

Chronos 2 electronic timers - 22.5 mm

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

Technical specifications

Timing	
Repetition accuracy (with constant parameters)	± 0.5 % (CEI 1812-1)
Drift	
- 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
Power supply	
Multi-voltage power supply	depending on version, see pages 6/6, 6/7
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
Output elements relay output	
1 or 2 changeover relays, AgNi (cadmium-free)	2000 VA / 80 W
Rated power	2000 V A / 80W
Maximum breaking current	10 A AC 10 A DC
Minimum breaking current	10 mA / 5 VDC
Voltage breaking capacity	250V AC/VDC
Electrical life	10 ⁵ operations 8 A 250V resistive
Mechanical life	5 x 10 ⁶ 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
Display	
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	

Other information

For special features, functions etc. please contact us.



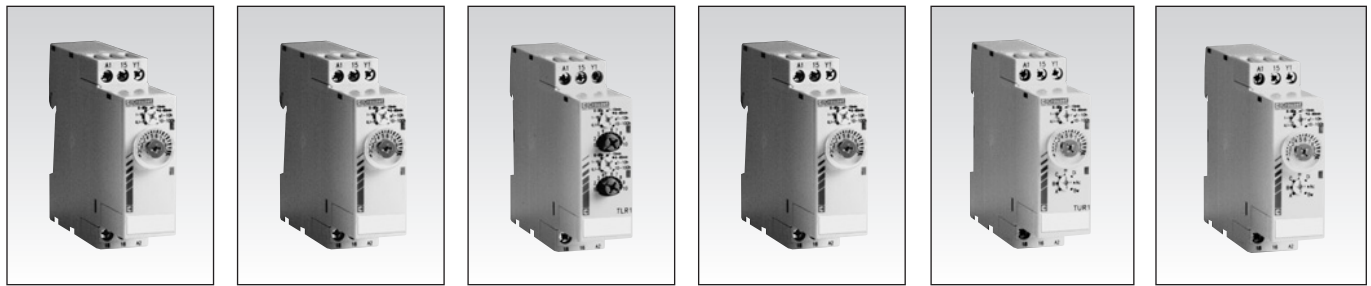
Timing	0.1s • 100h	0.1s • 100h	0.1s • 100h
Types			
Screw terminal	TUR1	TAR1	TBR1
Spring terminal	—	—	—
Part numbers and voltage			
24V ~ / 24 • 240V ~	88 865 105	88 865 115	88 865 125
12 V ~ / ~	—	—	—
12 • 240 V ~ / ~	—	—	—
Functions			
	Multi-function	Bifunction	Mono-function
	A-At - B - C - H-Ht	A - At	B
	Di-D - Ac - Bw		
Nominal current			
	10 A	10 A	10 A

Timing ranges (7 ranges) 0.1s- 1s- 10s- 1 min- 10 min- 1 h- 10 h- 100 h
TQR1: Selectable switching time 20 / 40 / 60 / 80 / 100 / 120 / 140 ms

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 + 80 °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: Symmetrical DIN rail (EN 50022)	
35 mm	
Connection capacity	
- without ferrule	
2 x 2.5 mm ²	
- with ferrule	
2 x 1.5 mm ²	
Spring terminals, 2 terminals per connection point	
- flexible wire	
1.5 mm ²	
- rigid wire	
2.5 mm ²	
Casing material	
Self-extinguishing	
Weight: 22.5 mm casing	
90 g	

Products and specifications subject to change without notice.
 Consult factory for application assistance.



0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h
TCR1	THR1	TLR1	TQR1	TUR4	TUR3
—	—	—	—	—	TURc3
88 865 135	88 865 145	88 865 155	88 865 175	—	—
—	—	—	—	88 865 100	—
—	—	—	—	—	88 865 103 88 865 503
Mono-function	Bifunction	Bifunction	Mono-function	Multi-function	Multi-function
C	H - Ht	Li - L	Q	A - At - B - C - H - Ht - Di - D - Ac - Bw	A - At - B - C - H - Ht - Di - D - Ac - Bw
10 A	10 A	10 A	10 A	10 A	10 A

Function diagrams

Function A
Delay on Make
1 relay



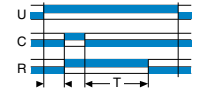
Function H
Interval
1 relay



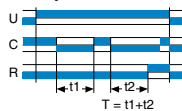
Function Li
Repeat Cycle. On Time First.
Pulse start



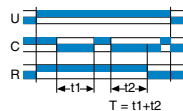
Function C
Delay on Break
1 relay



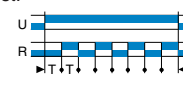
Function At
Accumulative Delay on Make
1 relay



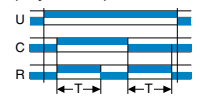
Function Ht
Accumulative Interval
1 relay



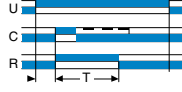
Function D
Repeat Cycle. Equal On/Off Time.
Off Time First.
Pause start



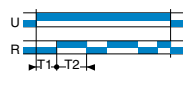
Function Bw
Pulse output (adjustable)
1 relay



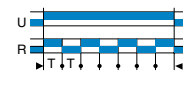
Function B
Single Shot
1 relay



Function L
Repeat Cycle. Off Time First
Pause start



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



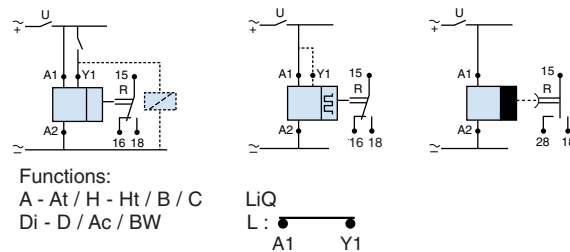
Function Ac
Combo Delay on Make/Delay on Break. Equal On/Off Time.
1 relay



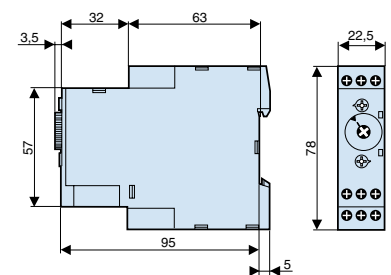
Function Q
Star-delta



Connections (Y1 = C, Function diagrams)



Dimensions



To order, specify:

1 Type **2** Part number
Example: Chronos 2 Timers TAR1 88 865 115

Products and specifications subject to change without notice.
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Chronos 2 electronic timers - 22.5 mm

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

Technical specifications	
Timing	
Repetition accuracy (with constant parameters)	± 0.5 % (CEI 1812-1)
Drift	
- 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 voltag: typically	>10 ms
Power supply	
Multi-voltage power supply	depending on version, see page 6/9
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
Output elements relay output	
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 ⁵ operations 8 A 250V resistive
Mechanical life	5 x 10 ⁶ 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
Display	
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 ~ / ≡

Functions

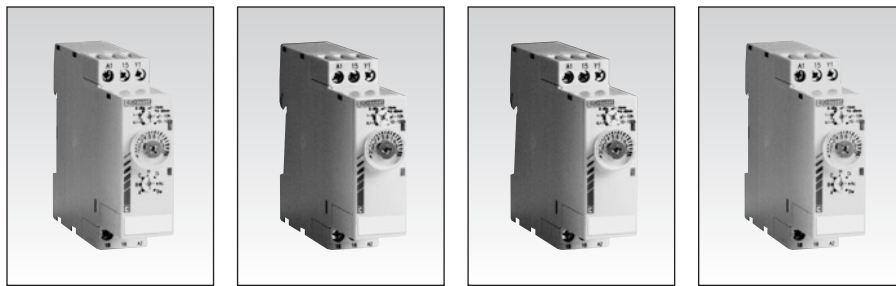
Nominal current

Timing ranges (7 ranges)
0.1s - 1s - 10s - 1 min - 10 min - 1 h - 10 h - 100 h

TK2R1 (4 ranges)
0.06s - 0.6s - 2.5s - 20s - 160s

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 listed 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: Symmetrical DIN rail (EN 50022)	Class B
Connection capacity	35 mm
- without ferrule	
- with ferrule	2 x 2.5 mm ²
Casing material	2 x 1.5 mm ²
Weight: 22.5 mm casing	Self-extinguishing 90 g

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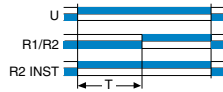
0.1s • 100h	0.1s • 100h	0.06s - 160s	0.1s • 100h
TU2R1	TA2R1	TK2R1	TU2R4
88 865 305	88 865 215	88 865 265	-
Multi-function A - At - B - C - H - Ht - Di - D - Ac - Bw	Bifunction A - At	Mono-function K	Multi-function A - At - B - C - H - Ht - Di - D - Ac - Bw
10 A	10 A	10 A	10 A
1 Relay Timed and 1 Relay Timed or Instant	2 Timers	2 Timers	1 Relay Timed and 1 Relay Timed or Instant

1
2

Function diagrams

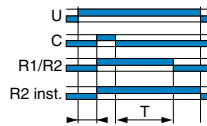
Function A

Delay on Make
1 Relay Timed and
1 Relay Timed or Instant



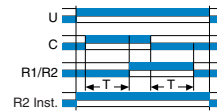
Function C

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



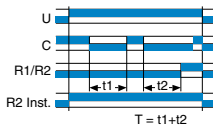
Function K

True delay OFF
2 relays



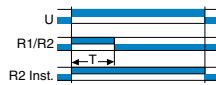
Function At

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



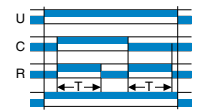
Function D

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



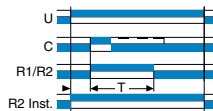
Function Bw

Pulse output (adjustable)
1 Relay Timed and
1 Relay Timed or Instant



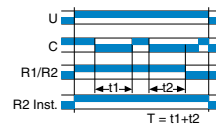
Function B

Single Shot
1 Relay Timed and
1 Relay Timed or Instant



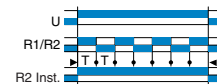
Function Ht

Accumulative Interval
1 Relay Timed and
1 Relay Timed or Instant

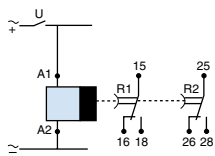
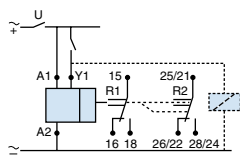


Function Di

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



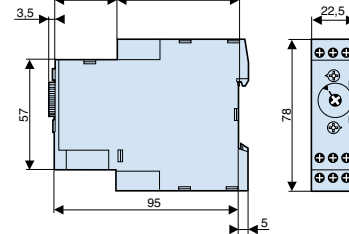
Connections (Y1 = C, Function diagrams)



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

K

Dimensions



To order, specify:

1 Type

2 Part number

Example: Chronos 2 Timers TA2R1 88 865 215

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