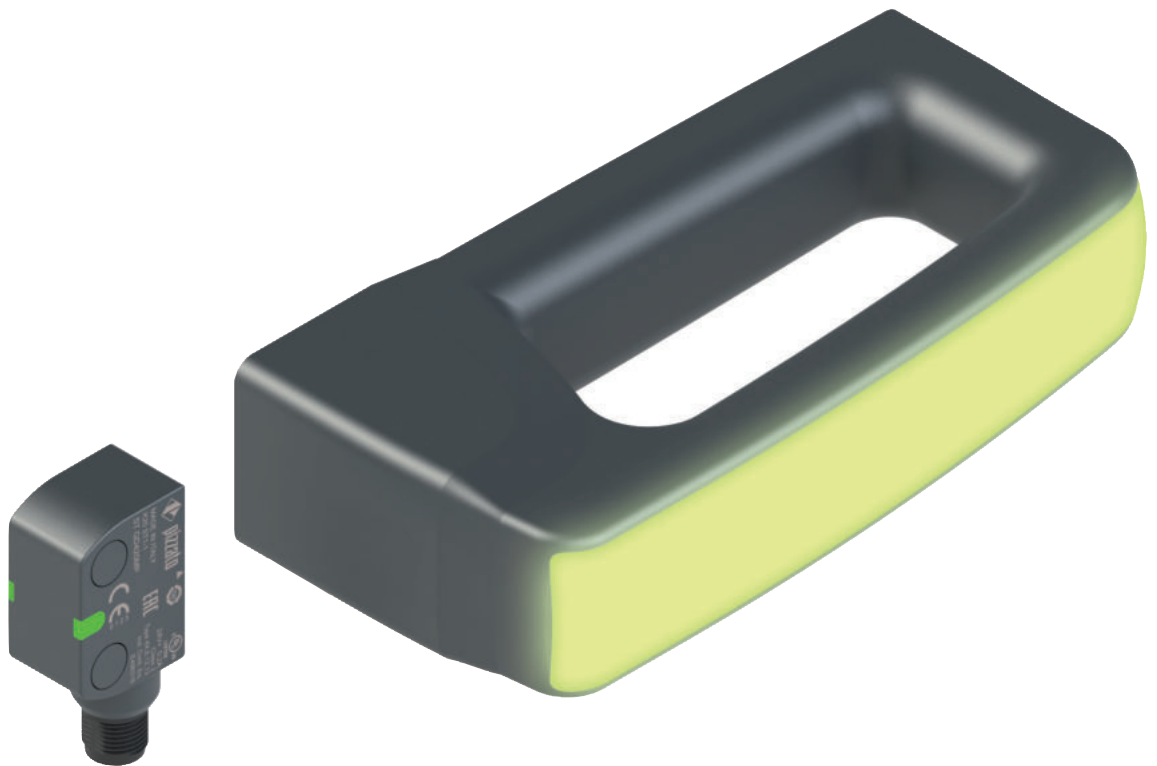


**Safety handles  
P-KUBE Smart**



# P-KUBE Smart safety handles for ST series RFID sensors

## Description



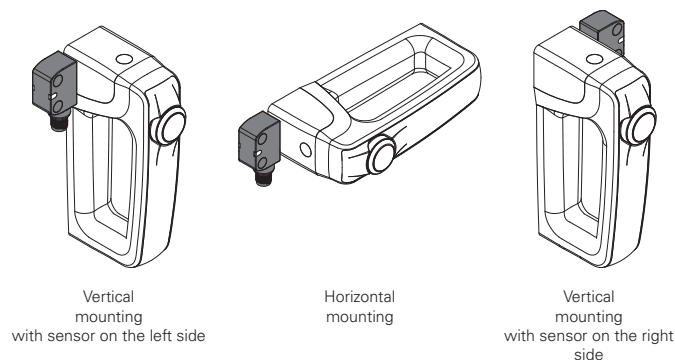
**P-KUBE Smart** safety handle can be used together with the RFID safety sensors of the ST series to create a modern and effective interlock system for all guards of machines without inertia.

These products combine the characteristics of a robust handle for safety enclosures, with an ergonomic, rounded grip and customisable functions for the customer, with various illuminated signalling options, to reflect the state of the guard, or other operating conditions the manufacturer wishes to indicate.

Depending on user needs, the new handles also allow integration of a control device (e.g. a button), directly in the grip.

## Adaptability and flexibility

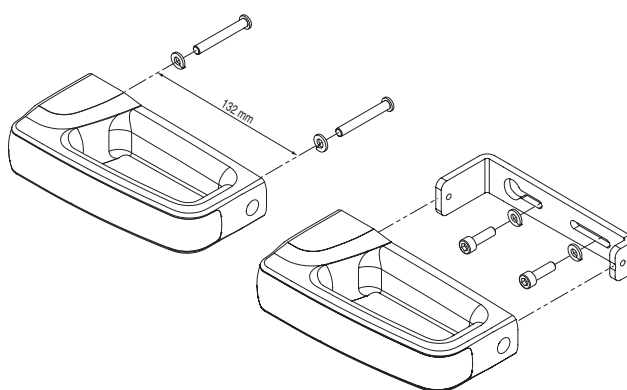
The same article code can be used both on hinged doors and sliding doors, with an opening both on the right and on the left side. Furthermore, it is possible to install the handle with horizontal or vertical grip, so that it can also be mounted on doors or compact guards along the external frame.



## Double fixing possibility

For applications on light or compact guards, it is possible to order the version with fixing directly on the handle using the two internal threaded inserts.

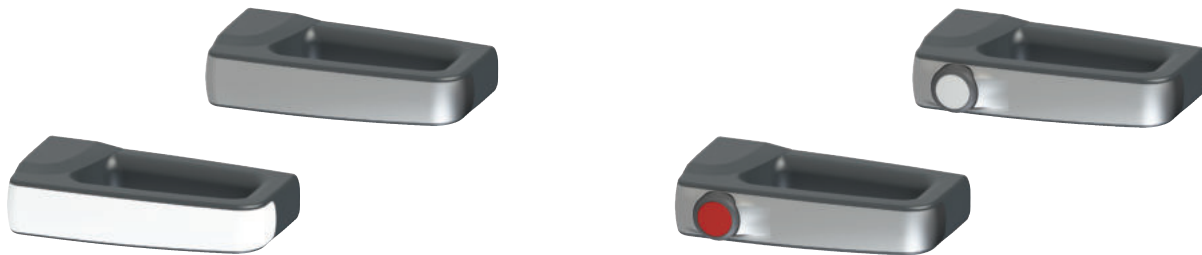
In the case of application on heavier guards, it is possible to fix the handle through an internal 5mm auxiliary plate, made of painted steel, to guarantee strength and long duration.



## Chrome-plated or illuminated grip

The grip is available with front strip in two finishes: satin chrome, and illuminated white. In the second version, the grip can be illuminated using RGB LED technology.

The modern, ergonomic design, combined with fully concealed fixing screws and wiring, allows implementation of machines and guards with particularly pleasing aesthetics.

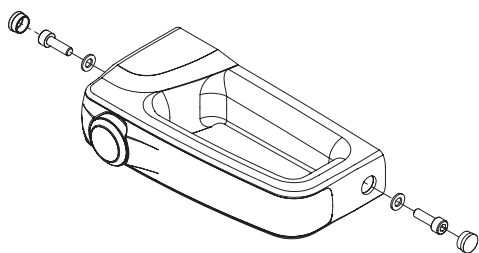


## Integrated control device

In the grip of the P-KUBE Smart handle, a spring-return button with 1NO contact can be integrated. This can be illuminated with a LED, and thus allows interaction with the machinery; for example to request machine stop, or transmit a reset command. The button is available in white, red, green, yellow, blue, and black.

## Protection against tampering

The P-KUBE Smart handle is supplied complete with snap-on protection caps to be applied to the holes of the fixing screws, so as to prevent access: therefore, standard screws can be used instead of tamper-proof screws, ensuring safety against deliberate tampering on the device. The caps also prevent the accumulation of soiling and facilitate the cleaning of the handle



## Connections

The electrical connections are made through a cable that comes out at the back of the device and can therefore be easily housed inside the frame of the guard, so as to make it completely invisible. This feature has a double advantage: contributing to the aesthetics of the machine and ensuring the protection of the cable against damage and tampering.

The P-KUBE Smart handle is available with PVC cable connections or with cable and integrated M12 connector.



### Available versions

Thanks to the wide range of configurations available, the P-KUBE Smart safety handle can be ordered in the version that best suits the user's needs. Customization options apply to the grip, which can be supplied with or without a control device, or with or without RGB LED lighting. This feature allows you to identify the most suitable product for a specific application or to diversify the handles that are installed on the same system, depending on the needs of machine designers and installers.



- Without control device  
- Satin chrome grip not illuminated



- Without control device  
- White grip, can be illuminated with RGB LEDs



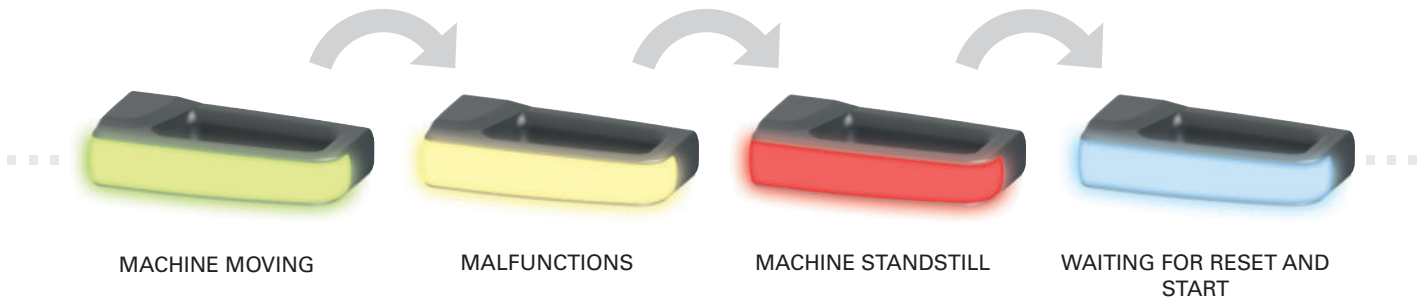
- With control device, can be illuminated  
- Satin chrome grip not illuminated



- With control device, can be illuminated  
- White grip, can be illuminated with RGB LEDs

### Customisable multicoloured illumination

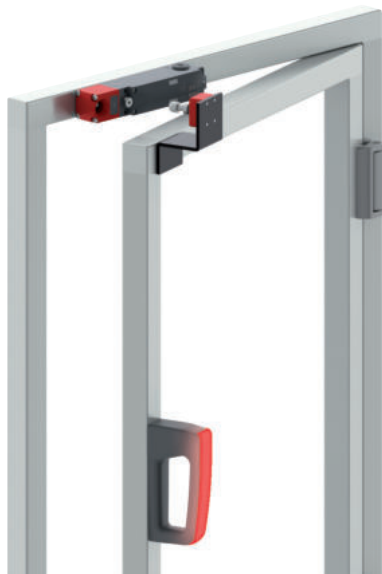
The P-KUBE Smart handle, with illuminated grip, allows the machine manufacturer to locally signal the state of the guard by using various colours, and fully customisable sequences. Thanks to RGB LED technology, the handle illumination is visible from a large distance; even in brightly-lit environments. The device illuminates in colours: green, yellow, red, blue, white, purple, light blue.



### Universal handle

The P-KUBE Smart handle is also available in the version without RFID tag, so that it can be used as a simple handle to open a guard, regardless of the type of safety switch with which the door interlock is made of.

In this configuration, it is possible to use the versions with illuminated grip, to create an integrated visual signal system without the need to install further devices on board of the machine.

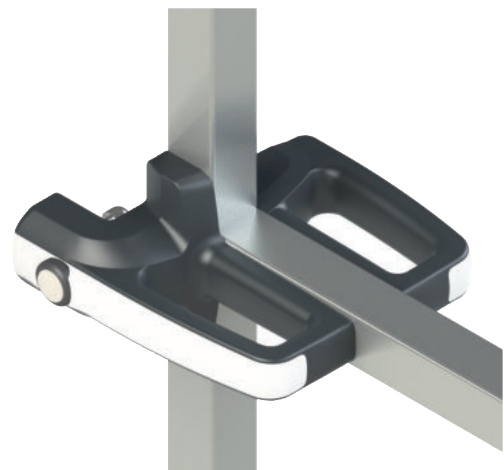


### Compatible with P-KUBE Krome

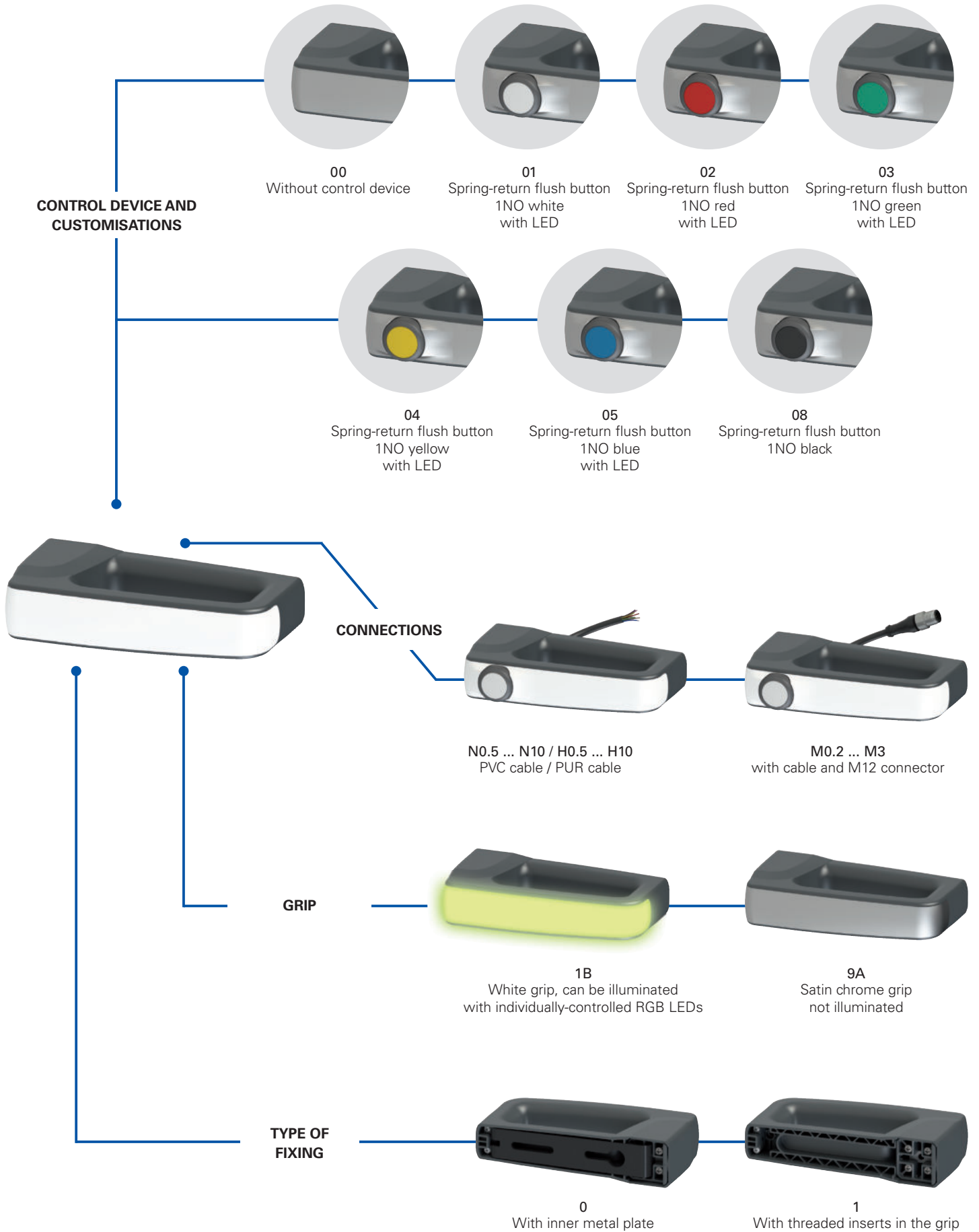
Designed with the same handle size and the same interaxle spacings for the fixing holes of the inner plate, the P-KUBE Smart series can be used as inner handle in guards using the P-KUBE Krome safety handle for NS and NG series RFID safety switches with lock.

The mounting turns out to be practical and quick, as the two handles can be fixed by using only two holes passing through the frame and two screws of adequate length.

All these elements put together form a system with uniform lines and with aesthetic continuity between the inner and outer handle.



## Selection diagram



- product option
- Product sold separately

## Code structure

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

article
options  
**ANT1B000A1-PN3**

### Device type

**T** For ST series RFID sensors

Note: the sensors must be purchased separately.

### Grip

**1B** White grip, can be illuminated with multicolor RGB LEDs supply voltage 24 Vdc

**9A** Satin chrome grip not illuminated

### Type of fixing

**0** With inner metal plate

**1** On the grip with threaded inserts

### Control device and customisations

**00** Without control device

**01** Spring-return flush button 1NO white with LED

**02** Spring-return flush button 1NO red with LED

**03** Spring-return flush button 1NO green with LED

**04** Spring-return flush button 1NO yellow with LED

**05** Spring-return flush button 1NO blue with LED

**08** Spring-return flush button 1NO black

1NO+1NC, 2NC or 2NO contacts available on request.

Other control devices on request.

For further information contact our technical department

### RFID coding

**Z** Without RFID tag

**0** With RFID tag with low coding level  
The ST sensor identifies any RFID tag of type 0

**1** With RFID tag with high coding level  
The ST sensor identifies one single RFID tag of type 1

### Cable type and connection

**M0.2** PVC cable, IEC 60332-1-2 oil resistant, length 0.15 m and M12 connector (standard)

**M0.5** PVC cable, IEC 60332-1-2 oil resistant, length 0.5 m and M12 connector

...

**M3** PVC cable, IEC 60332-1-2 oil resistant, length 3 m and M12 connector

**N0.5** PVC cable, IEC 60332-1-2 oil resistant, length 0.5 m

...

**N3** PVC cable, IEC 60332-1-2 oil resistant, length 3 m (standard)

...

**N10** PVC cable, IEC 60332-1-2 oil resistant, length 10 m

**H0.5** PUR cable, halogen free, length 0.5 m

...

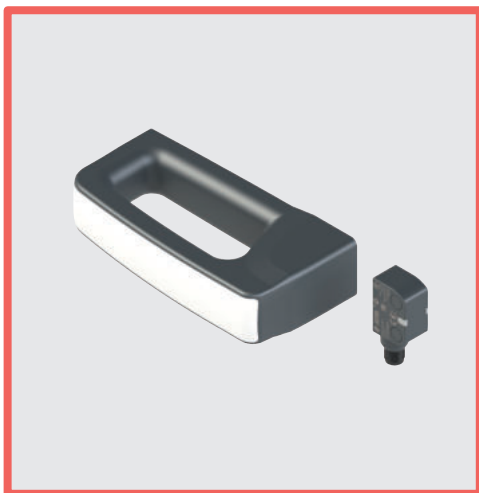
**H3** PUR cable, halogen free, length 3 m (standard)

...

**H10** PUR cable, halogen free, length 10 m

### Output direction, connections

**P** rear output



## Main features

- Modern and ergonomic design
- Versions with integrated RGB LEDs, for local signalling of guard state
- Customisable multicoloured illumination
- Illuminated control button integrated into grip
- Possibility of application with horizontal or vertical handle
- Direct fixing on the grip or through solid inner plate
- Usable with ST series RFID safety sensors

## Quality marks:



UL approval: E131787  
EAC approval: RU C-IT.YT03.B.00035/19

## Features approved by UL

Environmental ratings:  
Type 4X, 12, 13 (models without control component).  
Type 1 (models with control component).

Electrical ratings:  
Main rating (LED supply): 24 Vdc Class 2, 60 mA  
Secondary ratings (Contacts ratings control component):  
Silver contacts: 24 Vac Class 2, 1 A, Pilot Duty  
24 Vdc Class 2, 0.27 A, Pilot Duty  
Golden contacts: 24 Vdc Class 2, 100 mA

## Technical data

### Materials

Internal fixing plate in steel, oven-cured powder-coated.  
Glass fibre reinforced technopolymer grip, self-extinguishing and shock-proof.

### Electrical cables

Integrated mobile installation cable 8 x 0.25 mm<sup>2</sup> or 5 x 0.25 mm<sup>2</sup>.  
Versions with 3 m integrated cable, other lengths 0.5 to 10 m on request.  
Versions with 0.15 m cable length and M12 connector, other lengths 0.15 ... 3 m available on request.

### General data

Protection degree  
Versions with control device: IP65 acc. to EN 60529  
Versions without control device: IP67 acc. to EN 60529  
IP69K acc. to ISO 20653  
Ambient temperature: -20 ... +50°C  
Storage temperature: -40 ... +75°C  
Mission time: 20 years

### Power supply electrical data

Rated operating voltage  $U_e$ : 24 Vdc  $\pm$  15%  
Operating current at  $U_e$  voltage: 60 mA max  
External protection fuse: 1 A type Gg or equivalent device

### Electrical data of RGB LED control inputs

Rated operating voltage  $U_{e1}$ : 24 Vdc  
Operating current at  $U_{e1}$  voltage: 5 mA  
RGB LED life: min. 100,000 hours at rated voltage and +25 °C ambient temperature

### Technical data of the control devices

Mechanical endurance: 1 million operating cycles  
Actuating force: 4 N min, 100 N max  
Material of the contacts: silver contacts  
Contact type: Self-cleaning contacts with double interruption  
Thermal current  $I_{th2}$ : 1 A  
Rated insulation voltage  $U_{i2}$ : 32 Vac/dc  
Rated impulse withstand voltage  $U_{imp2}$ : 1.5 kV  
LED supply voltage: 24 Vdc  $\pm$  15%  
Single LED supply current: 10 mA  
Utilization category of the contact block: DC13;  $U_{e2}$ =24 Vdc,  $I_{e2}$ =0.55 A

### Actuation data

Assured operating distance  $S_{ao}$ : 11 mm  
Assured release distance  $S_{ar}$ : 24 mm  
Rated operating distance  $S_n$ : 15 mm  
Rated release distance  $S_{nr}$ : 18.5 mm  
Repeat accuracy:  $\leq 10\%$   $s_n$   
Differential travel:  $\leq 20\%$   $s_n$   
RFID transponder frequency: 125 kHz  
Max. switching frequency: 1 Hz

### In compliance with standards:

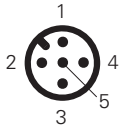
For articles with integrated electrical parts:  
IEC 60947-5-1, EN 60947-5-1, IEC 60947-1, EN 60947-1, IEC 60529, EN 60529, EN IEC 63000, UL 508, CSA 22.2 N. 14.

### Compliance with the requirements of:

For articles with integrated electrical parts:  
Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.  
For all products:  
RoHS Directive 2011/65/EU.

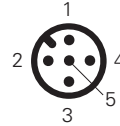


## Electrical connections



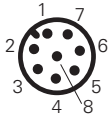
Versions with button  
articles AN T9A\*\*\*

Pin	Cable colour	Connection
1	brown	Supply to white button LED +24 Vdc
2	white	Supply to white button LED 0 V
3	blue	Disconnected
4	black	Button NO contact
5	grey	Button NO contact



Versions with illuminated grip  
articles AN T1B000\*

Pin	Cable colour	Connection
1	brown	Supply input +24 Vdc
2	white	Supply input +0 Vdc
3	blue	Control input blue (B) +24 Vdc
4	black	Control input red (R) +24 Vdc
5	grey	Control input green (G) +24 Vdc



Versions with button and illuminated grip  
articles AN T1B\*\*\*

Pin	Cable colour	Connection
1	white	Supply input +0 Vdc
2	brown	Supply input +24 Vdc
3	green	Control input green (G) +24 Vdc
4	yellow	LED power supply for button lighting +24 Vdc
5	grey	Button NO contact
6	pink	Button NO contact
7	blue	Control input blue (B) +24 Vdc
8	red	Control input red (R) +24 Vdc

### LED grip lighting combinations

R	G	B	Colour	R	G	B	Colour
0	0	0		1	1	0	
1	0	0		1	0	1	
0	1	0		0	1	1	
0	0	1		1	1	1	

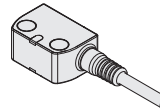
0 = colour control input off, 1 = colour control input on.

## Selection table for sensors

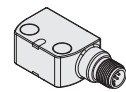
OS safety outputs  
O signalling outputs  
IS safety inputs  
I programming inputs  
EDM inputs  
Programmable



with 0.2 m cable length and M12 connector



with cable

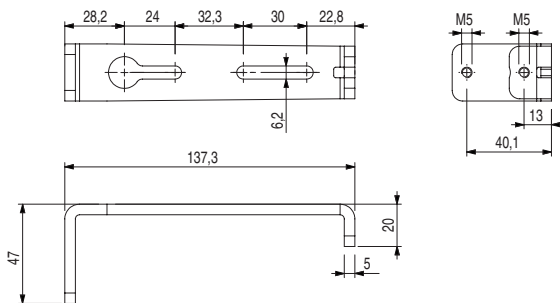


with M12 connector

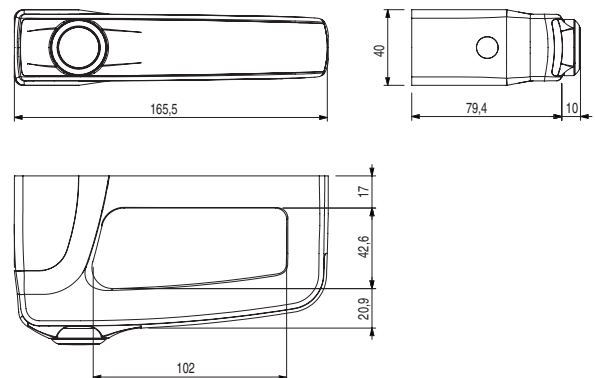
2	1	2	1	-	•	ST GD420M0.2	ST GD420N•	ST GD420MP
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## Dimensional drawings

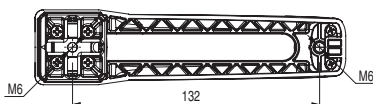
### Internal fixing plate (articles AN T••0••••)



### Grip



### Threaded fixing inserts (articles AN T••1••••)



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



General Catalogue  
Lift



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



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