

Industry

Solutions adapted to your applications



■ Sealed microswitches



■ Sealed limit switches



■ Adapted products

www.crouzet.com



Contents



■ Overview — P. 8



■ V5E — P. 10



■ V3E/V4E — P. 12



■ 83123/83139 — P. 14



■ Limit switches — P. 16



Recognised for more than 30 years for the high quality of our sensors, microswitches and limit switches, **Crouzet, a subsidiary of Schneider Electric**, now has a wide range of **sealed microswitches and limit switches**, designed to satisfy manufacturers' most stringent requirements.

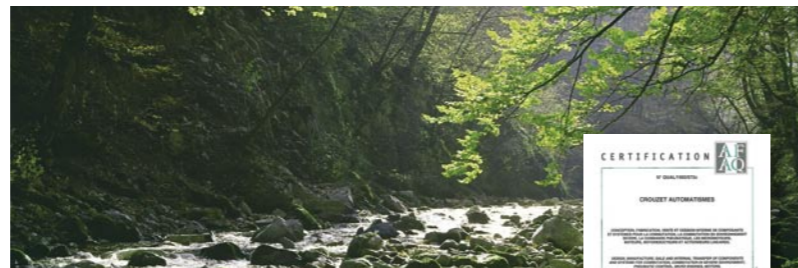
Custom Sensors & Technologies (CST), based at Moorpark in California, is a Schneider Electric Business Unit.

CST incorporates the Crouzet, Kavlico and Crydom brands as well as the original divisions of BEI Technologies, Newal and Systron Donner.

With this range Crouzet is providing new solutions for safety, accuracy, reliability and customization, to meet the requirements of your designs.

Because the **adaptation** of our products is at the heart of our strategy, Crouzet carries out specialist development based on standard, innovative and reliable products, which guarantee their ease of integration in your equipment.

Customer satisfaction will always be our prime objective. To this end, we comply with standard **ISO 9001** to ensure that our design, industrialization, manufacturing and commercialization processes correspond to our customers' requirements.



Eco-design is central to Crouzet's "Offer Creation Process", the aim of which is to design products and services that correspond as closely as possible to customers' requirements and reduce their environmental impact throughout their life cycle. For this reason, Crouzet is **ISO 14001** certified.



■ Sealed microswitches



■ Sealed limit switches

Why choose a sealed microswitch or limit switch?

- To ensure maximum **safety**, Crouzet has developed a complete range of microswitches and limit switches that can resist the most severe environments, in any industrial context.
- Moisture, splashing liquids, dust, grease, wide variations in ambient temperature, are all factors that can quickly affect the correct operation of an application.
- Our microswitches and limit switches have **IP 66** and **IP 67** protection levels defined according to **standard IEC 60529**.
 IP 6X: The first characteristic number designates the equipment's degree of protection against the penetration of solid objects and dust.
 IP X6: The second characteristic number designates the degree of protection against splashing water similar to heavy seas.
 IP X7: The second characteristic number designates the degree of protection against the effects of immersion.

Range of Crouzet products

Sealed microswitches



- Crouzet has a complete range of sealed microswitches that meet detection and safety requirements in numerous applications.

Sealed limit switches



- Crouzet has various types of limit switch that combine robustness and safety for applications in severe environments.

Sealed microswitches and limit switches



Crouzet, specialist in adapted automation components

Crouzet has defined **several levels of adaptation** for its products so we can meet the requirements of your application exactly. This ranges from **standard components through to special products**. All these solutions will be handled directly by a **dedicated organization**: sales department and technical support, CAC (Customer Adaptation Centre) or project engineers.



Customer Adaptation Centre

Adaptation at the heart of our strategy

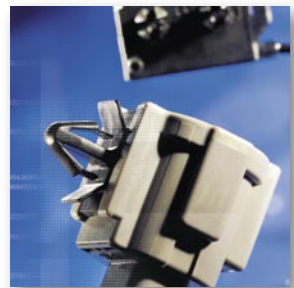
- Crouzet has for many years had a **specialist** approach to meeting the needs of applications and environments: from standard components through to special products.
- Based on a standard component, we create **added value** around the product in **partnership** with our customers based on their technical requirement.
- To do this, we have defined different levels of adaptation according to how the product is to be used. Our sales structure is organized so we can treat every project with equal importance.



■ **Special contacts:**
By advocating the use of the best metals, Crouzet guarantees the operation of its products in all types of environment.

Special products

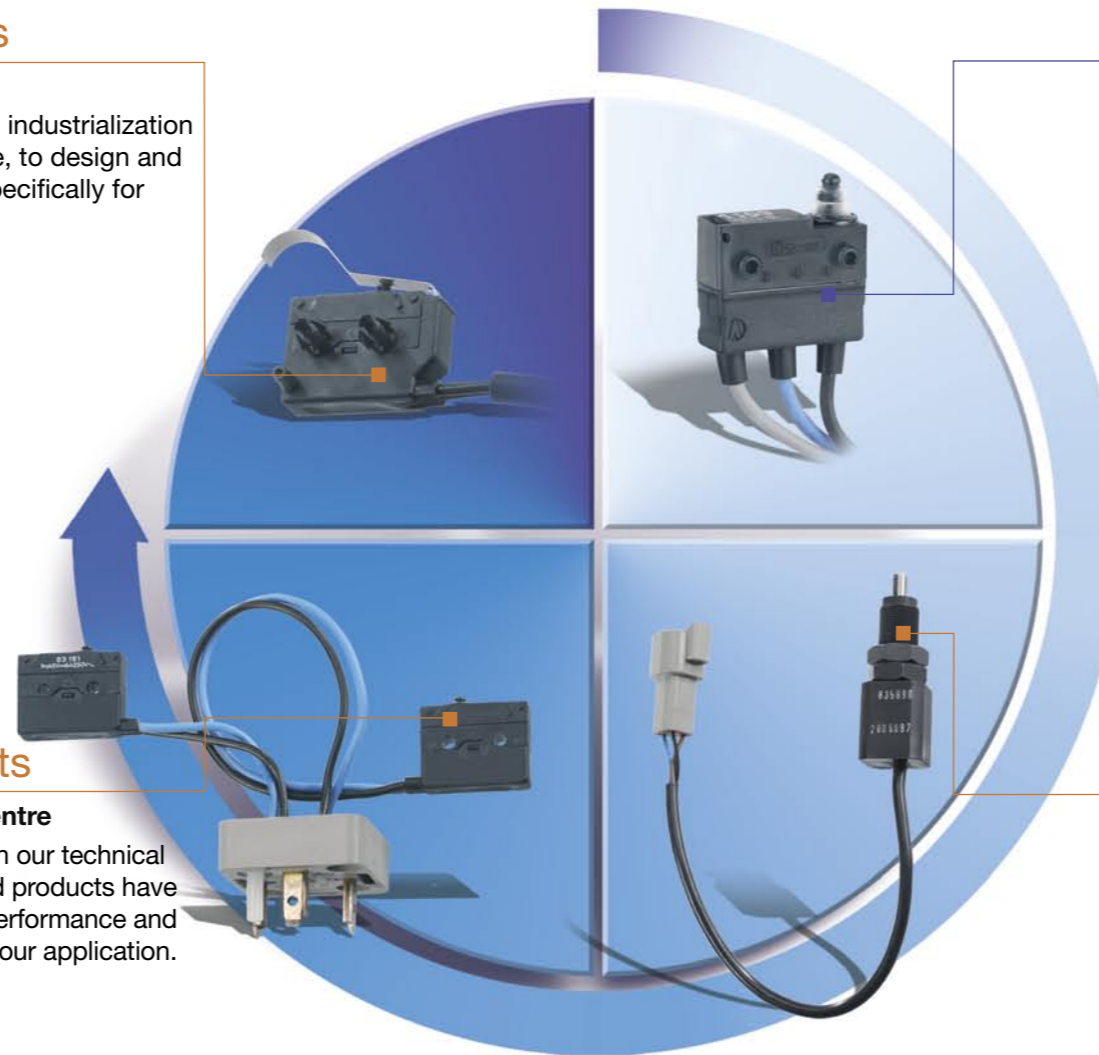
Project engineers
All our sensing design and industrialization expertise is at your service, to design and create special products specifically for your application.



■ **Special fixings:**
Snap-on fixing, screw-fixing, crimping or pins are just a few examples of the many Crouzet solutions that are available.

Adapted products

Customer Adaptation Centre
Defined in coordination with our technical sales teams, these adapted products have exactly the right levels of performance and functionality you need for your application.



Standard components

Sales department and technical support
A complete range of sealed microswitches and limit switches available immediately to create your automation or sensing application.



■ **Connections:**
Special connectors, customized wiring, customer bundles, dedicated terminals... Crouzet delivers a complete electrical function.

Components with added value

Customer Adaptation Centre
All our standard products can have additional factory-mounted auxiliaries or accessories (connectors, lead outputs, cables, etc.). Integration in your equipment becomes easy, simplifying your logistics and maximizing the reliability of your installation.



■ **Customized levers:**
Angled, curved, extended or retractable; these special types are used to sense the control data.

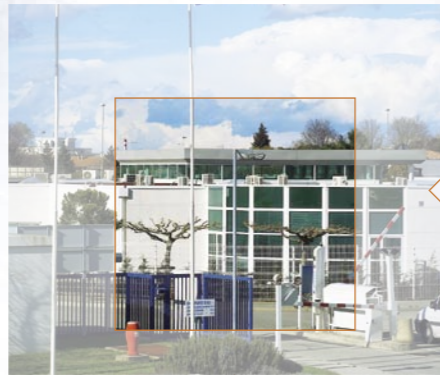
Sealed microswitches and limit switches



A Customer-oriented process

Project team

Crouzet puts in place a project team which provides you with experts who will work in partnership with you throughout all the phases of your project: drawing up the specification, feasibility, development, approval, management of pre-production, optimization of the logistics parameters, durability of the offer over time, and monitoring of products.



Project start-up

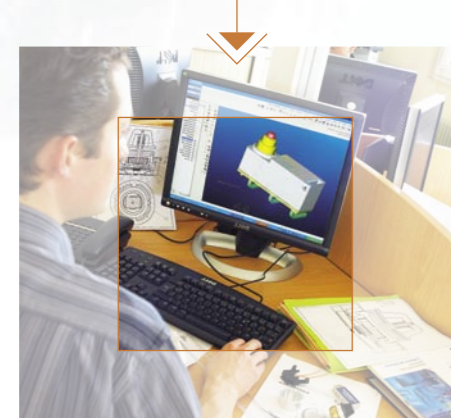
At the initial contact stage our specialist sales staff will work with you to identify your objectives and requirements, in order to draw up the functional specification, which takes account of the key factors for the success of your projects.

Logistics

Our logistics team is involved in all new projects from the outset and shares our common objectives.

- A weekly schedule based on your forecasts,
- A close relationship with your departments
- Just-in-time processes
- Partnerships with our suppliers

The Crouzet logistics platform optimizes the logistics flows and ensures the reliability of your supplies.



Design

With more than 30 years' experience, Crouzet has considerable expertise in all the technologies needed to develop and industrialize a complete sensor offer and also customized products:

- Mechanical (3-D CAD)
- Magnetic
- Electrical
- Electronic (EMC)

Production

From the standard to the specific, from small-scale production to fully automated mass production, the industrial flexibility of our factories means that the best products on the market are permanently available to you at competitive prices.

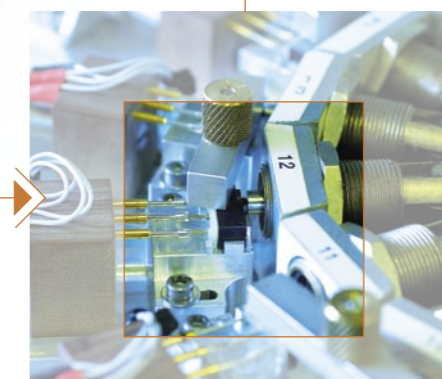
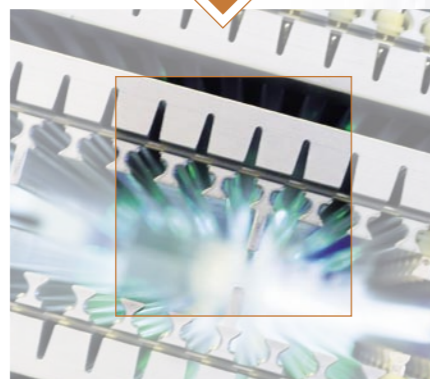
Each production start-up is defined so that it matches your logistics and quality requirements as closely as possible.



Innovation

Based on their experience in a wide range of sectors, Crouzet's design offices share common objectives:

- Basing innovation on market standards and the best technological options
- Combining a number of technologies to create innovative concepts.



Test laboratory

Our laboratories have facilities for testing all our products, from design through to production.

Whether this is done using simulation or in real tests (electrical, mechanical and environmental endurance), our products are validated, approved and monitored throughout the project development process.

Sealed microswitches maximum choice



Overview



■ Handling



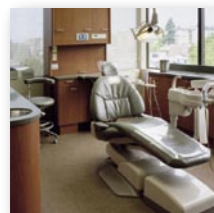
■ Roller shutters



■ Valves and fittings



■ Electrical cabinet



■ Medical chair



■ Access barrier



Product type	V5 Sealed	V4 Sealed	V3 Sealed	Series 83139	Series 83123
Examples of applications	Roller shutters	■	■		
	Medical equipment	■	■		■
	Access barriers		■	■	
	Valves	■	■		■
	Electrical equipment	■	■	■	
	Safety applications	■	■		■
	Handling equipment	■	■	■	
	Professional grass-cutting equipment			■	
	Portable electrical equipment				
IP 67 protection	■	■	■	■	
IP 66 protection					■
Electrical characteristics	250 V AC / 2 A 5 V DC / 0.001 A	250 V AC / 6 A 250 V AC / 10 A 250 V AC / 6 A (Dual-current) 250 V AC / 3 A	250 V AC / 8 A 250 V AC / 5 A 250 V AC / 0.1 A 250 V AC / 0.1 A	250 V AC / 6 A	250 V AC / 5 A
Dimensions					
Outputs: terminals, leads or cable	■	■	■	■	■
Standard accessories		Flat, roller or dummy roller levers			Spherical cover
Product features	Flexibility: long overtravel of 2 mm	Dimensions according to DIN 41 635B	Dimensions according to DIN 41 635A	Safety: Snap-action double break	Flat model
	Freedom: button actuation angle up to 45°	Two attachment points for the lever	Long overtravel	Compact dimensions	Suitable for manual control with tactile feedback
	Modularity: possibility of integrating components	Wide choice of connections	More than 200 standard variants	ATEX certified	

Sealed microswitches



V5 Sealed

A wealth of technology at the heart of your application

Latest addition

New addition to the sealed microswitch range: the V5 Sealed. Its **IP 67** protection and compact dimensions make the most recent addition to the sealed range the ideal component for applications that require ease of integration and safety in harsh industrial environments (dust, liquids, various types of contamination).

Innovative

The use of a totally new mechanical concept means that the V5 Sealed microswitch has a minimum **Overtravel (OT) of 2 mm**. The button is operated with **actuation angles** of up to **45°**, making it possible not to use a lever in some cases. For greater ease of operation, the V5 Sealed can be fitted with electronic components in order to carry out self-diagnostic operations.

Modular

There is a wide choice of catalogue configurations available for the V5 Sealed:

- Two ratings (standard for high currents, and low level)
- **Lead outputs or tag terminals**
- Positioning of fixing pins
- Mounting plate for screw fixing

The major + points of the V5 Sealed

- The **Overtravel** is at least 2 mm to increase the operating margins.
- **IP 67** protection, to provide effective protection of the electric switching.
- The **actuation angle** can be up to **45°**, for ease of integration.
- **Components** can be integrated between the terminals to maintain the **same dimensions** and provide specific electrical functions.

Scale 1

- IP 67 protection
- Standard ratings 2 A / 250 V AC
- Low level ratings 1 mA / 5 V DC to 2 A / 14V DC
- Reduced differential travel
- Choice of actuators



Adaptable

Because applications differ from one manufacturer to another, the V5 Sealed can take even more connections, special outputs and special levers.

Examples of adaptations

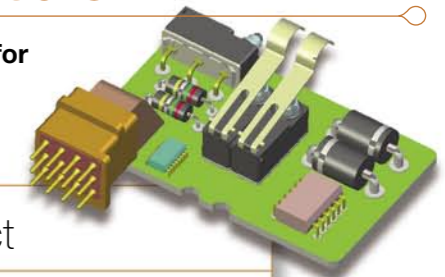
Auxiliary information control for industrial circuit-breakers.



Special product

The function of the **circuit-breaker auxiliary controls** is to send back information to a supervision system. Because of the small space that is available, the V5 Sealed is mounted on a **PCB*** dedicated to the application. The electronic card is designed according to the mechanical and electrical requirements.

*printed circuit board

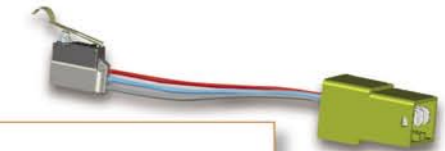


Opening/closing detection for automatic electric doors.



Component with added value

The **miniaturization of the V5 Sealed** and its low level rating make it easy to integrate for status information functions. Its seal and **associated connector** make it a complete sub-assembly, which leads to precious time being saved when mounting.



Sealed microswitches



Scale 1

- IP 67 protection
- Nominal ratings
0.1 to 10 A / 250 V AC
- Minimum ratings 1 mA / 4 VDC
- Reduced differential travel
- Choice of actuators

Miniature V3 Sealed

The most versatile range.

With a large selection of actuators, numerous switch ratings, lead outputs and a wide variety of connections, **the modularity** of the V3 Sealed range means that there are more than **200 variants**. The range meets the most conventional integration requirements with dimensions conforming to DIN 41 635A, but it is differentiated by having a **long overtravel**. The V3 Sealed range is one of the most complete low-cost solutions on the market today.



Scale 1

- IP 67 protection
- Nominal ratings
0.1 to 10 A / 250 V AC
- Minimum ratings 1 mA / 4 VDC
- Operating temperature
-40°C to +125°C
- Choice of actuators
on 2 positions

Subminiature V4 Sealed

The adaptable, hardworking range.

With its compact dimensions, conforming to standard DIN 41 635B, and **two attachment points**, the V4 sealed range offers perfect integration even in the most confined spaces. Its capacity to take **actuators in two positions** and its **IP 67** protection make it one of the most adaptable ranges of microswitches. The V4 sealed range is therefore a safe, effective solution for such applications as medical equipment, access barriers, valves, handling and lifting equipment.

Example of adaptation



Limit switch detecting wear on the brake disks of electromechanical motors.



Adapted product

The motor brakes are designed for intensive daily use and require accurate detection. The adapted V3 Sealed provides both **ease of mounting** and **reliability** over time with the addition of a metal plunger, providing a **long mechanical life**.



Examples of adaptations

Detection of the position of a door or a rack for electrical panels and cabinets.



Special product

The very restricted space available made it necessary to develop specific fixings on the V4 Sealed. This fixing system was made possible by the development of a **new casing** for the product. The V4 Sealed was fitted with a **special lever**, thus reducing the mechanical forces needed to reach the switching point.



Position detection of valve poppets.



Adapted product

The adaptation has been developed in partnership: the V4 Sealed are soldered onto a **special connector** which is then filled with resin to provide a seal within the application. The **complete sub-assembly** is delivered by Crouzet after undergoing stringent quality control.



Sealed microswitches



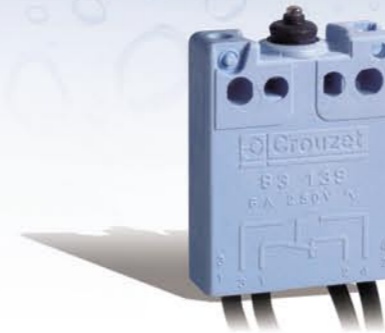
Series 83123 Sealed

The miniature with all its detail

The **snap-action** 83123 with its flattened shape is a model that is easy to fit. With its **tactile feedback**, it is particularly effective for the manual controls on medical equipment and portable electrical equipment. Depending on the environment in which the 83123 is installed, its sealed casing is either nitrile (-5 to +10°C), or silicone (-40 to +85°C).

Scale 1

- IP 66 protection
- Dimensions



Scale 1

- IP 67 protection against hydrocarbons and detergents
- Double break switching
- Double insulated or ATEX flameproof casing
- Choice of actuators

Series 83139 Sealed

Increased safety

With **snap-action double break**, the 83139 microswitch provides an even **higher degree of safety**. Depending on the model, it has **double insulation** for additional protection against electric shocks. For industrial environments where there is a risk of explosion, there is an **ATEX certified flameproof version** (Ex d II CT6). With a wide choice of actuators, the 83139 is ideal for **safety applications** such as the control of valves in industrial environments.

Example of adaptation

Detector for baler for agricultural machinery.



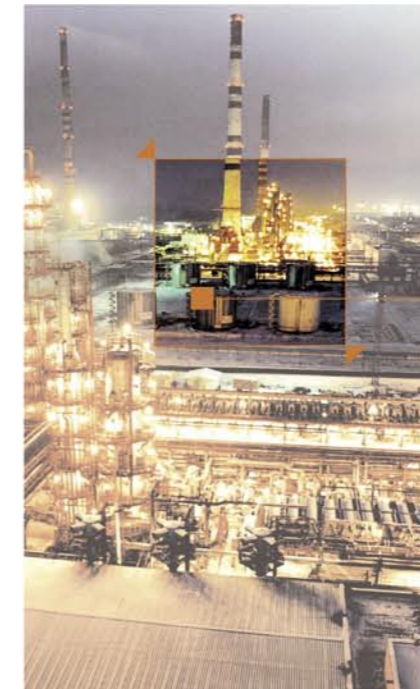
Adapted product

The sub-assembly was developed based on an 83123 with a **fixing/lever support assembly** for mounting on a frame and for control. The integration of a **sealed connector** on the cable output makes electrical connection easy and safe.



Example of adaptation

Detection of the opening of the neon cover for lighting in flameproof environments.



Component with added value

The 83139 has a special length lead output with metal tips. The double break function **guarantees switching** when the button is actuated. In addition to its IP 67 protection, the 83139 is **ATEX certified** which gives it the operating reliability required in this environment.



European standards EN 50014/ EN 50018 specify the characteristics of products in flameproof casings.

Example of product marking: **Ex d II C T6**
Ex: Symbol indicating that the product complies with a CENELEC standardized protection method
d: Protection method used (flameproof casing)
II: Group II (locations other than mines subject to firedamp)
C: Most severe subdivision (including amongst others: hydrogen, acetylene and carbon disulphide)
T6: The most severe temperature class (max. product surface temperature 85°C)

Sealed limit switches



- IP 66 / 67
- Metal casing
- cUL approval

Scale 1

Series 83870 / 83880

Dimensions conforming to NFC 63 145

The series are available with cable output, connector output or with low level cable and connector output. Each model is compact and has a metal casing to resist the most hostile environments. The series 83870 and 83880 are ideal for construction plant and industrial machines.

Series 83870



Series 83880



Series 83581 / 83589 / 83731

A specific model for each application

The Series 83 581 / 83 589 / 83 731 are compact, making them ideal for applications where space is limited. Their IP 67 protection makes these limit switches reliable and resistant to various types of contamination.

Series 83581

Protected miniature limit switches. Contact element: IP67

Series 83589

For harsh environments: IP66 / 67

Series 83731

Precision first and foremost



Example of adaptation

Level detection for lifting column.



Adapted product

For this function, the robustness of the 83870 is a deciding factor, as well as its seal. The limit switch is equipped with a cable support chain that has two functions: to follow the movement of the moving column and to guide the cable.



Example of adaptation

Detection of the presence of the grass compartment and the position of the brake pedal for professional grass-cutting machine.



Component with added value

The on-board functions on grass-cutting machines must resist various types of contamination, thermal shocks and corrosive environments. The 83589 is a corrosion-resistant product due to its casing and its control device. The seal of the product is guaranteed right up to the cable harness which incorporates a sealed connector.

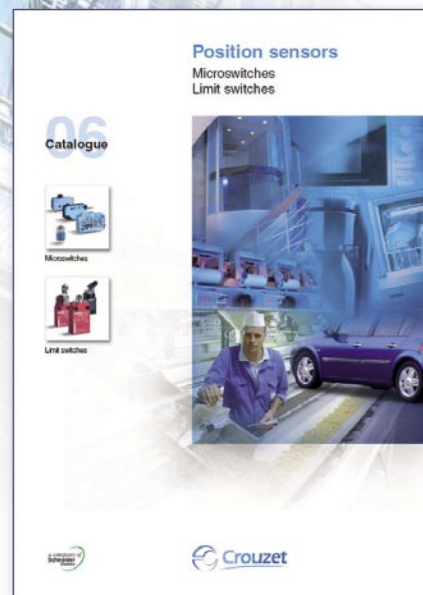


A complete range...

...of microswitches and limit switches

Crouzet on the Web

www.sensors.crouzet.com



■ General catalogue

Discover the whole of our **microswitch and limit switch** offer in our general Position Sensors catalogue. In it you will find all the technical information, the part numbers and the selection guides.

Microswitches:

- Sub-subminiature
- Subminiature
- Miniature
- Protected
- Sealed

Limit switches:

- Universal
- Conforming to standard ENU50047
- Conforming to standard NFC63145
- Specific
- Safety



■ Product Catalogue

And discover our new range of **analogue position sensors**: Angular and rotary sensors, linear sensors, adapted sensors, etc.

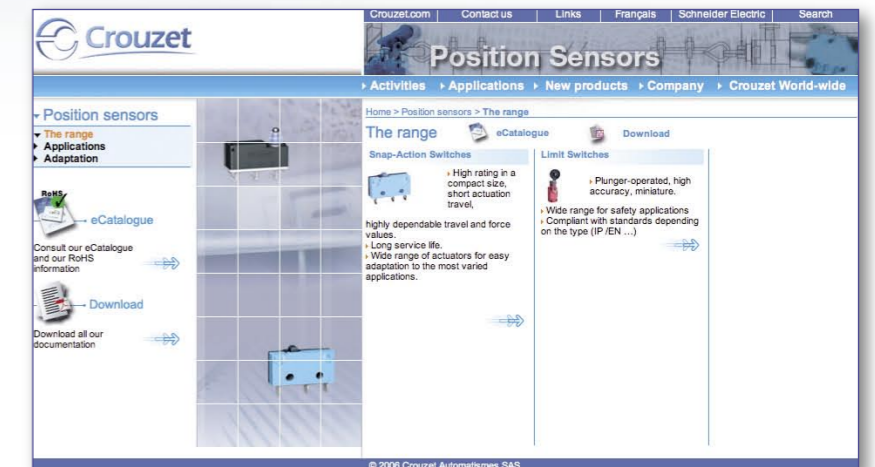
Various technologies are available:

- Potentiometer: wound
- Potentiometer: thick layer plastic track
- Potentiometer: hybrid
- Hall Effect



Discover our site

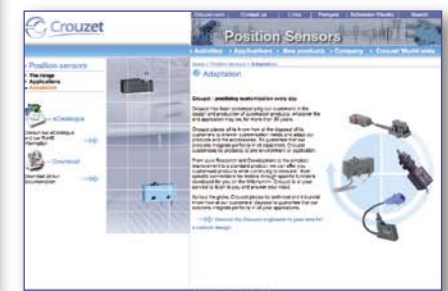
- Presentation of the offer
- Adaptation
- Applications
- Selection guides



■ Home



■ Applications

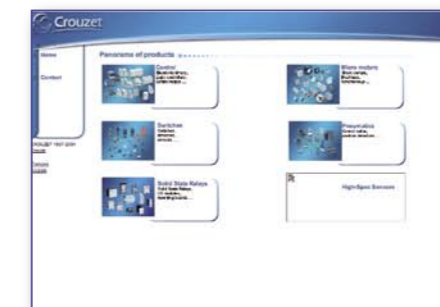


■ Adaptation

More information

- e-Catalogue
- Download zone

www.catalogue.crouzet.com



■ e-Catalogue



■ Documentation for downloading

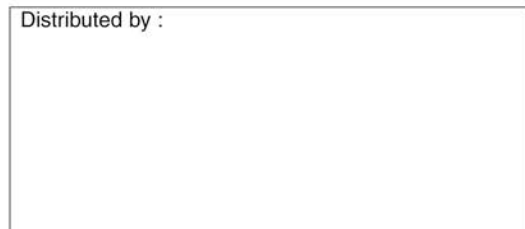
Crouzet across the globe:



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