Description

This system with integrated closing mechanism is used on safety doors or safety enclosures as well as anywhere it is necessary to control access to dangerous areas of machines or systems.

The new safety handle P-KUBE 2, installed in combination with the NG series RFID safety switch with guard locking, provides an integrated locking system for the guards and access control to dangerous areas; this new combination makes it possible to obtain, with a single device, an access control function with the maximum PL e safety level according to EN 13849-1 or SIL 3 according to EN 62061.

Maximum safety with a single device

PL e + SIL 3 The the NG series switches combined with the P-KUBE 2 handle are constructed with redundant electronics. As a result, the maximum PL e and SIL 3 safety levels can still be achieved through the use of a single device on a guard. This avoids expensive wiring in the field and allows faster installation. Inside the control cabinet, the two electronic safety outputs must be connected to a safety module with OSSD inputs or to a safety PLC.

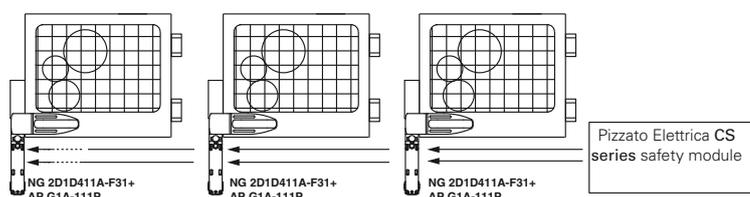## Series connection of several switches

PL e + SIL 3 One of the most important features of the NG series combined with the P-KUBE 2 handle is the possibility of connecting up to 32 sensors in series, while still maintaining the maximum safety levels PL e laid down in EN 13849-1 and SIL 3 acc.

to EN 62061.

This connection type is permissible in safety systems which have a safety module at the end of the chain that monitors the outputs of the last NG switch.

The fact that the PL e safety level can be maintained even with 32 sensors connected in series demonstrates the extremely secure structure of each single device.

NG 2D1D411A-F31+
AP G1A-111P
NG 2D1D411A-F31+
AP G1A-111P
NG 2D1D411A-F31+
AP G1A-111P

Pizzato Elettrica **CS series** safety module

RFID actuators with high coding level

The NG series is provided with an electronic system based on RFID technology to detect the actuator. This allows to provide each actuator with different coding and makes it impossible to tamper with a device by using another actuator of the same series. Millions of different coding combinations are possible for the actuators. They are therefore classified as high level coded actuators, according to EN ISO 14119.

Emergency release button
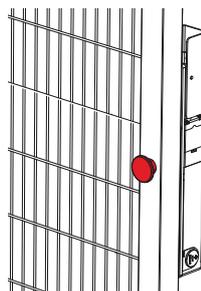
The release button oriented towards the inside of the machine allows accidentally trapped personnel to escape from the danger area even during a power failure. To reset the switch, simply return the button to its initial position.

The emergency release button can be freely extended using the appropriate extensions, allowing its installation also on very thick jambs (see accessories).

High protection degree

IP69K IP67 These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and 80°C).

Centring
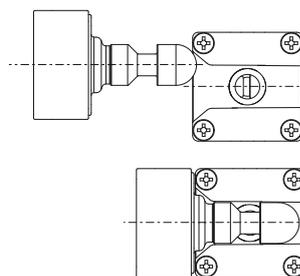
The switch is provided with a wide centring inlet for the actuator pin. This solution makes it easier to align the actuator and the opening hole on the head during installation. Moreover, this solution drastically reduces the probability of a collision between the switch and the actuator, making it possible to install the device even on inaccurately closing doors.

Dustproof
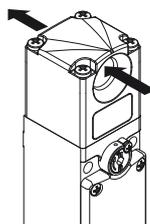
The switch is provided with a through hole for inserting the actuator. Thanks to this unique feature, any dust that enters the actuator hole can always come out on the opposite side instead of remaining inside. Moreover, the lock pin is provided with a diaphragm seal, making the system suitable for critical environments with a high level of dust.

## Six LEDs for immediate diagnosis
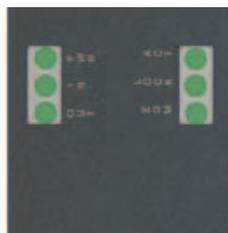
As the LEDs have been designed for quick immediate diagnosis, the status of each input and output is highlighted by one specific LED. This makes it possible to quickly identify the interruption points in the safety chain, which device is released, which door is opened and any errors inside the device. All of this at a glance, without needing to decode complex flashing sequences.

Easy to use

There are no specific sequences required for opening or closing the door, but only a single opening / closing movement.

If the door interlock is realised by means of a handle provided with a release push button, the door can be opened with a single movement even under stress (panic situations).
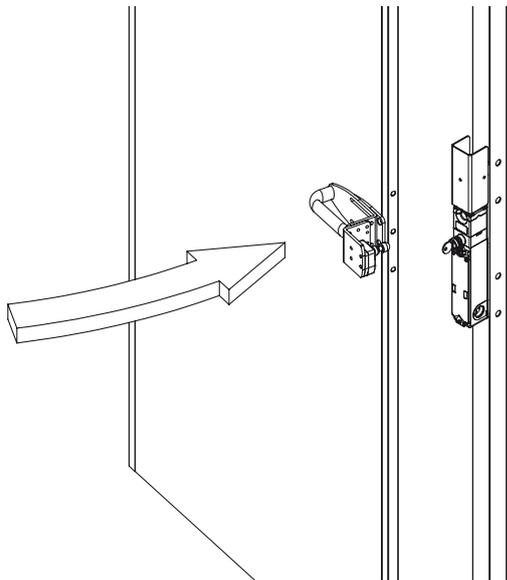
Holding force of the locked actuator

9750 N The robust interlocking system guarantees a maximum actuator holding force of F_{1max} = 9750 N. This is one of the highest values currently available on the market today, making this device suitable for heavy-duty applications.
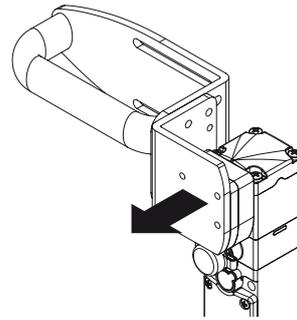
Holding force of the unlocked actuator

The inside of each switch features a device which holds the actuator in its closed position. Ideal for all those applications where several doors are unlocked simultaneously, but only one is actually opened. The device keeps all the unlocked doors in their position with a retaining force of 30 N~, stopping any vibrations or gusts of wind from opening them.
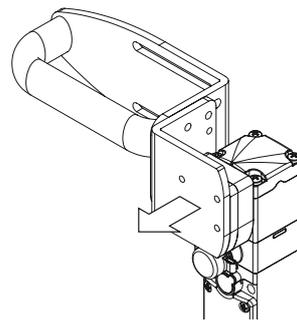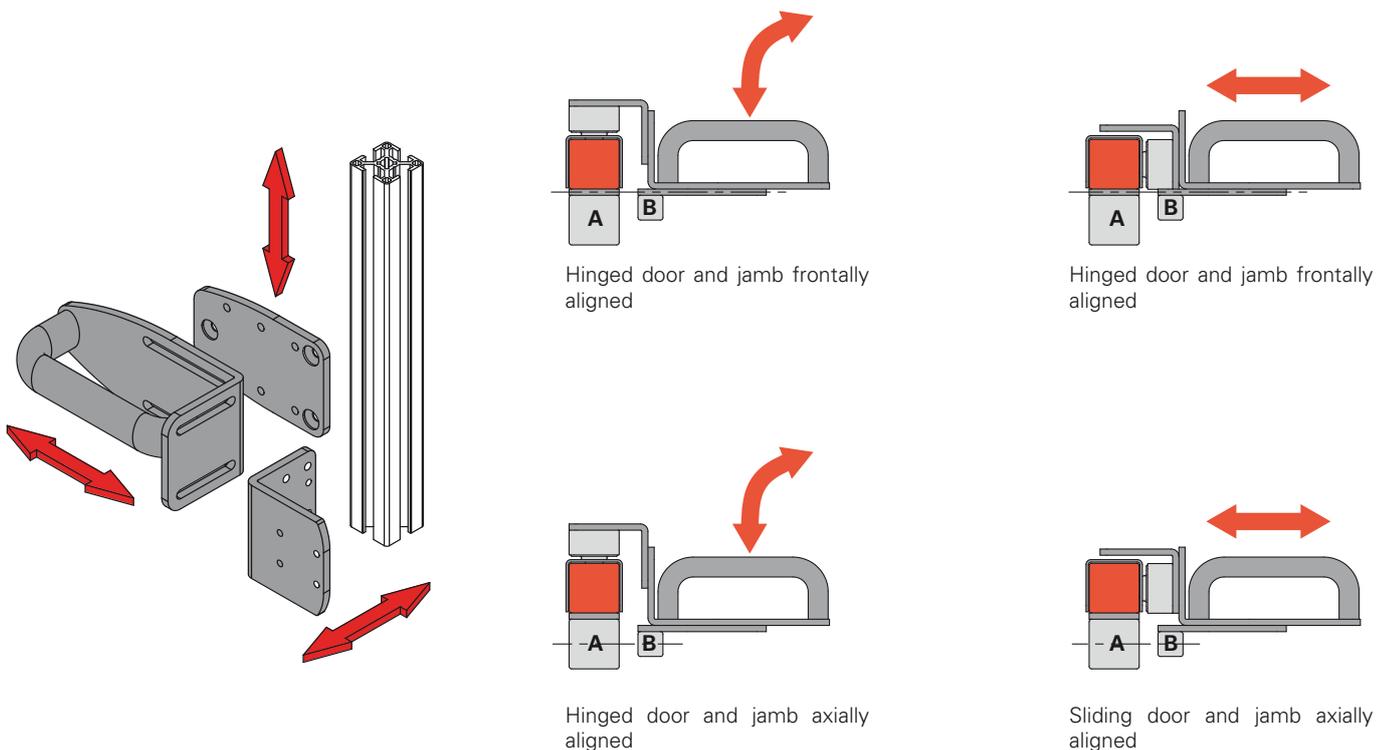
Sturdiness and easy installation

The handle is provided with 5 mm thick sturdy brackets in painted steel. The slots in the brackets allow independent adjustments to be performed. This ensures easy installation, eliminating the need to make changes to structure of the existing guard.

The adjustments make it possible to attach the handle to aluminium profiles or steel frames of various dimensions, from 40x40 mm to 80x80 mm for the frame jamb **(A)** and from 20x20 mm to 40x40 mm for the door **(B).**
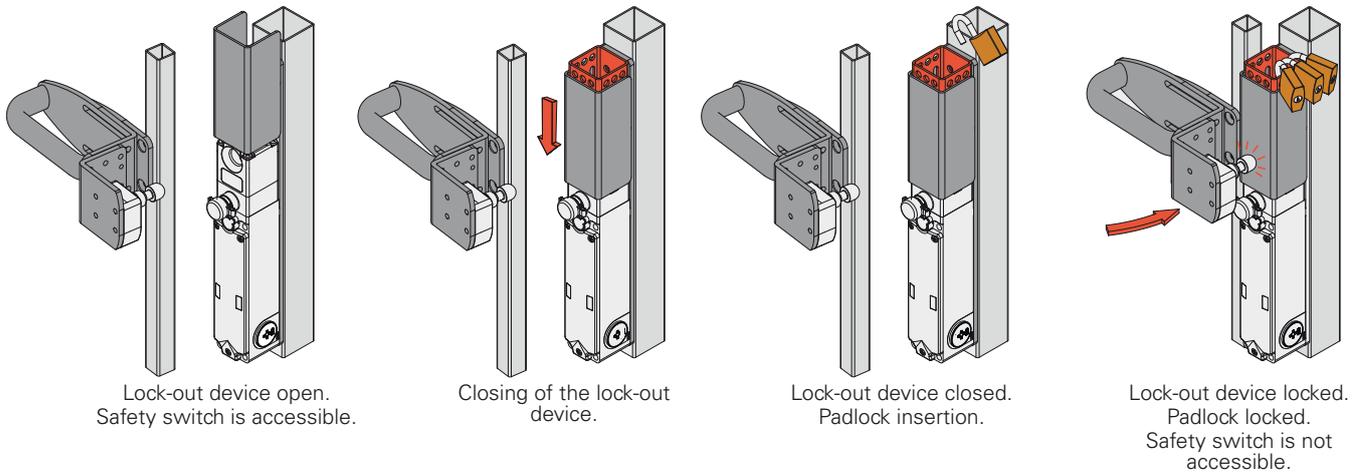
It can be installed both on hinged doors and sliding doors, either with right or left closing.

The handle is supplied with all of the components necessary for fastening at the appropriate distances with tamper-proof screws. The installer only has to assemble the components according to the application, fix the selected switch (supplied separately) and make centring adjustments.

Hinged door and jamb frontally aligned

Hinged door and jamb frontally aligned

Hinged door and jamb axially aligned

Sliding door and jamb axially aligned

Padlocking option for protecting against errors

The lock-out device is simply pushed downward to expose the holes for mounting padlocks. As a result, padlocks can no longer be mounted incorrectly, since the holes are not exposed until the switch is fully locked. 9 holes for padlocks with a diameter of 7 mm are present. The head of the switch can be quickly rotated in four different directions after loosening the fixing screws, while the lock-out device reliably protects on 3 sides. The lock-out device can thus be used on hinged and sliding doors – with both right and left closing – without any modification.

Lock-out device open.
Safety switch is accessible.

Closing of the lock-out device.

Lock-out device closed.
Padlock insertion.

Lock-out device locked.
Padlock locked.
Safety switch is not accessible.

LOCK-OUT: maximum safety with just one movement

With a single operation, the lock-out device can close the centring hole in the NG switch as well as shield the RFID recognition system for detecting the actuator. Accidental closing of the guard is thereby prevented by inhibiting both the mechanical locking of the door and the electrical switching of the switch contacts.
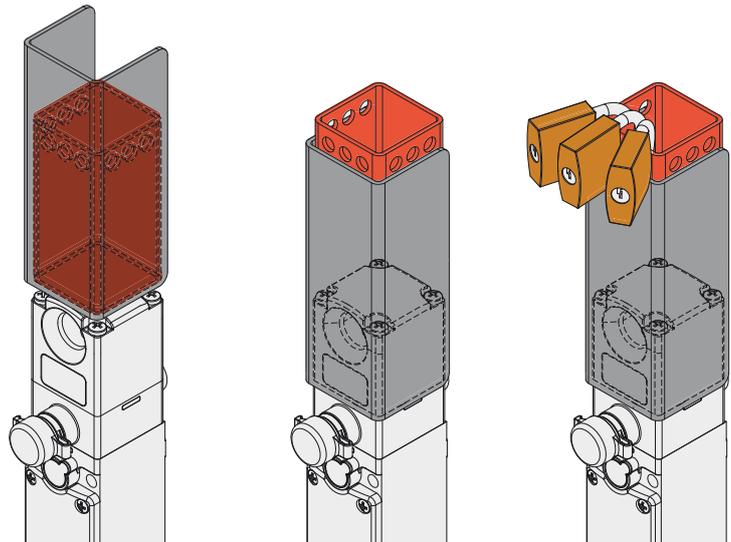
Head rotation

Because the lock-out device covers the switch head in the 3 possible approach directions, it can be used on hinged and sliding doors – with both right and left closing – without any additional modification.
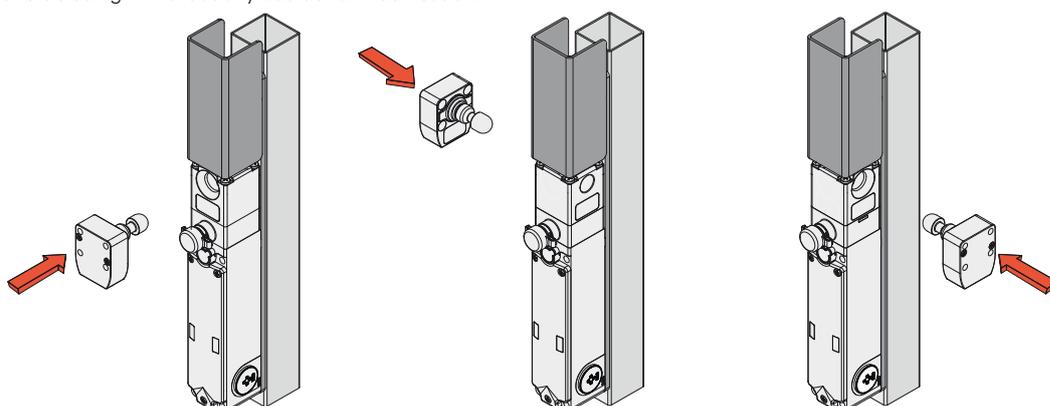
Code structure

Attention! The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.
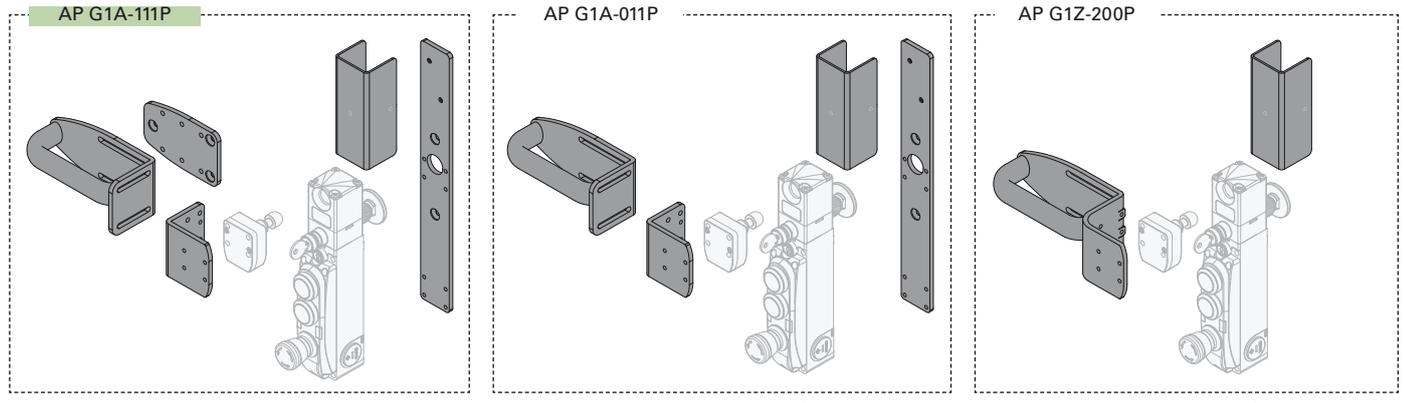
AP G1A-111P

LOCK OUT device	
1	LOCK OUT device
0	Without LOCK OUT device

Handle	
P	Plastic handle
M	Metal handle
Z	Without handle

Fixing on frames	
A	Long plate
B	Short plate
Z	Without plate

Plates for fastening the door handle	
000	Without door fastening plate
111	3 plates with multiple fastening options
011	2 plates with multiple fastening options
200	Configuration with 1 fixed plate

Note: the handle is supplied with fastening screws for the handle, for the switch, and for bolting the plates together.

AP G1A-111P

AP G1A-011P

AP G1Z-200P

In case of special applications, the LOCK-OUT device can also be supplied as single device.

Article	Drawing
AP G1Z-000Z	

NG 2D1D411A-F31

Safety locking switch, complete with separate actuator.

NG 2D5D411A-F31

Safety locking switch, complete with separate actuator.
With key release.

NG 2D6D411A-F31

Safety locking switch, complete with separate actuator. With key release and emergency release button.

NG 2D7D411D-F31

Safety locking switch, complete with separate actuator.
With emergency release button, lock and integrated control devices.

The NG series safety switch is also available in other versions. For further information see page 113.

AP G0B-111P

AP G0B-011P

AP G0Z-200P
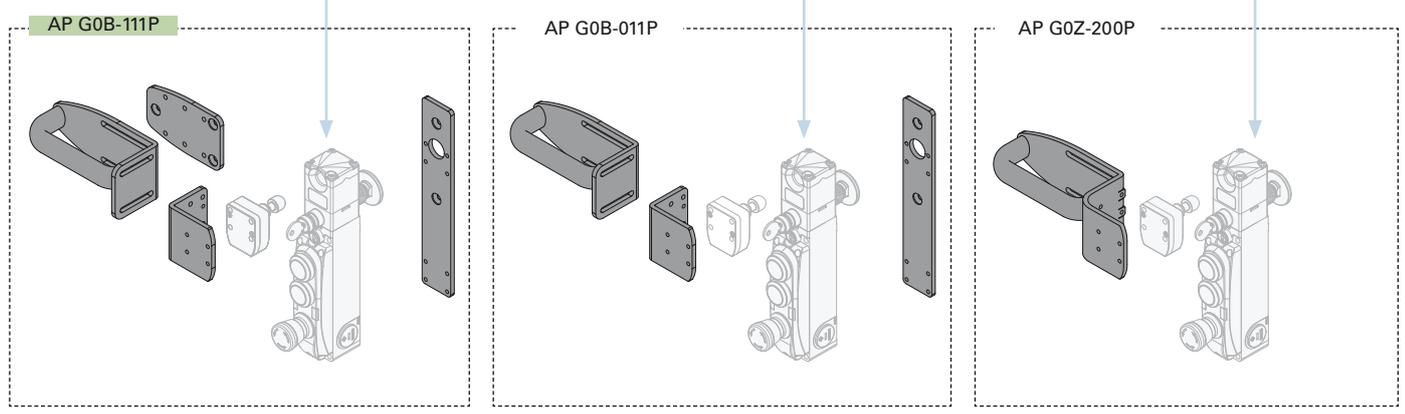
→ Sold separately as accessory

Items with code on **green** background are stock items

Profiled plate

Article	Description
AP A001	Profiled lateral plate

Profiled plate to be installed under the fixing plate of the switch. Suitable for both right and left mounting and provided with holes, this plate can be used for the installation of housings for the EROUND line button panels by Pizzato Elettrica (by means of common self-threading screws available on the market).
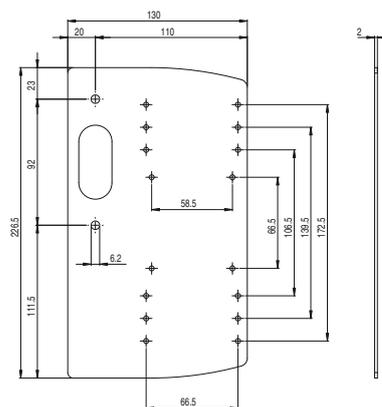
Bits for safety screws
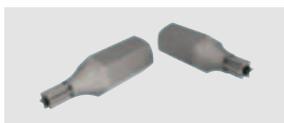
Bits for safety screws with pin, with ¼" hexagonal connection.

Article	Description
VF VAIT1T25	Bits for M5 screws with Torx T25 fitting
VF VAIT1T30	Bits for M6 screws with Torx T30 fitting

Adhesive labels for emergency release button

Polycarbonate yellow adhesive, rectangular, 300x32 mm, red inscription. It has to be fixed on the internal part of the jamb and helps finding the emergency release button.

Article	Description and language	
VF AP-A1AGR01	PREMERE PER USCIRE	ita
VF AP-A1AGR02	PUSH TO EXIT	eng
VF AP-A1AGR04	ZUM OFFNEN DRUCKEN	deu
VF AP-A1AGR05	POUSSER POUR SORTIR	fra
VF AP-A1AGR06	PULSAR PARA SALIR	spa
VF AP-A1AGR07	НАЖАТЬ ДЛЯ ВЫХОДА	rus
VF AP-A1AGR08	NACISNĄĆ ABY WYJŚĆ	pol
VF AP-A1AGR09	PRESSIONAR PARA SAIR	por

Complete housings for profiled plate

ES AC32010

Description	Features			Diagram
Button - 1NO E2 1PU2R421L35	flush, spring-return, green			
Contacts 1x E2 CF10G2V1	pos. 2 /	pos. 3 1NO	pos. 1 /	
Button - 1NC E2 1PU2S321L1	projecting, spring-return, red			
Contacts 1x E2 CF01G2V1	pos. 2 /	pos. 3 1NC ⊕	pos. 1 /	

ES AC32043

Description	Features			Diagram
Indicator light E2 1ILA210	white			
LED unit E2 LF1A2V1	White LED, 12 … 30 Vac/dc			
Button - 1NO E2 1PU2R4210	flush, spring-return, green			
Contacts 1x E2 CF10G2V1	pos. 2 /	pos. 3 1NO	pos. 1 /	

ES AC33076

Description	Features			Diagram
Illuminated button - 1NO E2 1PL2R2210	flush, spring-return, white			
LED unit E2 LF1A2V1	White LED, 12 … 30 Vac/dc			
Contacts 1x E2 CP10G2V1	pos. 2 /	pos. 3 LED	pos. 1 1NO	
Illuminated button - 1NO E2 1PL2R5210	flush, spring-return, yellow			
LED unit E2 LF1A2V1	White LED, 12 … 30 Vac/dc			
Contacts 1x E2 CP10G2V1	pos. 2 /	pos. 3 LED	pos. 1 1NO	
Emergency button Ø 40 mm- 2NC E2 1PERZ4531	rotary release, Ø 40 mm, red			
Label with shaped hole VE TF32G5700	yellow, 30x60 mm rectangular, no engraving			
Contacts 2x E2 CF01G2V1	pos. 2 1NC ⊕	pos. 3 /	pos. 1 1NC ⊕	

Accessories See page 299

Extensions for release button

| Article	Description	Drawing
VN NG-LP30	Metal extension for release button. For max. wall thickness of 30 mm	
VN NG-LP40	Metal extension for release button. For max. wall thickness of 40 mm	
VN NG-LP50	Metal extension for release button. For max. wall thickness of 50 mm	
VN NG-LP60	Metal extension for release button. For max. wall thickness of 60 mm	
VN NG-ERB	Red metal release button	
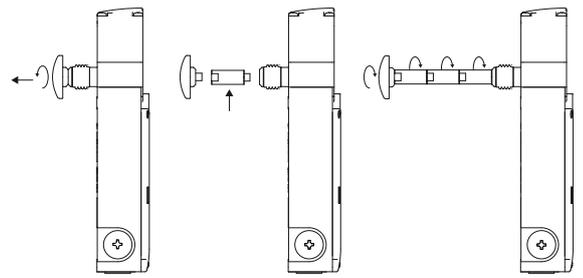
- Metal extensions can be combined with one another to achieve the desired length.
- Do not exceed an overall length of 500 mm between the release button and the switch.
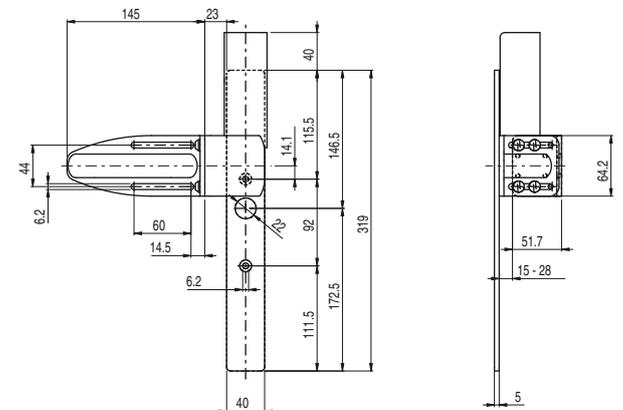- Use medium-strength thread locker to secure the extensions
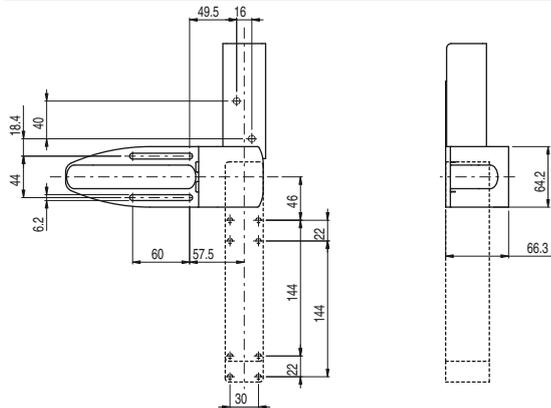
Dimensional drawings

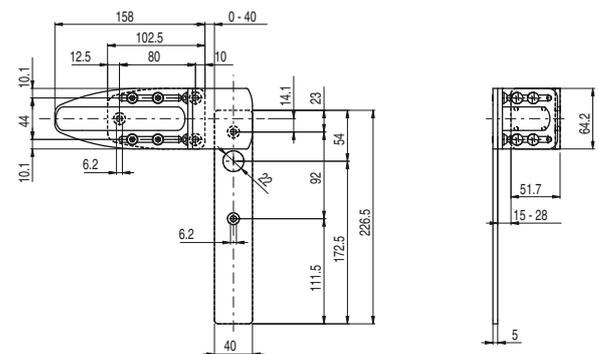All values in the drawings are in mm

AP G1A-111• safety handles
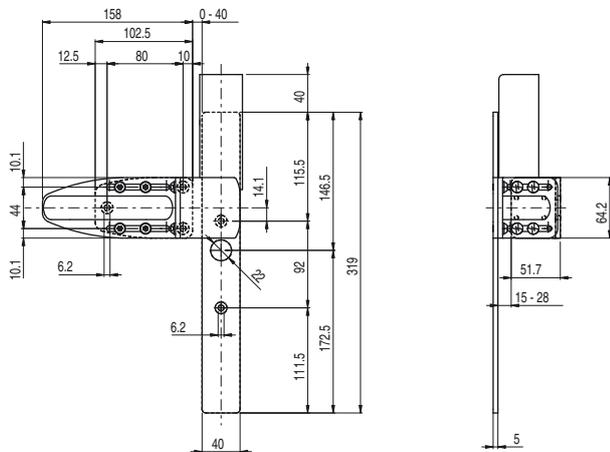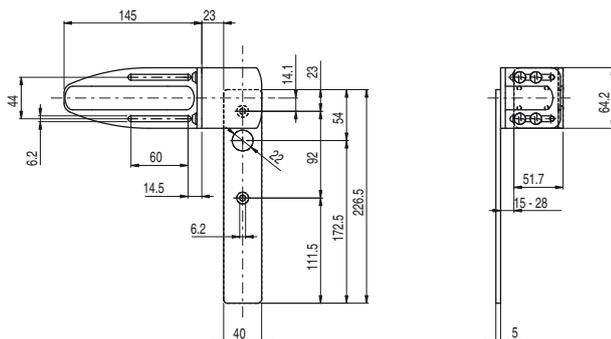

AP G1A-011• safety handles
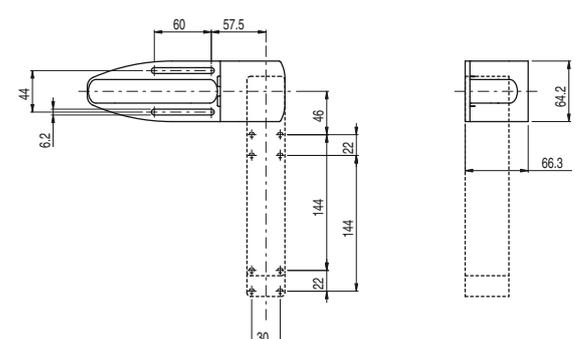

AP G1Z-200• safety handles

AP G0B-111• safety handles

AP G0B-011• safety handles

AP G0Z-200• safety handles

Items with code on **green** background are stock items

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