

POSITION LIMIT SWITCHES

Giovenzana offers four different typologies of **position limit switches**, used in particular in industrial and construction lifting plants, in the automation industry, in stage technology, in particular to control hoists, winches and machine tools.

The range of position limit switches includes thermoplastic material limit switches allowing for diversified switch activation types:

- with cross rods;
- with single rod with roller;
- with lever.

Each position limit switches has specific features allowing to choose the limit switch that best suit the specific customers' needs.

All position limit switches are CE marked and they are manufactured in compliance with the directives and standards actually in force.

Furthermore, position limit switches are also EAC and CCC certified, for the Eurasian and Chinese markets, as proof of the importance given to the quality levels required in different countries.

APPLICATIONS

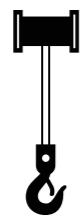
Our **position limit** switches are used to control several handling system:

SOPHISTICATED CRANE SYSTEM

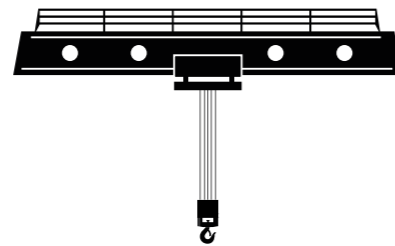
The unit controls power operating system (ex. PLC) and allows the crane to slow-down and/or to stop running.

HOIST

The unit is used to stop the hoist running whenever it reaches a "limit" position.



HOIST



CRANE

FEATURES

- Different versions are available for all standard system.
- Every customization is available upon request.

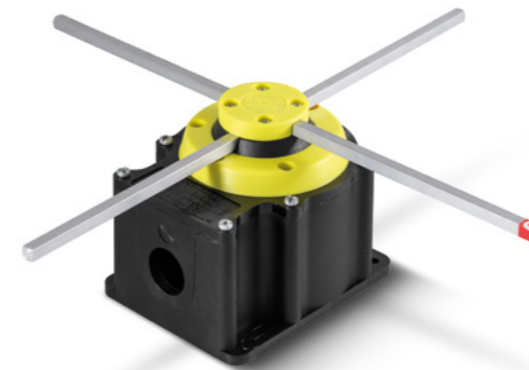
SERIES



FFH



FFH2C-1



FCR



FCP245

POSITION LIMIT SWITCHES

BENEFITS

- › Precise, reliable and safe devices
- › Good handling control ensured
- › Guaranteed maximum operating safety
- › Prevention of personal injury and damage to objects



FFH

FCR

FFH2C-1

FCP245

GENERAL CHARACTERISTICS

STANDARDS	IEC /EN 60497/3	IEC /EN 60497/3
CASE	Self extinguishing housing V0 UL94	Self extinguishing housing V0 UL94
PROTECTION CLASS	IP65 - Double insulation (IEC / EN 60529)	IP65 - Double insulation (IEC / EN 60529)
CABLE ENTRY	M16 / M20	Nr 1 Ø 22.5 mm
VERSIONS	Single or double speed motor configuration. 3, 4 or 4 with mechanical stop positions.	Single or double speed motor configuration. 3, 4 or 4 with mechanical stop positions.
NOTES	Fully adjustable aluminium rods □ 2x200 mm with "0" indicator. Reinforced mechanical stop.	Fully adjustable aluminium rods □ 6x300 mm with "0" indicator. Reinforced mechanical stop.
AMBIENTAL TEMPERATURE	Operating: -25°C ... +55°C Storage: -30°C ... +70°C	Operating: -25°C ... +55°C Storage: -30°C ... +70°C

GENERAL CHARACTERISTICS

STANDARDS	IEC /EN 60497/3	IEC /EN 60497/3, EN 81-1
CASE	Self extinguishing housing V0 UL94	Self extinguishing housing V0 UL94
PROTECTION CLASS	IP65 - Double insulation (IEC / EN 60529)	IP65 - Double insulation (IEC / EN 60529)
CABLE ENTRY	1 x M16 + 1 x M20	M20 (max 8)
VERSIONS	Single speed motor configuration. Other configurations on request.	Two pole on-off switch. Other configurations on request.
NOTES	Fully adjustable aluminium rod □ 6x120 mm with "0" indicator. Reinforced mechanical stop. Rubber covering wheel.	Reinforced mechanical stop.
AMBIENTAL TEMPERATURE	Operating: -25°C ... +55°C Storage: -30°C ... +70°C	Operating: -25°C ... +55°C Storage: -30°C ... +70°C

ELECTRICAL CHARACTERISTICS

PRODUCT ID	P016 Giovenzana Cam switch line	P016 Giovenzana Cam switch line
STANDARDS	IEC/EN 60947/3 – UL508	IEC/EN 60947/3 – UL508
MARKING	CE, IMQ, RINA, EAC, CCC, cULus, cCSAus	CE, IMQ, RINA, EAC, CCC, cULus, cCSAus
RATED OPERATING VOLTAGE - U_e	690V	690V
RATED INSULATION VOLTAGE - U_i	690V	690V
RATED IMPULSE WITHSTAND VOLTAGE - U_{imp}	4kV	4kV
RATED THERMAL CURRENT - I_{th}	16A	16A
ENCLOSED THERMAL CURRENT - I_{the}	16A	16A
RATED OPERATING CURRENT	AC21A AC22A	16A - 690 V AC
	AC23A 3ph 230V	13A - 4 kW
	AC23A 3ph 400V	13A - 7.5 kW
FREQUENCY	50 / 60 Hz	50 / 60 Hz
CONTACTS	Double gap positive opening (→)	Double gap positive opening (→)
BLOCK CALIBER	A3 (EN 60947-1)	A3 (EN 60947-1)
TERMINAL SCREW	M3.5	M3.5
TIGHTENING TORQUE	0.8 Nm / 7.2 lbin (EN60947-1) 7.5 lbin / 0.85 Nm (UL508)	0.8 Nm / 7.2 lbin (EN60947-1) 7.5 lbin / 0.85 Nm (UL508)
CONNECTABLE SECTION	Flexible conductors	1 x 0.75 / 4 ... 2 x 0.75 / 2.5 mm ² 10 ... 18 AWG
	Solid conductors	1 x 0.75 / 4 ... 2 x 0.75 / 2.5 mm ² 10 ... 18 AWG

ELECTRICAL CHARACTERISTICS

PRODUCT ID	PX20 Giovenzana Cam switch line	CX40 Giovenzana Cam switch line
STANDARDS	IEC/EN 60947/3 – UL508	IEC/EN 60947/3 – UL508
MARKING	CE, IMQ, RINA, EAC, CCC, cULus, cCSAus	CE, IMQ, RINA, EAC, CCC, cULus, cCSAus
RATED INSULATION VOLTAGE - U_i	690V	690V
RATED INSULATION VOLTAGE - U_i	690V	690V
RATED IMPULSE WITHSTAND VOLTAGE - U_{imp}	5kV	10kV
RATED THERMAL CURRENT - I_{th}	20A	40A
ENCLOSED THERMAL CURRENT - I_{th}	20A	40A
RATED OPERATING CURRENT	AC21A AC22A	20A - 690 V AC
	AC23A 3ph 230V	16A - 5 kW
	AC23A 3ph 400V	16A - 9 kW
FREQUENCY	50 / 60 Hz	50 / 60 Hz
CONTACTS	Double gap positive opening (→)	Double gap positive opening (→)
BLOCK CALIBER	A3 (EN 60947-1)	A5 (EN 60947-1)
TERMINAL SCREW	M3.5	M4
TIGHTENING TORQUE	0.8 Nm / 7.2 lbin (EN60947-1) 7.5 lbin / 0.85 Nm (UL508)	1.2 Nm (EN60947-1) 10.6 lbin (UL508)
CONNECTABLE SECTION	Flexible conductors	1 x 0.75 / 4 ... 2 x 0.75 / 2.5 mm ² 10 ... 18 AWG
	Solid conductors	1 x 0.75 / 4 ... 2 x 0.75 / 2.5 mm ² 10 ... 18 AWG

POSITION LIMIT SWITCHES

FFH Position limit switch



Position limit switch with reduced overall dimensions

The **FFH position limit switch** is used to control several handling systems:

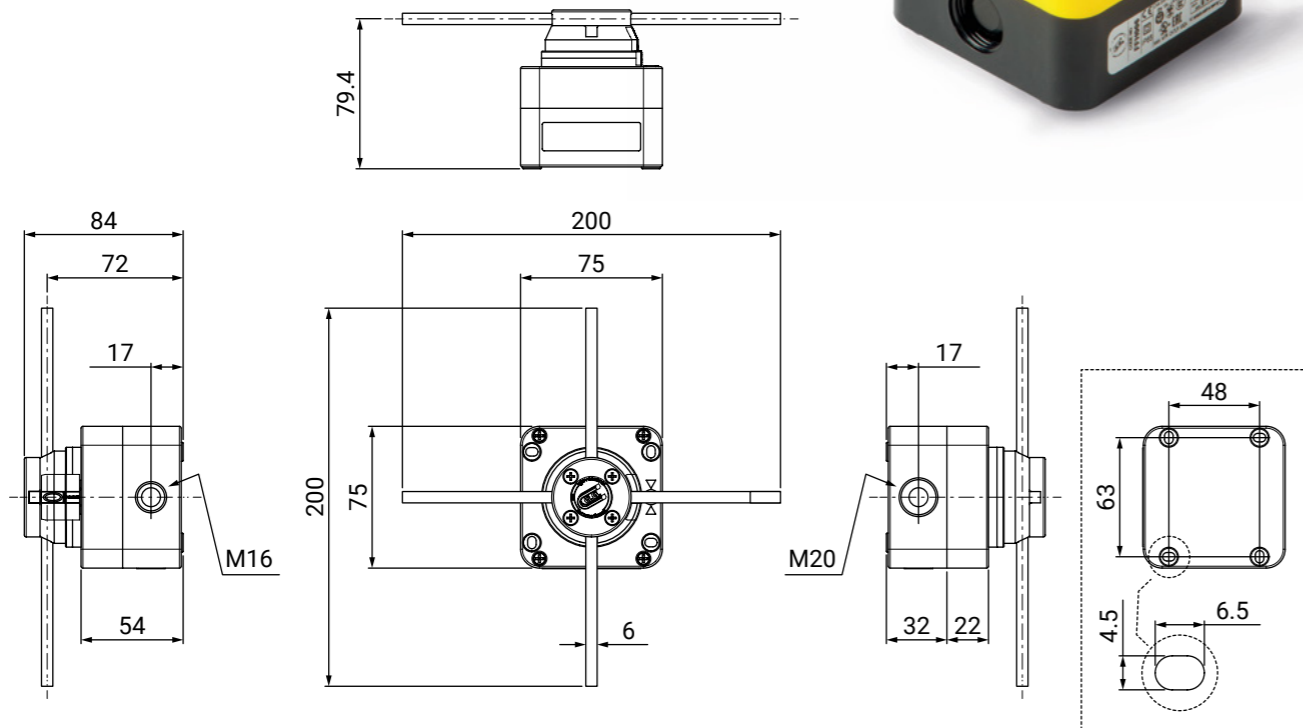
- **Bridge cranes:** the limit switch controls the operating system, for example a PLC, and allows the bridge crane to slow down or stop.
- **Hoists:** the limit switch is used to stop the hoist whenever it reaches a limit position.

Features

- Designed to ensure excellent performances in the most challenging operating conditions.
- Compact design to be adapted in any application need.
- Reduced overall dimensions compared to the historical FCR series.
- Arranged with 4 fixing holes.
- Positive opening NC contacts for safety functions.
- IP65 Protection degree.
- Aluminium rods with 6x6 mm section and enclosure in thermoplastic material.
- Cross rods with 4 maintained positions every 90°.
- Arranged with 2 outputs for cable clamps to reduce installation time and make wiring easier.
- Available different versions, also customizable on request.

Compliance and certifications

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



FFH
Internal
cam switch
P016 line



contact open contact close

Available codes

	<p>FFH001</p> <ul style="list-style-type: none"> Single speed 3 positions With mechanical interlock 	<p>contacts</p> <table border="1"> <tr> <td>3-4</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1-2</td> <td></td> <td></td> <td></td> </tr> </table> <p>- 90° 0 + 90° positions</p>	3-4				1-2																			
3-4																										
1-2																										
	<p>FFH002</p> <ul style="list-style-type: none"> Single speed 3 positions With mechanical interlock 	<p>contacts</p> <table border="1"> <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> </table> <p>- 90° 0 + 90° positions</p>	7-8				5-6				3-4				1-2											
7-8																										
5-6																										
3-4																										
1-2																										
	<p>FFH003</p> <ul style="list-style-type: none"> Single speed 4 positions Without mechanical interlock 	<p>contacts</p> <table border="1"> <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> </table> <p>0 90° 180° 270° positions</p>	3-4					1-2																		
3-4																										
1-2																										
	<p>FFH004</p> <ul style="list-style-type: none"> Single speed 4 positions Without mechanical interlock 	<p>contacts</p> <table border="1"> <tr> <td>5-6</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1-2</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>0 90° 180° 270° positions</p>	5-6					1-2																		
5-6																										
1-2																										
	<p>FFH005</p> <ul style="list-style-type: none"> Single speed 4 positions Without mechanical interlock 	<p>contacts</p> <table border="1"> <tr> <td>5-6</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1-2</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>0 90° 180° 270° positions</p>	5-6					1-2																		
5-6																										
1-2																										
	<p>FFH006</p> <ul style="list-style-type: none"> Double speed 4 positions With mechanical interlock 	<p>contacts</p> <table border="1"> <tr> <td>7-8</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5-6</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3-4</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1-2</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>- 180° - 90° 0 + 90° + 180° positions</p>	7-8						5-6						3-4						1-2					
7-8																										
5-6																										
3-4																										
1-2																										

POSITION LIMIT SWITCHES

FCR

Position limit switch

Position limit switch

The **FCR position limit switch** is used to control several handling systems:

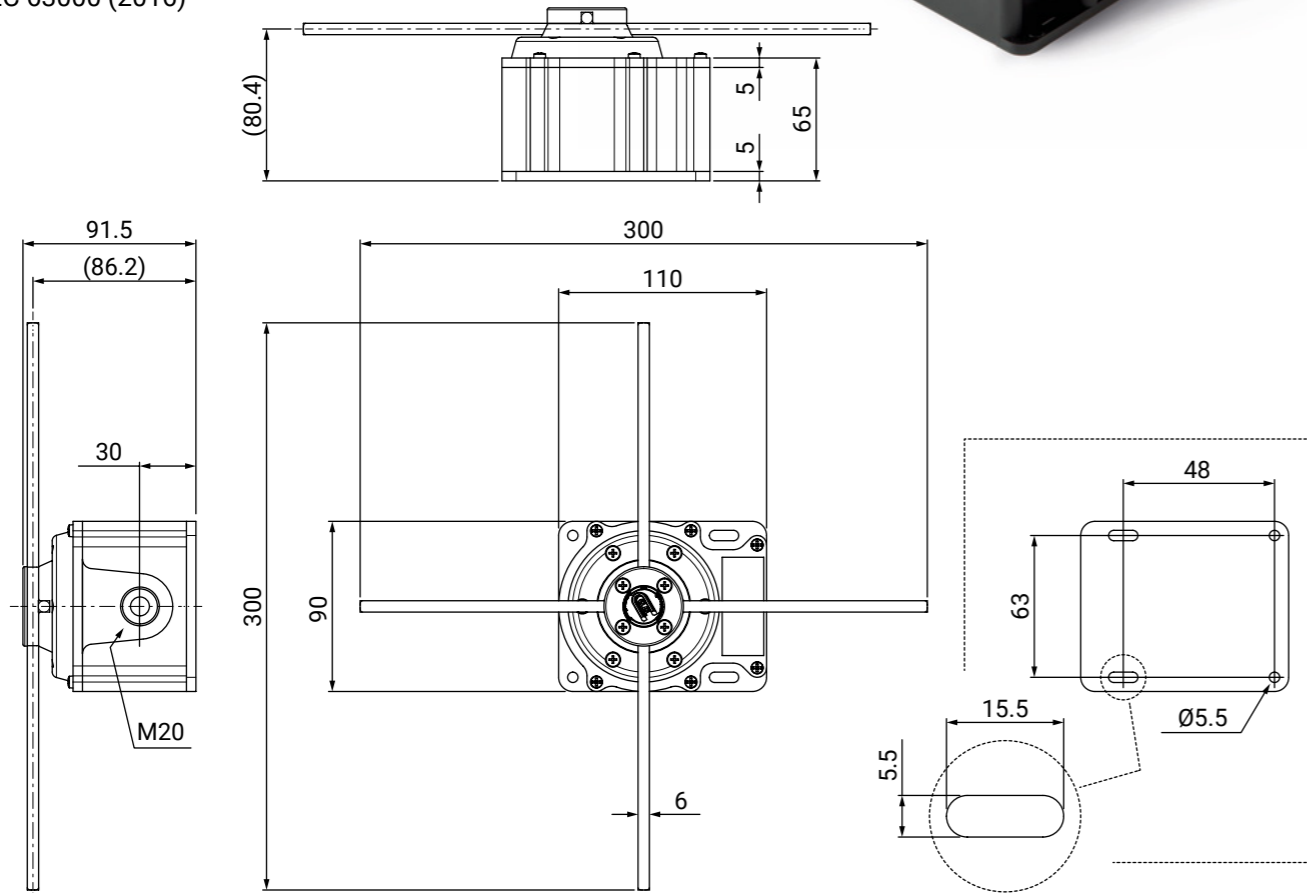
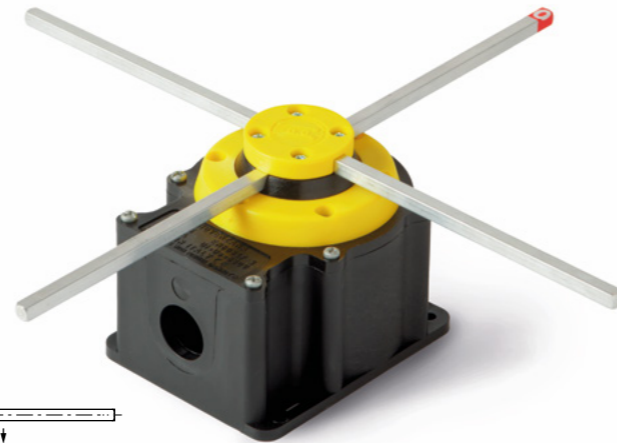
- **Bridge cranes:** the limit switch controls the operating system, for example a PLC, and allows the bridge crane to slow down or stop.
- **Hoists:** the limit switch is used to stop the hoist whenever it reaches a limit position.

Features

- Designed to guarantee excellent performance in the most challenging operating conditions.
- Arranged with 4 fixing holes.
- Positive opening NC contacts for safety functions.
- IP65 protection degree.
- Aluminium rods with 6x6 mm section and enclosure in thermoplastic material.
- Cross rods with 4 maintained positions every 90°.
- Arranged with 1 output for cable clamps to reduce installation time and make wiring easier.
- Available different versions, also customizable on request.

Compliance and certifications

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

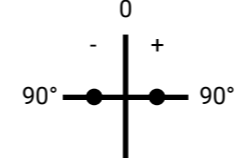
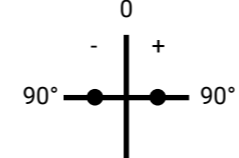
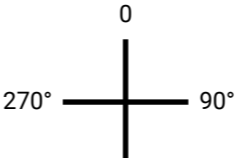
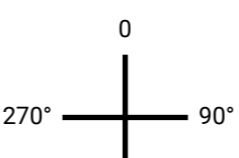
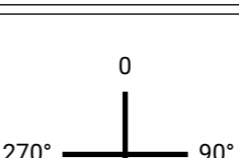
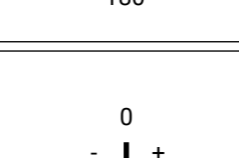


FCR
Internal
cam switch
P016 line



contact open (green square) contact close (red square)

Available codes

	<p>FCR001</p> <p>Single speed 3 positions With mechanical interlock</p>	<p>contacts</p> <table border="1"> <tr> <td>3-4</td> <td>contact open</td> <td>contact close</td> <td>contact close</td> </tr> <tr> <td>1-2</td> <td>contact close</td> <td>contact close</td> <td>contact open</td> </tr> </table> <p>- 90° 0 + 90° positions</p>	3-4	contact open	contact close	contact close	1-2	contact close	contact close	contact open																
3-4	contact open	contact close	contact close																							
1-2	contact close	contact close	contact open																							
	<p>FCR002</p> <p>Single speed 3 positions With mechanical interlock</p>	<p>contacts</p> <table border="1"> <tr> <td>7-8</td> <td>contact open</td> <td>contact close</td> <td>contact close</td> </tr> <tr> <td>5-6</td> <td>contact close</td> <td>contact close</td> <td>contact open</td> </tr> <tr> <td>3-4</td> <td>contact open</td> <td>contact close</td> <td>contact close</td> </tr> <tr> <td>1-2</td> <td>contact close</td> <td>contact close</td> <td>contact open</td> </tr> </table> <p>- 90° 0 + 90° positions</p>	7-8	contact open	contact close	contact close	5-6	contact close	contact close	contact open	3-4	contact open	contact close	contact close	1-2	contact close	contact close	contact open								
7-8	contact open	contact close	contact close																							
5-6	contact close	contact close	contact open																							
3-4	contact open	contact close	contact close																							
1-2	contact close	contact close	contact open																							
	<p>FCR003</p> <p>Single speed 4 positions Without mechanical interlock</p>	<p>contacts</p> <table border="1"> <tr> <td>3-4</td> <td>contact close</td> <td>contact open</td> <td>contact close</td> <td>contact open</td> </tr> <tr> <td>1-2</td> <td>contact close</td> <td>contact open</td> <td>contact close</td> <td>contact open</td> </tr> </table> <p>0 90° 180° 270° positions</p>	3-4	contact close	contact open	contact close	contact open	1-2	contact close	contact open	contact close	contact open														
3-4	contact close	contact open	contact close	contact open																						
1-2	contact close	contact open	contact close	contact open																						
	<p>FCR004</p> <p>Single speed 4 positions Without mechanical interlock</p>	<p>contacts</p> <table border="1"> <tr> <td>5-6</td> <td>contact close</td> <td>contact close</td> <td>contact open</td> <td>contact close</td> </tr> <tr> <td>1-2</td> <td>contact close</td> <td>contact open</td> <td>contact open</td> <td>contact open</td> </tr> </table> <p>0 90° 180° 270° positions</p>	5-6	contact close	contact close	contact open	contact close	1-2	contact close	contact open	contact open	contact open														
5-6	contact close	contact close	contact open	contact close																						
1-2	contact close	contact open	contact open	contact open																						
	<p>FCR005</p> <p>Single speed 4 positions Without mechanical interlock</p>	<p>contacts</p> <table border="1"> <tr> <td>5-6</td> <td>contact close</td> <td>contact open</td> <td>contact open</td> <td>contact close</td> </tr> <tr> <td>1-2</td> <td>contact close</td> <td>contact close</td> <td>contact open</td> <td>contact open</td> </tr> </table> <p>0 90° 180° 270° positions</p>	5-6	contact close	contact open	contact open	contact close	1-2	contact close	contact close	contact open	contact open														
5-6	contact close	contact open	contact open	contact close																						
1-2	contact close	contact close	contact open	contact open																						
	<p>FCR006</p> <p>Double speed 4 positions With mechanical interlock</p>	<p>contacts</p> <table border="1"> <tr> <td>7-8</td> <td>contact close</td> <td>contact close</td> <td>contact close</td> <td>contact open</td> <td>contact open</td> </tr> <tr> <td>5-6</td> <td>contact close</td> <td>contact close</td> <td>contact close</td> <td>contact open</td> <td>contact open</td> </tr> <tr> <td>3-4</td> <td>contact open</td> <td>contact open</td> <td>contact close</td> <td>contact close</td> <td>contact close</td> </tr> <tr> <td>1-2</td> <td>contact open</td> <td>contact close</td> <td>contact close</td> <td>contact close</td> <td>contact close</td> </tr> </table> <p>- 180° - 90° 0 + 90° + 180° positions</p>	7-8	contact close	contact close	contact close	contact open	contact open	5-6	contact close	contact close	contact close	contact open	contact open	3-4	contact open	contact open	contact close	contact close	contact close	1-2	contact open	contact close	contact close	contact close	contact close
7-8	contact close	contact close	contact close	contact open	contact open																					
5-6	contact close	contact close	contact close	contact open	contact open																					
3-4	contact open	contact open	contact close	contact close	contact close																					
1-2	contact open	contact close	contact close	contact close	contact close																					

POSITION LIMIT SWITCHES