
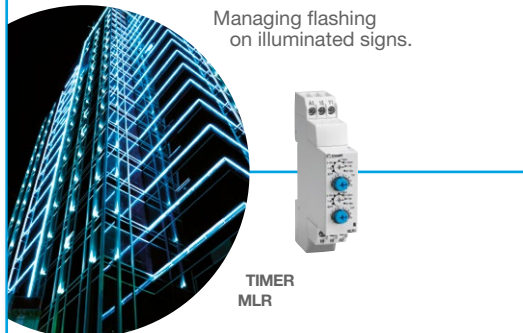




# APPLICATIONS

## WHERE ARE CHRONOS TIMERS FOUND?

In electrical cabinets associated with other automation functions for the following markets:

- Food industry
- Industrial automation systems
- Lighting
- Building equipment
- HVAC
- Small or large industrial machines

<p><b>Packaging</b></p>  <p>Controlling heat sealing times on blister packs, packaging bags, etc.</p> <p>TIMER MAR1, MUR1, MXR1</p>	<p><b>Illuminated signs</b></p>  <p>Managing flashing on illuminated signs.</p> <p>TIMER MLR</p>
<p><b>Ice maker</b></p>  <p>Managing the duration of refrigeration.</p> <p>TIMER TUR1, MUR, MAR</p>	<p><b>Lighting for mobile homes</b></p>  <p>Managing the duration of outdoor lighting of a mobile home if the light switch is left switched on.</p> <p>TIMED IMPULSE RELAY MXR</p>

Discover the full Crouzet timers range on [control.crouzet.com](http://control.crouzet.com)



CONTROL

# THE BASICS

## Crouzet,

a brand of Custom Sensors & Technologies, is a specialist in electromechanical, electronic technology, and software engineering. Based on Crouzet's 50 years of experience in time management, as well as experience in physical and mechanical values, we offer a range of automation components that includes: logic controllers, timers, control relays, counters, tachometers, machine safety equipment, and temperature controllers.

These products are particularly suited for use in water treatment, waste processing, renewable energy, HVAC, access control, building equipment, agriculture and industrial automation markets.

This document gives an overview of **the Chronos 2 DIN rail mounted timers.**



These timers are available in 3 casings:

- DIN rail modular casing (width: 17.5 mm)
- DIN rail industrial casing (width: 22.5 mm)
- Plug-in industrial casing (width: 35 mm).

## FEATURES OF THE CHRONOS 2 TIMERS

- Available in **mono-** or **multifunction** versions, to meet the specific needs of each application.
- **A timing range** of up to 100 hrs to cope with prolonged processing operations.
- **A range of power** supplies from 12 to 240 V in one unit for optimised stocks.
- Recognised **quality** and **reliability** ensures the correct operation of equipment.

# CHRONOS 2 TIMERS

## TIME MANAGEMENT



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# SELECTION GUIDE

## CHRONOS 2 DIN RAIL MOUNTED TIMERS

DIN rail modular casings - The 17.5 mm range will migrate to new part numbers. The chart below shows the new part numbers

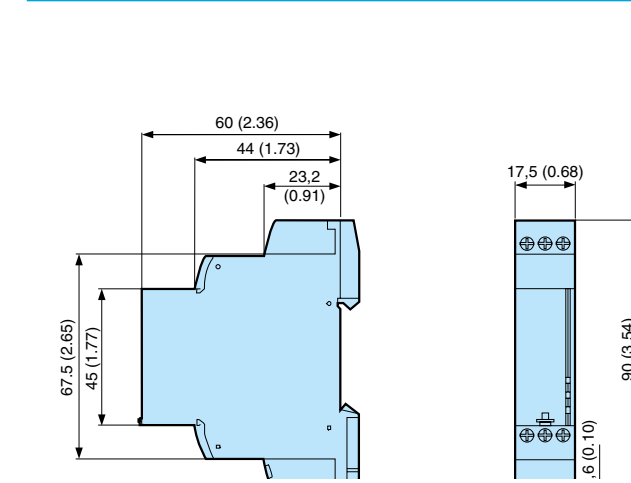
Casing width (mm)	Connections	Functions	Type of output	Output(s)	Timing	Supply	New part number	Old part number	Type
17.5	Screw terminals	A / At / B / C / H / Ht	Relay	1 x 8 A changeover	0.1 s $\Rightarrow$ 100 h	24 V $\overline{\text{---}}$ / 24 $\Rightarrow$ 240 V $\sim$	88 827 105	88 826 105	MUR1
		Di / D / Ac / Bw					88 827 115	88 826 115	MAR1
		A / At					88 827 125	88 826 125	MBR1
		B					88 827 135	88 826 135	MCR1
		C					88 827 145	88 826 145	MHR1
17.5	Screw terminals	H / Ht	Relay	1 x 8 A changeover	0.1 s $\Rightarrow$ 100 h	24 V $\overline{\text{---}}$ / 24 $\Rightarrow$ 240 V $\sim$	88 827 150	88 826 150	MLR4
		L / Li					88 827 155	88 826 155	MLR3
		A / At / B / C / H / Ht					88 827 100	88 826 100	MUR4
		Di / D / Ac / Bw					88 827 103	88 826 103	MUR3
		Ad / Ah / N / O / P					88 827 503	88 826 503	MURc3
17.5	Screw terminals	Pt / TL / Tl / W	Solid state	0.7 A	0.1 s $\Rightarrow$ 100 h	24 V $\overline{\text{---}}$ / 24 $\Rightarrow$ 240 V $\sim$	88 827 185	88 826 185	MXR1
		A / At / B / C / H / Ht					88 827 004	88 826 004	MUS2
		Di / D / Ac / Bw					88 827 014	88 826 014	MAS5
		A					88 827 044	88 826 044	MHS2
		H / Ht					88 827 054	88 826 054	MLS2

### Naming of Chronos 2 timers

M	U	$\phi/2$	R	1
Dimensions	Functions	Output(s)	Type of output	Supply
M: 17.5 mm	A: A function	$\phi$ : 1 Output	R: Relay	1: 24 V $\overline{\text{---}}$ / 24 $\Rightarrow$ 240 V $\sim$
T: 22.5 mm	B: B function	2: 2 Outputs	S: Solid state	2: 24 $\Rightarrow$ 240 V $\sim$
R: 22.5 mm	C: C function			3: 12 $\Rightarrow$ 240 V $\overline{\text{---}}$
O: Plug-in 8 pins	H: H function			4: 12 V $\overline{\text{---}}$
P: Plug-in 11 pins	L: L function			5: 24 $\Rightarrow$ 240 V $\overline{\text{---}}$
	Q: Q function			6: 230 $\Rightarrow$ 440 V $\sim$
	U: Multifunction (A-At-B-C-H-Ht-Di-D-Ac-Bw)			
	X: Multifunction (Ad-Ah-N-O-P-Pt-TL-Tl-W)			

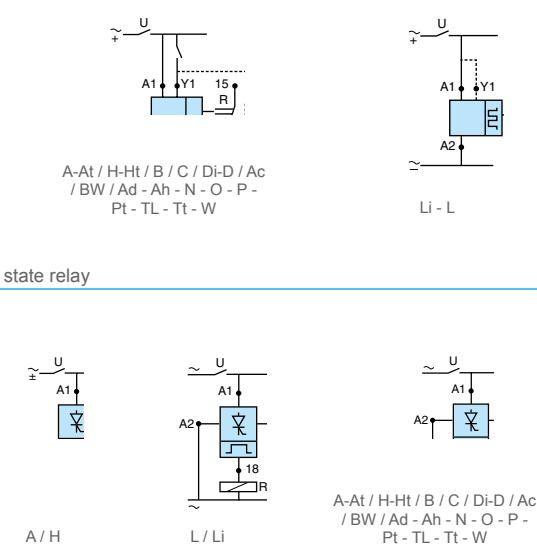
### Dimensions in mm (inches)

DIN rail modular casings (17.5 mm)



### Connections

One changeover relay output



### DIN rail industrial casings

Casing width (mm)	Connections	Functions	Type of output	Output(s)	Timing	Supply	Part number	Type
22.5	Screw terminals	A / At / B / C / H / Ht	Relay	1 x 8 A changeover	0.1 s $\Rightarrow$ 100 h	24 V $\overline{\text{---}}$ / 24 $\Rightarrow$ 240 V $\sim$	88 865 105	TUR1
		Di / D / Ac / Bw					88 865 115	TAR1
		A / At					88 865 125	TBR1
		B					88 865 135	TCR1
		C					88 865 145	THR1
		H / Ht					88 865 155	TLR1
		L / Li					88 865 175	TQR1
		Q					88 865 175	RQR1*
		K					88 865 265	TK2R1
		22.5					Screw terminals	A / At / B / C / H / Ht
Di / D / Ac / Bw	88 866 300		RU2R4*					
A / At	88 865 100		TUR4					
A / At / B / C / H / Ht	88 865 215		TA2R1					
Di / D / Ac / Bw	88 866 215		RA2R1*					
Ad / Ah / N / O / P	88 865 103		TUR3					
Pt / TL / Tl / W	88 865 503		TURc3					
Q	88 865 385		TX2R1					
A / At / B / C / H / Ht	88 866 385		RX2R1*					
Di / D / Ac / Bw	88 865 185		TXR1					
22.5	Screw terminals	Q	Relay	1 x 8 A changeover	0.1 s $\Rightarrow$ 100 h	24 V $\overline{\text{---}}$ / 24 $\Rightarrow$ 240 V $\sim$	88 865 176	TQR6
		A / At / B / C / H / Ht					88 866 176	RQR6*
		Di / D / Ac / Bw					88 865 303	TU2R3
		A / At / B / C / H / Ht					88 866 303	RU2R3*
		Di / D / Ac / Bw					88 865 305	TU2R1
		A / At / B / C / H / Ht					88 866 305	RU2R1*
		Di / D / Ac / Bw					88 866 305	RU2R1*
		1 x 8 A changeover					88 867 105	OUR1
		2 x 8 A changeover					88 867 215	OA2R1
		1 inst. or timed 8 A					88 867 135	OCR1
1 x 8 A changeover	88 867 155	OLR1						
1 x 8 A changeover	88 867 100	OUR4						
1 inst. or timed 8 A	88 867 103	OUR3						
1 x 8 A changeover	88 867 305	PU2R1						
2 x 8 A changeover	88 867 415	PA2R1						
1 inst. or timed 8 A	88 867 435	PC2R1						
1 x 8 A changeover	88 867 455	PL2R1						
1 inst. or timed 8 A	88 867 300	PU2R4						
1 inst. or timed 8 A	88 867 303	PU2R3						

### Removable industrial casings

Casing width (mm)	Connections	Functions	Type of output	Output(s)	Timing	Supply	Part number	Type
35	Removable 8-pin base	A / At / B / C / H / Ht	Relay	1 x 8 A changeover	0.1 s $\Rightarrow$ 100 h	24 V $\overline{\text{---}}$ / 24 $\Rightarrow$ 240 V $\sim$	88 867 105	OUR1
		Di / D / Ac / Bw					88 867 215	OA2R1
		A					88 867 135	OCR1
		C					88 867 155	OLR1
		L / Li					88 867 100	OUR4
		A / At / B / C / H / Ht					88 867 103	OUR3
		Di / D / Ac / Bw					88 867 305	PU2R1
		A / At					88 867 415	PA2R1
		C					88 867 435	PC2R1
		L / Li					88 867 455	PL2R1
35	Removable 11-pin base	A / At / B / C / H / Ht	Relay	1 x 8 A changeover	0.1 s $\Rightarrow$ 100 h	24 V $\overline{\text{---}}$ / 24 $\Rightarrow$ 240 V $\sim$	88 867 305	PU2R1
		Di / D / Ac / Bw					88 867 415	PA2R1
		A / At					88 867 435	PC2R1
		C					88 867 455	PL2R1
		L / Li					88 867 300	PU2R4
		A / At / B / C / H / Ht					88 867 303	PU2R3
		Di / D / Ac / Bw					88 867 303	PU2R3
		1 x 8 A changeover					88 867 105	OUR1
		2 x 8 A changeover					88 867 215	OA2R1
		1 inst. or timed 8 A					88 867 135	OCR1
1 x 8 A changeover	88 867 155	OLR1						
1 x 8 A changeover	88 867 100	OUR4						
1 inst. or timed 8 A	88 867 103	OUR3						
1 x 8 A changeover	88 867 305	PU2R1						
2 x 8 A changeover	88 867 415	PA2R1						
1 inst. or timed 8 A	88 867 435	PC2R1						
1 x 8 A changeover	88 867 455	PL2R1						
1 inst. or timed 8 A	88 867 300	PU2R4						
1 inst. or timed 8 A	88 867 303	PU2R3						

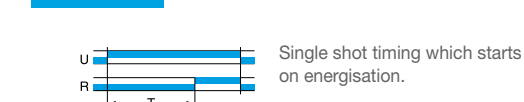
\* Available in 2014. The new part number's casings are different from the existing casings. Find out more on the technical datasheets available on [www.crouzet.com](http://www.crouzet.com)

U : Supply  
R : Output relay or load  
T : Timing  
 $\infty$  : Infinity  
C (Y1) : Command

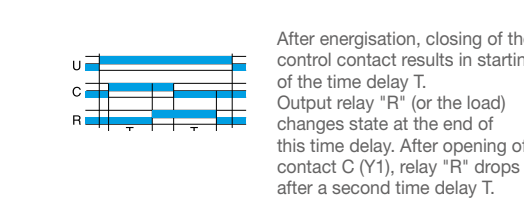
# FUNCTION DIAGRAMS

## GENERIC FUNCTIONS

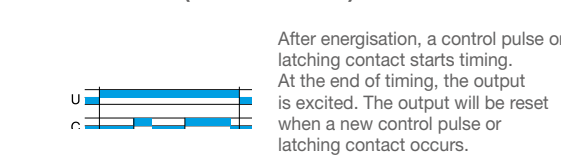
### A function Delay on energisation



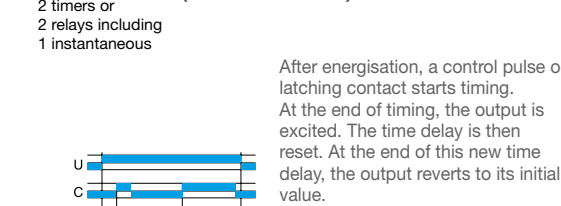
### Ac function Timing after closing and opening of control contact



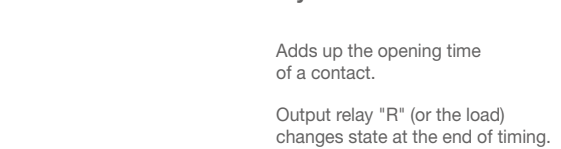
### Ad function Delay on energisation (cannot be reset)



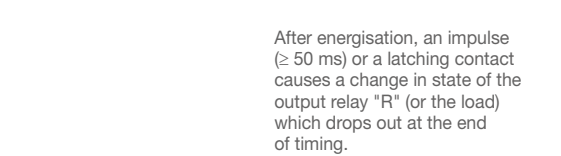
### Ah function Single shot flip-flop (cannot be reset)



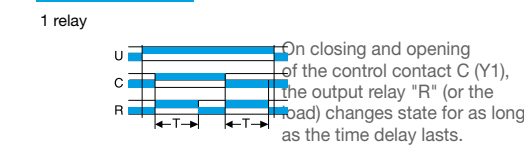
### At function Timing on energisation with memory



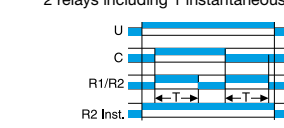
### B function Timing on impulse (one shot) - Shaping (cannot be reset)



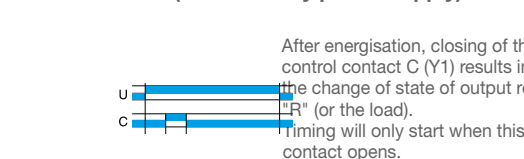
### Bw function Pulse output (adjustable)



2 timers or 2 relays including 1 instantaneous

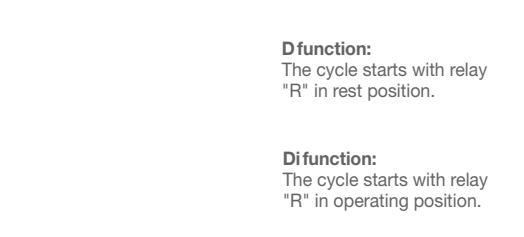


### C function Timing after impulse True delay off (with auxiliary power supply)



### D or Di functions Symmetrical flashing

Repetitive cycle which alternately sets the output relay "R" (or the load) to operating and rest position for equal periods of time.



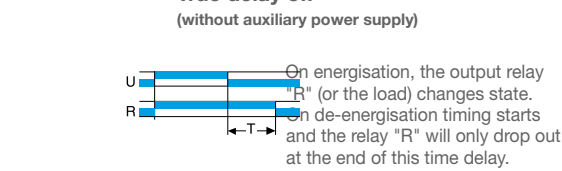
### H function Timing on energisation - Pulse output (adjustable)

On energisation, the output relay "R" (or the load) changes state, and stays there for the whole duration of the time delay and drops out at the end of the single shot cycle.

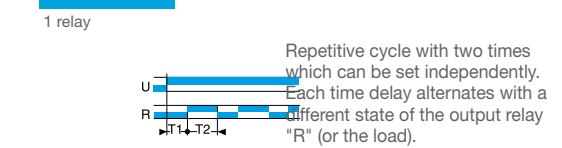
### Ht function Delay on energisation with memory

Adds up the total opening time of a contact. On energisation, the output relay "R" (or the load) changes state, and stays there for the whole duration of the time delay and drops out at the end of the single shot cycle.

### K function Delay on de-energisation True delay off (without auxiliary power supply)



### L function Asymmetrical flashing

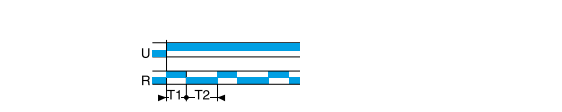


Note: The cycle starts with the relay "R" in the rest position.



### Li function Asymmetrical flashing

Repetitive cycle with two times which can be set independently.



### N function "Safe-guard"

On the first control pulse, the output is excited. If the interval between two impulses is longer than the timing value, this occurs normally and the output relay "R" (or the load) will change state at the end of timing. Otherwise, relay "R" stays in its original state until the condition is fulfilled.

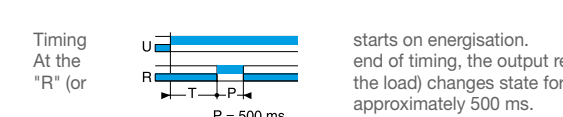


### O function "Delayed safe-guard"

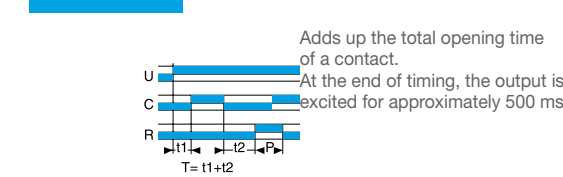
On energisation, a first timer runs and the output relay "R" (or the load) changes state. On the appearance of a control pulse, relay "R" returns to its initial position and stays there as long as the time interval between 2 impulses is less than the timing value. Otherwise, relay "R" will change state at the end of timing.



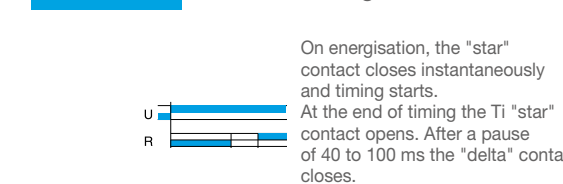
### P function Delayed fixed-length pulse



### Pt function Impulse counter (delay on)



### Q function "Star-delta" starting



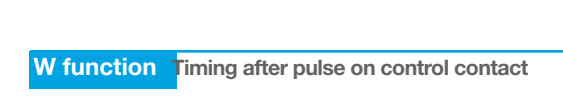
### TL function Impulse relay

After energisation, a control pulse or latching contact closes the relay. A second control pulse opens the relay.



### Tt function Timed impulse relay

After energisation, a control pulse or latching contact closes the relay and starts timing. The relay opens at the end of timing or on a second control pulse.



### W function Timing after pulse on control contact

After energisation, opening of the control contact results in a change in the state of output "R" (or the load) and timing starting.



All Chronos 2 timers are CE, UL, cUL, CSA, GL certified