

PRODUCT LINES

Overview



ABOUT CROUZET

100 YEARS MANUFACTURING THE FUTURE *Together*

Crouzet is an independent company **manufacturing mechatronic components for demanding applications in Aerospace & Transportation, Energy, Building & Machinery Industry.**

Crouzet provides **Switches & Sensors, Electromechanical Actuators, Electrical Control & Protection Equipment, Flight Control Equipment, Automation Controllers & Relays, and Instrumentation Services.**

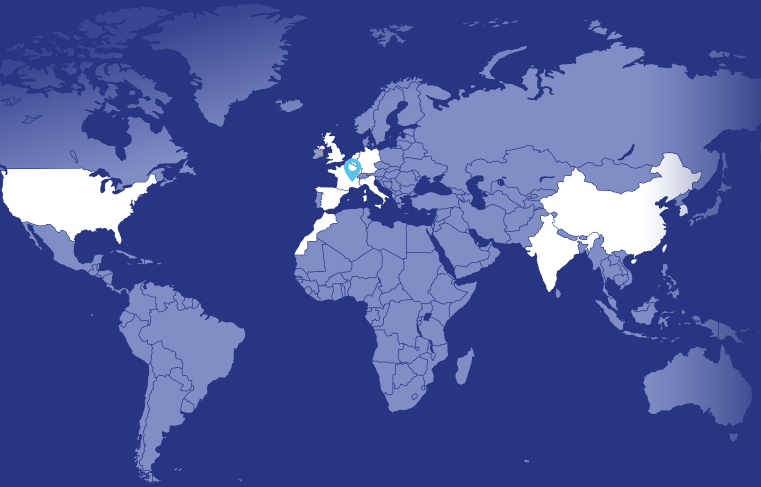
Since 1921, Crouzet has a heritage of close collaboration with customers in the development of products, from standard components to fully customized solutions.

Crouzet's customers and partners can rely on our teams worldwide to always meet and often exceed their expectations. Driven by innovation, our experts are focused on designing and delivering the right product for the right application.

Crouzet is your trusted partner of choice to face the industrial challenges of today and tomorrow.

WORLDWIDE PRESENCE

10 Manufacturing Plants
& 6 R&D Labs



HEADQUARTERS SALES OFFICES



VALENCE, FRANCE



PONT-DE-L'ISÈRE, FRANCE



PARIS, FRANCE



NANTES, FRANCE



ORLEANS, FRANCE



VOUVRY, SWITZERLAND



CASABLANCA 1, MOROCCO



CASABLANCA 2, MOROCCO



HUIZHOU, CHINA



BANGALORE, INDIA

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100 YEARS DESIGNING & MANUFACTURING MECHATRONIC COMPONENTS

For demanding applications



Aerospace & Defense

- › Aircraft
- › Helicopter
- › Defense
- › Urban Air Mobility



Transportation

- › Railway
- › Automotive
- › Specialty Vehicles



Energy

- › Nuclear
- › Distribution
- › Renewable



Building

- › Gates & Doors
- › Building
- › Efficiency



Machinery

- › Industrial
- › Automation
- › Food & Beverage

We work with the global leaders of our markets

AIRBUS



faurecia



ALSTOM

SIEMENS

VELAN



Schneider Electric

ABB

AS AUTOMATIC SYSTEMS

THALES

somfy.

ASSA ABLOY

WORLD CLASS
DISTRIBUTION
NETWORK

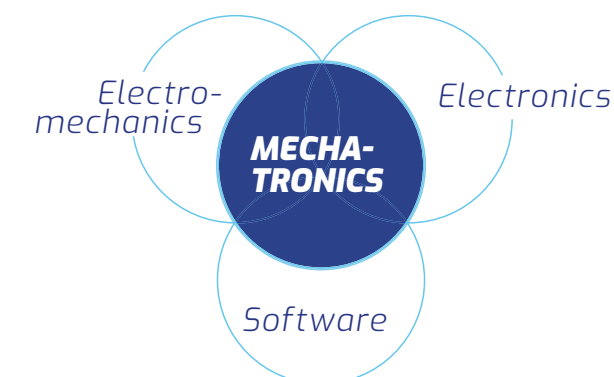
In compliance with highest standards



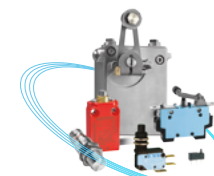
GENELEC

OUR OFFER: MECHATRONIC COMPONENTS

When combining our long-standing expertise on mechanical, electronics and software engineering, we are able to design and manufacture top-notch mechatronic components for your most demanding applications.



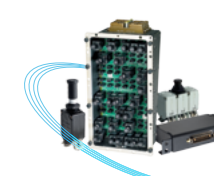
Get to know our product lines



Switches & Sensors



Cockpit Controls



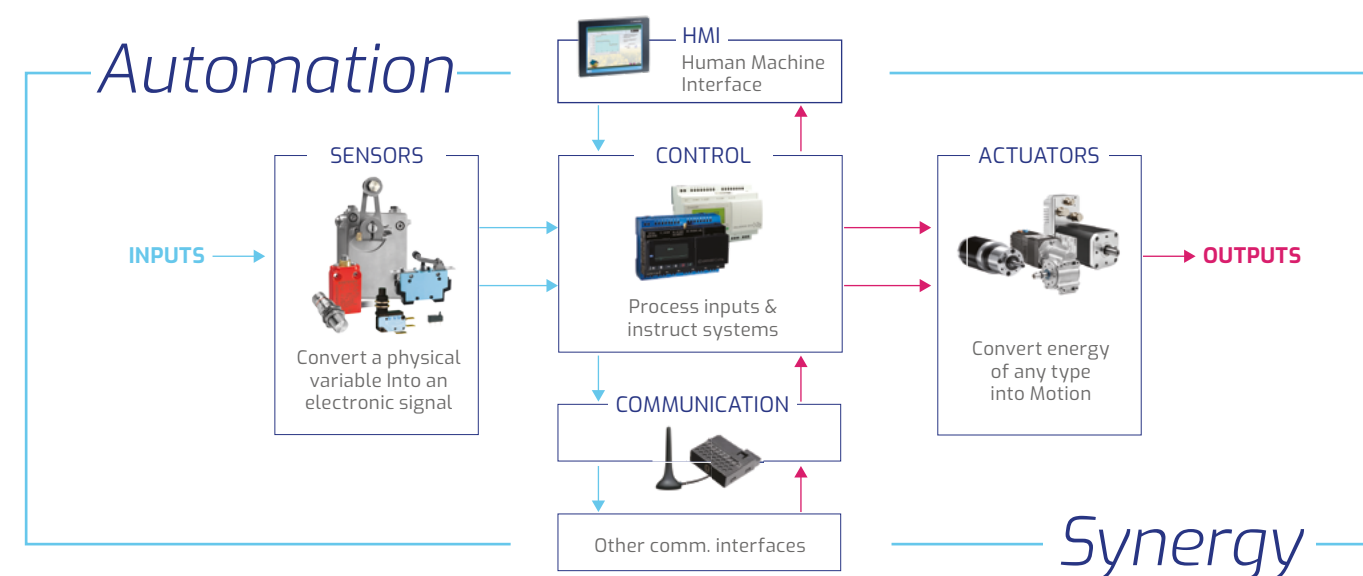
Electrical Protection



Motion Control



Automation & Control



DESIGN LAB

Customization, adaptation & co-design expertise at your service

When your innovation process needs more than high-quality standard products, we will answer your specific needs by offering you the best customized solution, a long-term partnership commitment and a multidisciplinary team dedicated to your project.

SWITCHES & POSITION SENSORS

MICROSWITCHES

SUB-SUBMINIATURE			SUBMINIATURE			MINIATURE & SPECIAL			
									
SERIES	V5S 8320	83228 83229	V5D 83194 83141	V4/V4D 83170 8327	V4S 8318	83132 83133 83134	V3/V3D 83161/160 8326	V3S/V3DS 83169 8329	PBX 8324
Max Rating @250 V~	4 A	5 A	5 A	12 A	10 A	6 A	25 A	10 A	10 A
Low level version	I (mA)	I (mA)	I (mA)	I (mA)	I (mA)	I (mA)	I (mA)	I (mA)	I (mA)
Sealing level	 IP67 IP69				IP67 IP69			IP67 IP69	IP65 IP67
Double break						 Za*			 Zb*
Max. tempera- ture (°C)	+90	+140	+150	+150	+125	+150	+200	+105	+85
Min. tempera- ture (°C)	-40	-55	-55	-40	-40	-40	-60	-40	-50
Specific environment			 **			 **			
Approvals	NF/ENEC/CE	CE	CE	CE	 CE	 CE	CE	 CE	CE
	UL	 US	 US	 US	 US	 US	 US	 US	 US
	CCC		**						
	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC

* Za: NO and NC circuits must be used at same polarity. Zb: NO and NC circuits are electrically separated, and can be used at opposite polarities. ** Consult us

LIMIT SWITCHES

STANDARD		HARSH ENVIRONMENT			
					
SERIES	8387 8388	83589	83777 83778	8399Nuc	8399Ex
Max Rating @ 250 V~	10 A	8 A	4A	1 A	1 A
Sealing level	IP66 IP67 IP69	IP66 IP67 IP69	IP66 IP68(4m) IP69	IP66 IP68(18m) IP69	IP66 IP67 IP69
Max. tempera- ture (°C)	+70	+85	+125	+200	+200
Min. tempera- ture (°C)	-40	-40	-55	-55	-40
Specific environment			 **	 	 
Approvals	CE	CE	CE	CE	CE
	UL	 US			
	CCC		**		
	EAC	EAC	EAC		



Irradiated Environment




High pressure up to 6 bar



Explosive atmospheres

SENSORS AEROSPACE

LIMIT SWITCH	PROXIMITY SWITCH	PROXIMITY SENSOR
		
Key features	› Hermetically sealed	› Contactless detection with integrated electronics
	› Customizable	› Contactless detection with external electronics
Operating force (N)	› Multi-pole functions	› Customizable
Mechanical life (cycles)	2.5 → 50	NA
Water proofness	NA	NA
Weight (g)	100 000	NA
Operating temperature (°C)	Watertight or hermetic version - DO 160 sect10	
	15 → 300	< 60
	< 50	
	-55 → +250	-55 → + 125
	-55 → + 125	-55 → + 125

NUCLEAR



RAILWAYS



ELECTRICAL EQUIPMENT



TRANSPORTATION



CUSTOMIZED SOLUTIONS

- › Dedicated application
- › Customer specific product
- › Innovation & industrialization



MANUALLY OPERATED SWITCHES

- › Pushbuttons, Momentary and/or Maintained, up to 4 poles
- › Toggles, Maintained and/or Momentary, up to 4 poles
- › Multiway, Momentary
- › Rockers, Momentary and Maintained
- › Triggers, Momentary



MOTION

MOTORS

CHARACTERISTICS	SERIES	INDUSTRIAL BRUSH			DCmind BRUSH		DCmind BRUSHLESS		SYNCHRONOUS		STEPPER
		82840 82860	82800 10 50	82830 82890	89800 10 50	89830 89890	80140 180 280	80350 60 70	82510 20 30 40	82330 82340	82910 20 30 40
Nominal power (W)		0.9 / 3	9 → 33	27 → 95	15 → 35	54 → 104	66 → 150	310 → 600	0.3 → 3	0.2 / 0.4	0.5 → 5
Voltage		12 → 24 V _~	12 → 48 V _~	12 → 48 V _~	12 → 48 V _~	12 → 120 V _~	9 → 75 V _~	9 → 75 V _~	24 → 240 V _~ 50 → 60 Hz	24 → 240 V _~ 50 → 60 Hz	3 → 64 V _~
Front side (mm)		Ø 32	Ø 42	Ø 63	Ø 42	Ø 63	SQ57	SQ75	Ø 35 / 51 Ø 57 / 65	Ø 47	Ø 35 / 51 Ø 57 / 65
Nominal speed (rpm)		3700	3000	3000	3000	3000	3000	3000	250 → 600	600 → 720	0 → 1500
Nominal torque (mN.m)		2.2 / 7.7	41 → 100	170 / 270	50 → 110	180 / 290	125 → 550	830 → 1900	10 → 110	2.5 → 8	15 → 300
Noise level (dBA)		55	55	55	35	35	45	50	30	45	35
Service life (hrs)		2000	3000	5000	4000	5000	20000	20000	20000	10 M on / off	20000
Certification											
Gearboxes											
Connection											
Standard											
Options											
IP		IP20			IP65*		IP54	IP65*, IP67* IP69*	IP40	IP30	IP40

* Except front face & shaft

EMC filter

Worm

Terminal

Planetary

Parallel shafts

Interchangeable brushes

Encoder

Cable

Ball bearing

Connector

Lead

Silent




Optional regenerative energy absorber

Brake

CONTROL ELECTRONICS

CHARACTERISTICS	SERIES	INTEGRATED			EXTERNAL	
		TNi21	SMi21	SMi22	BDE 30	BDE 40
Compatible models		SQ57			SQ57	
Speed-torque		●	●	●	●	●
Position (P/R)			4096	4096		
Programming			DCmind Soft & DCmind Soft + CANopen	DCmind Soft + CANopen	PWM or 0 → 10 V _~	
Communication bus			Optional 	Standard 		
Voltage		10 → 36 V _~	9 → 75 V _~	9 → 75 V _~	18 → 36 V _~	10 → 36 V _~
Maximum current (A)		17	17	75	10	14
Adaptations		Programs: Custom firmware as per customer specifications				

GEARBOXES

	PARALLEL SHAFTS	PLANETARY	WORM
			
	11 models	7 models	2 models
CHARACTERISTICS			
Torque (N.m)	0.5 → 6	0.8 → 120	10 → 20
Power (W)	0.2 → 50	8 → 600	25 → 600
Service life (Mr*)	1 → 10	50	50
Ratios	4 → 1036800	4 → 308	5 → 100
Options	Stainless stell shafts, pulleys, pinions, special bearings, etc...		
* Million revolutions			

SIMPLIFIED PROGRAMMING*
DCmind Soft (SMi21) & DCmind Soft+CANopen (SMi21 CANopen & SMi22) for DCmind BRUSHLESS

- › Precise configuration of the position, speed and torque
- › The most user-friendly software on the market
- › Two programming modes: application & expert
- › Application programs: dosing, valves, machinery, conveyor belt, access control

* Free software on our website (www.crouzet.com) or can be supplied on a USB stick in the «starter kit».



ELECTRICAL PROTECTION



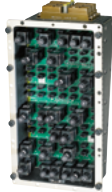
ELECTROMECHANICAL CIRCUIT BREAKERS

Thousands of Configurations Available

		REGULAR					HIGH-POWER					
		SINGLE POLE		THREE POLE			SINGLE POLE		THREE POLE			
												
STANDARD	MIL SPEC	M53320 (AS33201)	M55692 (AS5692)	M526574 (AS26574)	M55692 (AS5692)	M514154 (AS141544)						
	ASD-STAN	EN2495	EN2995	EN3773	EN2592	EN2996	EN3774	EN2794	EN3661	EN2665	EN3662	
	DIN-Bundeswehr	VG95345-TEIL6 VG95345-TEIL11										
	BACC Alternate	BACC18AD			BACC18AC			BACC18X	BACC18R	BACC18AE	10-60806-10	
CONFIGURATIONS	Rating	0.5 A - 30 A			0.5 A - 30 A		15 A - 60 A		15 A - 60 A			
	Auxiliary Contact	✔ With polarized AC		✔ With non polarized AC			✔ Without AC					
	Power Terminal	✔ Standard		✔ 45° or 60° Bus bar application			✔ Push-Fit (0.25inch TAB)		✔ Flying leads			
	Button Lenght	✔ Normal Lenght		✔ Extra Lenght								
	Actuation Type	✔ Push Pull		✔ Push Push								
	Threaded Barrel	✔ M12 - 0.75		✔ M12 - 100			✔ 7/16		✔ Cononical Barrel			
	Terminal Screw	✔ 8 - 32 UNC		✔ 6 - 32 UNC			✔ M4		✔ No Terminal Screws			
	Vibration Level	✔ Commercial Aircraft		✔ Fighter - Artillery Gun								

COMPLEMENTARY OFFER

60+ years of aerospace qualification expertise

SMART	REMOTE CONTROL	POWER DISTRIBUTION
CIRCUIT BREAKERS	CIRCUIT BREAKERS	BOXES
		
Arc Fault & Ground Fault Protection	A circuit breaker and a contactor in one single case	Standard Pre-qualified Equipement + Customized Versions as:
Avoid drilling into the fuel tank by drastically reducing the amount of energy released by a fault as requested by AC259B1	Allowing you to open and close the contactor at a distance just by applying a 28 V command input.	Illuminated & non-illuminated Boxes
		Push/Pull & Push/Push Versions
		Wired & PCB-Faston Versions

COCKPIT CONTROLS

FLIGHT CONTROLS				
Pushbuttons	Multiway	Pilot Grips	Control Wheels	
				
Key features	› 1, 2, 3, 4 pole › Sealed versions › More than 200 electrical combinations	› Tactile effect › Silver & gold terminals › Different hat shape and color	› Ergonomy and functions access › Aluminium castings or injected in advanced plastic composite › Highest level of finishing	› Comfort and aesthetics › Best in class quality › Aluminium castings or injected in advanced plastic composite
Operating force	8 N → 16 N	3 N → 6 N	90 daN	150 daN
Mechanical life	300 000 cycles	500 000 cycles	35 000 FH	35 000 FH
Water proofness	DO 260 cat W	DO 260 cat W	DO 260 cat W	DO 260 cat W
Weight (g)	3.6 → 7.7	7.3 → 15.7	420 → 780	960 → 1 250
Operating temperature (°C)	-55 → +85	-55 → +85	-55 → +85	-55 → +85



AUTOMATION & CONTROL

AUTOMATION CONTROLLERS

THE MILLENIUM LOGIC CONTROLLERS



NEW

THE SMALLEST LOGIC CONTROLLER EVER!

Perfect for small-scale applications:

- › The only highly configurable and multipurpose industrial logic controller with a 17.5 mm (0.69") body
- › Fits in any control panel or machine and supports DIN rail and panel mounting
- › 8 highly configurable I/Os (analog, digital, high-speed, PWM). It can replace dozens of control panel products
- › Built-in Bluetooth communication to give wireless capabilities to your applications.
- › Easy program transfer at a distance

Millenium Slim



THE CLASSIC LOGIC CONTROLLER

For everyone and for any simple application:

- › Many functions in a single product
- › Smart Design: Adapted for modular panels, can be DIN-rail mount or panel mount
- › Different input power versions (available)
- › Easy to use & free software
- › Expand up to 50 I/Os

Millenium 3



THE COMMUNICATING LOGIC CONTROLLER

For all your simple applications with connectivity needs:

- › Control at a distance: Access to the front face from your PC, laptop, or mobile devices
- › Monitor your applications (Datalog, Events and FTP server connection)
- › Interact with other devices and program anywhere on your local network (via Ethernet or Modbus RTU)

Millenium Exo



THE PLC MADE SIMPLE

PLC performance with logic controller simplicity, for your high-end applications:

- › 26 I/Os: Configurable inputs to digital, analog & high-speed. Relay, static and PWM outputs available
- › Network communication: Ethernet (Modbus TCP/IP), Modbus RTU and Bluetooth
- › The ease of use of a simple logic controller

eM4 NANO PLC



THE 5-IN-1 TELECONTROLLER

Control and monitor any application remotely with a cellular network:

- › Cellular Modem: Give cellular capabilities to your application
- › Alert system: Event alerts, status feedback and alarms wherever you are
- › Data logger: Measure and record key parameters
- › Nano-PLC: A PLC in a logic controller body
- › Display: Visualize and change parameters

eM4 ALERT



SPECIALIZED CONTROLLERS

AUTOMATION CONTROLLERS SOFTWARE



CROUZET SOFT

- › Easiest and most intuitive visual programming software
- › Pre-programmed application blocks like pump management, flow control, liquid level and many more



VIRTUAL DISPLAY

Visualize and manage your controller at a distance:

- › View and change parameters
- › Read & write programs
- › Download Datalog
- › Firmware update



Download it for FREE! <https://www.crouzet.com/software/download>

HMI



HMIs

- › 4.3", 7" and 10" sizes available
- › Several ways of communication: Ethernet, Modbus RTU, SLin/SLout
- › 2 versions available: High-Performance & Cost-Effective Essential



HMI SOFTWARE

- › Easy-to-use graphic software & pre-configured communication drivers
- › Wide range of tools to develop the perfect project



POWER SUPPLIES



MODULAR & INDUSTRIAL

- › Compact offer of 12 & 24 VDC DIN-Rail Power Supplies
- › From 10 W to 480 W
- › Up to 90 % efficiency

SENSORS & CONVERTERS



TEMPERATURE & SIGNAL CONVERTER

- › Convert temperature (Pt 100, 1000, Thermocouple J & K), current and PWM signals to voltage for use with Crouzet's Controllers



TEMPERATURE SENSORS

- › Air, duct, submersible and NTC Probes designed for simple & direct connection to Crouzet's Automation Controllers

SOLID STATE RELAYS



NEW

SINGLE-CHANNEL AC SINGLE-PHASE

Classic single relays available in multiple formats for any type of application

- › Panel Mount: Hockey-puck, Fast-on, Low-Profile and Mini-puck
- › DIN-rail Mount: 22.5 mm, 45 mm and 12 mm
- › PCB Mount: SIP



MULTI-CHANNEL AC SINGLE-PHASE

2 or 4 relays in one single package for space-saving needs

- › Panel Mount: Hockey-puck and Fast-on



LOAD DIAGNOSTICS AC SINGLE-PHASE

Single relays and add-on modules with load monitoring functions for heating systems

- › Panel Mount: Hockey-puck
- › DIN-rail Mount: Module



CONTACTOR / REVERSER AC 3-PHASE

Solid-state contactors for 3-phase heaters and motors' control

- › Panel Mount: Contactor and Reverser
- › DIN-rail Mount: 90 mm Contactor



NEW

NEW

DC OUTPUT

DC relays to control motors, lighting and other applications working on a DC power supply

- › Panel Mount: Hockey-puck
- › DIN-rail Mount: 12 mm and 58 mm Reverser contactor
- › PCB Mount: SIP

AUTOMATION & CONTROL

TIMERS



UNIVERSAL DIGITAL
Syr-line

- › Super Multifunction with up to 138 operating functions
- › Universal connection
- › High-contrast LED screen
- › Precise time configuration
- › Limits and password settings
- › Program without power supply



PLUG-IN
Syr-line

- › Compact body with 8 or 11 pin connections
- › Easy and quick plug & play
- › Very large dial for an easy set up
- › Single or double output in the same package
- › Protective cover



HIGH-POWER
Syr-line

- › High-Power up to 16 Amps
- › Control more or bigger loads
- › Multi-function or Mono-function
- › Protective cover



DIGITAL 48X48
Syr-line TMR48-D

- › Big digits in a large digital screen
- › Wide and long visibility
- › Large buttons for an easy and quick programing
- › Water & Dust proof IP66



DOUBLE OUTPUT
Syr-line

- › Double 8 Amps Output in the same 17.5 mm package
- › Second Relay can work instantaneously or delayed
- › **Special functions:** Alternator and Delayed Alternator



ANALOG 48X48
TMR48

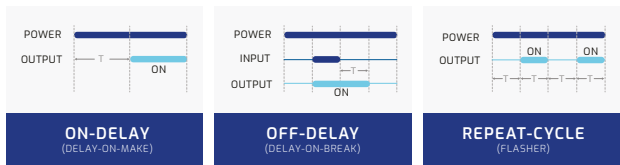
- › Large dial for an easy and quick programing
- › Multi-function or Mono-function
- › 8 or 11 pin connections
- › Multi-range from 0.02 s to 300 h



CLASSIC
Chronos 2

- › Multi-function or Mono-function
- › Multi-range
- › Multi-voltage
- › Screw or spring terminals

LARGE CHOICE OF TIMING FUNCTIONS



+ All timing functions on the market available

COUNTERS



ELECTRONIC

- › Hour counting, Impulse counting, Ratemeter, Chronometer, Batch counting and Preset functions
- › LED, LCD and backlight LCD
- › 48x24 and 48x48 mm sizes available



ELECTROMECHANICAL

- › Hour counting and Impulse counting functions
- › Mechanical Dial visualization
- › 40x27, 42x29, 46x46, 48x48, 56x29, 56x46 and 93x35 mm sizes available

NEW

MONITORING RELAYS



ELECTRICAL MONITORING
Three-Phase

- › Protect AC motors, HVAC Systems, Pumps, Conveyors, Packaging Machines and other loads
- › **Monitor in 3-phase networks (120 to 480 VAC):** phase sequence, phase failure, imbalance (asymmetry), over and undervoltage



CURRENT
Single-Phase

- › Detect over and under current in a single-phase network
- › **Detection of 3 ranges:** 2-500 mA, 0,1-10 A and 2-20 A
- › **2 packages available:** 17.5 and 35 mm



VOLTAGE
Single-Phase

- › Detect over and undervoltage in a single-phase network
- › **Detection of range:** 0,2 to 600 VAC/DC
- › **2 packages available:** 17.5 and 35 mm



LEVEL CONTROL
Pump up or down

- › Pump-up (filling), Pump-down (emptying)
- › Control one or two levels
- › **Measuring ranges:** 5-100 kΩ, 250- 1 MΩ



PROBES
Accessories

- › For use with level control relays
- › Electrode holder and protected suspension sensor

PNEUMATICS



LOGIC GATES

- On Sub-base & Plug-in
- › **Functions:** OR, AND, YES (Buffer), NOT (Inverter)
- › **Operating pressure:** 2 to 8 bar
- › Blue, green, yellow, orange, light grey, dark grey product colors



TIMERS

- On Sub-base
- › **Functions:** positive, negative, impulse and frequency generator
- › **Timing range:** 0.1 to 60 s
- › **Frequency range:** 0,02 to 8 Hz
- › **Operating pressure:** 2 to 8 bar



COUNTERS

- › Totalizing, Preset functions
- › 4, 5, 6 digits with or without reset
- › With or without pre-selection



POSITION DETECTORS

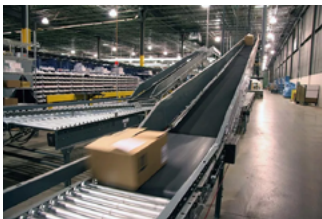
- › Pressure decay sensor, low force position, microvalve, miniature, compact, adjustable stop versions
- › **Permissive Fluids:** Air, inert gas
- › Different plunger, lever, roller and rotary head options



PRESSURE & VACUUM
SWITCHES

- › Vacuum pressure switches with electrical output
- › Adjustable pressure switches with positive or negative output
- › Adjustable vacuum switches with pneumatics positive, negative or electrical output available

INDUSTRIAL



BUILDING



POWER GENERATION



AGRICULTURE



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Warning:

The product information contained in this catalogue is given purely as information and does not constitute a representation, warranty or any form of contractual commitment. Crouzet and its subsidiaries reserve the right to modify their products without notice. It is imperative that we should be consulted over any particular use or application of our products and it is the responsibility of the buyer to establish, particularly through all the appropriate tests, that the product is suitable for the use or application. Under no circumstances will our warranty apply, nor shall we be held responsible for any application (such as any modification, addition, deletion, use in conjunction with other electrical or electronic components, circuits or assemblies, or any other unsuitable material or substance) which has not been expressly agreed by us prior to the sale of our products.