PRODUCT LINES

Overview

100 YEARS

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

NANTES, **FRANCE**

VOUVRY, **SWITZERLAND**

VALENCE, **FRANCE**

HUIZHOU, **CHINA**

CASABLANCA 1, **MOROCCO**

CASABLANCA 2, **MOROCCO**

📍 *HEADQUARTERS*   ■ *SALES OFFICES*

CONTENT

CROUZET

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
BOEING
SAFRAN AEROSPACE DEFENCE SECURITY
DASSAULT AVIATION

faurecia
Mercedes-Benz
ALSTOM
SIEMENS

VELAN
AREVA
Schneider Electric
ABB

AUTOMATIC SYSTEMS
THALES
somfy.
ASSA ABLOY

WORLD CLASS DISTRIBUTION NETWORK

In compliance with highest standards

ISO 9001
ISO 14001
OHSAS 18001
IECEE CB-Scheme
TÜV SÜD
RoHS
CCC
IECEx
Ex

EAC
NF
CE
cULus LISTED
cRUus
SP
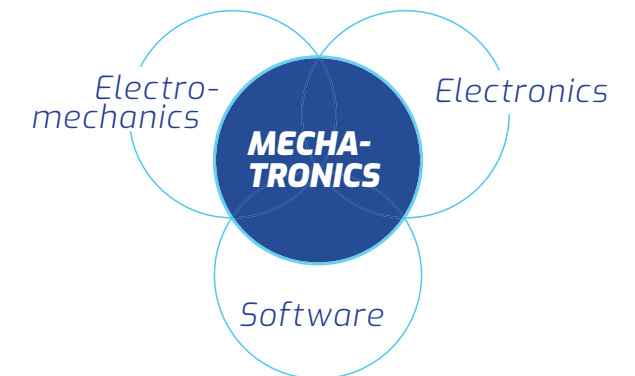GL OPERATING 24/7
UL
VDE
SIL
cen CENELEC

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.

Electro-mechanics — Electronics — Software
MECHA-TRONICS

Get to know our product lines
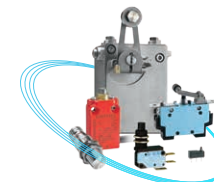
Switches & Sensors

Cockpit Controls

Electrical Protection

Motion Control

Automation & Control

Automation

HMI
Human Machine Interface

SENSORS
Convert a physical variable Into an electronic signal

INPUTS →

CONTROL
Process inputs & instruct systems

ACTUATORS
Convert energy of any type into Motion

→ OUTPUTS

COMMUNICATION
Other comm. interfaces

Synergy
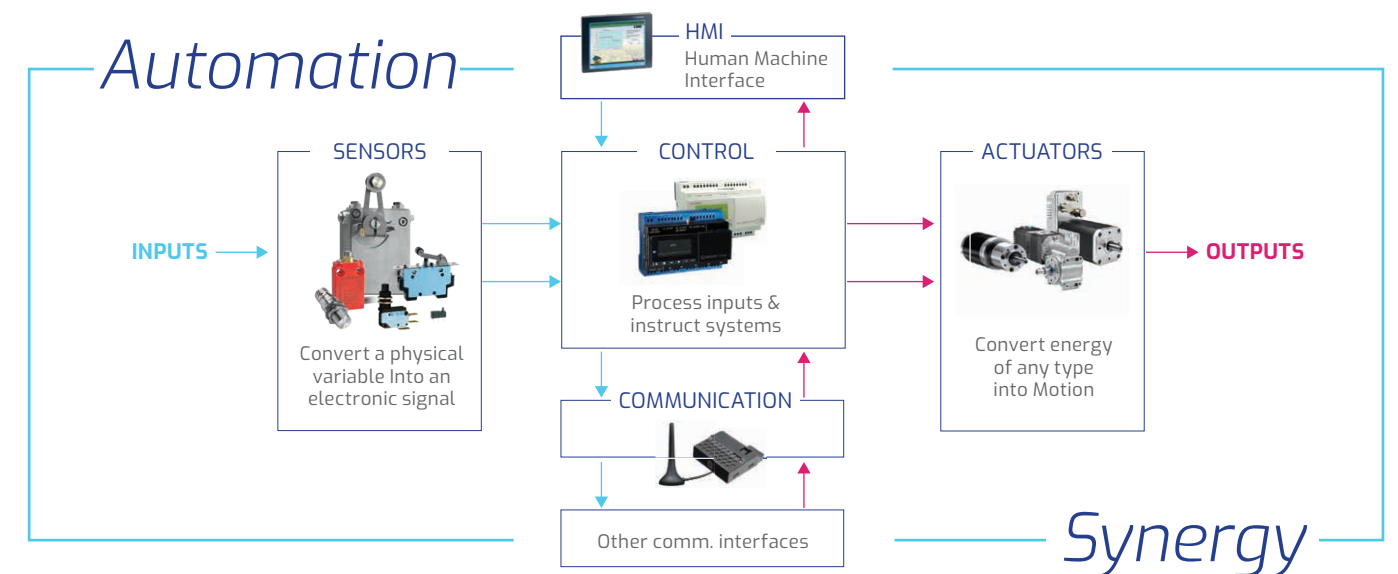
DESIGN LAB

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

SERIES	SUB-SUBMINIATURE			SUBMINIATURE			MINIATURE & SPECIAL		
	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	NF ⟁ CE	NF CE	CE	NF ⟁ CE	CE	CE
Approvals — UL	c🆄Lus	c🆄Lus	c🆄Lus	c🆄Lus	c🆄Lus	c🆄Lus	c🆄Lus	c🆄Lus	c🆄Lus
Approvals — CCC	CCC	**	CCC	CCC	CCC	CCC	CCC	CCC	CCC
Approvals — EAC	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

NUCLEAR   RAILWAYS   ELECTRICAL EQUIPMENT   TRANSPORTATION

LIMIT SWITCHES

SERIES	STANDARD	HARSH ENVIRONMENT			
	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			☢ **	⊠ ☢	⊠ ⓔx
Approvals — CE	CE	CE	CE	CE	CE
Approvals — UL	c🆄Lus LISTED				
Approvals — CCC	CCC	CCC	**	CCC	CCC
Approvals — EAC	EAC	EAC	EAC		

☢ Irradiated Environment   ⊠ High pressure up to 6 bar   ⓔx Explosive atmospheres

SENSORS AEROSPACE

	LIMIT SWITCH	PROXIMITY SWITCH	PROXIMITY SENSOR
Key features	› Hermetically sealed › Customizable › Multi-pole functions	› Contactless detection with integrated electronics › Customizable	› 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 - DO 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

MOTION

MOTORS

CHARACTERISTICS / SERIES	INDUSTRIAL BRUSH 82840 82860	82800 10 50	82830 82890	DCmind BRUSH 89800 10 50	89830 89890	DCmind BRUSHLESS 80140 180 280	80350 60 70	SYNCHRONOUS 82510 20 30 40	82330 82340	STEPPER 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
IP		IP20		IP65*		IP54	IP65*, IP67* IP69*	IP40	IP30	IP40

* Except front face & shaft

Legend: EMC filter, Cable, Worm, Ball bearing, Terminal, Connector, Planetary, Lead, Parallel shafts, Silent, Interchangeable brushes, Optional regenerative energy absorber, Encoder, Brake

CONTROL ELECTRONICS

CHARACTERISTICS / SERIES	INTEGRATED TNi21	SMi21	SMi22	EXTERNAL 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	
Communication bus		Optional CANopen	Standard CANopen		
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

CHARACTERISTICS	PARALLEL SHAFTS 11 models	PLANETARY 7 models	WORM 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 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».

RAILWAYS   ACCES CONTROL   EQUIPMENT   MEDICAL
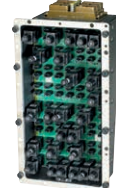
ELECTRICAL PROTECTION

ELECTROMECHANICAL CIRCUIT BREAKERS
Thousands of Configurations Available

		REGULAR				HIGH-POWER			
		SINGLE POLE			THREE POLE		SINGLE POLE	THREE POLE	
STANDARD	MIL SPEC	MS3320 (AS33201)	MS5692 (AS5692)	MS26574 (AS26574)	MS5692 (AS5692)	MS14154 (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

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 Equipement + Customized Versions as:

Illuminated & non-illuminated Boxes	Push/Pull & Push/Push Versions	Wired & PCB-Faston Versions

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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

DEFENSE　　　AIRCRAFT　　　HELICOPTER　　　URBAN AIR MOBILITY

AUTOMATION & CONTROL

AUTOMATION CONTROLLERS

THE MILLENIUM LOGIC CONTROLLERS

THE SMALLEST LOGIC CONTROLLER EVER!
Millenium Slim

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

NEW

THE CLASSIC LOGIC CONTROLLER
Millenium 3 M3

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

THE COMMUNICATING LOGIC CONTROLLER
Millenium Evo

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)

SPECIALIZED CONTROLLERS

THE PLC MADE SIMPLE
em4 NANOPLC

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

THE 5-IN-1 TELECONTROLLER
em4 ALERT

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

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

M3 **Millenium3 Soft**   **Crouzet Soft**   CROUZET **Virtual Display**

Download it for FREE! https://www.crouzet.com/softwares/download

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

Crouzet Touch Soft

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, DC, PANEL MOUNT
GN, GN+, GNA, GND GNAD

› Standard Panel Mount (Hockey-Puck)
› From 10 Amps to 125 Amps
› Overvoltage protection and IP20 covers included
› Multipurpose to switch different types of DC & AC loads (Heating, Lighting, Motion and others)

NEW

AC, DIN-RAIL MOUNT
GNR, GNR+

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

NEW

3-PHASE, DIN-RAIL & PANEL MOUNT
GN3, GNR3, GN0

› For frequent start/stop operation of 3-Phase motors or heaters
› GN0 for start, stop & reverse, all-in-one product
› 25A and 50A versions available
› Built-in overvoltage protection
› IP20 touch-safe housing

NEW

SMART, DIN-RAIL & PANEL MOUNT
GN SMART, GNR SMART Module

› Standard Panel Mount (Hockey-Puck) and DIN-rail module
› From 35 Amps to 75 Amps
› Overvoltage protection and IP20
› Load and current detection, and SSR faults

NEW

SPECIALIZED, PANEL MOUNT
GN2, GN4, GNF, GNZ, GNmini

› GN2 & GN4 multichannel versions with 2 and 4 independent outputs
› GNZ & GNmini, the low-profile and miniature versions
› Fast-on terminals for easy installation
› Ideal for limited-space applications

NEW

AUTOMATION & CONTROL

TIMERS

UNIVERSAL DIGITAL
Syr-line

NEW

› 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

ON-DELAY (DELAY-ON-MAKE)	OFF-DELAY (DELAY-ON-BREAK)	REPEAT-CYCLE (FLASHER)
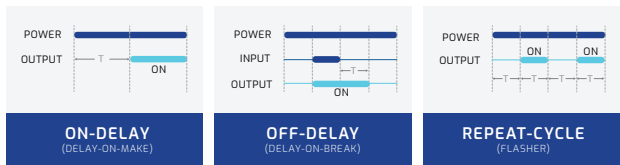
+ All timing functions on the market available

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
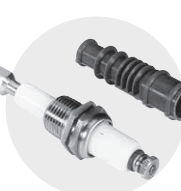› **2 packages available:** 17.5 and 35 mm

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
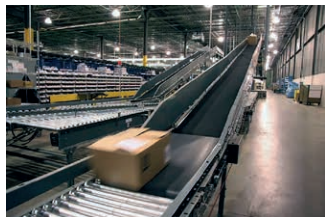
INDUSTRIAL   BUILDING   POWER GENERATION   AGRICULTURE

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