

ROTARY GEAR LIMIT SWITCHES

For more than 65 years, **Giovenzana International B.V.** has been designing and producing rotary gear limit switches, offering now four different series.

Rotary gear limit switches are used to control the movement of industrial machinery when it's necessary to measure movement based on the rotation angle and/or the number of shaft revolutions, providing upper, lower and/or intermediate limits for moving machinery and mechanisms.

Usually connected to the motor shaft, the rotary gear limit switch uses a series of gears and cams to activate a microswitch when the appropriate number of rotations is reached. This is generally used to stop the motor when a moving load has reached the desired position or final positions.

The device, through a gear transmission, controls a cam system operating on 2, 4 or more microswitches that after a certain number of revolutions predispose the motor or the equipment to the start or stop.

Each cam is equipped with a "micrometric" adjustable register screw that operates in an independent way, so it is possible to calibrate the opening and closing of each microswitch according to the necessary requirements.

The gear transmission system allows to choose different ratios and can be supplied in a bi-protruding shaft version or with linear control (potentiometer or encoder).

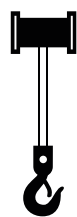
Each series of rotary limit switch has specific features which reduce time and costs for installation and maintenance.

Giovenzana International B.V. offers rotary gear limit switches with standard input ratios from 1:12 to 1:400 (custom input ratios are available on request up to 1:3572 - according to the configuration and the typology). They can be configured with maximum 8 contacts and combined with encoders and potentiometers to reach your own needs. We can offer snap action switches and different cam types to meet customers requirements.

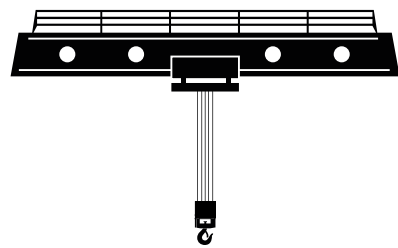
The wide range of the input ratios (standards and customized) available in our series, make every customers and applications needs satisfied.

APPLICATIONS

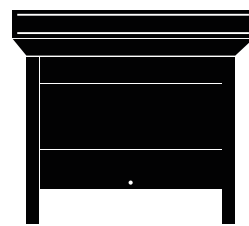
Giovenzana rotary limit switches are suitable for several applications: from lifting machinery to industrial overhead doors and boat lifts, from theatre lighting hoists to renewable energy systems, like wind turbines.



HOIST



CRANE



INDUSTRIAL DOORS



WIND TURBINES

SERIES



FGR0



FGR1



FGR2



FGR3

FEATURES

- The revolutions of the shaft are transmitted to a cam switch mechanism, through which mechanical switching contacts are actuated.
- Different ratios (also direct ratios) are available for the rotary gear limit switches of the FGR series.
- The switch can be equipped with a maximum of 8 switching contacts.
- Positive opening NC contacts for safety functions.
- Each cam can be individually adjusted to the desired position and thus enables flexible definition of end positions and reference points. More accurate adjustment of cams by means of screws.
- To reduce abrasion and rust, the transmission and guide shafts of the gears are made of stainless steel.
- The circumferential rubber gasket provides great protection against dust and water, allowing IP66 protection to be easily achieved for the entire products range.
- The optimised interior allows quick and easy cabling.

BENEFITS

- › High protection class degree
- › Extreme temperature resistance: -30°C to +70°C
- › Easy use, resistance and durability
- › Guaranteed safety



FGR0		FGR1
GENERAL CHARACTERISTICS		
CASE	Self-extinguishing thermoplastic material	Thermoplastic glass fiber reinforced material
PROTECTION CLASS	IP67 - IEC / EN 60529	IP65 - IEC / EN 60529
RATIO	1:12, 1:25, 1:33, 1:50, 1:75, 1:100, 1:150, 1:200, 1:400	1:12, 1:33, 1:50, 1:75, 1:100, 1:150, 1:200, 1:400
DIRECT RATIO	1:25, 1:50	1:50, 1:75, 1:100
SHAFT TYPE	Stainless steel mounted on self-lubricating bush protected by sealing rings on both sides Double overhang shaft version available on request	Stainless steel Double overhang shaft version available on request
FIXING TYPE	Base fixing Front fixing (flanged)	Base fixing Front fixing (flanged)
MICRO SWITCHES	Nr 4 max - micrometric adjustment of roller lever (long life)	Nr 4 max - micrometric adjustment of roller lever (long life)
CAM BLOCK	Self-lubricating with transparent support for easier cam viewing	Self-lubricating with transparent support for easier cam viewing
CABLE ENTRY	M16 (max 2)	M16 or M20 (max 4)
AMBIENTAL TEMPERATURE	Operating: -25°C ... +70°C Storage: -30°C ... +70°C	Operating: -25°C ... +70°C Storage: -30°C ... +70°C

ELECTRICAL CHARACTERISTICS					
MICRO SWITCHES CONNECTIONS	MFI.3 - 6.3 x 0.8 faston terminal MFI.3STP - Screws M3 for wire 1.5 mm² with plate protection		MFI.7 - 6.3 x 0.8 faston terminal		
STANDARD CONFORMITY	IEC / EN 61058-1, UL 1054, EN 60204-1, EN 60947-1, EN 60947-5-1		IEC / EN 61058-1, UL 1054, EN 60204-1, EN 60947-1, EN 60947-5-1		
MARKING	CE, cRUus, CCC, EAC		CE, cRUus, CCC, EAC		
RATED INSULATION VOLTAGE - Ui	250V		250V		
RATHED THERMAL CURRENT - Ith	8A		8A		
RATHED OPERATING CURRENT	Resistive Load	8A - 250 V AC	8A - 250 V AC		
	Inductive Load	3A - 250 V AC	3A - 250 V AC		
RATHED IMPULSE WITH-STAND VOLTAGE - Uimp	1500 V		1500 V		
POSITIVE OPENING	NC positive opening ➞		NC positive opening ➞		
CONTACT BLOCKS	1NC - 1 NO changeover snap action / silver plated - self cleaning		1NC - 1 NO changeover snap action / silver plated - self cleaning		
PROTECTION CLASS	IP40 (IP00 terminals) in according to EN 60529		IP40 (IP00 terminals) in according to EN 60529		

OPTIONS		
DOUBLE OVERHANG SHAFT	Available	Available
POTENTIOMETER	According to customer request	-
ENCODER	-	-
CAM SHAPES	5 different cam shapes	5 different cam shapes
PINIONS	On request	20 different pinion shapes on request



FGR2		FGR3
GENERAL CHARACTERISTICS		
CASE	Aluminium housing / self-extinguishing cover V0 UL94	Thermoplastic glass fiber reinforced material
PROTECTION CLASS	IP65 - IEC / EN 60529	IP66
RATIO	-	From 1:8 to 1:3572 (according to the configuration)
DIRECT RATIO	1:12, 1:33, 1:50, 1:100, 1:200	-
SHAFT TYPE	Steel mounted on ball bearings Double overhang shaft version available on request	AISI 304 Stainless steel mounted on ball bearings Double overhang shaft version available on request
FIXING TYPE	Base fixing Front fixing (flanged)	Base fixing Front fixing (flanged)
MICRO SWITCHES	Nr 6 max - micrometric adjustment of roller lever (long life)	Nr 8 max - micrometric adjustment of roller lever (long life)
CAM BLOCK	Self-lubricating	Self-lubricating with transparent support for easier cam viewing
CABLE ENTRY	M20 (max 2)	M20 (max 3)
AMBIENTAL TEMPERATURE	Operating: -25°C ... +70°C Storage: -30°C ... +70°C	Operating: -40°C ... +90°C Storage: -40°C ... +90°C

ELECTRICAL CHARACTERISTICS					
MICRO SWITCHES CONNECTIONS	MFI.7 - 6.3 x 0.8 faston terminal		MFI.7 - 6.3 x 0.8 faston terminal		
STANDARD CONFORMITY	IEC / EN 61058-1, UL 1054, EN 60204-1, EN 60947-1, EN 60947-5-1		IEC / EN 61058-1, UL 1054, EN 60204-1, EN 60947-1, EN 60947-5-1		
MARKING	CE, cRUus, CCC, EAC		CE, cRUus, CCC, EAC		
RATED INSULATION VOLTAGE - Ui	250V		250V		
RATHED THERMAL CURRENT - Ith	8A		8A		
RATHED OPERATING CURRENT	Resistive Load	8A - 250 V AC	8A - 250 V AC		
	Inductive Load	3A - 250 V AC	3A - 250 V AC		
RATHED IMPULSE WITH-STAND VOLTAGE - Uimp	1500 V		1500 V		
POSITIVE OPENING	NC positive opening ➞		NC positive opening ➞		
CONTACT BLOCKS	1NC - 1 NO changeover snap action / silver plated - self cleaning		1NC - 1 NO changeover snap action / silver plated - self cleaning		
PROTECTION CLASS	IP40 (IP00 terminals) in according to EN 60529		IP40 (IP00 terminals) in according to EN 60529		

OPTIONS		
DOUBLE OVERHANG SHAFT	Available	Available
POTENTIOMETER	-	According to customer request
ENCODER	-	According to customer request
CAM SHAPES	3 different cam shapes	5 different cam shapes
PINIONS	20 different pinion shapes on request	20 different pinion shapes on request



FGRO

Rotary gear limit switch



Rotary gear limit switch with overall reduced sizes

The **FGRO** is a device for controlling revolutions of rotating components or the angular position of industrial or construction machinery. A typical application is for small cranes. Also suitable for different applications such as automatic doors or automatic roofs in greenhouses. The unit, through a system of gears and cams transmission, controls 2 or 4 microswitches so, after a certain number of revolutions, predispose the motor or the equipment to the start or stop operation.

The microswitches have a calibration screw that works independently on each cam; so you can calibrate the opening and closing of each micro according to the necessary functional requirements.

The system change allows you to choose different ratios from 1:12 to 1:1480.

General features

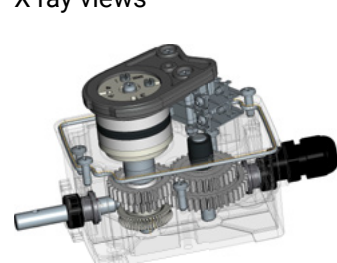
- Different versions available:
 - base fixing;
 - front fixing (with standard flange);
 - with double overhang shaft (on request).
- Overall size is reduced.
- Two different cover heights depending on whether the device is equipped with 2 or 4 microswitches.
- IP67 protection class (IEC / EN 60529).
- Available in different ratios: 1:12, 1:25, 1:33, 1:50, 1:75, 1:100, 1:150, 1:200, 1:400 (optional on request).
- Available in direct ratio: 1:25, 1:50 (others direct ratio on request).
- Available on request with pinions.
- Micro switches:
 - device available with 2 or 4 microswitches;
 - the working point is adjustable with a calibration screw;
 - each switch has 1NO + 1NC inside;
 - positive opening for NC contacts.

Compliance and certifications

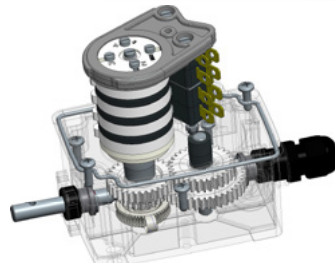
- 2014/35/UE - 2014/33/UE - 2011/65/UE - 2015/863/UE
- EN 60947-1 (2007/A1 : 2011/A2 : 2014)
- EN 60947-5-1 (2004/A1 : 2009/AC : 2004/AC : 2005)
- EN 60204-1 (2006/A1 : 2009)
- EN 60529 (1991/A1 : 2000/A2 : 2013)
- EN 50581 (2012)
- IEC 63000 (2016)

Base Fixing versions

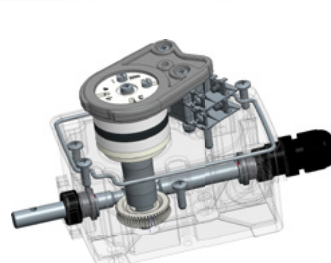
X-ray views



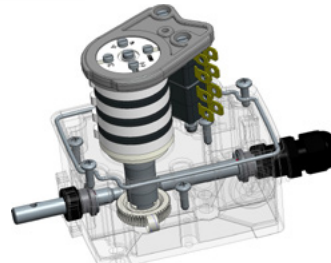
2 microswitches



4 microswitches



2 microswitches
Direct Ratio



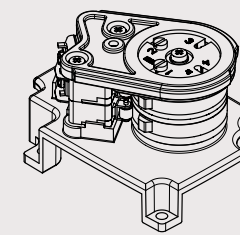
4 microswitches
Direct Ratio

Available codes

FGRO
Internal cam pack
2 microswitches



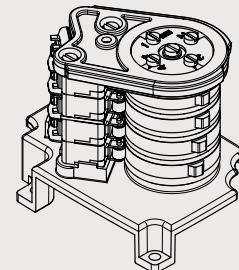
MFI.3



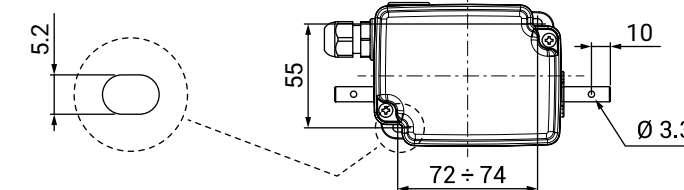
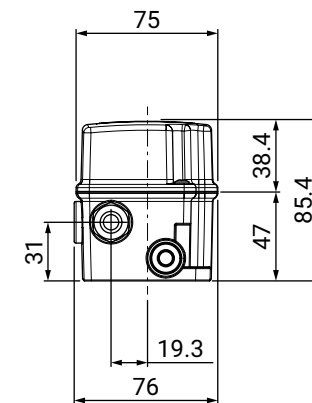
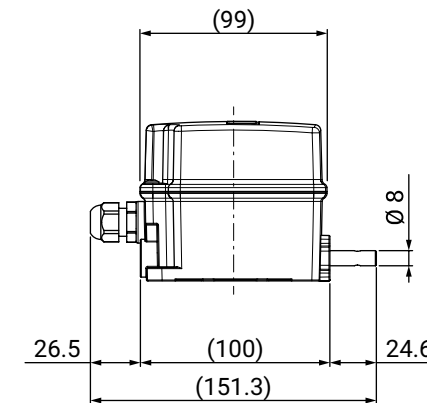
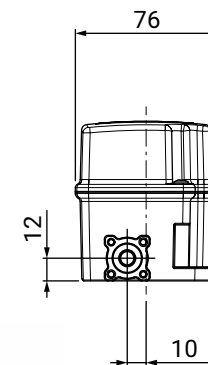
FGRO
Internal cam pack
4 microswitches



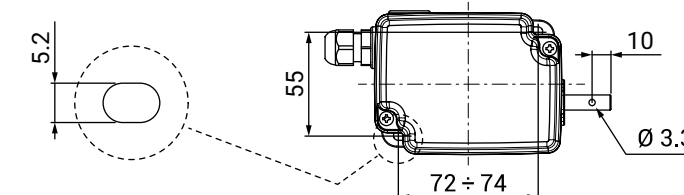
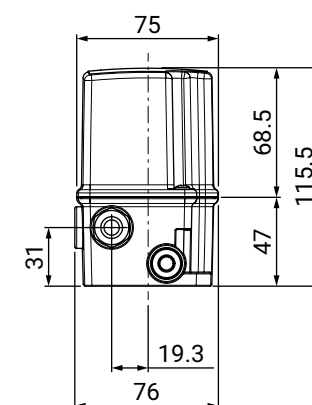
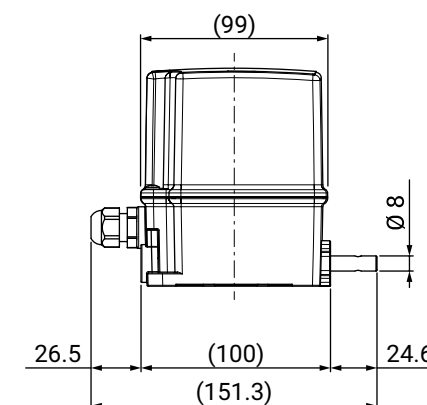
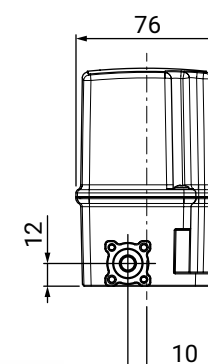
MFI.3



Base fixing
2 microswitches



Base fixing
4 microswitches

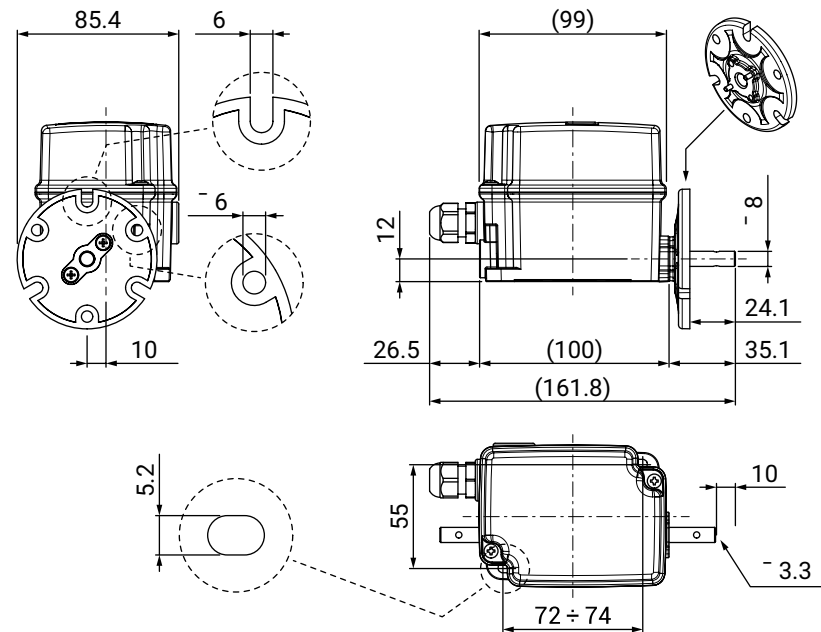




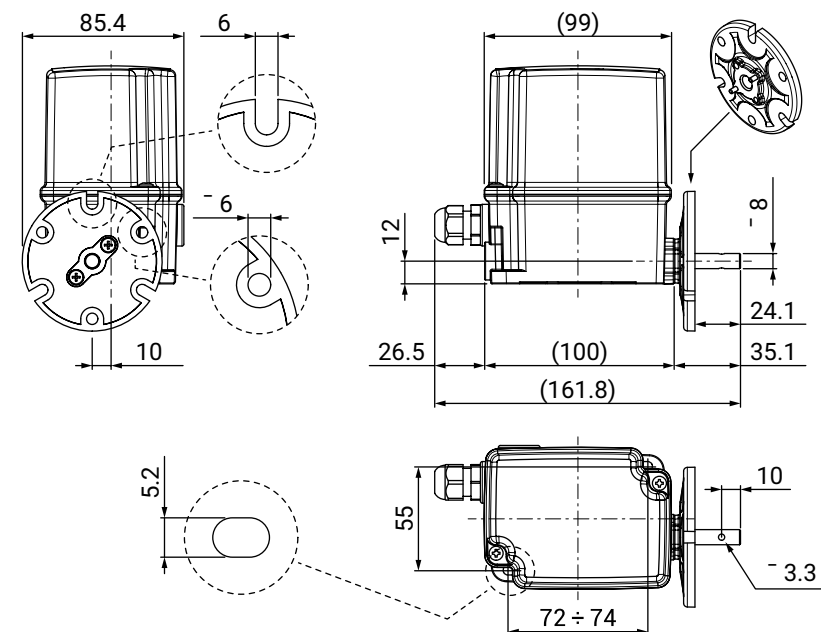
Available codes



Front fixing
2 microswitches



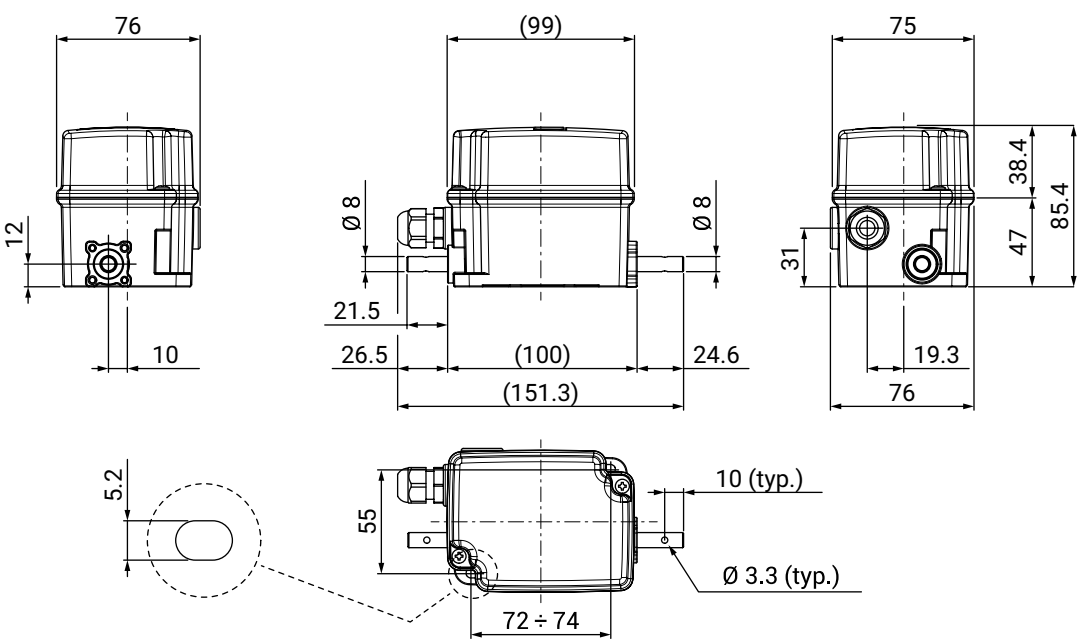
Front fixing
4 microswitches



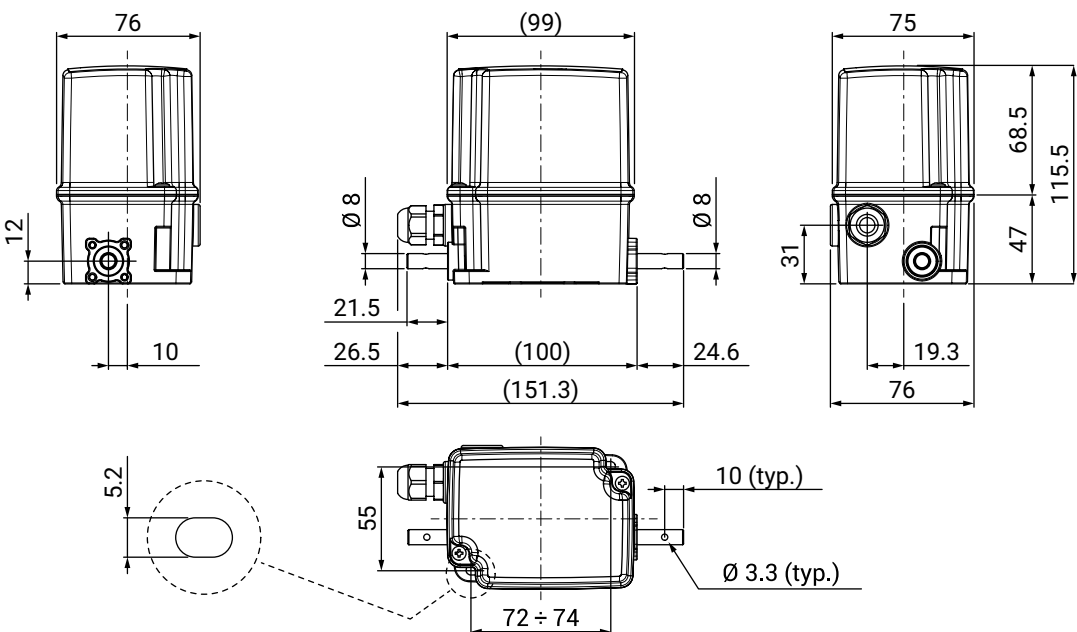
Available codes



Double overhang shaft
2 microswitches



Double overhang shaft
4 microswitches





Coding system

The **FGR0** coding system is very clear: each block of digits identifies a specific function. The code provides all the informations that can be used to specify each customization.

FGR0	-	0012	M	F	-	4	A	-	E1	-	01
Series	-	Nr. gear ratio	Shaft type	Flange	-	Nr. contacts	Contacts type	-	Options	-	Progressive versions
			M = single shaft B = double overhang shaft				A = MFI.3 (standard) B = MFI.3STP (on request)		E = Encoder P = Potentiometer		Not standard shaft, cams, pinions, colors, logos, extra accessories, etc...
STANDARD ENCODING								OPTIONAL ENCODING			

Available codes

Base fixing
2 microswitches



FGR0-0012M-2A
FGR0-0025M-2A
FGR0-0033M-2A
FGR0-0050M-2A
FGR0-0075M-2A
FGR0-0100M-2A
FGR0-0150M-2A
FGR0-0200M-2A
FGR0-0400M-2A

Base fixing
4 microswitches



FGR0-0012M-4A
FGR0-0025M-4A
FGR0-0033M-4A
FGR0-0050M-4A
FGR0-0075M-4A
FGR0-0100M-4A
FGR0-0150M-4A
FGR0-0200M-4A
FGR0-0400M-4A

Double overhang shaft
2 microswitches



FGR0-0012B-2A
FGR0-0025B-2A
FGR0-0033B-2A
FGR0-0050B-2A
FGR0-0075B-2A
FGR0-0100B-2A
FGR0-0150B-2A
FGR0-0200B-2A
FGR0-0400B-2A

Double overhang shaft
4 microswitches



FGR0-0012B-4A
FGR0-0025B-4A
FGR0-0033B-4A
FGR0-0050B-4A
FGR0-0075B-4A
FGR0-0100B-4A
FGR0-0150B-4A
FGR0-0200B-4A
FGR0-0400B-4A

Front fixing
2 microswitches



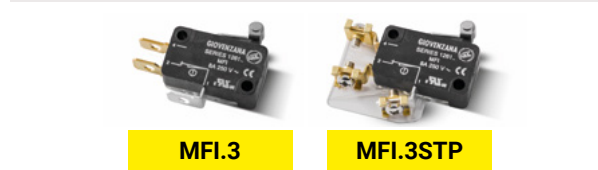
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FGR0-0075MF-2A
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FGR0-0150MF-2A
FGR0-0200MF-2A
FGR0-0400MF-2A

Front fixing
4 microswitches

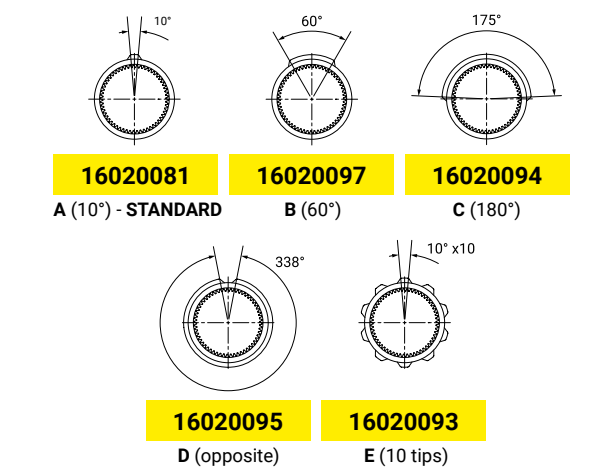


FGR0-0012MF-4A
FGR0-0025MF-4A
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FGR0-0075MF-4A
FGR0-0100MF-4A
FGR0-0150MF-4A
FGR0-0200MF-4A
FGR0-0400MF-4A

AVAILABLE CONTACT TYPES



AVAILABLE CAM SHAPES



Rotary gear limit switch

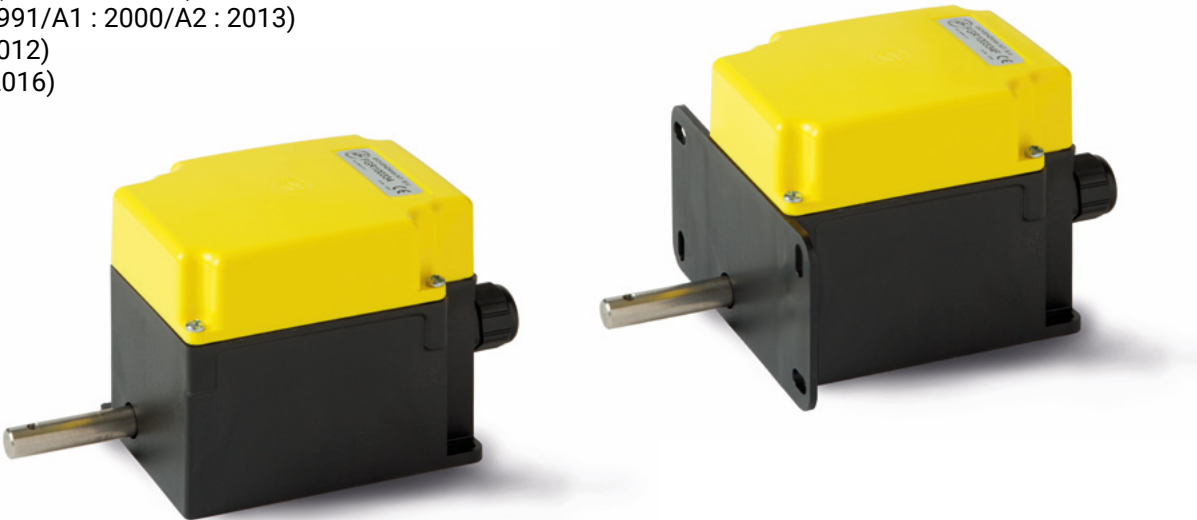
The **FGR1** is a device used to control and measure the movement of industrial machines by measuring the rotation angle and/or counting the number of revolutions of a shaft.

General features

- Different versions available:
 - base fixing;
 - front fixing;
 - with double overhang shaft.
- IP65 Protection class.
- Available in different ratios: 1:12, 1:33, 1:50, 1:75, 1:100, 1:150, 1:200, 1:400 (optional on request).
- Available in direct ratio: 1:50, 1:75, 1:100 (others direct ratio on request).
- Available on request with pinions.
- Micro switches:
 - device available with 4 microswitches;
 - the working point is adjustable with a calibration screw;
 - each switch has 1NO + 1NC inside;
 - positive opening for NC contacts.

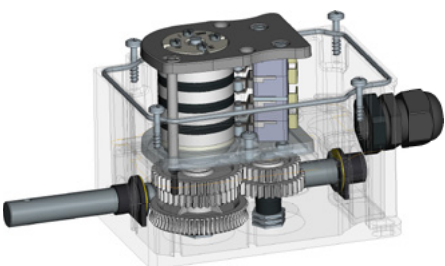
Compliance and certifications

- 2014/35/UE - 2014/33/UE - 2011/65/UE - 2015/863/UE
- EN 60947-1 (2007/A1 : 2011/A2 : 2014)
- EN 60947-5-1 (2004/A1 : 2009/AC : 2004/AC : 2005)
- EN 60204-1 (2006/A1 : 2009)
- EN 60529 (1991/A1 : 2000/A2 : 2013)
- EN 50581 (2012)
- IEC 63000 (2016)

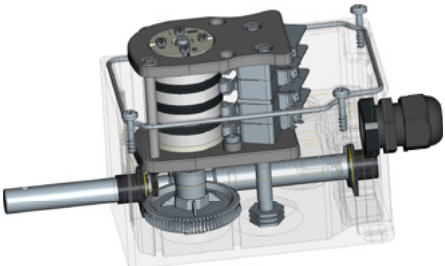


Base Fixing versions

X-ray views

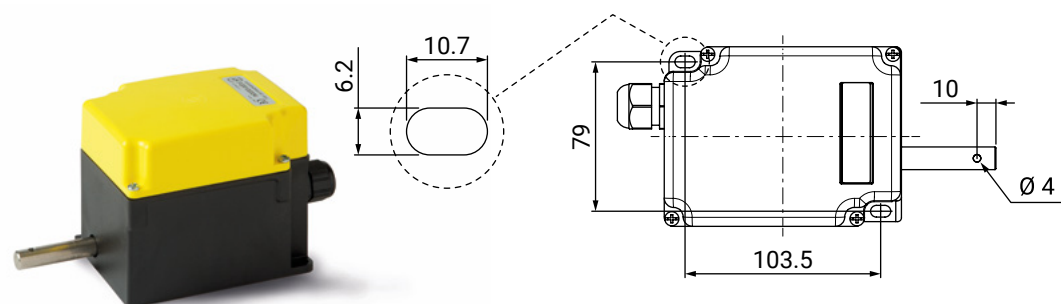
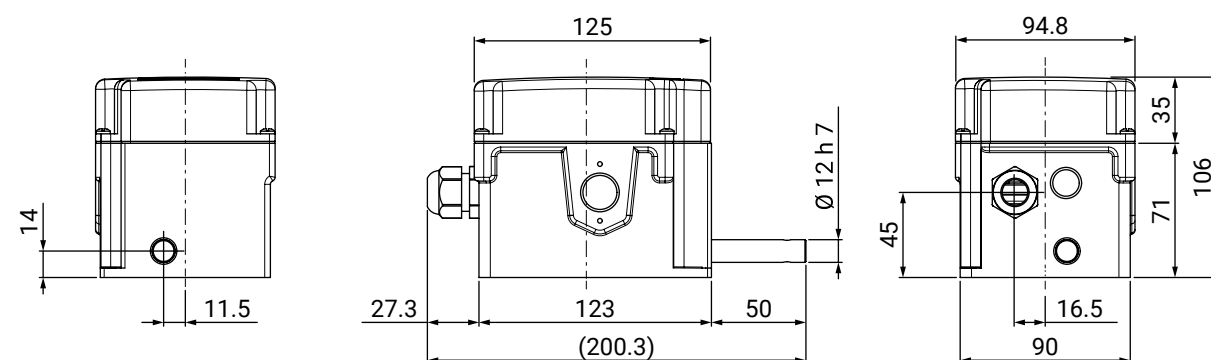
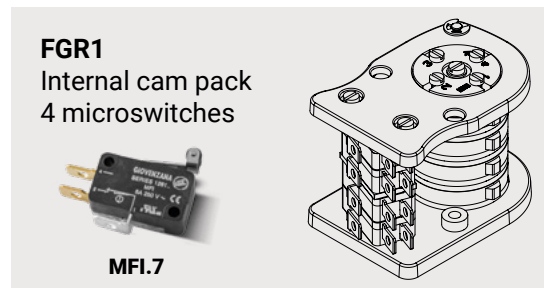


4 microswitches



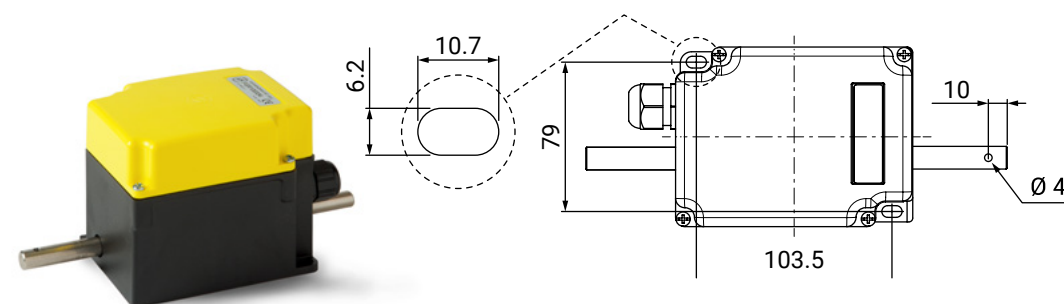
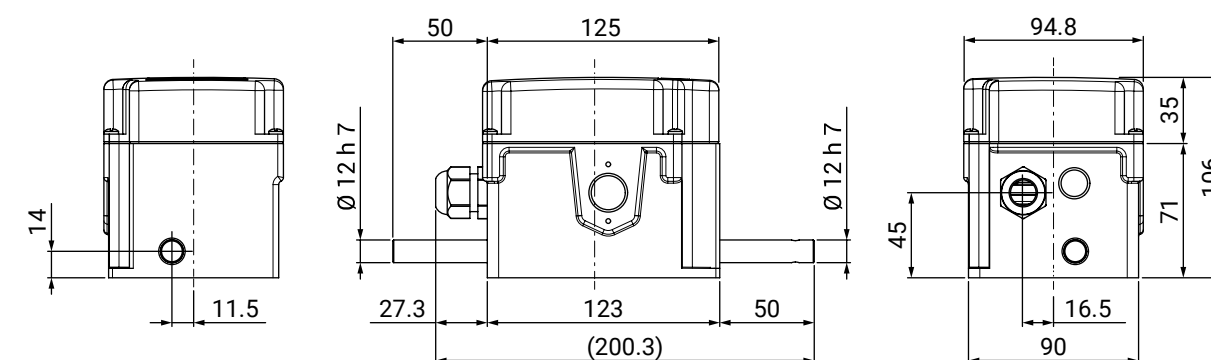
4 microswitches
Direct Ratio

Available codes



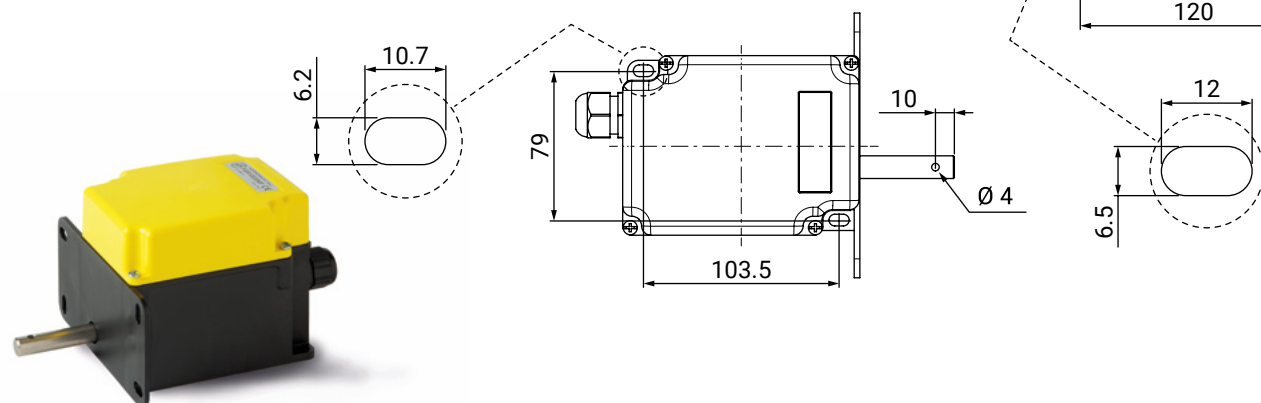
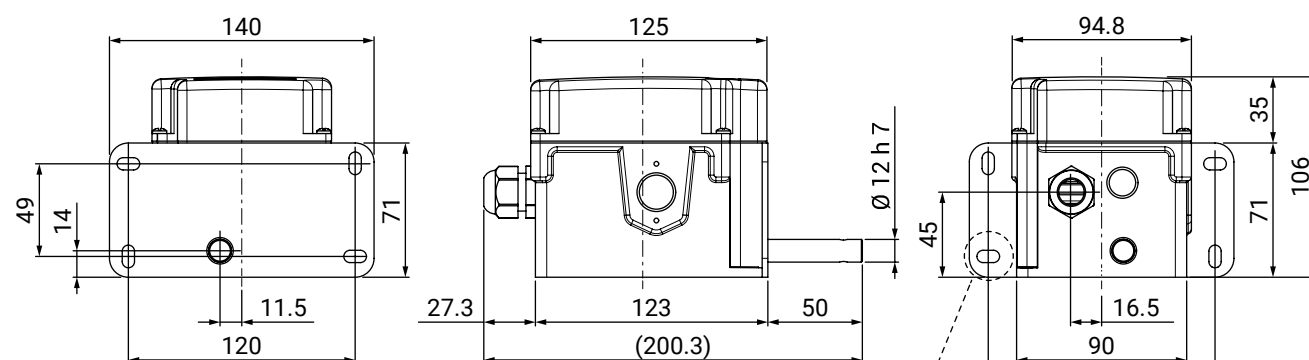
Base fixing
4 microswitches

Available codes



Double overhang shaft
4 microswitches

ROTARY LIMIT
SWITCHES



Front fixing
4 microswitches








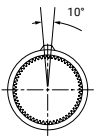
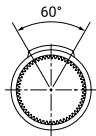
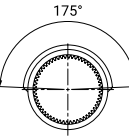
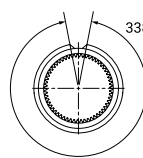
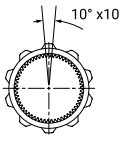
Coding system

The **FGR1** coding system is very clear: each block of digits identifies a specific function. The code provides all the informations that can be used to specify each customization.

FGR1	0012/0400	0-2-3-4	B	F	-	01
Series	Nr. gear ratio	Micro/cams	Shaft type	Flange	-	Options
	Between shaft and cam pack output.	0 = None 2 = Nr. 2 3 = Nr. 3 4 = Nr. 4	Blank = Single shaft B = Double overhang shaft	Blank = Without F = With flange	-	Progressive versions
STANDARD ENCODING					OPTIONAL ENCODING	

Available codes

Base fixing 4 microswitches	Front fixing 4 microswitches	Double overhang shaft 4 microswitches
		
FGR100124	FGR100124F	FGR100124B
FGR100334	FGR100334F	FGR100334B
FGR100504	FGR100504F	FGR100504B
FGR100754	FGR100754F	FGR100754B
FGR101004	FGR101004F	FGR101004B
FGR101504	FGR101504F	FGR101504B
FGR102004	FGR102004F	FGR102004B
FGR104004	FFGR104004F	FGR104004B

AVAILABLE CONTACT TYPES		AVAILABLE CAM SHAPES		
				
MFI.7	MFI.7STP On request	16020081 A (10°) - STANDARD	16020097 B (60°)	16020094 C (180°)
				
		16020095 D (opposite)	16020093 E (10 tips)	

Rotary gear limit switch

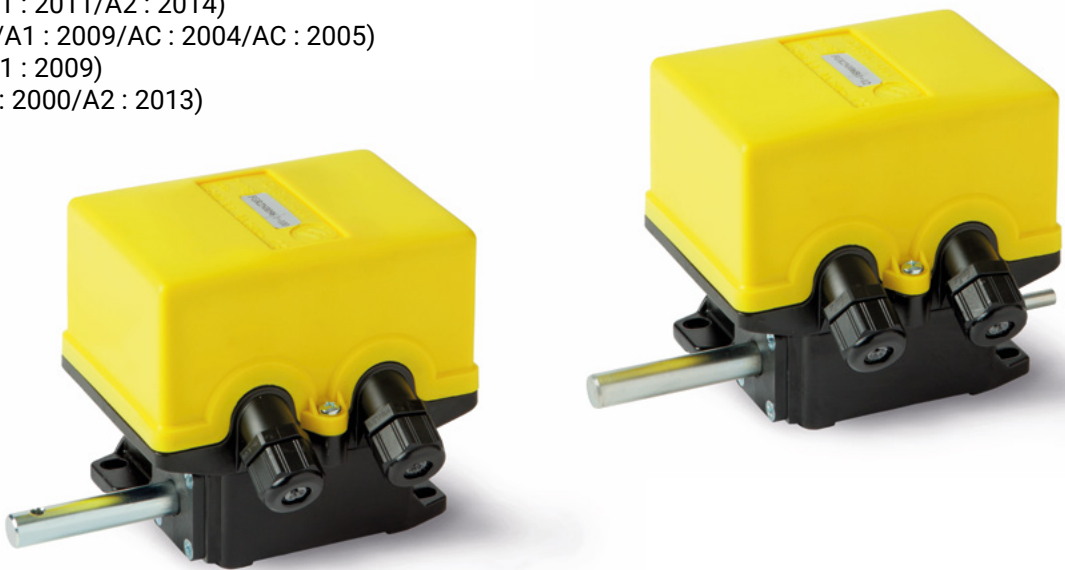
The **FGR2** is suitable for overhead crane winches, the speed control of rotating drums winding cables, machinery, etc... Equipped with adjustable micrometric screw, lives on each of the cams. The operation of the microswitches allows, by means of a screwdriver, the stroke calibration and therefore the opening or closing of the contacts according to the functional requirements.

General features

- Different versions available:
 - base fixing;
 - with double overhang shaft;
 - front fixing (base fixing + FLG accessory). On request.
- IP65 Protection class.
- Available in direct ratios: 1:12, 1:33, 1:50, 1:75, 1:100, 1:200 (optional on request).
- Available on request with pinions.
- Micro switches:
 - device available with 4 or 6 microswitches;
 - the working point is adjustable with a calibration screw;
 - each switch has 1NO + 1NC inside;
 - positive opening for NC contacts.

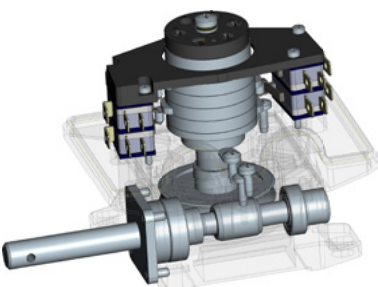
Compliance and certifications

- 2014/35/UE - 2014/33/UE - 2011/65/UE - 2015/863/UE
- EN 60947-1 (2007/A1 : 2011/A2 : 2014)
- EN 60947-5-1 (2004/A1 : 2009/AC : 2004/AC : 2005)
- EN 60204-1 (2006/A1 : 2009)
- EN 60529 (1991/A1 : 2000/A2 : 2013)
- EN 50581 (2012)
- IEC 63000 (2016)

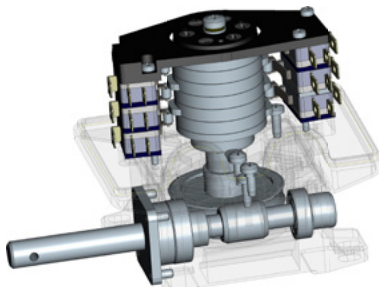


Base Fixing versions

X-ray views



4 microswitches
Direct Ratio

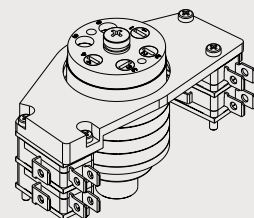


6 microswitches
Direct Ratio

Available codes

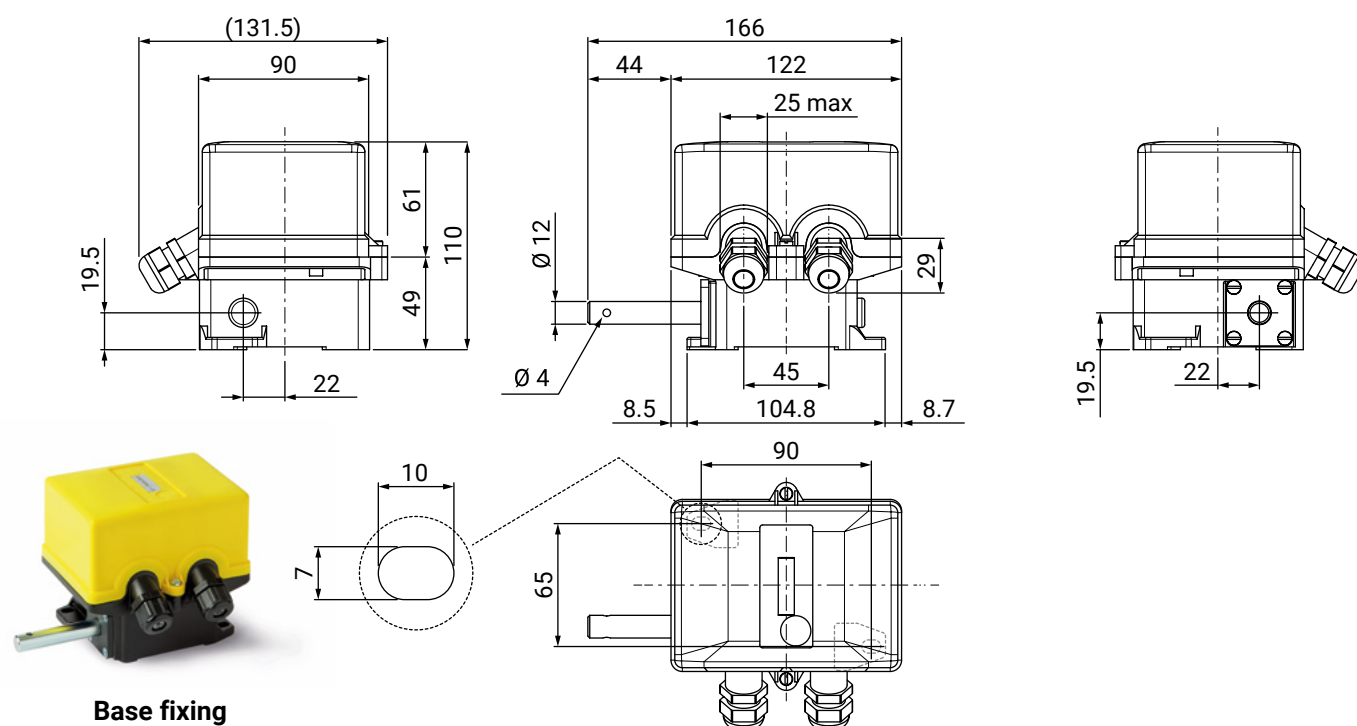
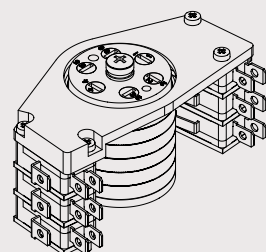
FGR2

Internal cam pack
4 microswitches

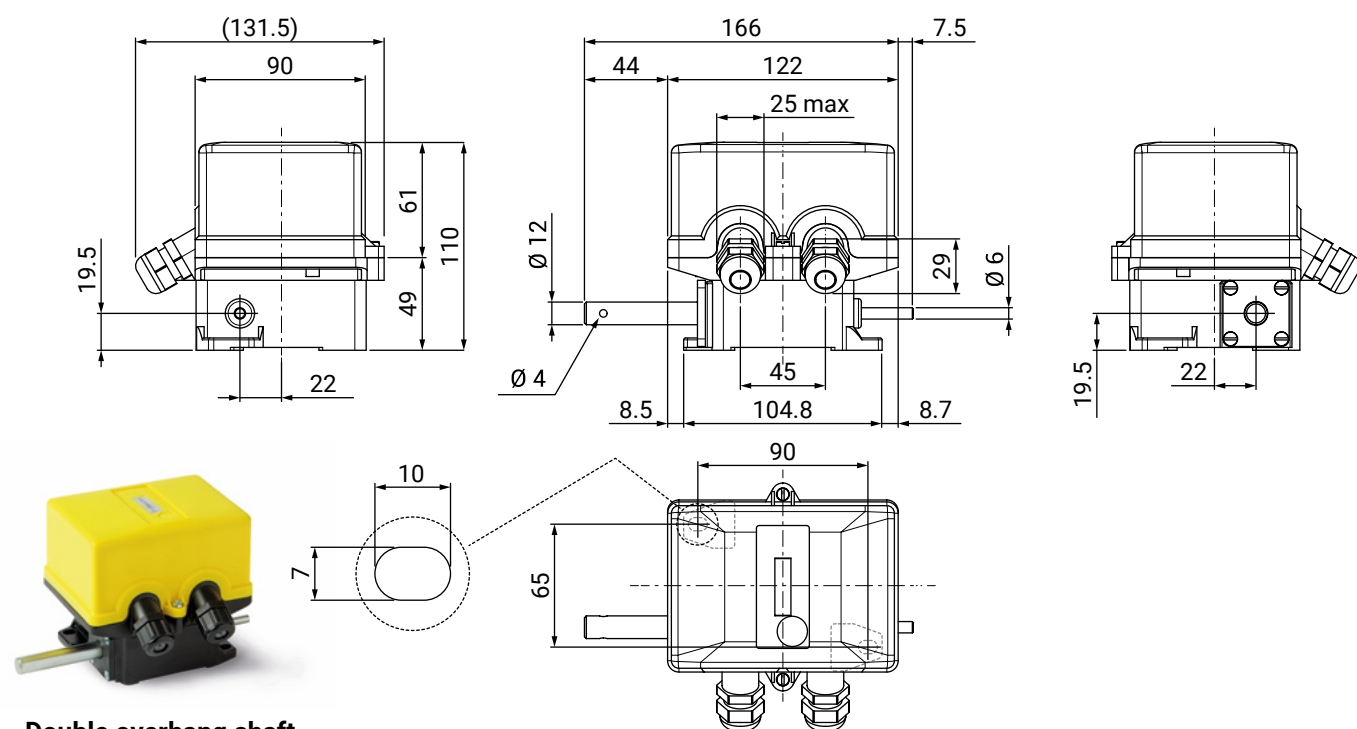
**MFI.7**

FGR2

Internal cam pack
6 microswitches

**MFI.7**

Base fixing
4 or 6 microswitches

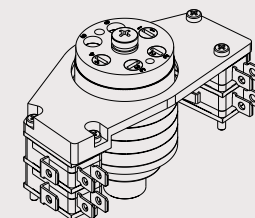


Double overhang shaft
4 or 6 microswitches

Available codes

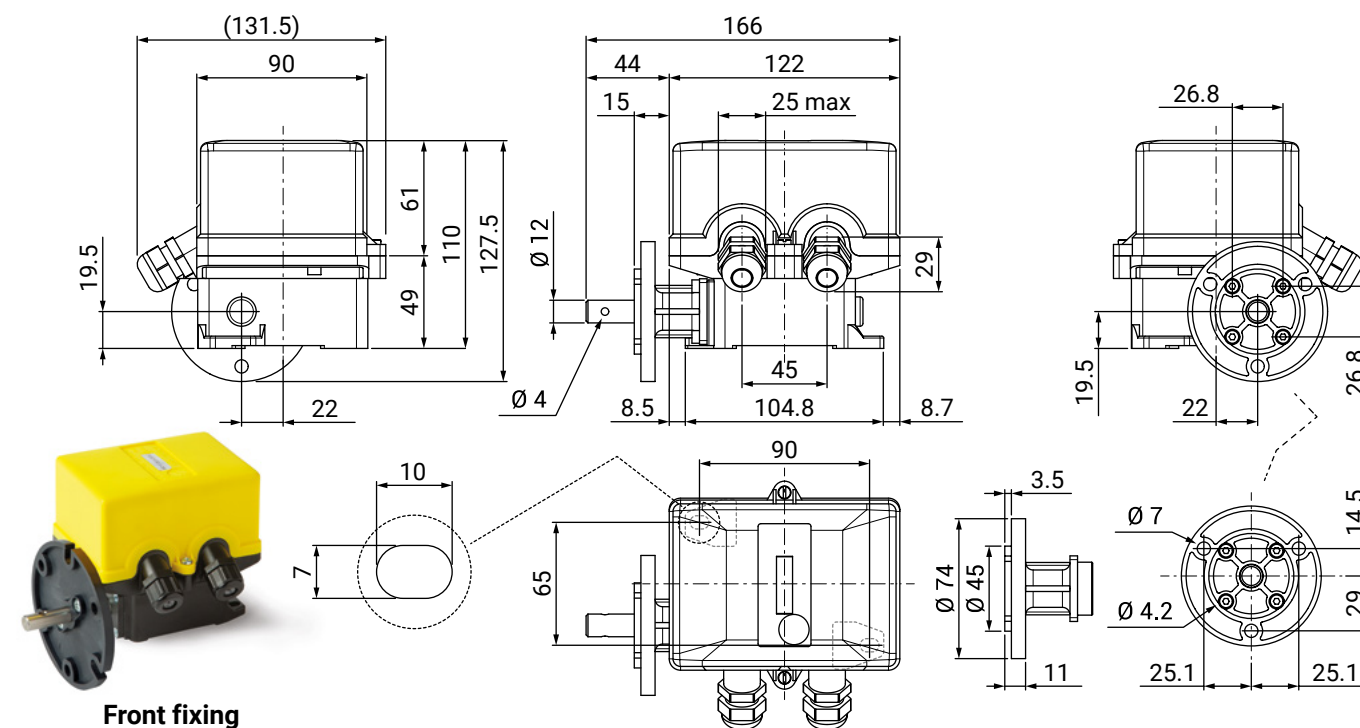
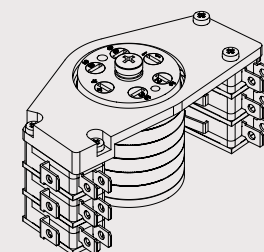
FGR2

Internal cam pack
4 microswitches

**MFI.7**

FGR2

Internal cam pack
6 microswitches

**MFI.7**

Front fixing
4 or 6 microswitches

Coding system

The **FGR2** coding system is very clear: each block of digits identifies a specific function. The code provides all the informations that can be used to specify each customization.

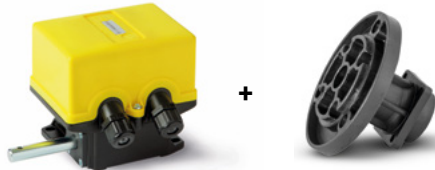
FGR2	F	N	006/007/008/009/010	B	6
Series	Flange	Contact type	Identity number	Shaft type	Micro/cams
	Blank = Without F = With flange	MFI.7		Blank = Single shaft B = Double overhang shaft	Blank = Nr. 4 6 = Nr. 6
STANDARD ENCODING					

Available codes

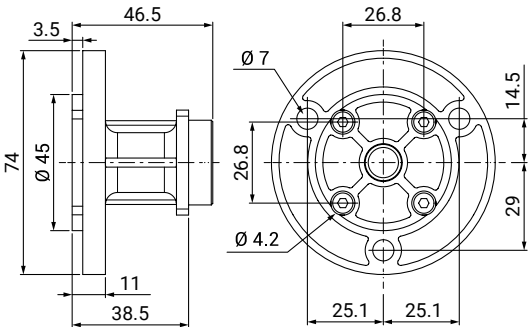
Ratio	Base fixing 4 microswitches	Base fixing 6 microswitches	Double overhang shaft 4 microswitches	Double overhang shaft 6 microswitches
1:12	FGR2N006	FGR2N0066	FGR2N006B	FGR2N006B6
1:33	FGR2N007	FGR2N0076	FGR2N007B	FGR2N007B6
1:50	FGR2N008	FGR2N0086	FGR2N008B	FGR2N008B6
1:100	FGR2N009	FGR2N0096	FGR2N009B	FGR2N009B6
1:200	FGR2N010	FGR2N0106	FGR2N010B	FGR2N010B6

Front fixing 4 or 6 microswitches

(A) Base fixing code plus **FLG** flange sold separately;



B) Front fixing device already assembled to be requested with code **FGRF2..**

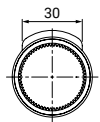


AVAILABLE CONTACT TYPES

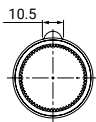


MFI.7

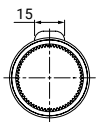
AVAILABLE CAM SHAPES



11703015
A (30°) - STANDARD



11703019
B (15°)



1173013
C (90°)

Rotary gear limit switch

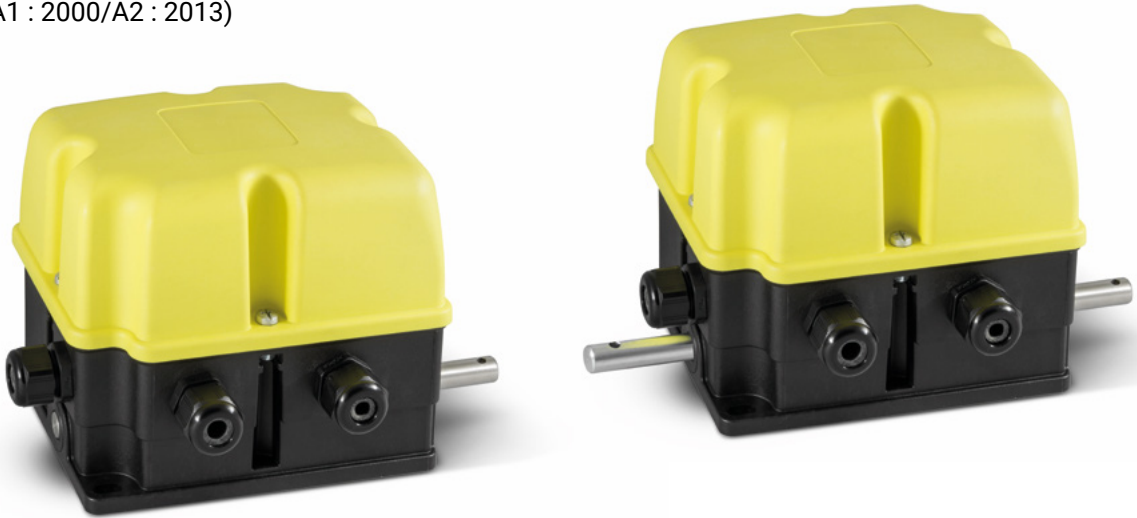
The **FGR3** is a device used to control and measure the movement of industrial machines by measuring the rotation angle and/or counting the number of revolutions of a shaft. It is suitable for several applications like cranes and wind turbines.

Geneal features

- Different versions available:
 - base fixing;
 - with double overhang shaft;
 - front fixing (on request).
- IP66 protection class.
- Available in different ratios: from 1:8 to 1:3572 (according to the configuration).
- Available on request with pinions.
- Microswitches:
 - device available potentially until 8 microswitches;
 - the working point is adjustable with a calibration screw;
 - each switch has 1NO + 1NC inside;
 - positive opening for NC contacts.

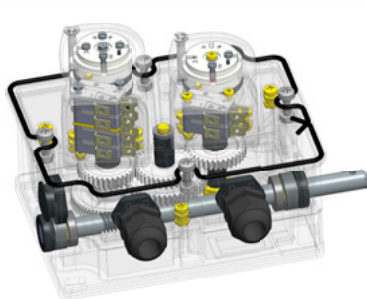
Compliance and certifications

- 2014/35/UE - 2014/33/UE - 2011/65/UE - 2015/863/UE
- EN 60947-1 (2007/A1 : 2011/A2 : 2014)
- EN 60947-5-1 (2004/A1 : 2009/AC : 2004/AC : 2005)
- EN 60204-1 (2006/A1 : 2009)
- EN 60529 (1991/A1 : 2000/A2 : 2013)
- EN 50581 (2012)
- IEC 63000 (2016)

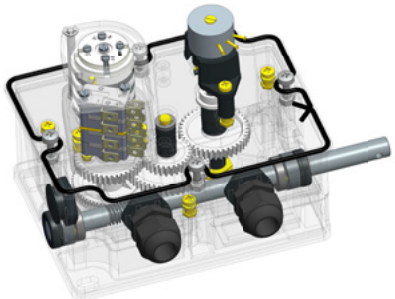


Base Fixing versions

X-ray views

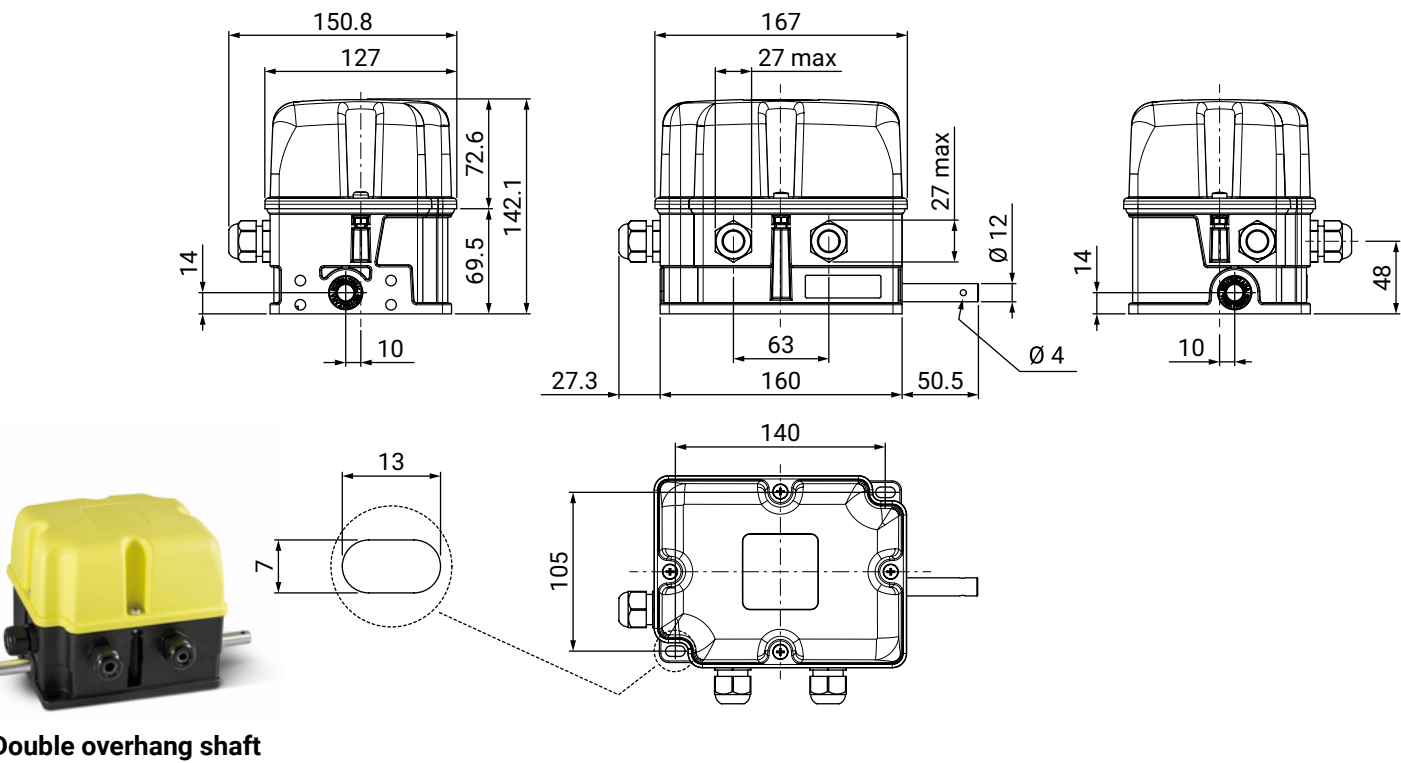
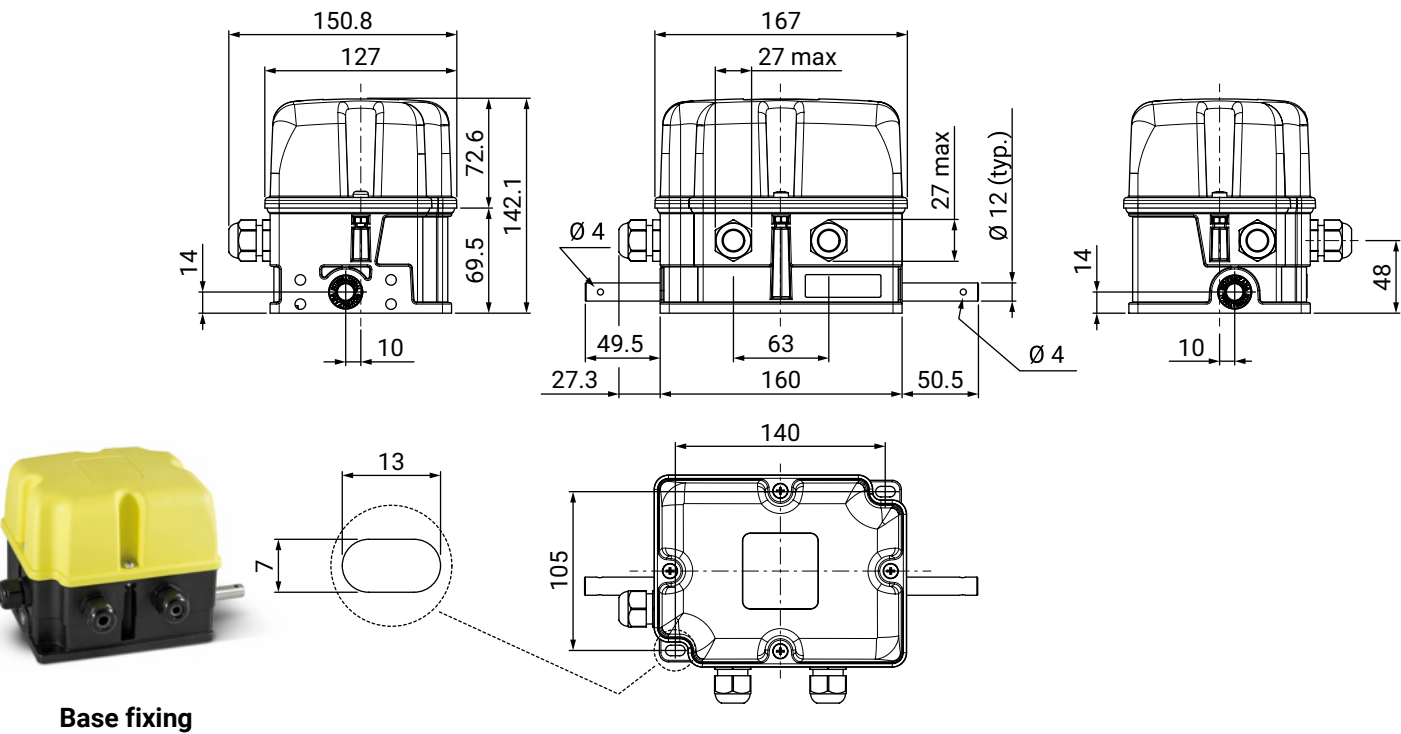


6 microswitches



4 microswitches
with potentiometer

Available codes

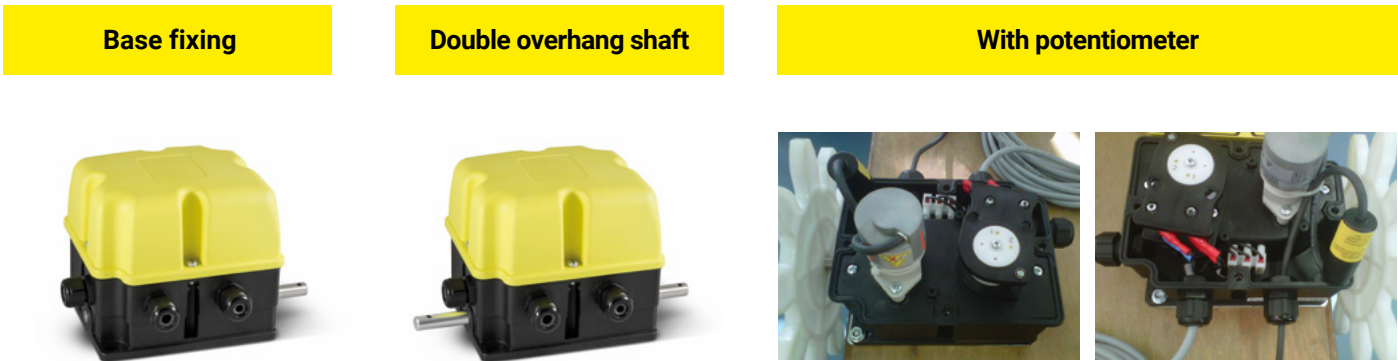


Coding system

The **FGR3** coding system is very clear: each block of digits identifies a specific function. The code provides all the informations that can be used to specify each customization.

FGR3	0-8	001-999	0-2-3-4	1-2-3-4	-	00-99
Series	Encoder / Potentiometer	Nr. gear ratio	Micro/cams	Shaft type	-	Options
	0 = No sensors 1 = Incremental Encoder D22 2 = Potentiometer 2.5 K Ω 3 = Potentiometer 5 K Ω 4 = Potentiometer 10 K Ω 5 = Absolut Encoder D36 6 = Incremental Encoder P/P 5000 imp. 7 = Absolut/Incremental Encoder D36 8 = Absolut Encoder D58 A ... Z = Custom on request	Between: - shaft and cam pack output; - shaft and sensor output; - both.	0 = None 2 = Nr. 2 3 = Nr. 3 4 = Nr. 4 5 = Nr. 5	1 = Single shaft and reduction in cam output. 2 = Double overhang shaft and reduction in cam output. 3 = Single shaft and reduction in both cam and sensor output. 4 = Double overhang shaft and reduction both in cam output and in sensor output.	-	Progressive versions

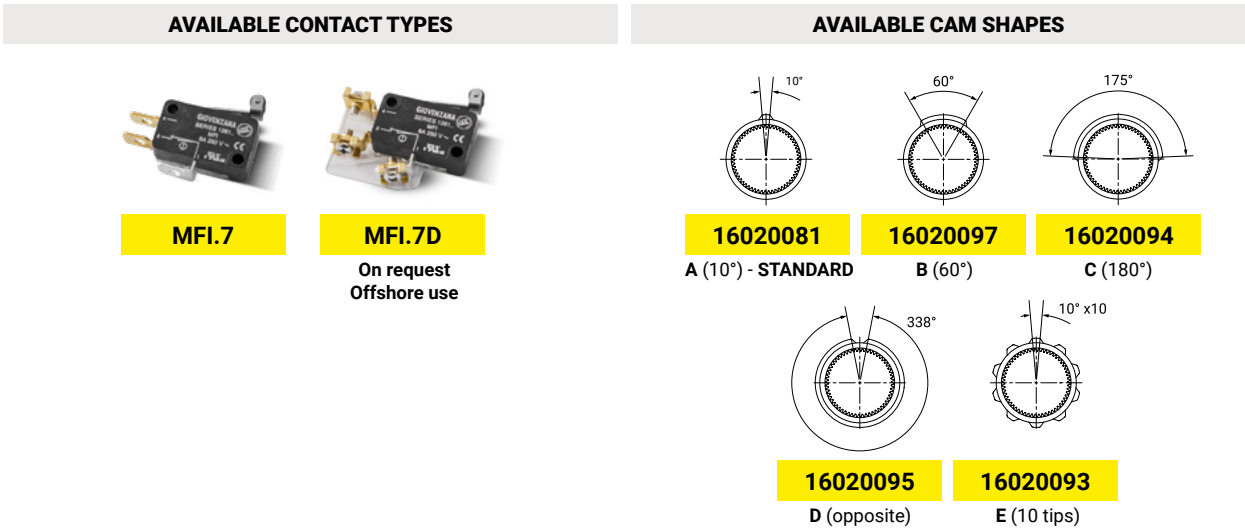
Available codes



Available options

- Can be supplied with front fixing. Available different typologies of flanged accessories, on request.
- Can be equipped with MFI.7 microswitches (standard version) or with MFI.7D micro switches (gold contact blocks - offshore use).
- Can be equipped with incremental or absolut encoder, available also with external encoder mounted.

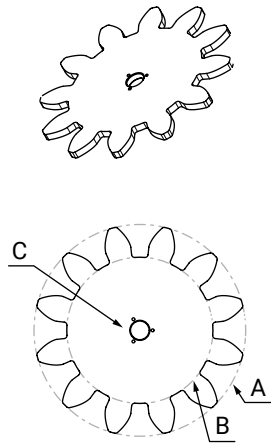
The **FGR3** series is a totally customizable products.
Create your own devices using the FGR3 coding system!





Water jet cut pinions

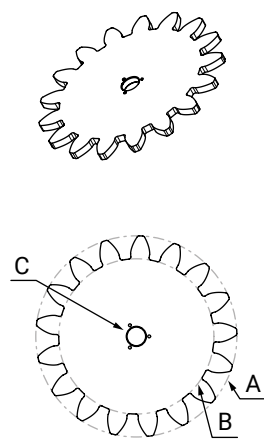
Our measuring pinions are specially manufactured for use with encoders and geared limit switches.
Pinions thickness = 10 mm.



16020051

M20 - Z12

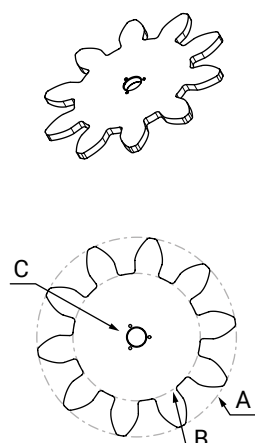
A = Ø 280 / B = Ø 193.2



16020052

M14 - Z17

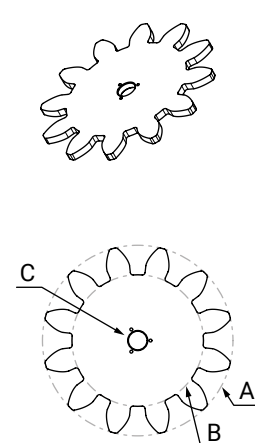
A = Ø 266 / B = Ø 205.24



16020053

M22 - Z10

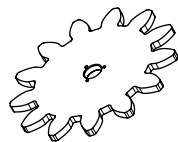
A = Ø 264 / B = Ø 168.52



16020054

M18 - Z12

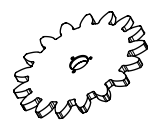
A = Ø 252 / B = Ø 173.88



16020055

M16 - Z13

A = Ø 240 / B = Ø 170.56



16020056

M10 - Z17

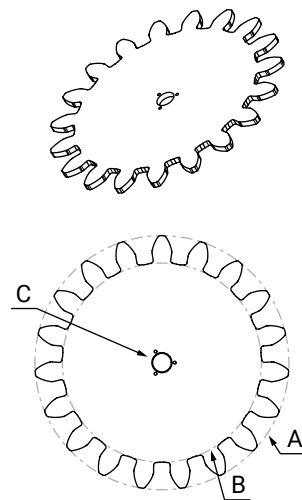
A = Ø 190 / B = Ø 146.6



16020057

M6 - Z13

A = Ø 90 / B = Ø 63.96



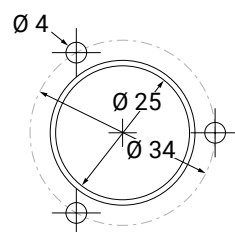
16020070

M16 - Z19

A = Ø 336 / B = Ø 263.2

Detail C

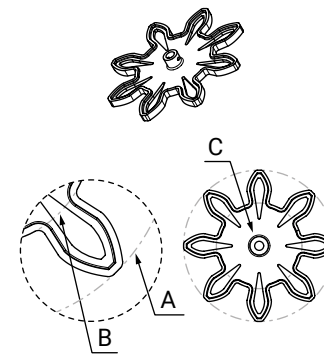
For all previous pinions.
Finished product measurements.



SPARE PARTS & ACCESSORIES

Rotary gear limit switch

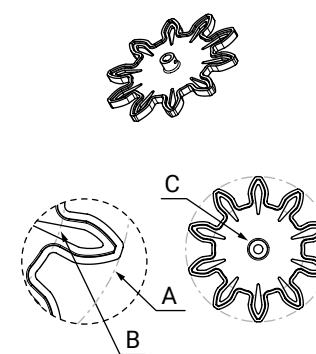
Injection moulded pinions



16020058

M20 - Z8

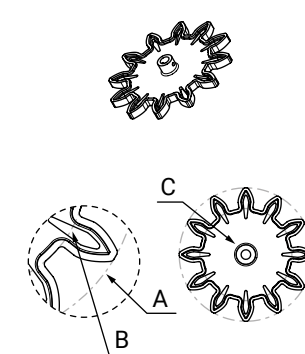
A = Ø 200 / B = Ø 113.2



16020059

M13 - Z10

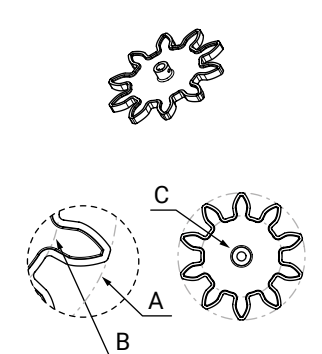
A = Ø 192 / B = Ø 122.56



16020060

M12 - Z12

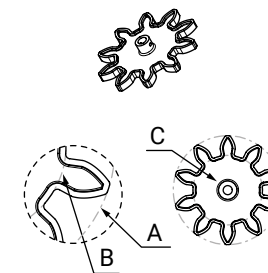
A = Ø 176.4 / B = Ø 121.716



16020061

M14 - Z10

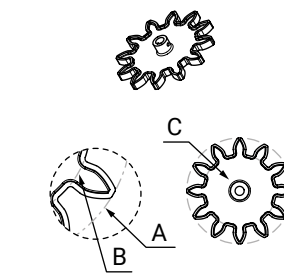
A = Ø 168 / B = Ø 107.24



16020062

M12 - Z10

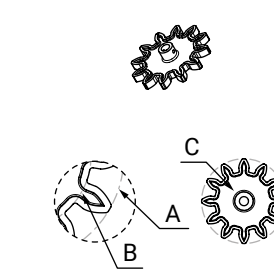
A = Ø 144 / B = Ø 91.92



16020063

M10 - Z12

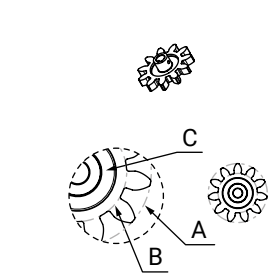
A = Ø 140 / B = Ø 96.6



16020064

M8 - Z12

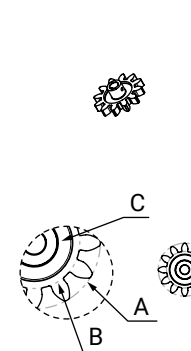
A = Ø 112 / B = Ø 77.28



16020065

M6 - Z11

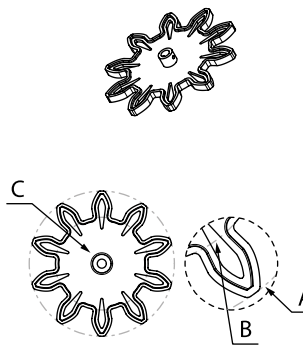
A = Ø 78 / B = Ø 51.96



16020066

M5 - Z12

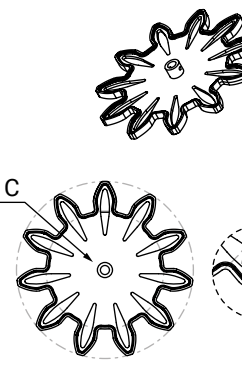
A = Ø 70 / B = Ø 48.3



16020068

M16 - Z20

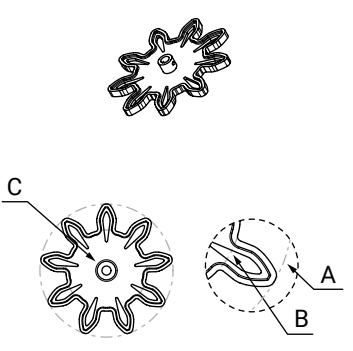
A = Ø 192 / B = Ø 122.56



16020069

M18 - Z11

A = Ø 234 / B = Ø 155.81



16020071

M16 - Z19

A = Ø 176 / B = Ø 107.285

Detail C

For all previous pinions.

