

PRODUCT LINES

Overview



ABOUT CROUZET

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

Crouzet provides **Switches and Sensors, Electromechanical Actuators, Electrical Protection Equipment, Cockpit Controls, Automation Controllers and 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 industrial challenges of today and tomorrow.

WORLDWIDE PRESENCE



📍 HEADQUARTERS

■ SALES OFFICES

CONTENT

	PAGES
EXCELLENCE OVERVIEW	04
OUR OFFER	05
SWITCHES & POSITION SENSORS	06-07
MOTION	08-09
ELECTRICAL PROTECTION	10
COCKPIT CONTROLS	11
AUTOMATION & CONTROL	12-15



100 YEARS DESIGNING & MANUFACTURING MECHATRONIC COMPONENTS

For demanding applications



Aerospace & Defense

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



Transportation

- › Railway
- › Automotive
- › Specialty
- › Vehicles



Energy

- › Nuclear
- › Energy
- › Distribution
- › Renewable
- › Energy



Building

- › Gates & Doors
- › Building
- › Efficiency



Machinery

- › Industrial
- › Automation
- › Food & Beverage

We work with the global leaders of our markets

AIRBUS

faurecia

VELAN

AS AUTOMATIC SYSTEMS

BOEING

Mercedes-Benz

AREVA

THALES

SAFRAN

ALSTOM

Schneider Electric

somfy.

DASSAULT AVIATION

SIEMENS

ABB

ASSA ABLOY

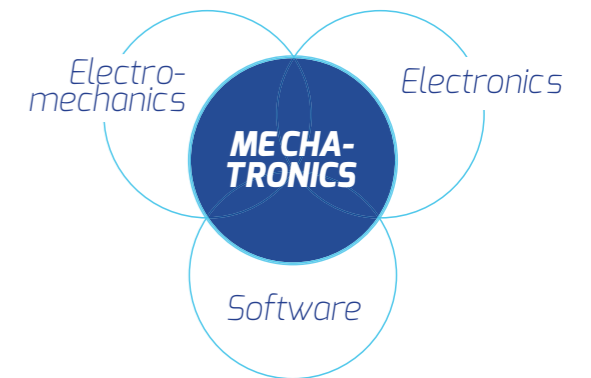
WORLD CLASS DISTRIBUTION NETWORK

In compliance with highest standards

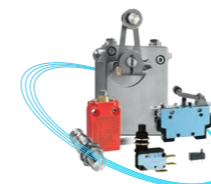


OUR OFFER: MECHATRONIC COMPONENTS

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



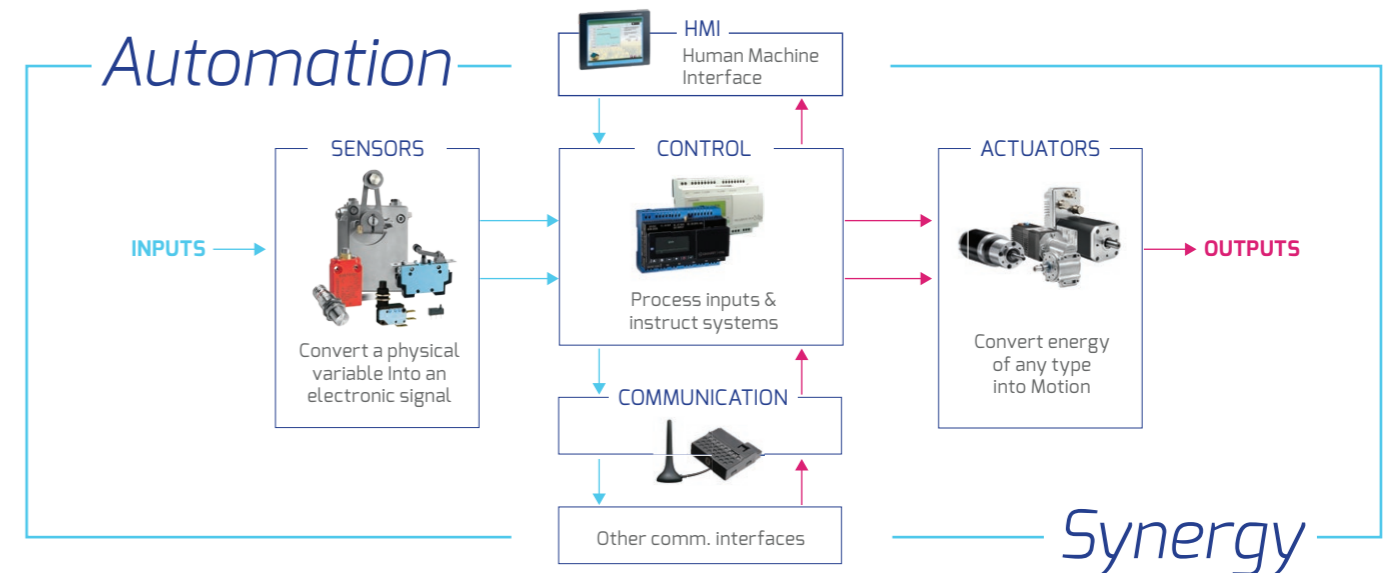
Electrical Protection



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. temperature (°C)	+90	+140	+150	+150	+125	+150	+200	+105	+85
Min. temperature (°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								
	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. temperature (°C)	+70	+85	+125	+200	+200
Min. temperature (°C)	-40	-40	-55	-55	-40
Specific environment					
Approvals	CE	CE	CE	CE	CE
	UL				
	CCC			**	
	EAC	EAC	EAC	EAC	

Irradiated Environment High pressure up to 6 bar Explosive atmospheres

SWITCHES AEROSPACE

	LIMIT SWITCH	PROXIMITY SWITCH	PROXIMITY SENSOR
Key features	<ul style="list-style-type: none"> Hermetically sealed Customizable Multi-pole functions 	<ul style="list-style-type: none"> Contactless detection with integrated electronics Customizable 	<ul style="list-style-type: none"> Contactless detection with external electronics Customizable
Operating force (N)	2.5 → 50	NA	NA
Mechanical life (cycles)	100 000	NA	NA
Water proofness	Watertight or hermetic version - D0 160 sect10		
Weight (g)	15 → 300	< 60	< 50
Operating temperature (°C)	-55 → +250	-55 → +125	-55 → +125

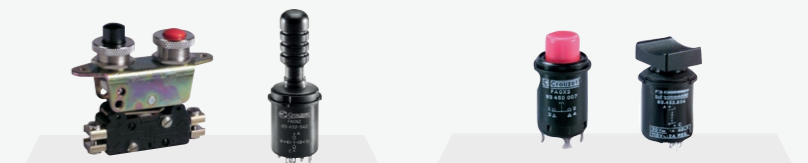
CUSTOMIZED SOLUTIONS

- › 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



NUCLEAR



RAILWAYS



ELECTRICAL EQUIPMENT



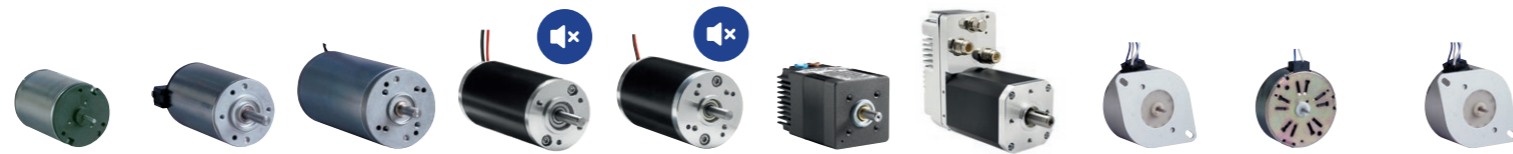
TRANSPORTATION



MOTION

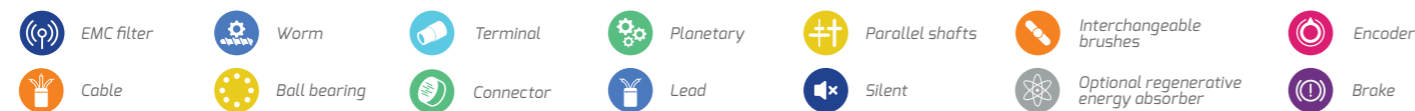
MOTORS

INDUSTRIAL BRUSH	DCmind BRUSH	DCmind BRUSHLESS	SYNCHRONOUS	STEPPER
------------------	--------------	------------------	-------------	---------



CHARACTERISTICS	SERIES	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 _{DC}	12 → 48 V _{DC}	12 → 48 V _{DC}	12 → 48 V _{DC}	12 → 120 V _{DC}	9 → 75 V _{DC}	9 → 75 V _{DC}	24 → 240 V _{AC} 50 → 60 Hz	24 → 240 V _{AC} 50 → 60 Hz	3 → 64 V _{DC}
Front side (mm)		∅ 32	∅ 42	∅ 63	∅ 42	∅ 63	SQ57	SQ75	∅ 35 / 51 ∅ 57 / 65	∅ 47	∅ 35 / 51 ∅ 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		CE RoHS	CE RoHS	CE RoHS	CE RoHS	CE RoHS	CE RoHS	CE RoHS	CE RoHS	CE RoHS	CE RoHS
Gearboxes		+	+	+	+	+	+	+	+	+	+
Connection		+	+	+	+	+	+	+	+	+	+
Standard			+		+	+	+	+			
Options		+	+	+	+	+					
IP			IP20		IP65*		IP54	IP65*, IP67* IP69*	IP40	IP30	IP40

* Except front face & shaft



CONTROL ELECTRONICS

INTEGRATED	EXTERNAL
------------	----------



CHARACTERISTICS	SERIES	TNi21	SMI21	SMI22	BDE 30	BDE 40
Compatible models		SQ57		SQ75	SQ57	
Speed-torque		•	•	•	•	•
Position (P/R)			4096	4096		
Programming			DCmind Soft & DCmind Soft + CANopen	DCmind Soft + CANopen	PWM or 0 → 10 V _{DC}	
Communication bus			Optional CANopen	Standard CANopen		
Voltage		10 → 36 V _{DC}	9 → 75 V _{DC}	9 → 75 V _{DC}	18 → 36 V _{DC}	10 → 36 V _{DC}
Maximum current (A)		17	17	75	10	14
Adaptations		Programs: Custom firmware as per customer specifications				

GEARBOXES

PARALLEL SHAFTS	PLANETARY	WORM
-----------------	-----------	------



CHARACTERISTICS	11 models	7 models	2 models
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 steel shafts, pulleys, pinions, special bearings, etc...		

* Million revolutions

RAILWAYS



ACCES CONTROL



EQUIPMENT



MEDICAL



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 (A533201)	M55692 (A55692)	M526574 (A526574)	M55692 (A55692)	M514154 (A5141544)						
	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 Length	✓ Normal Length	✓ Extra Length									
	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

Avoid drilling into the fuel tank by drastically reducing the amount of energy released by a fault as requested by AC25981



A circuit breaker and a contactor in one single case

Allowing you to open and close the contactor at a distance just by applying a 28 V command input.



Standard Pre-qualified Equipment + Customized Versions as:

- 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	<ul style="list-style-type: none"> › 1, 2, 3, 4 pole › Sealed versions › More than 200 electrical combinations 	<ul style="list-style-type: none"> › Tactile effect › Silver & gold terminals › Different hat shape and color 	<ul style="list-style-type: none"> › Ergonomy and functions access › Aluminium castings or injected in advanced plastic composite › Highest level of finishing 	<ul style="list-style-type: none"> › 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 (cycles)	300 000	500 000	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 → 1250
Operating temperature (°C)	-55 → +85	-55 → +85	-55 → +85	-55 → +85

DEFENSE



AIRCRAFT



HELICOPTER



URBAN AIR MOBILITY



AUTOMATION & CONTROL

AUTOMATION CONTROLLERS



The all-in-one Telecontroller, 5 products in one. Connect to a cellular network to control and monitor any remote application:

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



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



Millenium EVO, the communicating logic controller for all your small-scale automation projects:

- › 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 3, the logic controller of choice for 10+ years. 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 power supplies available
- › Easy to use & free software
- › Expand up to 50 I/Os

AUTOMATION 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

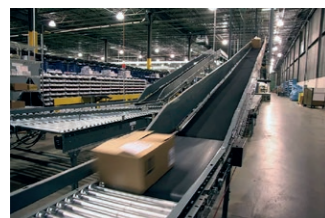
Download it for FREE! <https://automation.crouzet.com/software>

INDUSTRIAL

BUILDING

POWER GENERATION

AGRICULTURE



HMIS



HMIs

- › 4.3", 7" and 9.7" 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
- › Easy-to-use graphic software & pre-configured communication drivers

POWER SUPPLIES



POWER SUPPLIES

- › Compact offer of 24 VDC DIN-Rail Power Supplies
- › 10 W, 30 W, 60 W, 100 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



AC, PANEL MOUNT

- GN, GN+, GNA
- › Standard Panel Mount (Hockey-Puck)
- › From 10 Amps to 125 Amps
- › Over voltage protection and IP20 covers included
- › Multipurpose to switch different types of AC loads (Heating, Lighting, Motion and others)



AC, DIN-RAIL MOUNT

- GNR, GNR+
- › 22.5 and 45 mm DIN-Rail Mount (Ready-to-use)
- › From 20 Amps to 45 Amps
- › Over voltage protection and IP20 covers included
- › Multipurpose to switch different types of AC loads (Heating, Lighting, Motion and others)



DC, PANEL MOUNT

- GND & GNAD
- › Standard Panel Mount (Hockey-Puck)
- › From 10 Amps to 40 Amps
- › Over voltage protection and IP20 covers included
- › Multipurpose to switch different types of DC loads (Heating, Lighting, Motion and others)



SMART, PANEL MOUNT

- GN SMART
- › Standard Panel Mount (Hockey-Puck)
- › From 35 Amps to 75 Amps
- › Over voltage protection and IP20 covers included
- › Load and current detection



SMART, DIN-RAIL MOUNT

- GNR SMART Module
- › Module for GNR/GNR+
- › Load current up to 40 Amps
- › Open loads/mains and partial load breaking detection and SSR faults
- › AC Current teaching function

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 programming
- › 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

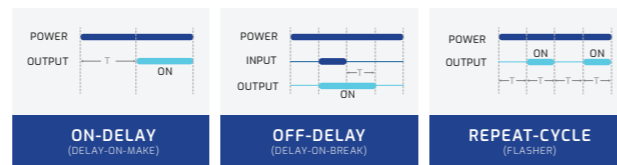
- › Large dial for an easy and quick programming
- › Multi-function or Mono-function
- › 8 or 11 pin connections
- › Multi-range from 0.02 s to 300 h



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, Totalizing (impulse), Ratemeter, Chronometer, Batch counting and Preset functions
- › LED, LCD and backlight LCD
- › 24x48 and 48x48 mm sizes available



ELECTROMECHANICAL

- › Hour counting and Totalizing (impulse) functions
- › Mechanical Dial visualization
- › 15x32, 24x48, 36x37, 36x48 and 48x48 sizes

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



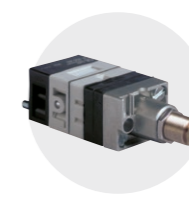
COUNTERS

- › 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

AMERICAS**CANADA**

Tel.: +1 (855) 929-5465
americas.custserv@crouzet.com

MEXICO

Tel.: +1 (855) 929-5465
americas.custserv@crouzet.com

USA

+1 (855) 929-5465
americas.custserv@crouzet.com

COUNTRIES NOT LISTED

+1 (855) 929-5465
americas.custserv@crouzet.com

EUROPE / MIDDLE EAST / AFRICA**BELGIUM**

Tel.: +32 (0) 2 620 06 05
Fax: +32 (0) 2 461 00 23
klantenservice@crouzet.com

FRANCE

Tel.: +33 (0) 475 802 101
Fax: +33 (0) 475 828 900
relationclient@crouzet.com

GERMANY / AUSTRIA

Tel.: +49 (0) 2103/9385930
Fax: +49 (0) 2103/980-222
kundenservice@crouzet.com

ITALY

Tel.: +39 (02) 38 594 099
Fax: +39 (02) 82 952 104
assistenzaclienti@crouzet.com

SPAIN / PORTUGAL

Tel.: +34 (91) 215 80 95
Fax: +34 (93) 2 20 02 05
atencionalcliente@crouzet.com

SWITZERLAND

Tel.: +41 (0) 225 67 57 90
Fax: +41 (0) 565 88 02 75
kundenservice@crouzet.com

THE NETHERLANDS

Tel.: +31 (0) 20-654 52 20
klantenservice@crouzet.com

UNITED KINGDOM

Tel.: +44 (0) 2076 600 025
customer.relation@crouzet.com

COUNTRIES NOT LISTED

Tel.: +33 (0) 475 802 102
Fax: +33 (0) 475 828 900
customer.relation@crouzet.com

ASIA / PACIFIC**CHINA**

Tel.: +86 (75) 2 5303 200
china@crouzet.com

INDIA

india@crouzet.com

SOUTH KOREA

Tel.: +82 (2) 2679 8312
Fax: +82 (2) 2679 9888
korea@crouzet.com

EAST ASIA PACIFIC

Tel.: +86 (21) 8025 7177
Fax: +86 (21) 6107 1771
eap@crouzet.com

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.