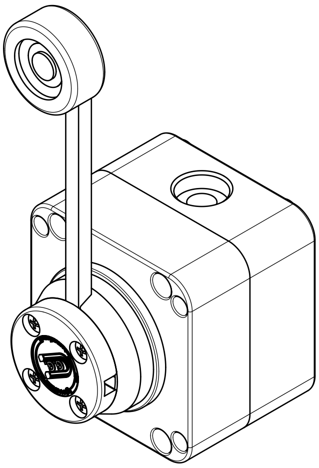
GIOVENZANA
INTERNATIONAL B.V.

Strawinskylaan 1105
1077 XX Amsterdam, The Netherlands

MT-FFH2C-1-EN / 17.09.2021
Rev. 1

EN
instruction manual



FFH2C-1

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.

Giovenzana International B.V. reserves the right to change the features and data shown in this document at any time and without notice. This document cannot therefore be considered a contract with third parties.

Position limit switches FFH2C-1 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 FFH2C-1 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 60497/3
Case	self extinguishing housing V0 UL94
Protection class IEC/EN 60529	IP65 double insulation
Cable entry	M16 / M20
Operating temperature	-25 ... +55°C
Storage temperature	-30 ... +70°C
Notes	- adjustable aluminium rod - reinforced mechanical stop - rubber wheel

Cam switch technical data

Product ID			PX20 Giovenzana line
Rated enclosed thermal current	Ithe		20 A
Rated insulation voltage	Ui		690 V
Connections	terminals gauge	EN60947-1	A3
	terminals screw		M3.5
	tightening torque	EN60947-1 UL508	0.8 N×m / 7.2 lb×m 7.5 lb×in / 0.85 N×m
Connectable section	flexible cable		1 × 0.75 ... 4 mm² or 2 × 0.75 ... 2.5 mm² AWG 18 ... 10
	rigid cable		1 × 0.75 ... 4 mm² or 2 × 0.75 ... 2.5 mm² AWG 18 ... 10
Contacts			double breaking

Certifications

Limit switches FFH2C-1 series are in conformity with the following standards or other normative documents:

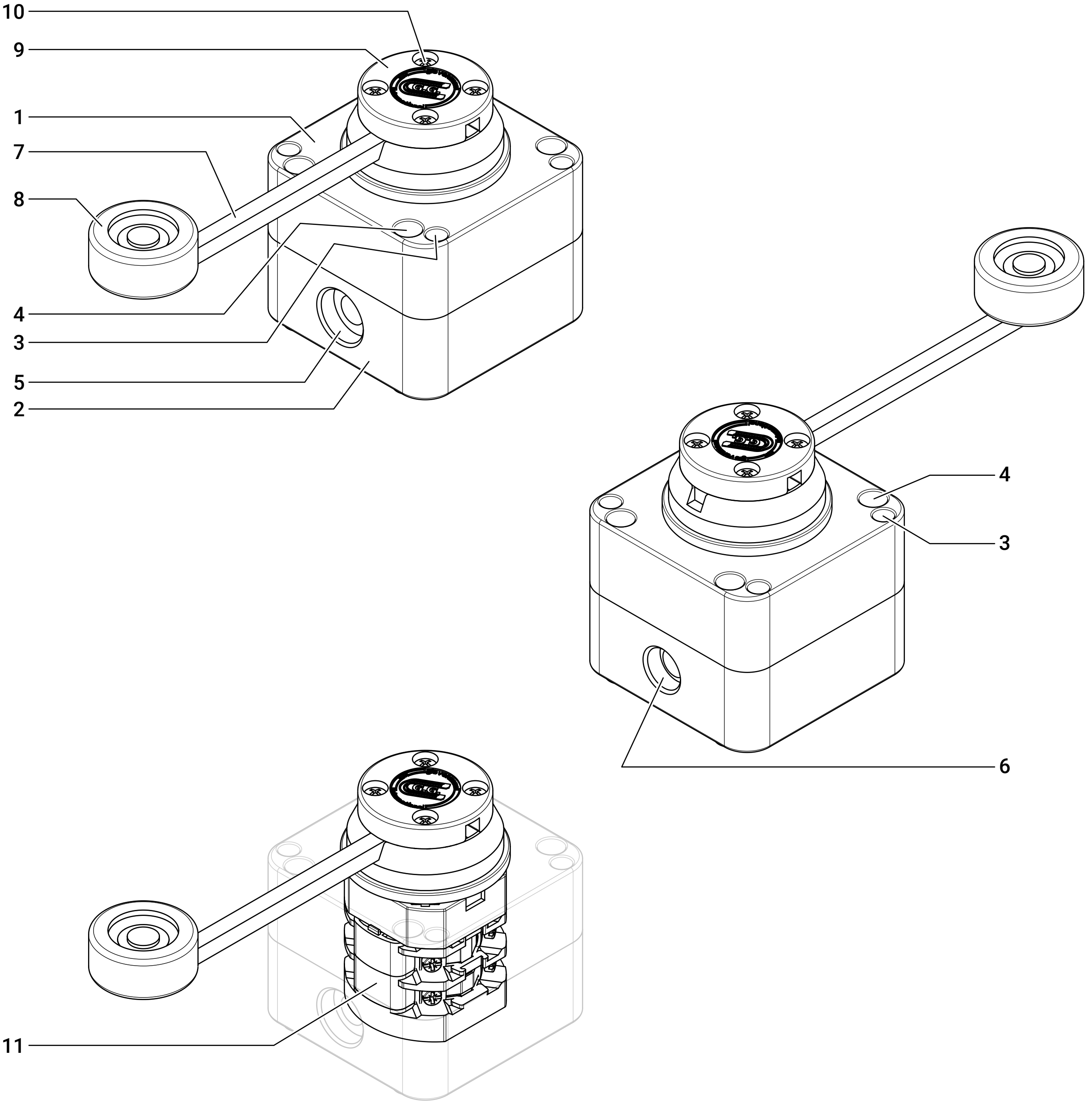
EN 60947-1	2007/A1 : 2011/A2 : 2014
EN 60947-3	2009/A1 : 2012/A2 : 2015
EN 60204-1	2006/A1 : 2009
EN 60529	1991/A1 : 2000/A2 : 2013
EN 50581	2012
IEC 63000	2016

and therefore follow the provision of the Directives:

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

Markings

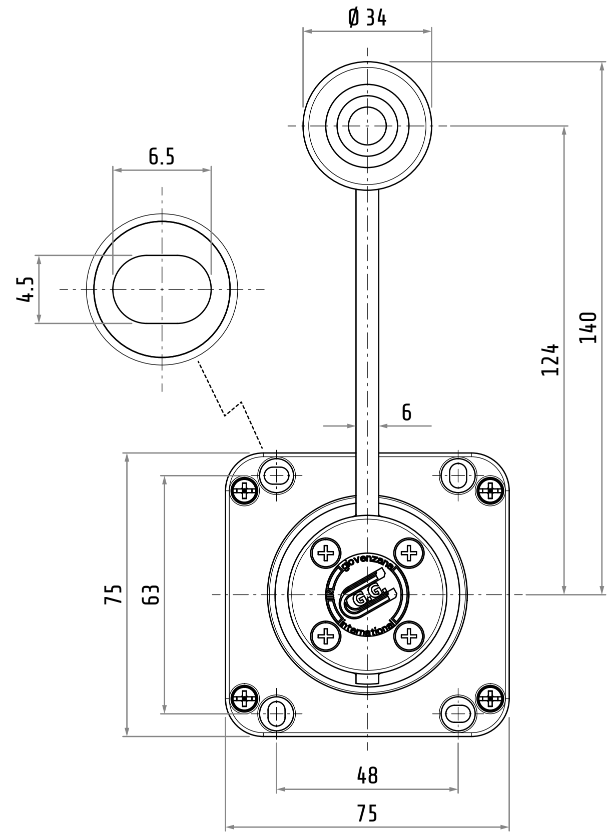
Main components

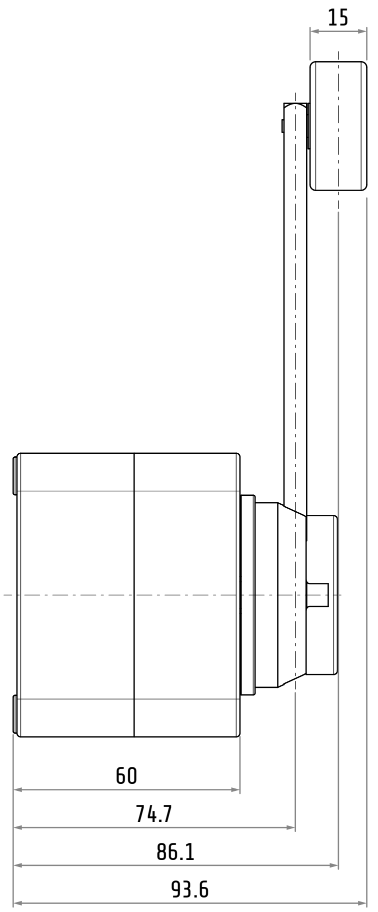


1	Cover
2	Base
3	Cover fixing screws M4×30
4	Holes for installation screws
5	M20 knockout
6	M16 knockout

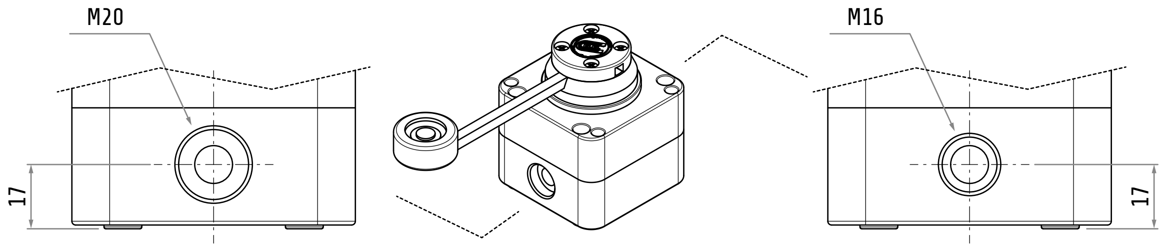
7	Shaft
8	Rubber wheel
9	Shaft fixing disk
10	Disk fixing screws 3E9×13
11	Cam switch

Overall dimensions

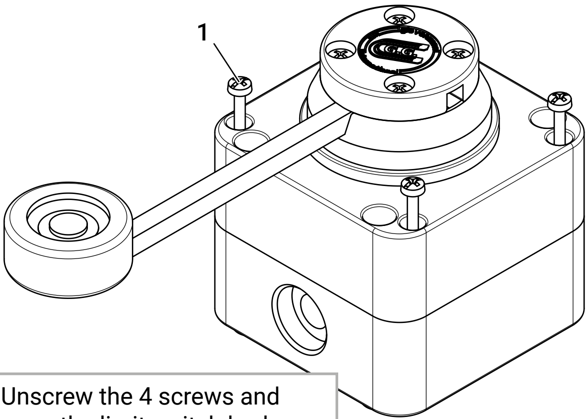




Dimensions in mm / illustrations NOT in scale

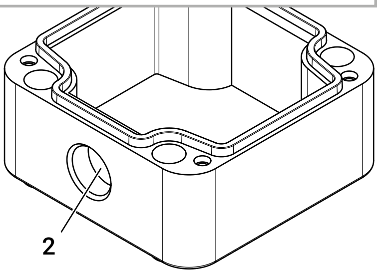


WIRING

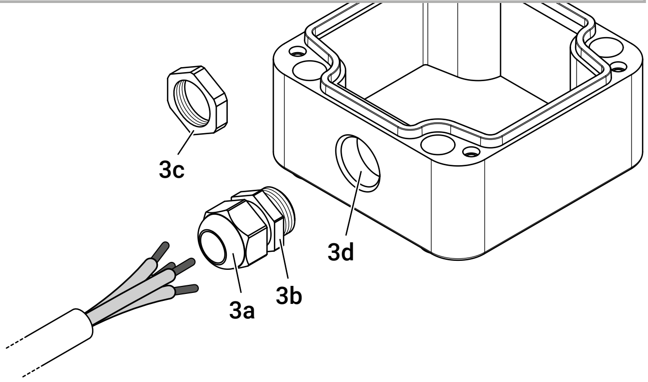


1 Unscrew the 4 screws and open the limit switch body.

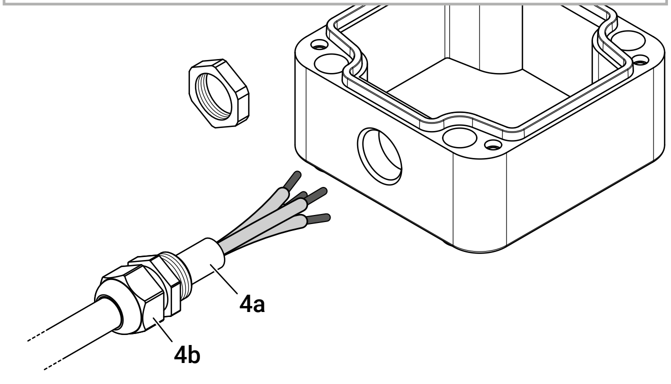
2 Depending on the need, break one or both the knock-outs (M16 / M20) with a suitable object, such as a screwdriver.



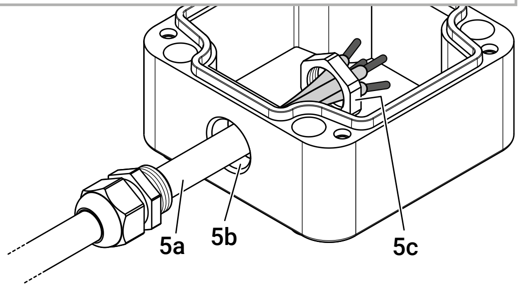
3 Loosen the sealing nut (a) of a cable gland (a-b-c) matching the choosen knock-out (d).



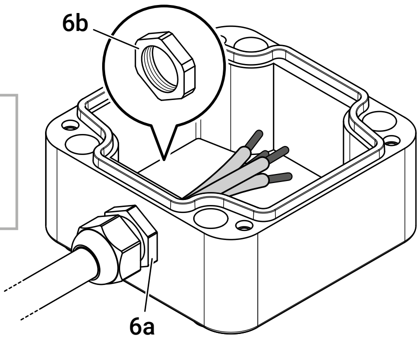
4 Insert a suitable cable (a) into the cable gland (b).



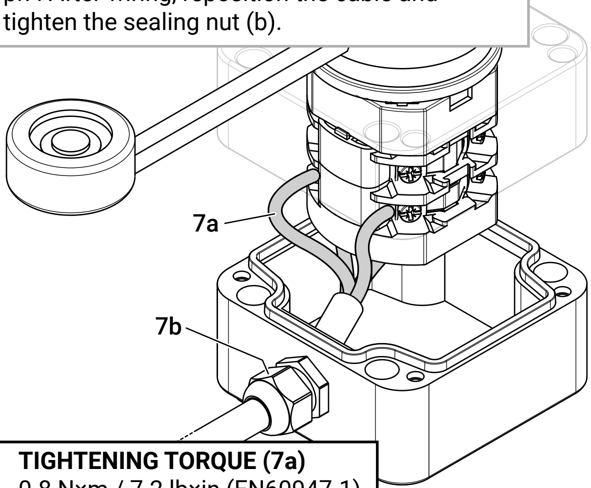
5 Insert the cable (a) in the limit switch base (b) passing it also through the lock nut (c).



6 Fix the cable gland (a) and then tighten the lock nut (b).



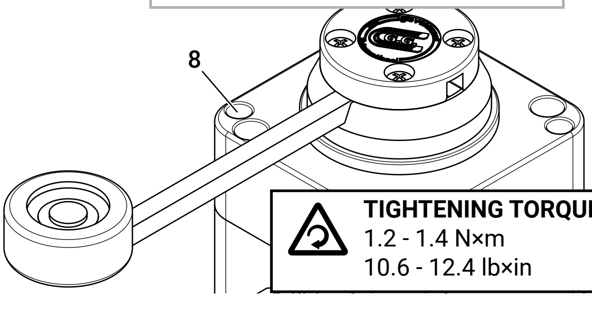
7 Wire (a) the cam switch according to the diagram in paragraph "Cam switch operation" p.7. After wiring, reposition the cable and tighten the sealing nut (b).



TIGHTENING TORQUE (7a)
0.8 N×m / 7.2 lb×in (EN60947-1)
7.5 lb×in / 0.85 N×m (UL508)

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

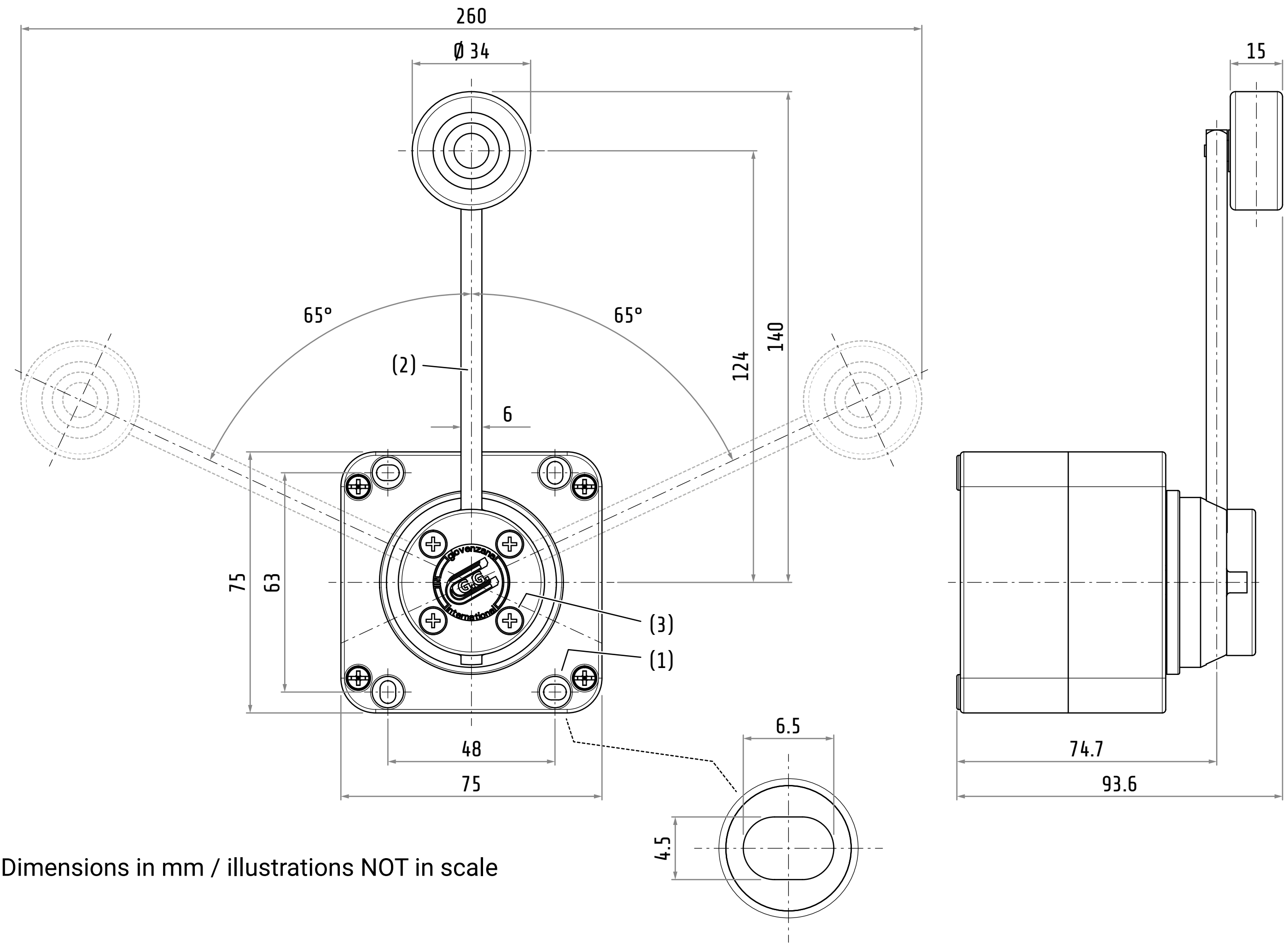
8 Refit the cover on the base with the 4 screws.



TIGHTENING TORQUE
1.2 - 1.4 N×m
10.6 - 12.4 lb×in

INSTALLATION

Installation dimensions and rod calibration



Dimensions in mm / illustrations NOT in scale

TIGHTENING TORQUE
1.2 - 1.4 N×m / 10.6 - 12.4 lb×in

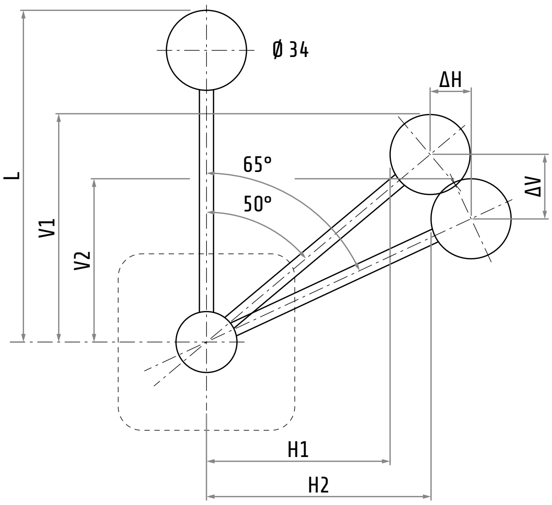
1 Fix the limit switch with 4 suitable screws (1) (not supplied) into the service position considering the drilling pattern and the overall dimensions shown in the picture.

2 After fixing the limit switch it is possible to adjust the rod (2) it by loosening the 4 screws (3) of the disk.

ATTENTION
The range of adjustmet follows the rules on the paragraph “Operation” p.7.

Operation

	50°		65°			
L	V1	H1	V2	H2	ΔV	ΔH
140.0	96.1	77.2	69.0	94.5	27.1	17.3
135.0	92.8	73.4	66.9	89.9	26.0	16.6
130.0	89.6	69.6	64.8	85.4	24.9	15.8
125.0	86.4	65.7	62.6	80.9	23.8	15.1

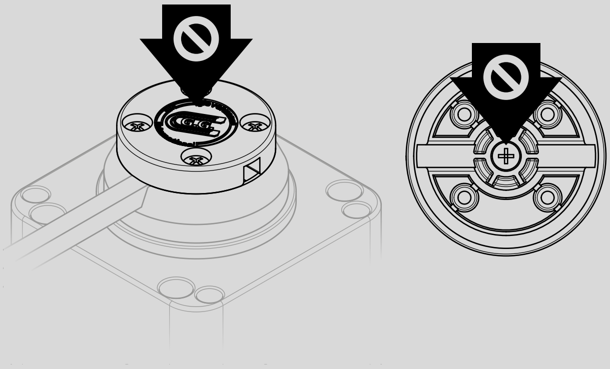


50°	Operation angle
65°	Maximum allowed angle
L	Total allowed length
V1	Maximum vertical operation distance
H1	Maximum horizontal operation distance
V2	Maximum vertical allowed distance
H2	Maximum horizontal allowed distance

Dimensions in mm / illustrations NOT in scale

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

⚠ **ATTENTION**
DO NOT REMOVE THE SHAFT FIXING DISK FOR ANY REASON. IN CASE OF ACCIDENTAL REMOVAL, **DO NOT TAMPER THE CENTRAL SCREW UNDER ANY CASE AND FOR ANY REASON. ANY TAMPERING WILL RESULT IN IRREPARABLE DAMAGE TO THE LIMIT SWITCH.**



Cam switch operation

FFH2C-1

- Single speed
- 3 positions with spring return
- With mechanical interlock ●