

# Chronos 2 electronic timers - Plug-in 8-pin (35 mm)

- Multi-function or mono-function
- Multi-range (7 ranges, available options)
- Multi-voltage
- SPDT or DPDT relay output 10A - 250V
- Plug-in
- 1 LED status indicator
- Option of connecting a small cord to the control input
- 3-wire sensor control option



Technical specifications	
<b>Timing</b>	
Repetition accuracy (with constant parameters)	± 0.5 % (CEI 1812-1)
<b>Drift</b>	
- Temperature	± 0.05 % / °C
- Voltage	± 0.2 % / V
Display precision according to IEC 1812-1	±10 % / 25 °C
Minimum pulse duration	
- Typically	30 ms
- Typically under load	100 ms
Maximum reset time by de-energisation	
- Typically	100 ms
Immunity to breaks in supply voltage: typically	>10 ms
<b>Power supply</b>	
Multi-voltage power supply	depending on version, see page 6/10, 6/11
Frequency	50/60 Hz
Operating range	85 to 110 % Un (85 to 120 % Un for 12V AC/DC)
Load factor	100 %
Maximum power consumption	0.6 W 24V AC/DC 1.5 W 230V AC 32 VA 230V AC
<b>Output elements relay output</b>	
1 or 2 changeover relays, AgNi (cadmium-free)	2000 VA / 80 W
Rated power	2000 V A / 80W
Maximum breaking current	10 AAC 10 A DC
Minimum breaking current	10 mA / 5 VDC
Voltage breaking capacity	250V AC/VDC
Electrical life	10 <sup>5</sup> operations 8 A 250V resistive
Mechanical life	5 x 10 <sup>6</sup> operations
Breakdown voltage acc. to IEC 1812-1	2.5 kV / 1min / 1 mA /50Hz
Impulse voltage acc. to IEC 664-1 IEC 1812-1	5 kV, wave 1.2 / 50 µs
<b>Display</b>	
State displayed by 1 LED	
- Flashing green when on	
Green LED operation indicator	
▬▬▬▬ Pulsing:	
- timer on, no timing in progress (except functions Di-D and Li-L)	
▬▬▬▬ Flashing:	
- timing in progress	
▬▬▬▬ Permanently lit:	
- Relay waiting, no timing in progress	
Input type	
- Volt-free contact	
- 3-wire PNP output control option maximum residual voltage: 0.4 V whatever the timer power supply	0.4 V

Other information
<b>For special features, functions etc. please contact us.</b>

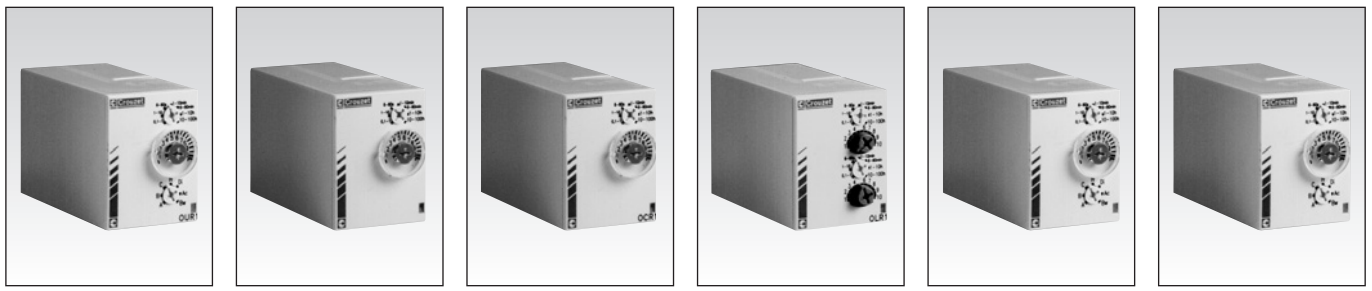
Timing	0.1s • 100h
<b>Types</b>	OL2R1
<b>Part numbers and voltage</b>	88 867 801
24V $\overline{\text{---}}$ / 24 • 240V $\sim$	—
12 V $\sim$ / $\overline{\text{---}}$	—
12 • 240 V $\sim$ / $\overline{\text{---}}$	—
<b>Functions</b>	Monofunction L
<b>Nominal current</b>	8 A
<b>Accessories</b>	S-08
8-pin connector base (for the whole range)	2 timers
<b>Timing ranges (7 ranges)</b>	0.1s - 1s - 10s - 1 min - 10 min - 1 h - 10 h - 100 h

General specifications	
Conforming to standards IEC 1812-1, EN 50081-1/2, EN 50082-1/2, LV directives (73/23/EEC + 93/68/EEC (CE marking) + EMC (89/336/EEC + IEC 669-2-3 (17.5 mm)	
Approvals UL cUL listed CSA recognized	
Temperatures limits	
- use	-20 °C + 60 °C
- stored	-30 °C + 60 °C
Installation category (acc. to IEC 664-1)	Voltage surge category
Creepage distance and clearance acc. to IEC 664-1	4 kV / 3
Degree of protection acc. to IEC 529	
- terminal block	IP 20
- casing	IP 40
- front face (except Tk2R1)	IP 50
Vibration resistance acc. to IEC 68-2-6	f = 10 • 55 Hz A = 0.35 mm
Relative humidity acc. to IEC 68-2-3 without condensation	93 %
Electromagnetic compatibility	Level III
- Immunity to electrostatic discharges acc. to IEC 1000-42	(Air 8 K / Contact 6 KV)
- Immunity to electrostatic fields acc. to ENV 50140/204 (IEC 1000-4-3)	Level III 10V/m: 80 MHz to 1 GHz)
- Immunity to rapid transient bursts acc. to IEC 1000-4-4	Level III (direct 2kV/ Capacitive coupling clamp 1 KV)
- Immunity to shock waves on power supply acc. to IEC 1000-4-5	Level III (common mode 2 KV / residual current mode 1KV)
- Immunity to radiofrequency in common mode acc. to ENV	Level III (10V rms: 0.15 MHz to 80 MHz)
- Immunity to voltage dips and breaks acc. to IEC 1000-4-11	30 % / 10 ms 60 % / 100 ms > 95 % / 5 s
- Mains-borne and radiated emissions acc. to EN 55022 (EN 55011 Group 1)	
Fixing: plug-in bases	Class B
Casing material	8-pin
Weight: plug-in casing	Self-extinguishing 80 g

Products and specifications subject to change without notice.

Consult factory for application assistance.

204 Airline Drive, Suite 300, Coppell, Texas 75019 / Tel: (800) 677-5311 / FAX: (800) 677-3865 / www.crouzet-usa.com



0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h
<b>OUR1</b>	<b>OA2R1</b>	<b>OCR1</b>	<b>OLR1</b>	<b>OUR4</b>	<b>OUR3</b>
<b>88 867 105</b>	<b>88 867 215</b>	<b>88 867 135</b>	<b>88 867 155</b>	<b>88 867 100</b>	<b>88 867 103</b>
Multi-function A - At - B - C - H - Ht - Di - D - Ac - Bw	Mono-function A	Mono-function C	Bifunction Li - L	Multi-function A - At - B - C - H - Ht - Di - D - Ac - Bw	Multi-function A - At - B - C - H - Ht - Di - D - Ac - Bw
10 A	10 A	10 A	10 A	10 A	10 A
1 relay	2 relays	1 relay	1 relay	1 relay	1 relay

**Function diagrams**

**Function A**  
Delay on Make  
1 relay

**Function C**  
Delay on Break  
1 relay

**Function L**  
Repeat Cycle. Off Time First  
Pause start

**Function D**  
Repeat Cycle. Equal On/Off Time.  
Off Time First.  
Pause start

**Function H**  
Interval  
1 relay

**Function Li**  
Repeat Cycle. On Time First.  
Pulse start

**Function Di**  
Repeat Cycle. Equal On/Off Time.  
On Time First.  
Pulse start

**Function At**  
Accumulative Delay on Make  
1 relay

**Function Ht**  
Accumulative Interval  
1 relay

**Function Ac**  
Combo Delay on Make/Delay on Break. Equal On/Off Time.  
1 relay

**Function Bw**  
Pulse output (adjustable)  
1 relay

**Function B**  
Single Shot  
1 relay

**Connections: 8-pin 1 relay**  
(Y1 = C, Function diagrams)

Functions:  
A - At / H - Ht / B / C  
Di - D / Ac / Bw

**8-pin 2 relay**

A

**Dimensions**

**Accessories**

8-pin connector base S08

**To order, specify:**

<b>1</b> Type	<b>2</b> Part number	<b>3</b> Part number
Example: Chronos 2 Timers OUR1	88 867 105	8-pin connector base S08

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# Chronos 2 electronic timers - Plug-in 11-pin (35 mm)

- Multi-function or mono-function
- Multi-range (7 ranges, available options)
- Multi-voltage
- DPDT Relay output 10A - 250V
- Plug-in
- 1 LED status indicator
- Option of connecting a small cord supply to the control input
- 3-wire sensor control option

Technical specifications	
<b>Timing</b>	
Repetition accuracy (with constant parameters)	± 0.5 % (CEI 1812-1)
<b>Drift</b>	
- Temperature	± 0.05 % / °C
- Voltage	± 0.2 % / V
Display precision according to IEC 1812-1	±10 % / 25 °C
Minimum pulse duration	
- Typically (relay version)	30 ms
- Typically (solid state version)	50 ms
- Typically under load (relay version)	100 ms
Maximum reset time by de-energisation	
- Typically (relay version)	100 ms
- Typically (solid state version)	350 ms
Immunity to breaks in supply voltage: typically	>10 ms
<b>Power supply</b>	
Multi-voltage power supply	depending on version, see page 6/13
Frequency	50/60 Hz
Operating range	85 to 110 % Un (85 to 120 % Un for 12V AC/DC)
Load factor	100 %
Maximum power consumption	0.6 W 24V AC/DC 1.5 W 230V AC 32 VA 230V AC
<b>Output elements relay output</b>	
1 or 2 changeover relays, AgNi (cadmium-free)	2000 VA / 80 W
Rated power	2000 V A / 80W
Maximum breaking current	10 AAC 10 A DC
Minimum breaking current	10 mA / 5 VDC
Voltage breaking capacity	250V AC/VDC
Electrical life	10 <sup>5</sup> operations 8 A 250V resistive
Mechanical life	5 x 10 <sup>6</sup> operations
Breakdown voltage acc. to IEC 1812-1	2.5 kV / 1min / 1 mA /50Hz
Impulse voltage acc. to IEC 664-1 IEC 1812-1	5 kV, wave 1.2 / 50 μs
<b>Display</b>	
State displayed by 1 LED	
- Flashing green when on	
Green LED operation indicator	
■■■■■ Pulsing:	
- timer on, no timing in progress (except functions Di-D and Li-L)	
■■■■■ Flashing:	
- timing in progress	
■■■■■ Permanently lit:	
- Relay waiting, no timing in progress	
Input type	
- Volt-free contact	
- 3-wire PNP output control option maximum residual voltage: 0.4 V whatever the timer power supply	0.4 V

## Other information

For special features, functions, etc. please contact us.

## Timing

### Types

### Part numbers and voltage

24V ~ / 24 • 240V ~

12 V ~ / ~

12 • 240 V ~ / ~

### Functions

### Nominal current

### Accessories

11-pin connector base (for the whole range)

**S11**

### Timing ranges (7 ranges)

0.1s - 1s - 10s - 1 min - 10 min - 1 h - 10 h - 100 h

## General specifications

Conforming to standards

IEC 1812-1, EN 50081-1/2, EN 50082-1/2, LV directives (73/23/EEC + 93/68/EEC (CE marking) + EMC (89/336/EEC + IEC 669-2-3 (17.5 mm)

Approvals

UL cUL listed CSA recognized

Temperatures limits

- use

-20 °C + 60 °C

- stored

-30 °C + 60 °C

Installation category (acc. to IEC 664-1)

Voltage surge category

Creepage distance and clearance acc. to IEC 664-1

4 kV / 3

Degree of protection acc. to IEC 529

- terminal block

IP 20

- casing

IP 40

- front face (except Tk2R1)

IP 50

Vibration resistance acc. to IEC 68-2-6

f = 10 • 55 Hz  
A = 0.35 mm

Relative humidity acc. to IEC 68-2-3 without condensation

93 %

Electromagnetic compatibility

- Immunity to electrostatic discharges acc. to IEC 1000-42

Level III  
(Air 8 K /  
Contact 6 KV)

- Immunity to electrostatic fields acc. to ENV 50140/204 (IEC 1000-4-3)

Level III 10V/m:  
80 MHz to 1 GHz)

- Immunity to rapid transient bursts acc. to IEC 1000-4-4

Level III (direct 2kV/  
Capacitive coupling  
clamp 1 KV)

- Immunity to shock waves on power supply acc. to IEC 1000-4-5

Level III (common  
mode 2 KV / residual  
current mode 1KV)

- Immunity to radiofrequency in common mode acc. to ENV

Level III (10V rms:  
0.15 MHz to 80  
MHz)

- Immunity to voltage dips and breaks acc. to IEC 1000-4-11

30 % / 10 ms  
60 % / 100 ms >  
95 % / 5 s

- Mains-borne and radiated emissions acc. to EN 55022 (EN 55011 Group 1)

Class B

Fixing: plug-in bases

Casing material

11-pin

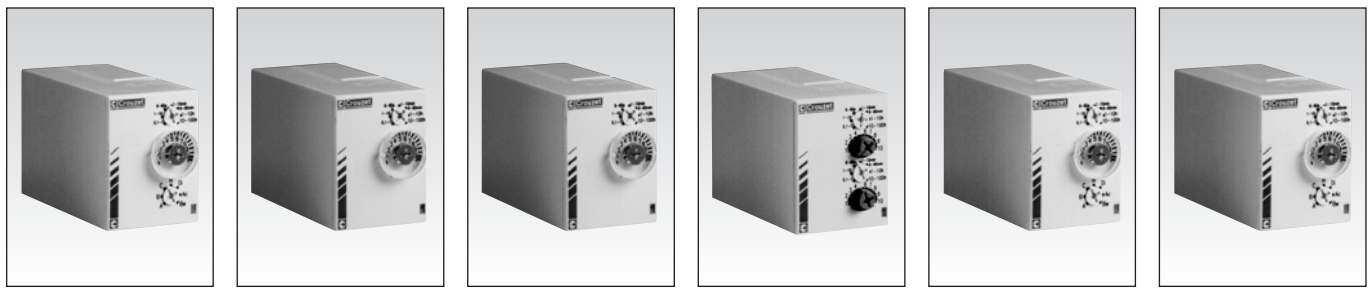
Weight: plug-in casing

Self-extinguishing  
80 g

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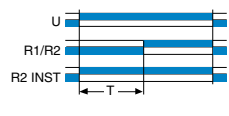
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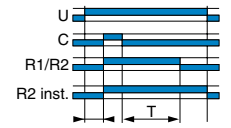
0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h
<b>PU2R1</b>	<b>PA2R1</b>	<b>PC2R1</b>	<b>PL2R1</b>	<b>PU2R4</b>	<b>PU2R3</b>
<b>88 867 305</b>	<b>88 867 415</b>	<b>88 867 435</b>	<b>88 867 455</b>	-	-
-	-	-	-	<b>88 867 300</b>	-
-	-	-	-	-	<b>88 867 303</b>
Multi-function A - At - B - C - H - Ht - Di - D - Ac - Bw	Bifunction A - At	Mono-function C	Bifunction Li - L	Multi-function A - At - B - C - H - Ht - Di - D - Ac - Bw	Multi-function A - At - B - C - H - Ht - Di - D - Ac - Bw
10 A	10 A	10 A	10 A	10 A	10 A
1 Relay Timed and 1 Relay Timed or Instant	2 relays	2 relays	2 relays	1 Relay Timed and 1 Relay Timed or Instant	1 Relay Timed and 1 Relay Timed or Instant

**Function diagrams**

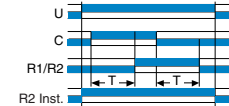
**Function A**  
Delay on Make  
1 Relay Timed and  
1 Relay Timed or Instant



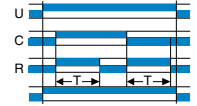
**Function C**  
Delay on Break  
1 Relay Timed and  
1 Relay Timed or Instant



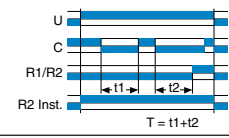
**Function Ac**  
Combo Delay on Make/Delay on  
Break. Equal On/Off Time.  
1 Relay Timed and  
1 Relay Timed or Instant



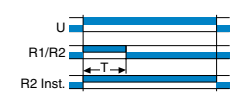
**Function Bw**  
Pulse output (adjustable)  
1 Relay Timed and  
1 Relay Timed or Instant



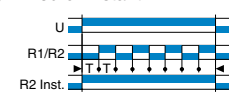
**Function At**  
Accumulative Delay on Make  
1 Relay Timed and  
1 Relay Timed or Instant



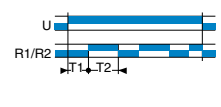
**Function H**  
Interval  
1 Relay Timed and  
1 Relay Timed or Instant



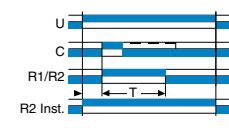
**Function D**  
Repeat Cycle  
Equal On/Off Time. Off Time First.  
1 Relay Timed and  
1 Relay Timed or Instant



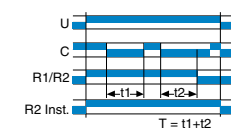
**Function L**  
Repeat Cycle.  
Off Time First.  
2 relays



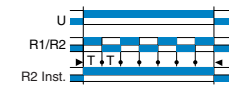
**Function B**  
Single Shot  
1 Relay Timed and  
1 Relay Timed or Instant



**Function Ht**  
Accumulative Interval  
1 Relay Timed and  
1 Relay Timed or Instant



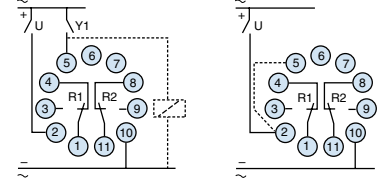
**Function Di**  
Repeat Cycle.  
On Time First.  
1 Relay Timed and  
1 Relay Timed or Instant



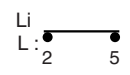
**Function Li**  
Repeat Cycle.  
On Time First.  
2 relays



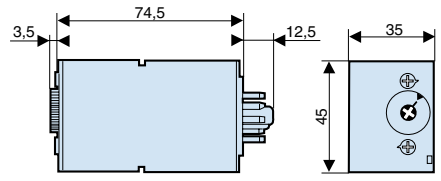
**Connections (Y1 = C, Function diagrams)**



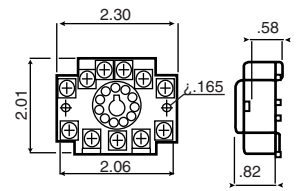
Functions:  
A - At / H - Ht / B / C  
Di - D / Ac / BW



**Dimensions**



**Accessories**



11-pin connector base S11

<b>To order, specify:</b>		
<b>1</b>	Type	<b>2</b>
<b>3</b>	Part number	<b>3</b>
	Example: Chronos 2 Timers PU2R1 88 867 305	Accessories 11-pin connector base S11

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