



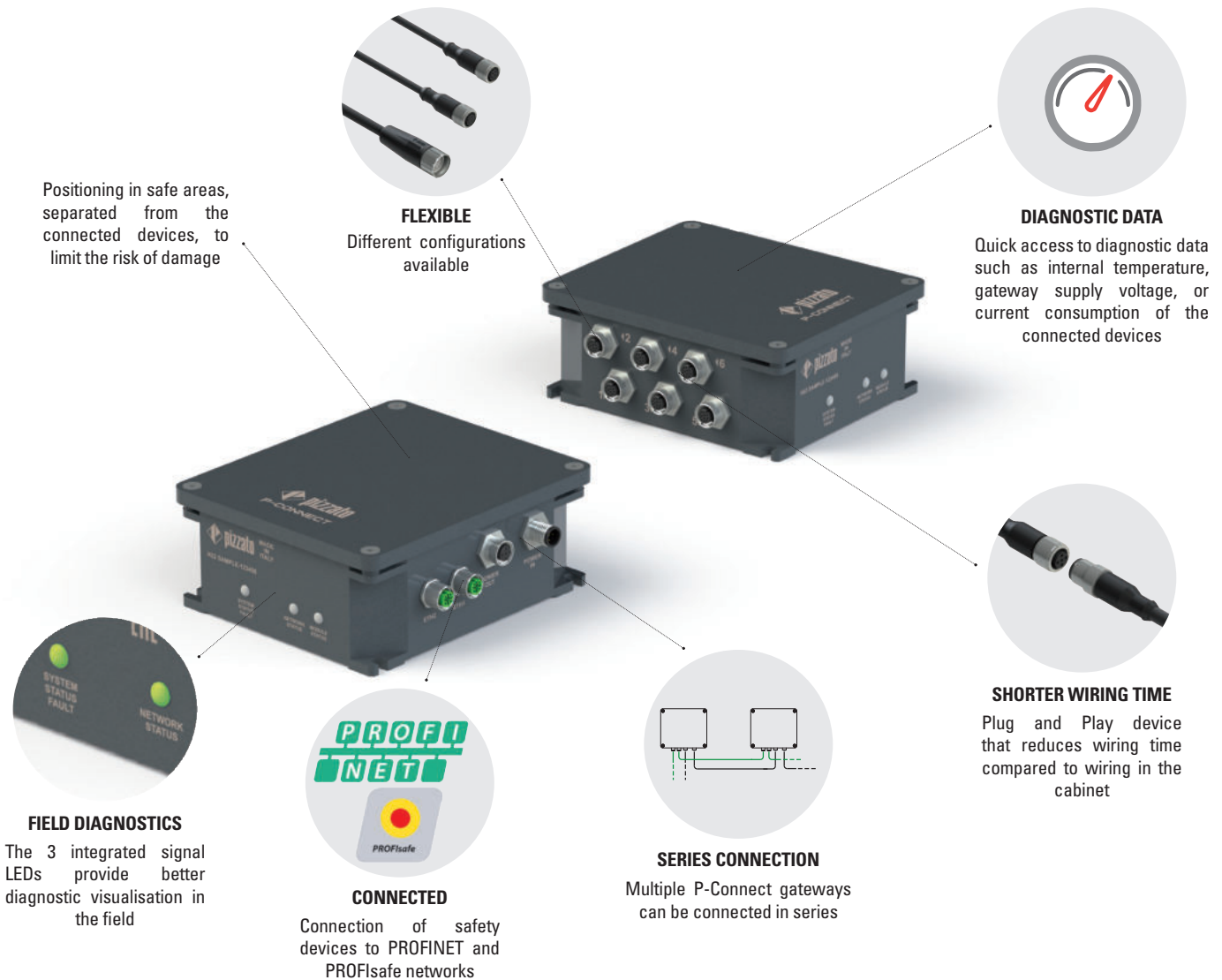
P-Connect connection gateway for safety devices



P-Connect connection gateway for safety devices

Description

The P-Connect connection gateway is a system that allows up to six (6) devices to be connected to a data network. Safety information is exchanged via PROFIsafe extensions. Based on the configurations, the gateway can transmit signals from two NG or NS series RFID safety switches with lock. The connection is performed safely using PROFIsafe standards. Furthermore, the P-Connect gateway can be connected to a number of devices available in the Pizzato Elettrica catalogue. These include the BN series modular control device units, and AN series handles with integrated signalling LED.



Code structure

BP A1PL2001

Communication protocol		Input configuration	
P	PROFIsafe (PROFINET)	001	Configuration 001
Power supply connector		002	Configuration 002
2	1 x M12 5-pole male connector + 1 x M12 5-pole female connector	003	Configuration 003
		...	Other configurations on request

→ The 2D and 3D files are available at www.pizzato.com



Main features

- Aluminium housing
- Protection degree IP65
- Operating temperature -15°C ... +50°C
- 3 LEDs integrated in the device for status indication
- Devices can be connected in series

Quality marks:



EC-type examination certificate: Pending
 TÜV SÜD approval: Pending
 UL approval: Pending
 PROFINET/PROFIsafe approval: Pending

Functions performed by P-Connect:

- Transmission of digital signals from connected devices to PROFINET and PROFIsafe communication busses
- Device power supply
- Overvoltage, overcurrent and temperature monitoring

Communication protocol

PROFIsafe acc. to IEC 61784-3-3
 PROFINET acc. to IEC 61158 and IEC 61784

Safety bits:

- OSSD outputs of the connected devices

Signalling bits:

- Unsafe inputs and outputs of the connected devices
- Bits for overvoltage, overcurrent, and temperature

Technical data

Aluminium housing, baked powder coating.
 Protection degree:

IP65 acc. to EN 60529
 with connectors of equal or higher protection degree

General data

Operating temperature: -15°C ... +50°C
 Storage temperature: -30°C ... +70°C
 Pollution degree: 2
 Overvoltage category: III

Power supply electrical data

Rated voltage (U_n): 24 Vdc SELV/PELV
 Supply voltage tolerance: ±15%
 Operating current at U_n voltage
 - no devices connected: 0.1 A
 - maximum current supported: 3.3 A
 Insulation voltage U_i : 32 V
 Shock and vibration resistance: acc. to EN 60947-1
 EMC protection: acc. to EN 61000-4 e EN 61326-3-1

Input and output circuits

Number of safety inputs: 3 dual channel
 (or 6 single channel)
 Number of safety outputs: 1 dual channel
 (or 2 single channel)
 Number of unsafe inputs: 14
 Number of unsafe outputs: 24
 Number of test outputs: 2
 Maximum voltage at unsafe inputs: 24 Vdc
 Voltage at unsafe outputs: 24 Vdc
 Maximum control current at unsafe output: 50 mA
 Maximum current at test outputs: 100 mA
 Maximum current at unsafe outputs: 500 mA

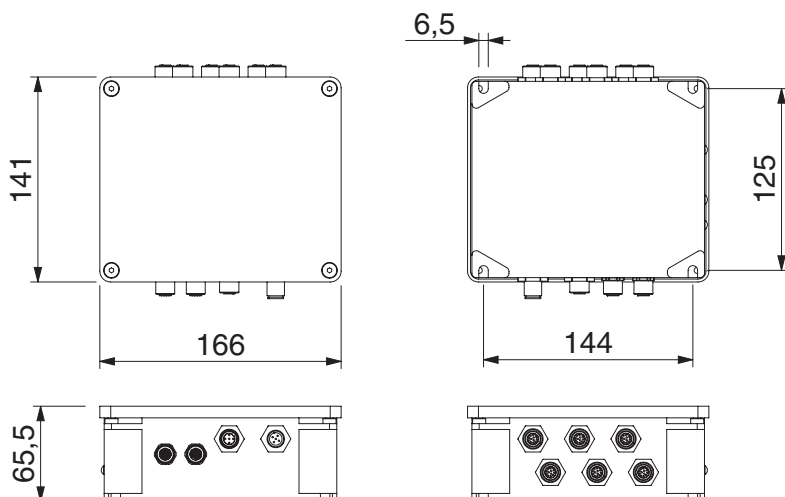
In compliance with standards:

EN 60947-1, EN 61326-1, EN 61326-3-1, UL 508, CSA C22.2 n° 14, EN IEC 63000, EN 60529, IEC 61784-3-3, EN 61508, EN 62061, EN ISO 13849-1, EN 61131-2.

Compliance with the requirements of:

Machinery Directive 2006/42/EC, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.

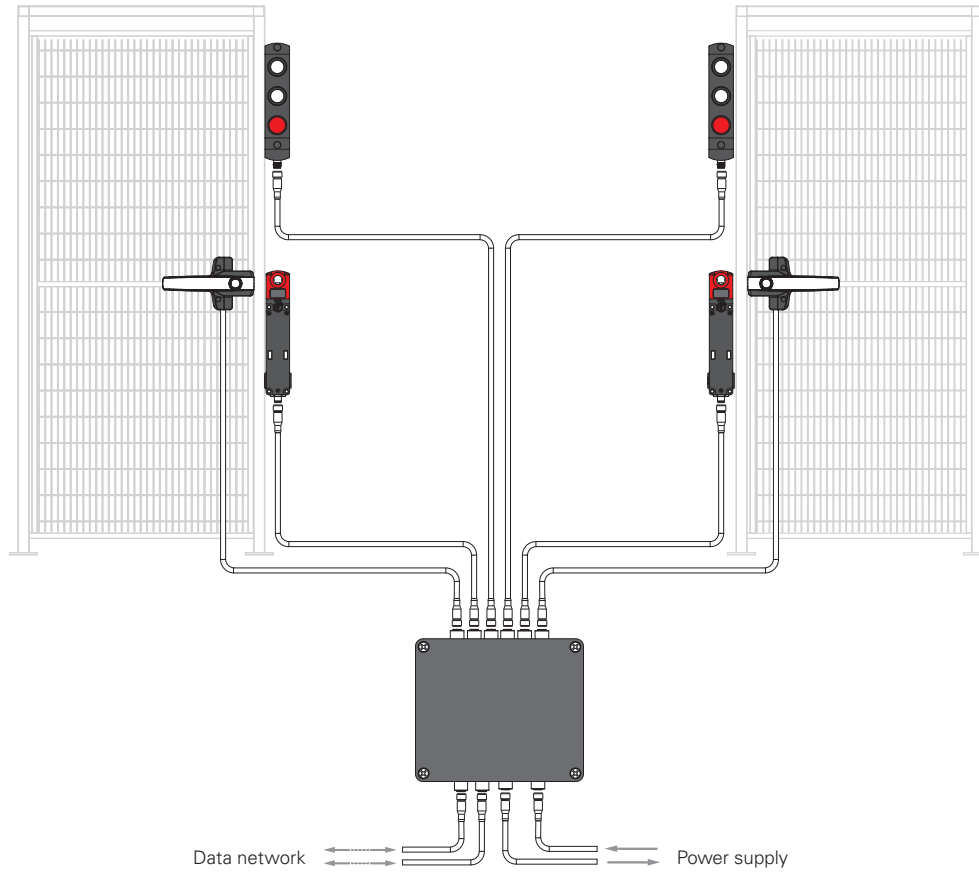
Dimensional drawings



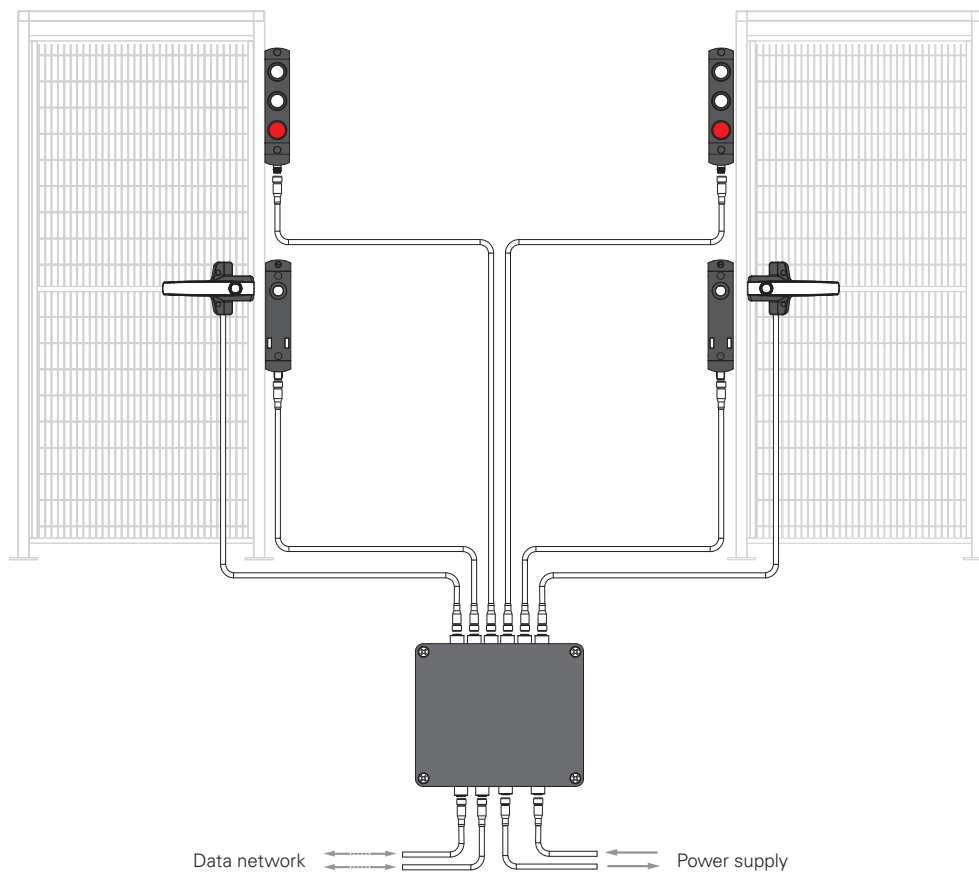
All values in the drawings are in mm

BP A1PL2001

Solution with NG series switches, P-KUBE Krome safety handle and BN series control device units



Solution with NS series switches, P-KUBE Krome safety handle and BN series control device units







Note: the position of the connectors in the diagram is for illustrative purposes only.



Functional safety

Safety parameters	SIL	PL	Cat.
Monitoring function for the safety outputs	3	e	4
Locking function of the single channel actuator	2	d	2

Device combinations for safety solutions

	Description	Quantity	For NG series switches	For NS series switches
			Article number	Article number
	RFID safety switch with lock, with separate actuator	2	NG ●●●●311A-F3●K958 ⁽¹⁾ NG ●●●●321A-F3●K958 ⁽¹⁾ NG ●●●●411A-F3●K958 ⁽¹⁾ NG ●●●●421A-F3●K958 ⁽¹⁾ NG ●●●●311B-F3●K958 ⁽¹⁾ NG ●●●●321B-F3●K958 ⁽¹⁾ NG ●●●●411B-F3●K958 ⁽¹⁾ NG ●●●●421B-F3●K958 ⁽¹⁾	NS ●3●●●●P●-F4● ⁽¹⁾ NS ●4●●●●P●-F4● ⁽¹⁾
	P-Connect connection box	1	BP A1PL2001	BP A1PL2001
	P-KUBE Krome safety handle with illuminated white grip with control device	2	AN G1B00●●-PM● ^{(1) (2)}	AN S1B00●●-PM● ^{(1) (2)}
	BN series control device unit with 3 control devices	2	BN AC3Z●●● ^{(1) (3)}	BN AC3Z●●● ^{(1) (3)}

Notes:









⁽¹⁾ For the configurations, see the General Catalogue Safety, or contact technical assistance.

⁽²⁾ Only configurations with M12 8-pole connector.

⁽³⁾ Only configurations with two non-illuminated devices with 1NO or 1NC, an emergency stop button 2NC, with M12 8-pole connector.

⚠ Attention: The articles listed above correspond to the maximum configuration that can be realised with the P-Connect connection gateway. Solutions with fewer devices can be implemented. If devices with emergency stop buttons are removed, the internal dip switches must be set accordingly to correctly configure the internal electronics of the connection system.

Connections

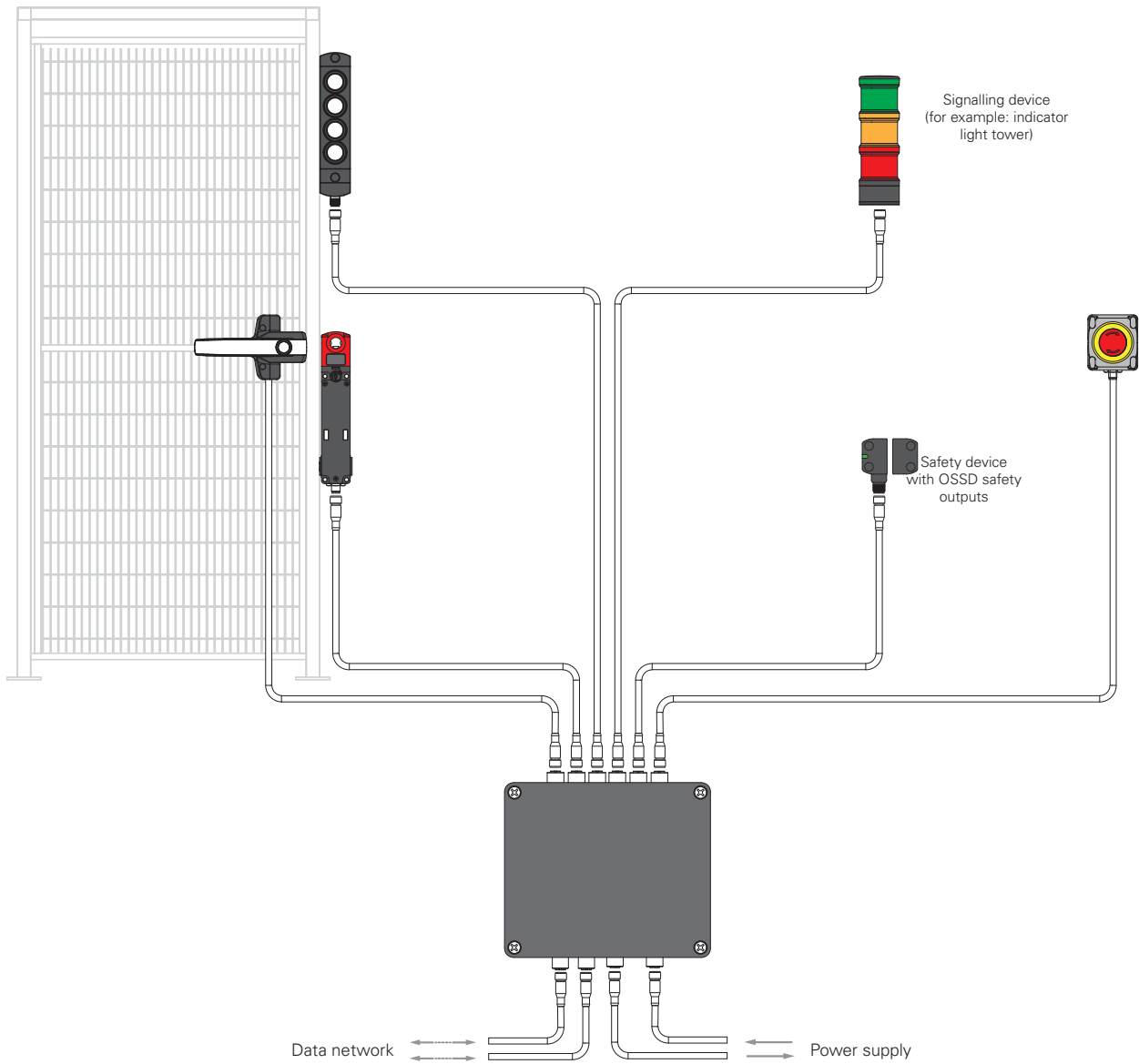
Article	Power supply ports	Network ports	Device inputs					
BP A1PL2001	 2 x M12, 5-pole	 2 x M12, 4-pole, D-coded	 M12, 8-pole	 M12, 8-pole	 M12, 8-pole	 M12, 8-pole	 M12, 8-pole	 M12, 8-pole

Cables with connectors available

Article	Description
VF CA5●●●M	M12 female connectors with cable, 5-pole
VF CA5●●●M-MD	M12 extension cables, 5-pole
VF CA8●●●M-MD	M12 extension cables, 8-pole

BP A1PL2002

Solutions with NG series switch, P-KUBE Krome safety handle, BN series control device unit, signalling device, safety device with OSSD safety outputs and control device unit including emergency stop



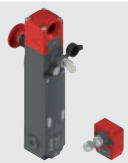






Note: the position of the connectors in the diagram is for illustrative purposes only.



Functional safety

Safety parameters	SIL	PL	Cat.
Monitoring function for the safety outputs	3	e	4
Locking function of the dual channel actuator	3	e	4

Device combinations for safety solutions

	Description	Quantity	Article number
	RFID safety switch with lock, with separate actuator, NG series	1	NG ●●●311A-F3●K958 ⁽¹⁾ NG ●●●311B-F3●K958 ⁽¹⁾ NG ●●●321A-F3●K958 ⁽¹⁾ NG ●●●321B-F3●K958 ⁽¹⁾ NG ●●●411A-F3●K958 ⁽¹⁾ NG ●●●411B-F3●K958 ⁽¹⁾ NG ●●●421A-F3●K958 ⁽¹⁾ NG ●●●421B-F3●K958 ⁽¹⁾
	Safety device with OSSD safety outputs, at the user's discretion	1	Check that the electrical connections of the chosen device are compatible with the diagrams shown in the paragraph "Pin assignments of usable devices"
	P-Connect connection box	1	BP A1PL2002
	BN series control device unit with 4 control devices	1	BN AC4Z●●● ^{(1) (2)}
	Signalling device chosen by the user (for example: indicator light tower)	1	Check that the electrical connections of the chosen device are compatible with the diagrams shown in the paragraph "Pin assignments of usable devices"
	P-KUBE Krome safety handle with illuminated white grip with control device	1	AN G1B00●●-PM● ^{(1) (3)}
	Control device unit including emergency stop and luminous disc for signalling	1	ES AC31●●● ^{(1) (3)}

Notes:

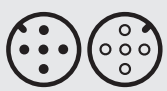







⁽¹⁾ For the configurations, see the General Catalogue Safety, or contact technical assistance.

⁽²⁾ Only configurations with four buttons 1NO + LED, M12 12-pole connector.

⁽³⁾ Only configurations with M12 8-pole connector.

⚠ Attention: The articles listed above correspond to the maximum configuration that can be realised with the P-Connect connection gateway. Solutions with fewer devices can be implemented. If devices with emergency stop buttons are removed, the internal dip switches must be set accordingly to correctly configure the internal electronics of the connection system.

Connections

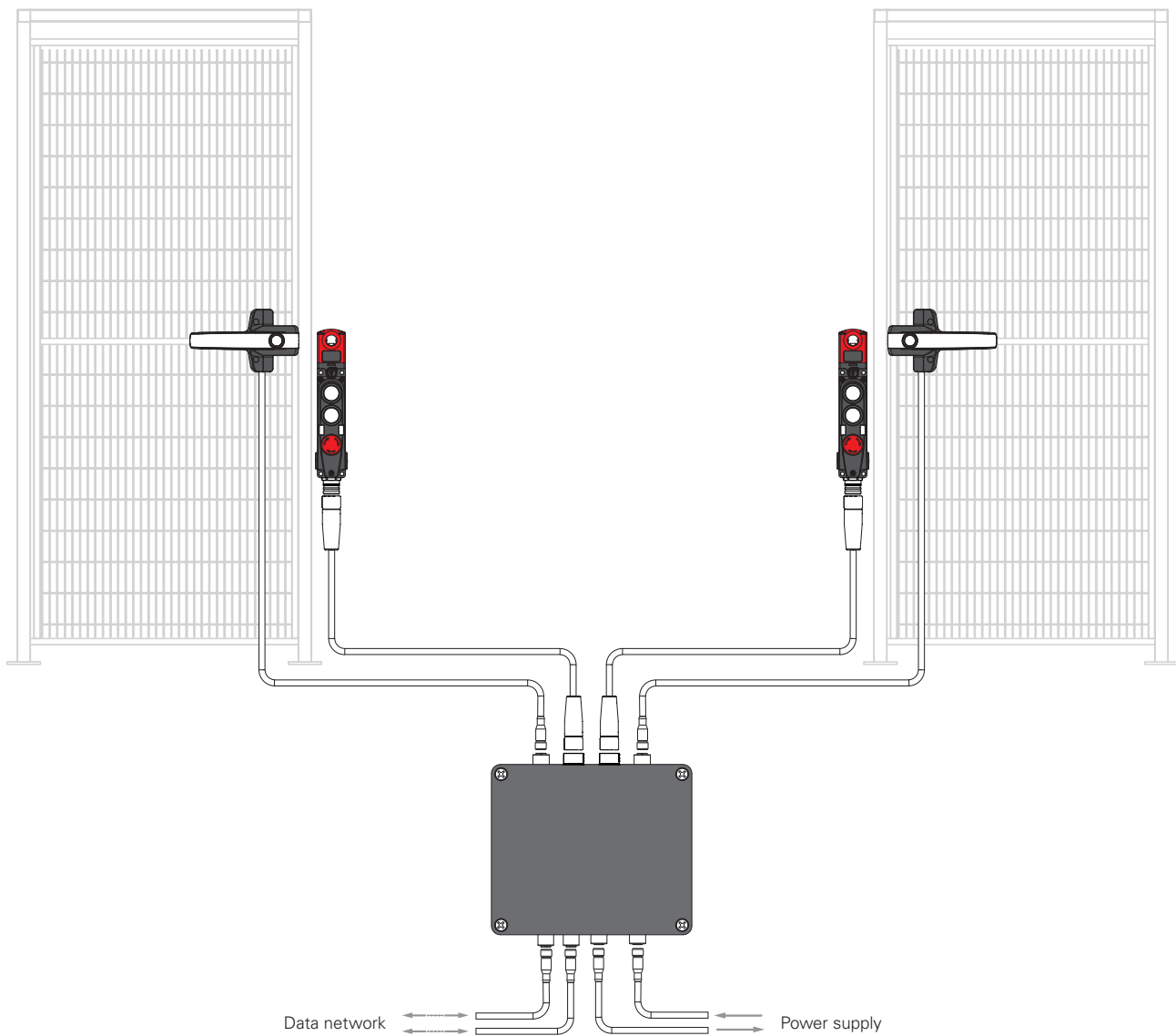
Article	Power supply ports	Network ports	Device inputs					
BP A1PL2002	 2 x M12, 5-pole	 2 x M12, 4-pole, D-coded	 M12, 8-pole	 M12, 8-pole	 M12, 12-pole	 M12, 8-pole	 M12, 8-pole	 M12, 8-pole

Cables with connectors available

Article	Description
VF CF●●●●M	M12 male connectors with cable, 5-pole
VF CA5●●●M	M12 female connectors with cable, 5-pole
VF CA5●●●M-MD	M12 extension cable, 5-pole
VF CA8●●●M-MD	M12 extension cable, 8-pole
VF CA12●●●M-MD	M12 extension cable, 12-pole

BP A1PL2003

Solution with NG series switches and P-KUBE Krome safety handles



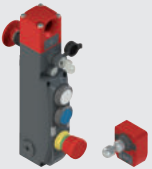


Note: the position of the connectors in the diagram is for illustrative purposes only.



Functional safety

Safety parameters	SIL	PL	Cat.
Monitoring function for the safety outputs	3	e	4
Locking function of the single channel actuator	2	d	2

Device combinations for safety solutions

	Description	Quantity	Article number
	RFID safety switch with lock, with integrated control devices, with separate actuator, NG series	2	NG ●●●311C-F3•K60● ⁽¹⁾ NG ●●●312V-F3•K60● ⁽¹⁾ NG ●●●321C-F3•K60● ⁽¹⁾ NG ●●●322V-F3•K60● ⁽¹⁾ NG ●●●411C-F3•K60● ⁽¹⁾ NG ●●●412V-F3•K60● ⁽¹⁾ NG ●●●421C-F3•K60● ⁽¹⁾ NG ●●●422V-F3•K60● ⁽¹⁾ NG ●●●311D-F3•K60● ⁽¹⁾ NG ●●●315R-F3•K60● ⁽¹⁾ NG ●●●321D-F3•K60● ⁽¹⁾ NG ●●●325R-F3•K60● ⁽¹⁾ NG ●●●411D-F3•K60● ⁽¹⁾ NG ●●●415R-F3•K60● ⁽¹⁾ NG ●●●421D-F3•K60● ⁽¹⁾ NG ●●●425R-F3•K60● ⁽¹⁾
	P-Connect connection box	1	BP A1PL2003
	P-KUBE Krome safety handle with illuminated white grip with control device	2	AN G1B00●●-PM● ^{(1) (2)}







Notes:

⁽¹⁾ For the configurations, see the General Catalogue Safety, or contact technical assistance.

⁽²⁾ Only configurations with M12 8-pole connector.

⚠ Attention: The articles listed above correspond to the maximum configuration that can be realised with the P-Connect connection gateway. Solutions with fewer devices can be implemented. If devices with emergency stop buttons are removed, the internal dip switches must be set accordingly to correctly configure the internal electronics of the connection system.

Connections

Article	Power supply ports	Network ports	Device inputs
BP A1PL2003	 2 x M12, 5-pole	 2 x M12, 4-pole, D-coded	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  1 M23, 19-pole </div> <div style="text-align: center;">  2 M23, 19-pole </div> <div style="text-align: center;">  3 M12, 8-pole </div> <div style="text-align: center;">  4 M12, 8-pole </div> </div>

Cables with connectors available

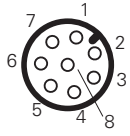
Article	Description
VF CA5●●●M	M12 female connectors with cable, 5-pole
VF CA5●●●M-MD	M12 extension cable, 5-pole
VF CA8●●●M-MD	M12 extension cable, 8-pole
VF CA19●●●S-SD	M23 extension cable, 19-pole

P-Connect connection gateway for safety devices

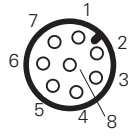
Pin assignments of usable devices

BP A1PL2001

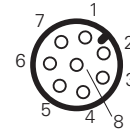
NG - NS series
safety switches



AN series
safety handles



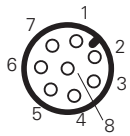
BN AC3•••• series
control device units



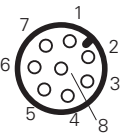
Pin	Connection	Type	Pin	Connection	Type	Pin	Connection	Type
1	A1	I	1	0 Vdc power supply	O	1	+24 Vdc power supply	I
2	O3	O	2	+24 Vdc power supply	I	2	NO, device 1	O
3	A2	O	3	Control input green LED (G)	I	3	Disconnected	-
4	OS1	O	4	Control input LED	I	4	NO, device 2	O
5	IE2	I	5	NO, device	I	5	NC1, device 3	I
6	I3	I	6	NO, device	O	6	NC1, device 3	O
7	OS2	O	7	Control input blue LED (B)	I	7	NC2, device 3	I
8	IE1	I	8	Control input red LED (R)	I	8	NC2, device 3	O

BP A1PL2002

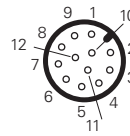
NG series safety devices
+ equivalent device



AN series
safety handle

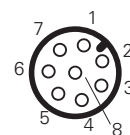


BN AC4•••• series
control device unit

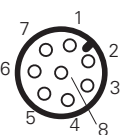


Pin	Connection	Type	Pin	Connection	Type	Pin	Connection	Type
1	A1	I	1	0 Vdc power supply	O	1	+24 Vdc power supply	I
2	O3	O	2	+24 Vdc power supply	I	2	Control input LED device 1	I
3	A2	O	3	Control input green LED (G)	I	3	0 Vdc power supply	O
4	OS1	O	4	Control input LED	I	4	NO, device 1	O
5	IE2	I	5	NO, device	I	5	NO, device 2	O
6	I3	I	6	NO, device	O	6	Control input LED device 2	I
7	OS2	O	7	Control input blue LED (B)	I	7	NO, device 3	O
8	IE1	I	8	Control input red LED (R)	I	8	Control input LED device 3	I
						9	NO, device 4	O
						10	Disconnected	-
						11	Disconnected	-
						12	Control input LED device 4	I

Indicator light tower
(reference wiring diagram)

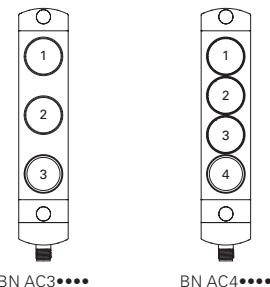


Control unit with emergency stop and luminous disc



Pin	Connection	Type	Pin	Connection	Type
1	0 Vdc power supply	O	1	Disconnected	-
2	+24 Vdc power supply	I	2	Control input luminous disc +24 Vdc	I
3	Control input LED 1	I	3	Luminous disc power supply 0 Vdc	O
4	Control input LED 4	I	4	Disconnected	-
5	Buzzer power supply	I	5	NC1, emergency stop	I
6	Signalling output	O	6	NC1, emergency stop	O
7	Control input LED 2	I	7	NC2, emergency stop	I
8	Control input LED 3	I	8	NC2, emergency stop	O

Control device numbering:



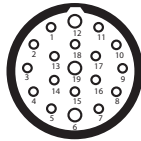
Legend:
A1 = Supply input +24 Vdc
A2 = Supply input 0 V
IE1, IE2 = Solenoid activation inputs
O3 = Signalling output, actuator inserted
O4 = Signalling output, actuator inserted and locked
IS1, IS2 = Safety inputs
OS1, OS2 = Safety outputs
I3 = Actuator programming input/reset
I5 = EDM input (cannot be used on BP series)

I = Device input
O = Device output

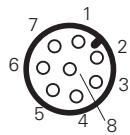


BP A1PL2003

NG series
safety switches



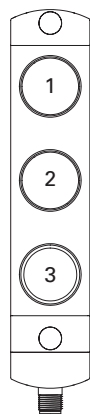
AN series
safety handles



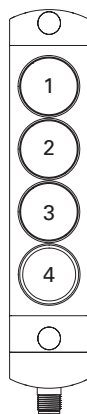
Pin	Connection	Type
1	I4	I
2	IS1	I
3	IS2	I
4	OS1	O
5	OS2	O
6	A1	I
7	I3	I
8	O3	O
9	O4	O
10	NC1, device 3	I
11	NC1, device 3	O
12	I5	I
13	NC2, device 3	I
14	NC2, device 3	O
15	Device 1 contact	O
16	Control input LED device 2	I
17	Device 2 contact	O
18	Control input LED device 1	I
19	A2	O

Pin	Connection	Type
1	0 Vdc power supply	O
2	+24 Vdc power supply	I
3	Control input green LED (G)	I
4	Control input LED	I
5	NO, device	I
6	NO, device	O
7	Control input blue LED (B)	I
8	Control input red LED (R)	I

Control device numbering:



BN AC3●●●●



BN AC4●●●●



NG ●●●●●●

Legend:

A1 = Supply input +24 Vdc

A2 = Supply input 0 V

IE1, IE2 = Solenoid activation inputs

O3 = Signalling output, actuator inserted

O4 = Signalling output, actuator inserted and locked

IS1, IS2 = Safety inputs

OS1, OS2 = Safety outputs

I3 = Actuator programming input/reset

I5 = EDM input (cannot be used on BP series)

I = Device input

O = Device output



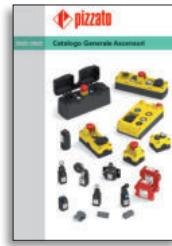
General Catalogue
Detection



General Catalogue
HMI



General Catalogue
Safety



General Catalogue
Lift



Website
www.pizzato.com



PASSION FOR QUALITY

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