GIOVENZANA INTERNATIONAL B.V. reserves the right to modify, as specifications change, all technical and functional characteristics of the products shown in the catalogue without prior notice as this information is intended for general knowledge and is not legally binding. The most updated version of this catalogue is downloadable from the website www.giovenzana.com.
THE PHILOSOPHY
Giovenzana’s philosophy is based upon the basic principles of business management, dynamism and continuous research into the operator’s needs in the field of man-machine interaction. These principles, thanks to the experience and professionalism of its staff, guarantees development and growth.

THE HISTORY
With over 50 years experience in this field, coupled with excellent managerial skills, Giovenzana has maintained growth relying upon:
• Market research
• Product placement
• Manufacturing technology and above all, team work.

THE PRODUCTS
Giovenzana, leader in the industrial technology field, is the first choice for:
• Handling equipment;
• Automation;
• Lifting equipment;
• Atex;
• Maintenance;
• Command and control of moving parts;
Development, design and production are combined to reach a common goal and cover most industrial applications.

QUALITY AS A LIFESTYLE
Giovenzana is an UNI EN ISO 9001:2015 certified company.
The commercial success of a product does not happen by chance but is the end result of the combined efforts of all human resources operating within an organizational structure that is devoted to quality.
Giovenzana’s company is also certified UNI EN ISO 14001:2015 and its goal is not just “to manufacture a quality product” but also to ensure the protection of our cycle processes.

THE PRODUCTION
The solutions offered by Giovenzana result from the company’s extensive knowledge of the requirements of industrial electrical accessories, and are in line with all relevant international standards. The solutions fall into four main sectors: industrial automation, lift, handling system and Atex.

AUTOMATION
Automation includes Phoenix cam switches from 12A to 200A and Regolus switch disconnectors from 16A to 160A; Pegasus, Orion and NEMA control auxiliaries; thermoplastic limit switches, foot switches and micro switches.

LIFT
Throughout the years, continuous technological research and development has made Giovenzana the undisputed leader in its field. The range includes:
• pit bottom push button stations;
• recall drive control units;
• inspection boxes.

HANDLING SYSTEM
Handling equipment comprises of single and double row pendant stations up to 14 gang for control and data protection; switching, position and rotary gear limit switches, slip rings, warning horns, busbar conductor rails and festoon system.

ATEX
Giovenzana has obtained the important certifications for ATEX and IECEx company system (QAN and QAR) for the potentially EXPlosion Atmospheres. ATEX is the European Directive mandatory in conformity with the International Standard EN 60079 - IEC 60079. Giovenzana develops projects realizing and constructing safety solution systems, equipment and components. The goal is to protect people and environment with these safety components. (Our explosion proof product catalogue (for Zone 1-2, 1G-2G Gas and Dust) is in continuous development by our R&D Engineers.
• Switch Disconnectors Regolus Ex Series from 25A to 100A;
• Enclosures Regolus Ex Series with a wide temperature range: -60°C/+150°C;
• Limit Switches Rotary Gear FGR2-Ex Series;
• Microswitches MFI-Ex Series;
• Cam Switches Phoenix Ex from 12A to 40A;
• Festoon System Ex Series.

PRODUCTION SURVEILLANCE
Product Certification:
EC-Type Examination Certificate
Production & Quality Certifications:
1. QAN (Quality Assurance Notification) necessary for ATEX
2. QAR (Quality Assessment Report) necessary for IECEx
The manufacturer is obliged to implement in the company a quality and production system in accordance with ISO/IEC 80079-34. This system involves extraordinary control and security measures which are periodically checked and approved by the Notification Bodies under audit inspections.
With these two important certificates Giovenzana has obtained the authority to design, develop, implement, and construct equipment and components in safety systems solutions.

Our goal is to protect people and environment with the safety systems and products.

The ATEX mark (ATmospheres EXPlosives) refers to two European directives concerning the risk of deflagration in potentially explosive atmospheres:
• ATEX 2014/34/EU: concerns the requirements for electrical and non-electrical equipment used in potentially explosive environments. According to this directive the manufacturer has to comply with the provided requirements and mark the articles in conformity with particular categories.

These directives determine the requirements for the safety and health protection of people, animals and property and carry several procedures for the conformity demonstration of equipment to the directive requirements.

HAZARDOUS AREAS’ CLASSIFICATION
A potentially explosive atmosphere is an atmosphere that could become explosive according to the local conditions of work (environments with a presence of air and flammable substance in the form of gas, smog, steam and dusts).

The ATEX Directive defines two types of explosive atmospheres:
• Atmospheres with explosive gas - Zone 0, 1 and 2;
• Atmospheres with explosive dusts - Zone 20, 21 and 22.

Zone 0: area in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist is present continuously or for long periods of time.
Zone 1: area in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist is likely to occur in normal operation occasionally.
Zone 2: area in which an explosive gas atmosphere is not likely to occur in normal operation but, if it does occur, will persist for a short period only.
Zone 20: place in which an explosive atmosphere in the form of a cloud of combustible dust in air is present continuously, or for long periods or frequently.
Zone 21: place in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur, occasionally in normal operation.

Zone 22: area in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

IECEx
The IECEx directive facilitates the international exchange and acceptance of product-safety test results amongst participating laboratories for national approval or certification in one or more countries without the need for additional testing.
The IECEx certification system is endorsed by the United Nations and is internationally recognised as the certificate system for promoting the safety of equipment, services and personnel that are associated with devices, systems and installations used in explosive atmospheres.

International Classifications
Some other countries require their own local certificates on the basis of IECEx tests, for example: INMETRO for Brazilian market or EAC for Russia and CIS.
ATEX DIRECTIVES APPLY TO MANY SECTORS OF INDUSTRIAL PRODUCTION

The companies involved with the ATEX Directives and its risks have the duty to conform when purchasing equipment and also on components certification. For each type of company the dangerous areas and materials that could create a potential risk have been identified.

**SECTOR A: FOOD AND AGRICULTURE (Dust)**

**COMPANIES**
- Food and agriculture (Dust)
- Biscuits, pasta, semolina and sugar; plant and equipment food processors; coffee roasting, cereal and cocoa grinding companies; bakers, distilleries and mills.

**DANGEROUS ZONES**
- The typical food industry processes involve handling of materials stored in silos, resulting in the release of dust and hazardous ATEX areas. During transport and storage of grains explosive dust can form. The drying, grinding and refining of agricultural and food material is hazardous. In food industries controlled environments are often used for the sterilization of alcoholic substances.

**MATERIALS**
- Cocoa, coffee, cereals (mixed powder), wheat flour, soy flour, gelatin, wheate, milk powder, lactose, rye, whey, sugar, granulated sugar, alcohol.

**SECTOR B: FIXTURES, FITTINGS AND METAL INDUSTRIES (Dust)**

**COMPANIES**
- Metal window frames, metal accessories fixtures, profiling order, metals surface treatment.

**DANGEROUS ZONES**
- Potentially explosive atmosphere for the presence of metallic fine dust caused by machine operations in the production cycle. Accumulation on walls of layers of micro dust and also buildup in crevices and in venting machine. Dust from sanding in the production of molded metal parts, during the surface treatment (grinding) explosive metal powders can form. This is true particularly in the case of light metals and mixtures of alloys. These metal dusts may result into an explosion hazard in the separators and filters. The conductive powders are the most dangerous ones.

**MATERIALS**
- Active substances, various chemicals, pharmaceuticals and biohazard materials.

**SECTOR C: AVIATION, AEROSPACE, NAVAL, AUTOMOTIVE, RAILWAYS (Dust)**

**COMPANIES**
- Aircraft construction, trains, cars maintenance, precision engineering, from electronic industry to aerospace, spray booths, resins processing.

**DANGEROUS ZONES**

**MATERIALS**
- Hydrocarbons, propellants, sanding metal dust, fuels, solvents, magnesium, zirconium, aluminum.

**SECTOR D: CHEMISTRY (Dust – Gas)**

**COMPANIES**
- Paints, colors, soda, alcohol, chemicals, solvents, oils.

**DANGEROUS ZONES**
- Presence of solvents and fumes during the production cycle. Production of Hydrogen in chemical reactions. materials transformation of solid, liquid and gaseous fuels with consequent risk of creating explosive atmospheres. Use of explosive dust or liquids for the synthesis of products. Losses from flanges. Various solvents: acetic acid, ethyl alcohol, acetone, alcohol, ethylene, etc.

**MATERIALS**
- Processed chemicals products.

**SECTOR E: COMBUSTIBLES, FUEL, ENERGY, METALLURGY (Dust – Gas)**

**COMPANIES**
- Petrolium refining plants, plants which treat gases such as fuel oil and natural gas, metallurgy, electric power production.

**DANGEROUS ZONES**
- Accidental loss and extraordinary transactions of spillage. The hydrocarbons handled in refineries are all flammable and, depending on the flash point, they can generate an explosive atmosphere also at room temperature. The environment in which the oil treatment equipment is located is normally considered an area at risk of explosion. For metallurgical and power generation carbon coke is generally used, it is highly flammable organic material and there are many scrap of combustible powder.

**MATERIALS**
- Hydrocarbons, LPG, refinery gas, fuels, metal dust, acids, fossil carbon, wood.

**SECTOR F: RESEARCH, UNIVERSITIES AND LABORATORIES (Dust – Gas)**

**COMPANIES**
- Oxygen cylinders, lab products, test or analysis benches.

**DANGEROUS ZONES**
- Areas used as a warehouse for bottled oxygen or flammable gases. Boxes for explosive or toxic material processing. Appearances of micro-powders in the processing of Hi-Tech components. Use of solvents in laboratory tests. Sterilization of rooms using ethanol or flammable solvents.

**MATERIALS**
- Various solvents, ethanol, alcohol, gas cylinders, oxygen, lab products, electronic micropowder, resins, gallium arsenide, production photocells, dust from electric circuits, arsenic.

**SECTOR G: FURNITURE, CARPENTERS, LEATHER PROCESSING, TANNERIES, TEXTILE (Dust)**

**COMPANIES**
- Furniture, fittings and metal industries.

**DANGEROUS ZONES**
- Potentially explosive atmosphere for the presence of metallic fine dust caused by machine operations in the production cycle. Accumulation on walls of layers of micro dust and also buildup in crevices and in venting machine. Dust from sanding in the production of molded metal parts, during the surface treatment (grinding) explosive metal powders can form. This is true particularly in the case of light metals and mixtures of alloys. These metal dusts may result into an explosion hazard in the separators and filters. The conductive powders are the most dangerous ones.

**MATERIALS**
- Active substances, various chemicals, pharmaceuticals and biohazard materials.
**SECTOR H: PLASTICS AND RUBBER (Dust - Gas)**

**COMPANIES**
Plastics and rubber processing.

**DANGEROUS ZONES**
Production and storage of plastic or rubber granulate explosive dust can form in grinders, in storage systems, and dust separation. Some rubbers are made with flammable liquid solutions.

**MATERIALS**
Polymer of vinyl chloride, plastic micro powder.

---

**EXAMPLES OF EXPLOSIVE ATMOSPHERES**

**EXPLANATION**
- **ZONE 0**: Flammable gases, flammable liquids, or flammable dusts in an explosive atmosphere.
- **ZONE 1**: Flammable gases, flammable liquids, or flammable dusts in an explosive atmosphere which can be ignited by a spark or jet of flame from outside the enclosure.
- **ZONE 2**: Flammable gases, flammable liquids, or flammable dusts in an explosive atmosphere which can be ignited by a spark or jet of flame originating from within the enclosure.

**EXPLOSIVE GAS ATMOSPHERES**
- **ZONE 1**: Gas Atmospheres
- **ZONE 2**: Gas Atmospheres

**EXPLOSIVE DUST ATMOSPHERES**
- **ZONE 0**: Dust Atmospheres
- **ZONE 1**: Dust Atmospheres
- **ZONE 2**: Dust Atmospheres

---

**SECTOR L: PAPER MILLS (Dust)**

**COMPANIES**
Paper production.

**DANGEROUS ZONES**
In paper processing operations, during the production cycle, in particular during loading, cutting and processing in general, accumulations of potentially explosive powders are created.

**MATERIALS**
Paper, cellulose and metal micro powder.

---

**MARKING**

**CLASSIFICATION AND LABELLING OF EXPLOSION-PROOF AREAS**

**Classification of explosion-proof areas**

- **Zone 0**: Flammable gases, flammable liquids, or flammable dusts in an explosive atmosphere.
- **Zone 1**: Flammable gases, flammable liquids, or flammable dusts in an explosive atmosphere which can be ignited by a spark or jet of flame from outside the enclosure.
- **Zone 2**: Flammable gases, flammable liquids, or flammable dusts in an explosive atmosphere which can be ignited by a spark or jet of flame originating from within the enclosure.

**Protection principles**
- **Type of protection**
- **Code**
- **Standard**
- **Group**
- **Category**
- **Marking**

**CLASSIFICATION OF AREAS**

**Explosion group**

- **IIB**: Flammable gases, flammable liquids, or flammable dusts in an explosive atmosphere.

**Dusts**

- **Zone 21**: Flammable dusts in an explosive atmosphere which can be ignited by a spark or jet of flame originating from within the enclosure.

**Equipment protection**

- **Ex d**: Intrinsic safety (for use in Zone 2).
- **Ex tb**: Intrinsic safety (for use in Zone 1).
- **Ex n**: Encapsulation (for use in Zone 0).

**Ingress Protection**

- **Ex tb**: Protection against dust deposits.
- **Ex p**: Protection against water.

---

**EXAMPLES**

- **German**
  - **0152**: Dust Category I
  - **0178**: Dust Category II

**EXAM**

- **PTB**: German Official Institute for Examinations.

---

**EMPLOYMENT Sectors**

- **COMPANIES**
  - **SECTOR I: DISPOSAL OF WASTE EXPLOSIVES (Dust - Gas)**
    - **Material**
      - **Gases**
      - **Explosive or metal powders, organic or chemical firework and ammunition safety.**
      - **Microbursts for safety systems such as Air Bag or treatment of wastewater at treatment plants, cartridges, buoy smoke, hand flares.**
      - **Production and storage of rockets, smoke bombs, Landfills, national galleries, automotive.**

- **COMPANIES**
  - **SECTOR H: PLASTICS AND RUBBER (Dust)**
    - **Material**
      - **Gases**
      - **Explosive or metal powders, organic or chemical firework and ammunition safety.**
      - **Microbursts for safety systems such as Air Bag or treatment of wastewater at treatment plants, cartridges, buoy smoke, hand flares.**
      - **Production and storage of rockets, smoke bombs, Landfills, national galleries, automotive.**

---

**PRODUCTS**

- **Code**
  - **Ex d**: Protection against dust deposits.
  - **Ex tb**: Intrinsic safety (for use in Zone 1).
  - **Ex n**: Encapsulation (for use in Zone 0).

---

**TEMPERATURE CLASS**

- **Zone 0**: Flammable gases, flammable liquids, or flammable dusts in an explosive atmosphere.
- **Zone 1**: Flammable gases, flammable liquids, or flammable dusts in an explosive atmosphere which can be ignited by a spark or jet of flame from outside the enclosure.
- **Zone 2**: Flammable gases, flammable liquids, or flammable dusts in an explosive atmosphere which can be ignited by a spark or jet of flame originating from within the enclosure.
- **Zone 20**: Flammable gases, flammable liquids, or flammable dusts in an explosive atmosphere which can be ignited by a spark or jet of flame originating from within the enclosure.
- **Zone 21**: Flammable dusts in an explosive atmosphere which can be ignited by a spark or jet of flame originating from within the enclosure.
- **Zone 22**: Flammable dusts in an explosive atmosphere which can be ignited by a spark or jet of flame originating from within the enclosure.

**PRODUCT CLASSIFICATION**

- **Ex d**: Intrinsic safety (for use in Zone 2).
- **Ex tb**: Intrinsic safety (for use in Zone 1).
- **Ex n**: Encapsulation (for use in Zone 0).

---

**PROTECTION**

- **Type of protection**
- **Code**
- **Standard**
- **Group**
- **Category**
- **Marking**

---

**MARKING**

- **Ex d**: Intrinsic safety (for use in Zone 2).
- **Ex tb**: Intrinsic safety (for use in Zone 1).
- **Ex n**: Encapsulation (for use in Zone 0).

---

**EXAMPLES**

- **German**
  - **0152**: Dust Category I
  - **0178**: Dust Category II
INDEX OF ATEX PRODUCTS

- Switch Disconnectors Regolus Ex - SE 6 SQ Series  pag. 10
- Enclosures Regolus Ex Series  pag. 12
- Limit Switches Rotary Gear FGR2-Ex Series  pag. 14
- Micro Switches MFI-Ex Series  pag. 16
- Cam Switches Phoenix Ex - P0, PX, C0, CX Series  pag. 18
- Feeston System Ex Series  pag. 20
**MARKING “EX” **

**STANDARD IEC 60079-31**

**ZONE 21, 22**

The "Ex" type of protection is based on the protection by an enclosure which is sealed to the penetration of dust and limits the surface temperature. The electrical components that could ignite an explosive atmosphere (high temperatures, sparks, etc.) are located inside enclosures with degree of protection IP6X, in Zone 22 with non-conductive dust the degree of protection IP5X is allowed.

Furthermore, the outer surface temperature of the equipment is kept below the maximum surface temperature T in relation to the maximum temperature for cloud TCL and layer Tl provided for in the installation site.

IP protection in accordance with IEC 60079-0 requirements.

New switch disconnectors Regolus Ex for command and emergency in aluminum box painted in Grey RAL 7035 and Yellow PANTONE 102C, suitable for use in ZONE 21 and 22 (Dust) with rated current of 25-32-40-63-80-100A.

**APPLICATIONS**

- Consideration of dust accumulating on the installation site.
- Suitable for cloud TCL and layer Tl provided for in the installation site.

**REFERENCE STANDARDS**

- EN 60079-34, EN 60947-3, EN60079-0, EN60079-31.
- Directive: ATEX 2014/34/EU.
- Design: ATEX 2014/34/EU.

**CLASSIFICATION AREA "Dust"**

**Zone 21**: area in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur occasionally in normal operation.

**Zone 22**: area in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

**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; 60079-31.

**PRINCIPLE**

The enclosure is sealed so tight, that no combustible dust can enter. The surface temperature of external enclosure is limited.

**ELECTRICAL SCHEMES**

**DESIGN PARAMETERS**

- Minimum degree of protection in accordance with IEC/EN 60079-0 & IEC-EX.
- Consideration of dust accumulating on the surface and reduction of permissible surface temperature with dust layer ≥ 5 mm are possible.

**APPLICATIONS**

Various equipment where during normal operation sparks, electric arcs or hot surfaces occur and complex industrial designs (controllers) which by means of this type of protection can be utilized in the potentially explosive atmosphere.

**MARKING & APPROVALS**

**SITE SERIES**

- SQ025-032 SQ 025-032
- SQ040-063 & SE 63-80-100

**PRODUCT CODE**

<table>
<thead>
<tr>
<th>POLES NUMBER</th>
<th>ENCLOSEMENT</th>
<th>Ith (A)</th>
<th>Hfe (A)</th>
<th>AC 21A/690V (A)</th>
<th>AC 22A/690V (A)</th>
<th>AC 23A/400V (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3P</td>
<td>EXD9 Yellow</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>25</td>
</tr>
<tr>
<td>3P</td>
<td>EXD9 Grey</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>32</td>
</tr>
<tr>
<td>3P</td>
<td>EXD9 Grey</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>50</td>
</tr>
<tr>
<td>3P</td>
<td>EXD9 Yellow</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>75</td>
</tr>
</tbody>
</table>

**SE SERIES**

- SE030-040EXB9
- SE040-063EXB9

<table>
<thead>
<tr>
<th>POLES NUMBER</th>
<th>ENCLOSEMENT</th>
<th>Ith (A)</th>
<th>Hfe (A)</th>
<th>AC 21A/690V (A)</th>
<th>AC 22A/690V (A)</th>
<th>AC 23A/400V (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3P</td>
<td>EXB9 Grey</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>50</td>
</tr>
<tr>
<td>4P</td>
<td>EXB9 Yellow</td>
<td>86</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>60</td>
</tr>
<tr>
<td>4P</td>
<td>EXB9 Grey</td>
<td>86</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>60</td>
</tr>
<tr>
<td>4P</td>
<td>EXB9 Grey</td>
<td>86</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>60</td>
</tr>
<tr>
<td>4P</td>
<td>EXB9 Grey</td>
<td>86</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>60</td>
</tr>
<tr>
<td>4P</td>
<td>EXB9 Grey</td>
<td>86</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>60</td>
</tr>
</tbody>
</table>

**DIMENSIONAL DRAWINGS**

**SQ SERIES**

- SQ025-032
- SQ040-063

**SE SERIES**

- SE800-004BEXB9
- SE630-004BEXB9
- SE100-004BEXB9

**REFERENCE INFORMATION**

* SQ Series can be supplied with added contact block on request.
New Enclosures Regolus Ex are blind enclosures made of aluminum alloy for use in environments at risk of explosion under Directive ATEX 2014/34/EU. These enclosures are to be considered components. The components require subsequent certification / declaration by the user. The cover is secured to the box with stainless steel screws, the tightness is ensured by a silicone seal that allows to maintain a degree of protection IP65. The containers are provided in different versions depending on the size of the metal box (and therefore of the maximum power that can be dissipated) and the colorations provided.

**ATEX mark (ATmospheres EXPlosives) refers to two European directives concerning the risk of deflagration in potentially explosive atmospheres.**

**CLASSIFICATION AREA “Gas”**

**Zone 1**: place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapor or mist is likely to occur in normal operation occasionally.

**Zone 2**: place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapor or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

**CLASSIFICATION AREA “Dust”:**

**Zone 21**: area in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur occasionally in normal operation.

**Zone 22**: area in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

**TYPE OF PROTECTION**

Increased safety (Ex “e”)

Protection by enclosures (Ex “tb”)

**MARKING**

Ex e II Gb - Ex tb IIC Db in accordance with IEC 60079-0, 60079-31, 60079-7

**PRINCIPLE**

Additional measures provide a higher level of protection. This ensures reliable prevention of unacceptably high temperatures and sparks or electrical arcs, both on the internal and on the external parts of electrical equipment, whose normal operation does not involve unacceptably high temperature sparks or arching.

**DESIGN PARAMETERS**

- For uninsulated, live parts, special protective requirements apply.
- Air and creepage gaps are made wider than is generally the case in industry. Special conditions apply to the IP protection degree to be adhered to.
- For windings, their design, mechanical strength and insulation, higher requirements apply and the windings must be protected from increased temperatures.
- Minimum cross sections are stipulated for winding wire, the impregnation and reinforcement of coils and for thermal monitoring equipment.

**APPLICATIONS**

Installation material such as junction boxes, connection cabinets for heating systems, batteries, transformers, ballasts and cage motors.

**DIMENSIONAL DRAWINGS**

<table>
<thead>
<tr>
<th>PRODUCT CODE</th>
<th>OVERALL DIMENSIONS</th>
<th>FINISHING COLOR COVER/BOTTOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNA/8NGEX</td>
<td>150x200x110mm</td>
<td>Grey/Black</td>
</tr>
<tr>
<td>BNA/8NYEX</td>
<td>150x200x110mm</td>
<td>Yellow/Black</td>
</tr>
<tr>
<td>BNB/8NGEX</td>
<td>105x140x85mm</td>
<td>Grey/Black</td>
</tr>
<tr>
<td>BNB/8NYEX</td>
<td>105x140x85mm</td>
<td>Yellow/Black</td>
</tr>
</tbody>
</table>
ATEX & IECEx Technology

**New Limit Switch FGR2-Ex**

FGR2-Ex Series for potentially explosive atmospheres, single or rear twin shaft, with 4 or 6 micro switches and transmission ratio from 012 to 200.

**Applications**

Aimed at controlling the revolutions of the rotating parts of industrial and construction machinery such as drum winding ropes, machines, gates, cranes etc...

The type of enclosure designed and adopted internal components, conform this equipment for use in areas with potential explosive atmosphere for both gas and dust according to ATEX Directive 2014/34/EU.

**Marking & Approvals**

- Aluminium housing
- Antistatic plastic cover
- Directive ATEX 2014/34/EU

**Characteristics**

<table>
<thead>
<tr>
<th>Case</th>
<th>Ratio</th>
<th>Protection Class</th>
<th>Shaft Type</th>
<th>Fixing Type</th>
<th>Micro Switches</th>
<th>Cam Block</th>
<th>Cable Entry</th>
<th>Options</th>
<th>Rated operational current</th>
<th>Ambient Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium housing</td>
<td>012 - 033 - 050 - 100 - 200</td>
<td>IP65</td>
<td>Steel mounted on ball bearing</td>
<td>Front (flanged with FLG accessories)</td>
<td>MFI-Ex Series</td>
<td>Self-lubricating with transparent support for easier cam viewing</td>
<td>M20 (max n° 2) not included</td>
<td>15 pinions</td>
<td>8A (1A)</td>
<td>-25°C +70°C</td>
</tr>
</tbody>
</table>

**Classification Area "Gas & Dust":**

- **Zona 2**: place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapor or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.
- **Zone 21**: area in which an explosive atmosphere in the form of a cloud of combustible dust is likely to occur occasionally in normal operation.

**Type of Protection Gas**

Restricted breathing case (Ex “dc ec”).

**Marking**

II 3G Ex dc ec IIB T5 Gc in accordance with IEC 60079-0, 60079-15.

**Principle**

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

**Type of Protection Dust**

Protection by enclosure (Ex “tb”).

**Marking**

II 2D Ex tb IIC T85°C Db in accordance with IEC 60079-0, 60079-31.

**Principle**

The coupling of the enclosure is hermetically sealed with special seals, so that the combustible dust cannot enter. The outer surface temperature is limited.

**Reference Standards:**

- EN 80079-34
- EN 60947-3
- EN 61241-0
- EN60079-0
- EN60079-31
- EN60079-15

**Directive:**

ATEX 2014/34/EU.

**Classification Area "Gas & Dust":**

- **Zona 2**: place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapor or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.
- **Zone 21**: area in which an explosive atmosphere in the form of a cloud of combustible dust is likely to occur occasionally in normal operation.

**Marking & Approvals**

- IP65
- Bottom with stainless steel screws
- MFI-Ex Series
- Directive ATEX 2014/34/EU
- Max n° 6 - micrometric adjustment
- Self-lubricating with transparent support for easier cam viewing
- M20 (max n° 2) not included
- 15 pinions
- 8A (1A)
- -25°C +70°C
New Micro Switches MFI-Ex certified ATEX and IECEx, suitable for use in Zone 2 (Gas).

NC positive opening, with snap-action operation with high reliability, equipped with self-cleaning switching contacts in silver alloy and available with the pin plunger or various types of actuation lever.

Reference standards:
EN 80079-34, EN 60947-3, EN 61241-0, EN60079-0, EN60079-31, EN60079-15.

Directive: ATEX 2014/34/EU.

CLASSIFICATION AREA “Gas”:
Zona 2: place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapor or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

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

MARKING
II 3G Ex dc ec IIB Gc in accordance with IEC 60079-0; 60079-15.

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

APPLICATIONS
The Micro Switches ATEX IECEx find application in many fields such as: control valves, actuators, conveyors, material handling and in general in petrochemical plants.

The type of materials and the internal design of the elements, conform this component for use in areas with potential explosive atmospheres due to the presence of gas in accordance with the ATEX Directive 2014/34/EU.
New Cam Switches ATEX e IECEx in aluminium alloy case painted in grey RAL 7035 and yellow 102C PANTONE, to be used in zones 21 e 22 (Dust) with rated current from 12A to 40A.

Reference standards:
EN 80079-34, EN 60947-3, EN60079-0, EN60079-31.

Directive:
ATEX 2014/34/EU.

CLASSIFICATION AREA "Dust":
Zone 21: area in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur occasionally in normal operation.
Zone 22: area in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

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

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

PRINCIPLE
The enclosure is sealed so tight, that no combustible dust can enter. The surface temperature of external enclosure is limited.

DESIGN PARAMETERS
- Minimum degree of protection in accordance with IEC/EN 60529 ≥ IP 6X.
- Consideration of dust accumulating on the surface and reduction of permissible surface temperature with dust layer ≥ 5 mm are possible.

APPLICATIONS
The Cam Switches PHOENIX Ex Series, can be involved in different application, from automation industry to food machines (professional coffee machines, pasta production, bottling machines, ...) passing through the supply of engines, use in distribution switchboards and controls for professional welders. Thanks to the type of protection they are able to offer, they can be used in hazardous areas with potential explosive atmospheres.

PRODUCT LINES AVAILABLE
- PO & PX Series from 12A, 16A and 20A (Maximum 3 wafers)
- CO & CX Series from 25A, 32A, 40A (Maximum 2 wafers)

By request it is possible to supply special electrical configurations (for example: electric closures, n° of positions, switching angles, etc.)

For more informations, contact our Technical Support.

E-mail: customerstechnicalsupport@giovenzana.com

ORDER FORM FOR SPECIAL SCHEMES ON REQUEST
- For PO - PX Series the maximum poles number is 6 (3 wafers).
- For CO - CX Series the maximum poles number is 4 (2 wafers).

MARKING & APPROVALS
- Grey cover / Black knob (B9)
- Yellow cover / Black knob (B0)

Notes
Contact person
Phone:
E-mail:
Quantity:
Due date:
Order No.
New Festoon System Ex - 30 & 41 Series certified ATEX & IECEx to use in potentially explosive areas.

Reference standards:
EN 80079-36, ISO IEC 80079-36.

Directive: ATEX 2014/34/EU.

The Festoon System is the traditional system for energy transmission by using a cable. The main applications of this system are mobile power consumers like cranes, monorails, electric hoists, machine tools, car wash systems, plating lines, etc...

This feeding system has several advantages:
- Safety - the cables are flame resistant, the conductors are completely protected;
- Versatility - it can be used for straight rails as curved rails, for indoor and outdoor applications;
- Easy to install;
- The maintenance of the line is extremely reduced.

CLASSIFICATION AREA “Gas”
Zone 1: place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapor or mist is likely to occur in normal operation occasionally.
Zona 2: place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapor or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

CLASSIFICATION AREA “Dust”:
Zone 21: area in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur occasionally in normal operation.

Zone 22: area in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

PRODUCT LINES AVAILABLE
- 30 Ex Series
- 41 Ex Series

For more informations, contact our Technical Support.
E-mail: customerstechnicalsupport@giovenzana.com
### C-RAIL BAR

<table>
<thead>
<tr>
<th>SERIES</th>
<th>CHARACTERISTICS</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BAR HEIGHT</td>
<td>LOAD CAPACITY</td>
</tr>
<tr>
<td>30</td>
<td>30 mm</td>
<td>100 kg/m</td>
</tr>
<tr>
<td>41</td>
<td>41 mm</td>
<td>140 kg/m</td>
</tr>
</tbody>
</table>

#### 41 Ex SERIES

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-Rail Bar</td>
<td>30602001/4</td>
<td>Length: 4 meters</td>
</tr>
<tr>
<td>Single joint</td>
<td>30602002</td>
<td></td>
</tr>
<tr>
<td>Double joint</td>
<td>30602004</td>
<td></td>
</tr>
<tr>
<td>Track support bracket</td>
<td>30602003</td>
<td></td>
</tr>
<tr>
<td>Track support bracket - ceiling fixing</td>
<td>30602004</td>
<td></td>
</tr>
<tr>
<td>End stop</td>
<td>30602038Ex</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single towing trolley</td>
<td>30602009Ex</td>
<td></td>
</tr>
<tr>
<td>Double towing trolley</td>
<td>30602020Ex</td>
<td></td>
</tr>
<tr>
<td>Flat cable trolley - Material: steel - Saddle: 68 mm</td>
<td>30602086Ex</td>
<td></td>
</tr>
<tr>
<td>Head clamp - Saddle: 55 mm</td>
<td>30602071Ex</td>
<td></td>
</tr>
<tr>
<td>Head clamp - Saddle: 76 mm</td>
<td>30602072Ex</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE**

ATEX & IECEx: FESTOON SYSTEM Ex

Festoon System Ex Series - Equipment for potentially explosive atmospheres.