

Introduction

To apply safety switches on machinery guards it is necessary to confront with practical issues relating to ease of installation, precise mechanical movements of the guard, the occurrence of critical environmental conditions.

Moreover, frequently the guards are used by clumsy operators and in some cases even by persons not qualified or not familiar with the operative principles of machineries.

These problems become important when the guard is a door to a protected area. The physical dimensions of this type of repair and the related construction tolerances cause problems of alignment with the consequent risk of damage to the security devices.

The possibility that one or more operators access physically within the protected zone introduces further problems of management and the analysis of the risks of the machine must forecast situations such as accidental trapping of an operator within the danger zone, sometimes even unauthorized operators as employees cleaners.

From its experience in this field, Pizzato Elettrica has created an innovative line of safety handles called P-KUBE with all the characteristics necessary to decrease the risks for the machinery manufacturers, make life simpler for the installers and make easier and more intuitive the operations for the operators getting in and out of the area.

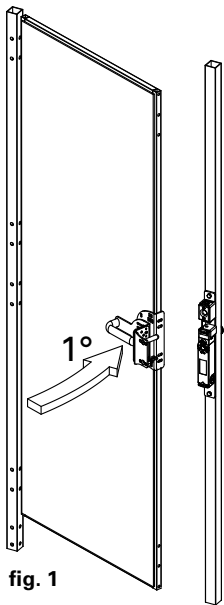


fig. 1

The basic principle of this series of products provides a system of centering and mechanical stopping along the direction of movement of the door (Fig. 1).

This way the operator is allowed to go in and out of the danger area with simple and natural movements.

Especially in the case of staff trapped, with people taken by panic or not instructed, to avoid complex movements to escape the danger zone greatly reduces the likelihood of accidents.

The centering device is extremely sturdy and can also be used for heavy applications or in presence of inattentive staff.

These handles are designed for use with switches equally sturdy, capable of withstanding the most axial loads, such as switches FG series with solenoid with holding force up to 2500 N or metal switches FD series. The safety handle mounted in combination with a FG or FD series switch, creates an integrated system of guards closure with the relative access control to dangerous areas, which prevents the restart of the machine in case of protection open.

Some versions are provided with a "lock-out" device to block the door in open position and to prevent an unexpected restart of the system when a maintenance man enter the area.

Thanks to their adjustable structure the handles can be applied to different types of doors or barriers: swing or sliding, right or left

and on different profiles.

The handle comes with all components designed to be attached at the correct mechanical distances through anti-tampering screws. The installer should only assemble the parts according to the application, set the chosen switch (provided separately) and make centering adjustments.

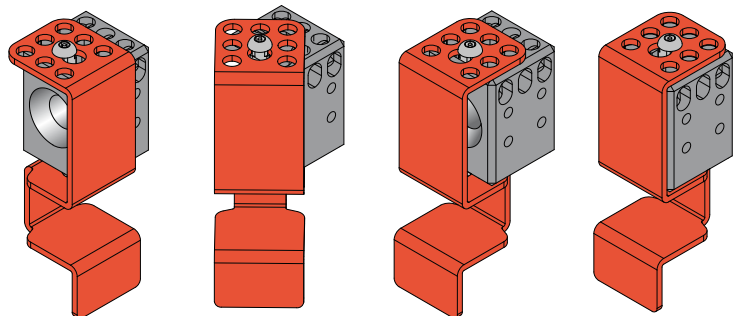
Main data

- Easy functioning. To open or close the door there are no specific sequences needed but only intuitive actions.
- Handle provided with a self-centering sturdy metal pin in order to have the alignment between the jamb and the door. This device works also as a door mechanical stop.
- Possibility to assemble it on swing and sliding doors.
- Possibility to adjust the handle on 3 different axis through slotted brackets.
- Easy installation.
- Optional Lock-out device with padlocks to avoid the unwanted or accidental closing of the protection by the insertion of the actuator in the switch
- In case of door blocked by a FG series switch provided with a release push button, you can open it in a single operation even if under strain (panic situation).
- Sturdy painted brackets (thickness of 4 and 5 mm), stainless steel components.
- Compatible with safety switch FD series with separate actuator and safety switch FG series with solenoid.

LOCK OUT (patent pending)

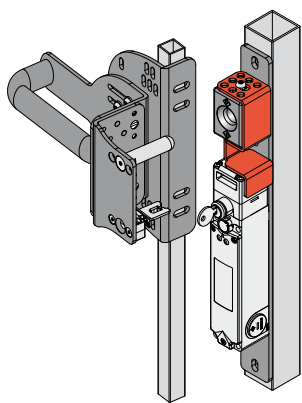
By means of one single operation, the "lock-out" device can close both the centring hole and the slot for the actuator fitted in the switch, therefore making it impossible for the door to be closed mechanically and for the switch contacts to be switched electrically.

The "lock-out" device translates the red cover in such a way that the holes found in the cover do not coincide with the holes found in the underlying metal block. This makes it impossible for the device to be padlocked in its open position.

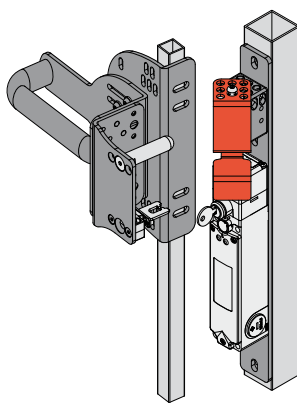




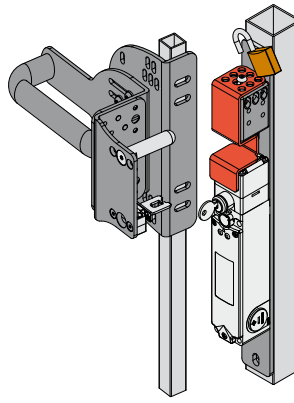
LOCK OUT device working cycle



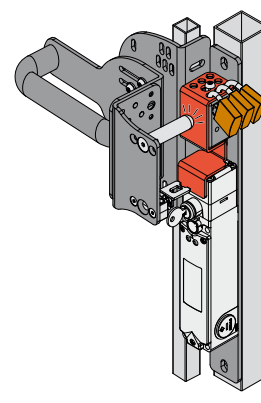
Lock-out device open
Safety switch accessible



Lock-out device closing

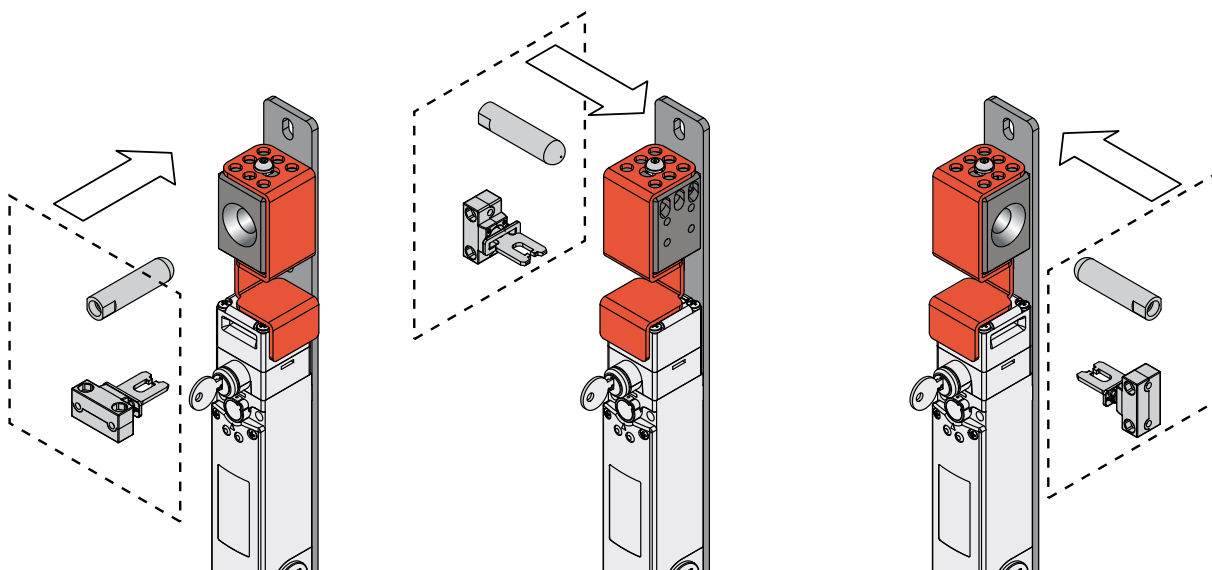


Lock-out device closed
Padlock insertion



Lock-out device locked
Padlock locked
Safety switch not accessible

Rotating centering block

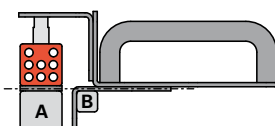
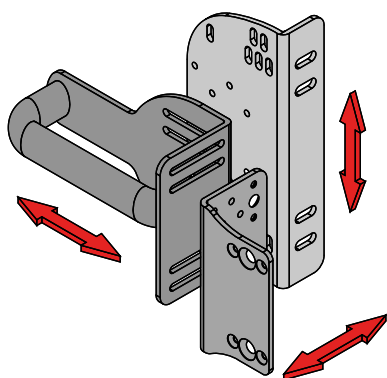


The symmetrical shape of the Lock-out device allows it to be applied on swing and sliding doors, both right and left, not altering either its centering function nor the possibility to apply one or more padlocks

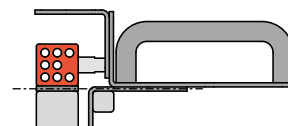
Adaptability and assembling on different profiles

The slots on the three brackets applied on the door allow independent adjustments on 3 axis, in order to provide an extremely easy assembling without any modification on the protection structure. The adjustments allow to apply the handle on door profiles of different dimensions, from 40x40 mm to 60x60 mm (A) on posts and from 20x20 mm to 40x40 mm (B) on the door. The brackets are joined between them through anti-tampering screws.

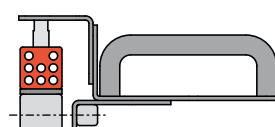
Thanks to its vertical design, the bracket containing the safety switch and the Lock-out device doesn't stick out more than the posts.



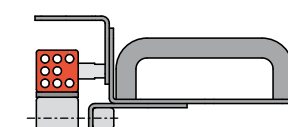
Swing door and jamb frontally aligned



Sliding door and jamb frontally aligned



Swing door and jamb axially aligned



Sliding door and jamb axially aligned

Code structure

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

VF AP-P11A-200P

LOCK OUT device

- 1 with LOCK OUT device
- 0 centering block only
- 2 with LOCK OUT device with 100 N holding force

Brackets preset for fixing

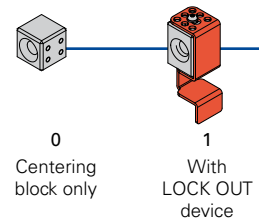
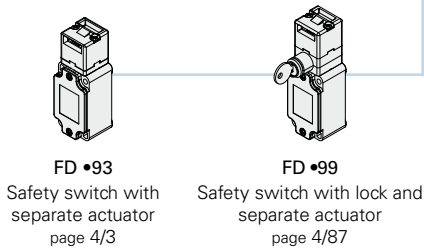
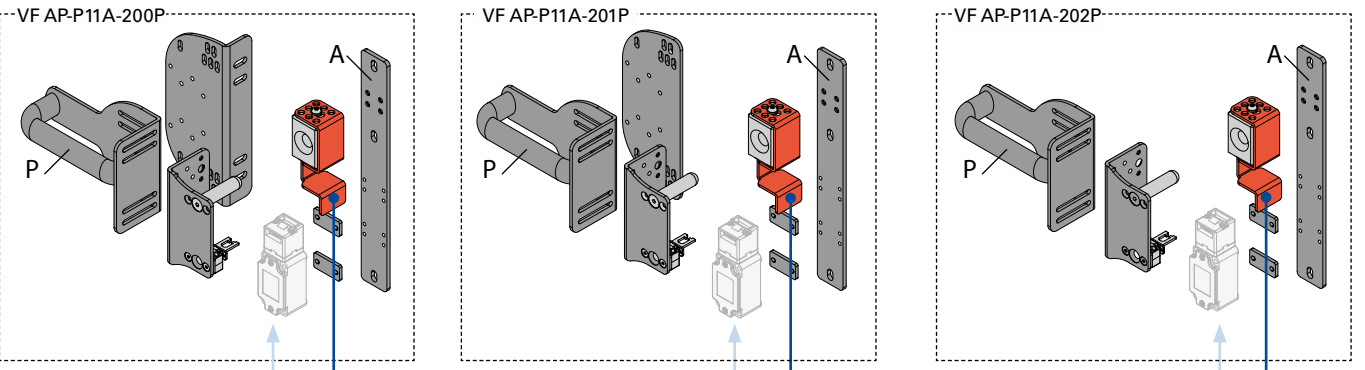
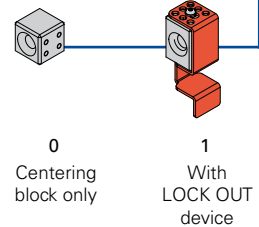
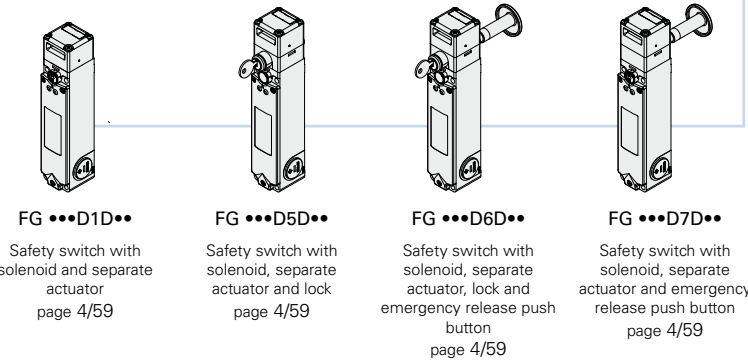
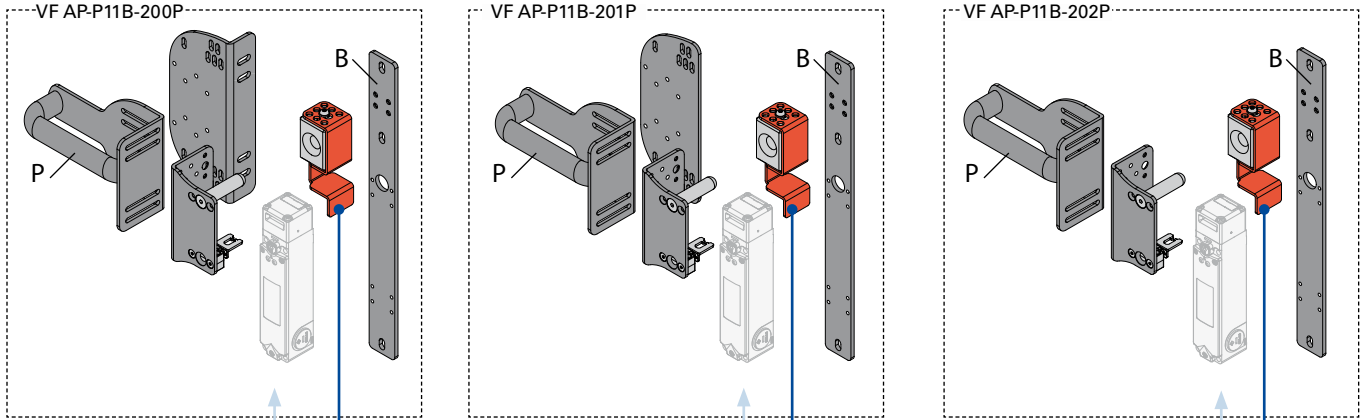
- A FD ••••
- B FG ••••••••
- Z without plate (B) for brackets FG
- Y without plate (A) for brackets FD

Handle

- P plastic handle
- M metal handle

Plates configuration

- 200 configuration with adjustable "L" plate for door profile
- 201 configuration with adjustable plain plate for door profile
- 202 configuration without adjustable plate for door profile



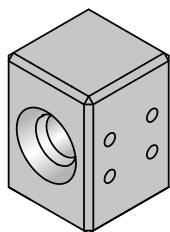
● product option
 → accessory sold separately



Application field

This integrated closing device can be applied on guards or protections of perimetric safety barriers, where it is required control on access to dangerous areas of a machinery or plant.

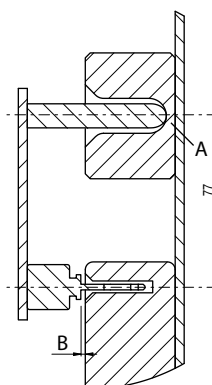
Sturdiness and simplicity



Its special design and materials allow the safety handle to be used in heavy applications or with sturdy wide-ranging (700 mm minimum) protections. In particular:

- 4 and 5 mm sturdy painted brackets.
- Stainless steel single body centering block
- Stainless steel centering pin with a large diameter .
- Actuator maximum holding force equal to 2500N (versions with FG switches).
- Stainless steel bolts and screws and elastic washers (safety inserts excluded, see page 4/97).

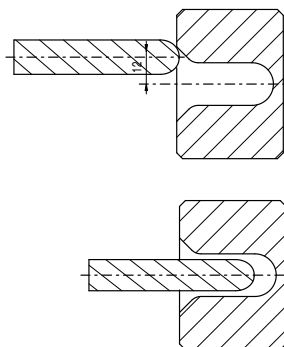
Mechanical stop



When the door closes the metal pin goes to the bottom of the centering block (A) before the actuator hits the housing of the switch, leaving a distance of security (B), thus avoiding any damage.

The metal pin only hits surfaces which transmit the shock to the structure but not to the switch, regardless of whether the lock-out device is open or closed.

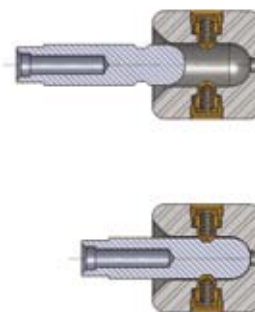
Centering



The centering of the pin on the block, both made of stainless steel, forces the alignment between actuator and switch, ensuring a proper insertion without risk of collisions.

It allows to safely realign the protection to the frame, even with heavy misalignment.

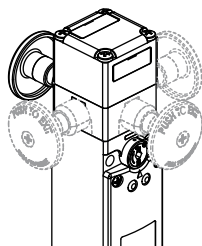
Holding force 100 N



A new version of the lock-out device with a holding force equal to 100 N is available on request. This renovated device has been added with a new holding function, made available on request. This new optional function keeps the handle in its limit-stop closed position, and makes it necessary to exert a moderately energetic pull to open the door. Ideal for all those applications where several doors are unlocked simultaneously, but only one is actually opened, this device keeps all the unlocked doors

in position, preventing them from being opened by any vibration or gusts of wind. Machine restarting will therefore be very quick, since it will no longer be necessary to reposition to their limit stop the unlocked doors which may have been inadvertently opened.

Emergency release push button (FG series)

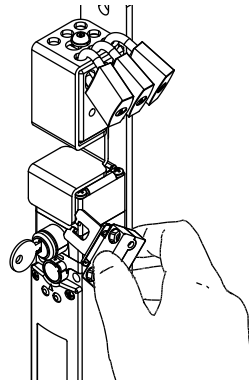


For FG series switches with actuator lock is available an emergency push button which, oriented towards the inside of the machinery, allows the exit of the operator accidentally trapped, even in case of total blackout.

Pushing the button, it will be actuated the same function of the auxiliary release device. To reset the switch, restore the button to the initial position.

The emergency button can be rotated, it's available in different lengths and it's fixed to the switch by a screw, to allow the installation of the switch inside or outside the guards.

Non-possibility to bypass with a loose actuator



Once operated and locked the lock-out device, the actuator entry of the switch is no longer accessible.

An operator who has a second separate actuator can not by-pass the device block and operate the switch.

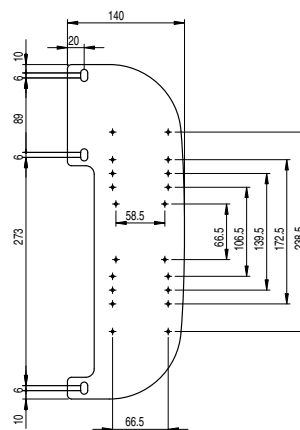
Shaped plate



Article	Description
VF AP-C001	Lateral shaped plate for push-button panel



The shaped plate can be applied under the switch fixing plate. It can be installed both on the right or on the left side allowing the fixing of a push-button panel. It can be fitted to the right or to the left, it is supplied with holes and used to fasten the boxes for Pizzato Elettrica EROUND push-button panels by means of commercial self-threading screws. See ES series on page 3/63.



Safety inserts kit



Kit with 3 pcs hexagonal 1/4" safety inserts. Connection DIN 3126, C 6,35. Hexagonal impression with hole. The P-Kube safety handle is provided with anti-crash screws. Therefore it requires the use of the 3 kit safety insert.

Article composition VF AP-K01:

Qty	Description	⊙	Length
1	hexagonal 1/4" insert for M5 screws	3 mm	25 mm
1	hexagonal 1/4" insert for M6 screws	4 mm	25 mm
1	hexagonal 1/4" insert for M8 screws	5 mm	25 mm

Release push button adhesive



Polycarbonate yellow adhesive, rectangular 300x32 mm, red writing. Applied on the jamb internal part it helps finding the emergency release push button.

Article	Description
VF AP-A1AGR01	"PREMERE PER USCIRE "
VF AP-A1AGR02	"PUSH TO EXIT "
VF AP-A1AGR04	"ZUM OFFNEN DRUCKEN "
VF AP-A1AGR05	"POUSSER POUR SORTIR "
VF AP-A1AGR06	"PULSAR PARA SALIR "
VF AP-A1AGR07	"НАЖАТЬ ДЛЯ ВЫХОДА "
VF AP-A1AGR08	"NACISNAĆ ABY WYJŚĆ "
VF AP-A1AGR09	"PRESSIONAR PARA SAIR "

Safety switches FD and FG series

Safety switch with separate actuator **FD series**



Main data

- Metal housing or polymer housing, from one to three conduit entries
- Protection degree IP67
- 9 contact blocks available
- 6 stainless steel actuators available
- M12 assembled connector versions
- Silver contacts gold plated versions



Safety switch with solenoid and separate actuator **FG series**

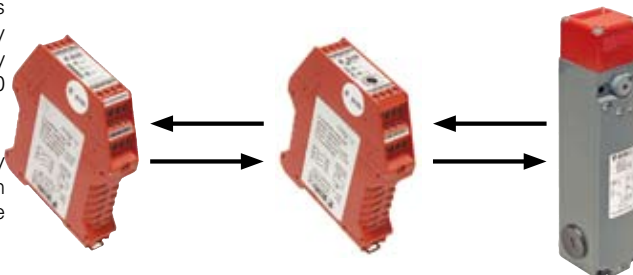
Main features

- Actuator holding force 2500 N
- 20 contact blocks with 4 poles
- Metal housing, three conduit entries M20
- Protection degree IP67
- Version with lock release device and emergency release push button
- 4 stainless steel actuators
- Rotating head and devices and not detachable
- Signalling LED
- Working with energized or de-energized solenoid

Safety modules CS series

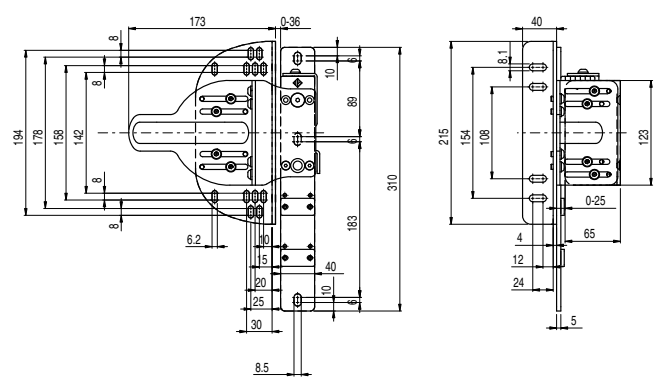
Pizzato Elettrica offers its customers a wide range of safety modules make considering the typical problems about the control of the safety switches and their real use conditions. There are available safety modules with instantaneous or delayed contacts used for the type 0 emergency circuits (immediate stop) or type 1 (monitored stop).

Safety switches with solenoid FG series could be connected to safety modules in order to obtain safety circuits up to PLe in accordance with EN ISO 13849. For any technical information or wiring diagram please contact our technical staff.

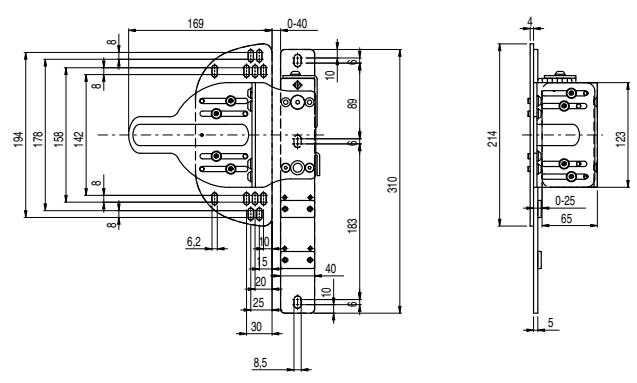


Dimensional drawings

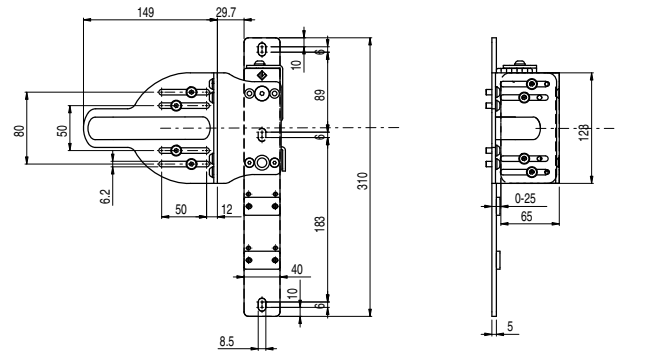
Safety handle VF AP-P1•A-200•



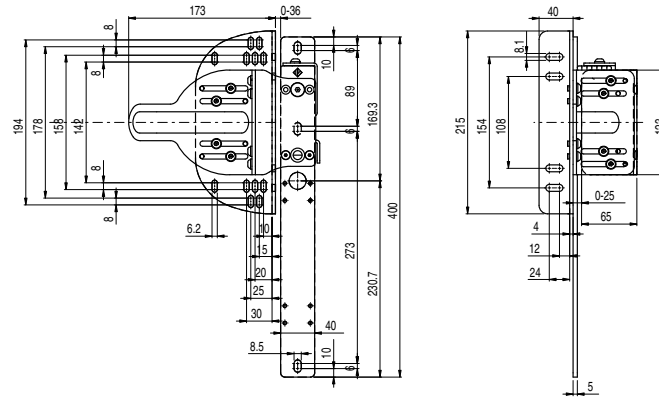
Safety handle VF AP-P1•A-201•



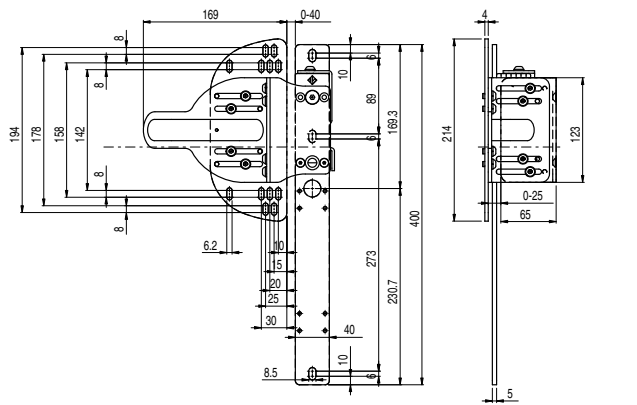
Safety handle VF AP-P1•A-202•



Safety handle VF AP-P1•B-200•



Safety handle VF AP-P1•B-201•



Safety handle VF AP-P1•B-202•

