



GIOVENZANA
INTERNATIONAL B.V.



HANDLING SYSTEM



Position Limit switches

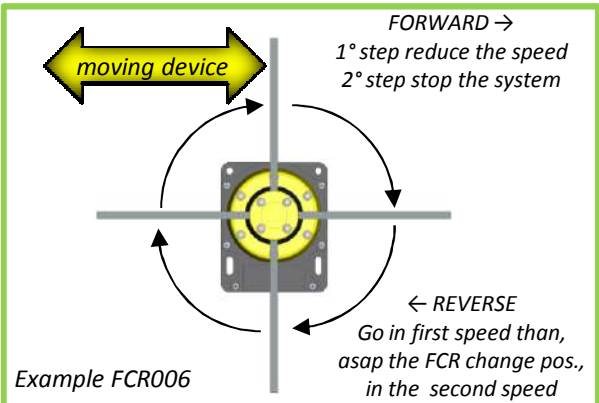
page 36 to 42

The position (rotary-angular) limit switch is used to control several handling system:

- sophisticated crane system:
the unit controls power operating system (ex. PLC) and allows the crane to slow-down and/or to stop running.
 - hoist:
the unit is used to stop the hoist running whenever it reaches a “limit” position
- Different combinations available for all standard system.
 - Customization available on request.

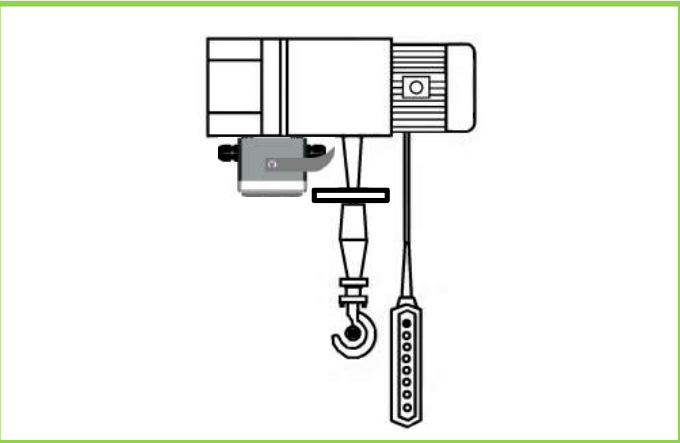
How it works?

As an example, an FCR006 is typically used on a sophisticated crane system. Its function is to control the crane as it approaches operational limits in the following sequence:
With the crane moving forward the end position, the FCR006 controls the crane’s speed reducing the speed (first step) then stopping the crane (second step) .
In this position the forward command is no longer enabled.
Only the reversing command is enabled for operation, in the first speed than in the second speed.



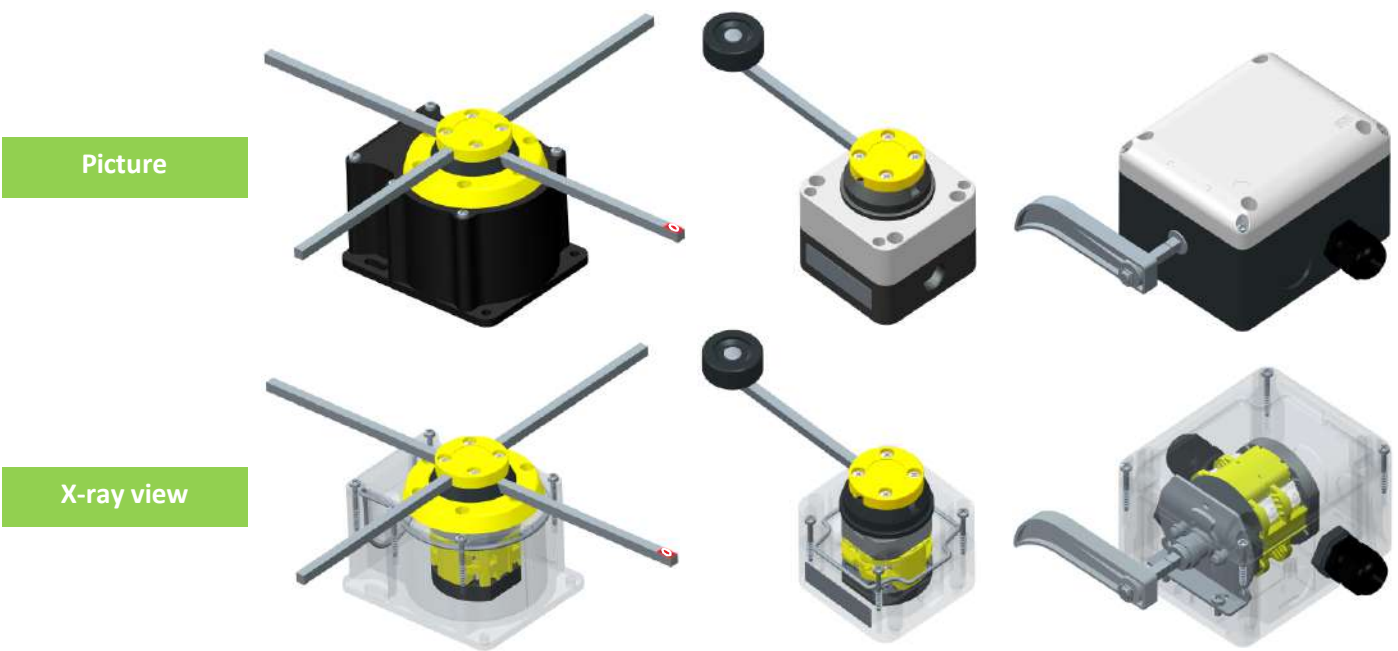
Picture shows a FCR working on a crane system

Picture shows a FCP working on a hoist





Line	FCR	FFH	FCP
Page	38	40	41



LIMIT SWITCHES

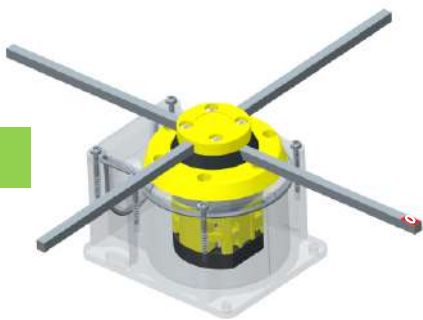
Characteristics				
Standards		IEC/EN 60947/3	IEC/EN 60947/3	IEC/EN 60947/3, EN81-1
Case		self extinguishing housing V0 UL94	self extinguishing cover V0 UL94	self extinguishing housing V0 UL94
Protection class IEC/EN 60529		IP65	IP65	IP65
Cam switch	enclosed thermal current [Ithe]	16A	20A	40A
	rated insulation voltage [Ui]	690V	690V	690V
	product ID	P016 Giovenzana line	PX20 Giovenzana line	CX40 Giovenzana line
	contacts	double gap positive opening	double gap positive opening	double gap positive opening
	markings			
Cable entry		N° 1 dia. 22.5mm	1xM20 + 1xM16	M20 (max 8)
Versions		- single or double speed motor configuration - 3,4 or 4 with mechanical stop positions	single speed motor configuration (other configuration on request)	two pole on-off switch (other configuration on request)
Notes		fully adjustable aluminium rods □ 6x300mm with "0" indicator - reinforced mechanical stop	- fully adjustable metallic rods □ 6x120mm - reinforced mechanical stop - rubber covering wheel	- reinforced mechanical stop



Picture



X-ray view



☐ contact open
☒ contact close

Versions

FCR001	single speed	3 positions with mechanical interlock (●)	<table><tr><td>3-4</td><td></td><td></td><td></td></tr><tr><td>1-2</td><td></td><td></td><td></td></tr><tr><td>Cont. Pos.</td><td>-90°</td><td>0</td><td>+90°</td></tr></table>	3-4				1-2				Cont. Pos.	-90°	0	+90°													
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1-2																												
Cont. Pos.	-90°	0	+90°																									
FCR002	single speed	3 positions with mechanical interlock (●)	<table><tr><td>7-8</td><td></td><td></td><td></td></tr><tr><td>5-6</td><td></td><td></td><td></td></tr><tr><td>3-4</td><td></td><td></td><td></td></tr><tr><td>1-2</td><td></td><td></td><td></td></tr><tr><td>Cont. Pos.</td><td>-90°</td><td>0</td><td>+90°</td></tr></table>	7-8				5-6				3-4				1-2				Cont. Pos.	-90°	0	+90°					
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FCR003	single speed	4 positions NO mechanical interlock	<table><tr><td>3-4</td><td></td><td></td><td></td><td></td></tr><tr><td>1-2</td><td></td><td></td><td></td><td></td></tr><tr><td>Cont. Pos.</td><td>0</td><td>90°</td><td>180°</td><td>270°</td></tr></table>	3-4					1-2					Cont. Pos.	0	90°	180°	270°										
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1-2																												
Cont. Pos.	0	90°	180°	270°																								
FCR004	single speed	4 positions NO mechanical interlock	<table><tr><td>-</td><td colspan="4">empty</td></tr><tr><td>5-6</td><td></td><td></td><td></td><td></td></tr><tr><td>-</td><td colspan="4">empty</td></tr><tr><td>1-2</td><td></td><td></td><td></td><td></td></tr><tr><td>Cont. Pos.</td><td>0</td><td>90°</td><td>180°</td><td>270°</td></tr></table>	-	empty				5-6					-	empty				1-2					Cont. Pos.	0	90°	180°	270°
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1-2																												
Cont. Pos.	0	90°	180°	270°																								
FCR005	single speed	4 positions NO mechanical interlock	<table><tr><td>-</td><td colspan="4">empty</td></tr><tr><td>5-6</td><td></td><td></td><td></td><td></td></tr><tr><td>-</td><td colspan="4">empty</td></tr><tr><td>1-2</td><td></td><td></td><td></td><td></td></tr><tr><td>Cont. Pos.</td><td>0</td><td>90°</td><td>180°</td><td>270°</td></tr></table>	-	empty				5-6					-	empty				1-2					Cont. Pos.	0	90°	180°	270°
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Cont. Pos.	0	90°	180°	270°																								
FCR006	two speeds	4 positions with mechanical interlock (●)	<table><tr><td>7-8</td><td></td><td></td><td></td><td></td></tr><tr><td>5-6</td><td></td><td></td><td></td><td></td></tr><tr><td>3-4</td><td></td><td></td><td></td><td></td></tr><tr><td>1-2</td><td></td><td></td><td></td><td></td></tr><tr><td>Cont. Pos.</td><td>-180°</td><td>-90°</td><td>0</td><td>+90°</td></tr></table>	7-8					5-6					3-4					1-2					Cont. Pos.	-180°	-90°	0	+90°
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Cont. Pos.	-180°	-90°	0	+90°																								

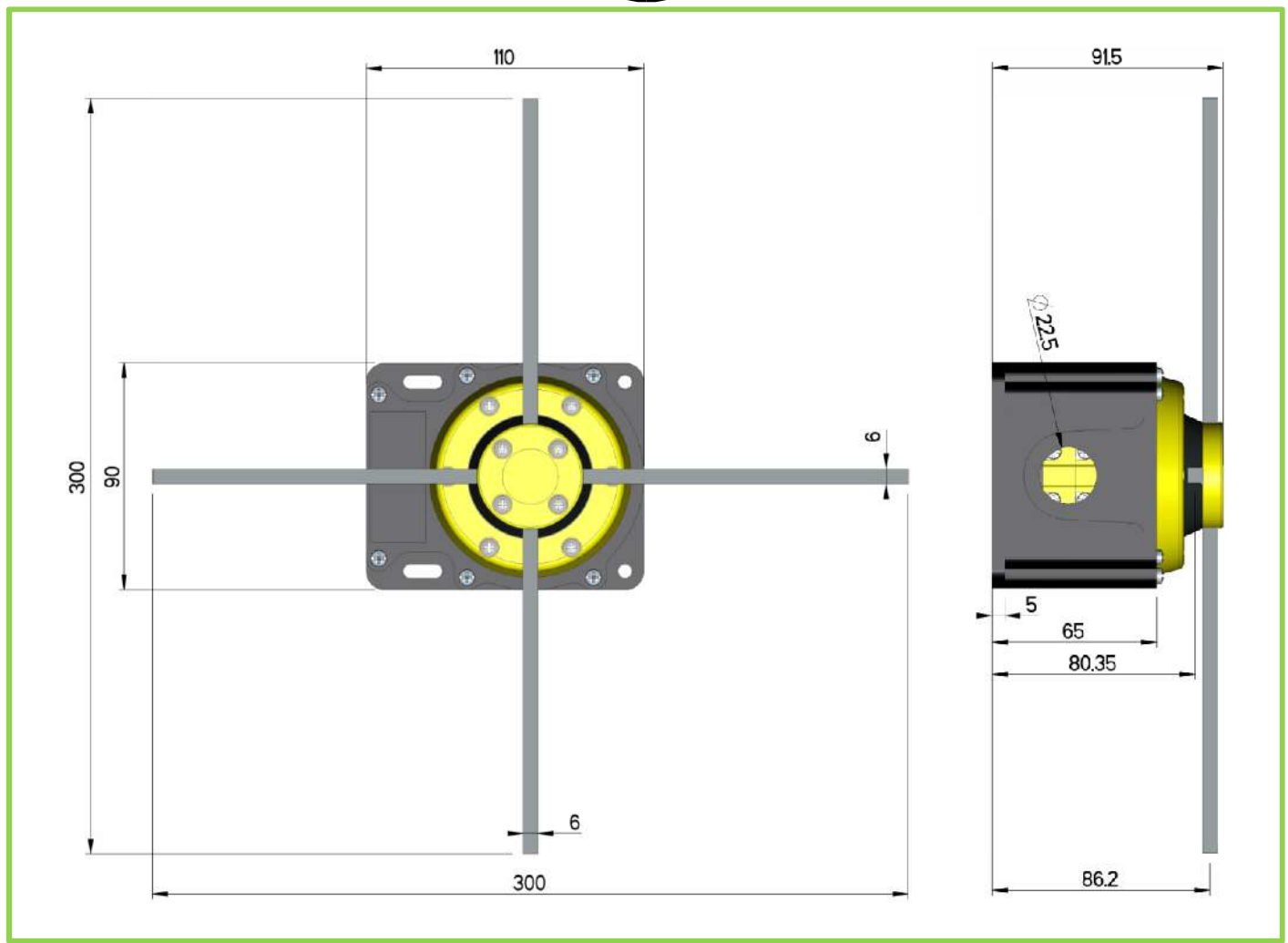
Characteristics

Standards		IEC/EN 60947/3
Case		self extinguishing housing V0 UL94
Protection class IEC/EN 60529		IP65 (double insulation )
Cam switch	enclosed thermal current [Ithe]	16A
	rated insulation voltage [Ui]	690V
	product ID	P016 Giovenzana line
	contacts	double gap positive opening 
	markings	     
Cable entry		N° 1 dia. 22.5mm
Versions		- single or double speed motor configuration - 3,4 or 4 with mechanical stop positions
Notes		fully adjustable aluminium rods □ 6x300mm with "0" indicator - reinforced mechanical stop

Other versions available on request →

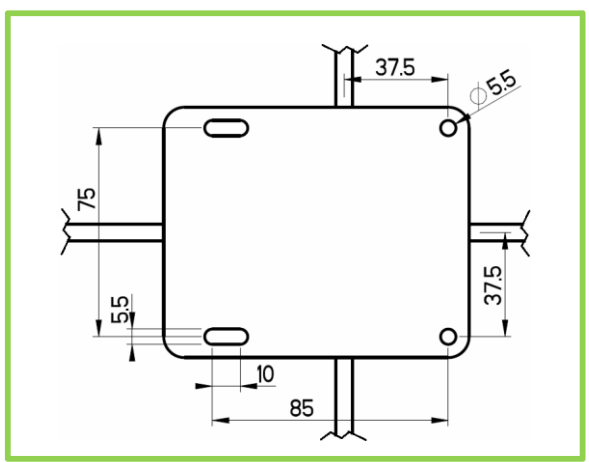


Dimensions



LIMIT SWITCHES

Fixing holes

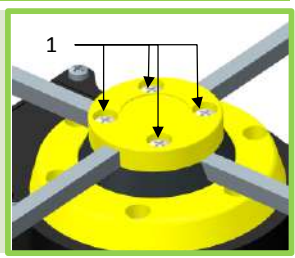


Section view

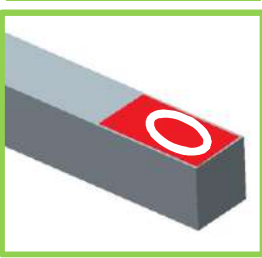


Rods adjusting guide

- I. Loosen the four screws (1)
- II. Adjust the rods
- III. Tighten the four screws (1)

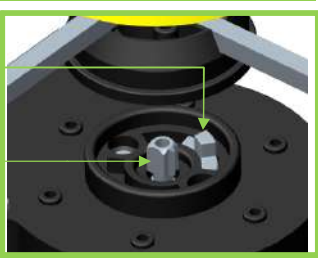


"ZERO" indicator



Reinforced mechanical stop insert

metallic stop insert
metallic cam's control shaft





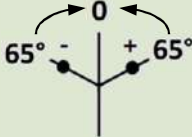
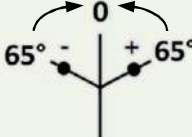
Picture



X-ray view

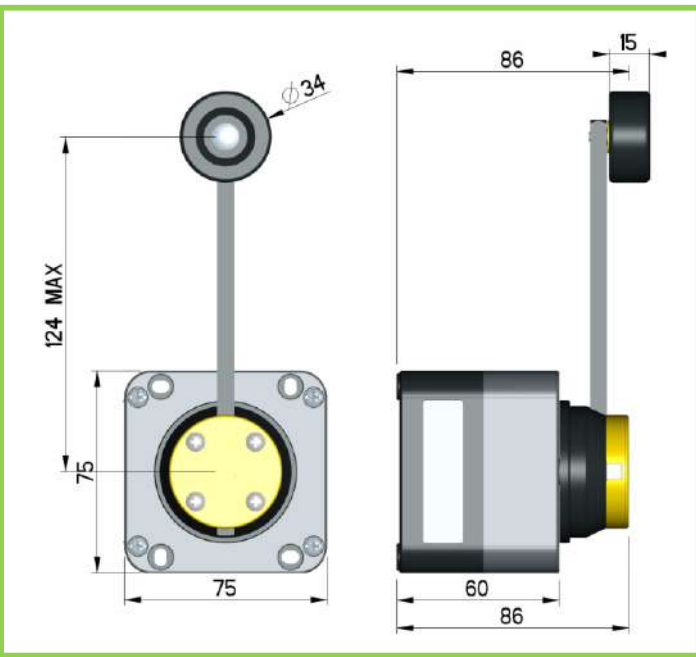
□ contact open
■ contact close

Versions

FFH2C	single speed	 3 positions automatic return to "0" with mechanical interlock (●)	<table><tr><td>3-4</td><td></td><td></td><td></td></tr><tr><td>1-2</td><td></td><td></td><td></td></tr><tr><td>Cont. Pos.</td><td>-65°</td><td>0</td><td>+65°</td></tr></table>	3-4				1-2				Cont. Pos.	-65°	0	+65°
3-4															
1-2															
Cont. Pos.	-65°	0	+65°												
FFH2C-1	single speed	 3 positions automatic return to "0" with mechanical interlock (●)	<table><tr><td>3-4</td><td></td><td></td><td></td></tr><tr><td>1-2</td><td></td><td></td><td></td></tr><tr><td>Cont. Pos.</td><td>-65°</td><td>0</td><td>+65°</td></tr></table>	3-4				1-2				Cont. Pos.	-65°	0	+65°
3-4															
1-2															
Cont. Pos.	-65°	0	+65°												

↑ Other versions available on request

Dimensions



Characteristics

Standards		IEC/EN 60947/3
Case		self extinguishing housing V0 UL94
Protection class IEC/EN 60529		IP65 (double insulation □)
Cam switch	enclosed thermal current [Ithe]	20A
	rated insulation voltage [Ui]	690V
	product ID	PX20 Giovenzana line
	contacts	double gap positive opening ▶
	markings	CE, UL, ENEC, etc.
Cable entry		1xM20 + 1xM16
Versions		single speed motor configuration (other configuration on request)
Notes		-fully adjustable metallic rods □ 6x120mm - reinforced mechanical stop -rubber covering wheel

Reinforced mechanical stop insert

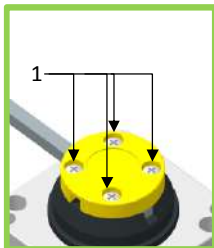


Section view

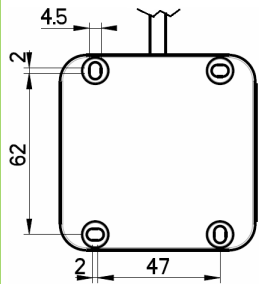


Rod adjusting guide

- I. Loosen the four screws (1)
- II. Adjust the rods
- III. Tighten the four screws (1)

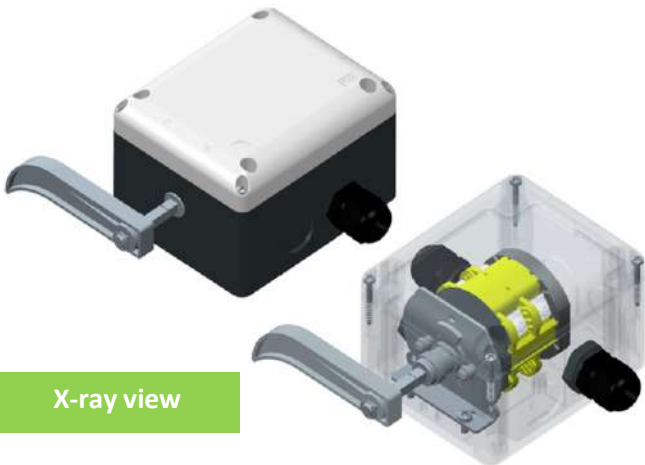


Fixing holes





Picture



□ contact open
■ contact close

Versions

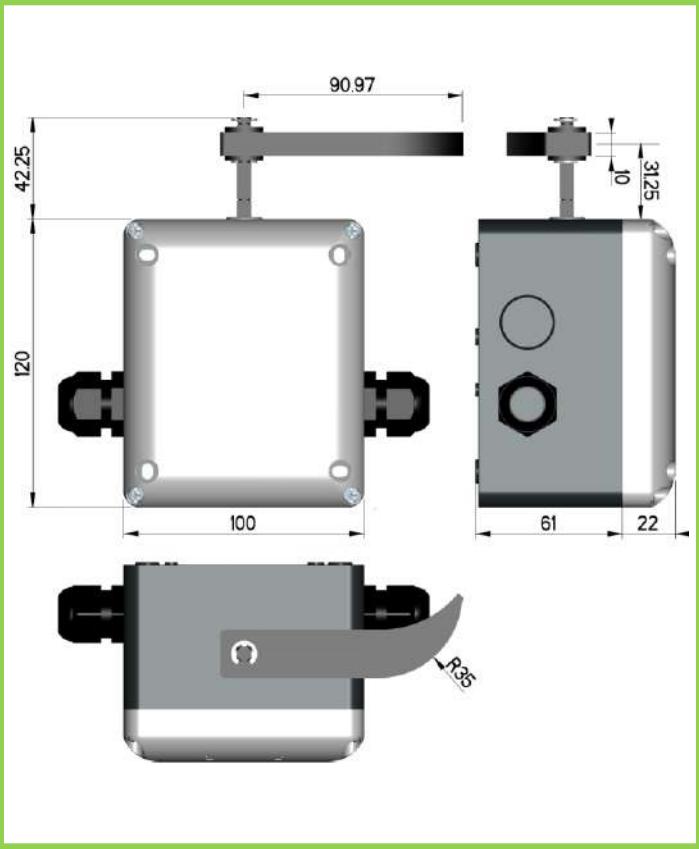
FCP245

single speed

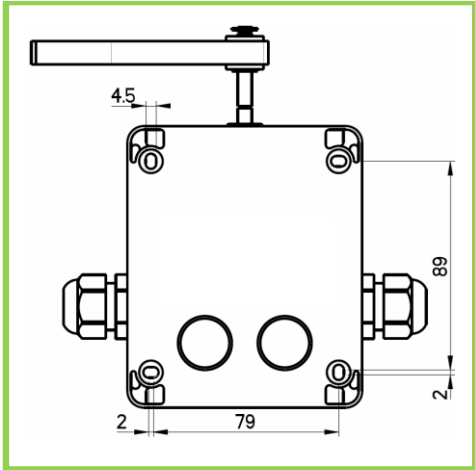
3-4			
1-2			
Cont. Pos.	-50°	0	+50°

↑ Other versions available on request

Dimensions



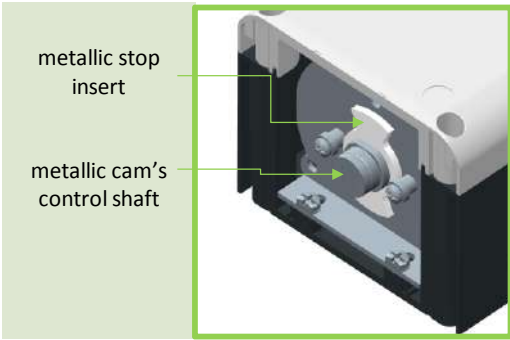
Fixing holes



Characteristics

Standards		IEC/EN 60947/3
Case		self extinguishing housing V0 UL94
Protection class IEC/EN 60529		IP65 (double insulation □)
Cam switch	enclosed thermal current [Ithe]	40A
	rated insulation voltage [Ui]	690V
	product ID	CX40 Giovenzana line
	contacts	double gap positive opening ▶
	markings	CE, Y, c, UL, US, ENEC, CCC, and other certification marks
Cable entry		M20 (max 8)
Versions		two pole on-off switch (other configuration on request)
Notes		- reinforced mechanical stop

Reinforced mechanical stop insert



Section view



LIMIT SWITCHES



LIMIT SWITCHES

General characteristics		FCR	FFH	FCP
Markings		CE EAC	CE	CE
Standards		IEC/EN 60947/3	IEC/EN 60947/3	IEC/EN 60947/3
Case		self extinguishing housing V0 UL94	self extinguishing housing V0 UL94	self extinguishing housing V0 UL94
Protection class IEC/EN 60529		IP65 (double insulation □)	IP65 (double insulation □)	IP65 (double insulation □)
Climate temperature	Operating	-25°C + 55°C		
	Storage	-30°C + 70°C		
Cable entry		N° 1 dia. 22.5mm	1xM20 + 1xM16	M20 (max 8)
Versions		- single or double speed motor configuration - 3,4 or 4 with mechanical stop positions	single speed motor configuration (other configuration on request)	two pole on-off switch (other configuration on request)
Notes		fully adjustable aluminium rods □ 6x300mm with "0" indicator - reinforced mechanical stop	- fully adjustable metallic rods □ 6x120mm - reinforced mechanical stop - rubber covering wheel	- reinforced mechanical stop
Weight KG (approx)		0.5	0.35	0.55
Electrical characteristics		FCR	FFH	FCP
Cam switch product ID		P016 Giovenzana line	PX20 Giovenzana line	CX40 Giovenzana line
Standards		IEC/EN 60947/3 – UL508	IEC/EN 60947/3 – UL508	IEC/EN 60947/3 – UL508
Markings		CE G UL US EAC CCC	CE G UL US EAC CCC	CE G UL US EAC CCC
Enclosed thermal current [Ithe]		16A	20A	40A
Rated insulation voltage [Ui]		690V	690V	690V
Frequency		50/60 Hz	50/60 Hz	50/60 Hz
Rated operating current	AC21A-AC22A	16A - 690Vac	20A - 690Vac	40A - 690Vac
	AC23A 3ph 230V	13A - 4kW	16A - 5kW	35A - 11kW
	AC23A 3ph 400V	13A - 7.5kW	16A - 9kW	32A – 18.5kW
Rated short circuit withstand current (gG 20A - 690V)		5kA	5kA	10kA
Contacts		double gap positive opening ➡	double gap positive opening ➡	double gap positive opening ➡
Connections	caliber	A3 (EN60947-1)	A3 (EN60947-1)	A5 (EN60947-1)
	screw size	M3.5	M3.5	M4
	max torque	0.8 Nm (EN60947-1) 7.5 lb.in. (UL508)	0.8 Nm (EN60947-1) 7.5 lb.in. (UL508)	1.2 Nm (EN60947-1) 10.6 lb.in. (UL508)
Connectable section	flexible or solid min/MAX	1x0.75/4 – 2x0.75/2.5	1x0.75/4 – 2x0.75/2.5	2x2.5/10
	flexible or solid AWG	16-12	16-12	14-6



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