

Micro-control

Control system solutions
adapted to your applications

08 Overview



■ Logic controllers



■ Control relays



■ Timers

www.crouzet.com



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Editorial



For over 40 years, Crouzet, a subsidiary of Schneider Electric, has established a reputation for providing quality timers, logic controllers and control relays. With the exciting new Millenium 3 & C-Lynx ranges, read on to discover Crouzet's complete Micro-control product offer.

Always one step ahead of market trends and customer requirements, Crouzet is continually developing its range of both standard and customised automation components and solutions to cover all the latest commercial and industrial applications and meet the needs expressed by manufacturers of automated equipment and machinery.

Throughout the world, Crouzet provides technical and industrial expertise to ensure that its products are perfectly customised and adapted for integration in any of your equipment.

In 2005, Schneider Electric set up the CST (Custom Sensors & Technologies) Business Unit incorporating the companies BEI, Crouzet, Crydom & Kavlico. In addition to the Micro-control products in this brochure, the new CST unit also offers an extensive range of products and solutions in detection, control and motorisation. The result? Even better service and technical choice for our customers.

Quality is at the heart of Crouzet's strategy. Our Quality Control and Environmental Management Systems are ISO 9001 and ISO 14001 certified respectively.



Eco-design is also a pivotal component in the company's "Offer Creation Process", the aim of which is to design products and services that match customer requirements whilst at the same time reducing their environmental impact throughout their life cycle.

All Crouzet products are now fully compliant with the RoHS directive.



Micro-control expertise

► Expertise - for all your applications

■ **Crouzet's Micro-control offer** encapsulates all the vital steps in creating standard control system solutions and ensuring equipment reliability:

- **Analysis** of customer requirements
- **Multidisciplinary expertise** in the fields of sensors, motors and pneumatic components
- **Advanced prototyping** and on-site testing for adapted products
- Electrical, mechanical and climatic endurance **tests**
- **Standardisation and approval** of components (e.g., EMC)
- Electronics, electrical, mechanical and cable connections **expertise**
- Software & Firmware **engineering**
- **Customisable** product marking and labelling
- **International logistics**, after sales service.

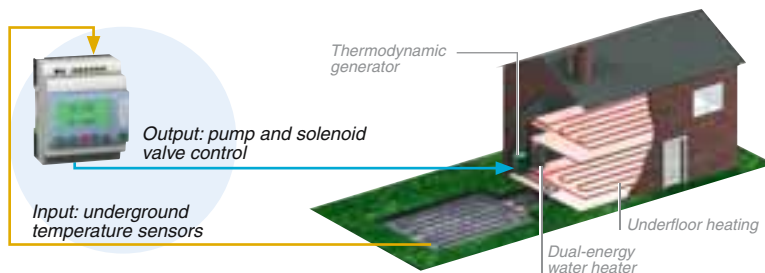
■ **Crouzet has developed extensive** "Adapted Control" expertise to meet the specific needs of each customer. Standard offers can therefore be tailored to provide dedicated products and solutions at any time.

■ **Crouzet's Micro-control products** are used in a variety of commercial applications, such as Building Management Systems, access management and vending machines, as well as in industrial applications, such as plastic forming tools, conveyors and woodworking machines. They can also control agricultural equipment, water treatments (pump control, filtration...) and manage installation dedicated to new energies (wind, solar, biomass...).

For more application examples, click on the "Applications" heading in the Micro-control section on our website: www.crouzet.com

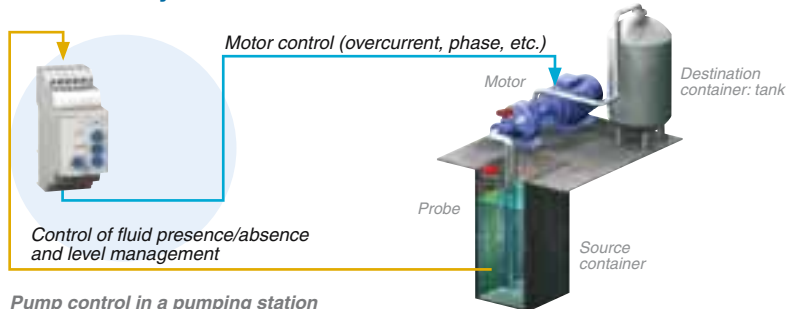
► Examples of Micro-control applications:

Logic controller



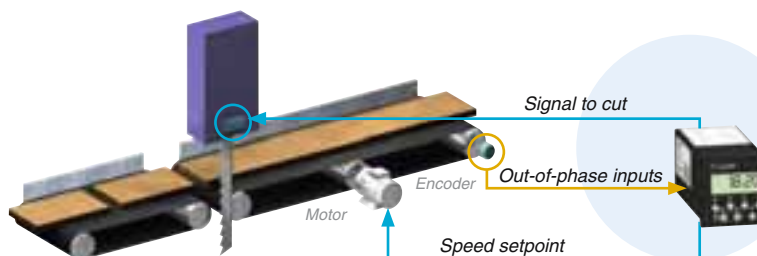
Heat control and domestic hot water system management: heat pump

Control relay



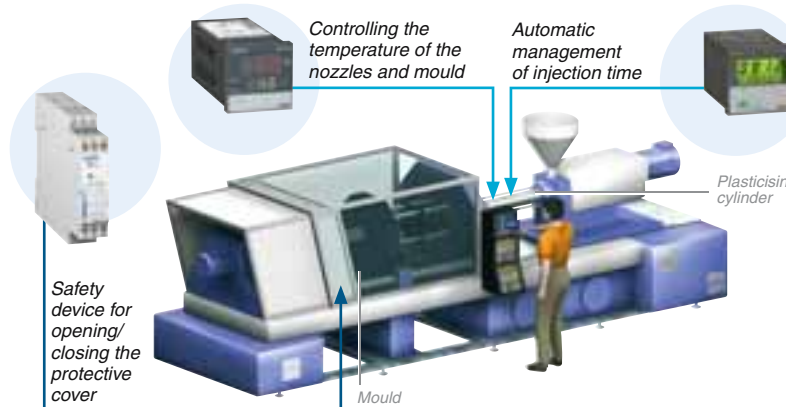
Pump control in a pumping station

Counter / Ratemeter



Cutting to length on woodworking machine

Temperature controller / Timer / Safety relay



Control and safety devices for injection/moulding press

Adapted Micro-control offer



Whatever the type of machine, Crouzet can adapt standard components or create specific products to work in complete harmony with your equipment. Just take a look at the adaptation wheel below to discover the different levels of customisation offered by Crouzet's Customer Adaptation Technical Service.

■ Dedicated Adapted Control Team

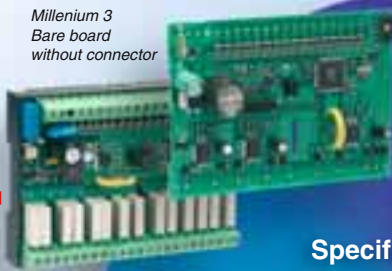
■ Specific products

All our design and industrialisation expertise in control and automation systems at your service, to define and create specific products dedicated to your application.

■ Standard components

A complete range of standard stocked control products available to create your automation applications.

Millenium 3
Bare board
without connector



Specific
products

Millenium 3



TMR48
timer

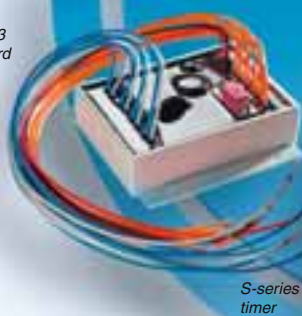


Standard
components



C-Lynx
control
relay

Millenium 3
Resin board



Adapted
products

Components
with added value



Millenium 3 adapted
"application-specific" kit

■ Adapted products

Defined jointly with our technical sales teams, these adapted products have all the performance and functionality you need for your application.

■ Components with added value

Standard products complemented by factory-mounted auxiliaries or accessories (connectors, cables, wire outputs, etc.) or supplied as special kits to assist integration into your equipment, simplify logistics and maximise the reliability of your installation.

Presentation of the offer

Micro-control offer



Taking a specialist approach to offer complete solutions, Crouzet harnesses electronic and electromechanical technologies to meet all your time management, management of physical and electrical values and counting requirements. The entire range is sold through a global distribution network working hand in hand with local sales forces dedicated to Micro-control applications.

■ Global distribution network

Product		Technology	Functions						
				Sensing	Operator dialogue	Processing	Actuating	Communicating	Supplying power
		Electronic	Electromechanical						
		Range	Range						
Logic controller P. 6-11		■ Millenium 3 "compact" version ■ Millenium 3 "expandable" version ■ Millenium 3 digital or analogue extensions ■ Millenium 3 "application-specific" extensions ■ Accessories (faceplates, converters, display units, etc.)	-	■	■	■	■	■	
		■ Millenium 3 network communication extensions	-					■	
		■ Millenium 3 modem communication interface	-					■	
Serveur Web for supervision P. 11		■ Millenium Web Server	-		■	■		■	
Regulated switch mode power supply P. 12-13		■ Modular power supply ■ Equipment power supply for integrated control system ■ DC/DC converter	-						■
Control relay P. 14-19		■ C-Lynx ■ E, L & F series ■ Defrost relay	-	■		■	■		
Timer P. 20-31	DIN rail mounted 	■ Chronos ■ RTM miniature ■ S serie	■ TOP 2000	■	■	■	■		
	Panel-mounted 	■ TMR 48 (Analogue) ■ MBA (Analogue) ■ TIMER 8xx (Digital)	■ TOP 2000 ■ Manual reset	■	■	■	■		
Counter / Ratemeter P. 32-35		■ CPT4 (with preselection) ■ CP2 (without preselection)	■ CH48G ■ 36 x 37 mm ■ 36 x 48 mm	■	■	■	■		
Temperature controller P. 36-37		■ CT48A (Analogue) ■ CTD24 (Digital) ■ MIC48 (Digital) ■ CTD43 (Digital) ■ CTD46 (Digital) ■ CTH46 (Digital) ■ Pt100 & Thermocouple probes	-	■	■	■	■		
Safety relay P. 38-39		■ Emergency stops and/or mobile safety guards ■ Relevelling check ■ Timed contacts ■ Extension relays ■ Zero speed monitoring ■ Two-hand control	-	■		■	■		

Logic controllers

Power supplies

Control relays

Timers

Counters /
Ratemeters

Temperature
controllers

Safety products

Millenium 3 "Compact" range

Millenium 3 logic controllers



Type	Part number	Power supply	Inputs	Outputs
With display				
 CD12 NEW	88970041	24 V $\overline{\text{---}}$	8 digital (including 4 analogue)	4 relays 8 A
	88970042	24 V $\overline{\text{---}}$	8 digital (including 4 analogue)	4 solid state 0.5 A (including 1 PWM)
	88970043	100 $\rightarrow$ 240 V $\sim$	8 digital	4 relays 8 A
	88970044	24 V $\sim$	8 digital	4 relays 8 A
	88970045	12 V $\overline{\text{---}}$	8 digital (including 4 analogue)	4 relays 8 A
 CD20 NEW	88970051	24 V $\overline{\text{---}}$	12 digital (including 6 analogue)	8 relays 8 A
	88970052	24 V $\overline{\text{---}}$	12 digital (including 6 analogue)	8 solid state 0.5 A (including 4 PWM)
	88970053	100 $\rightarrow$ 240 V $\sim$	12 digital	8 relays 8 A
	88970054	24 V $\sim$	12 digital	8 relays 8 A
	88970055	12 V $\overline{\text{---}}$	12 digital (including 6 analogue)	8 relays 8 A
Without display				
 CB12 NEW	88970021	24 V $\overline{\text{---}}$	8 digital (including 4 analogue)	4 relays 8 A
	88970023	100 $\rightarrow$ 240 V $\sim$	8 digital	4 relays 8 A
	88970024	24 V $\sim$	8 digital	4 relays 8 A
 CB20 NEW	88970031	24 V $\overline{\text{---}}$	12 digital (including 6 analogue)	8 relays 8 A
	88970033	100 $\rightarrow$ 240 V $\sim$	12 digital	8 relays 8 A
	88970034	24 V $\sim$	12 digital	8 relays 8 A



■ Ergonomic display



■ Optimum memory capacity

▶ Millenium 3 logic controllers operate with the following software:



■ M3 SOFT

Multilingual programming software (CD-ROM)

Part no.: 88970100

■ M3 SPECIFIC FUNCTIONS

Libraries of specific functions (CD-ROM)

Part no.: 88970103

■ M3 ALARM

Alarm management software (CD-ROM)

Part no.: 88970116

This software is used alongside communication interface M3MOD (Part no.: 88970117)

Logic controllers

Modem communication solutions			Modular power supplies ⁽¹⁾					Starter kits and demo case
M3 MOD	RTC	GSM	12 V DC - 24 W	24 V DC - 7.5 W	24 V DC - 15 W	24 V DC - 30 W	24 V DC - 60 W	
								
NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW
88970117	88970118	88970119	88950306	88950303	88950304	88950307	88950302	
■	□	□		■	■	■	■	Standard
■	□	□		■	■	■	■	88970080
■	□	□						88970106 (Demo-case)
■	□	□						88970081
■	□	□	■					
■	□	□		■	■	■	■	88970082
■	□	□		■	■	■	■	88970083
■	□	□						
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■	□	□						
■	□	□		■	■	■	■	
■	□	□						
■	□	□						

■ Compatible
□ Mounted with M3MOD:
- GSM modem
- or STN modem

⁽¹⁾ Find the whole "Power Supplies" offer on pages 12-13



▶ The 4 starter kits each contain:

- 1 CD12 or CD20 logic controller + 1 USB link cable + 1 M3 SOFT programming software CD-ROM + 1 M3 SPECIFIC FUNCTIONS CD-ROM.

Part no.: 88970080 / 88970081 / 88970082 / 88970083



▶ The demonstration case contains:

- 1 CD12 logic controller + 1 USB link cable + 1 M3 SOFT programming software CD-ROM + 1 M3 SPECIFIC FUNCTIONS CD-ROM + 1 voltage adaptor + 1 I/O simulation card.

Part no.: 88970106

Logic controllers

Power supplies

Control relays

Timers

Counters /
Rate meters

Temperature
controllers

Safety products

Millenium 3 "Expandable" range

Millenium 3 logic controllers



Type		Part number	Power supply	Inputs	Outputs
With display					
	XD10 NEW	88970141	24 V $\overline{\text{---}}$	6 digital (including 4 analogue)	4 relays 8 A
		88970142	24 V $\overline{\text{---}}$	6 digital (including 4 analogue)	4 solid state 0.5 A (including 1 PWM)
		88970143	100 $\rightarrow$ 240 V $\sim$	6 digital	4 relays 8 A
		88970144	24 V $\sim$	6 digital	4 relays 8 A
	XD26 NEW	88970161	24 V $\overline{\text{---}}$	16 digital (including 6 analogue)	10 relays (8 x 8 A relay and 2 x 5 A relay)
		88970162	24 V $\overline{\text{---}}$	16 digital (including 6 analogue)	10 solid state 0.5 A (including 4 PWM)
		88970163	100 $\rightarrow$ 240 V $\sim$	16 digital	10 relays (8 x 8 A relay and 2 x 5 A relay)
		88970164	24 V $\sim$	16 digital	10 relays (8 x 8 A relay and 2 x 5 A relay)
		88970165	12 V $\overline{\text{---}}$	16 digital (including 6 analogue)	10 relays (8 x 8 A relay and 2 x 5 A relay)

"Sandwich" extensions

Type		Part number	Power supply	Inputs	Outputs
Digital					
	XE10 NEW	88970321	Via the controller 24 V $\overline{\text{---}}$	6 digital	4 relays 5 A (1 of which is a changeover relay)
		88970323	100 $\rightarrow$ 240 V $\sim$	6 digital	4 relays 5 A (1 of which is a changeover relay)
		88970324	24 V $\sim$	6 digital	4 relays 5 A (1 of which is a changeover relay)
Type		Part number	Power supply	Network	Characteristics of exchanges (words)
Communication					
	XN05 NEW	88970270	Via the controller 24 V $\overline{\text{---}}$	Ethernet (Server)	Read: 8 - Read/Write: 8 Clock: 4 - Status: 1
	XN03 NEW	88970250	Via the controller 24 V $\overline{\text{---}}$	Modbus RS-485 (Slave)	Read: 4 - Read/Write: 4 Clock: 4 - Status: 1
	XN06 NEW	88972250*	Via the controller 24 V $\overline{\text{---}}$	Modbus RS-485 (Slave)	Read: 8 - Read/Write: 8 Clock: 12 - Status: 1

Termination extensions

Type		Part number	Power supply	Inputs	Outputs
Digital					
	XR06 NEW	88970211	Via the controller 24 V $\overline{\text{---}}$	4 digital	2 relays 8 A
		88970213	Via the controller 100 $\rightarrow$ 240 V $\sim$	4 digital	2 relays 8 A
		88970214	Via the controller 24 V $\sim$	4 digital	2 relays 8 A
		88970215	Via the controller 12 V $\overline{\text{---}}$	4 digital	2 relays 8 A
	XR10 NEW	88970221	Via the controller 24 V $\overline{\text{---}}$	6 digital	4 relays 8 A
		88970223	Via the controller 100 $\rightarrow$ 240 V $\sim$	6 digital	4 relays 8 A
		88970224	Via the controller 24 V $\sim$	6 digital	4 relays 8 A
		88970225	Via the controller 12 V $\overline{\text{---}}$	6 digital	4 relays 8 A
	XR14 NEW	88970231	Via the controller 24 V $\overline{\text{---}}$	8 digital	6 relays (4 x 8 A relay and 2 x 5 A relay)
		88970233	Par le contrôleur 100 $\rightarrow$ 240 V $\sim$	8 digital	6 relays (4 x 8 A relay and 2 x 5 A relay)
		88970234	Via the controller 24 V $\sim$	8 digital	6 relays (4 x 8 A relay and 2 x 5 A relay)
		88970235	Via the controller 12 V $\overline{\text{---}}$	8 digital	6 relays (4 x 8 A relay and 2 x 5 A relay)

Analogue and "Application-specific" analogue

	XA04 NEW	88970241	Via the controller 24 V $\overline{\text{---}}$	1 analogue (0-10V / 0-20mA), 1 analogue (0-10V / 0-20mA / Pt100)	2 analogue (0-10V) / PWM
	XA04W NEW	88972805*	Via the controller 24 V $\overline{\text{---}}$	1 pH ⁽¹⁾ (0-14), 1 ORP ⁽²⁾ (0-1000mV) 1 current (4-20mA), 1 Pt100 (0-50°C)	-
	XA03 NEW	88970800*	Via the controller 24 V $\overline{\text{---}}$	3 Pt100 (-25 $\rightarrow$ +125°C)	-

* These products are used with the M3 AC SOFT software - Part no.: 88970111

⁽¹⁾ pH probe - Part no.: 89750171 - ⁽²⁾ ORP (Redox) probe - Part no.: 89750173



Logic controllers

Modem communication solutions			Modular power supplies ⁽¹⁾				
M3 MOD	RTC	GSM	12 V DC - 24 W	24 V DC - 7.5 W	24 V DC - 15 W	24 V DC - 30 W	24 V DC - 60 W
							
NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW
88970117	88970118	88970119	88950306	88950303	88950304	88950307	88950302
☐	☐	☐		☐	☐	☐	☐
☐	☐	☐		☐	☐	☐	☐
☐	☐	☐					
☐	☐	☐		☐	☐	☐	☐
☐	☐	☐		☐	☐	☐	☐
☐	☐	☐					
☐	☐	☐					
☐	☐	☐	☐				

- *Compatible*
- *Mounted with M3MOD:*
 - *GSM modem*
 - *or STN modem*

⁽¹⁾ Find the whole "Power Supplies" offer on pages 12-13

▶ Millenium 3 logic controllers operate with the following software:

■ **M3 SOFT**

Multilingual programming software (CD-ROM)

Part no.: 88970100

■ M3 SPECIFIC FUNCTIONS

Libraries of specific functions (CD-ROM)

Part no.: 88970103

■ M3 ALARM

Alarm management software (CD-ROM)

Part no.: 88970116

This software is used alongside communication interface M3MOD (Part no.: 88970117)



► **The 3 starter kits each contain:**

- 1 XD26 logic controller + 1 USB link cable + 1 M3 SOFT programming software CD-ROM + 1 M3 SPECIFIC FUNCTIONS CD-ROM

Part no: 88970084 / 88970085 / 88970094

- The **88970094** starter kit also contains a 24 V DC - 30 W power supply.



► Millenium 3 Adapted Control:

- Crouzet offers a range of "hardened or specific" products:

- ❑ Bare board versions (12 or 20 I/O)
- ❑ Resin board versions for harsh environments (vibration resistance and extended temperature range)
- ❑ "Application-specific" analogue extensions: Temperature control (3 Pt100), Water treatment (pH, ORP/Redox).

■ **Crouzet can also provide **Millenium 3 solutions adapted****, as required to meet any specification, offering, for example, a greater number of I/O, specific extensions, dedicated connections, customised laser marking, and "customer" software functions, kitting of products (ie.: Millenium 3 + temperature sensors)...

For any special applications, please contact our Micro-control sales and technical experts.



Millenium 3 "Accessories" range

Programming

Type	Part number	Description
Connection accessories		
	88970102	3 m serial link cable: PC => Millenium 3
	88970104	Millenium 3 => Bluetooth interface (class A 10 m)
	88970108	EEPROM memory cartridge for transferring/saving programs
	88970109	3 m USB link cable: PC => Millenium 3
	88970110	Bluetooth => USB adaptor (class A 10 m)
	88970123	1.80 m serial link cable: DB9/DB9

(PA): Programming accessories

Sensing

Type	Part number	Description	Power supply	Main characteristic
Analogue temperature sensors				
	89750146	Copper protective sleeve	-	-20 → +100°C
	89750147	Stainless steel 316 protective sleeve	-	-20 → +400°C
	89750150	Zone/space sensor (0-10 V)	24 V ---	-10 → +40°C
	89750151	Ventilation duct (0-10 V)	24 V ---	-10 → +60°C
	89750152	Outdoor sensor (0-10 V)	24 V ---	-10 → +40°C
	89750153	Remote/submersible probe (0-10 V)	24 V ---	-10 → +150°C
	89750155	Remote/submersible probe (0-10 V)	24 V ---	-40 → +20°C
	89750180	Sensor CTN for Millenium 3 - 24 V --- (pack of 10)	-	-25 → +85°C
	89750181	Sensor CTN for Millenium 3 - 24 V --- (pack of 100)	-	-25 → +85°C
	18373112	Heat transfer compound	-	-
	79696035	Pt100 probe Class B with stainless steel 316 sheath	-	max.: 200°C
	79696036	Pt100 probe Class B with stainless steel 316 sheath	-	max.: 400°C
	79696037	Pt100 probe Class B with aluminium V6 sheath	-	max.: 200°C
Analogue pressure transmitters 4-20 mA ⁽¹⁾				
	89210001	Capacitive pressure transmitter: Relative ⁽²⁾	12 → 32 V ---	0 → 0.25 bar
	89210002	Capacitive pressure transmitter: Relative ⁽²⁾	12 → 32 V ---	0 → 1 bar
	89210003	Capacitive pressure transmitter: Relative ⁽²⁾	12 → 32 V ---	0 → 2.5 bar
	89210004	Capacitive pressure transmitter: Relative ⁽²⁾	12 → 32 V ---	0 → 10 bar
	89210005	Capacitive pressure transmitter: Relative ⁽²⁾	12 → 32 V ---	0 → 25 bar
	89210006	Capacitive pressure transmitter: Relative ⁽²⁾	12 → 32 V ---	0 → 60 bar
	89210007	Capacitive pressure transmitter: Absolute ⁽³⁾	12 → 32 V ---	0 → 1 bar
	89210008	Capacitive pressure transmitter: Absolute ⁽³⁾	12 → 32 V ---	0 → 2.5 bar
	89210009	Capacitive pressure transmitter: Absolute ⁽³⁾	12 → 32 V ---	0 → 10 bar
	89210010	Capacitive pressure transmitter: Absolute ⁽³⁾	12 → 32 V ---	0 → 25 bar
	89210011	Capacitive pressure transmitter: Absolute ⁽³⁾	12 → 32 V ---	0 → 100 bar

(AS): Analogue sensors

⁽¹⁾ Connection: G 1/4 male DIN 16288⁽²⁾ In relation to the atmospheric pressure⁽³⁾ In relation to vacuum

Converting

Type	Part number	Description	Power supply	Inputs	Outputs
Signal converters					
	88950108	0-20 mA / 0-10 V input converter	-	4	4
	88950112	PWM / 0-10 V output converter	24 V ---	1	1
Temperature converters					
	88950150	Input converter -20 → + 150°C	24 V ---	Pt1000 3-wire	0-10 V
	88950151	Input converter -40 → + 40°C	24 V ---	Pt100 3-wire	0-10 V
	88950152	Input converter 0 → + 100°C	24 V ---	Pt100 3-wire	0-10 V
	88950153	Input converter 0 → + 250°C	24 V ---	Pt100 3-wire	0-10 V
	88950154	Input converter 0 → + 300°C	24 V ---	Thermocouple J	0-10 V
	88950155	Input converter 0 → + 600°C	24 V ---	Thermocouple K	0-10 V

(AC): Analogue Converter

Logic controllers

Displaying

Type	Part number	Description	Power supply
Remote LCD alphanumeric displays (Modbus communication)			
 RD	88970421	Runtime kit: Three-colour screen + XN06 Modbus extension	24 V $\overline{\text{---}}$
	88970422	Runtime kit: Monochrome screen + XN06 Modbus extension	24 V $\overline{\text{---}}$
	88970844	Programming kit: Monocolour screen + XN06 Modbus extension + CD + cables	24 V $\overline{\text{---}}$
	88970849	Programming kit: Three-colour screen + XN06 Modbus extension + CD + cables	24 V $\overline{\text{---}}$
Remote LCD displays/keypads (direct link with Millenium 3 via cable)			
 RD NEW	88970410	Remote LCD screen/keypad	24 V $\overline{\text{---}}$
	88970411	Remote LCD screen/keypad + 4 function buttons + 4 LEDs	24 V $\overline{\text{---}}$
	88970412	Kit with remote LCD screen/keypad + cable	24 V $\overline{\text{---}}$
	88970413	Kit with remote LCD screen/keypad + 4 function buttons + 4 LEDs + cable	24 V $\overline{\text{---}}$
	88970414	IP65 protection accessory for display/keypad	
Remote LED display - Input 0-10 V			
 RD	88950400	Display with 4 x 14 mm red digits	24 V $\overline{\text{---}}$
Potentiometer Ø 22 mm			
 EP	88950109	External potentiometer for value adjustment (4700 Ω)	30 V $\overline{\text{---}}$ max

(RD): Remote Display - (EP): External potentiometer

Mounting

Type	Part number	Description	List of products
Removable connectors			
 MA	88970310	Removable kit 12 I/O	CD12 or CB12
	88970311	Removable kit 20 I/O	CD20 or CB20
Faceplates			
 MA NEW	89750160	IP67 sealed faceplate (76.5 mm)	CD12
	89750161	IP67 sealed faceplate (147.5 mm)	■ XD10 + XR06 or XN03 or XN05 or XA04 ■ CD20 ■ XD10 + XN03 or XN05 + XR06 or XA04 ■ XD10 + XR10 or XR14
	89750162	IP67 sealed faceplate (248.5 mm)	■ XD26 + XR06 or XN03 or XN05 or XA04 ■ XD10 + XN03 or XA04 + XR10 or XR14 ■ XD10 + XE10 + XR06 or XA04 ■ XD26 + XN03 or XN05 + XR06 or XA04 ■ XD26 + XR10 or XR14 ■ XD10 + XE10 + XR10 or XR14 ■ XD26 + XE10 + XR06 or XA04 ■ XD26 + XN03 or XN05 + XR10 or XR14
	88970809	IP40 faceplate	CD12 or CB12
	88970810	IP40 faceplate	CD20 or CB20

(MA): Mounting Accessories

► Millenium Web Server Solution

Supervising / Archiving / Remote diagnostics / Managing Modbus networks

Type	Part number	Description	Power supply
 XC10 NEW	88950124	The Millenium Web Server solution comprises: the Web Server module + 1 supervision page configuration software package (any Internet browser can be used)	24 V $\overline{\text{---}}$

Regulated switch mode power supplies

Description	Type	Part number	Input voltage	Nominal output voltage
Modular casing < 60W				
Modular power supplies - Millenium range				
	PS NEW	88950303	100 → 240 V ~	24 V ~ (22.8 V → 28.8 V)
		88950304		24 V ~ (22.8 V → 28.8 V)
		88950305		5 V ~ (4.75 → 6.25 V)
		88950306		12 V ~ (11.4 V → 15 V)
		88950307		24 V ~ (22.8 V → 28.8 V)
		88950302		24 V ~ (22.8 V → 28.8 V)
DC/DC converter				
	PS NEW	88950320	9 → 18 V ~	12 V ~ (11.8 V → 12.2 V)
		88950321	9 → 36 V ~	24 V ~ (23.5 V → 24.5 V)
Metal casing > 60W				
Equipment power supplies for integrated control systems				
	89450 Without PFC*	89450110	100 → 240 V ~	12 V ~
		89450210		24 V ~
		89450221	115 / 230 V ~	24 V ~
		89450231		24 V ~
		89450241		24 V ~
	89450 With PFC*	89450122	100 → 240 V ~	12 V ~
		89450222		24 V ~
		89450232	115 / 230 V ~	24 V ~
		89450242		24 V ~
	89450 Accessories	26450100	Snap-on plate for 35 mm DIN rail	
26450101		Mounting bracket		

* PFC = Power Factor Correction

Power supplies

	Nominal power	Nominal output current	Casing width	Connection
	7.5 W	0.3 A	36 mm	Screw terminals
	15 W	0.6 A	36 mm	
	20 W	4 A	54 mm	
	24 W	2 A	54 mm	
	30 W	1.2 A	54 mm	
	60 W	2.5 A	72 mm	
	10 W	0.8 A	36 mm	Screw terminals
	10 W	0.4 A	36 mm	
	60 W	5 A	-	Screw terminals
	60 W	2.5 A	-	
	100 W	4.2 A	-	
	150 W	6.2 A	-	
	240 W	10 A	-	
	100 W	8.3 A	-	
	100 W	4.2 A	-	
	150 W	6.2 A	-	
	240 W	10 A	-	

Logic controllers

Power supplies

Control relays

Timers

Counters /
Ratemeters

Temperature
controllers

Safety products

E, F, L and C-Lynx ranges



Description	Type	Part number	Power supply
C-Lynx phase control			
	MWS NEW	84873020	Self-powered 3 x 208 → 3 x 480 V ~ - 50/60 Hz
	MWS2 NEW	84873021	Self-powered 3 x 208 → 3 x 440 V ~ - 50/60 Hz
	MWG NEW	84873022	Self-powered 3 x 208 → 3 x 480 V ~ - 50/60 Hz
	MWU NEW	84873023	Self-powered 3 x 208 → 3 x 480 V ~ - 50/60 Hz
	MWA NEW	84873024	Self-powered 3 x 208 → 3 x 480 V ~ - 50/60 Hz
	MWUA NEW	84873025	Self-powered 3 x 208 → 3 x 480 V ~ - 50/60 Hz
	HWUA NEW	84873026	Self-powered 3 x 220 → 3 x 480 V ~ - 50/60 Hz
	H3US NEW	84873220	Self-powered 3 x 220 → 3 x 480 V ~ - 50/60 Hz
	H3USN NEW	84873221	Self-powered 3 x 120 → 3 x 277 V ~ (Phase-Neutral) 50/60 Hz
	M3US NEW	84873222	Self-powered 3 x 208 → 3 x 480 V ~ - 50/60 Hz

E-series phase control

EWS	84892299	Self-powered 3 x 200 → 3 x 500 V ~ - 50/60 Hz
EWS2	84873004	Self-powered 3 x 200 → 3 x 460 V ~ - 50/60 Hz



C-Lynx current control

	MIC NEW	84871122	24 → 240 V ~ - 50/60 Hz
	HIL NEW	84871120	24 → 240 V ~ - 50/60 Hz
	HIH NEW	84871130	24 → 240 V ~ - 50/60 Hz

E-series current control

	EIT	84871040	24 V ~ - 50/60 Hz
		84871041	24 V ~ - 50/60 Hz
		84871042	48 V ~ - 50/60 Hz
		84871043	120 V ~ - 50/60 Hz
		84871044	230 V ~ - 50/60 Hz
	TI for EIT	26852304	-
	EIL	84871020	24 V ~ - 50/60 Hz
		84871021	24 V ~ - 50/60 Hz
		84871022	48 V ~ - 50/60 Hz
		84871023	120 V ~ - 50/60 Hz
		84871024	230 V ~ - 50/60 Hz
	EIH	84871030	24 V ~ - 50/60 Hz
		84871031	24 V ~ - 50/60 Hz
		84871032	48 V ~ - 50/60 Hz
		84871033	120 V ~ - 50/60 Hz
		84871034	230 V ~ - 50/60 Hz



C-Lynx frequency control

HHZ NEW	84872501	120 → 277 V ~ - 50/60 Hz
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Control relays

	Control functions	Control values	Output relay	Casing width
	Phase failure and phase sequence	208 → 480 V ~ - 50/60 Hz	1 single pole changeover relay 5 A	17.5 mm
	Phase failure and phase sequence	208 → 480 V ~ - 50/60 Hz	2 single pole changeover relays 5 A	17.5 mm
	Phase failure and phase sequence (with regeneration)	208 → 480 V ~ - 50/60 Hz	1 single pole changeover relay 5 A	17.5 mm
	Phase failure and phase sequence	208 → 480 V ~ - 50/60 Hz	1 single pole changeover relay 5 A	17.5 mm
	Undervoltage	-20% → -2%		
	Phase failure and phase sequence	208 → 480 V ~ - 50/60 Hz	1 single pole changeover relay 5 A	17.5 mm
	Asymmetry	5% → 15 %		
	Undervoltage and overvoltage	-20% → -2% / +2% → +20%	1 single pole changeover relay 5 A	17.5 mm
	Asymmetry	5% → 15 %		
	Phase failure and phase sequence	208 → 480 V ~ - 50/60 Hz		
	Overvoltage	+2% → +20%	1 double changeover relay 2 x 5 A	35 mm
	Asymmetry	5% → 15 %		
	Undervoltage	-20% → -2%		
	Phase failure and phase sequence	220 → 480 V ~ - 50/60 Hz		
	Phase failure	220 → 480 V ~ - 50/60 Hz	2 single pole changeover relays 5 A	35 mm
	Undervoltage	-20% → -2%		
	Overvoltage	+2% → +20%		
	Phase failure and loss of neutral	120-277 V ~ - 50/60 Hz	2 single pole changeover relays 5 A	35 mm
	Undervoltage	-20% → -2%		
	Overvoltage	+2% → +20%		
	Phase failure	208 → 480 V ~ - 50/60 Hz	1 single pole changeover relay 5 A	17.5 mm
	Undervoltage	-20% → -2%		
	Overvoltage	+2% → +20%		
	Phase failure and phase sequence	200 - 500 V ~	1 single pole changeover relay 8 A	22.5 mm
	Phase failure and phase sequence	200 - 460 V ~	2 single pole changeover relays 8 A	22.5 mm
	Overcurrent (or undercurrent) with built-in current transformer	2 A → 20 A	1 single pole changeover relay 5 A	17.5 mm
	Undercurrent or overcurrent	2 mA → 20 mA / 10 mA → 100 mA / 50 mA → 500 mA	1 double changeover relay 2 x 5 A	35 mm
	Undercurrent or overcurrent	0,1 A → 1 A / 0.5 A → 5 A / 1 A → 10 A	1 double changeover relay 2 x 5 A	35 mm
	Undercurrent or overcurrent	10 A → 100 A with current transformer (Part no: 26852304)	1 single pole changeover relay 8 A	22.5 mm
	Undercurrent or overcurrent			
	Undercurrent or overcurrent			
	Undercurrent or overcurrent			
	Current transformer	10 → 100 A	-	-
	Undercurrent or overcurrent	2 mA → 20 mA / 10 mA → 100 mA / 50 mA → 500 mA	1 single pole changeover relay 8 A	22.5 mm
	Undercurrent or overcurrent			
	Undercurrent or overcurrent			
	Undercurrent or overcurrent			
	Undercurrent or overcurrent	0.1 A → 1 A / 0.5 A → 5 A / 1 A → 10 A	1 single pole changeover relay 8 A	22.5 mm
	Undercurrent or overcurrent			
	Undercurrent or overcurrent			
	Undercurrent or overcurrent			
	Undercurrent or overcurrent			
	Underfrequency or overfrequency (window)	40 → 60 Hz and 50 → 70 Hz	2 single pole changeover relays 5 A	35 mm

Logic controllers

Power supplies

Control relays

Timers

Counters /
Rate meters

Temperature
controllers

Safety products



Description	Type	Part number	Power supply	Control functions
C-Lynx voltage control				
	MUS12DC NEW	84872140	Self-powered 12 V $\square$ - 50/60 Hz	Overvoltage or undervoltage
	MUS80ACDC NEW	84872141	Self-powered 24 $\rightarrow$ 48 V $\sim$ - 50/60 Hz	Overvoltage or undervoltage
	MUS260ACDC NEW	84872142	Self-powered 110 $\rightarrow$ 240 V $\sim$ - 50/60 Hz	Overvoltage or undervoltage
	MUSF80ACDC NEW	84872151	Self-powered 24 $\rightarrow$ 48 V $\sim$ - 50/60 Hz	Overvoltage and undervoltage (window)
	MUSF260ACDC NEW	84872152	Self-powered 110 $\rightarrow$ 240 V $\sim$ - 50/60 Hz	Overvoltage and undervoltage (window)
	HUH NEW	84872120	24 $\rightarrow$ 240 V $\sim$ - 50/60 Hz - 50/60 Hz	Overvoltage or undervoltage
	HUL NEW	84872130	24 $\rightarrow$ 240 V $\sim$ - 50/60 Hz - 50/60 Hz	Overvoltage or undervoltage

E-series voltage control

	EUL	84872020	24 V $\square$ - 50/60 Hz	Overvoltage or undervoltage
		84872021	24 V $\sim$ - 50/60 Hz	Overvoltage or undervoltage
		84872023	120 V $\sim$ - 50/60 Hz	Overvoltage or undervoltage
		84872024	230 V $\sim$ - 50/60 Hz	Overvoltage or undervoltage
	EUH	84872030	24 V $\square$ - 50/60 Hz	Overvoltage or undervoltage
		84872031	24 V $\sim$ - 50/60 Hz	Overvoltage or undervoltage
		84872033	120 V $\sim$ - 50/60 Hz	Overvoltage or undervoltage
		84872034	230 V $\sim$ - 50/60 Hz	Overvoltage or undervoltage

**C-Lynx level control**

	HNM NEW	84870700	24 $\rightarrow$ 240 V $\sim$ - 50/60 Hz	Filling or emptying with conductive liquids (1 or 2 levels)
	MNS NEW	84870720	24 $\rightarrow$ 240 V $\sim$ - 50/60 Hz	Filling (1 level)
	HNE NEW	84870710	24 $\rightarrow$ 240 V $\sim$ - 50/60 Hz	Filling or emptying with all types of material (1 or 2 levels)

E, F and L series level control

	ENR	84870201	24 V $\sim$ - 50/60 Hz	Filling or emptying with conductive liquids (1 or 2 levels)
		84870203	120 V $\sim$ - 50/60 Hz	
		84870204	230 V $\sim$ - 50/60 Hz	
	ENRM	84870211	24 V $\sim$ - 50/60 Hz	Filling or emptying with conductive liquids (2 levels)
		84870213	120 V $\sim$ - 50/60 Hz	
		84870214	230 V $\sim$ - 50/60 Hz	
	FNLS	84870803	230 V $\sim$ - 50/60 Hz	Filling or emptying with conductive liquids (2 levels: high/low)
	FN	84870501	24 V $\sim$ - 50/60 Hz	Filling or emptying with conductive liquids (2 levels: high/low)
		84870502	48 V $\sim$ - 50/60 Hz	
		84870503	120 V $\sim$ - 50/60 Hz	
		84870504	230 V $\sim$ - 50/60 Hz	
	LN	84870301	24 V $\sim$ - 50/60 Hz	Emptying with conductive liquids (1 or 2 levels))
		84870303	120 V $\sim$ - 50/60 Hz	
		84870304	230 V $\sim$ - 50/60 Hz	
		84870306	24 V $\sim$ - 50/60 Hz	
		84870308	120 V $\sim$ - 50/60 Hz	
		84870309	230 V $\sim$ - 50/60 Hz	
		84870401	24 V $\sim$ - 50/60 Hz	Filling and monitoring of wells (2 levels)
		84870403	120 V $\sim$ - 50/60 Hz	
		84870404	230 V $\sim$ - 50/60 Hz	

Level control accessories

	S5	79696006	High-pressure and high-temperature probe $\leq 350^{\circ}\text{C}$ (connection: G 3/8)	
	S3	79696014	Electrode holder with a single 1000 mm probe $\leq 200^{\circ}\text{C}$ (connection: G 1/2)	
	S7	79696043	Protected electrode for level > 1 metre, for mounting by suspension and connected using cable C1 (part no.: 79696001: length as per request)	
	S8	79696044	A light, compact 3-probe electrode holder (probes measuring 1000 mm) $\leq 80^{\circ}\text{C}$ (connection: G 1/2)	

Control relays

Control values	Output relay	Casing width
9 → 15 V $\overline{\text{---}}$	1 single pole changeover relay 5 A	17.5 mm
20 → 80 V $\overline{\text{~}}$	1 single pole changeover relay 5 A	17.5 mm
65 → 260 V $\overline{\text{~}}$	1 single pole changeover relay 5 A	17.5 mm
20 → 80 V $\overline{\text{~}}$	1 single pole changeover relay 5 A	17.5 mm
65 → 260 V $\overline{\text{~}}$	1 single pole changeover relay 5 A	17.5 mm
0,2 V → 2 V / 1 V → 10V / 6V → 60 V	1 double changeover relay 2 x 5 A	35 mm
15 V → 150 V / 30 V → 300 V / 60 V → 600 V	1 double changeover relay 2 x 5 A	35 mm
0,2 V → 2 V / 1 V → 10V / 6 V → 60 V	1 single pole changeover relay 8 A	22.5 mm
15 V → 150 V / 30 V → 300 V / 60 V → 600 V	1 single pole changeover relay 8 A	22.5 mm
Sensitivity: 250 Ω → 5 k Ω / 5 k Ω → 100 k Ω / 50 k Ω → 1 M Ω	1 double changeover relay 2 x 5 A	35 mm
Contact input for discrete sensor	1 single pole changeover relay 5 A	17.5 mm
Contact input for discrete sensor: PNP or NPN sensor/contact	1 single pole changeover relay 5 A	35 mm
Sensitivity: 5 k Ω - 100 k Ω	1 single pole changeover relay 8 A	22.5 mm
Sensitivity: 250 Ω - 5 k Ω / 5 k Ω - 100 k Ω / 50 k Ω - 1 M Ω	1 single pole changeover relay 8 A	22.5 mm
Sensitivity: 250 Ω - 5 k Ω	2 single pole changeover relays 8 A	45 mm
Sensitivity: 5 k Ω - 100 k Ω with alarm (overflow or running dry)	2 single pole changeover relays 8 A	45 mm
Sensitivity: 5 k Ω - 100 k Ω	1 single pole changeover relay 8 A	45 mm plug-in 8-pin ⁽¹⁾ 45 mm plug-in 8-pin ⁽¹⁾ 45 mm plug-in 8-pin ⁽¹⁾ 45 mm plug-in 11-pin ⁽²⁾ 45 mm plug-in 11-pin ⁽²⁾ 45 mm plug-in 11-pin ⁽²⁾
Sensitivity: 5 k Ω - 100 k Ω	1 single pole changeover relay 8 A	45 mm plug-in 11-pin ⁽²⁾ 45 mm plug-in 11-pin ⁽²⁾ 45 mm plug-in 11-pin ⁽²⁾

⁽¹⁾ 8-pin connector base - **Part no.: 25622080**

⁽²⁾ 11-pin connector base - **Part no.: 25622130**

Custom'able label



► C-Lynx Adapted Control:

- Based on your specifications, Crouzet can also offer a range of C-Lynx control relays adapted to your requirements:
 - Adaptation of the level of regeneration for phase failure checks,
 - Conversion of adjustable products into products with a fixed threshold,
 - Adaptation of input voltage ranges and measurement ranges,
 - Option of customising markings.

For any special applications, please contact our Micro-control sales and technical experts.



C-Lynx speed control

HSV **NEW**

84874320

24 → 240 V ~ - 50/60 Hz



C-Lynx temperature control in lifts according to EN 81

HT81 **NEW**

84874110

24 → 240 V ~ - 50/60 Hz

HT81-2 **NEW**

84874120

24 → 240 V ~ - 50/60 Hz

HWT81 **NEW**

84874130

24 → 240 V ~ - 50/60 Hz



C-Lynx pump control

HPC **NEW**

84874200

1-phase:
230 V ~ - 50/60 Hz
3-phases (self-powered):
3 x 208 → 3 x 480 V ~ - 50/60 Hz



C-Lynx motor temperature and phase control

HWTM **NEW**

84873027

24 → 240 V ~ - 50/60 Hz

HWTM2 **NEW**

84873028

24 → 240 V ~ - 50/60 Hz

Series E motor temperature control



ETM

84874015

24 V ~ - 50/60 Hz

84874013

120 V ~ - 50/60 Hz

84874014

230 V ~ - 50/60 Hz

ETM2

84874025

24 V ~ - 50/60 Hz

84874023

120 V ~ - 50/60 Hz

84874024

230 V ~ - 50/60 Hz

ETM22

84874035

24 V ~ - 50/60 Hz

84874033

120 V ~ - 50/60 Hz

84874034

230 V ~ - 50/60 Hz

Heat exchanger defrost relay for air conditioning system



NFR

88899204

90 → 260 V ~ - 50/60 Hz

C-Lynx accessories

Description Type Part number

Removable sealable covers to protect settings

For 17.5 mm casing

84800000

For 35 mm casing

84800001

Control relays

Control functions	Control values	Output relay	Casing width
Underspeed or overspeed	Time between controlled pulses: 0.05 → 0.5 s / 0.1 → 1 s / 0.5 → 5 s / 1 → 10 s / 0.1 → 1 mn / 0.5 → 5 mn / 1 → 10 mn	1 single pole changeover relay 5 A	35 mm
Undertemperature and overtemperature (window)	Input Pt100 3-wire Low threshold: -1°C → +11°C High threshold: +34°C → +46°C	1 single pole changeover relay 5 A	35 mm
Undertemperature and overtemperature (window)	Input Pt100 3-wire Low threshold: -1°C → +11°C High threshold: +34°C → +46°C	2 N/O relays 5 A	35 mm
Undertemperature and overtemperature (window)	Input Pt100 3-wire Low threshold: -1°C → +11°C High threshold: +34°C → +46°C	2 N/O relays 5 A	35 mm
Phase failure and phase sequence	3 x 208 → 3 x 480 V ~ - 50/60Hz		
3-phase network monitoring	-	1 single pole changeover relay 5 A	35 mm
Phase failure and phase sequence	208 → 480 V ~ - 50/60 Hz		
Undercurrent or overcurrent (window)	1 A → 10 A ~		
Phase failure and phase sequence	208 → 480 V ~ - 50/60 Hz	2 N/O relays 5 A	35 mm
Thermal protection	PTC		
Phase failure and phase sequence	208 → 480 V ~ - 50/60 Hz	2 N/O relays 5 A	35 mm
Thermal protection	PTC		
Test	-		
Latching	-		
Thermal protection	PTC	1 N/O relay 8 A	22.5 mm
Thermal protection	PTC	1 single pole changeover relay 8 A	22.5 mm
Thermal protection	PTC	1 single pole changeover relay 8 A	22.5 mm
Frost formation monitored by temperature probe (length: 1.60 m)	Temperature of the exchanger < -3°C	1 single pole changeover relay 8 A	22.5 mm 6.35 mm Faston connectors

Example:

M

W

S

□

Casing width

M

17.5 mm

H

35 mm

E

22,5 mm

F

45 mm

L

Plug-in 45 mm

□

Control functions

W

Phase

I

Current

HZ

Frequency

U

Voltage

3U

3-phase voltage

N

Level

SV

Underspeed

P

Pump control

T81

Temperature of lift machine room

WT

Phase + Temperature of lift machine room

T

Temperature

□

Function details

DIN rail mounted timers

Description	Type	Part number	Power supply	Functions (see pages 28-31)
Electronic timers				
Chronos 2 range - 17.5 mm				
	MUR4	88826100	12 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	MUR3	88826103	12 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	MUR1	88826105	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	MAR1	88826115	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	A-At
	MBR1	88826125	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	B
	MCR1	88826135	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	C
	MHR1	88826145	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	H-Ht
	MLR1	88826155	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	Li-L
	MXR1	88826185	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	Ad-Ah-N-O-P-Pt-TL-Tt-W
	MURc3	88826503	12 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	MUS2	88826004	24 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	MAS5	88826014	24 $\rightarrow$ 240 V $\sim$	A
	MHS2	88826044	24 $\rightarrow$ 240 V $\sim$	H
	MLS2	88826054	24 $\rightarrow$ 240 V $\sim$	Li-L
Chronos 2 range - 22.5 mm				
	TUR4	88865100	12 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	TUR3	88865103	12 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	TUR1	88865105	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	TAR1	88865115	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	A-At
	TBR1	88865125	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	B
	TCR1	88865135	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	C
	THR1	88865145	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	H-Ht
	TLR1	88865155	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	Li-L
	TQR1	88865175	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	Q
	TQR6	88865176	230 $\rightarrow$ 400 V $\sim$	Q
	TXR1	88865185	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	Ad-Ah-N-O-P-Pt-TL-Tt-W
	TXR4	88865180	12 V $\sim$	Ad-Ah-N-O-P-Pt-TL-Tt-W
	TURc3	88865503	12 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	TA2R1	88865215	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	A-At
	TU2R4	88865300	12 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	TU2R3	88865303	12 $\rightarrow$ 230 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	TU2R1	88865305	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	TX2R1	88865385	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	Ad-Ah-N-O-P-Pt-TL-Tt-W
	TK2R1	88865265	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	K
Chronos 2 range - 35 mm plug-in				
	OUR4	88867100	12 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	OUR3	88867103	12 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	OUR1	88867105	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	OCR1	88867135	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	C
	OLR1	88867155	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	Li-L
	OA2R1	88867215	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	A
	PA2R1	88867415	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	A-At
	PC2R1	88867435	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	C
	PL2R1	88867455	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	Li-L
	PU2R4	88867300	12 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	PU2R3	88867303	12 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht
	PU2R1	88867305	24 V $\sim$ / 24 $\rightarrow$ 240 V $\sim$	A-Ac-At-B-Bw-C-D-Di-H-Ht

Timing	Outputs	Rated current	Casing width	Connection
0 → 1 s / 1 → 10 s / 0.1 → 1 min / 1 → 10 min / 0.1 → 1 h / 1 → 10 h / 10 → 100 h /	1 timed changeover relay	8 A	17.5 mm	Screw terminals
	1 timed changeover relay	8 A	17.5 mm	Screw terminals
	1 timed changeover relay	8 A	17.5 mm	Screw terminals
	1 timed changeover relay	8 A	17.5 mm	Screw terminals
	1 timed changeover relay	8 A	17.5 mm	Screw terminals
	1 timed changeover relay	8 A	17.5 mm	Screw terminals
	1 timed changeover relay	8 A	17.5 mm	Screw terminals
	1 timed changeover relay	8 A	17.5 mm	Screw terminals
	1 timed changeover relay	8 A	17.5 mm	Screw terminals
	1 timed changeover relay	8 A	17.5 mm	Screw terminals
	1 timed changeover relay	8 A	17.5 mm	Screw terminals
	1 timed changeover relay	8 A	17.5 mm	Spring terminals
	Solid state	0.7 A	17.5 mm	Screw terminals
	Solid state	0.7 A	17.5 mm	Screw terminals
	Solid state	0.7 A	17.5 mm	Screw terminals
	Solid state	0.7 A	17.5 mm	Screw terminals
0 → 1 s / 1 → 10 s / 0.1 → 1 min / 1 → 10 min / 0.1 → 1 h / 1 → 10 h / 10 → 100 h /	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	1 timed changeover relay	8 A	22.5 mm	Screw terminals
	2 timed changeover relay	8 A	22.5 mm	Spring terminals
	2 timed changeover relays ⁽¹⁾	8 A	22.5 mm	Screw terminals
	2 timed changeover relays ⁽¹⁾	8 A	22.5 mm	Screw terminals
0.06 → 0.6 s / 0.25 → 2.5 s / 2 → 20 s / 16 → 160 s	2 timed changeover relays ⁽¹⁾	8 A	22.5 mm	Screw terminals
1 s / 10 s / 1 min / 10 min / 1 h / 10 h / 100 h	1 timed changeover relay	8 A	35 mm	Plug-in 8-pin ⁽²⁾
	1 timed changeover relay	8 A	35 mm	Plug-in 8-pin ⁽²⁾
	1 timed changeover relay	8 A	35 mm	Plug-in 8-pin ⁽²⁾
	1 timed changeover relay	8 A	35 mm	Plug-in 8-pin ⁽²⁾
	1 timed changeover relay	8 A	35 mm	Plug-in 8-pin ⁽²⁾
	1 timed changeover relay	8 A	35 mm	Plug-in 8-pin ⁽²⁾
	2 timed changeover relay	8 A	35 mm	Plug-in 8-pin ⁽²⁾
	2 timed changeover relay	8 A	35 mm	Plug-in 11-pin ⁽³⁾
	2 timed changeover relay	8 A	35 mm	Plug-in 11-pin ⁽³⁾
	2 timed changeover relays	8 A	35 mm	Plug-in 11-pin ⁽³⁾
	2 timed changeover relays ⁽¹⁾	8 A	35 mm	Plug-in 11-pin ⁽³⁾
	2 timed changeover relays ⁽¹⁾	8 A	35 mm	Plug-in 11-pin ⁽³⁾
	2 timed changeover relays ⁽¹⁾	8 A	35 mm	Plug-in 11-pin ⁽³⁾

⁽¹⁾ or 1 timed & 1 instantaneous

⁽²⁾ 8-pin connector base - Part no.: 25622080

⁽³⁾ 11-pin connector base - Part no.: 25622130



Description	Type	Part number	Power supply	Functions (see pages 28-31)	
Miniatures range - 21 x 27 mm					
	RTMA2	88895201	12 V ---	A	
		88895202	24 V ---		
		88895203	24 V $\sim$		
		88895206	110 V $\sim$		
		88895207	230 V $\sim$		
	RTMA4	88896201	12 V ---		A
		88896202	24 V ---		
		88896203	24 V $\sim$		
		88896206	110 V $\sim$		
		88896207	230 V $\sim$		
RTM Accessories	26532702	Spring clips for DIN rail mounting base			
	26532706	Base for DIN rail mounting RTMA4			
	26532707	Base for DIN rail mounting RTMA2			
	26532708	PCB base RTMA4			
	26532709	PCB base RTMA2			
Electromechanical timers					
TOP 2000 range					
	6 s - 12 min	88225011	220 $\rightarrow$ 240 V $\sim$	2-3-4	
		88225012	110 $\rightarrow$ 127 V $\sim$		
		88225013	24 V $\sim$		
		88225019	42 $\rightarrow$ 48 V $\sim$		
	6 min - 12 h	88225014	220 $\rightarrow$ 240 V $\sim$	2-3-4	
		88225015	110 $\rightarrow$ 127 V $\sim$		
		88225016	24 V $\sim$		
		88225017	42 $\rightarrow$ 48 V $\sim$		



► Adapted Control timer:

■ To satisfy the requirements of equipment manufacturers, Crouzet offers an adapted range of DIN rail mounted timers with solid state output: the **S series**

- ☐ Mono-function
- ☐ Single-range
- ☐ Mono-voltage
- ☐ Timing fixed or adjustable by external or built-in potentiometer.

On request, Crouzet can modify output contacts, remove the mounting brackets and even reduce the dimensions.

■ Based on your specifications, Crouzet can also adapt any other DIN rail- or panel-mounted timer:

- ☐ Conversion of adjustable timing products into products with fixed timing
- ☐ Other timing ranges
- ☐ Adaptation of the output power
- ☐ Customer labelling.

For any special applications, please contact our Micro-control sales and technical experts.

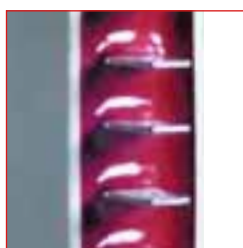
Timers

Timing	Outputs	Rated current	Casing width	Connection
■ 0 → 1 s ■ 1 → 10 s ■ 0.1 → 1 min ■ 1 → 10 min ■ 0.1 → 1 h ■ 1 → 10 h ■ 10 → 100 h	2 timed changeover relays	5 A	21 mm	Plug-in 8-pin
■ 0 → 1 s ■ 1 → 10 s ■ 0.1 → 1 min ■ 1 → 10 min ■ 0.1 → 1 h ■ 1 → 10 h ■ 10 → 100 h	4 timed changeover relays	5 A	21 mm	Plug-in 14-pin

6 s → 12 min	1 time changeover relay & 1 instantaneous	5 A	48 mm	Screw terminals
6 min → 12 h	1 time changeover relay & 1 instantaneous	5 A	48 mm	Screw terminals



■ Resin-coated for sealed protection.



■ Connection by 6.35 mm Faston connectors.



■ Dedicated version for compressors and heat pumps (prevention of compressor short-cycling, percentage timer).

Panel-mounted timers

Description	Type	Part number	Power supply	Functions (see pages 28-31)				
Electronic timers - ANALOGUE								
TMR 48 range								
	TMR48 A	88886106	12 → 240 V $\overline{\sim}$ / 24 → 240 V $\sim$	A				
	TMR48 X	88886116	12 → 240 V $\overline{\sim}$ / 24 → 240 V $\sim$	A1, A2, H1, H2, Q1, Q2, D-Di				
	TMR48 U	88886016	12 → 240 V $\overline{\sim}$ / 24 → 240 V $\sim$	A, B, C, W, G, Ac, Bw				
	TMR48 L	88886516	12 → 240 V $\overline{\sim}$ / 24 → 240 V $\sim$	L/Li, G/Gi				
	TMR Accessories	25622080	11-pin connector base					
		25622130	8-pin connector base					
		79237739	Spring clips					
		79694002	11-pole rear base					
		25622203	8-pole rear base					
	MBA range							
	MBA2F	88901308	100 → 240 V $\sim$	A				
		88901328						
		88901348						
		88901378						
		88901398						
	MBA3F	88901302	24 V $\overline{\sim}$	A				
		88901322						
		88901342						
		88901372						
		88901392						
		Electronic timers - DIGITAL						
		TIMER 8xx range with LCD display						
		812	88857400	220 → 240 V $\sim$	A			
88857406			110 V $\sim$					
88857409			24 V $\sim$					
814		88857003	12 V $\overline{\sim}$ / 24 → 48 V $\sim$	A, B, C, D, Di, H				
		88857005	24 V $\sim$ / 110 → 240 V $\sim$	A, B, C, D, Di, H				
		88857103	12 V $\overline{\sim}$ / 24 → 48 V $\sim$	A, B, C, D, Di, H				
815		88857105	24 V $\sim$ / 110 → 240 V $\sim$	A, B, C, D, Di, H				
		88857301	24 V $\overline{\sim}$ / 220 → 240 V $\sim$	A1, A2, AM, Amt				
		88857302	12 V $\overline{\sim}$ / 42 → 48 V $\sim$					
88857307		24 V $\sim$ / 110 V $\sim$						
816		88857601	24 V $\sim$ / 220 → 240 V $\sim$	A, B, C, D, Di, H				
		88857604	24 V $\sim$ / 48 $\sim$					
		88857607	24 V $\sim$ / 110 V $\sim$					
		88857701	24 V $\sim$ / 220 → 240 V $\sim$	A, B, C, D, Di, H				
		88857704	24 V $\sim$ / 110 V $\sim$					
		TIMER 8xx Accessories	25622301		8-pin solder tag connector			
25622076			11-pin solder tag connector					
79237739			Spring clips					
25622080			11-pin connector base					
25622130			8-pin connector base					
79694002			11-pole rear base					
25622203			8-pole rear base					

Timers

Timing	Outputs	Rated current	Casing width	Connection
0.02 → 1.2 s / 0.05 → 3 s / 0.2 → 12 s / 0.5 → 30 s / 2 → 120 s / 5 → 300 s / 0.2 → 12 min / 0.5 → 30 min / 2 → 120 min / 5 → 300 min / 0.2 → 12 h / 0.5 → 30 h / 2 → 120 h / 5 → 300 h	2 timed changeover relays	5 A	48 mm	Plug-in 8-pin
	2 timed changeover relays (or 1 timed & 1 instantaneous)	5 A	48 mm	Plug-in 8-pin
	2 timed changeover relays	5 A	48 mm	Plug-in 11-pin
	2 timed changeover relays	5 A	48 mm	Plug-in 11-pin
0.1 s → 1 s 0.5 s → 10 s 3 s → 60 s 0.5 min → 10 min 3 min → 60 min	Solid state	400 mA	Ø 22 mm	Screw terminals
0.1 s → 1 s 0.5 s → 10 s 3 s → 60 s 0.5 min → 10 min 3 min → 60 min	Solid state	200 mA	Ø 22 mm	Screw terminals
99,99 s / 999,9 s / 9999 s / 99 min 59 s / 99,99 min / 999,9 min / 9999 min / 99h59 min / 99,99 h / 999,9 h / 9999 h	2 timed double changeover relays	2 x 5 A	48 mm	Plug-in 8-pin
	1 timed changeover relay	8 A	48 mm	Plug-in 8-pin
	1 changeover relay (timed or instantaneous)	8 A	48 mm	Plug-in 8-pin
	1 changeover relay (timed or instantaneous)	8 A	48 mm	Plug-in 11-pin
	1 timed changeover relay	8 A	48 mm	Plug-in 11-pin
	1 changeover relay (timed or instantaneous)	2 x 8 A	48 mm	Plug-in 11-pin
	1 timed changeover relay	8 A	48 mm	Plug-in 8-pin
	1 timed changeover relay	8 A	48 mm	Plug-in 11-pin

Logic controllers

Power supplies

Control relays

Timers

Counters /
Rate meters

Temperature
controllers

Safety products

Description	Type	Part number	Power supply	Functions (see pages 28-31)
Electromechanical timers				
TOP 2000 range				
	6 s - 12 min	88226011	220 → 240 V ~	2-3-4
		88226012	110 → 127 V ~	
		88226013	24 V ~	
		88226019	42 → 48 V ~	
		88226501	24 V ~	
		88226502	42 → 48 V ~	
		88226503	110 → 127 V ~	
		88226504	220 → 240 V ~	
	6 min - 12 h	88226014	220 → 240 V ~	2-3-4
		88226015	110 → 127 V ~	
		88226016	24 V ~	
		88226017	42 → 48 V ~	
		88226505	24 V ~	
		88226506	42 → 48 V ~	
		88226507	110 → 127 V ~	
		88226508	220 → 240 V ~	
TOP 2000 Accessories	25622301	8-pin solder tag connector		
	25622130	8-pin connector base		
Manual reset range				
	882564 Single-pole	88256401	127 V ~ / 230 V ~	A
		88256402		
		88256403		
		88256404		
		88256405		
		88256406		
		88256407		
		88256408		
	882565 2-pole	88256506	127 V ~ / 230 V ~	A
		88256507		
		88256508		
		88256509		
		88256510		
		88256511		
		88256512		
		88256513		
	882569 3-pole	88256906	127 V ~ / 230 V ~	A
		88256907		
		88256908		
		88256909		
		882569110		
		882569111		
		882569112		
		882569113		

Timers

Timing	Outputs	Rated current	Casing width	Connection
6 s → 12 min	1 timed changeover relay & 1 instantaneous	5 A	48 mm	Plug-in 8-pin
6 s → 12 min	1 timed changeover relay & 1 instantaneous	5 A	48 mm	Screw terminals
6 min → 12 h	1 timed changeover relay & 1 instantaneous	5 A	48 mm	Plug-in 8-pin
6 min → 12 h	1 timed changeover relay & 1 instantaneous	5 A	48 mm	Screw terminals
5 min (max. display time: 4 min 40 s) 15 min (max. display time: 14 min) 30 min (max. display time: 28 min) 60 min (max. display time: 56 min) 120 min (max. display time: 1 h 53 min) 5 h (max. display time: 4 h 43 min) 15 h (max. display time: 14 h 10 min) 30 h (max. display time: 28 h 20 min)	1 timed changeover	16 A	55 mm	6.35 mm Faston connectors
5 min (max. display time: 4 min 40 s) 15 min (max. display time: 14 min) 30 min (max. display time: 28 min) 60 min (max. display time: 56 min) 120 min (max. display time: 1 h 53 min) 5 h (max. display time: 4 h 43 min) 15 h (max. display time: 14 h 10 min) 30 h (max. display time: 28 h 20 min)	2 timed changeovers	16 A	55 mm	6.35 mm Faston connectors
5 min (max. display time: 4 min 40 s) 15 min (max. display time: 14 min) 30 min (max. display time: 28 min) 60 min (max. display time: 56 min) 120 min (max. display time: 1 h 53 min) 5 h (max. display time: 4 h 43 min) 15 h (max. display time: 14 h 10 min) 30 h (max. display time: 28 h 20 min)	3 timed changeovers	16 A	55 mm	6.35 mm Faston connectors

Logic controllers

Power supplies

Control relays

Timers

Counters /
Rate meters

Temperature
controllers

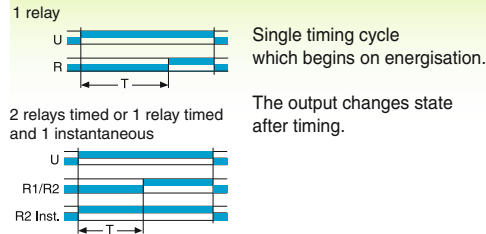
Safety products

Generic functions

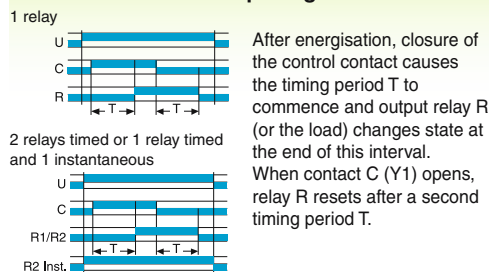
This section contains all the function diagrams for Crouzet timers.

U : Supply
R : Output or load relay
T : Timing
C (Y1) : Control contact
∞ : indefinite

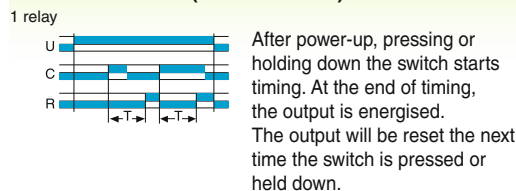
→ Function A: Delay on energisation



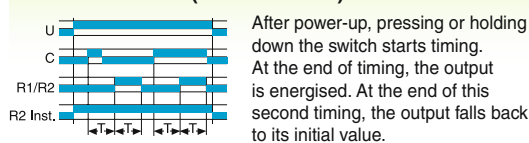
→ Function Ac: Timing after closing and opening of control contact



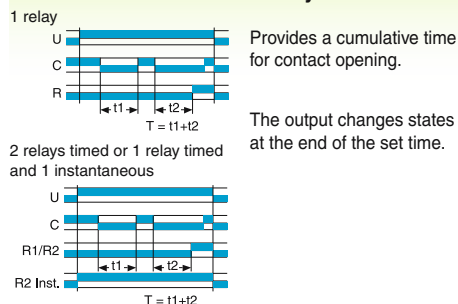
→ Function Ad: Delay on energisation by switch (not resettable)



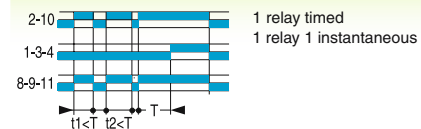
→ Function Ah: Flashing single cycle by switch (not resettable)



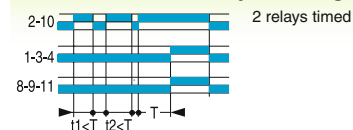
→ Function At: Timing on energisation with memory



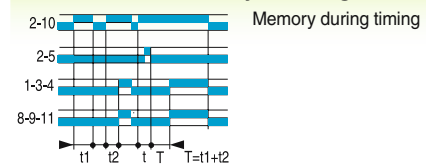
→ Function A1: Delay on energisation



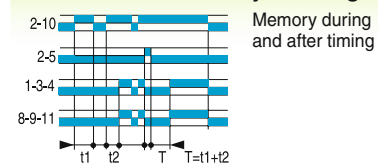
→ Function A2: Delay on energisation



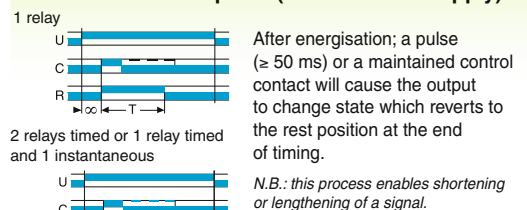
→ Function AM: Delay on energisation



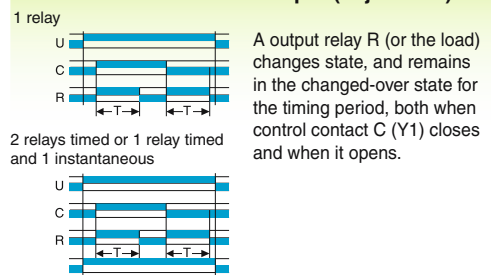
→ Function AMt: Delay on energisation



→ Function B: Timing on impulse one shot On pulse (with constant supply)

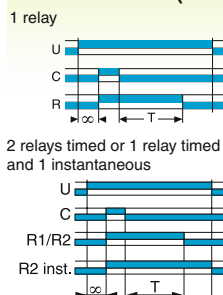


→ Function Bw: Pulse output (adjustable)



U : Supply
R : Output or load relay
T : Timing
C (Y1) : Control contact
 ∞ : indefinite

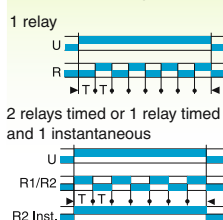
→ Function C: Timing after impulse Delay OFF (with constant supply)



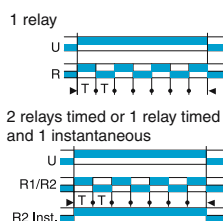
After energisation, once the control contact is closed the output state changes. Timing will only begin on the re-opening of this control contact (one shot). Relay R returns to its initial position at the end of the timing period.

→ Function D or Di: Symmetric recycler

Repetitive cycle which switches the output alternately between the rest and operating position for equal time bases. $T1 + T2 = T$ total

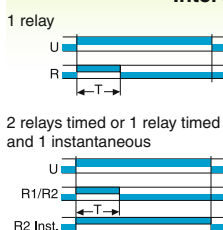


Function D: the cycle begins with the output in rest position. Pause start.



Function Di: the cycle begins with the output in the operating position. Pulse start.

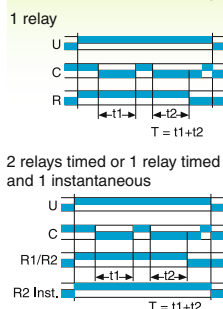
→ Function H: Timing on energisation Interval timer - one shot



On energisation, the output changes state, remains in that state for the duration of timing and resets at the end of the single cycle.

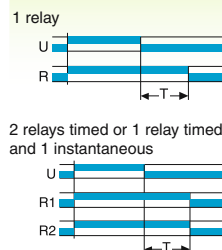
N.B. This is complementary to function A.

→ Function Ht: Delay on energisation with memory



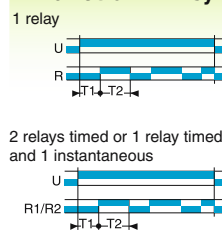
Provides a cumulative time for contact opening. On energisation, the output changes state, remains in that state for the duration of timing and resets at the end of the single cycle.

→ Function K: Delay on de-energisation - True delay OFF



On energisation, the output changes state. On de-energisation timing commences and the output only returns to the reset condition after timing.

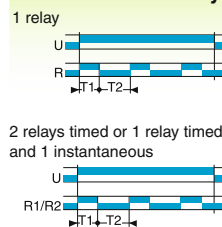
→ Function L: Asymmetric recycler



Repetitive cycle comprising 2 independent adjustable time bases. Each time base corresponds alternately to a different output state.

N.B.: The cycle starts with the output in the rest position.

→ Function Li: Asymmetric recycler



Repetitive cycle comprising 2 independent adjustable time bases. Each time base corresponds alternately to a different output state.

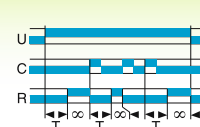
N.B.: The cycle starts with the output in the operating position.

→ Function N: "Safe-guard"



At the first control pulse the output is energised. To complete the timing the interval between the two control pulses must be greater than the timing set.

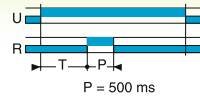
→ Function O: "Delayed safe-guard"



On energisation, a first timing sequence occurs and the output changes state. With the closing of the control contact, the output resets and the timing starts, with the output being activated after timing. For the timing to be completed, the interval between the closing of two control contacts must be greater than the timing set.

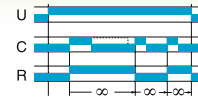
U : Supply
R : Output or load relay
T : Timing
C (Y1) : Control contact
 ∞ : indefinite

→ Function P: Delayed fixed-length pulse



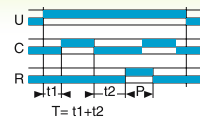
Timing begins on energisation. At the end of the timing period output relay R (or the load) changes state for a period of approximately 500 ms.

→ Function TL: Impulse relay



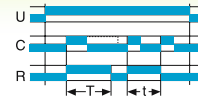
After power-up, pressing or holding down the switch closes the relay. Pressing the switch a second time opens the relay.

→ Function Pt: Impulse counter (delay on)



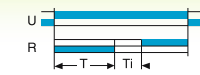
Calculates the total opening time of a contact. At the end of timing, the output is energised for approximately 500 ms.

→ Function Tt: Timed impulse relay



After power-up, pressing or holding down the switch closes the relay and starts timing. The relay opens at the end of timing or when the switch is pressed a second time.

→ Function Q: "Star-delta"



At the end of timing, the output is not energised. It remains "open" (not conducting) and will only change state after the fixed time of T_i has elapsed. Dwell time selectable

→ Function W: Timing after pulse on control contact



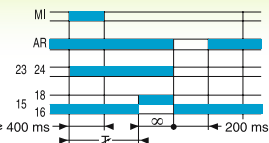
After energisation, if the control contact opens it causes output relay R (or the load) to change state and timing to start. At the end of the timing period, relay R resets to its original state.

► Dedicated functions TOP2000

→ Function 2:



→ Function 3:



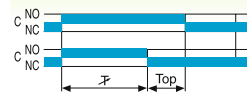
→ Function 4:



→ 1 pole:



→ 2 poles:

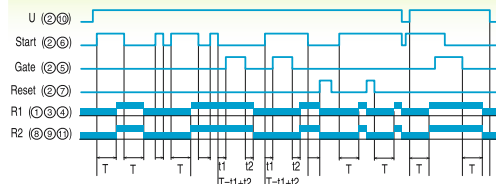


→ 3 poles:

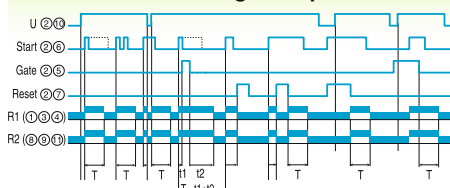


TMR48 dedicated functions

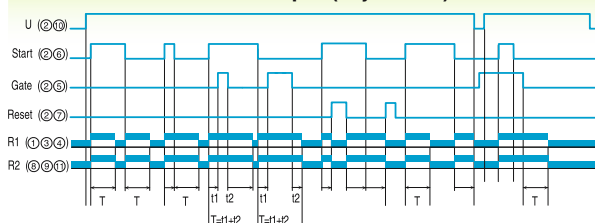
→ Function Ac: Timing after closing and opening of control contact



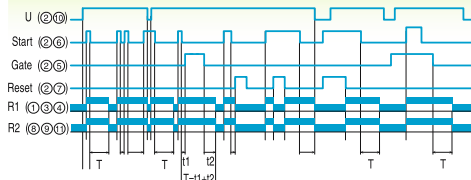
→ Function B: Timing on impulse



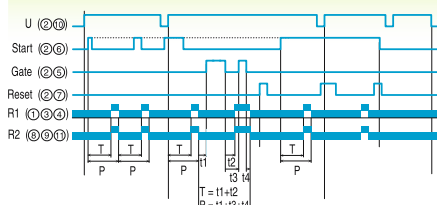
→ Function Bw: Pulse output (adjustable)



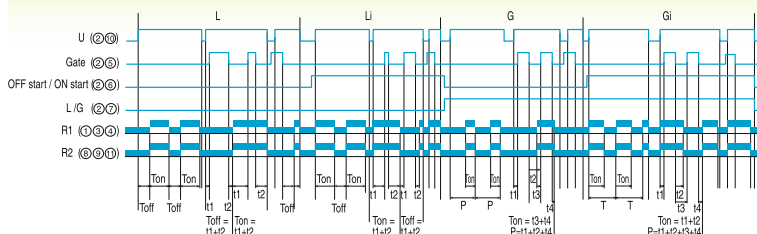
→ Function C: Timing after impulse - Delay off with constant supply



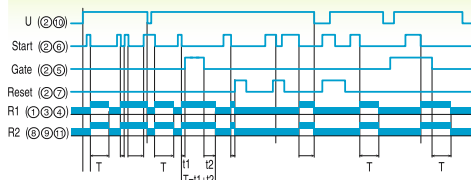
→ Function G: Cyclic function



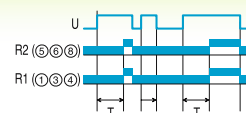
→ Function L/LiG/Gi: Asymmetric recycler



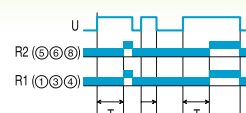
→ Function W: Timing after impulse on control contact



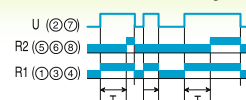
→ Function A TMR48 A: Delay on energisation



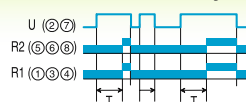
→ Function A TMR48 U: Delay on energisation



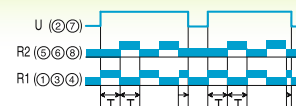
→ Function A1: Delay on energisation



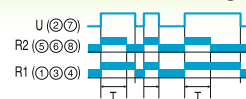
→ Function A2: Delay on energisation



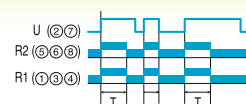
→ Function D-Di: Symmetric recycler



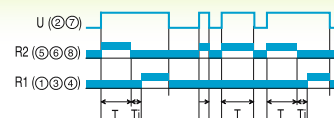
→ Function H1: Timing on energisation



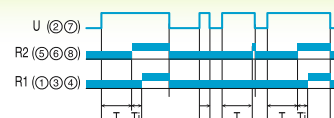
→ Function H2: Timing on energisation



→ Function Q1: Star-delta



→ Function Q2: Star-delta 2



Electronic counters

Description	Type	Part number	Power supply	Functions
With preselection				
Multifunction up/down counters - CPT4 range				
	CPT4 - LCD NEW 1 preset	87620111	12 → 24 V $\overline{\text{---}}$	■ Preselection counter
		87620112	24 V $\sim$	■ Ratemeter
		87620113	115 V $\sim$	■ Timer
		87620114	230 V $\sim$	■ Multi-totaliser
	CPT4 - LCD NEW 2 presets	87620121	12 → 24 V $\overline{\text{---}}$	■ Preselection counter
		87620122	24 V $\sim$	■ Ratemeter
		87620123	115 V $\sim$	■ Timer
		87620124	230 V $\sim$	■ Multi-totaliser ■ Batch counters
	CPT4 - LED NEW 1 preset	87620211	12 → 24 V $\overline{\text{---}}$	■ Preselection counter
		87620212	24 V $\sim$	■ Ratemeter
		87620213	115 V $\sim$	■ Timer
		87620214	230 V $\sim$	■ Multi-totaliser
	CPT4 - LED NEW 2 presets	87620221	12 → 24 V $\overline{\text{---}}$	■ Preselection counter
		87620222	24 V $\sim$	■ Ratemeter
		87620223	115 V $\sim$	■ Timer
		87620224	230 V $\sim$	■ Multi-totaliser ■ Batch counters
CPT4 - Accessories NEW		87620300	Panel cut-out adaptor plate 72 x 72 mm	

Description	Type	Part number	Power supply	Functions
Without preselection				
Totalizer - CP2 range*				
	CP2 - 2108	87610340	Lithium battery	Totalizer
	CP2 - 2231	87610040	Lithium battery	Totalizer
	CP2 - 2232	87610050	Lithium battery	Totalizer
Total/partial impulse counter - CP2 range*				
	CP2 - 2293	87610240	Lithium battery	Total / partial impulse counter
	CP2 - 2294	87610250	Lithium battery	Total / partial impulse counter
Hour counters / Chronometer - CP2 range*				
	CP2 - 2108 H	87610440	Lithium battery	Hour counter / chronometer (second, minute, hour)
Hour counters - CP2 range*				
	CP2 - 2213	87610140	Lithium battery	Hour counter (second, minute, hour)
	CP2 - 2214	87610150	Lithium battery	Hour counter (second, minute, hour)
	CP2 - Accessories	26546829	Panel cut-out adaptor plate 25 x 50 mm	
		26546830	Panel cut-out adaptor plate 45 x 45 mm	
		26546831	Panel cut-out adaptor plate Ø 50 mm	

* with manual or remote reset

Counters / Ratemeters

	Max. counting speed	Type of counter inputs*	Output relay	Display	Dimension
	5 kHz	Voltage or solid state	1 changeover relay & 1 solid state	LCD screen with 6 digits (height 9 mm) Display: -99999 to 999999	48 x 48 mm
	5 kHz	Voltage or solid state	2 changeover relays & 2 solid state	LCD screen with 6 digits (height 9 mm) Display: -99999 to 999999	48 x 48 mm
	5 kHz	Voltage or solid state	1 changeover relay & 1 solid state	LCD screen with 6 digits (height 7.6 mm) Display: -99999 to 999999	48 x 48 mm
	5 kHz	Voltage or solid state	2 changeover relays & 2 solid states	LCD screen with 6 digits (height 7.6 mm) Display: -99999 to 999999	48 x 48 mm

* Input counting modes: Upcounting, Downcounting, Cumulative counting, Directional up-down counting, Independent up-down counting, Phase.

	Max. counting speed	Type of counter inputs	Output relay	Display	Dimension
	7 kHz	Volt-free contact, solid state or voltage	-	LCD screen with 6 digits (height 7 mm)	24 x 48 mm
	7.5 kHz	Solid state	-	LCD screen with 8 digits (height 7 mm)	24 x 48 mm
	40 Hz	Voltage	-	LCD screen with 8 digits (height 7 mm)	24 x 48 mm
	100 Hz	Volt-free contact or solid state	-	LCD screen with 8 digits (height 7 mm)	24 x 48 mm
	100 Hz	Voltage	-	LCD screen with 8 digits (height 7 mm)	24 x 48 mm
	7 kHz	Volt-free contact	-	LCD screen with 8 digits (height 7 mm)	24 x 48 mm
	-	Volt-free contact or solid state	-	LCD screen with 6 digits (height 7 mm)	24 x 48 mm
	-	Voltage	-	LCD screen with 6 digits (height 7 mm)	24 x 48 mm

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Electromechanical counters

Description	Type	Part number	Power supply	Functions
Without preselection				
Hour counters - CH48G range				
	CH48G Without reset	99761710	18 → 26 V ~	Hour counter (hour)
		99761711	36 → 48 V ~	
		99761712	110 → 127 V ~	
		99761714	220 → 240 V ~	
		99761715	110 → 127 V ~	
		99761716	220 → 240 V ~	
		99761718	24 → 30 V ~	
	CH48G Accessories	26546803	Connector base for DIN rail mounting	
26546805		Bezel (grey) 55 x 55 mm		
Totalizers - 24 x 28 mm range				
	Without reset	99766901	230 V ~	Totalizer
		99766902	115 V ~	
		99766904	24 V ~	
		99766907	24 V ---	
	With manual reset	99766921	230 V ~	Totalizer
		99766922	115 V ~	
		99766924	24 V ~	
		99766927	24 V ---	
Totalizers - 36 x 37 mm range				
	Without reset	99766601	230 V ~	Totalizer
		99766602	115 V ~	
		99766604	24 V ~	
		99766607	24 V ---	
	With manual reset	99766610	230 V ~	Totalizer
		99766611	115 V ~	
		99766613	24 V ~	
		99766616	24 V ---	
Totalizers - 36 x 48 mm range				
	Without reset	99766701	230 V ~	Totalizer
		99766702	115 V ~	
		99766704	24 V ~	
		99766707	24 V ---	
	With manual reset	99766710	230 V ~	Totalizer
		99766711	115 V ~	
		99766713	24 V ~	
		99766716	24 V ---	

Counters / Ratemeters

	Max. counting speed	Type of counter inputs	Output relay	Display	Dimensions
	-	Voltage	-	7 digits, including 2 decimals (height 3.8 mm)	48 x 48 mm
	-				
	-				
	-				
	-				
	-				
	-				
	50 → 60 Hz	-	-	6 digits (height 4 mm)	24 x 48 mm
	50 → 60 Hz			5 digits (height 4 mm)	24 x 48 mm
	50 → 60 Hz				
	-				
	50 → 60 Hz				
	50 → 60 Hz				
	50 → 60 Hz				
	50 → 60 Hz	-	-	6 digits (height 4 mm)	36 x 37 mm
	50 → 60 Hz			5 digits (height 4 mm)	36 x 37 mm
	50 → 60 Hz				
	-				
	50 → 60 Hz				
	50 → 60 Hz				
	50 → 60 Hz				
	50 → 60 Hz	-	-	6 digits (height 4 mm)	36 x 48 mm
	50 → 60 Hz			5 digits (height 4 mm)	36 x 48 mm
	50 → 60 Hz				
	-				
	50 → 60 Hz				
	50 → 60 Hz				
	50 → 60 Hz				

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Electronic temperature controllers

Description	Type	Part number	Voltage	Functions	Output relay 1	Output relay 2
Analogue						
CT48A range						
	CT48A	89420047	230 V ~	Heating	Relay 5 A	-
		89420067				
		89420097				
		89420077	230 V ~	Heating	Relay 5 A	-
		89420087				
		89420207	230 V ~	Heating	Relay 5 A	-
		89420217				
		89420227				
		89420237				
	89420257					
CT48A Accessories		25622301	8-pin solder tag connector			
		25622303	8-pin connector base for DIN rail and panel mounting			
		79237709	IP54 protective cover			
Digital						
CTD24 range						
	CTD24 1 alarm	89422702	24 V ~	Heating or cooling	Relay 3 A	Relay 3 A
		89422708	100 → 240 V ~			
		89422712	24 V ~	Heating or cooling	Relay 3 A	Voltage logic
		89422718	100 → 240 V ~			
		89422722	24 V ~	Heating or cooling	Voltage logic	Voltage logic
		89422728	100 → 240 V ~			
MIC48 range						
	MIC48 2 alarms	89422002	24 V ~	Heating	Relay 3 A	Relay 1 A
		89422008	100 → 240 V ~	and/or cooling		
		89422012	24 V ~	Heating	Voltage logic	
		89422018	100 → 240 V ~	and/or cooling		
		89422402 *	24 V ~	Heating	Relay 3 A	
		89422408 *	100 → 240 V ~	and/or cooling		
		89422412 *	24 V ~	Heating	Voltage logic	
		89422418 *	100 → 240 V ~	and/or cooling		
CTD43 range						
	CTD43 1 alarm	89421102	24 V ~	Heating or cooling	Relay 3 A	Relay 1 A
		89421108	100 → 240 V ~			
		89421112	24 V ~	Heating or cooling	Voltage logic	Relay 1 A
		89421118	100 → 240 V ~			
CTD46 range						
	CTD46 1 alarm	89422102	24 V ~	Heating or cooling	Relay 3 A	Relay 1 A
		89422108	100 → 240 V ~			
		89422112	24 V ~	Heating or cooling	Voltage logic	Relay 1 A
		89422118	100 → 240 V ~			
CTH46 range						
	CTH46	89422502	24 V ~	Heating or cooling	Relay 3 A	Relay 1 A
		89422508	100 → 240 V ~			
		89422512	24 V ~	Heating or cooling	Voltage logic	Relay 1 A
		89422518	100 → 240 V ~			
Temperature probes						
	Thermocouple	79696030		Thermocouple probe J with nickel-plated brass eyelet - max.: 400°C		
		79696031		Thermocouple probe J with stainless steel 304 casing - max.: 600°C		
		79696032		Thermocouple probe J with stainless steel 316 sheath Ø 6 mm - max.: 400°C		
		79696033		Thermocouple probe J with stainless steel 316 sheath Ø 5 mm - max.: 400°C		
		79696034		Thermocouple probe K with stainless steel 304 casing - max.: 1100°C		
	Pt100	79696035		Pt100 probe Class B with stainless steel 316 sheath - max.: 200°C		
		79696036		Pt100 probe Class B with stainless steel 316 sheath - max.: 400°C		
		79696037		Pt100 probe Class B with aluminium V6 sheath - max.: 200°C		

* Optional Modbus-Jbus RS 485 link on request for MIC 48 controllers

Temperature controllers

	Temperature	Input type	Control type	Number of displays	Dimensions	Connection
	(0 → + 250° C) (0 → + 450° C) (0 → + 600° C)	Thermocouple J	Digital or Proportional derivative selected by wiring	-	56 mm x 48 mm	Plug-in 8-pin
	(0 → + 800° C) (0 → + 1200° C)	Thermocouple K				
	(-50 → +30° C) (0 → + 40° C) (0 → + 120° C) (0 → + 200° C) (0 → + 400° C)	Resistance temperature detector Pt100 (2-wire)				
	-	Universal configurable: Resistance temperature detector Pt100 (2-3 wire) / Thermocouples J-K-R-S-L-N / Voltage	PID with auto-tune & adaptive tune	1 (4 digits)	24 mm x 48 mm	Screw terminals
	-	Resistance temperature detector PT100 (3-wire) / Thermocouples J-K-R-S-T-L-N / Voltage / Current	PID with auto-tune & adaptive tune <i>Option: load break monitoring with current transformer:</i> Part no.: 26852301 (10 A / 50 mA) Part no.: 26852302 (25 A / 50 mA) Part no.: 26852303 (50 A / 50 mA) Part no.: 26852304 (100 A / 50 mA)	2 (4 digits)	56 mm x 48 mm	Screw terminals
	-	Resistance temperature detector PT100 (3-wire) / Thermocouples J-K-L-N	PID with auto-tune & adaptive tune	1 (3 digits)	56 mm x 48 mm	Screw terminals
	-	Resistance temperature detector PT100 (3-wire) / Thermocouples J-K-L-N	PID with auto-tune & adaptive tune	2 (3 digits)	56 mm x 48 mm	Screw terminals
	-	Resistance temperature detector PT100 (3-wire) / Thermocouples J-K-L-N	PID with auto-tune & adaptive tune	2 (3 digits)	56 mm x 48 mm	Screw terminals

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Safety relays

Description	Type	Part number	Power supply	Functions	Levels of safety according to EN 954-1
Emergency stop and/or mobile guards					
	KNA3-XS	85100036	24 V ~	■ Emergency stops ■ Mobile guard monitoring	3
		85100037	40 → 260 V ~		
	KNA3-RS	85100434	115 V ~	■ Emergency stops ■ Mobile guard monitoring	4
		85100435	230 V ~		
		85100436	24 V ~		
	KZP3-RS	85100536	24 V ~		
Relevelling zone check					
	KZHNV-XS	85100526	24 V ~	Relevelling zone check for lifts according to EN81	4
Timed contacts					
	KZR3-RS	85100736	24 V ~	■ Emergency stops ■ Mobile guard monitoring ■ Safety timer function from 0.5 s to 30 s	4
Extension relay					
	KZE3-XS	85100936	24 V ~	Extending the number of contacts in a safety relay	Depending on main relay
	KZEC3-XS	85101936	24 V ~	Extending the number of contacts in a safety relay	Depending on main relay
Zero speed monitoring					
	KSW2-RS	85100326	24 V ~	Zero speed monitoring for a single or 3-phase motor	4
2-hand control					
 	KZH2-XS	85100626	24 V ~	Type III C "2-hand control" functions according to EN 574/97	4
	KZH3-RS	85100634	115 V ~	Type III C "2-hand control" functions according to EN 574/97	4
		85100635	230 V ~		
		85100636	24 V ~		

Safety products

	Safety contacts	Data contacts	Casing width	Connection
	3 N/O safety contacts	1 N/C signalling contact	22.5 mm	Screw terminals
	3 N/O safety contacts	1 N/C signalling contact	45 mm	Screw terminals
	2 N/O safety contacts	1 N/C signalling contact	22.5 mm	Screw terminals
	1 N/O instantaneous safety contacts 1 N/O timed safety contact 1 N/C timed safety contact	1 N/C timed signalling contact	45 mm	Screw terminals
	3 N/O safety contacts	1 N/C return loop	22.5 mm	Screw terminals
	3 N/O safety contacts	1 N/C return loop	22.5 mm	Spring terminals
	1 N/O safety contacts 1 N/C safety contact	Separate return loop	45 mm	Screw terminals
	2 N/O safety contacts	-	22.5 mm	Screw terminals
	3 N/O safety contacts	1 N/C signalling contact	45 mm	Screw terminals

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25000000				
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25622080	11-pin connector base	-	Accessory	17 / 21 / 24
25622130	8-pin connector base	-	Accessory	17 / 21 / 24 / 26
25622203	8-pole rear base	-	Accessory	24-25
25622301	8-pin solder tag connector	-	Accessory	24 / 26 / 36
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