GIOVENZANA INTERNATIONAL B.V.

ATEX & IECEx: REGOLUS EX SWITCH DISCONNECTORS - SQ, SE SERIES

Equipment for potentially explosive atmospheres

| II 2D Ex tb IIIC T85°C Db | Zone 21-22 (Dust) | Tamb = -20°C /+55°C | IP65 |

MARKING "EX t"
STANDARD IEC 60079-31
ZONE 21, 22

The type of protection "Ex t" is based on the protection of a sealed enclosure against dust penetration and limits the surface temperature. Electrical components that could trigger an explosive atmosphere (high temperatures, sparks, etc.) are located inside IP6X-rated containers; in zone 22 with non-conductive dust, IP5X protection is permitted.

In addition, the temperature of the outer surface of the equipment is kept below the maximum surface temperature T, depending on the maximum temperature for the TCL cloud and the layer TI expected in the installation site.
IP protection complies with IEC 60079-0.

The new Regolus Ex control and emergency switches in aluminium housing, painted in RAL 7035 grey and PANTONE 102C yellow, are suitable for use in zone 21 and 22 (Dust) with nominal currents of 25-32-40-63-80-100A.

STANDARDS OF REFERENCE
EN 80079-34, EN 60947-3, EN 61241-0, EN 60079-0, EN 60079-31.

DIRECTIVE
ATEX 2014/34/EU. EAC TR TS 012/2011 "Safety components and equipment for hazardous areas and potentially explosive atmospheres".

CLASSIFICATION AREA "DUST"
Zone 21: an area in which the explosive atmosphere, in the form of a cloud of combustible dust in the air, is likely to occur during normal operations.
Zone 22: an area in which an the explosive atmosphere, in the form of a cloud of combustible dust in the air, is probably not present during normal operations but, if it does, persists only for a short time.

TYPE OF PROTECTION
Protection by enclosures (Ex "tb").

MARKING
Ex ta/tb/tc Da/Db/Dc II 1/2/3 D in accordance with IEC 60079-0, IEC 60079-31.

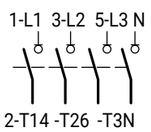
PRINCIPLE
The housing joint shall be hermetically sealed with special seals so that the fuel dust cannot enter. The temperature of the outer surface is limited.

DESIGN PARAMETERS
- Minimum degree of protection in accordance with IEC/EN 60529 ≥ IP 6X.
- Assessment of surface dust accumulation and reduction of permitted surface temperature with ≥ 5 mm dust layer.

APPLICATIONS
Various equipment that during normal scintillation operation, generate electric arcs or have very hot surfaces or any industrial controller that by this type of protection can be used in potential areas with explosive atmosphere.

ELECTRICAL SCHEMES

3 POLES



4 POLES

MARKING AND APPROVALS

	PRODUCT CODE	POLES NUMBER	ENCLOSURE	Ith (A)	Ithe (A)	AC 21A/690V (A)	AC 22A/690V (A)	AC 23A/400V (A)
SQ SERIES	SQ025003DEX09	3P	EX09 Grey	32	32	32	25	25
	SQ025003DEX10	3P	EX10 Yellow	32	32	32	25	25
	SQ032003DEX09	3P	EX09 Grey	40	40	40	32	32
	SQ032003DEX10	3P	EX10 Yellow	40	40	40	32	32
	SQ040003DEXB9	3P	EXB9 Grey	63	63	63	63	50
	SQ040003DEXB0	3P	EX10 Yellow	63	63	63	63	50
	SQ063003DEXB9	3P	EXB9 Grey	80	80	80	80	75
	SQ063003DEXB0	3P	EX10 Yellow	80	80	80	80	75

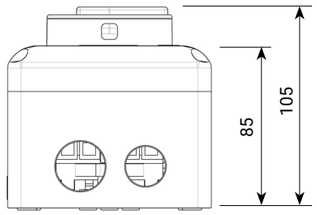
	PRODUCT CODE	POLES NUMBER	ENCLOSURE	Ith (A)	Ithe (A)	AC 21A/690V (A)	AC 22A/690V (A)	AC 23A/400V (A)
SE SERIES	SE630003BEXB9	3P	EXB9 Grey	63	63	63	63	50
	SE630004BEXB9	4P	EXB9 Grey	63	63	63	63	50
	SE630003BEXB0	3P	EX10 Yellow	63	63	63	63	50
	SE630004BEXB0	4P	EX10 Yellow	63	63	63	63	50
	SE800003BEXB9	3P	EXB9 Grey	86	80	80	80	60
	SE800004BEXB9	4P	EXB9 Grey	86	80	80	80	60
	SE800003BEXB0	3P	EX10 Yellow	86	80	80	80	60
	SE800004BEXB0	4P	EX10 Yellow	86	80	80	80	60
	SE100003BEXB9	3P	EXB9 Grey	100	86	100	86	67
	SE100004BEXB9	4P	EXB9 Grey	100	86	100	86	67
	SE100003BEXB0	3P	EX10 Yellow	100	86	100	86	67
	SE100004BEXB0	4P	EX10 Yellow	100	86	100	86	67

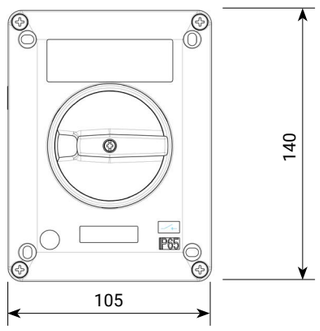
* SQ Series can be supplied with added contact blocks on request.

DIMENSIONAL DRAWINGS

SQ 025-032

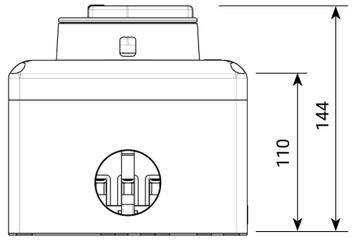
Nr 2 holes for cable gland M25
Nr 2 holes for cable gland M20

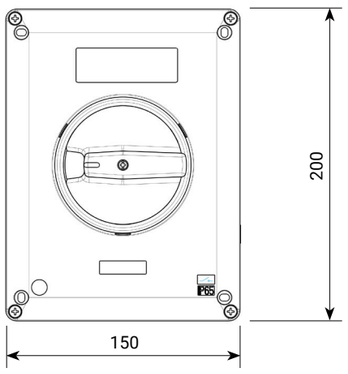




SQ 040-063 AND SE 63-80-100

Nr 2 holes for cable gland M40





GIOVENZANA
INTERNATIONAL B.V.

ATEX & IECEx: REGOLUS EX ENCLOSURES

Equipment for potentially explosive atmospheres

| II 2G Ex e IIC Gb - II 2D Ex tb IIIC Db | Zone 1-2-21-22 (Gas & Dust) | Tamb = -60°C /+150°C | IP65 |

The new Regolus Ex enclosures are made of aluminium alloy for use in explosion-hazard environments in accordance with the ATEX Directive 2014/34/EU.
The enclosures are to be considered components. The components require a subsequent certification/declaration by the end user.
The cover is fixed to the bottom with stainless steel screws, the seal is guaranteed by a silicone seal that allows to maintain a degree of protection IP65. The enclosures are supplied in different versions depending on the size (and therefore the maximum dissipable power) and the different colouring.
The ATEX mark (explosive atmospheres) refers to the European directive on the risk of deflagration in potentially explosive atmospheres.

CLASSIFICATION AREA "GAS"
Zone 1: an area in which an explosive atmosphere consisting of a mixture of air and flammable substances in the form of gas, vapour or mist, is likely to occur during normal operation.
Zone 2: an area in which an explosive atmosphere consisting of a mixture of air and flammable substances in the form of gas, vapour or mist, is not likely to occur during normal operations, but if it does, it will only persist for a short period.

CLASSIFICATION AREA "DUST"
Zone 21: an area in which the explosive atmosphere, in the form of a cloud of combustible dust in the air, is likely to occur during normal operations.
Zone 22: an area in which an the explosive atmosphere, in the form of a cloud of combustible dust in the air, is probably not present during normal operations but, if it does, persists only for a short time.

TYPE OF PROTECTION
Increased safety (Ex "e").
Protection by enclosures (Ex "tb").

MARKING
Ex e Gb II 2G - Ex tb IIIC Db in accordance with IEC 60079-0, IEC 60079-31, IEC 60079-7.

PRINCIPLE
Additional measures shall be applied to provide increased safety against the

possibility that the construction will not produce excessive arcs, sparks or temperatures during normal operation or under specified abnormal conditions.

DESIGN PARAMETERS
- For live parts, not insulated, special protection requirements shall apply.
- A minimum degree of protection (IP code) of enclosure is required. The purpose of the degree of protection is to prevent the penetration of solids or water (conductors) which may affect the insulation distances, which guarantee the maintenance of the non-sparkling property.
- For windings, mechanical and insulation resistances, higher requirements apply and the windings must be protected from an increase in temperature.
- Minimum sections are provided for cable winding, impregnation and strengthening of coils and for thermal monitoring equipment.

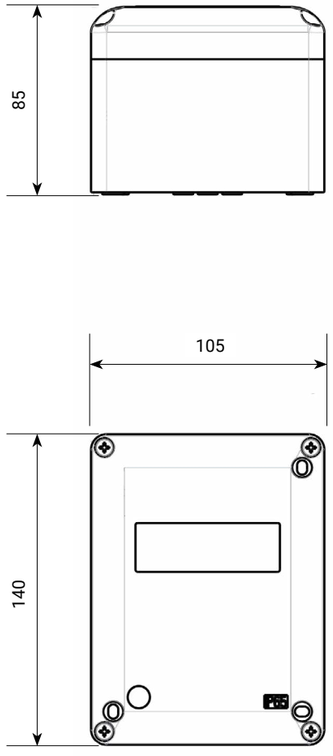
APPLICATIONS
Installation equipment such as junction boxes, connection panels for heating systems, batteries, transformers, reactors and engines.

MARKING AND APPROVALS

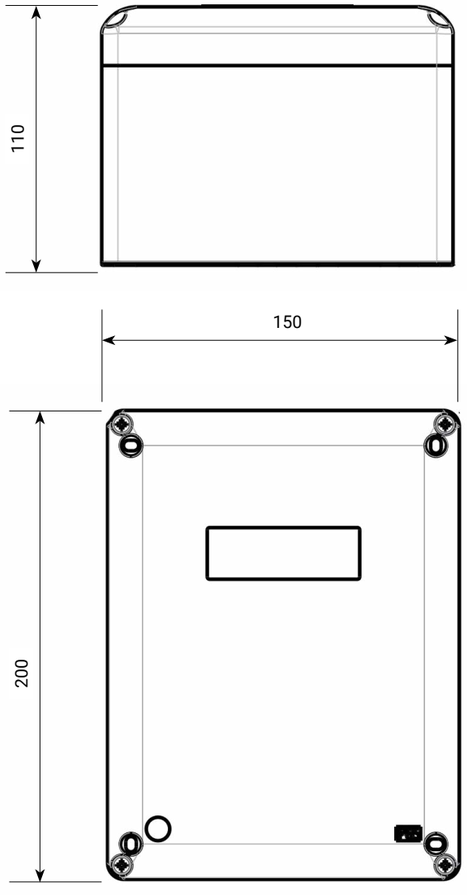
PRODUCT CODE	OVERALL DIMENSIONS	FINISHING COLOR COVER/BOTTOM
BNA/8NGEX	150x200x110mm	Grey/Black
BNA/8NYEX	150x200x110mm	Yellow/Black
BNB/8NGEX	105x140x85mm	Grey/Black
BNB/8NYEX	105x140x85mm	Yellow/Black

DIMENSIONAL DRAWINGS

BNB SERIES



BNA SERIES



GIOVENZANA INTERNATIONAL B.V.

ATEX & IECEx: ROTARY GEAR LIMIT SWITCHES - FGR2-Ex Series

Equipment for potentially explosive atmospheres. Single single or rear twin shaft, with 4 or 6 microswitches and transmission ratio from 012 to 200.

| II 3G Ex dc ec IIB T5 Gc | II 2D Ex tb IIIC T85°C Db | Zone 2-21 (Gas & Dust) | Tamb = -20°C/+70°C | IP65 |

The innovative FGR2-Ex limit switch, ATEX and IECEx certified, in aluminium and antistatic plastic housing, suitable for use in zone 2 (Gas) and zone 21 (Dust).
The apparatus, through a gear transmission, controls a cam system operating on 4 or 6 micro switches that after a certain number of revolutions predispose the engine or the equipment at the start or stop. Each cam is equipped with a micrometric "adjustable register screw" which operates independently, so it is possible to calibrate the opening and closing of each micro switch according to the necessary functional requirements. The gear transmission system allows you to choose different ratios and can also be supplied in a twin rear shaft version.

STANDARDS OF REFERENCE
EN 80079-34, EN 60947-3, EN 61241-0, EN 60079-0, EN 60079-31, EN 60079-1, EN 60079-7.

DIRECTIVE
ATEX 2014/34/EU. EAC TR TS 012/2011 "Safety components and equipment for hazardous areas and potentially explosive atmospheres".

CLASSIFICATION AREA "GAS & DUST"
Zone 2: an area in which an explosive atmosphere consisting of a mixture of air and flammable substances in the form of gas, vapour or mist, is not likely to occur during normal operations, but if it does, it will only persist for a short period.
Zone 21: an area in which the explosive atmosphere, in the form of a cloud of combustible dust in the air, is likely to occur during normal operations.

TYPE OF GAS PROTECTION
Limited breathing housing (Ex "dc ec").
MARKING
II 3G Ex dc ec IIB T5 Gc in accordance with IEC 60079-0, IEC 60079-1, IEC 60079-7.
PRINCIPLE
Limited in the power dissipation (ΔT limited), so that the depression that occurs when de-energized is such as to delay the entry of explosive atmosphere for a time limit indicated by the norm.

TYPE OF DUST PROTECTION
Protection by enclosure (Ex "tb").

MARKING
II 2D Ex tb IIIC T 85°C Db in accordance with IEC 60079-0, IEC 60079-31.

PRINCIPLE
The housing joint shall be hermetically sealed with special seals so that the fuel dust cannot enter.
The temperature of the outer surface is limited.

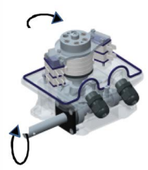
APPLICATIONS
For the control of revolving parts of industrial or construction machinery such as rope reel drums, operating machines, sliders, cranes, etc.
The type of housing designed and the internal components adopted, make this equipment for use in potential areas with explosive atmosphere for both gas and dust according to ATEX Directive 2014/34/EU.

MARKING AND APPROVALS

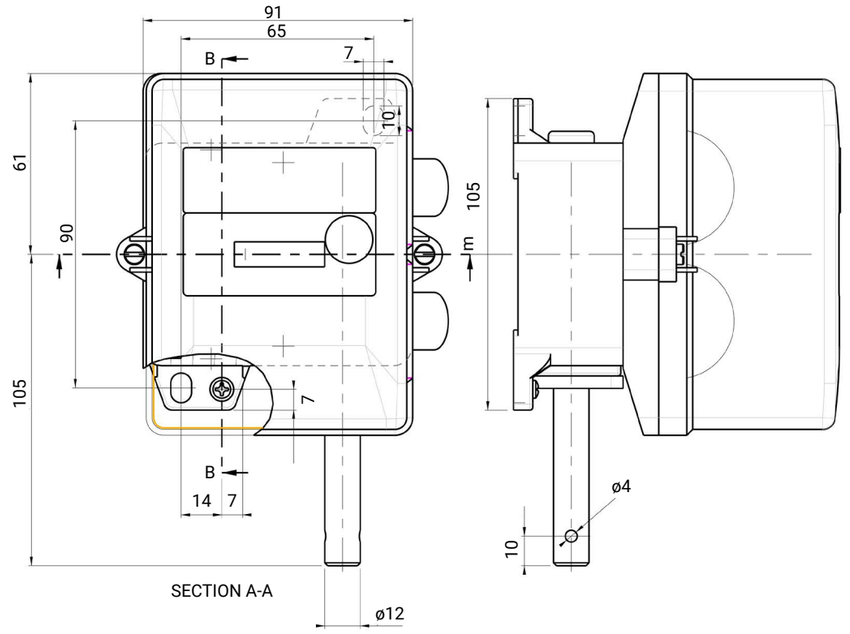
GENERAL CHARACTERISTICS

Case	Housing made of aluminium Anti-static plastic cover
Ratio	012 - 033 - 050 - 100 - 200
Protection Class	IP65
Shaft Type	Steel mounted on ball bearings Available version with coaxial shaft
Fixing Type	Bottom with stainless steel screws Front (flanged with FLG accessories)
Micro Switches	MFI-Ex Series Directive ATEX 2014/34/EU
Micro Switches	Max nr 6 - micrometric adjustment
Cam Block	Self-lubricating and transparent support for easy cam display
Cable Entry	M16 (max nr 2) not included
Options	15 pinions
Rated operational current	8A (1A)
Ambient Temperature	-20°C ... +70°C

RATIO	SINGLE SHAFT		REAR SHAFT	
				
	4 Micro Switches	6 Micro Switches	4 Micro Switches	6 Micro Switches
				
012	FGR2006EX	FGR20066EX	FGR2006BEX	FGR2006B6EX
033	FGR2007EX	FGR20076EX	FGR2007BEX	FGR2007B6EX
050	FGR2008EX	FGR20086EX	FGR2008BEX	FGR2008B6EX
100	FGR2009EX	FGR20096EX	FGR2009BEX	FGR2009B6EX
200	FGR2010EX	FGR20106EX	FGR2010BEX	FGR2010B6EX



DIMENSIONAL DRAWINGS



GIOVENZANA INTERNATIONAL B.V.

ATEX & IECEx: MICRO SWITCHES - MFI-Ex SERIES

Equipment for potentially explosive atmospheres, available in 9 drive types.

| II 3G Ex dc ec IIB Gc | Zone 2 (Gas) |

New ATEX and IECEx certified MFI-Ex micro switches for use in zone 2 (Gas).

Micro NC switches with positive opening, with high reliability snap-action operation, equipped with self-cleaning silver alloy switch contacts and available with pin plunger or different types of actuator lever.

STANDARDS OF REFERENCE
EN 80079-34, EN 60947-3, EN 61241-0, EN 60079-0, EN 60079-31, EN 60079-1, EN 60079-7.

DIRECTIVE
ATEX 2014/34/EU. EAC TR TS 012/2011 "Safety components and equipment for hazardous areas and potentially explosive atmospheres".

CLASSIFICATION AREA "GAS"
Zone 2: an area in which an explosive atmosphere consisting of a mixture of air and flammable substances in the form of gas, vapour or mist, is not likely to occur during normal operations, but if it does, it will only persist for a short period.

TYPE OF GAS PROTECTION
Restricted breathing case (Ex "dc ec").

MARKING
II 3G Ex dc ec IIB Gc in according with IEC 60079-0, IEC 60079-1, IEC 60079-7.

PRINCIPLE
Limited power dissipation (ΔT limited), so the depression that is created when de-energized, is such as to delay the entry of explosive atmosphere for a time limit specified by the standard.

APPLICATIONS
ATEX and IECEx micro switches are used in many fields such as: control valves, actuators, conveyor belts, materials handling and in petrochemical plants in general.

The type of materials and the internal design of the elements, conform this component for use in potential areas with explosive atmospheres due to the presence of gas according to ATEX Directive 2014/34/EU.

GENERAL CHARACTERISTICS

According to	IEC / EN 61058 UL1054	
Working Temperature	-20 ... +89 only for North America -36 ... +126	°C °F
Mechanical life **Electrical life**	1 x 10⁶ 5 x 10⁵	cycles/min cycles/min
Termination type	Screw terminal	

ELECTRICAL CHARACTERISTICS

Rated thermal current Ith	8	A
Rated insulated voltage Ui	250	V
Rated impulse withstand voltage Uimp	1500	V
Rated operating current Ie	8 - 250 - Resistive load 1 - 250 - Inductive load	A - V A - V
Electric shock protection	Class II	
Pollution Class	2	

MARKING & APPROVALS

ATEX IECEx c UL us EAC Ex INMETRO

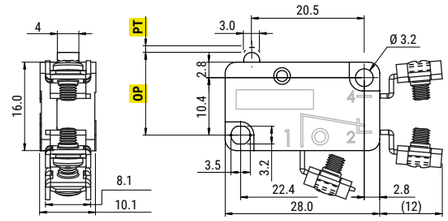
DIMENSIONAL DRAWINGS

Micro switches with Screw terminals

1 NC - 1 NO

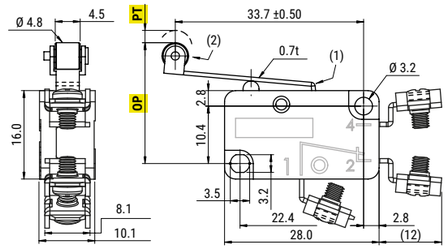
SNAP ACTION

MFI.Ex Pin Plunger



OF	max	5.1	N
RF	min	1.9	N
PT	max	1.4	mm
OT	min	0.8	mm
OP		14.4 ±0.5	mm

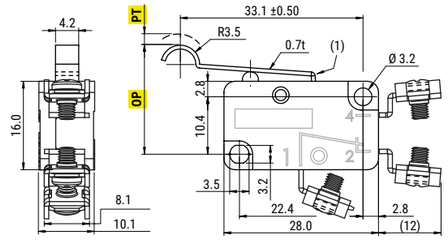
MFI.1Ex Long roller lever



OF	max	3.2	N
RF	min	1.0	N
PT	max	3.3	mm
OT	min	0.8	mm
OP		20.3 ±1.2	mm

(1) Lever in stainless steel
(2) Roller in plastic

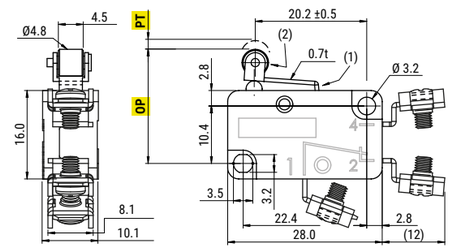
MFI.2Ex Simulated roller lever



OF	max	3.2	N
RF	min	1.0	N
PT	max	3.3	mm
OT	min	0.8	mm
OP		18.4 ±1.2	mm

(1) Lever in stainless steel

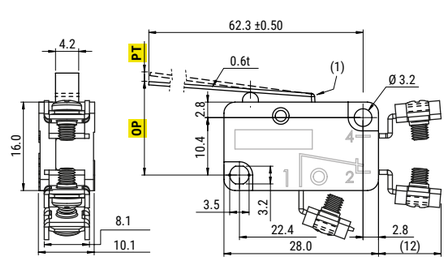
MFI.3Ex Roller lever



OF	max	5.1	N
RF	min	1.9	N
PT	max	1.4	mm
OT	min	0.6	mm
OP		20.3 ±0.8	mm

(1) Lever in stainless steel
(2) Roller in plastic

MFI.4Ex Long lever



OF	max	1.3	N
RF	min	0.15	N
PT	max	7.6	mm
OT	min	2.2	mm
OP		15.1 ±2.6	mm

(1) Lever in stainless steel

GIOVENZANA INTERNATIONAL B.V.

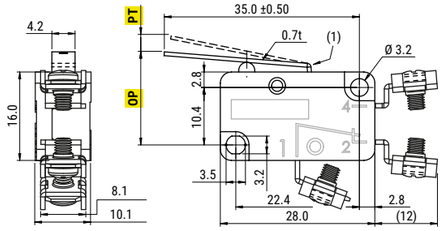
DIMENSIONAL DRAWINGS

Micro switches with Screw terminals

1 NC - 1 NO

SNAP ACTION

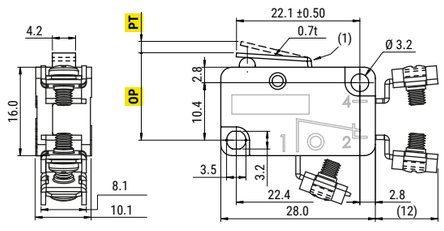
MFI.5Ex Lever



OF	max	3.2	N
RF	min	1.2	N
PT	max	3.3	mm
OT	min	0.8	mm
OP		15.1 ±1.2	mm

(1) Lever in stainless steel

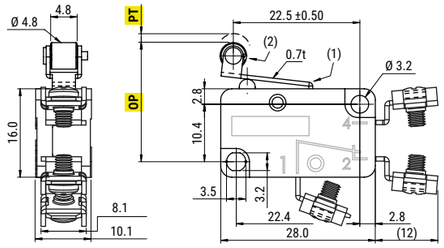
MFI.6Ex Short lever



OF	max	5.1	N
RF	min	1.9	N
PT	max	1.6	mm
OT	min	0.6	mm
OP		15.1 ±0.6	mm

(1) Lever in stainless steel

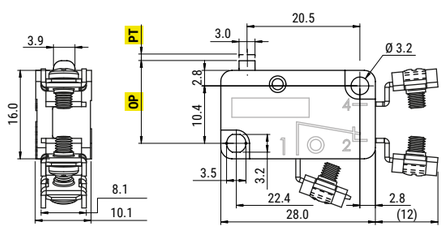
MFI.7Ex Roller lever L = 16 mm



OF	max	4.5	N
RF	min	1.9	N
PT	max	1.8	mm
OT	min	0.8	mm
OP		21.1 ±0.6	mm

(1) Lever in stainless steel
(2) Roller in plastic

MFI.8Ex Pin plunger 90°



OF	max	5.1	N
RF	min	1.9	N
PT	max	1.4	mm
OT	min	0.8	mm
OP		14.4 ±0.5	mm

NEW

ATEX & IECEx: FEESTON SYSTEM Ex

Equipment for potentially explosive atmospheres.

| II 2G Ex h IIB T5 Gb | II 2D Ex h IIIC T90° Db | Zone 1-2 (Gas) e 21-22 (Dust) | Tamb = -25°C /+80°C |

New Feeston System Ex series 30 and 41 certified ATEX and IECEx for use in potentially explosive areas.

STANDARDS OF REFERENCE

EN 80079-36, ISO IEC 80079-36.

DIRECTIVE

ATEX 2014/34/EU. EAC TR TS 012/2011 "Safety components and equipment for hazardous areas and potentially explosive atmospheres".

The Festoon System is the traditional system for the transmission of energy by cable.
The main applications of this system are mobile energy consumers such as cranes, monorails, electric hoists, machine tools, car wash systems, plating lines, etc.
One of the most successful is the crane where the festoon line transmits the signals to control the movements of the winch. The 30 and 41 lines are composed of a“C” bar fixed along the crane’s axis of movement. The cable is supported by trolleys that slide hanging from the bar to“C”.
This feeding system has several advantages:

- Safety: the cables are flame resistant, the conductors are completely protected;
- Versatility: can be used for straight tracks such as curved tracks, for internal and external applications;
- Easy to install;
- Line maintenance is extremely low.

Both lines 30 and 41 offer a complete selection of articles and accessories to customize the line according to customer specifications. ATEX and iecex certifications allow the use of this system in hazardous areas with potentially explosive atmospheres.

CLASSIFICATION AREA “GAS”

Zone 1: an area in which an explosive atmosphere consisting of a mixture of air and flammable substances in the form of gas, vapour or mist, is likely to occur during normal operation.
Zone 2: an area in which an explosive atmosphere consisting of a mixture of air and flammable substances in the form of gas, vapour or mist, is not likely to occur during normal operations, but if it does, it will only persist for a short period.

CLASSIFICATION AREA “DUST”

Zone 21: an area in which the explosive atmosphere, in the form of a cloud of combustible dust in the air, is likely to occur during normal operations.
Zone 22: an area in which an the explosive atmosphere, in the form of a cloud of combustible dust in the air, is probably not present during normal operations but, if it does, persists only for a short time.

MARKING

II 2G Ex h IIB T5 Gb
II 2D Ex h IIIC T90° Db

APPLICATIONS

To use in hazardous areas with potentially explosive atmospheres.

CRANE TECHNOLOGY
Cranes and Hoists
Recycling plans
Galvanized plants

PRODUCTION AUTOMATION
Electric systems
Automated conveyors

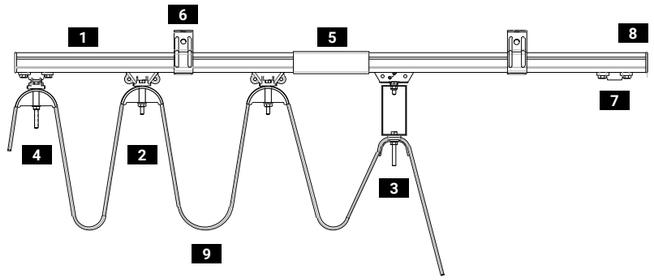
BMU
Building maintenance units
Airport and terminal stations
Skyscrapers
Cleanroom technology

PORT TECHNOLOGY
RTG cranes
STG cranes

STORAGE
High-bay warehouses
Automated storage

PRODUCT LINES AVAILABLE

- 30 Ex Series
- 41 Ex Series



1	**C-RAIL BAR**	In galvanized steel
2	**TROLLEY**	Supports the cable
3	**TOWING TROLLEY**	Connects to the mobile device and allows the movement
4	**HEAD CLAMP**	Cable-supporting element without movement
5	**JOINT**	Connects two C-rail bars
6	**SUPPORT**	Holds the C-rail bar
7	**END STOP**	Prevents the exit of the trolley from the C-rail bar
8	**END CAP**	Closes and protects the C-rail bar
9	**CABLE**	Transmits the energy

MARKING & APPROVALS

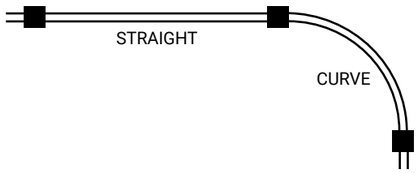
For more informations, contact our Technical Support.
customerstechnicalsupport@giovenzana.com

GIOVENZANA INTERNATIONAL B.V.

C-RAIL BAR

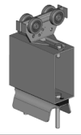
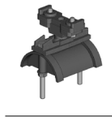
SERIES	CHARACTERISTICS		
	BAR HEIGHT	LOAD CAPACITY	MATERIAL
30 Ex SERIES	30 mm	100 kg/m	Galvanized steel
41 Ex SERIES	41 mm	140 kg/m	Galvanized steel

MODULES AVAILABLE	
STRAIGHT	4 meters module
CURVE	90° curve radius 1,5 meters (only for line 41)



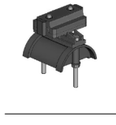
30 Ex SERIES

PRODUCT	CODE	DESCRIPTION
	**30607001**	C-Rail Bar Lenght: 4 meters
	**30607002**	Joint
	**30607003**	Track support bracket
	**30607017**	Track support bracket - ceiling fixing
	**30607004**	Support arm bracket - bracket fixing
	**30607015**	End cap
	**30607016**	Cable clamp
	**30607005Ex**	End stop

PRODUCT	CODE	DESCRIPTION
	**30607007Ex**	Towing trolley
	**30607010Ex**	Flat cable trolley - Material: steel - Saddle: 68 mm
	**30607011Ex**	Flat cable trolley - Material: PA - Saddle: 55 mm
	**30607021Ex**	Round cable trolley
	**30607020Ex**	Head clamp - Saddle: 55 mm
	**30607006Ex**	Head clamp - Saddle: 76 mm

41 Ex SERIES

PRODUCT	CODE	DESCRIPTION
	**30602001/4**	C-Rail Bar Lenght: 4 meters
	**30602002** **30602034**	Single joint Double joint
	**30602003**	Track support bracket
	**30602004**	Track support bracket - ceiling fixing
	**30602038Ex**	End stop

PRODUCT	CODE	DESCRIPTION
	**30602091Ex**	Single towing trolley
	**30602020Ex**	Double towing trolley
	**30602086Ex**	Flat cable trolley - Material: steel - Saddle: 68 mm
	**30602071Ex**	Head clamp - Saddle: 55 mm
	**30602072Ex**	Head clamp - Saddle: 76 mm