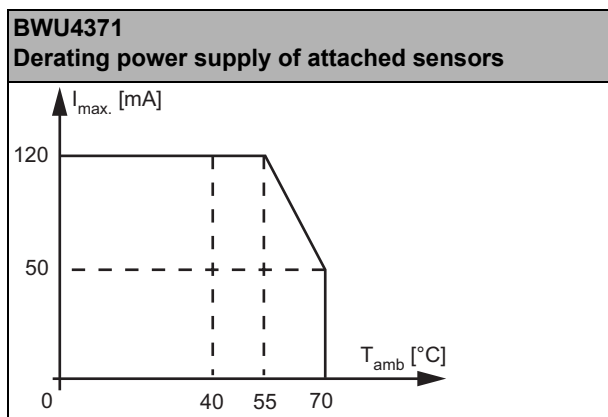
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<b>Article no.</b>		<b>BWU4371</b>
<b>Input</b>		
Number		4
Power supply		out of ASi
Sensor supply		short-circuit and overload protected according to EN 61131-2
Power supply of attached sensors	up to +40 °C	120 mA <sup>(1)</sup>
	at +55 °C	
	at +70 °C	50 mA <sup>(1)</sup>
Switching threshold		< 5 V (low), > 15 V (high)
<b>Output</b>		
Number		2
Power supply		out of AUX
Output		short-circuit and overload protected according to EN 61131-2
Max. output current	up to +40 °C	1 A per output, $\Sigma(\text{Out})$ 3 A <sup>(2)</sup>
	at +55 °C	
	at +70 °C	0,5 A per output, $\Sigma(\text{Out})$ 1,5 A <sup>(2)</sup>
<b>Interface</b>		
Number		1
Interface		Nord system bus <sup>(3)</sup>
Baud rates		9600 Bit/s
Power supply		out of AUX
Fuse		short-circuit and overload protected according to EN 61131-2
Max. current	up to +40 °C	1 A per motor, $\Sigma(\text{Out})$ 3 A <sup>(2)</sup>
	at +55 °C	
	at +70 °C	0,5 A per motor, $\Sigma(\text{Out})$ 1,5 <sup>(2)</sup>
<b>Visualization</b>		
LED ASI (green)	on: ASi voltage flashing: ASi voltage on, but peripheral fault <sup>(4)</sup> or address 0 off: no ASi voltage	
LED FLT (red)	on: ASi node offline flashing: peripheral fault <sup>(4)</sup> off: ASi node online	
LED AUX (green)	on: 24 V <sub>DC</sub> AUX off: no 24 V <sub>DC</sub> AUX	
LEDs I1 ... I4 (yellow)	state of inputs I1 ... I4	
LEDs O1, O2 (yellow)	state of outputs O1, O2	
LED M1 (yellow)	Nord system bus communication active	

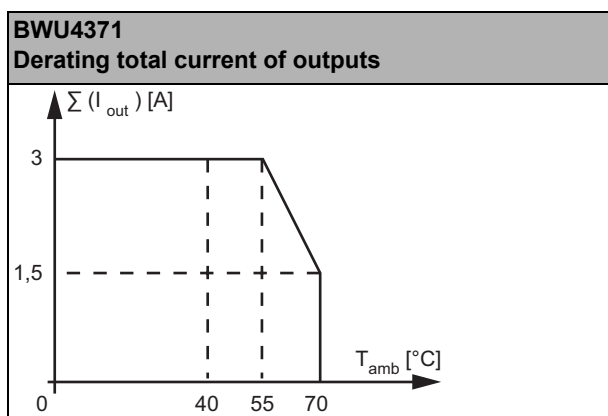
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<b>Article no.</b>	<b>BWU4371</b>
<b>Environment</b>	
Applied standards	EN 61000-6-2 EN 61000-6-4 EN 60529
It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe	yes <sup>(5)</sup>
Operating altitude	max. 2000 m
Ambient operating temperature	-30 °C ... +55 °C (up to max. +70 °C) <sup>(1)</sup> <sup>(2)</sup> <sup>(6)</sup>
Storage temperature	-25 °C ... +85 °C
Housing	plastic, for DIN rail mounting or for screw mounting <sup>(7)</sup>
Protection category	IP67 <sup>(8)</sup>
Pollution Degree	2
Tolerable loading referring to humidity	according to EN 61131-2
Max. tolerable shock load	30g, 11 ms, acc. EN 61131-2
Max. tolerable vibration stress	5 ... 8 Hz 50 mm <sub>pp</sub> /8 ... 500 Hz 6g, acc. EN 61131-2
Isolation voltage	≥500 V
Weight	100 g
Dimensions (B / H / T in mm)	45 / 80 / 56

(1)



(2)



(3) The system bus has a 120 Ω terminating resistor on both sides.

(4) See table "Peripheral fault indication"

(5) 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.

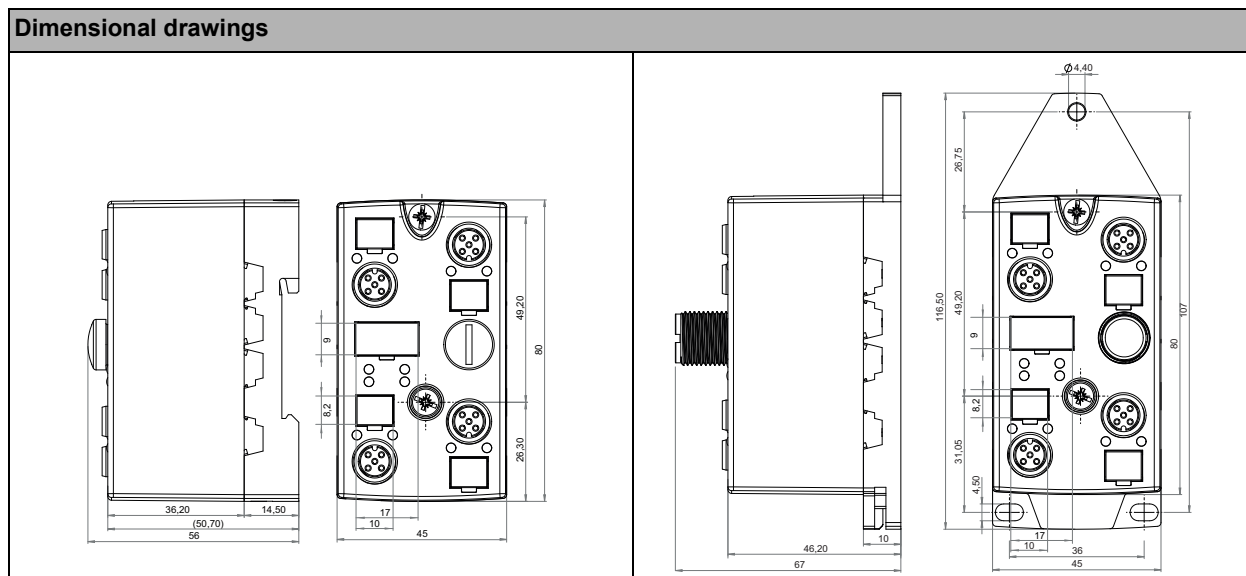
(6) Maximum ambient operating temperature +55 °C according UL certificate for the use in the USA and Canada

(7) Depending on substructure module (see accessories). The substructure module is not included in the scope of delivery.

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<sup>(8)</sup> Protection category IP67 can only be achieved if all open connections are sealed with suitable end caps fulfilling the same protection category.

UL-specifications (UL508) BWU4371	
External protection	An isolated source with a secondary open circuit voltage of $\leq 30 V_{DC}$ 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.



Article no.	Peripheral fault indication				
	Overload sensor supply	Output short circuited	AUX voltage missing	Communication error	Motor error
BWU4371	•	•	•	•	•

## Programming (Bit-setting of ASi process data image)

Article no.	Byte	Bit									
		D7	D6	D5	D4	D3	D2	D1	D0		
BWU4371	<b>Digital input data</b>										
	0	reserved								I4	I3
	1	motor ready	motor running	at reference	direction of rotation	motor error	motor specific error	reserved			
	2	actual speed, high byte (0 ... 100%, resolution 0,01%), UINT16									
	3	actual speed, low byte (0 ... 100%, resolution 0,01%), UINT16									
	4	actual moment current (mA), high byte, UINT16									
5	actual moment current (mA), low byte, UINT16										

Article no.	Byte	Bit								
		D7	D6	D5	D4	D3	D2	D1	D0	
BWU4371	<b>Digital output data</b>									
	0	reserved							O2	O1
	1	enable	start/stop	direction of rotation	brake	reset	free wheel	reserved		
	2	speed setpoint, high byte (0 ... 100%, resolution 0,01%), UINT16								
	3	speed setpoint, low byte (0 ... 100%, resolution 0,01%), UINT16								
	4	ramp (ms), high byte, UINT16								
5	ramp (ms), low byte, UINT16									

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## Pin assignment

Signal name	Explanation
Ix	Digital input x
Ox	Digital output x
CAN-H	Communication with motor, positive pole
CAN-L	Communication with motor, negative pole
24 V <sub>ext out</sub>	Power supply, out of external voltage, positive pole (AUX, actuator supply)
0 V <sub>ext out</sub>	Power supply, out of external voltage, negative pole (AUX, actuator supply)
24 V <sub>ext in</sub>	Input voltage, positive pole (AUX+)
0 V <sub>ext in</sub>	Input voltage, negative pole (AUX-)
ASi+	ASi network, positive potential
ASi-	ASi network, negative potential
24 V <sub>out of ASi</sub>	Power supply, out of ASi, positive pole (sensor supply)
0 V <sub>out of ASi</sub>	Power supply, out of ASi, negative pole (sensor supply)
n.c.	not connected

## Connections

Article no.	M12 Connection	Marking	Pin1	Pin2	Pin3	Pin4	Pin5	
BWU4371	X1	I1/I2	24 V out of ASi	I2	0 V out of ASi	I1	n.c.	
	X2	I3/I4	24 V out of ASi	I4	0 V out of ASi	I3	n.c.	
	X3	O1/O2	0 V <sub>ext out</sub>	O2	0 V <sub>ext out</sub>	O1	n.c.	
	X4	M1 (motor)	n.c.	24 V ext out	0 V <sub>ext out</sub>	CAN-H	CAN-L	
	ADDR (protection cap)	connection for ASi-5 addressing plug						

## Accessories:

- ASi substructure module for 4-channel module in 45 mm-housing (art. no. BW2349)
- ASi substructure module (CNOMO) 4-channel module in 45 mm-housing (art. no. BW2350)
- Universal protection cap ASi-5/ASi-3 for M12 sockets, IP67 (article no. BW4056)
- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)
- It is recommended to use NORD „SK TIE4-M12-SYSS“ M12 BUS system connector to connect the motor interface with the module.