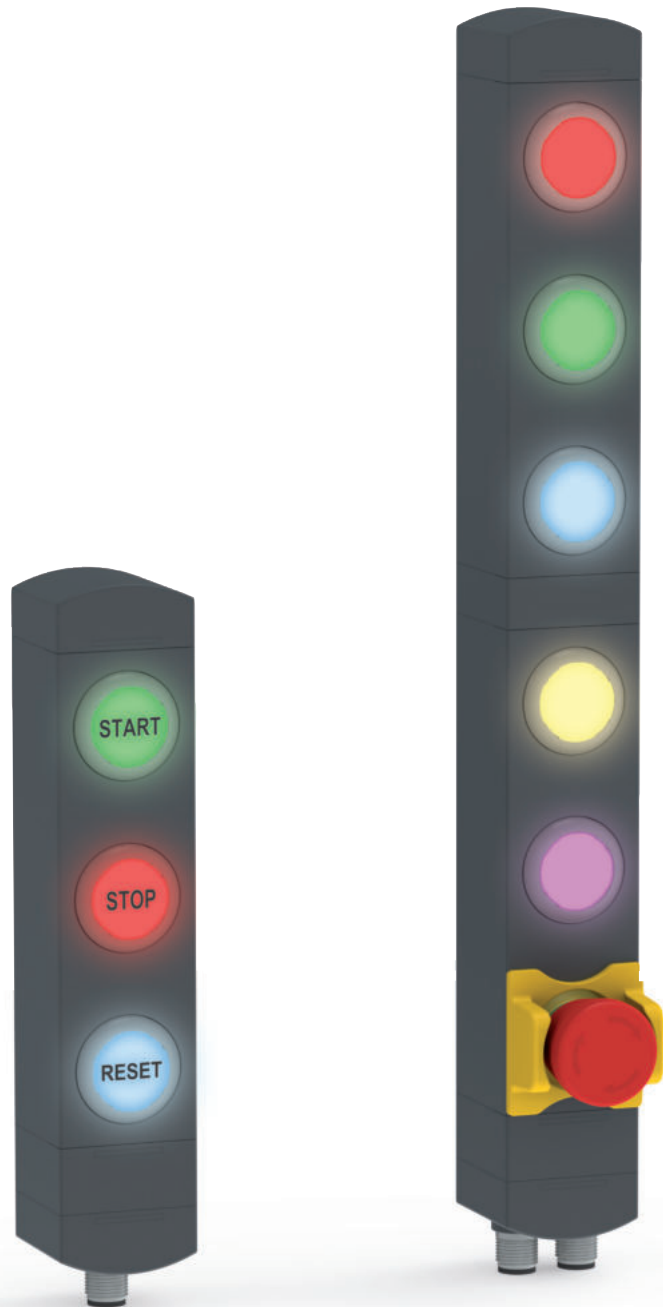


**BN series  
IO-Link control device units**



## IO-Link

IO-Link is an open communication standard for sensors and actuators, defined by the PROFIBUS User Organization (PNO). IO-Link technology is a point-to-point communication standard that connects sensors and actuators to the control system. As well as the cyclic operating data of the connected sensors and actuators, parameter and diagnostic data is also sent.



# IO-Link

## Data and configuration

The BN Series control device unit exchanges with the IO-Link master data on the surrounding environment, such as:

- State of the buttons (or the different types of devices);
- LED state;
- Supply voltage;
- Temperature;
- Device usage time.

The system detects any out-of-range values in the monitored data. Device data can be displayed in real time.





## Plug & Play

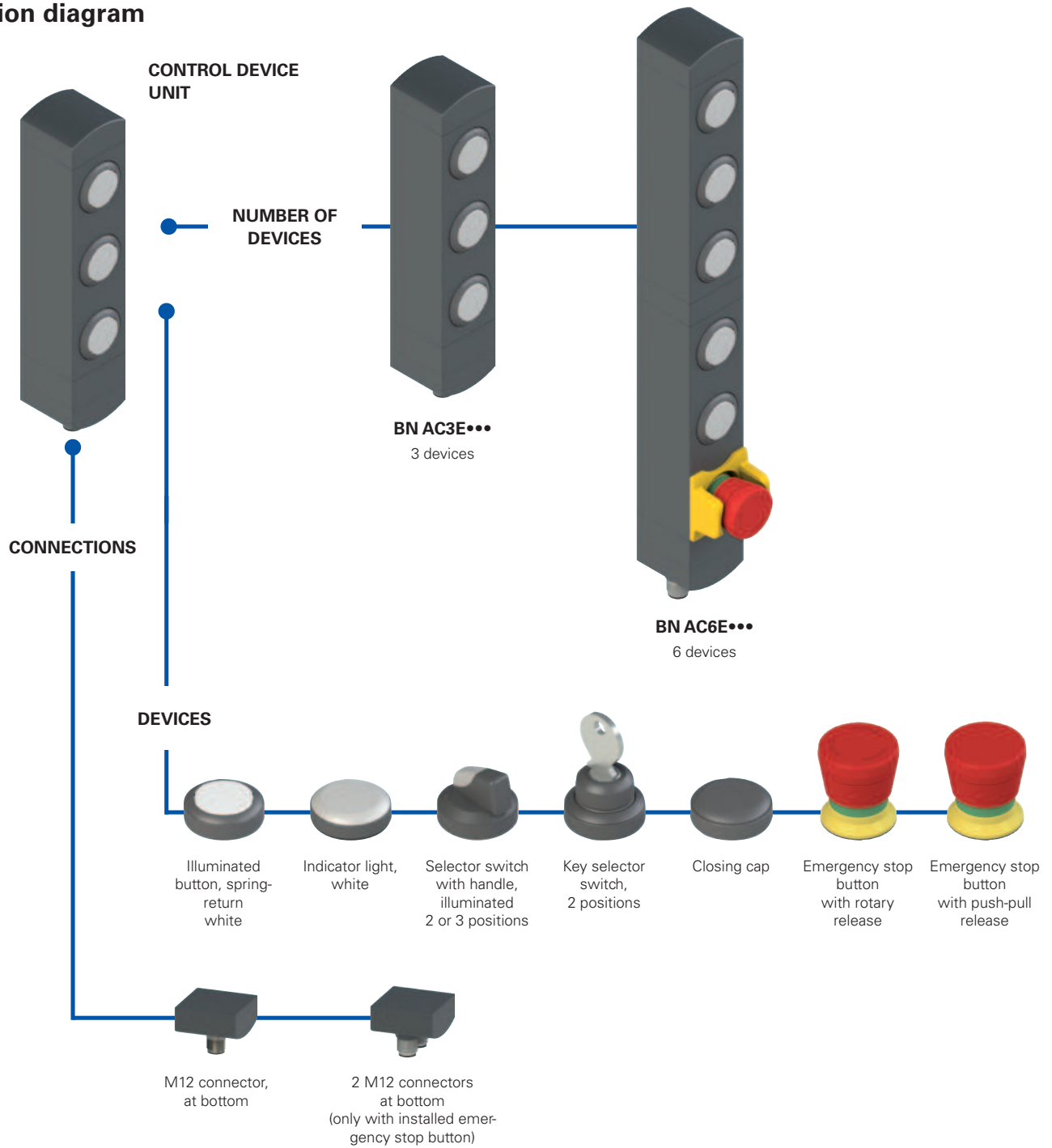
The BN series IO-Link control device unit offers numerous advantages compared to traditional wired solutions. The Plug & Play technology makes the device easy to install without complex, time-consuming and costly wiring. This also means the device can be quickly replaced if it gets damaged or malfunctions, without having to dismantle whole parts of the plant.

## Custom colour and RGB LEDs

The control devices of the BN series IO-Link control device unit can be illuminated, a solution to meet any requirements.

As they have RGB LEDs, the buttons can be configured in a vast range of colours: red, green, blue, yellow, cyan, magenta and white. There are also 4 colours that can be configured by the user to customise the appearance of the control device unit to suit your own aesthetic and functional preferences. The brightness of the RGB LEDs can be adjusted via IO-Link to adapt to various environmental conditions, and the LEDs can also be set to blink at various frequencies and fade out.

## Selection diagram



## Code structure

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

## BN AC3EA01

Number of devices		Button configuration	
<b>3</b>	3 devices	<b>A01</b>	A01 configuration
<b>6</b>	6 devices	<b>A02</b>	A02 configuration
		<b>Operation</b>	
		<b>E</b>	IO-Link



## Examples of available configurations

### BN AC3EA01



		Connection	M12 connector, 4-pole
IO-Link	L +	+24 Vdc power supply	A1
	/	Not connected	A2
	L -	Power supply 0 V	A3
	C/Q	IO-Link data	A4

	Description	Diagram	Connections
Device 1	Illuminated button, spring-return white with RGB LED	/	
Device 2	Illuminated button, spring-return white with RGB LED	/	
Device 3	Illuminated button, spring-return white with RGB LED	/	
Connector	M12, 4-pole		

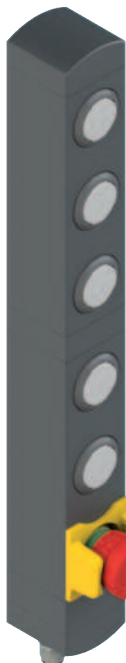
### BN AC3EA02



		Connection	M12 connector, 4-pole
IO-Link	L +	+24 Vdc power supply	A1
	/	Not connected	A2
	L -	Power supply 0 V	A3
	C/Q	IO-Link data	A4

	Description	Diagram	Connections
Device 1	Illuminated button, spring-return white with RGB LED	/	
Device 2	Illuminated button, spring-return white with RGB LED	/	
Device 3	Emergency stop button with rotary release 2NC and guard		
Connector	2 x M12, 4-pole		

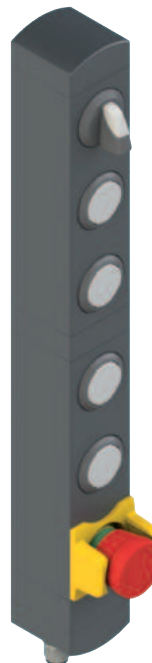
### BN AC6EA01



		Connection	M12 connector, 4-pole
IO-Link	L +	+24 Vdc power supply	A1
	/	Not connected	A2
	L -	Power supply 0 V	A3
	C/Q	IO-Link data	A4

	Description	Diagram	Connections
Device 1	Illuminated button, spring-return white with RGB LED	/	
Device 2	Illuminated button, spring-return white with RGB LED	/	
Device 3	Illuminated button, spring-return white with RGB LED	/	
Device 4	Illuminated button, spring-return white with RGB LED	/	
Device 5	Illuminated button, spring-return white with RGB LED	/	
Device 6	Emergency stop button with rotary release 2NC and guard		
Connector	2 x M12, 4-pole		

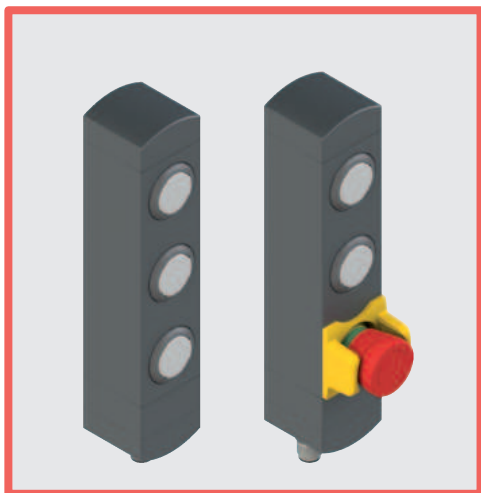
### BN AC6EA02



		Connection	M12 connector, 4-pole
IO-Link	L +	+24 Vdc power supply	A1
	/	Not connected	A2
	L -	Power supply 0 V	A3
	C/Q	IO-Link data	A4

	Description	Diagram	Connections
Device 1	Three-position selector switch with handle that can be illuminated with a white LED	/	
Device 2	Illuminated button, spring-return white with RGB LED	/	
Device 3	Illuminated button, spring-return white with RGB LED	/	
Device 4	Illuminated button, spring-return white with RGB LED	/	
Device 5	Illuminated button, spring-return white with RGB LED	/	
Device 6	Emergency stop button with rotary release 2NC and guard		
Connector	2 x M12, 4-pole		





## Main features

- Modular control device unit with 3 or 6 devices
- Rotatable fixing position
- Flush-mounted control devices
- Compact dimensions, minimal housing width
- Two types of control devices available: illuminated RGB button, spring-return, and illuminated selector switch

## Quality marks:



UL approval: E131787

## Features approved by UL

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

Model BN with base module dimensions 40 mm by 38.5 mm by 145.5 mm:

Input Supplied by 24 Vdc, Class 2 Source or limited voltage limited energy, 0.2 A max. (Maximum eight leds).

Output IO-Link (Serial data) 24 V dc 0.0X A max.

Emergency Stop Button 24 Vac/dc "Class 2" 0.25 A Pilot Duty (Maximum one provided, with maximum two contacts NC).

Model BN with base module dimensions 40 mm by 38.5 mm by 82.1 mm:

Input Supplied by 24 Vdc, Class 2 Source or limited voltage limited energy, 0.2 A max. (Maximum four leds).

Output IO-Link (Serial data) 24 V dc 0.0X A max.

Emergency Stop Button 24 Vac/dc "Class 2" 0.25 A Pilot Duty (Maximum one provided, with maximum two contacts NC).

Environmental ratings: Type 1

## Technical data

Housing made of glass fibre reinforced technopolymer, self-extinguishing and shock-proof.  
Versions with integrated single or double M12 stainless steel connector.  
Protection degree: IP65 acc. to EN 60529

### General data

Ambient temperature:	-20°C ... +50°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
Selector switch:	300,000 operating cycles

### Electrical data

Rated operating voltage $U_e$ :	24 Vdc $\pm$ 25% SELV/PELV
Max. operating current:	200 mA

### Emergency stop button

Mechanical endurance:	50,000 operating cycles
Safety parameter $B_{10D}$ :	100,000
Actuating force:	20 N min / 100 N max
Rated insulation voltage $U_i$ :	32 Vac/dc
Rated impulse withstand voltage $U_{imp}$ :	0,5 kV
Material of the contacts:	silver contacts
Contact type:	Self-cleaning contacts with double interruption
Utilization category of the contact block:	DC-13; $U_e = 24 V$ , $I_e = 0.55 A$

### IO-Link

Interface and System Specification Version 1.1.3

The IODD is available for download at [www.pizzato.com](http://www.pizzato.com)

### In compliance with standards:

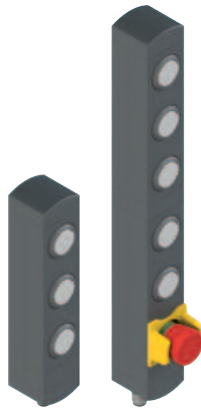
IEC 60947-5-1, IEC 60947-5-5, EN ISO 13850, UL 508, CSA C22.2 No. 14.

### 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.



## Description

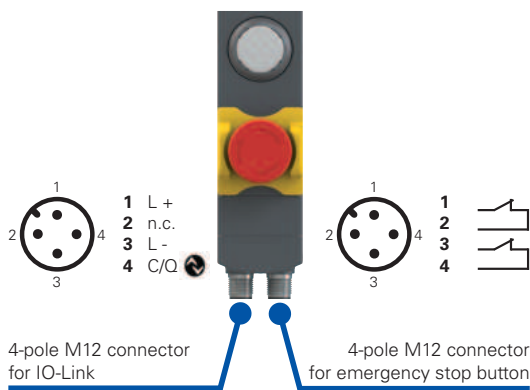


There's a new version of the Pizzato BN series control device unit that supports the modern IO-Link communication standard, opening the doors to new configuration, customisation and control options. The unit is quick and easy to update.

BN series IO-Link control device units can consist of one or two interconnected and rotatable modules: a distinctive feature of BN series control device units.

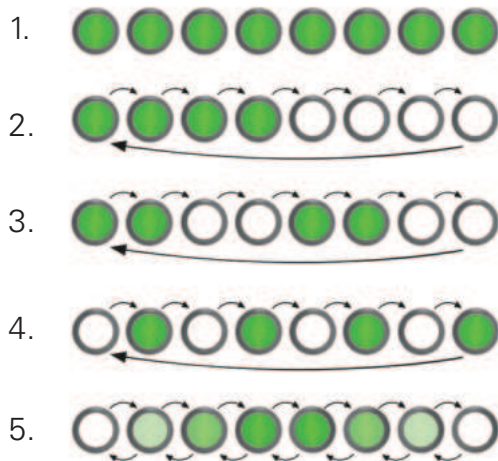
Each module can take 3 control devices (e.g. buttons, emergency stop buttons, selectors) so up to 6 devices can be installed in a single control device unit. The buttons have RGB LEDs, while the selector has a white LED.

## Connection and power supply



The standard version of the BN series IO-Link control device unit comes with a 4-pole M12 connector for communicating with the IO-Link master. If an emergency stop button is installed, a second 4-pole M12 connector must be used for the relevant voltage-free contacts. The 4-pole M12 connector used to communicate with the IO-Link master has just 3 wires (positive and negative for the power supply, and the data connection). The supply voltage of the IO-Link master (24 VDC) also supplies power to the BN series control device unit. The cable can also be unscreened. It must have a max. length of 20 m.

## Customisable LED mode

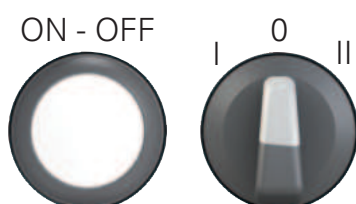


The state and colour of the RGB LEDs on the butt of the BN series IO-Link control device unit can be set to different modes, including:

1. Fixed light on;
2. Light blinking at 0,5 Hz;
3. Light blinking at 1 Hz;
4. Light blinking at 2 Hz;
5. Light fading out.

Night mode can also be set on the above types, dimming the brightness from "HIGH" to "LOW".

## IO-Link control devices



The following types of control devices can be connected via IO-Link:

- White, spring-return button that can be illuminated with a RGB LED;
- Two- or three-position selector switch with handle that can be illuminated with a white LED.

Other control devices available on request, such as:

- White indicator light with RGB LED;
- Two-position key selector switch;
- Emergency stop button with push-pull release;
- Hole blanking plug.



General Catalogue  
Detection



General Catalogue  
HMI



General Catalogue  
Safety



General Catalogue  
Lift



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



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