AS-i Safety Input Module (M12), IP67

for optoelectronic protective devices or floating contacts

Applications up to category 4/PLe/SIL 3

(Figure similar)

Figure	Type	Inputs Safety, SIL 3, cat. 4	Outputs digital	Safety signal inputs	AS-i connection[1]	AS-i address[2]	Special function	Article no.
	IP67, 4 x M12, Safety	2 x 2 channels	-	floating contacts	AS-i using profile cable, sensors using M12	2 Single Slaves	-	**BWU2631**
	IP67, 4 x M12, Safety	1 x 2 channels	2 x electronic	floating contacts	AS-i using profile cable, sensors using M12	1 Single Slave	-	**BWU2284**
	IP67, 4 x M12, Safety	1 x 2 channels	2 x electronic	optoelectronic protective devices	AS-i using profile cable, sensors using M12	1 Single Slave	-	**BWU2270**
	IP67, 4 x M12, Safety	1 x 2 channels	2 x electronic	floating contacts	AS-i and sensors using M12	1 Single Slave	-	**BWU2369**
	IP67, 4 x M12, Safety	1 x 2 channels	2 x electronic	optoelectronic protective devices	AS-i and sensors using M12	1 Single Slave	-	**BWU2370**
	IP67, 4 x M12, Safety	1 x 2 channels	2 x electronic	optoelectronic protective devices	AS-i using profile cable, sensors using M12	1 Single Slave	reset output for optoelectronic protective devices	**BWU2689**
	IP67, 4 x M12, Safety	1 x 2 channels	2 x electronic	complemen-tary switch	AS-i using profile cable, sensors using M12	1 Single Slave	-	**BWU2814**

1 **AS-i connection:** the connection to AS-i as well to AUX (auxiliary 24V power) is either made via yellow AS-i profile cable with piercing technology or via M12 socket (in IP20 via clamps).

2 **AS-i address:** AB Slave (max. 62 AB Slaves/AS-i network), 2 AB Slaves (max. 31 modules with 2 AB Slaves), Single Slaves (max. 31 Single Slaves/AS-i network), mixed use allowed (upon request, slaves are available with specific AS- Slave profiles).

Article no.	BWU2270 BWU2370	BWU2689	BWU2284 BWU2369	BWU2814	BWU2631
Connection					
Connection	M12				
Length of connector cable	unlimited		I/O: max. 15 m		
AS-i					
Profile	S-7.B.1, ID1=F		S-7.B.0, ID1=F		S1:S-7.B.0, ID1=F S2: S-7.B.0, ID1=E
Voltage	22 ... 31,6V				
Max. current consumption	60mA		80mA		
AUX					
Voltage	24V (20 ... 30V DC) (PELV)				–
Max. current consumption	4A max.		3A max.		–

Article no.	BWU2270 BWU2370	BWU2689	BWU2284 BWU2369	BWU2814	BWU2631
Input					
Number	2 / 1 safety inputs for OSSDs		2 / 1 safety inputs for floating contacts		4 / 2 safety inputs for floating contacts
Safe input	OSSD		floating contact, switching current static 4mA at 24V, dynamic 15mA at 24V (T = 100µs)	non-equivalent switch	floating contact, switching current static 4mA at 24V, dynamic 15mA at 24V (T = 100µs)
Power supply	out of AUX voltage		out of AS-i voltage		
Input level	V_{in} > 11V for High-Level, Input current > 2,5mA at 15V		10mA, R < 150Ω		
OSSD test pulses	0 ... 50 Hz		–		
OSSD test pulse width	U_{aux} ≥ 21,5V= 0 ... 1 ms test pulses possible U_{aux} ≥ 17V= 0 ... 0,8 ms test pulses possible U_{aux} < 17V= 0 ... 0,6 ms		–		
Start delay	< 22 ms		–		
Output					
Number	2, electronic				–
Power supply	out of AUX voltage				–
Max. output current	1A per output				–
Display					
2x LED (yellow)	state of input OSSD1, OSSD2		state of input S1, S2		state of input S1.1, S1.2
2x LED (yellow)	state of output Out1, Out2	state of output Out2, Out3	state of output Out1, Out2		state of input S2.1, S2.2
LED AUX (green)	24V DC AUX on				–
LED ASI (green)	AS-i voltage on				
LED FLT/FAULT (red)	LED on: AS-i communication error, slave does not participate in the normal exchange of data, e.g. slave address 0 LED flashing: peripheral fault				
Environment					
Applied standards	EN ISO 13 849-1:2008/AC2009: PLe Cat4 EN ISO 13 849-2:2008 EN 62 061:2005 SIL 3 EN 50 295 EN 61 000-6-2 EN 61 000-6-4 EN 61 131-2		EN ISO 13 849-1:2008/AC2009: PLe Cat4 EN ISO 13 849-2:2008 EN 62 061:2005 SIL 3 EN 50 295 EN 61 000-6-2 EN 61 000-6-4		
Operating temperature	0°C ... +55°C				
Storage temperature	-40°C ... +85°C				
Protection class DIN EN 60 529	IP67				
Max. tolerable shock and vibration stress	≤ 15 g, T ≤ 11 ms 10 .. 55 Hz, 0,5 mm amplitude				

AS-i Safety Input Module (M12), IP67

Article no.	AS-i and 24V connection		Safe inputs			Peripheral fault by			Dimensions in mm (W / H / D)
	profile cable	M12	floating	non-equivalent switch	OSSD	cross connection S1 to S2	output overload	AUX voltage missing	
BWU2270	●	–	–	–	●	–	●	●	45 / 80 / 42
BWU2689	●	–	–	–	●	–	●	●	45 / 80 / 42
BWU2284	●	–	●	–	–	●	●	–	45 / 80 / 42
BWU2814	●	–	–	●	–	●	●	–	45 / 80 / 42
BWU2369	–	●	●	–	–	●	●	–	45 / 116,5 / 47,5
BWU2370	–	●	–	–	●	–	●	●	45 / 116,5 / 47,5
BWU2631	●	–	●	–	–	●	–	–	45 / 80 / 42

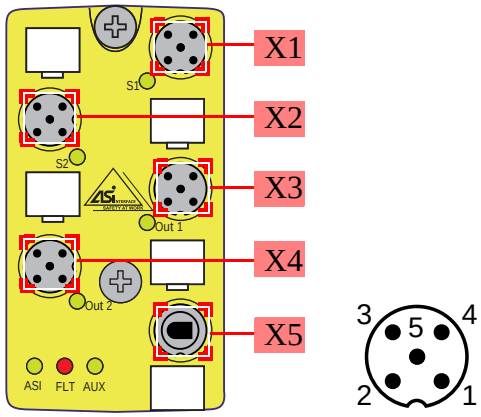
BWU2270, BWU2284, BWU2631, BWU2689 and BWU2814:

The matching substructure modules are available as accessories with two different drilling patterns.

BWU2369 and BWU2370:

They are supplied including mounted substructure modules (no additional profile cable connection possible)

Programming	AS-i Bit setting			
Bit	**D0**	**D1**	**D2**	**D3**
	Safe input			
BWU2284 / BWU2369 / BWU2631	S1	S1	S2	S2
BWU2814	S1	S1	S2 denied	S2 denied
BWU2270 / BWU2370 / BWU2689	OSSD1	OSSD1	OSSD2	OSSD2
	Output			
BWU2270 / BWU2284 / BWU2369 / BWU2370 / BWU2631 / BWU2814	Out 1	Out 2	not used	
BWU2689	not used	Out 2	Out 3	not used
	Parameter bit			
BWU2270 / BWU2370 / BWU2689	P0: watchdog (0 off / 1 on)			
BWU2284 / BWU2631	P0 not used			
BWU2270 / BWU2284 / BWU2370 / BWU2631 / BWU2689	P1, P2, P3 not used			

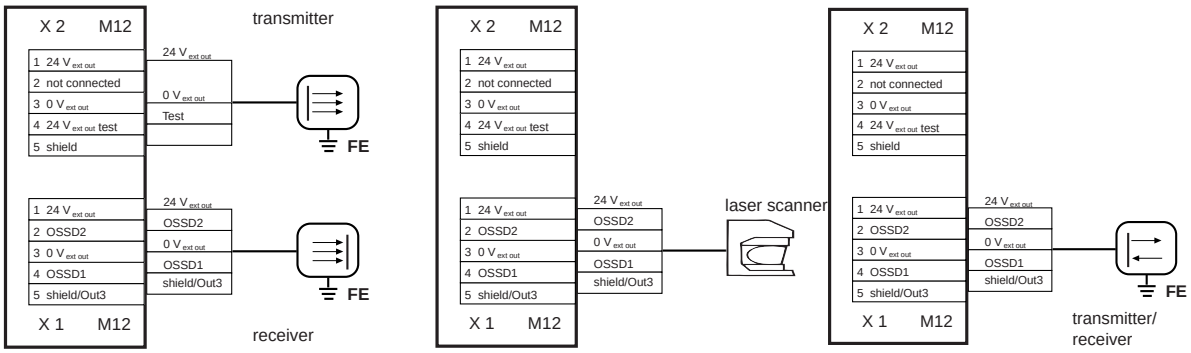


Connections M12										
	BWU2270 / BWU2370					BWU2284 / BWU2369				
Name/ Number	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
X 1	$24V_{ext\ out}$	OSSD2	$0V_{ext\ out}$	OSSD1	shield	S1+	S1-	S2+	S2-	nc
X 2	$24V_{ext\ out}$	nc	$0V_{ext\ out}$	$24V_{ext\ out}$	shield	S2+	S2-	nc	nc	nc
X 3	nc	Out2	$0V_{ext\ out}$	Out1	nc	nc	Out2	$0V_{ext\ out}$	Out1	nc
X 4	nc	nc	$0V_{ext\ out}$	Out2	nc	nc	nc	$0V_{ext\ out}$	Out2	nc
X 5	Addressing socket (with protection cap) (BWU2270)					Addressing socket (with protection cap) (BWU2284)				
	AS-i M12 (BWU2370)					AS-i M12 (BWU2369)				
	AS-i+	$0V_{ext\ in}$	AS-i-	$+24V_{ext\ in}$	nc	AS-i+	$0V_{ext\ in}$	AS-i-	$+24V_{ext\ in}$	nc

Connections M12										
	BWU2631					BWU2689				
Name/ Number	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
X 1	S1.1+	S1.1-	S1.2+	S1.2-	–	$24V_{ext\ out}$	OSSD2	$0V_{ext\ out}$	OSSD1	Out3
X 2	S1.2+	S1.2-	–	–	–	$24V_{ext\ out}$	nc	$0V_{ext\ out}$	$24V_{ext\ out}$	shield
X 3	S2.1+	S2.1-	S2.2+	S2.2-	–	nc	Out2	$0V_{ext\ out}$	nc	nc
X 4	S2.2+	S2.2-	–	–	–	nc	Out3	$0V_{ext\ out}$	Out2	nc
X 5	Double addressing socket (with protection cap) (slave 1: above; slave 2: below)					Addressing socket (with protection cap) (BWU2689)				

BWU2814					
Name/ Number	**1**	**2**	**3**	**4**	**5**
X 1	open		close		nc
	S1+	S1-	S2+	S2-	
X 2	close		nc	nc	nc
	S2+	S2-			
X 3	nc	Out2	$0V_{ext\ out}$	Out1	nc
X 4	nc	nc	$0V_{ext\ out}$	Out2	nc

Connection examples BWU2270, BWU2370, BWU2689



Accessories:

- **AS-i substructure module for 4-channel module in 45 mm-housing (article no. BW2349)**
- **AS-i substructure module (CNOMO) for 4-channel module in 45 mm-housing (article no. BW2350)**
- **Protection caps for not used M12 sockets (article no. BW2368)**