

AS-i Speed Monitor

AS-i Speed Monitor

- for sine/cosine encoder
- for HTL encoder
- for SSI encoder
- for TTL encoder
- for sensors

for up to 2 independent axes

up to 2 fast electronic safe outputs

- up to 128 devices

Supplied out of AS-i and external 24 V

Chip card



(figure similar)



Figure	Model	Safe Monitoring	Encoder signal/ Sensor signal	Number of monitored axes	Outputs Safety, SIL 3, cat. 4	Encoder/Sensor connection	Article no.
	Speed Monitor for encoders	speed + position	sine/cosine, SSI, TTL (1)	up to 2 independent axes	2 release circuits; 2 x fast electronic safe outputs	RJ45	BWU2849
	Speed Monitor for encoders	speed + position	sine/cosine, TTL	1 axis	2 release circuits; 2 x fast electronic safe outputs	RJ45	BWU2868
	Speed Monitor for encoders	speed	sine/cosine	up to 2 independent axes	–	Mini IO	BWU2427
	Speed Monitor for encoders	speed	HTL or sensors/initiators (24V)	up to 2 independent axes	–	Mini IO	BWU2595

(1) TTL ability from ID. no. 15882 (see lateral label).

Article no.	BWU2427	BWU2595	BWU2849	BWU2868
Connection				
AS-i /AUX Connection	1 x 4-fold COMBICON		1 x 4-fold COMBICON 1 x 4-fold Mini-COMBICON	
Encoder connection	2 x AMP Mini-IO		2 x RJ45	1 x RJ45
AS-i				
Profile	safe input slaves: S-0.B.E., ID1=F diagnostic slaves: S-7.A.5., ID1=7 (default)		safe input slaves: S-7.B.E., ID1=F diagnostic slaves: S-7.A.5., ID1=7 (default)	
Address	depending on configuration			
Operating voltage	18 ... 31,6 V			
Max. current consumption	150 mA			
Max. continuous operating current	125 mA			
AUX				
Voltage	18 ... 30 V			
Max. current consumption	200 mA	50 mA	1,4 A	
Input				
Number	2 x encoder			1 x encoder
Input type	sine / cosine	HTL	sine / cosine, SSI ⁽²⁾ , TTL	
Input level	–	Logic level HTL: 16 V ... 28,8 V	–	
Power supply	internal 5 V (max. 100 mA), external 5 V	external 24 V	external, max. 30 V	
Parameterization range for the speed limit	2 Hz ... 200 kHz		1 Hz ... 250 kHz	
Output				
Number	–		2 semiconductor outputs, max. contact load: 700 mA _{DC-13} at 24 V	
Power supply	–		out of AUX	
Test pulse	–		minimum interval between 2 pulses: 250 ms pulse length: max. 1 ms	
Display				
LED ASI (green)	on: AS-i voltage present flashing: peripheral fault ⁽¹⁾ or address 0		on: AS-i voltage present flashing: configuration not verified or address 0	
LED FAULT/FLT (red)	on: offline or address 0 flashing: peripheral fault ⁽¹⁾		on: offline or address 0 flashing: configuration not verified	
LED AUX (green)	24 V _{DC} AUX present			
LED CONF (yellow)	off: normal operation mode flashing: chip card is written on: frequency stored via PRJ button		off: normal operation mode flashing: device red or yellow flashing, chip card is written on: configuration operation	
LED ST1, ST2 (yellow)	state of encoders 1 (ENC 1), 2 (ENC 2)			state of encoders 1 (ENC 1)
LED F1, F2 (yellow)	off: axes 1, 2 rotating flashing: encoder error ⁽¹⁾ on: axes 1, 2 stopped			off: axis 1 rotating flashing: encoder error ⁽¹⁾ on: axis 1 stopped
LED O1, O2 (yellow)	–		state of outputs O1, O2 flashing: overload cut-off ⁽¹⁾	

Article no.	BWU2427	BWU2595	BWU2849	BWU2868
Environment				
Applied standards	EN 62061 SIL 3 EN ISO 13849-1 PLe EN 60529			
Operating altitude	max. 2000 m			
Ambient temperature	0 °C ... +55 °C			
Storage temperature	-25 °C ... +85 °C			
Housing	plastic, for DIN rail mounting			
Protection class	IP20			
Tolerable loading referring to humidity	acc. EN 61131-2			
Weight	160 g			
Dimensions (W / H / D in mm)	22,5 / 99,6 / 114			

(1) see table „Peripheral fault indication“

(2) SSI encoders may only be used with speed monitors with 2 encoder connections as a second encoder is required as a reference for security applications.

Article No.	Peripheral fault indication		
	Encoder error	AUX voltage missing	Overload output
BWU2427	•	•	–
BWU2595	•	•	–
BWU2849	•	–	•
BWU2868	•	–	•

Pin assignment

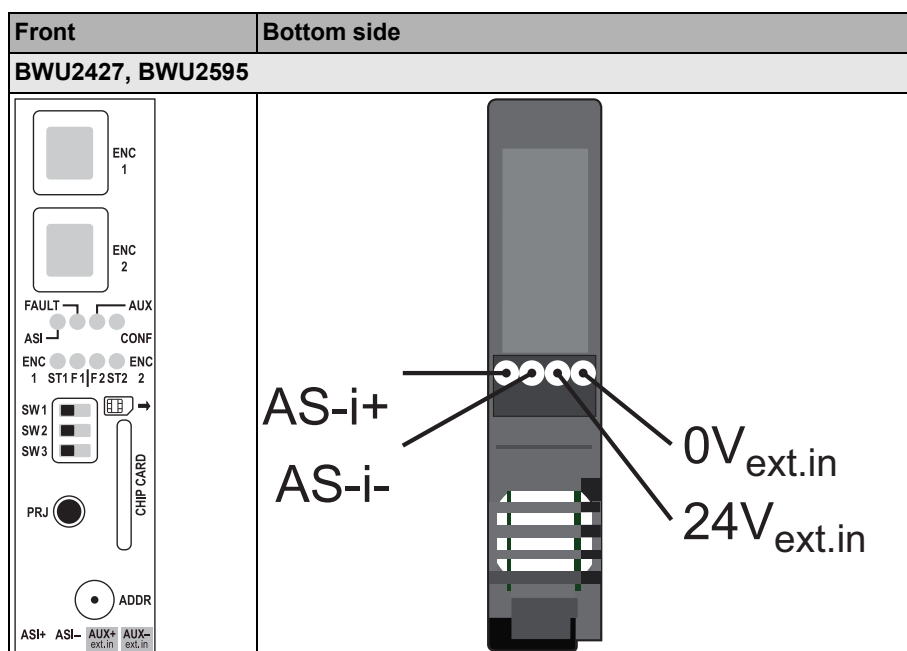
Signal name	Description
Ub	power supply, encoder, positive pole
GND	power supply, encoder, negative pole
CLK, $\overline{\text{CLK}}$	clock connection
DATA, $\overline{\text{DATA}}$	data connection
sin, $\overline{\text{sin}}$; cos, $\overline{\text{cos}}$; A, \overline{A} ; B, \overline{B}	signal connection

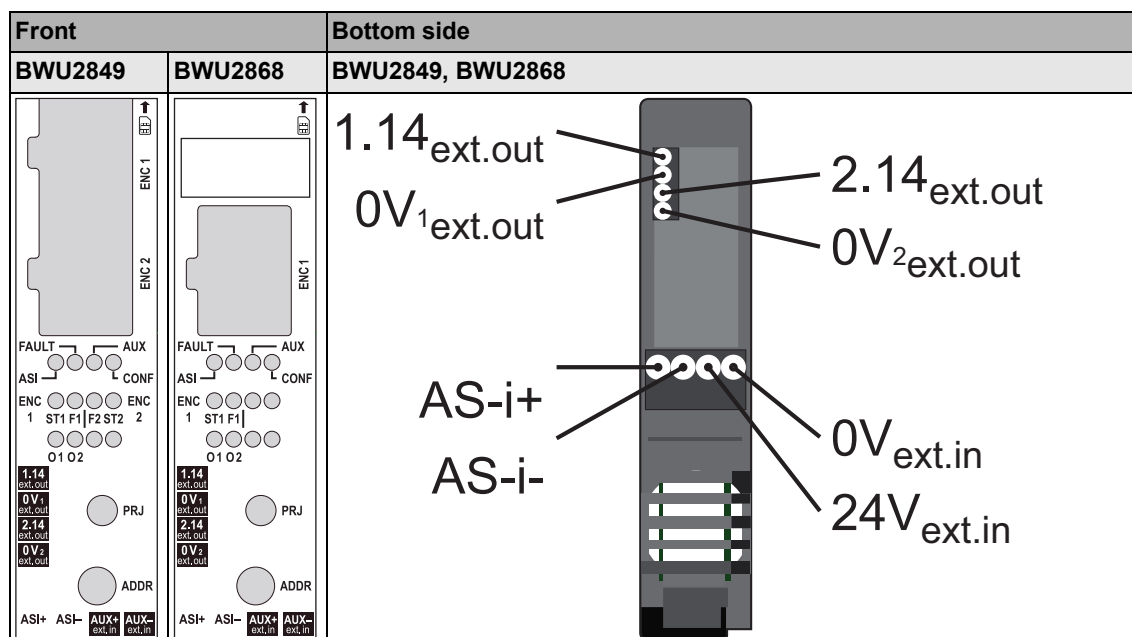
Article No.	Pin	sin/cos	HTL	Mini IO connector, 8 pole
BWU2427 / BWU2595	1	$\overline{\text{sin}}$	\overline{B}	
	2	sin	B	
	3	n.c.	n.c.	
	4	n.c.	n.c.	
	5	cos	A	
	6	$\overline{\text{cos}}$	\overline{A}	
	7	Ub _{out}	n.c.	
	8	GND _{out}	GND	

Article No.	Pin	sin/cos	SSI	TTL	RJ45 connector, 8 pole
BWU2849 / BWU2868	1	Ub _{in}	Ub _{in}	Ub _{in}	
	2	GND _{in}	GND _{in}	GND _{in}	
	3	–	CLK	–	
	4	sin	DATA	B	
	5	$\overline{\text{sin}}$	$\overline{\text{DATA}}$	$\overline{\text{B}}$	
	6	–	CLK	–	
	7	cos	–	A	
	8	$\overline{\text{cos}}$	–	$\overline{\text{A}}$	

Connection and switch assignment

Marked	Description
ENC 1, ENC 2	connection encoder
CHIP CARD	chip card
ADDR	addressing socket
PRJ	projecting button
S1, S2, S3	function selector switch
1.14 _{ext.out} , 0V _{1 ext.out}	semiconductor output 1
2.14 _{ext.out} , 0V _{2 ext.out}	semiconductor output 2
ASI+, ASI-	connection to AS-i bus
24V _{ext.in} , 0V _{ext.in} AUX+ _{ext.in} , AUX- _{ext.in}	connection external 24 V _{DC} power supply (AUX)





Accessories:

- Connecting cable for Speed Monitor (art. no. BW2476, BW2477, BW2494, BW2991, BW2993)
- Adapter for connecting 2 encoders (art. no. BWU2977)
- Adapter for Speed Monitor (art. no. BW2497, BW2499, BW2740, BW3046)
- Encoder Simulator (art. no. BW2506)
- Chip card (art. no. BW2079, BW2222, BW2744)