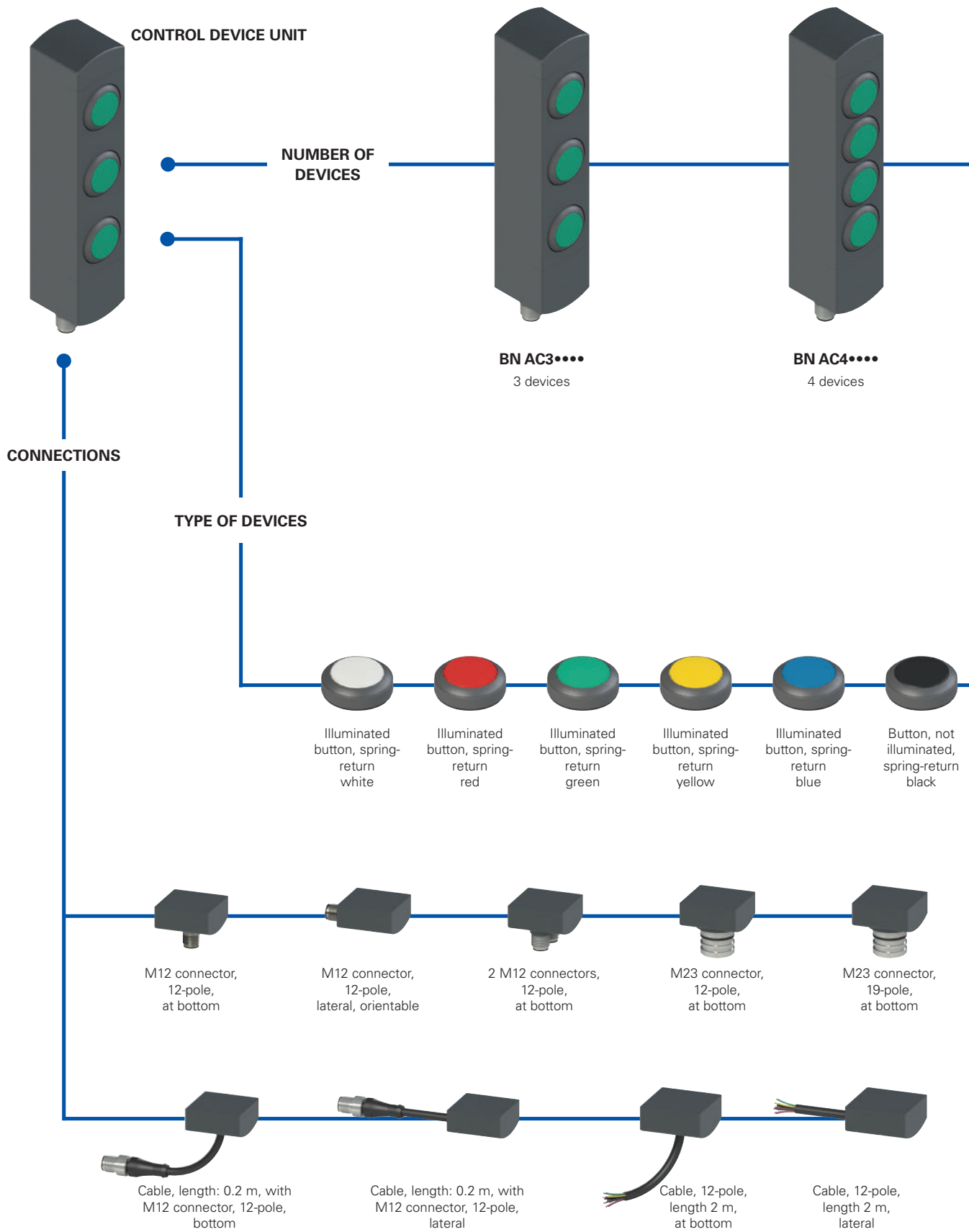




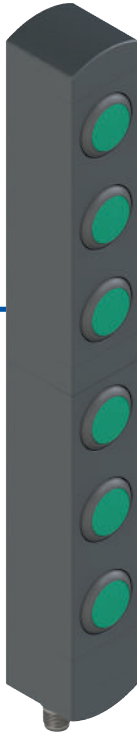
## BN series control device units



## Selection diagram



● product option  
 → sold separately as accessory



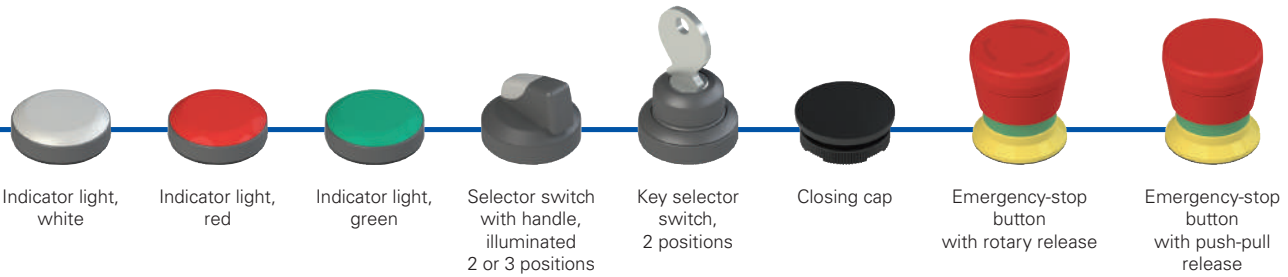
**BN AC6**•••••  
6 devices



**BN AC7**•••••  
7 devices



**BN AC8**•••••  
8 devices



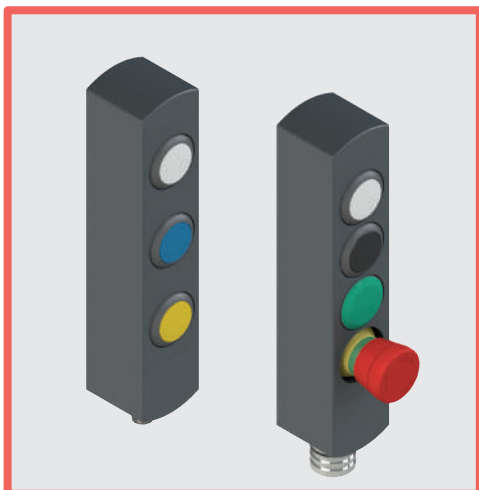
## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

# BN AC3ZA01

Number of devices	
<b>3</b>	3 devices
<b>4</b>	4 devices
<b>6</b>	6 devices
<b>7</b>	7 devices
<b>8</b>	8 devices

Button configuration	
<b>A01</b>	A01 configuration
<b>A02</b>	A02 configuration
<b>A03</b>	A03 configuration
<b>...</b>	other configurations on request



## Main features

- Modular control device unit for 3 to 8 devices.
- Can be fixed in various positions.
- Flush-mounted control devices.
- Compact dimensions, minimal housing width.
- Numerous control devices available.

## Quality marks:



UL approval: E131787

## Features approved by UL

Electrical ratings: 24 Vdc Class 2, 0,1 A

Input Supplied by 24V dc, Class 2 Source or limited voltage limited energy, 0,096 A max. (maximum eight leds).

Output 24 Vac/dc Class 2 0,25 A Pilot Duty (maximum eight actuators, with maximum twelve contacts, NO or NC or both) or 0,18 A Pilot Duty (maximum eight actuators, with maximum sixteen contacts, NO or NC or both).

Environmental ratings: Type 1

## Technical data

Housing made of glass fibre reinforced technopolymer, self-extinguishing and shock-proof. Versions with integrated cable 12 x 0.14 mm<sup>2</sup>, length 2 m, other lengths from 0.5 m to 10 m on request.

Versions with integrated M23 or M12 stainless steel connector.

Versions with 2 integrated M12 stainless steel connectors.

Versions with 0.2 m cable and M12 connector, other lengths from 0.1 ... 3 m on request.

Protection degree: IP65 acc. to EN 60529

## General data

Ambient temperature: -25°C ... +70°C  
 Fixing screws for the housing: 2xM5, tightening torque 3 Nm  
 Fixing screws for turnable modules: Tightening torque of 0.8 ... 1.2 Nm

Mechanical endurance:

Spring-return button: 1 million operating cycles  
 Emergency stop button: 50,000 operating cycles  
 Selector switch: 300,000 operating cycles  
 Key selector switch: 50,000 operating cycles  
 30,000 operating cycles including removal of the key  
 100,000 (emergency-stop button)

Safety parameter  $B_{10D}$ :

Actuating force:

Spring-return button: 4 N min 100 N max.  
 Emergency stop button: 20 N min 100 N max.  
 Selector switch: 0.1 Nm min 1.5 Nm max.  
 Key selector switch: 0.1 Nm min 1.3 Nm max.

## Electrical data of the devices

Rated operating voltage  $U_e$ : 24 Vdc  $\pm$ 10% SELV  
 Thermal current  $I_{th}$ : 1 A  
 Rated insulation voltage  $U_i$ : 32 Vac/dc  
 Rated impulse withstand voltage  $U_{imp}$ : 1.5 kV  
 Material of the contacts: silver contacts  
 Contact type: Self-cleaning contacts with double interruption  
 Utilization category of the contact block: DC13;  $U_e = 24$  V;  $I_e = 0.55$  A  
 LED supply voltage: 24 Vdc  $\pm$ 15%  
 Single LED supply current: 12 mA

## M12 connector electrical data

Max. operating voltage: 32 Vac/dc  
 Max. operating current: 1.5 A max.

## M23 connector electrical data

Max. operating voltage: 32 Vac/dc  
 Max. operating current: 3 A max.

## In compliance with standards:

IEC 60947-5-1, IEC 60947-5-5, EN ISO 13850, UL 508, CSA 22.2 No.14

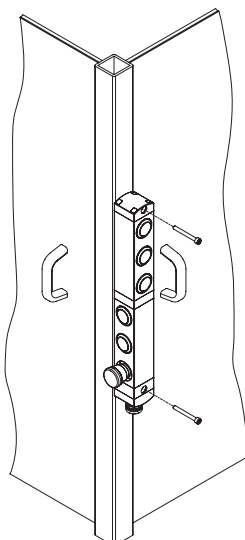
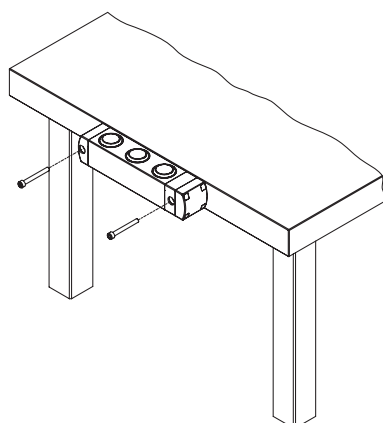
## Compliance with the requirements of:

Machinery Directive 2006/42/EC, Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.

## ⚠ Installation for safety applications:

Always connect the safety circuit to the **NC contacts** (normally closed contacts) as stated in standard EN 60947-5-1.

## Actuation of the control devices from various directions



Thanks to the design with turnable modules, the control device units of the BN series offer the user many different options for fixing to the machine.

The orientation of the control devices can be selected independent of the fastening.

With the configurations for 6, 7 and 8 devices, the upper and lower part can be oriented independent of one another. This is especially useful if it should be possible to achieve a command state from two different sides of the machine. In these cases, a single device and single wiring harness can be used, thereby saving time and money.



## General data

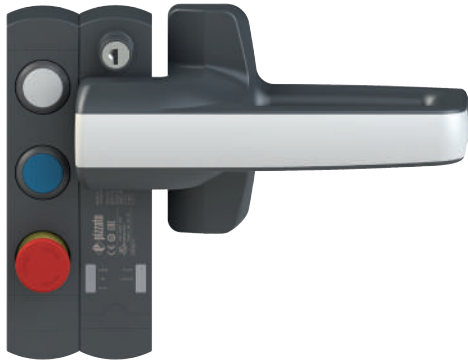


The new modular control device units of the BN series from Pizzato Elettrica can be combined perfectly with the RFID safety switches with lock of the NS series. Machine manufacturers who already use these products thereby have the possibility to attach a control device unit directly next to the safety switch that is identical in shape and dimensions.

The control device units of the BN series are available in configurations with 3 to 8 devices.

The unique design with individually turnable modules allows the user to select from a number of combinations. He receives a very versatile product that is immediately ready for use.

## Compatibility with NS series switches



The control device units of the BN series have the same dimensions as the RFID safety switches with lock of the NS series. When mounted directly to the side of the switch, one obtains an integrated safety device whose components are made of the same material and have identical dimensions.

## Minimal dimensions

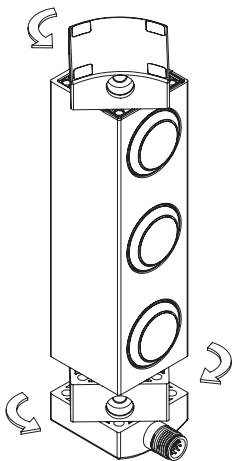


One special feature of the control device units of the BN series is the slim thickness of just 40 mm.

The control devices are embedded in the housing of the unit and protrude only slightly out of the front.

This protects the control devices from unintended impacts, thereby increasing the service life of the devices and, at the same time, giving the devices an attractive design, making them predestined for use on modern machines in which this aspect is also given special consideration.

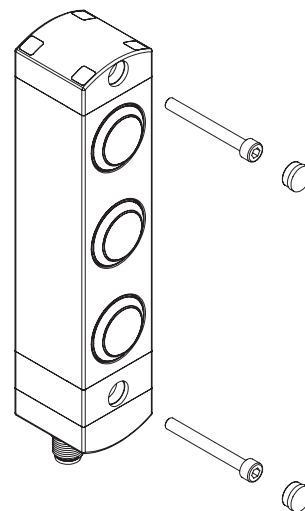
## Turnable and non-detachable modules



During installation, the fixing modules can be turned on the top and bottom of the device to enable variable orientation of the control devices.

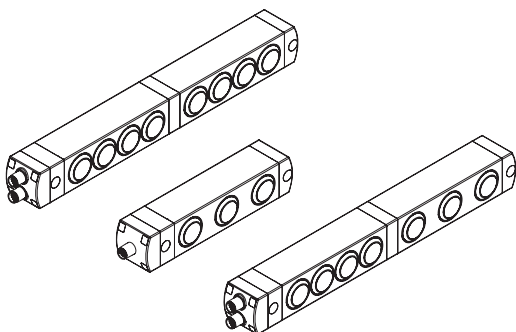
Operation is very simple: after loosening the fixing screws, the device body can be turned in steps of 90° and fixed in the desired position. Another advantage for the installer is that the fixing modules cannot be detached from the device body. Disassembly of the individual parts is not necessary and there is no risk of losing parts or reassembling incorrectly.

## Protection against tampering



Each control device unit of the BN series is supplied complete with snap-on protection caps to be applied on the holes of the fixing screws. Not only do the caps prevent deposits of dirt from accumulating and simplify cleaning, they also prevent access to the fixing screws of the device, thereby offering increased protection against tampering.

## Individually and freely configurable



The control device unit is available in various configurations: for standard applications there are configurations with 3 or 4 devices, while configurations with 6, 7 or 8 devices are available for more complex applications that allow a larger number of control and signalling devices to be attached at the same location for the user.

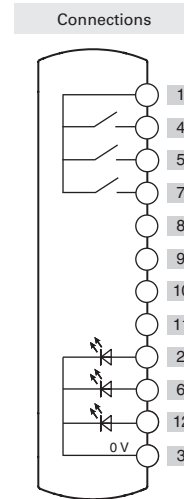
With all product configurations, a number of devices can be installed that can also be illuminated via LEDs integrated in the device.

## Examples of available configurations

### BN AC3ZA01



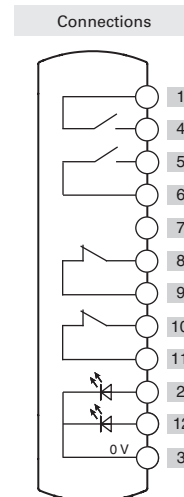
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	
Device 2	Illuminated button, spring-return 1NO	blue	
Device 3	Illuminated button, spring-return 1NO	yellow	
Connector	M12, 12-pole, at bottom	/	



### BN AC3ZA02



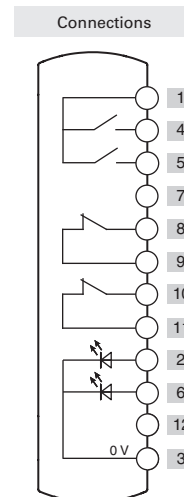
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	
Device 2	Illuminated button, spring-return 1NO	blue	
Device 3	Emergency-stop button with rotary release 2NC	red	
Connector	M12, 12-pole, at bottom	/	



### BN AC3ZA03



	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	
Device 2	Illuminated button, spring-return 1NO	yellow	
Device 3	Emergency-stop button with rotary release 2NC	red	
Connector	M12, 12-pole, at bottom	/	

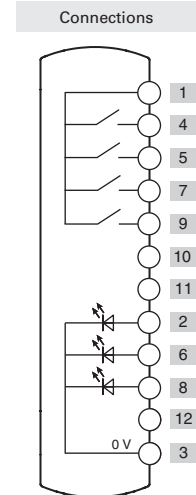




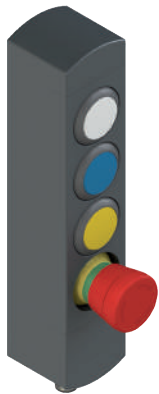
### BN AC4ZA01



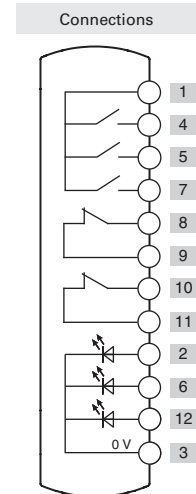
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	green	
Device 2	Illuminated button, spring-return 1NO	red	
Device 3	Illuminated button, spring-return 1NO	white	
Device 4	Two-position key selector switch 1NO	black	
Connector	M12, 12-pole, at bottom	/	



### BN AC4ZA02



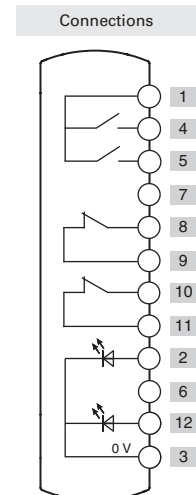
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	
Device 2	Illuminated button, spring-return 1NO	blue	
Device 3	Illuminated button, spring-return 1NO	yellow	
Device 4	Emergency-stop button with rotary release 2NC	red	
Connector	M12, 12-pole, at bottom	/	



### BN AC4ZA03



	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	
Device 2	Spring-return button 1NO	black	
Device 3	Indicator light	green	
Device 4	Emergency-stop button with rotary release 2NC	red	
Connector	M23, 12-pole, at bottom	/	



For pin assignments of the connectors, see page 9

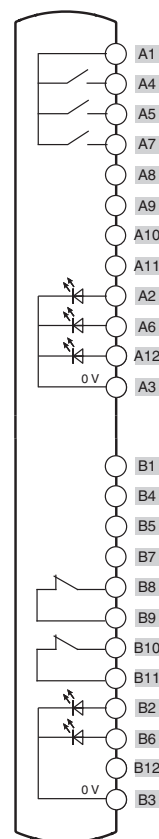
# BN series control device units

## BN AC6ZA01



	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	
Device 2	Illuminated button, spring-return 1NO	blue	
Device 3	Illuminated button, spring-return 1NO	yellow	
Device 4	Indicator light	green	
Device 5	Indicator light	white	
Device 6	Emergency-stop button with rotary release 2NC	red	
Connector	Two M12, 12-pole, at bottom	/	

### Connections

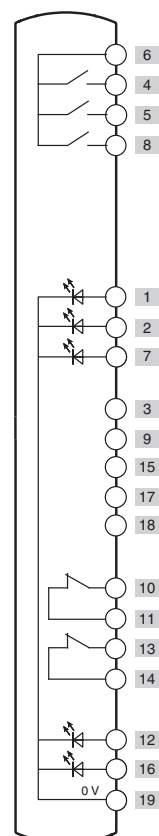


## BN AC6ZA02



	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	
Device 2	Illuminated button, spring-return 1NO	blue	
Device 3	Illuminated button, spring-return 1NO	yellow	
Device 4	Indicator light	green	
Device 5	Indicator light	white	
Device 6	Emergency-stop button with rotary release 2NC	red	
Connector	M23, 19-pole, at bottom	/	

### Connections





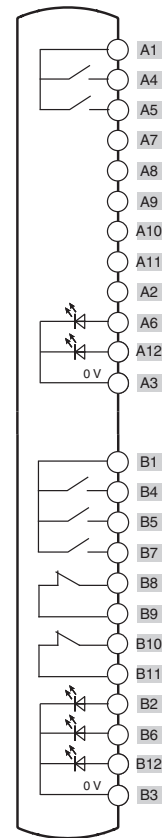


## BN AC7ZA01



	Description	Colour	Diagram
Device 1	Two-position key selector switch 1NO	black	
Device 2	Illuminated selector switch with handle with two positions 1NO	black	
Device 3	Indicator light	green	
Device 4	Illuminated button, spring-return 1NO	white	
Device 5	Illuminated button, spring-return 1NO	blue	
Device 6	Illuminated button, spring-return 1NO	yellow	
Device 7	Emergency-stop button with rotary release 2NC	red	
Connector	Two M12, 12-pole, at bottom	/	

### Connections

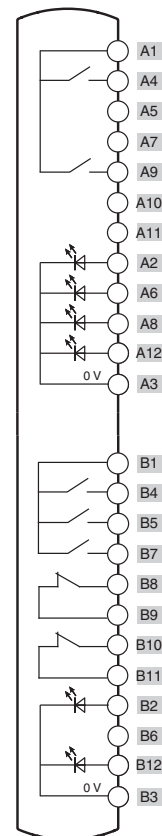


## BN AC8ZA01




	Description	Colour	Diagram
Device 1	Illuminated selector switch with handle with two positions 1NO	black	
Device 2	Indicator light	red	
Device 3	Indicator light	green	
Device 4	Illuminated button, spring-return 1NO	yellow	
Device 5	Illuminated button, spring-return 1NO	white	
Device 6	Spring-return button 1NO	black	
Device 7	Illuminated button, spring-return 1NO	blue	
Device 8	Emergency-stop button with rotary release 2NC	red	
Connector	Two M12, 12-pole, at bottom	/	




### Connections



For pin assignments of the connectors, see page 9

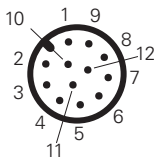
## Available integrated devices

	Description	Colour	Article	Combinable with contacts	Protrusion (x) mm
	Illuminated button, spring-return	<ul style="list-style-type: none"> <li>● White</li> <li>● Red</li> <li>● Green</li> <li>● Yellow</li> <li>● Blue</li> </ul>	VN NG-AC26005 VN NG-AC26001 VN NG-AC26003 VN NG-AC26002 VN NG-AC26004	1NO 2NO 1NO+1NC	3
	Non-illuminated button, spring-return	● Black	VN NG-AC26007	1NO 2NO 1NO+1NC	3
	Indicator light	<ul style="list-style-type: none"> <li>● White</li> <li>● Red</li> <li>● Green</li> </ul>	VN NG-AC26064 VN NG-AC26060 VN NG-AC26062	/	2.7
	Emergency-stop button acc. to EN ISO 13850 Rotary release Push-pull release	<ul style="list-style-type: none"> <li>● Red</li> <li>● Red</li> </ul>	VN NG-AC26052 VN NG-AC26055	2NC	26.4
	Illuminated selector switch with handle, with transparent lens for LED	<ul style="list-style-type: none"> <li>● Black</li> <li>● Black</li> </ul>	VN NG-AC26033 VN NG-AC26034	1NO 2NO 1NO+1NC	16.8
	Key selector switch, 2 positions	<ul style="list-style-type: none"> <li>● Black</li> <li>● Black</li> </ul>	VN NG-AC26040 VN NG-AC26043	1NO 2NO 1NO+1NC	39 (a) 14 (b)
	Closing cap	● Black	VN NG-AC26090	/	0
	Fixing key	● Black	VN NG-AC26080	/	/

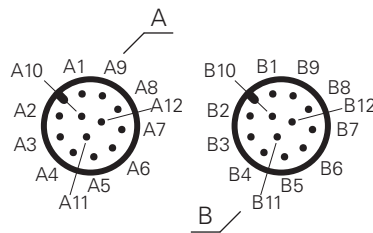
Legend:  Maintained  Spring-return  Key extraction position (a) with key (b) without key

## Electrical connections

M12 connector, 12-pole



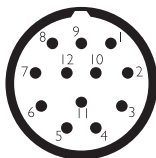
Two M12 connectors, 12-pole



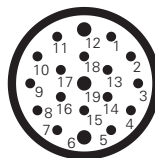
Cable

Pin No.	Cable colour	Pin No.	Cable colour
1	brown	7	black
2	blue	8	grey
3	white	9	red
4	green	10	purple
5	pink	11	grey-pink
6	yellow	12	red-blue

M23 connector, 12-pole



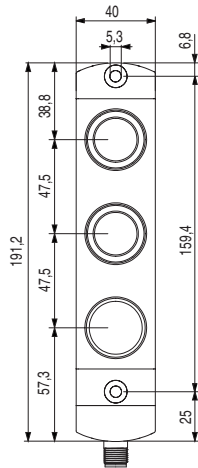
M23 connector, 19-pole



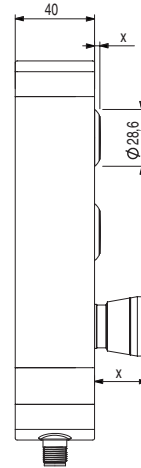
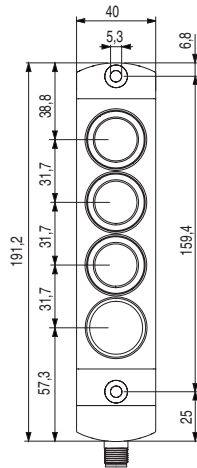


## Dimensional drawings

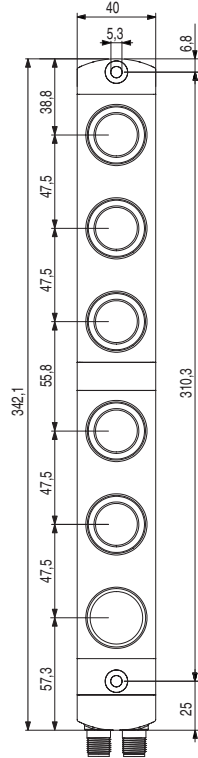
BN AC3●●●●



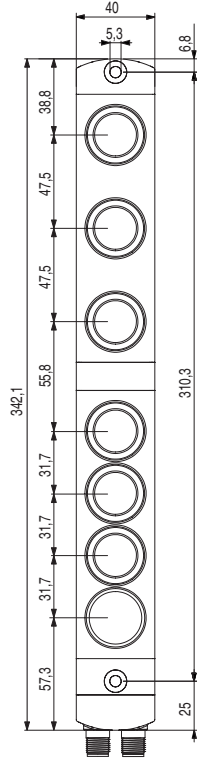
BN AC4●●●●



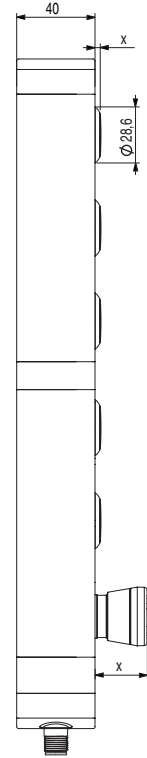
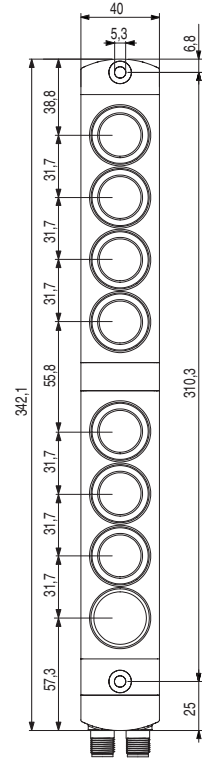
BN AC6●●●●



BN AC7●●●●

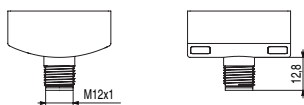


BN AC8●●●●

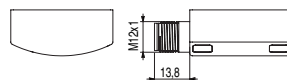


## Output type

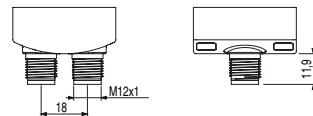
M12 connector, at bottom



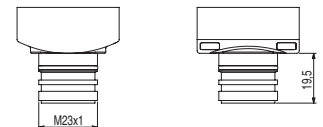
M12 connector, lateral



Two M12 connectors, at bottom



M23 connector, at bottom



All values in the drawings are in mm

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



General Catalogue  
Detection



General Catalogue  
HMI



General Catalogue  
Safety



Lift General  
Catalogue



Website  
[www.pizzato.com](http://www.pizzato.com)



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