

# Active Distributor ASi-5, IP67, 1 RGB/RGBW LED Stripe

2 x connectors for profile cable

Periphery connection via 1 x round cable/  
connecting wires 0,5 mm<sup>2</sup>

To control 1 x RGB/RGBW LED stripe with  
max. 255 LEDs

Suitable for LED stripes type ws2812b and  
sk6812



(Figure similar)



Figure	Type	Inputs digital	Outputs digital	Input voltage (sensor supply) <sup>(1)</sup>	Output voltage (actuator supply) <sup>(2)</sup>	ASi connection <sup>(3)</sup>	Connection <sup>(4)</sup>	ASi address <sup>(5)</sup>	Special function	Art. no.
	IP67, depth 35 mm	–	1 x RGB/RGBW LED stripe	–	out of AUX (5 V)	ASi profile cable	1 x round cable/ connecting wires 0,5 mm <sup>2</sup>	1 ASi-5 address	To connect RGB/RGBW LED stripe to ASi	<b>BWU4101</b>

- (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.
- (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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<b>Article No.</b>		<b>BWU4101</b>
<b>Connection</b>		
ASi/AUX connection		profile cable and piercing technology
Periphery connection		1 x round cable/connecting wires 0,5 mm <sup>2</sup>
Round cable		0,2 m
		max. allowed tensile strain 10 N
<b>ASi</b>		
Address		1 ASi-5 address
Operating voltage		30 V (18 ... 31.6 V)
As of ASi specification		ASi-5
ASi process data width		7 byte <sup>(1)</sup>
Max. current consumption		35 mA
Max. current consumption without sensor/ actuator supply		35 mA
<b>AUX</b>		
Operating voltage		12 ... 30 V
Max. current consumption		1 A (24 V) / 1,8 A (12 V)
<b>Output</b>		
Number		1 x RGB/RGBW LED stripe
Max. number of LEDs		255
Bytes / LEDs		3 (RGB) or 4 (RGBW)
Actuator supply		5 V out of AUX, short-circuit and overload protected, acc. EN 61131-2
Max. output current	up to +40 °C	2 A out of 5 V
	at +60 °C	1,6 A
	at +70 °C	1,2 A
<b>Display</b>		
LED ASi (green)		on: ASi voltage OK flashing: ASi voltage on, but peripheral fault <sup>(2)</sup> or address 0 off: no ASi voltage
LED FLT/FAULT (red)		on: ASi voltage 0 or ASi node offline flashing: peripheral fault <sup>(1)</sup> off: no ASi voltage
LED AUX (green)		AUX supply OK
LED 5 V (green)		on: 5 V actuator supply on flashing: overload/short circuit off: 5 V actuator supply off
<b>Environment</b>		
Applied standards		EN 61000-6-2 EN 61000-6-3 EN 61131-2 EN 60529
Can be used in passively safe paths up to SIL3/PLe		yes <sup>(3)</sup>
Operating altitude		max. 2000 m
Ambient temperature		-30 °C ... +60 °C <sup>(4)</sup>
Storage temperature		-25 °C ... +85 °C
Housing		plastic, for screw mounting, suitable for cable ducts (≥35 mm installation depth)
Pollution degree		2
Protection category		IP67 <sup>(5)</sup>
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

<sup>(1)</sup> The ASi-5 process data bandwidth depends on the ASi-5 profile. Further selectable profiles can be found in the hardware catalog of the Bihl+Wiedemann Suite or in the configuration manual.

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- (2) see table "Peripheral fault indication"
- (3) The module is suitable for use in passively safe paths because an exclusion of errors can be assumed for the connection of the two potentials, ASi and AUX.
- (4) Down to -25 °C with flexibly mounted cable, -30 °C only with fixed mounted cable.
- (5) Protection category IP67 can only be achieved, if also the cable connector fulfills IP67

Article no.	Peripheral fault indication		
	Overload sensor supply	Output short circuited	AUX voltage missing
BWU4101	-	•	•

## Programming: ASi bit assignment

Profile Nb:	Byte	Bit							
		D7	D6	D5	D4	D3	D2	D1	D0
0x820110 (RGB)	0	RL-DIR	RL-CONT	RL	Flash		Mode	Freeze	
	1	First (UInt8)							
	2	Last (UInt8)							
	3	Red (UInt8)							
	4	Green (UInt8)							
	5	Blue (UInt8)							
0x820111 (RGBW)	0	RL-DIR	RL-CONT	RL	Flash		Mode	Freeze	
	1	First (UInt8)							
	2	Last (UInt8)							
	3	Red (UInt8)							
	4	Green (UInt8)							
	5	Blue (UInt8)							
	6	White (UInt8)							

## Legend


Bit-Name	Values	Meaning
FIRST	0-255	First LED in the range to be activated
LAST	0-255	Last LED in the range to be activated
Red	0-255	Intensity of the red color
Green	0-255	Intensity of the green color
Blue	0-255	Intensity of the blue color
White	0-255	Intensity of the white color
Freeze	0	Apply current color values from the cyclic channel
	1	Freeze current color values
MODE	0	The LEDs in the addressed range change their color value, the rest is off
	1	The LEDs in the addressed range change their color value, the rest stays on the last value
FLASH	00	Continuously lit
	01	Flash 1
	10	Flash 2
	11	Flash 3
RL	0	Running light deactivated
	1	Running light activated; running light of the set RGB values from cyclic channel; other parameters are set acyclically
RL-CONT	0	Running light once only
	1	Continuous running light
RL-DIR	00	Running light direction from first LED forwards
	01	Running light direction from last LED backwards
	10	Running light moves back and forth

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## Pin assignment

Signal	Description
D <sub>out</sub>	Communication to control the individual LEDs on the strip
5 V <sub>ext out</sub>	Power supply, out of external voltage, positive pole (AUX)
0 V <sub>ext out</sub>	Power supply, out of external voltage, negative pole (AUX, acuator supply)
24 V <sub>ext in</sub>	External power supply, input, positive pole
0 V <sub>ext in</sub>	External power supply, input, negative pole
ASi +, ASi -	Connection to ASi bus
n.c. (not connected)	Not connected

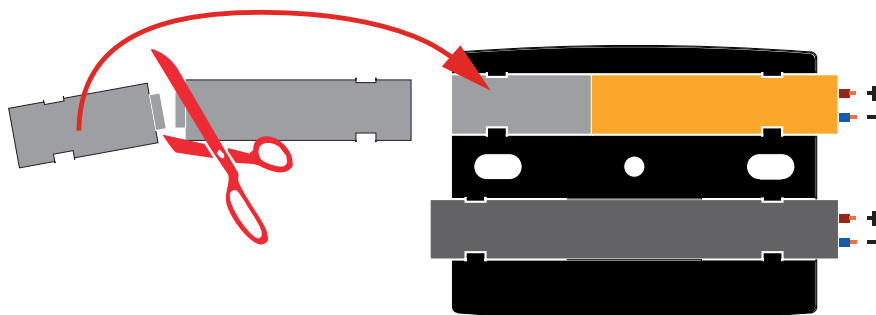
## Connections: round cable/connecting wires 0,5 mm<sup>2</sup>

Artikel Nr.	Anschluss	BN	BU	BK	
BWU4101	X1	5 V <sub>ext out</sub>	D <sub>out</sub>	0 V <sub>ext out</sub>	

## 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. BW4925)