

TOP ATEX

HAZARDOUS AREAS

Rotary limit switch



Gear limit switch used to control and measure the movement of industrial in areas with potentially explosive atmospheres. Saline fog resistant and rich in options, Top is designed to meet the most demanding requirements.

FEATURES

- It consists of a gear motor that transfers movement to the cams and the other movement detection devices through a primary input reduction stage (worm gear and helical toothed gear) and one or more secondary output stages (pairs of straight toothed gears).
- Accurate adjustment of cams by means of screws.
- Positive opening NC contacts for safety functions.
- Mechanical life of switches: up to 10 million operations.
- IP protection degree: Top is classified IP 65.
- Extreme temperature resistance: -25°C to +60°C.
- Saline fog resistant.
- It features base and cover made of electrostatic varnished die-cast aluminum, transmission and gear driving shafts made of stainless steel AISI 303, worm gear transmission shaft rotating on ball bearings, self-lubricating technopolymer gears and driving bushes.
- All materials and components used are wear resistant and guarantee protection of the unit against water and dust.

OPTIONS

- Rapporti di riduzione da 1:1 a 1:8100, ottenuti combinando opportunamente diversi stadi secondari di uscita.
- Possibilità di ottenere un rapporto giri diverso per ognuna delle tre uscite del finecorsa per consentire un controllo diversificato della macchina in base a particolari esigenze.
- Interruttori 1NO+1NC ad apertura rapida o 1NC ad apertura lenta.
- Possibilità di montare 3 gruppi camme (massimo 18 interruttori).
- Pressacavi e connettori conformi Atex.
- Disponibile con flange, pignoni e innesti.
- Piastre con adattatori universali per la sostituzione di sistemi esistenti.

CERTIFICATIONS

- CE Marking.
- Atex Certification.

Fill in the "request form" for accurate product configuration.

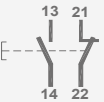
CERTIFICATIONS

Conformity to Community Directives	2014/35/UE Low Voltage Directive
	2006/42/CE Machinery Directive
	2014/34/UE Atex Directive
Conformity to EN IEC Standards	EN IEC 60204-1 Safety of machinery - Electrical equipment of machines
	EN IEC 60947-5-1 Low-voltage switchgear and controlgear - Control circuit devices and switching elements - Electromechanical control circuit devices
	EN IEC 60529 Degrees of protection provided by enclosures
	EN IEC 60079-31 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
	EN IEC 60079-0 Explosive atmospheres – Part 0: Equipment – General requirements
	EN IEC 60079-14 Explosive atmospheres – Part 14: Electrical installations design, selection and erection
Type of protection	II 3G Ex ec IIB T5 Gb
	II 3D Ex tc IIB T100°C Dc
Markings and homologations	CE  IEC

GENERAL TECHNICAL SPECIFICATIONS

Ambient temperature	Storage -25°C/+60°C
	Operational -25°C/+60°C
IP protection degree	IP 65
Insulation category	Class I
Rotation speed	Max. 800 rpm
Cable entry	Cable gland M20
Shafts	Stainless steel AISI 303

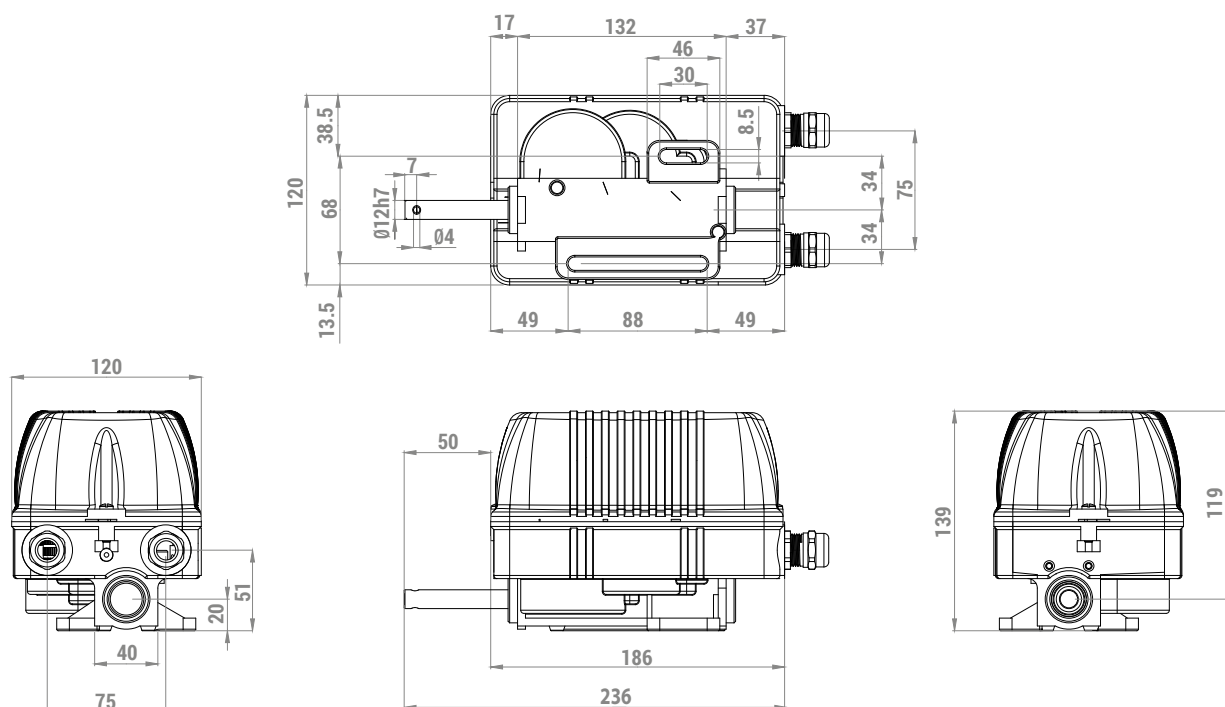
TECHNICAL SPECIFICATIONS OF THE SWITCHES

Code	PRSL0110XX	PRSL0111XX
Utilisation category	AC 15	
Rated operational voltage	250 Vac	
Rated operational current	3 A	
Rated thermal current	10 A	
Rated insulation voltage	300 Vac	
Mechanical life	10x10 ⁶ operations	
Connections	Screw-type terminals	
Wires	1x2.5 mm ² , 2x1.5 mm ² (UL (c)UL: use 60°C or 75°C copper (CU) conductors and stiff or flexible wire 14-22 AWG)	
Tightening torque	0.5 Nm	
Switch type	Double break, snap action	Double break, slow action
Contacts	1NO+1NC (All NC contacts are of the positive opening operation type )	1NC (All NC contacts are of the positive opening operation type )
Scheme		
Markings and homologations	CE  	

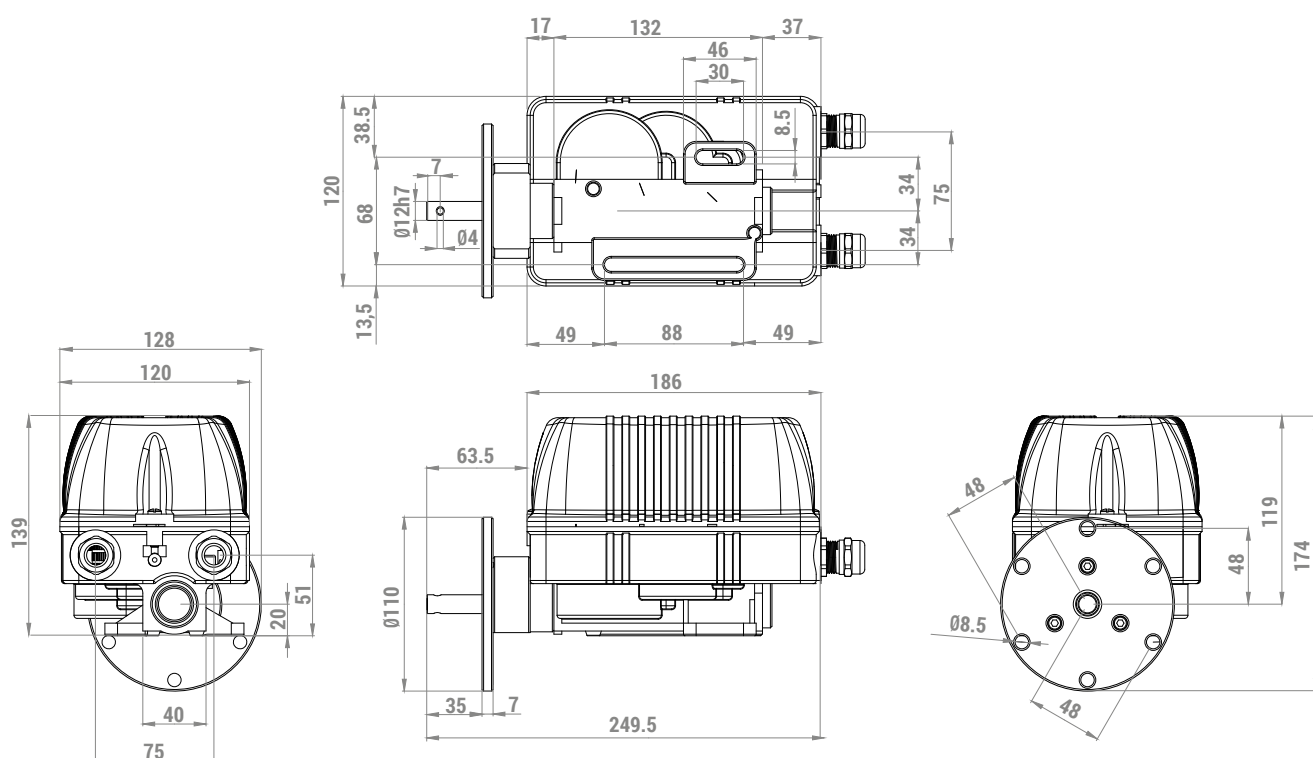
Switches PRSL0100XX available on request.

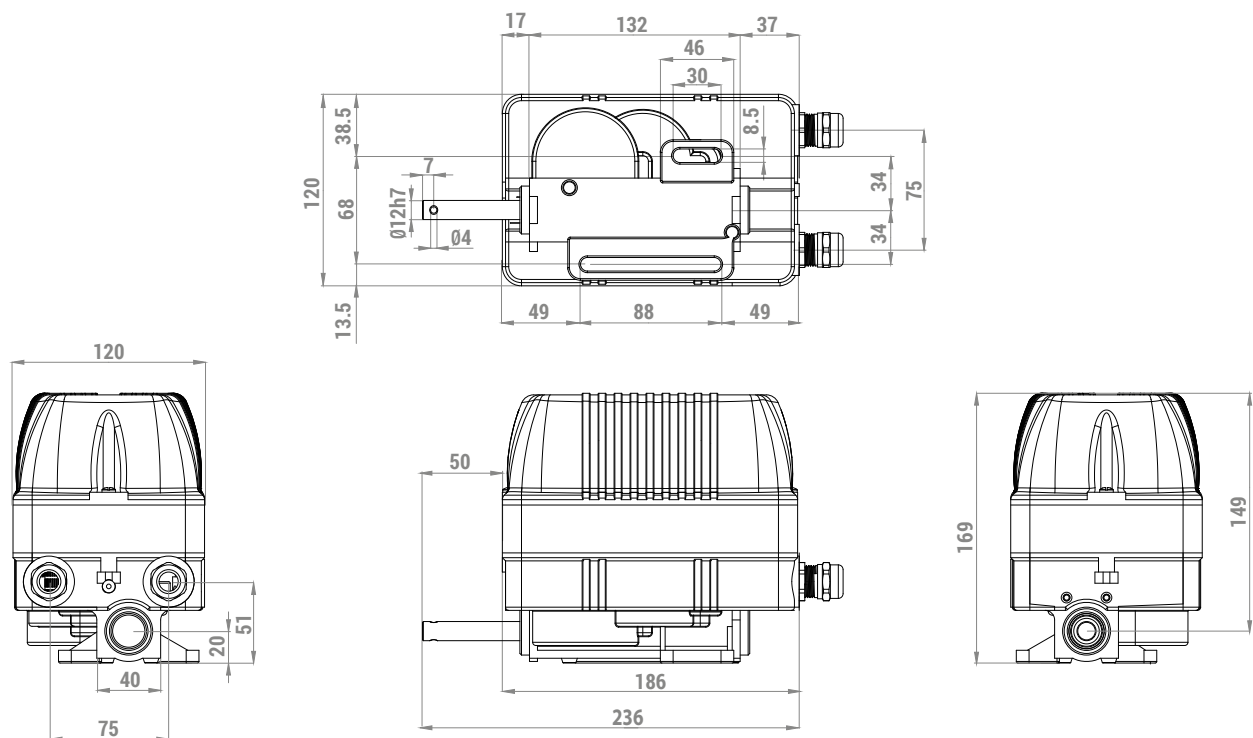
OVERALL DIMENSIONS (mm)

Standard

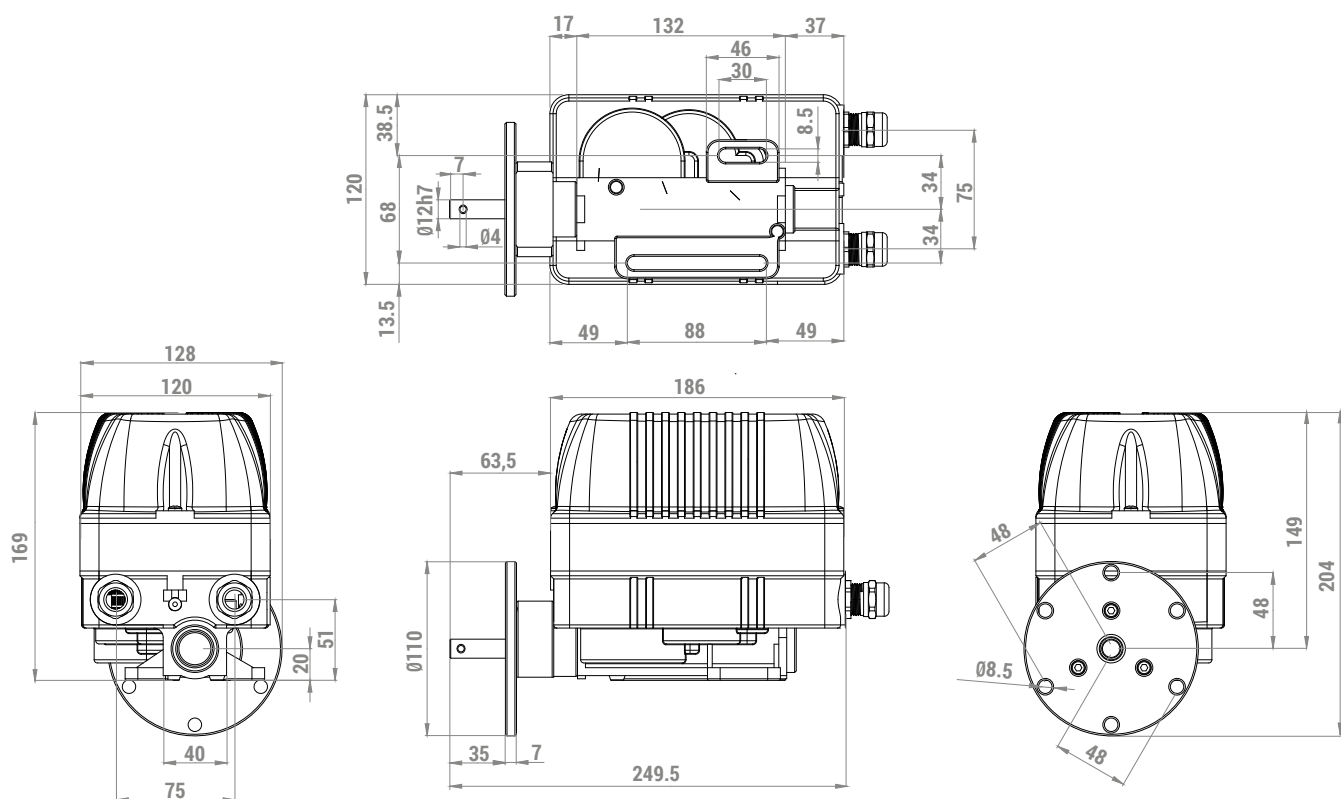


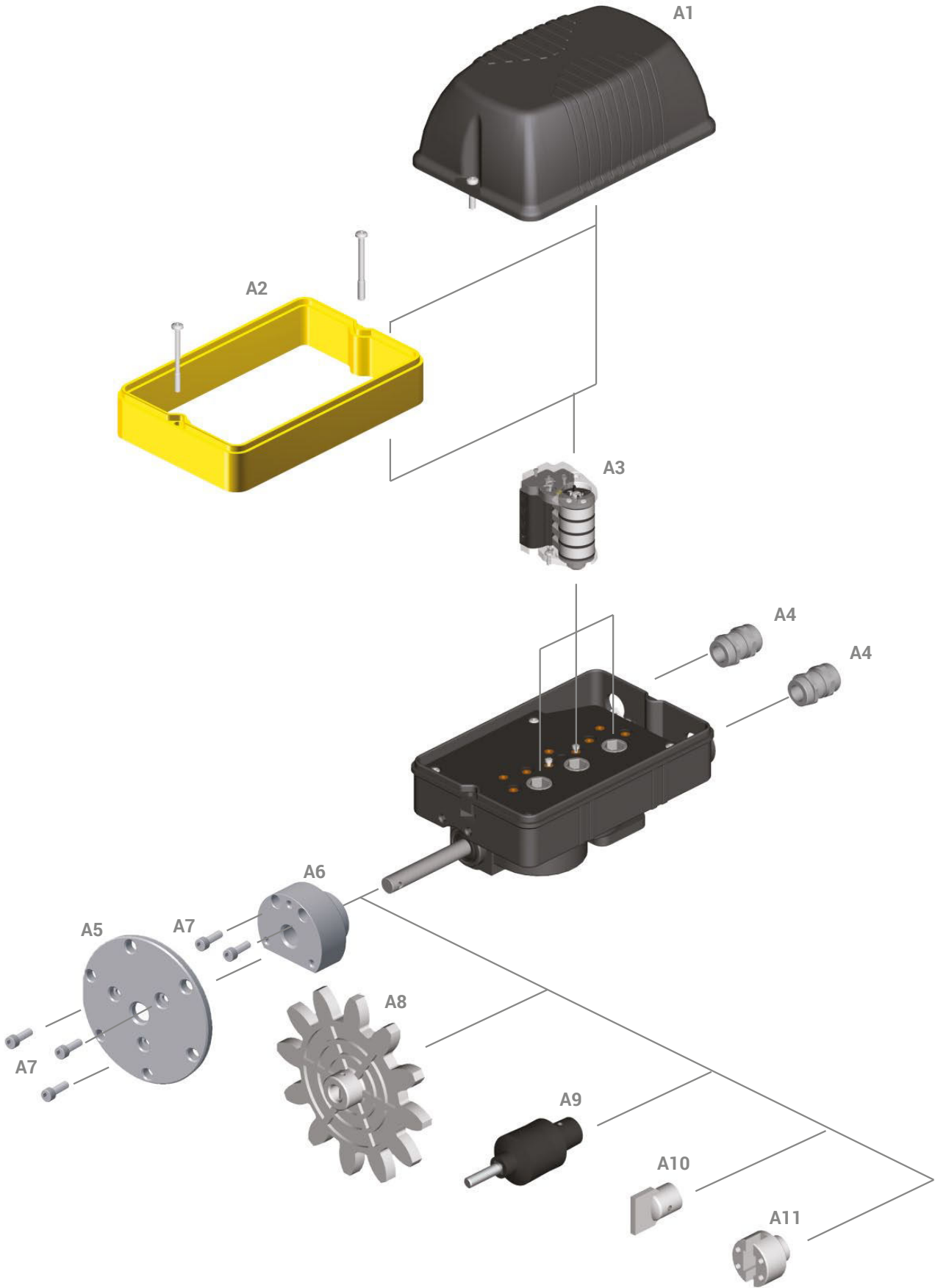
With flange





Top XL with cover rise and flange





Refer to the following tables for descriptions of components: "Standard cam sets" and "Accessories".

COMPONENTS

Standard cam sets

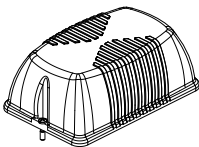
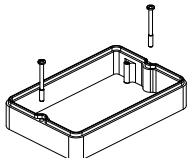
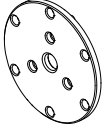
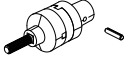
Ref.	Drawing	No. and type of cams	No. and type of switches	Code
A3		2 cams A	2 PRSL0110XX switches	FCL20001
		2 cams A	2 PRSL0111XX switches	FCL20002
		Cams A+C	2 PRSL0110XX switches	FCL20003
		Cams A+C	2 PRSL0111XX switches	FCL20004
		2 cams C	2 PRSL0110XX switches	FCL20005
		2 cams C	2 PRSL0111XX switches	FCL20006
		Cams D+D+B+F	4 PRSL0110XX switches	FCL40001
		Cams D+D+B+F	4 PRSL0111XX switches	FCL40002
		4 cams A	4 PRSL0110XX switches	FCL40003
		4 cams A	4 PRSL0111XX switches	FCL40004
		Cams A+A+C+C	4 PRSL0110XX switches	FCL40005
		Cams A+A+C+C	4 PRSL0111XX switches	FCL40006
		4 cams C	4 PRSL0110XX switches	FCL40007
		4 cams C	4 PRSL0111XX switches	FCL40008
		Cams C+C+C+E	4 PRSL0110XX switches	FCL40009
		Cams C+C+C+E	4 PRSL0111XX switches	FCL40010
		Cams A+A+E+E	4 PRSL0110XX switches	FCL40011
		Cams A+A+E+E	4 PRSL0111XX switches	FCL40012
		5 cams A	5 PRSL0110XX switches	FCL50006
		5 cams A	5 PRSL0111XX switches	FCL50005
		5 cams C	5 PRSL0110XX switches	FCL50001
		5 cams C	5 PRSL0111XX switches	FCL50010
		6 cams A	6 PRSL0110XX switches	FCL60003
		6 cams A	6 PRSL0111XX switches	FCL60006
		6 cams C	6 PRSL0110XX switches	FCL60001
		6 cams C	6 PRSL0111XX switches	FCL60010

Other sets with 2/3/4/5 or 6 cams/switches are available on request.
New cam packs available, with worm gear to improve hysteresis.

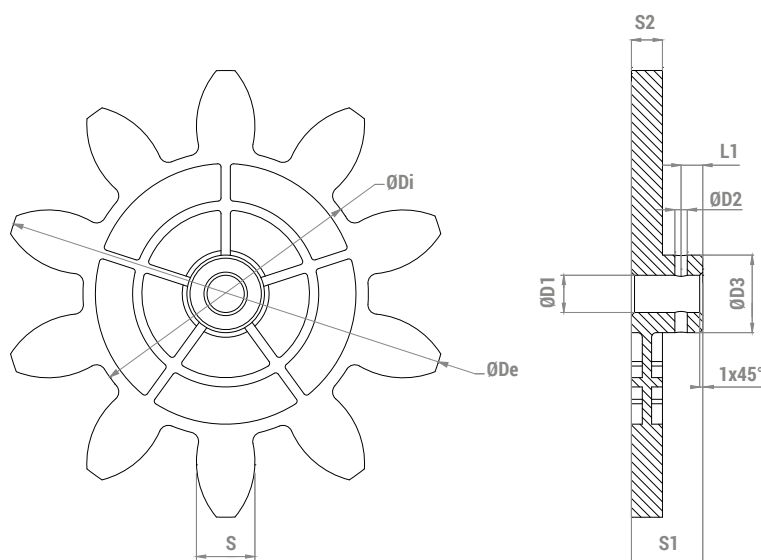
Cam reference chart

Cam			Cam code for PRSL0110XX switch	Switching angle with PRSL0110XX	Cam code for PRSL0111XX switch	Switching angle with PRSL0111XX
A		1 point	PRSL7194PI	21.5° ±0.5°	PRSL7194PI	23.0° ±0.5°
B		10 points	PRSL7193PI	21.5° ±0.5°	PRSL7193PI	23.0° ±0.5°
C		60° sector	PRSL7195PI	82.0° ±0.5°	PRSL7195PI	86.0° ±0.5°
D		72° sector	PRSL7196PI	94.0° ±0.5°	PRSL7196PI	97.5° ±0.5°
E		180° sector	PRSL7191PI	204.5° ±0.5°	PRSL7191PI	203.0° ±0.5°
F		305° sector	PRSL7192PI	328.5° ±0.5°	PRSL7192PI	327.0° ±0.5°

Accessories

Ref.	Drawing	Description	Code
A1		Cover with gasket, screws and earth cable	PA090018
A2		Cover rise with gasket, screws and earth cable	PRSL0707PI
A4		Cable gland M20x1.5	PRPS1075PE
A5		Flange	PRTR1300PE
A6		Flange support	PRT03018PE
A7		Screw for flange fastening and flange support	PRVI0223PE
A8		Pinion gear	See pinion gear tables
A9		Coupling with pin	PRSL0981PI
A10		Male coupling with pin	PRSL0919PI
A11		Female coupling with pin	PRSL0920PI

Moulded pinion gears



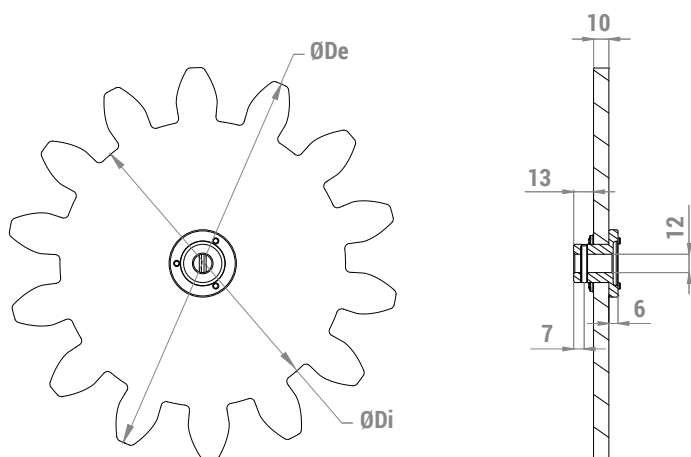
Legend

Z	Number of teeth
M	Module
Dp	Primitive diameter
De	External diameter
Di	Internal diameter
a	Addendum
d	Dedendum
Alpha	Pressure angle

Code	Z	M	Dp	De	Di	a	d	S	Alpha	D1	D2	D3	S1	S2	L1
PRSL0855PI	8	24.00	192.00	240.00	136.00	24.00	28.00	38.1	20.00	12.00	4.00	24.00	23.00	10.00	7.00
PRSL0915PI	8	20.00	160.00	200.00	113.20	20.00	23.40	31.41	20.00	12.00	4.00	24.00	23.00	10.00	7.00
PRSL0912PI	10	12.00	120.00	144.00	92.00	12.00	14.00	18.85	20.00	12.00	4.00	25.00	23.00	10.00	7.00
PRSL0913PI	10	14.00	140.00	168.00	107.24	14.00	16.38	21.99	20.00	12.00	4.00	24.60	23.00	10.00	7.00
PRSL0914PI	10	16.00	160.00	192.00	122.67	16.00	18.67	25.13	20.00	12.00	4.00	24.00	23.00	10.00	7.00
PRSL0917PI	11	6.00	66.00	78.00	51.96	6.00	7.02	9.42	20.00	12.00	4.00	19.00	23.00	8.00	7.00
PRSL0916PI	12	5.00	60.00	70.00	48.30	5.00	5.83	7.85	20.00	12.00	4.00	20.00	23.00	8.00	7.00
PRSL0918PI	12	8.00	96.00	112.00	77.28	8.00	9.36	12.56	20.00	12.00	4.00	21.50	23.50	10.00	7.00
PRSL0911PI	12	10.00	120.00	140.00	96.67	10.00	11.67	15.71	20.00	12.00	4.00	25.00	23.50	10.00	7.00
PRSL0944PI	12	12.00	144.00	168.00	116.00	12.00	14.00	18.85	20.00	12.00	4.00	24.00	23.00	10.00	7.00

Measuring unit: mm.

Waterjet cut pinion gears



Legend

Z	Number of teeth
M	Module
Dp	Primitive diameter
De	External diameter
Di	Internal diameter
a	Addendum
d	Dedendum
Alpha	Pressure angle

Code	Z	M	Dp	De	Di	a	d	Alpha
PRSL0857PI	8	18.00	144.00	180.00	102.00	18.00	21.00	20.00
PRSL0992PI	9	10.00	90.00	110.00	66.67	10.00	11.67	20.00
PRSL0879PI	9	16.00	144.00	176.00	106.67	16.00	18.67	20.00
PRSL0854PI	9	18.00	162.00	198.00	120.00	18.00	21.00	20.00
PRSL0871PI	9	20.00	180.00	220.00	133.33	20.00	23.33	20.00
PRSL0849PI	9	24.00	216.00	264.00	160.00	24.00	28.00	20.00
PRSL0846PI	10	10.00	100.00	120.00	76.67	10.00	11.67	20.00
PRSL0993PI	10	18.00	180.00	216.00	138.00	18.00	21.00	20.00
PRSL0970PI	10	22.00	220.00	264.00	168.52	22.00	25.74	20.00
PRSL0856PI	10	24.00	240.00	288.00	184.00	24.00	28.00	20.00
PRSL0861PI	11	12.00	132.00	156.00	104.00	12.00	14.00	20.00
PRSL0998PI	11	18.00	198.00	234.00	156.00	18.00	21.00	20.00
PRSL0997PI	11	20.00	220.00	260.00	173.36	20.00	23.32	20.00
PRSL0859PI	11	24.00	264.00	312.00	204.00	24.00	30.00	20.00
PRSL0863PI	12	14.00	168.00	196.00	133.00	14.00	17.50	20.00
PRSL0897PI	12	16.00	192.00	224.00	154.67	16.00	18.67	20.00
PRSL0972PI	12	18.00	216.00	252.00	173.88	18.00	21.06	20.00
PRSL0845PI	12	20.00	240.00	280.00	193.34	20.00	23.32	20.00
PRSL0878PI	12	24.00	288.00	336.00	232.00	24.00	28.00	20.00
PRSL0860PI	13	6.00	78.00	90.00	63.00	6.00	7.50	20.00
PRSL0853PI	13	12.00	156.00	178.59	126.00	11.29	15.00	20.00
PRSL0898PI	13	16.00	208.00	240.00	170.67	16.00	18.66	20.00
PRSL0862PI	14	10.00	140.00	169.00	125.00	15.00	7.50	20.00
PRSL0896PI	14	16.00	224.00	256.00	186.67	16.00	18.67	20.00
PRSL0999PI	14	18.00	252.00	288.00	210.00	18.00	21.00	20.00
PRSL0848PI	14	20.00	280.00	320.00	233.33	20.00	23.33	20.00
PRSL0858PI	15	18.00	270.00	306.00	228.00	18.00	21.00	20.00
PRSL0847PI	16	20.00	320.00	360.00	273.33	20.00	23.33	20.00
PRSL0973PI	17	10.00	170.00	190.00	145.00	10.00	12.50	22.89
PRSL0974PI	17	14.00	238.00	266.00	203.00	14.00	17.50	22.89
PRSL0851PI	20	6.00	120.00	132.00	105.00	6.00	7.50	22.89

Measuring unit: mm.

TOP ATEX - REQUEST FORM FOR LIMIT SWITCH

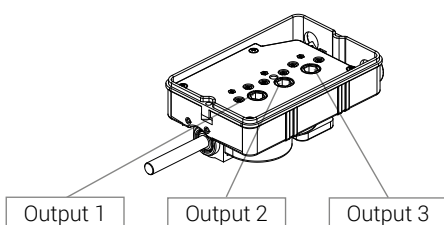
Instructions

(See next pages for list of components and legends)

- 1 Revolution ratio:** write the required revolution ratio for each output.
- 2 Standard cam sets:** write the code of the cam set required for each output, according to the legend.
- 3 Customized cam sets:** for non standard cam sets, fill in the scheme choosing the cams and the switches required, according to the legend. It is possible to assemble sets with 2, 3, 4, 5 or 6 cams/switches. When using 6 cams/switches, the PRSL0707PI cover rise is also required. Customized cams are available on request.
- 4 Shaft:** tick the type of shaft required.
Customized shafts are available on request.
- 5 Coupling, flange, pinion gear:** tick the appropriate box when coupling, flange or pinion gear are required.

When a standard pinion gear is required, write the code number listed in the pinion gear tables in the catalogue.

When a special pinion gear is required, write the number of teeth, the module and the primitive diameter.



Revolution ratio

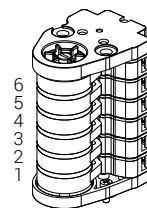
Output 1			Output 2			Output 3		

Standard cam sets

Cam set code

	Output 1
	Output 2
	Output 3

Customized cam sets



Output 1

Cam code

6	
5	
4	
3	
2	
1	

Switch code

Output 2

Cam code

6	
5	
4	
3	
2	
1	

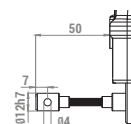
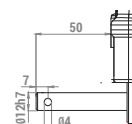
Switch code

Output 3

Cam code

6	
5	
4	
3	
2	
1	

Switch code

☐ Standard shaft☐ Flexible shaft☐ Male coupling☐ Female coupling☐ Pinion gear☐ Coupling☐ FlangePinion gear code

Customized pinion gear

No. of teeth Module Primitive diameter

2 Legend - Standard cam sets

No. & type of switches	No. & type of cams	Cam set code
2 x PRSL0110XX	2 cams A	FCL20001
	Cams A+C	FCL20003
4 x PRSL0110XX	2 cams C	FCL20005
	Cams D+D+B+F	FCL40001
	4 cams A	FCL40003
	Cams A+A+C+C	FCL40005
	4 cams C	FCL40007
	Cams C+C+C+E	FCL40009
5 x PRSL0110XX	Cams A+A+E+E	FCL40011
	5 camme A	FCL50006
6 x PRSL0110XX	5 camme C	FCL50001
	6 camme A	FCL60003
6 x PRSL0110XX	6 camme C	FCL60001
2 x PRSL0111XX	2 cams A	FCL20002
	Cams A+C	FCL20004
	2 cams C	FCL20006
4 x PRSL0111XX	Cams D+D+B+F	FCL40002
	4 cams A	FCL40004
	Cams A+A+C+C	FCL40006
	4 cams C	FCL40008
	Cams C+C+C+E	FCL40010
	Cams A+A+E+E	FCL40012
5 x PRSL0111XX	5 camme A	FCL50005
	5 camme C	FCL50010
6x PRSL0111XX	6 camme A	FCL60006
	6 camme C	FCL60010

3 Legend - Switches

PRSL0110XX	PRSL0111XX
1NO+1NC	1NC
	

3 Legend - Cams

Standard Cam	Cam code for PRSL0110XX switch	Switching angle with PRSL0110XX	Cam code for PRSL0111XX switch	Switching angle with PRSL0111XX
A 	PRSL7194PI	21.5° ±0.5°	PRSL7194PI	23.0° ±0.5°
B 	PRSL7193PI	21.5° ±0.5°	PRSL7193PI	23.0° ±0.5°
C 	PRSL7195PI	82.0° ±0.5°	PRSL7195PI	86.0° ±0.5°
D 	PRSL7196PI	94.0° ±0.5°	PRSL7196PI	97.5° ±0.5°
E 	PRSL7191PI	204.5° ±0.5°	PRSL7191PI	203.0° ±0.5°
F 	PRSL7192PI	328.5° ±0.5°	PRSL7192PI	327.0° ±0.5°

Cam with worm gear to improve hysteresis	Cam code
 1 point	CFD00001
 10 points	CFC00001
 15° sector	CFC01501
 30° sector	CFC03000

Cam with worm gear to improve hysteresis	Cam code
 40° sector	CFC04001
 60° sector	CFC06002
 90° sector	CFC09001
 180° sector	CFC18001

