

# Chronos 2 timers

## → 22.5 mm

Timing	
Timing ranges (7 ranges)	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h
Repetition accuracy with constant parameters	± 0.5 % (IEC/EN 61812-1)
Drift Temperature	± 0.05 % / °C
Drift Voltage	± 0.2 % / V
Display accuracy according to IEC/EN 61812-1	± 10 % / 25 °C
Immunity from micro power cuts : typical	< 10 ms

Supply	
Multi-voltage power supply	Depending on version
Frequency (Hz)	50 / 60
Operating factor	100 %

Output specification	
Rated power	2000 VA/80 W
Maximum breaking current	8 A $\sim$ 250 V $\sim$ resistive 8 A $\text{---}$ 30 V $\text{---}$ resistive
Minimum breaking current	10 mA / 5 V $\text{---}$
Voltage breaking capacity	250 V $\sim$ / 8 A $\sim$ resistive 250 V $\text{---}$ / 0.3 A resistive
Electrical life (operations)	10 <sup>6</sup> 8 A 250 V $\sim$ resistive
Mechanical life (operations)	10 x 10 <sup>6</sup>
Breakdown voltage acc. to IEC/EN 61812-1	2.5 kV / 1 min / 1 mA / 50 Hz
Impulse voltage acc. to IEC/EN 60664-1, IEC/EN 61812-1	5 kV wave 1.2 / 50 $\mu$ s

General characteristics	
Conformity to standards	IEC/EN 61812-1 IEC/EN 61000-6-1 IEC/EN 61000-6-2 IEC/EN 61000-6-3 IEC/EN 61000-6-4
Certifications	CE, UL, cUL, CSA, GL
Temperature limits use (°C)	-20 → +60
Temperature limits stored (°C)	-30 → +60
Installation category (acc. to IEC/EN 60664-1)	Voltage surge category III
Creepage distance and clearance acc. to IEC/EN 60664-1	4 kV / 3 mm
Protection (IEC/EN 60529)	IP20
Degree of protection acc. to IEC/EN 60529 Front face	IP50
Vibration resistance acc. to IEC/EN 60068-2-6	20 m/s <sup>2</sup> 10 Hz → 150 Hz
Relative humidity no condensation acc. to IEC/EN 60068-2-30	93 % non-condensing
Electromagnetic compatibility - Immunity to electrostatic discharges acc to IEC/EN 61000-4-2	Level III (Air 8 kV / Contact 6 kV)
Immunity to radiated, radio-frequency, electromagnetic field acc. IEC/EN 61000-4-3	Level I (1 V/m : 2.0 G Hz → 2.7 G Hz) Level II (3 V/m : 1.4 G Hz → 2.0 G Hz) Level III (10 V/m : 80 M Hz → 1 G Hz)
Immunity to rapid transient bursts acc. to IEC/EN 61000-4-4	Level III (direct 2 kV / Capacitive coupling clamp 1 kV)
Immunity to shock waves on power supply acc. to IEC/EN 61000-4-5	Level III (2 kV / common mode 2 kV/residual current mode 1 kV)

Immunity to radio frequency in common mode acc. to IEC/EN 61000-4-6	Level III (10V rms : 0.15 M Hz to 80 M Hz)
Immunity to voltage dips and breaks acc. to IEC/EN 61000-4-11	0 % residual voltage, 1 cycle 70 % residual voltage, 25/30 cycles
Mains-borne and radiated emissions acc. to EN 55022 (CISPR22), EN55011 (CISPR11)	Class B
Fixing : Symmetrical DIN rail	35 mm
Terminal capacity Single-wire without ferrule	1 x 0.5 → 3.3 mm <sup>2</sup> (AWG 20 → AWG 12) 2 x 0.5 → 2.5 mm <sup>2</sup> (AWG 20 → AWG 14)
Terminal capacity Multi-wire with ferrule	1 x 0.5 → 2.5 mm <sup>2</sup> (AWG 20 → AWG 14) 2 x 0.5 → 1.5 mm <sup>2</sup> (AWG 20 → AWG 16)
Housing material	Self-extinguishing
Shock test IEC/EN 60068-2-27	15 g - 11 ms
Short interruption on power line acc to IEC/EN 61000-4-11	0 % residual voltage, 250/300 cycles

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→ 22.5 mm

- Relay output
- Multi-function or mono-function
- Multi-range
- Multi-voltage
- Screw terminals
- LED status indicator



## Part numbers

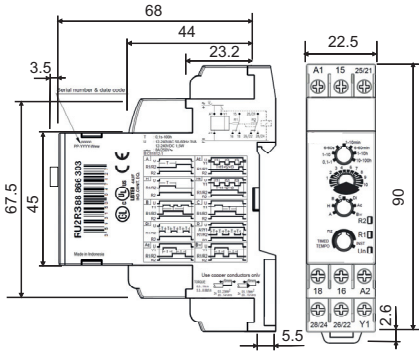
Type	Functions	Timing	Output	Nominal rating	Connections	Supply voltage	Code
RU2R1	A - Ac - At - B - Bw - C - D - Di - H - Ht	0.1s → 100h	2 changeover relay	2 x 8 A	Screw terminals	24 V $\overline{\text{---}}$ / 24 → 240 V $\sim$	<b>88 866 305</b>
RU2R3	A - Ac - At - B - Bw - C - D - Di - H - Ht	0.1s → 100h	2 changeover relay	2 x 8 A	Screw terminals	12 → 240 V $\sim$	<b>88 866 303</b>
RU2R4	A - Ac - At - B - Bw - C - D - Di - H - Ht	0.1s → 100h	2 changeover relay	2 x 8 A	Screw terminals	12 V $\sim$	<b>88 866 300</b>
RQR1	Q	0.1s → 100h	2 open contacts	2 x 8 A	Screw terminals	24 V $\overline{\text{---}}$ / 24 → 240 V $\sim$	<b>88 866 175</b>
RQR6	Q	0.1s → 100h	2 open contacts	2 x 8 A	Screw terminals	230 → 240 V $\sim$ / 380 → 440 V $\sim$	<b>88 866 176</b>
RA2R1	A - At	0.1 s → 100 h	2 changeover relay	2 x 8 A	Screw terminals	24 V $\overline{\text{---}}$ / 24 → 240 V $\sim$	<b>88 866 215</b>
RX2R1	Ad - Ah - N - O - P - Pt - Tl - Tt - W	0.1 s → 100 h	2 changeover relay	2 x 8 A	Screw terminals	24 V $\overline{\text{---}}$ / 24 → 240 V $\sim$	<b>88 866 385</b>

## General characteristics

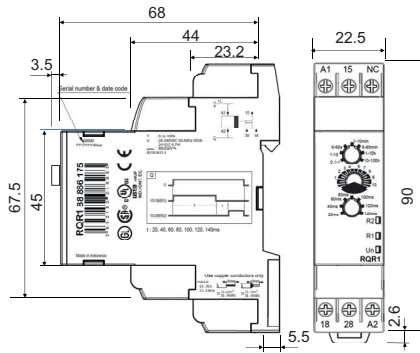
<b>Timing</b>	
Minimum pulse duration typically	30 ms
Minimum pulse duration typically (under load)	100 ms
Maximum reset time by de-energisation typically	120 ms
<b>Supply</b>	
Operating range	85 → 110 % Un / 85 → 120 % Un (12 V $\sim$ )
Max. absorbed power	15 VA (400 V $\sim$ ) 50 VA (240 V $\sim$ ) 0.7 W (24 V $\overline{\text{---}}$ ) 1.2 VA (12 V $\sim$ ) 0.5 W (12 V $\overline{\text{---}}$ )
<b>Output specification</b>	
2 changeover relays, AgNi (cadmium-free)	2 C/O
<b>General characteristics</b>	
Weight : casing 22.5 mm	88 866 175 (RQR1) : 81 g 88 866 176 (RQR6) : 81 g 88 866 215 (RA2R1) : 87 g 88 866 300 (RU2R4) : 86 g 88 866 303 (RU2R3) : 90 g 88 866 305 (RU2R1) : 88 g 88 866 385 (RX2R1) : 88 g
Insulation resistance according to IEC/EN 60664-1	> 500 M $\Omega$ (500 V $\overline{\text{---}}$ )

## Dimensions (mm)

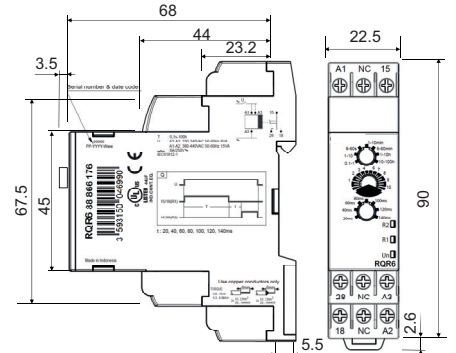
### RU2R1 / RU2R3 / RU2R4



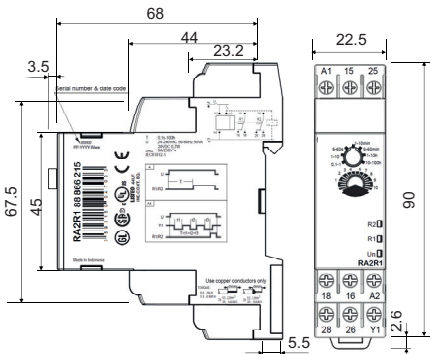
### RQR1



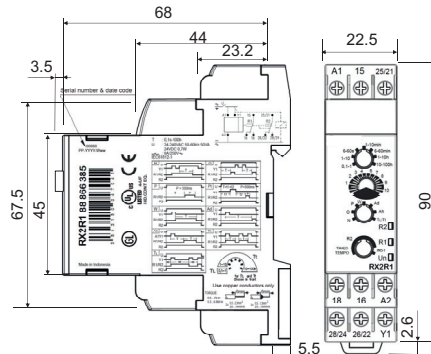
### RQR6



### RA2R1

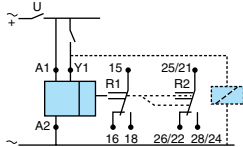


### RX2R1



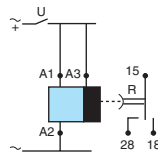
## Connections

### 2 changeover relay outputs



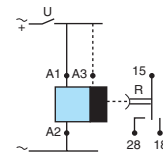
A - Ac - At - B - Bw - C - D - Di - H - Ht

### 2 relay outputs (RQR1)



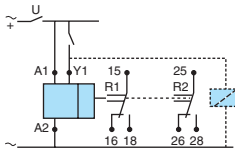
Q

### 2 relay outputs (RQR6)



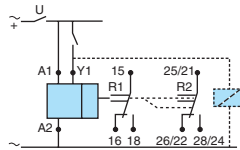
A1-A2 : 230-240 VAC  
A3-A2 : 380-440 VAC

### 2 changeover relay outputs



A - At

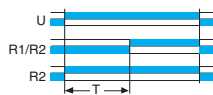
### 2 changeover relay outputs



Ad - Ah - N - O - P - Pt - TL - Tt - W

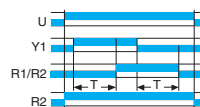
## Curves

### Function A



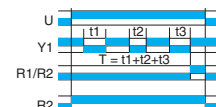
Delay on energisation

### Function Ac



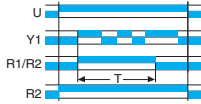
Timing after closing and opening of control contact

### Function At



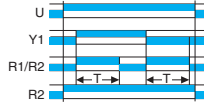
Timing on energisation with memory

**Function B**



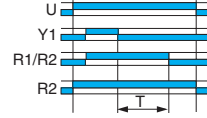
Timing on impulse one shot

**Function Bw**



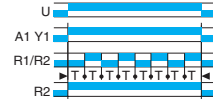
Pulse output (adjustable)

**Function C**



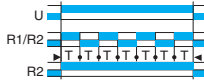
Timing after impulse delay OFF

**Function D**



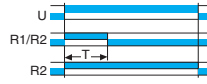
Flip-flop Pause start

**Function Di**



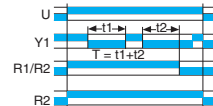
Flip-flop Pulse start

**Function H**



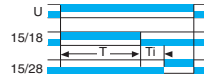
Timing on energisation

**Function Ht**



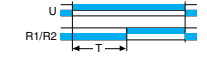
Delay on energisation with memory

**Function Q**



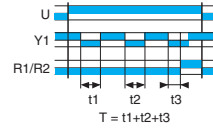
Star-delta  
Ti : 20, 40, 60, 80, 100, 120, 140 ms

**Function A (RA2R1)**



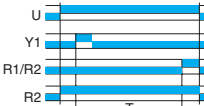
Delay on energisation

**Function At (RA2R1)**



Timing on energisation with memory

**Function Ad**



Delay on energisation by switch (non resettable)

**Function Ah**



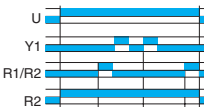
Flashing single cycle by switch (non resettable)

**Function N**



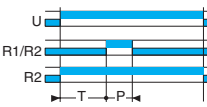
Safe-guard

**Function O**



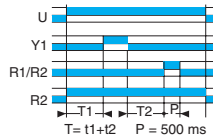
Delayed safe-guard

**Function P**



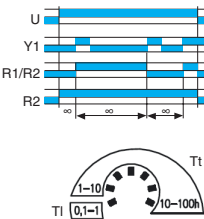
Delayed fixed-length pulse

**Function Pt**



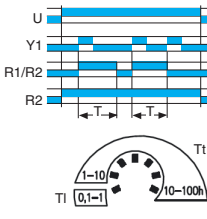
Impulse counter (delay on)

**Function TI**



Impulse relay

**Function Tt**



Timed impulse relay

**Function W**



Timing after pulse on control contact