Passive distribution box - **BC** series

Description

The new BC series passive distribution box from Pizzato can be used to connect safety devices with 8-pole M12 male connector in series. This makes it possible to group various input/output signals in one single 19-pole or 12-pole connection or with an M23 connector, which is then connected to the control device. Grouping the connections in a single box makes wiring faster and tidier, thereby avoiding the need to lay multiple lines. In addition, it's easier to replace devices if needed. This solution improves power distribution compared to the typical series connection, so more NG/NS series devices can be connected. The BC series distribution box is provided with a strong, compact, sealed housing. It's waterproof and withstands vibrations or shock, and has a diagnostics' LED that shows the state of the connected device.

Main features



Status LED:
Display of the diagnostics output

Protection degree IP67:
Developed for indoor and outdoor industrial applications





Available variants:
- Version with 8 connectors (8 x M12 – 8-pole)
- Version with 4 connectors (4 x M12 – 8-pole)



Various variants for I/O:
- M23 connector
- 19-pole cable (2 x 0.75 mm² + 17 x 0.34 mm²)
- 12-pole cable (12 x 0.5 mm²)

Power and signals:
- Improves the power distribution on connected devices without voltage drops
- Signal for door open and lock/unlock for each connected device

Code structure

BC 1Z4A1A1FSK

Design and material of the housing	
1	Technopolymer housing 54 x 115 mm
2	Technopolymer housing 54 x 152 mm

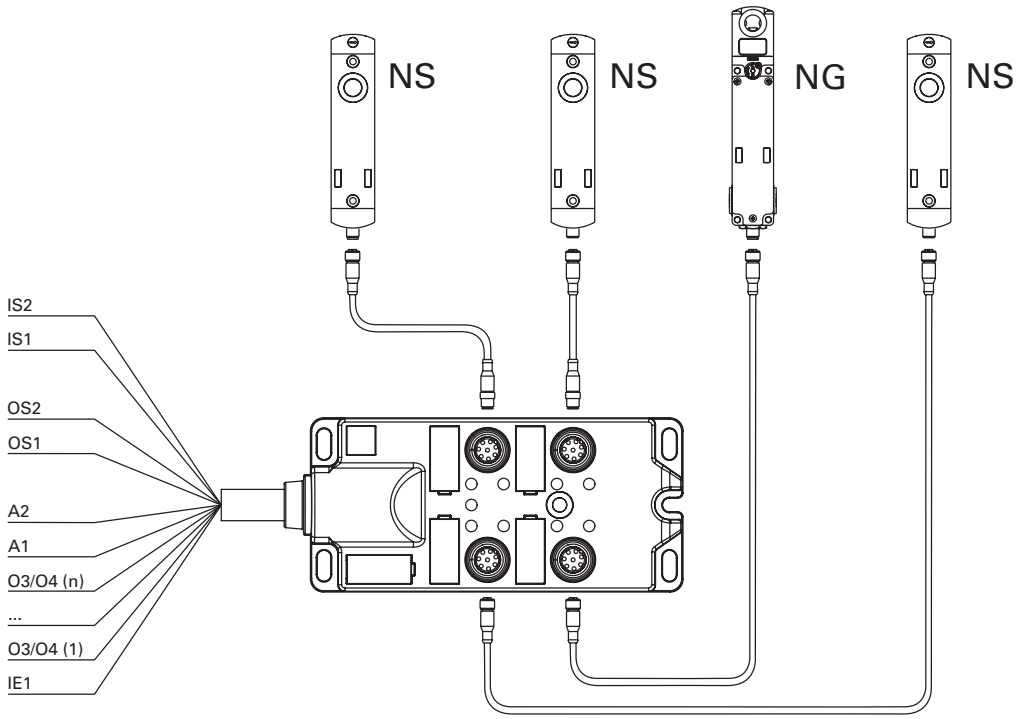
Type and number of inputs	
4A	4 inputs, M12 female connector, 8-pole
8A	8 inputs, M12 female connector, 8-pole

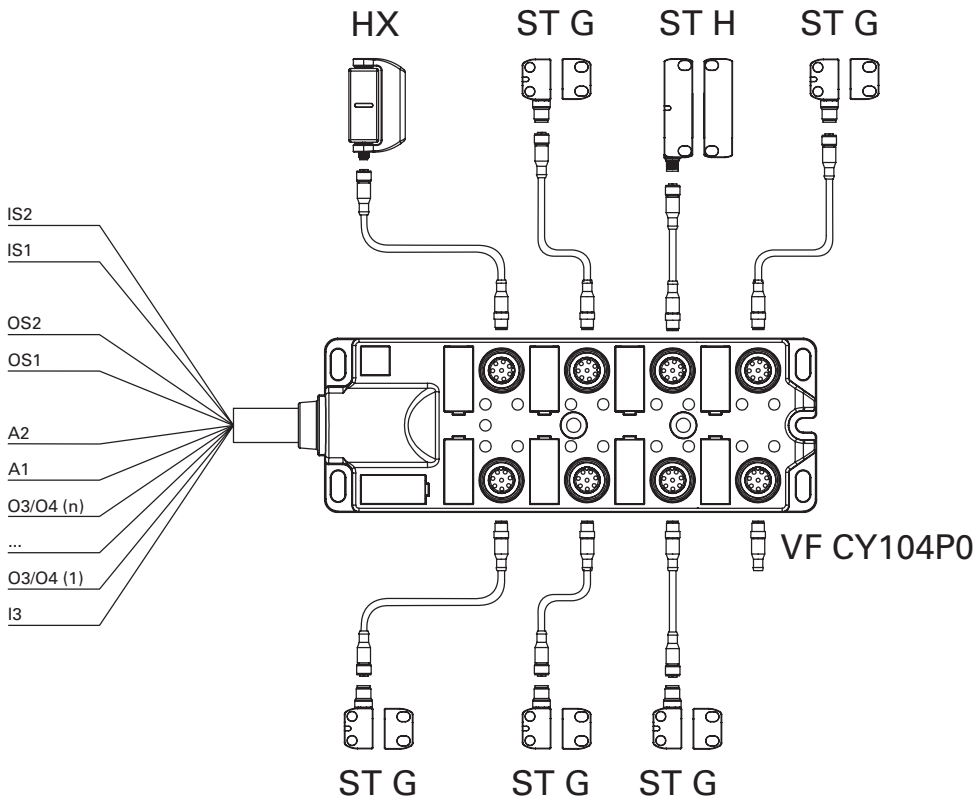
Type of distribution of the input signals on the devices	
1	One common input I3/IE1 for all devices (for versions with 4 or 8 device connections)
2	Independently connected inputs I3/IE1 (only for version with 4 device connections)
3	Independently connected inputs I3/IE1 for 6 devices and one common input for two additional devices (only for version with 8 device connections)

Connection type	
K	Integrated connectors
2	Cable length: 2 m
5	Cable length: 5 m
10	Cable length: 10 m

Direction of the output connection and cable or connector type	
FS	Front output, M23 connector, 12-pole (for BC ••4A•••••• versions only)
FT	Front output, M23 connector, 19-pole (for BC ••8A•••••• versions only)
AF	Axial output, PVC cable, 12 x 0.5 mm² (for BC ••4A•••••• versions only)
AL	Axial output, PVC cable, 2 x 0.75 mm² + 17 x 0.34 mm² (for BC ••8A•••••• versions only)

Connection example for the devices

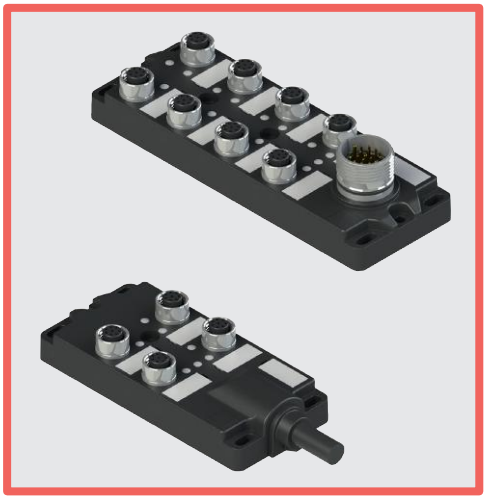




Note: Outputs O3/O4 indicate the "Guard closed" state (O3) for the devices of the ST and HX series, while they indicate the "Guard closed and locked" state (O4) for the devices of the NS and NG series.

Note: A VF CY104P0 bridge connector must be connected on all M12 connectors that are not connected to a device.

Passive distribution box - **BC** series



Main features

- Technopolymer housing
- Protection degree up to IP67
- Various models available for I/O: M23 connector, 19-pole cable, 12-pole cable
- Versions with 4 or 8 M12 connectors available
- Integrated signalling LEDs

Quality marks:

Technical data

Housing
Housing made of glass fibre reinforced technopolymer, self-extinguishing and shock-proof

Protection degree:	IP65 acc. to EN 60529 IP67 acc. to EN 60529

General data

Ambient temperature:	-20°C … +50°C
Storage temperature:	-40°C … +75°C
Tightening torque, body:	2 … 3Nm
Tightening torque, M12 connectors:	0.6 … 0.8 Nm
Tightening torque, M23 connectors:	1 ... 1.5 Nm

General electrical data

Rated operating voltage U_e:	24 Vdc
Rated insulation voltage U_i:	30 Vac / 36 Vdc
External protection fuse:	8 A type gG for connection A1
Maximum operating current M12 connector, 8-pole:	2 A

Electrical data of distribution box with 4 M12 connectors

Maximum operating current with 12-pole cable:	5 A x 0.5 mm² (20 AWG), the currents are per conductor
Maximum operating current M23 connector, 12-pole:	8 A pin 6 and pin 19, 4 A all other pins, currents apply per pin

Electrical data of distribution box with 8 M12 connectors

Maximum operating current with 19-pole cable:	8 A x 0.75 mm² (19 AWG) pink cable, white-pink cable 4 A x 0.34 mm² (22 AWG) all other cables
Maximum operating current M23 connector, 19-pole:	8 A pin 6 and pin 19, 4 A for all other pins

In compliance with standards:
EN 60947-1, EN 60529, EN 61000-6-2, EN 61000-6-3, EN IEC 63000.

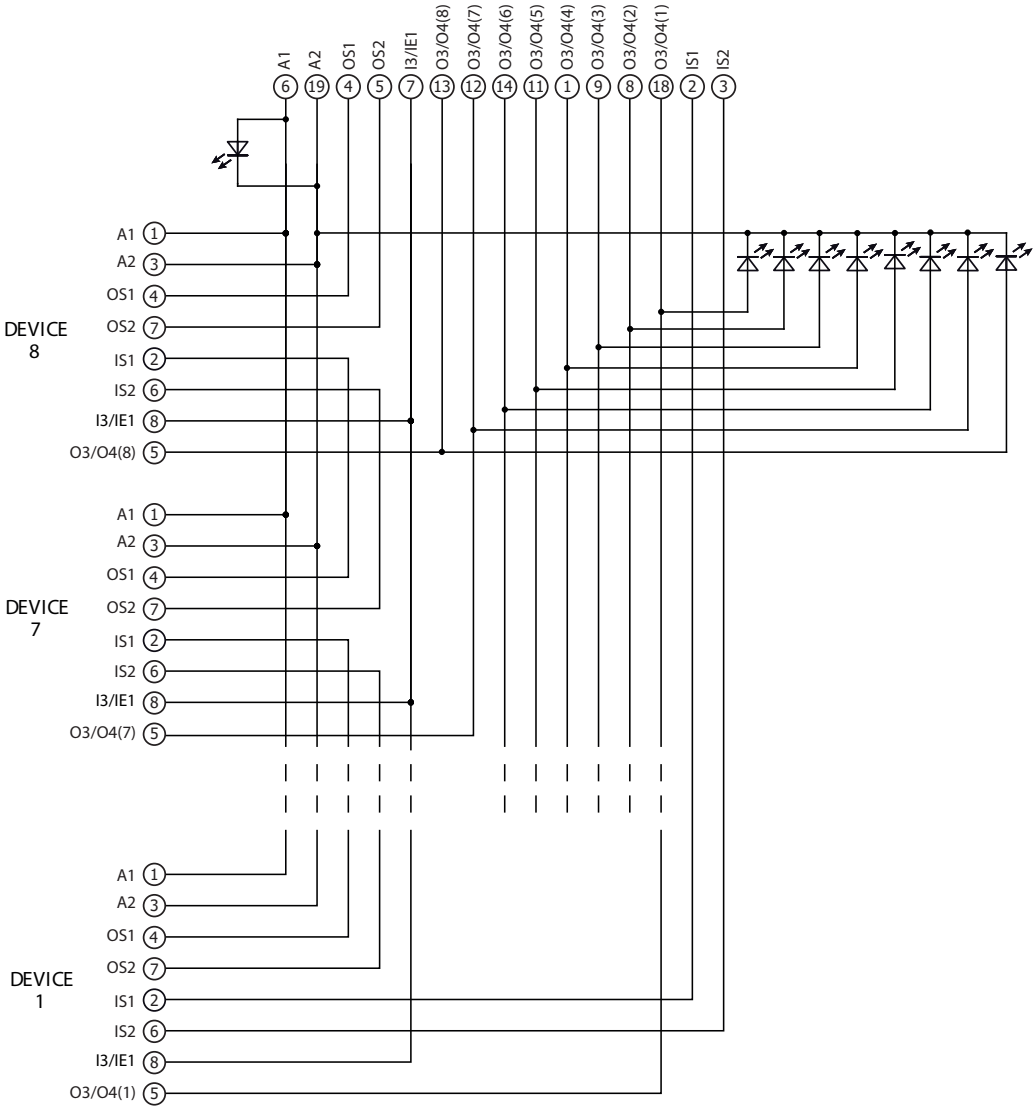
Compliance with the requirements of:
RoHS Directive 2011/65/EU.

Selection table for BC series passive distribution box

	4 devices, M23 connector	4 devices, PVC cable	8 devices, M23 connector	8 devices, PVC cable
				
One common input I3/IE1 for all devices	BC 1Z4A1A1FSK	BC 1Z4A1A1AF•	BC 2Z8A1A1FTK	BC 2Z8A1A1AL•
Independently connected inputs I3/IE1	BC 1Z4A2A1FSK	BC 1Z4A2A1AF•	/	/
Independently connected inputs I3/IE1 for 6 devices and one common input for two additional devices	/	/	BC 2Z8A3A1FTK	BC 2Z8A3A1AL•

Internal device connections

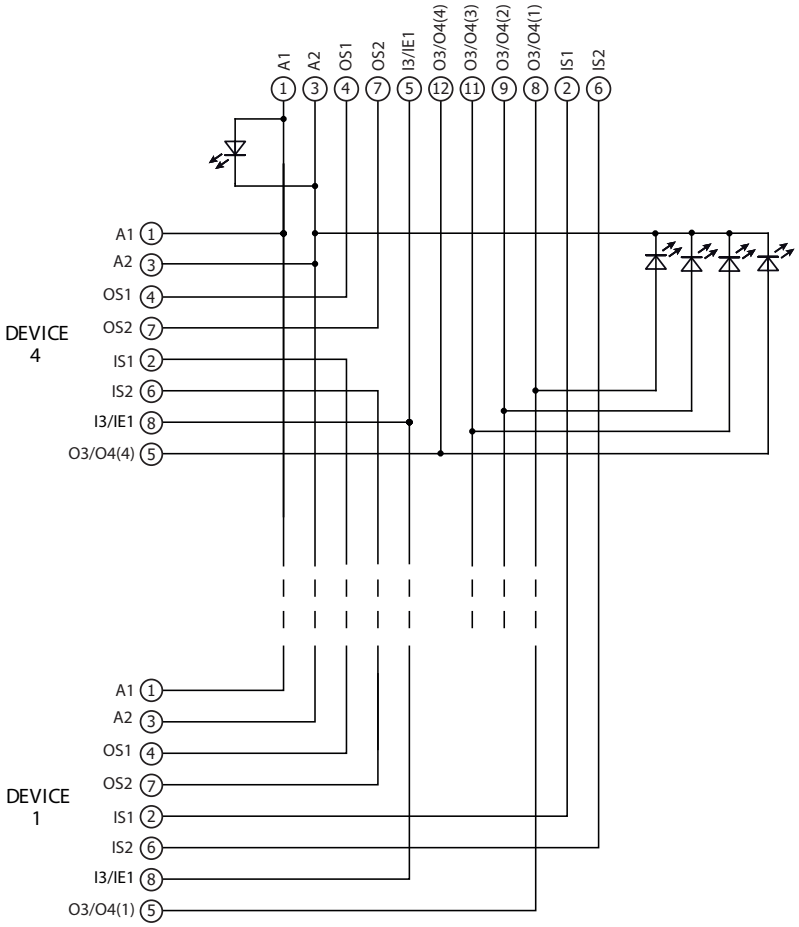
BC 2Z8A1••••



Versions with connector	Versions with cable		
BC 2Z8A••••FTK	BC 2Z8A••••AL•	Connection	
M23 connector, 19-pole	Cable 2x0.75 mm² + 17x0.34 mm²		
1	White	O3/O4 (4)	Signalling output device 4
2	Brown	IS1	Safety input
3	Green	IS2	Safety input
4	Yellow	OS1	Safety output
5	Grey	OS2	Safety output
6	Pink	A1	Supply input +24 Vdc
7	Blue	I3/IE1	Solenoid activation / programming input
8	Red	O3/O4 (2)	Signalling output device 2
9	Black	O3/O4 (3)	Signalling output device 3
10	Purple	n.c.	
11	Grey-Pink	O3/O4 (5)	Signalling output device 5
12	Red-Blue	O3/O4 (7)	Signalling output device 7
13	White-Green	O3/O4 (8)	Signalling output device 8
14	Brown-Green	O3/O4 (6)	Signalling output device 6
15	White-Yellow	n.c.	
16	Yellow-Brown	n.c.	
17	White-Grey	n.c.	
18	Grey-Brown	O3/O4 (1)	Signalling output device 1
19	White - Pink	A2	Supply input 0 V

Internal device connections

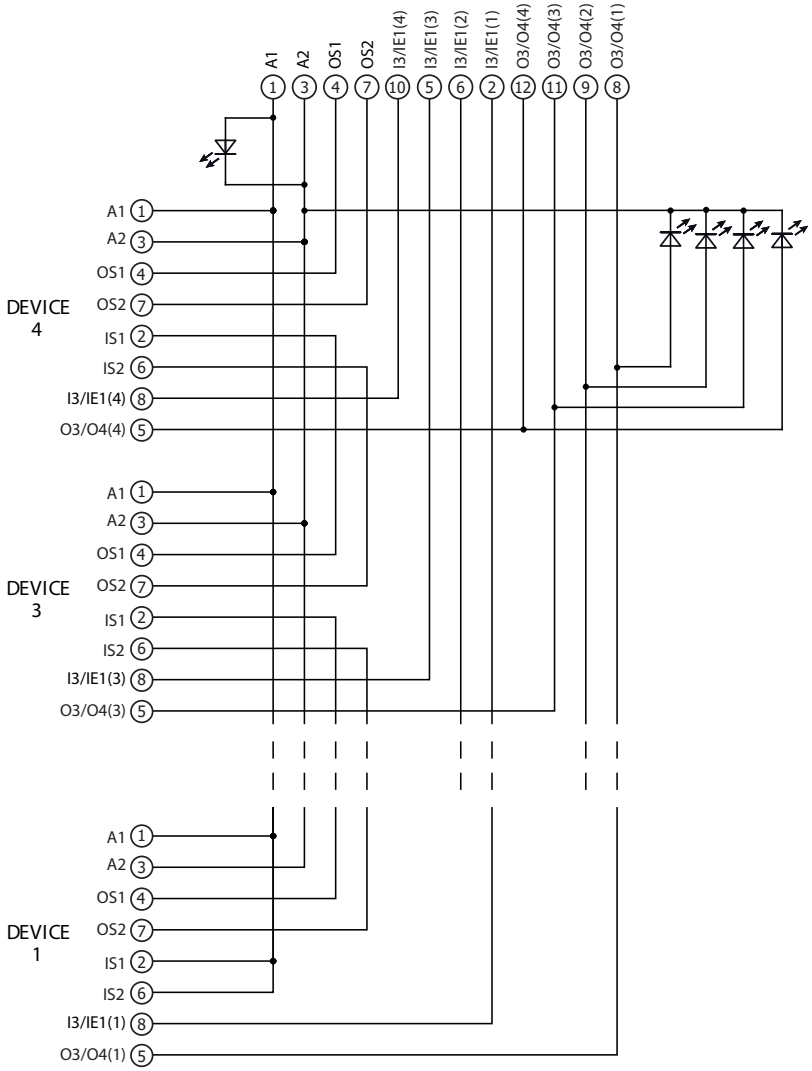
BC 1Z4A1•••••



Versions with connector	Versions with cable		
BC 1Z4A••••FSK	**BC 1Z4A••••AF•**	**Connection**	
M23 connector, 12-pole	**Cable 12x0.5 mm²**		
1	White	A1	Supply input +24 Vdc
2	Brown	IS1	Safety input
3	Green	A2	Supply input 0 V
4	Yellow	OS1	Safety output
5	Grey	I3/IE1	Solenoid activation / programming input
6	Pink	IS2	Safety input
7	Blue	OS2	Safety output
8	Red	O3/O4 (1)	Signalling output device 1
9	Black	O3/O4 (2)	Signalling output device 2
10	Purple	n.c.	
11	Grey-Pink	O3/O4 (3)	Signalling output device 3
12	Red-Blue	O3/O4 (4)	Signalling output device 4

Internal device connections

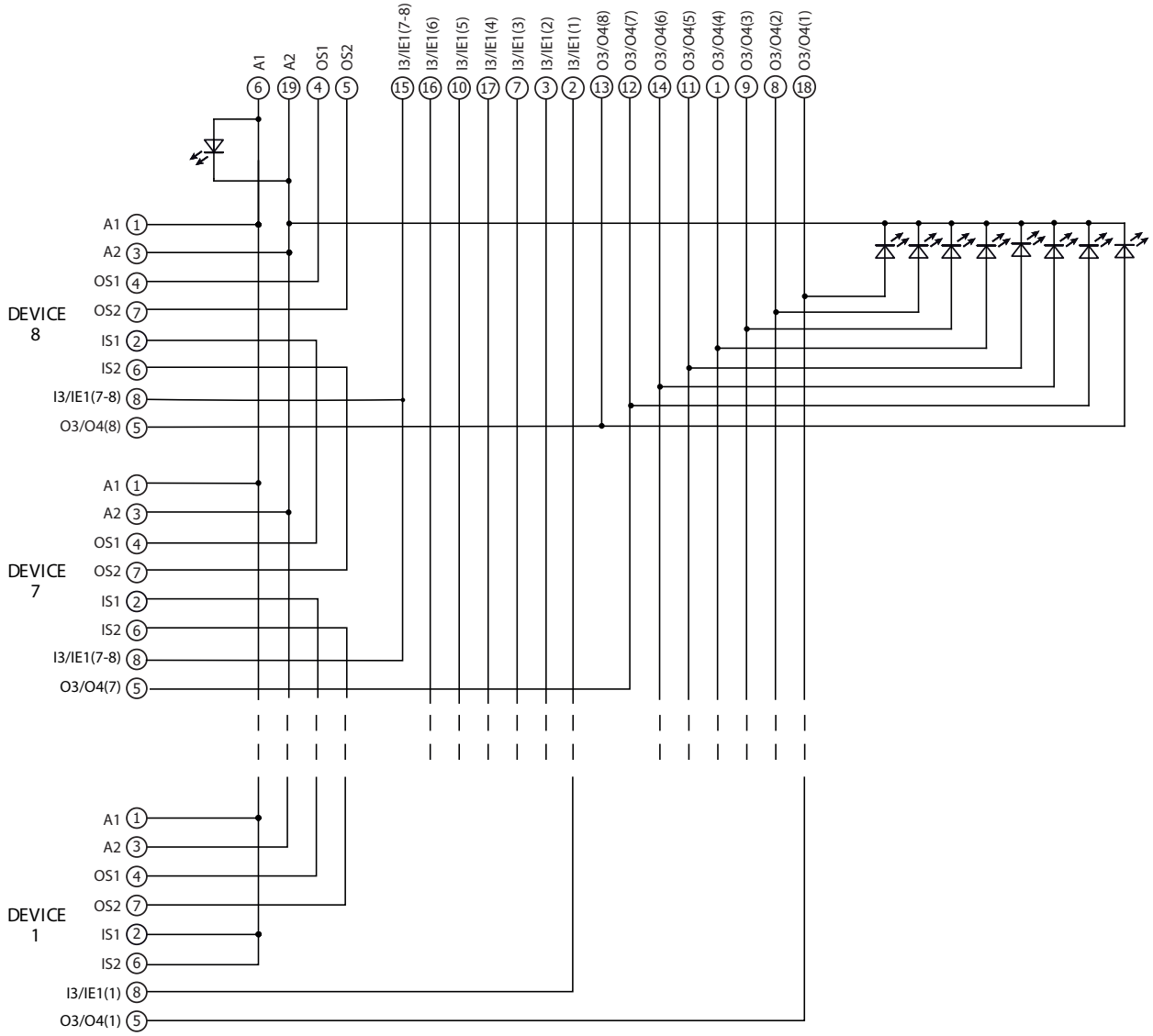
BC 1Z4A2•••••



Versions with connector	Versions with cable		
BC 1Z4A••••FSK	**BC 1Z4A••••AF•**	**Connection**	
M23 connector, 12-pole	**Cable 12x0.5 mm²**		
1	White	A1	Supply input +24 Vdc
2	Brown	I3/IE1 (1)	Solenoid activation / programming input (1)
3	Green	A2	Supply input 0 V
4	Yellow	OS1	Safety output
5	Grey	I3/IE1 (3)	Solenoid activation / programming input (3)
6	Pink	I3/IE1 (2)	Solenoid activation / programming input (2)
7	Blue	OS2	Safety output
8	Red	O3/O4 (1)	Signalling output device 1
9	Black	O3/O4 (2)	Signalling output device 2
10	Purple	I3/IE1 (4)	Solenoid activation / programming input (4)
11	Grey-Pink	O3/O4 (3)	Signalling output device 3
12	Red-Blue	O3/O4 (4)	Signalling output device 4

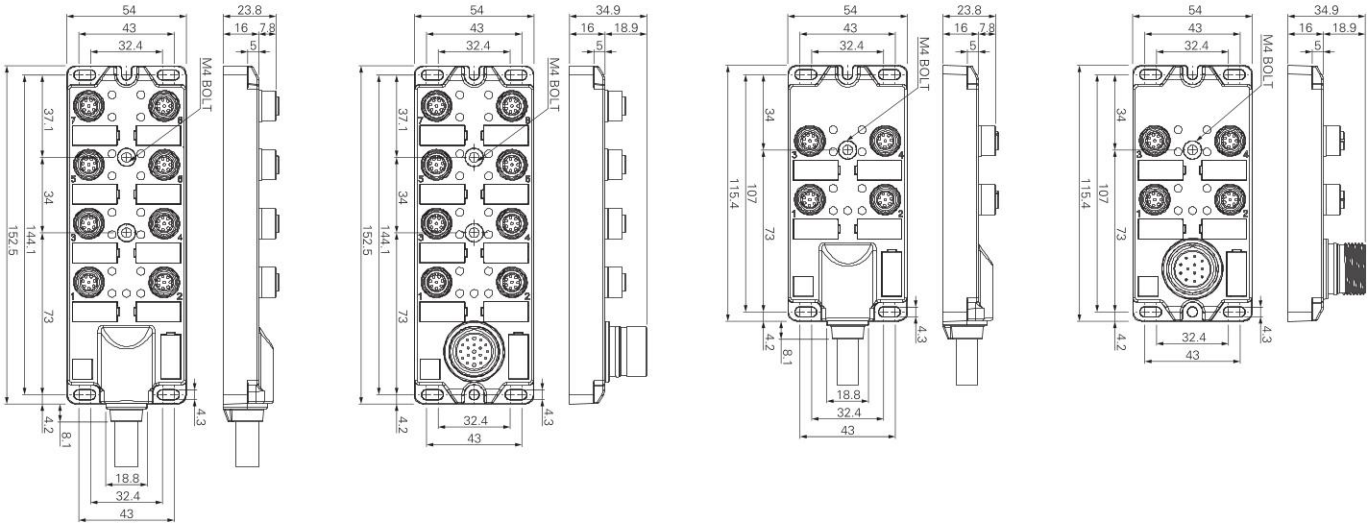
Internal device connections

BC 2Z8A3•••••



Versions with connector	Versions with cable		
BC 2Z8A••••FTK	BC 2Z8A••••AL•	Connection	
M23 connector, 19-pole	Cable 2x0.75 mm² + 17x0.34 mm²		
1	White	O3/O4 (4)	Signalling output device 4
2	Brown	I3/IE1 (1)	Solenoid activation / programming input (1)
3	Green	I3/IE1 (2)	Solenoid activation / programming input (2)
4	Yellow	OS1	Safety output
5	Grey	OS2	Safety output
6	Pink	A1	Supply input +24 Vdc
7	Blue	I3/IE1 (3)	Solenoid activation / programming input (3)
8	Red	O3/O4 (2)	Signalling output device 2
9	Black	O3/O4 (3)	Signalling output device 3
10	Purple	I3/IE1 (5)	Solenoid activation / programming input (5)
11	Grey-Pink	O3/O4 (5)	Signalling output device 5
12	Red-Blue	O3/O4 (7)	Signalling output device 7
13	White-Green	O3/O4 (8)	Signalling output device 8
14	Brown-Green	O3/O4 (6)	Signalling output device 6
15	White-Yellow	I3/IE1 (7-8)	Solenoid activation / programming input (7-8)
16	Yellow-Brown	I3/IE1 (6)	Solenoid activation / programming input (6)
17	White-Grey	I3/IE1 (4)	Solenoid activation / programming input (4)
18	Grey-Brown	O3/O4 (1)	Signalling output device 1
19	White - Pink	A2	Supply input 0 V

Dimensional drawings



All values in the drawings are in mm

Accessories

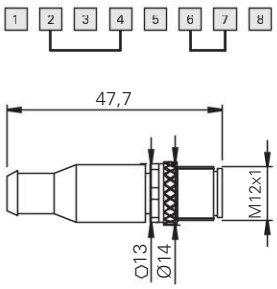
Male bridge connector, M12



Features:

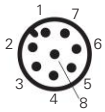
- M12 male connector without cable, with internal jumpers for plugging into the unused M12 sockets of the distribution box.
- Polyurethane connector body
- Gold-plated contacts
- Anti-vibration self-locking ring nut

Internal wiring diagram



Pin assignment

8-pole male



Max. operating voltage:	250 Vac / 300 Vdc
Max. operating current:	2 A
Protection degree:	IP67 acc. to EN 60529
Tightening torque of the ring:	0.6 … 0.8 Nm

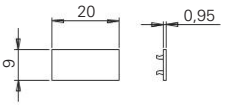
Article	Description
VF CY104P0	M12 terminating plug for series connections, for 8-pole M12 female connector

Note: Unused pins may not be present.

ATTENTION: always disconnect the power supply before removing the connector.

White label





Article	Description
AC 6309	White label made of polyamide PA66 (packs of 200 pcs).
AC 6310	White label made of polyamide PA66 (packs of 40 pcs).

Note: Connection cables between distribution box and devices can be found in various lengths in the chapter Accessories on page 365.