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FCR

POSITION LIMIT SWITCH



Before use, read this booklet carefully to acquaint yourself with the features of the product. This booklet is an integral part of the product and therefore must be kept until the product is dismissed.



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Position limit switches FCR are designed and manufactured according to IEC international standard and EN European regulations.



Any improper installation or any tampering of the device may cause serious personnel injury or property damage, therefore, the installation and maintenance must be performed by specialized and authorized personnel.



The use of this device is not allowed in environment with a potentially explosive atmosphere or in presence of corrosive substances and in salt spray.



The FCR limit switches rotary gear position are used to control several handling systems:

- **Bridge cranes:** the limit switch controls the operating system, for example a PLC, and allows the bridge crane to slow down or stop.
- **Hoists:** the limit switch is used to stop the hoist whenever it reaches a limit position.



They are suitable for use in industrial environment with machinery monitoring and protection purpose.

SPECIFICATIONS

General technical data

Standards	IEC/EN 60947/3
Case	self extinguishing housing V0 UL94
Protection class IEC/EN 60529	IP65 double insulation
Cable entry	Ø 22.5 mm
Operating temperature	-25 ... +55°C
Storage temperature	-30 ... +70°C
Notes	- 300 mm adjustable aluminium rods with "0" indicator - reinforced mechanical stop

Cam switch technical data

Product ID	P016 Giovenzana line		
Rated enclosed thermal current	I _{the}		16 A
Rated insulation voltage	U _i		690 V
Connections	terminals gauge	EN60947-1	A3
	terminals screw		M3.5
	tightening torque	EN60947-1 UL508	0.8 N×m / 7.2 lb×in 7.5 lb×in / 0.85 N×m
Connectable section	flexible cable		1 × 0.75 ... 4 mm ² or 2 × 0.75 ... 2.5 mm ² 18 ... 10 AWG
	rigid cable		1 × 0.75 ... 4 mm ² or 2 × 0.75 ... 2.5 mm ² 18 ... 10 AWG
Contacts	double breaking		

Certifications

Limit switches FCR series are in conformity with the following standards or other normative documents:

EN 60947-1	2007/A1 : 2011/A2 : 2014
EN 60947-3	2009/A1 : 2012/A2 : 2015
EN 60204-1	2006/A1 : 2009
EN 60529	1991/A1 : 2000/A2 : 2013
EN 50581	2012
IEC 63000	2016

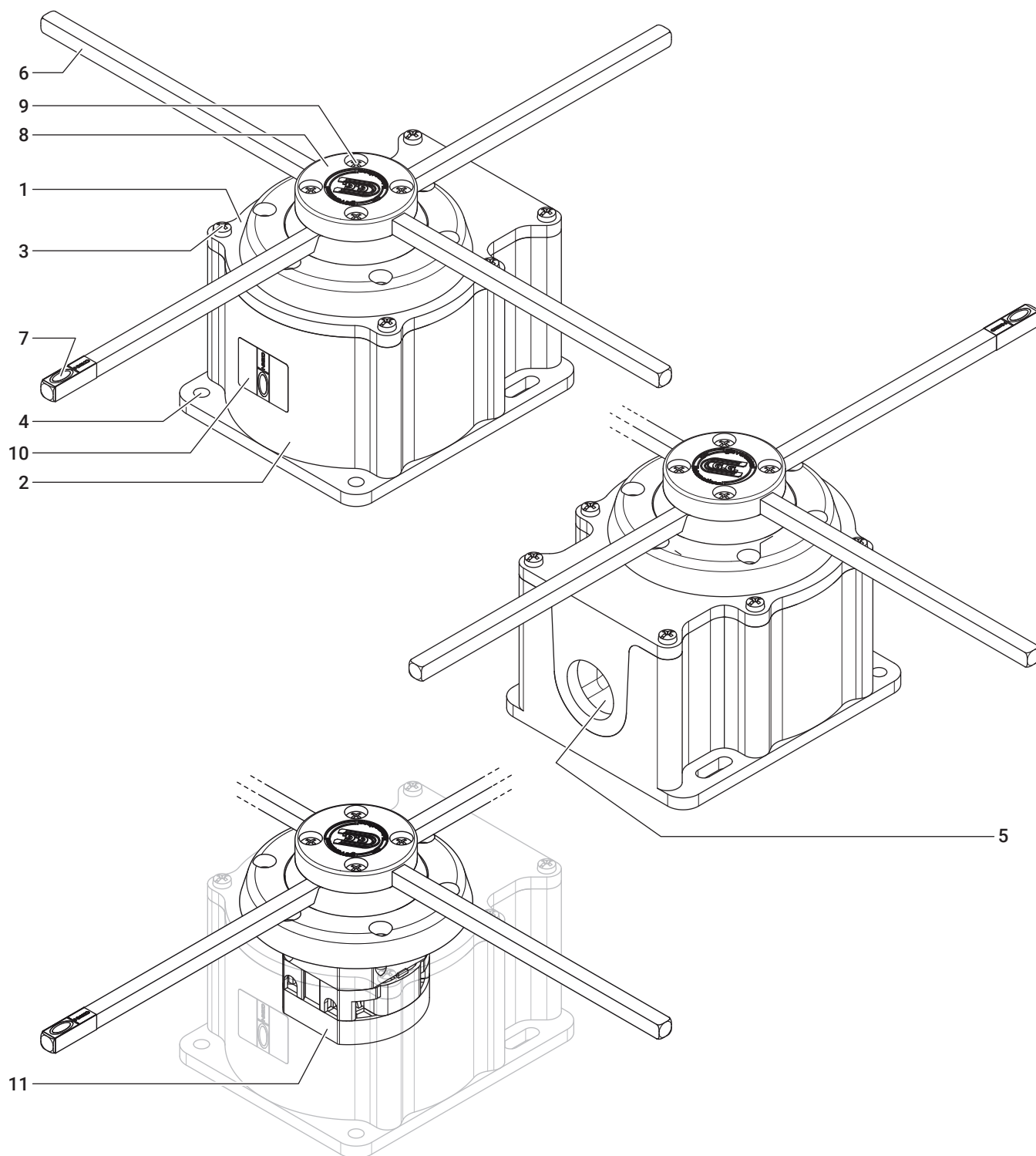
and therefore follow the provision of the Directives:

2014/35/UE
2011/65/UE
2015/863/UE

Markings



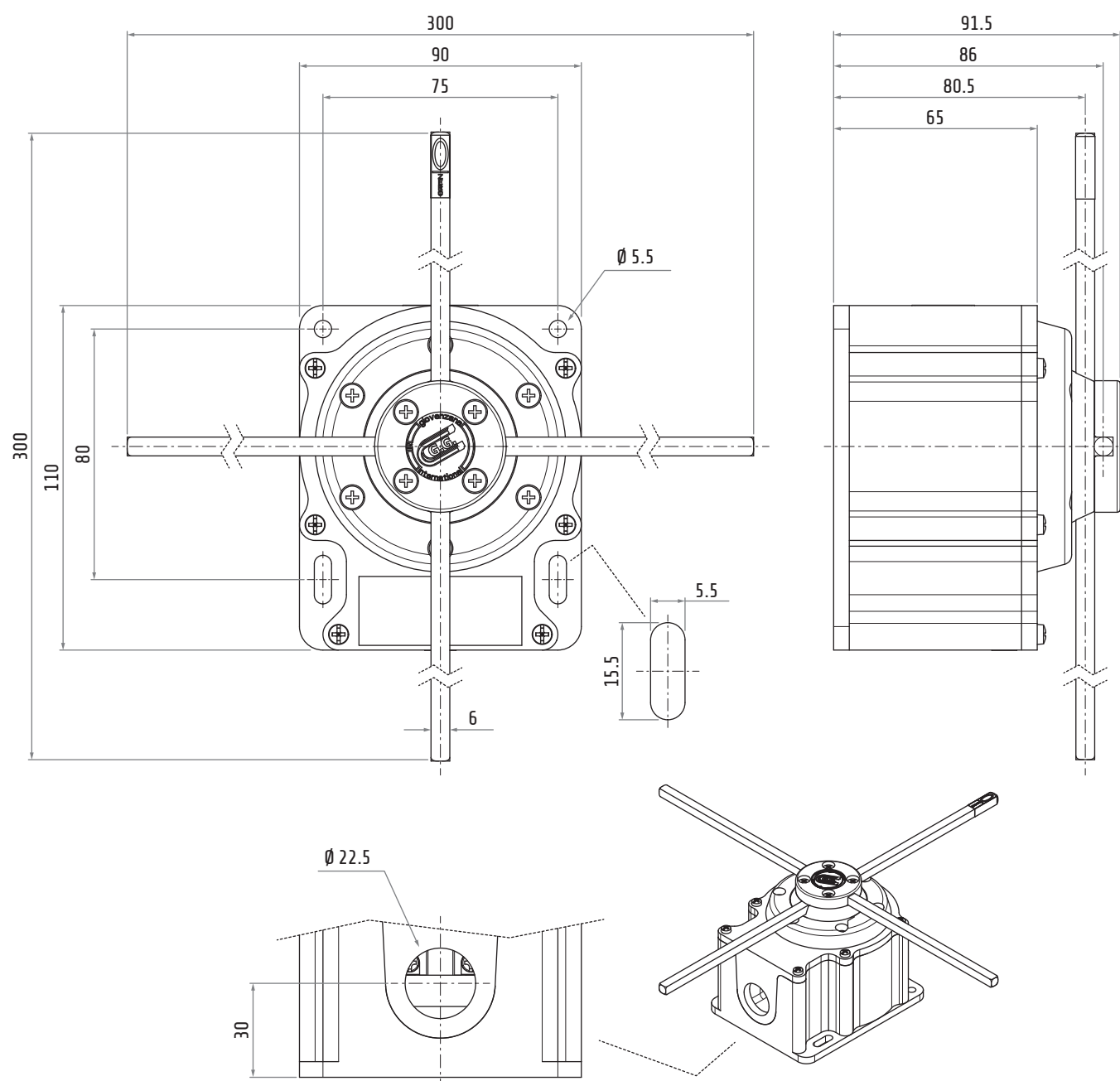
Main components



1	Cover
2	Base
3	Cover fixing screws M4×30
4	Holes for installation screws
5	Cable entry Ø 22.5 mm
6	Shaft 6×6 mm

7	Shaft red label for "0 position"
8	Shaft fixing disk
9	Disk fixing screws M4×30
10	Head red label for "0 position"
11	Cam switch

Overall dimensions



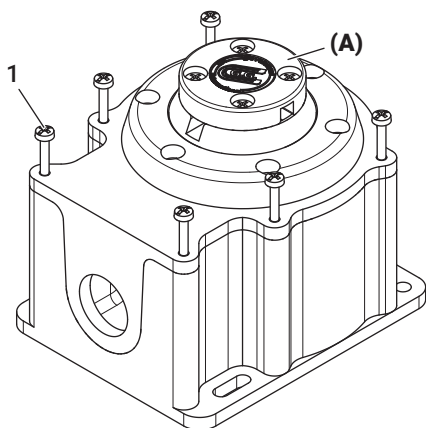
Dimensions in mm / illustrations NOT in scale

WIRING

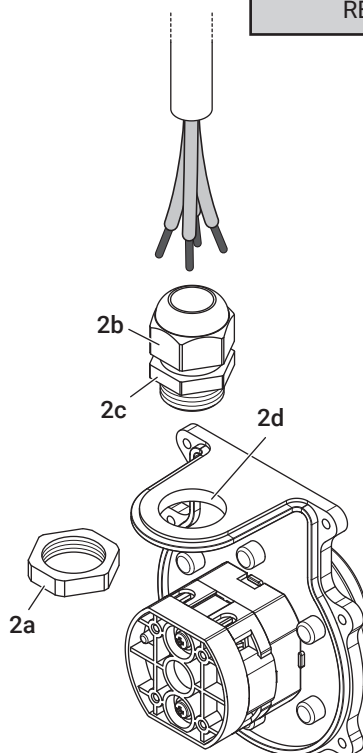


ATTENTION

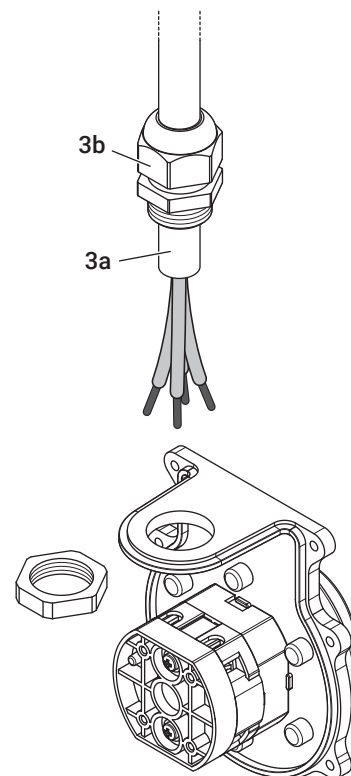
DO NOT TURN THE DISK (A) FOR ANY REASON BEFORE INSTALLING THE RODS!



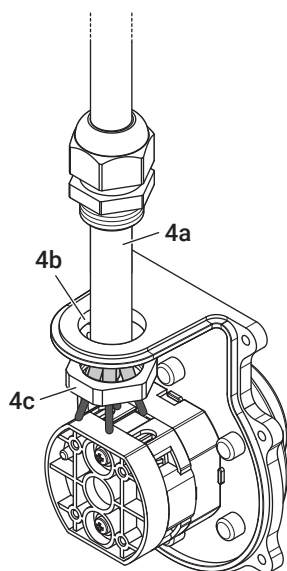
- 1** Unscrew the 6 screws and open the limit switch body.



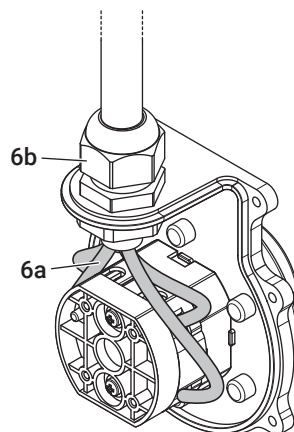
- 2** Loosen the lock nut (a) of a cable gland (a-b-c) matching the Ø 22.5 mm hole (d) of the limit switch.



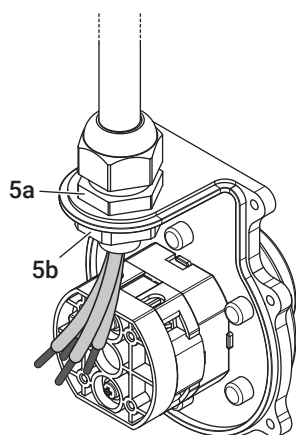
- 3** Insert a suitable cable (a) into the cable gland (b).



- 4** Insert the cable (a) in the limit switch cover (b) passing it also through the lock nut (c).



- 6** Wire (a) the cam switch according to the diagram in paragraph "Cam switch operation" p.8. After wiring, tighten the sealing nut (b).



- 5** Fix the cable gland (a) and then tighten the lock nut (b).



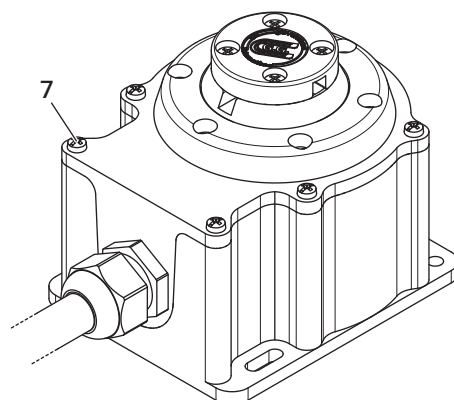
TIGHTENING TORQUE (6a)

0.8 Nxm / 7.2 lbxin (EN60947-1)
7.5 lbxin / 0.85 Nxm (UL508)



ATTENTION

Carry out the wiring so that the cables do not get in the way when closing the cover.



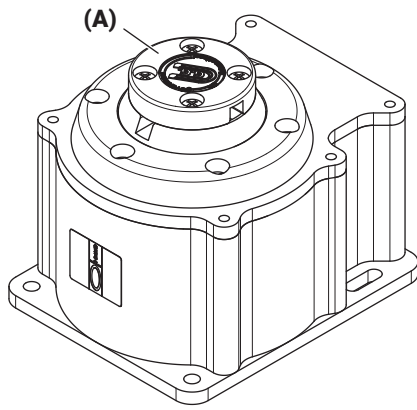
- 7** Refit the cover on the base with the 6 screws.



TIGHTENING TORQUE

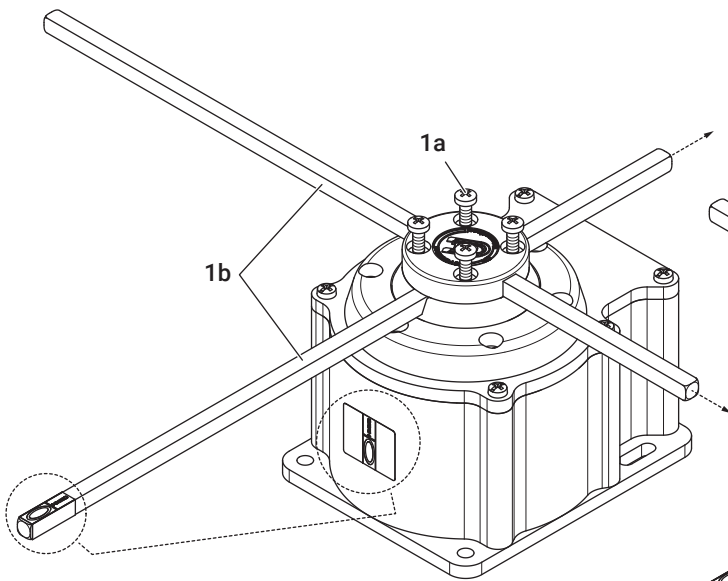
1.2 - 1.4 Nxm
10.6 - 12.4 lbxin

ROD POSITIONING



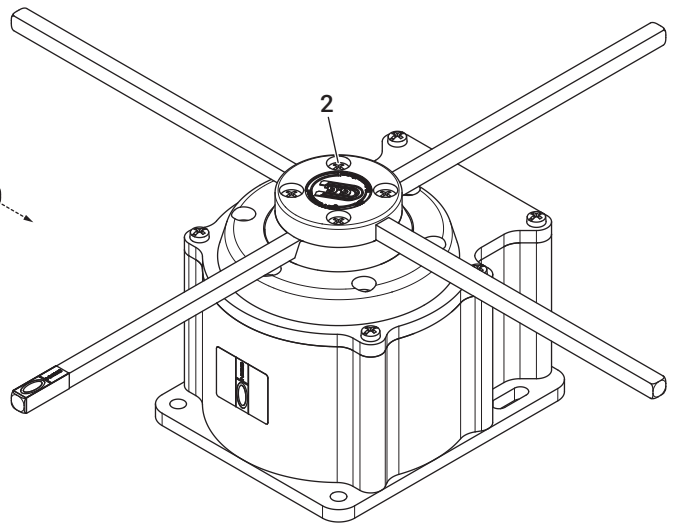
ATTENTION

DO NOT TURN THE DISK (A) FOR ANY REASON BEFORE INSTALLING THE RODS!



1

Loosen without removing the 4 screws (a) of the fixing disk. Insert the rods (b) matching the one with the "0" indicator with the label on the body.



2

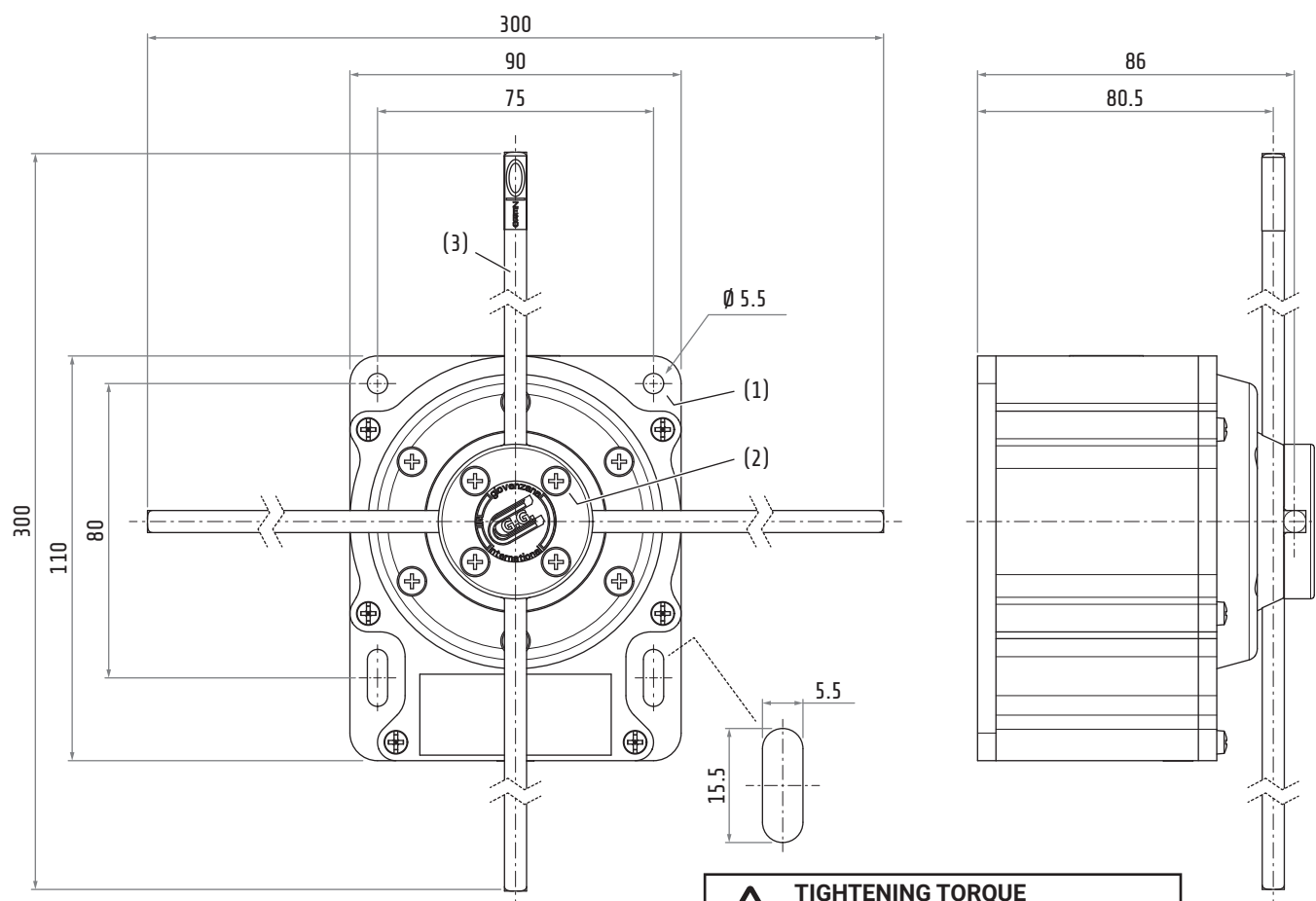
Tighten the 4 screws of the fixing disk.



TIGHTENING TORQUE

1.2 - 1.4 N×m / 10.6 - 12.4 lb×in

Installation dimensions and rods calibration



TIGHTENING TORQUE

1.2 - 1.4 N×m / 10.6 - 12.4 lb×in

1

Fix the limit switch with 4 suitable screws (1) (not supplied) into the service position, considering the drilling pattern and the overall dimensions shown in the picture.



ATTENTION

Please note that in this example the "0" has been positioned upwards.

2

After fixing the limit switch it is possible to calibrate it by loosening the 4 screws of the disk (2) and sliding the rods (3).



ATTENTION

The range of adjustmet follows the rules on the paragraph "Operation" p.7.

Dimensions in mm / illustrations NOT in scale

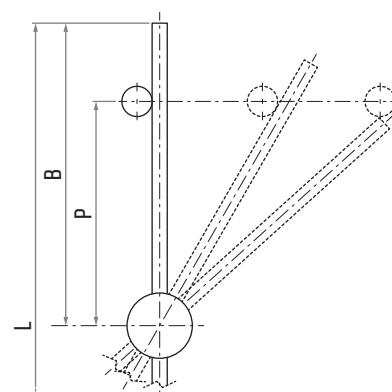
Operation

Total length	L	300 mm
Arm length	B	150 mm
Maximum operation distance	P	101 mm



ATTENTION

Do not adjust the arm length (B) with values not allowed. A not allowed arm length could compromise the operation of the limit switch and therefore cause serious damages to things and people during use.

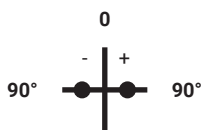


VERSIONS

Cam switch operation

FCR001

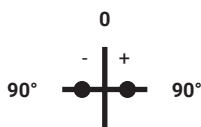
- Single speed
- 3 positions
- With mechanical interlock ●



1	3-4		×	×
	1-2	×	×	
		-90°	0	+90°

FCR002

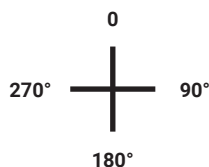
- Single speed
- 3 positions
- With mechanical interlock ●



2	7-8		×	×
	5-6	×	×	
1	3-4		×	×
	1-2	×	×	
		-90°	0	+90°

FCR003

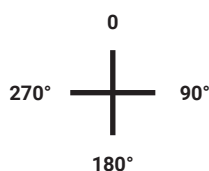
- Single speed
- 4 positions rotary
- Without mechanical interlock



1	3-4	×		×	
	1-2	×		×	
		0	90°	180°	270°

FCR004

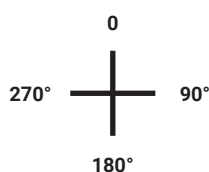
- Single speed
- 4 positions rotary
- Without mechanical interlock



2					
	5-6	×	×		×
1					
	1-2	×			
		0	90°	180°	270°

FCR005

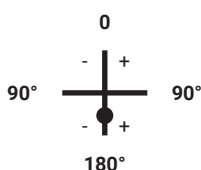
- Single speed
- 4 positions rotary
- Without mechanical interlock



2					
	5-6	×			×
1					
	1-2	×	×		
		0	90°	180°	270°

FCR006

- Double speed
- 4 positions
- With mechanical interlock ●



2	7-8	×	×	×	×	
	5-6	×	×	×		
1	3-4			×	×	×
	1-2		×	×	×	×
		-180°	-90°	0	+90°	+180°

CUSTOM VERSIONS AVAILABLE ON REQUEST