

Cost efficient solution in IP20



(Figure similar)

Figure	Housing	Inputs digital	Outputs digital	Input voltage (sensor supply) ⁽¹⁾	Output voltage (actuator supply) ⁽²⁾	Periphery connection	ASi connection ⁽³⁾	ASi address ⁽⁴⁾	Article No.
	22.5 mm x 114 mm	4 (NPN)	4 x electronic (NPN)	out of AUX	out of AUX	pluggable terminals	pluggable terminals	1 AB address	BW5053

- (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 or via M12 socket (in IP20 via clamps).
- (4) **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 2nd ASi node is turned off as long as the 1st ASi node is addressed to address "0". Upon request, ASi nodes are available with specific ASi node profiles.

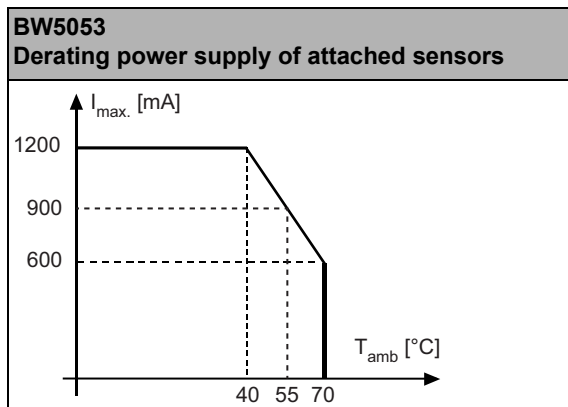
Article no.		BW5053
General data		
Device type		input / output
Connection		
ASi / AUX connection		pluggable terminals ⁽¹⁾
Periphery connection		pluggable terminals ⁽¹⁾
Primary application		control cabinet
Length of connector cable		I/O: unlimited ⁽²⁾
ASi		
Profile		S-7.A.7, ID1=7 (fixed)
Address		1 AB address
Required Master profile		≥M4
Since ASi specification		3.0
Operating voltage		30 V (18 ... 31.6 V)
Max. current consumption		60 mA
Max. current consumption without sensor/ actuator supply		60 mA
AUX		
Voltage		24 V (18 ... 30 V)
Max. current consumption		3,2 A
Input		
Number		4 (NPN)
Power supply		out of AUX
Sensor supply		short-circuit and overload protected according to EN 61131
Power supply of attached sensors	up to +40 °C	1200 mA permanent operation ⁽³⁾
	at +55 °C	900 mA permanent operation ⁽³⁾
	at +70 °C	600 mA permanent operation ⁽³⁾
Switching threshold		ground I+ -U < 5 V (low) -U > 15 V (high)
Output		
Number		4 x electronic (NPN)
Power supply		out of AUX
Actuator supply		short-circuit and overload protected according to EN 61131
Max. output current	up to +40 °C	0,5 A per output, Σ (Out) 2 A
	at +55 °C	
	at +70 °C	
Display		
LED ASI (green)		on: ASi voltage on flashing: ASi voltage on, but peripheral fault ⁽⁴⁾ or address 0 off: no ASi voltage
LED FLT/FAULT (red)		on address 0 or offline flashing: peripheral fault ⁽⁴⁾ off: online
LEDs I1 ... In (yellow)		state of inputs I1 ... I4
LEDs O1 ... On (yellow)		state of outputs O1 ... O4
LED AUX (green)		on: 24 V _{DC} AUX off: no 24 V _{DC} AUX

Article no.	BW5053
Environment	
Applied standards	EN 61000-6-2 EN 61000-6-3 EN 61131 EN 60529
It can be used with a switched AUX cable, which is passively safe up to SIL3/PLe	no ⁽⁵⁾
Operating altitude	max. 2000 m
Ambient temperature	-30 °C ... +70 °C ⁽³⁾ no condensation permitted
Storage temperature	-25 °C ... +85 °C
Housing	plastic, for DIN rail mounting
Pollution Degree	2
Protection category	IP20
Tolerable loading referring to humidity	according to EN 61131-2
Voltage of insulation	≥500 V
Weight	120 g
Dimensions (W / H / D in mm)	22,5 / 114

(1) Not included in the scope of delivery.

(2) Loop resistance ≤150 Ω

(3)



(4) See table "Peripheral fault indication"

(5) 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.

Wiring rules (recommended)

Push-in terminals, 2 /3 /4 poles (pitch 5 mm)	
General	
Nominal cross section	2.5 mm ²
Conductor cross section	
Conductor cross section solid	0.2 ... 2.5 mm ²
Conductor cross section flexible	0.2 ... 2.5 mm ²
Conductor cross section flexible, with ferrule	without plastic sleeve: 0.25 ... 2.5 mm ²
	with plastic sleeve: 0.25 ... 2.5 mm ²
2 conductors with same cross section, stranded, with TWIN ferrules	without plastic sleeve: 0.5 ... 1.5 mm ²
AWG	24 ... 14
Stripped insulation length	10 mm

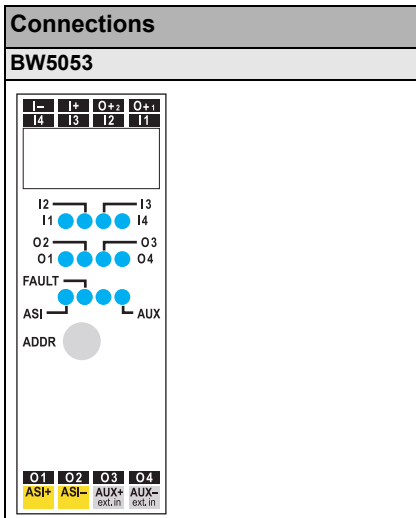
Article no.	Peripheral fault indication	
	Overload sensor supply	AUX voltage missing
BW5053	-	•

Programming	Bit setting			
	D3	D2	D1	D0
	input			
BW5053	I4	I3	I2	I1
	output			
BW5053	O4	O3	O2	O1

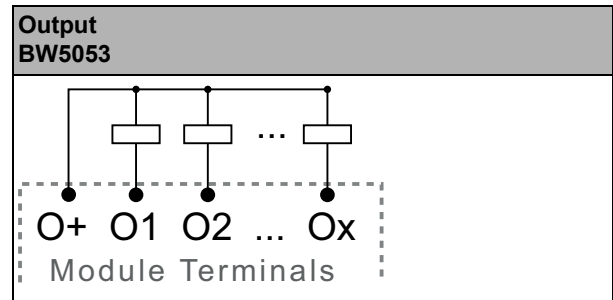
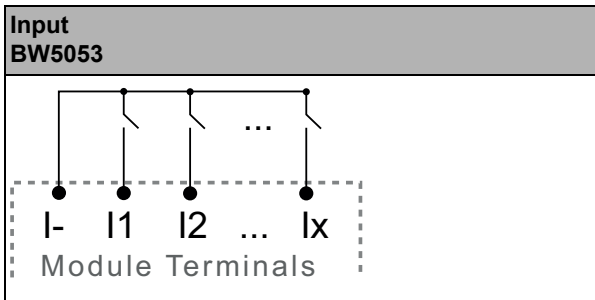
Programming	Bit setting			
	parameter bit			
	P3	P2	P1	P0
BW5053	not used	0 = on / 1 = off (synchronous I/O mode)	0 = on / 1 = off (data input filter 128 µs)	not used, watchdog always on

Connections

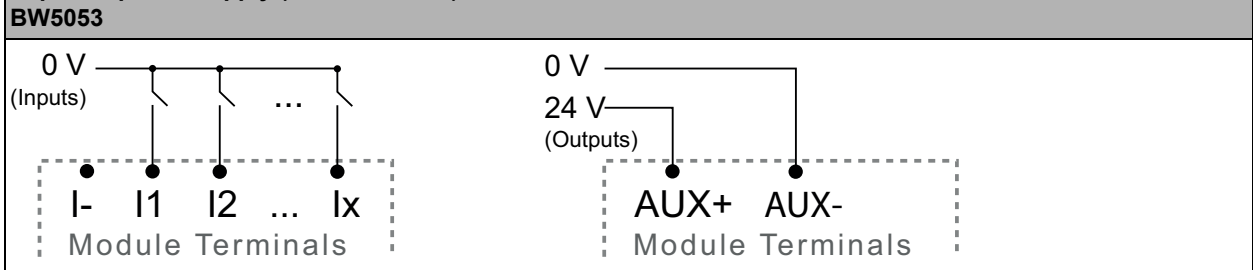
Name	Explanation
I _x	digital input x
O _x	digital output x
I ₊ , I ₋ , I ₊ _n , I ₋ _n	sensor supply
O ₋ _n	GND for outputs (PNP)
O ₊ _n	GND for outputs (NPN)
AUX _{ext.in} ⁺	power supply, out of external voltage, positive pole (AUX, actuator supply)
AUX _{ext.in} ⁻	power supply, out of external voltage, negative pole (AUX, actuator supply)
ASi +, ASi -	connection to ASi bus
ADDR	connection for ASi addressing device
n.c. (not connected)	not connected



Power supply NPN



Separate power supply (recommended)



Accessories:

- ASi-5/ASi-3 Address Programming Device (art. no. BW4925)