

Chronos 2 electronic timers - 17.5 mm

- Multi-function or mono-function
- Multi-range (7 ranges, available options)
- Multi-voltage
- SPDT relay output: 10A - 250V
- 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 6/2, 6/3
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	0.4 V

Other information

For special features, functions etc. please contact us.

Timing	0.1s • 100h	0.1s • 100h
Types		
Screw terminals	MUR1	MAR1
Spring terminals	—	—
Part numbers and voltage		
24V ~ / 24 • 240V ~	88 826 105	88 826 115
12 V ~ / ~	—	—
12 • 240 V ~ / ~	—	—
Functions		
	Multi-function	Bifunction
	A - At - B - C - H - Ht -	A - At
	Di - D - Ac - Bw	
Nominal current		
	10 A	10 A
Timing ranges (7 ranges)		
1s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h		

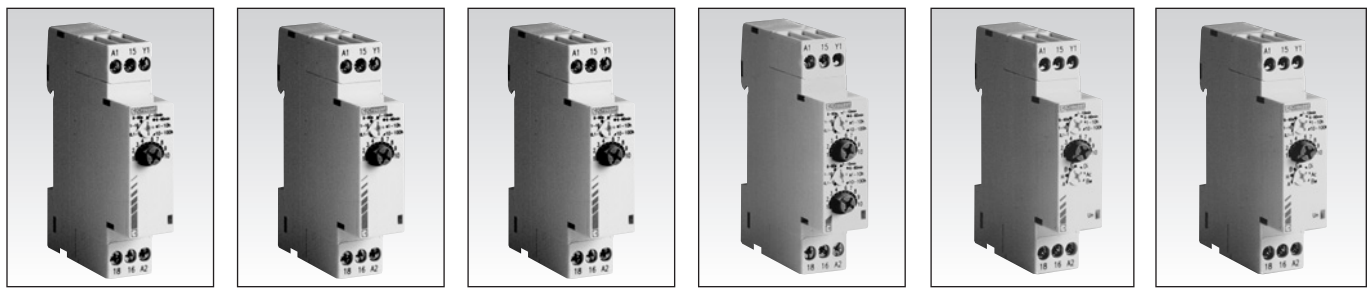
General specifications

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	
cUL listed	UL 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: 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: 17.5 mm casing	60 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

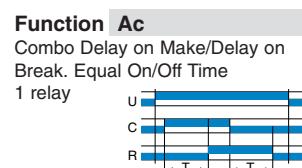
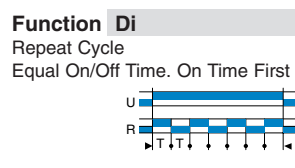
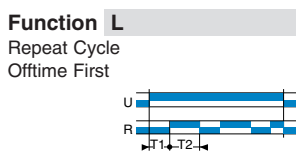
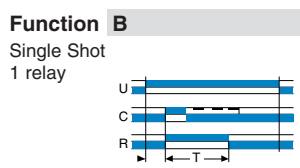
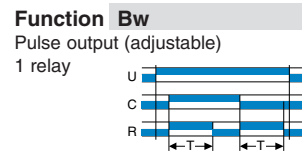
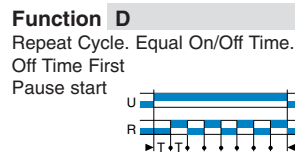
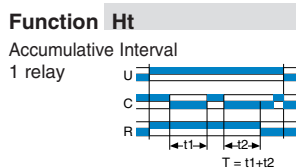
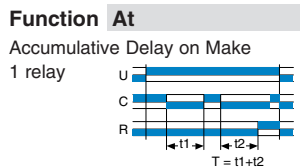
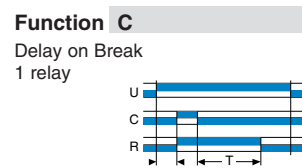
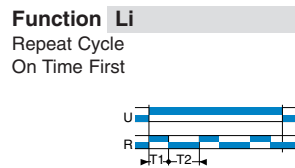
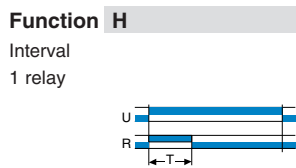
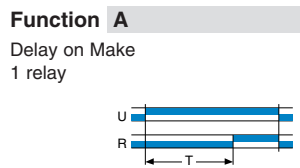


0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h
MBR1	MCR1	MHR1	MLR1	MUR4	MUR3
—	—	—	—	—	MURc3
88 826 125	88 826 135	88 826 145	88 826 155	—	—
—	—	—	—	88 826 100	—
—	—	—	—	—	88 826 103 88 826 503
Mono-function B	Mono-function C	Bifunction H - Ht	Bifunction Li - L	Multi-function 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

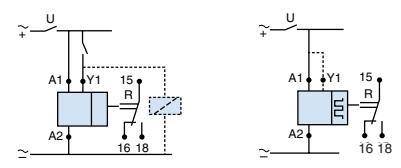
1
2

4

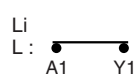
Function diagrams



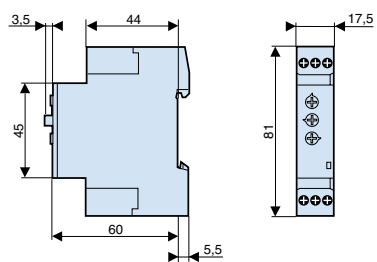
Connections (Y1 = C, Function diagrams)



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



Dimensions



To order, specify:

1 Type **2** Part number

Example: Chronos 2 Timers MUR1 88 826 105

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Chronos 2 electronic timers - 17.5 mm

Solid state output

- Multi-function or mono-function
- Multi-range (7 ranges, available options)
- Multi-voltage
- Solid state output: 0.7 A - 250 V (0.5 A UL)
- Screw or spring terminals
- 1 LED status indicator

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 page 6/5
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: Solid state output	
Rated power	0.7 A AC/DC 20 °C (0.5A UL)
Derating	5 mA / °C
Maximum admissible current	20 A ≤ 10 ms
Minimum breaking current	10 mA
Off-state leakage	< 5 mA
Voltage breaking capacity	250V AC/VDC
Maximum voltage drop at terminals	3 fils 4V - 2 fils 8V
Electrical life	10 ⁸ operations
Mechanical life	10 ⁸ operations
Breakdown voltage acc. to IEC 664, IEC 255-5	2.5 kV to 1 mA / 1 min.
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

24 • 240 V ~ 50 • 60 Hz
24 • 240 V ~ 50 • 60 Hz

Functions

Nominal current

Timing ranges (7 ranges)

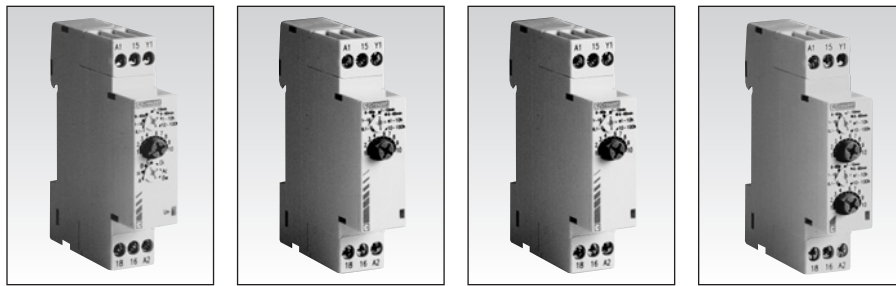
1s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h

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: 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: 17.5 mm casing	60 g

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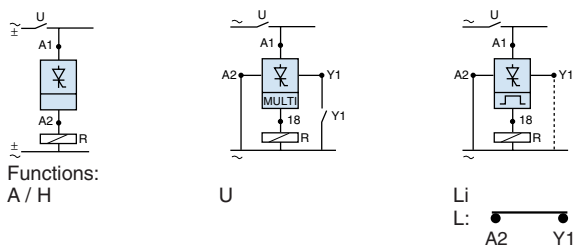


0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	1
MUS2	MAS5	MHS2	MLS2	
88 826 004	—	88 826 044	88 826 054	2
—	88 826 014	—	—	
Multi-function A - At - B - C - H - Ht - Di - D - Ac - Bw	Mono-function A	Mono-function H	Bifunction Li - L	
0.7 A, 0.5 A (UL)	0.7 A, 0.5 A (UL)	0.7 A, 0.5 A (UL)	0.7 A, 0.5 A (UL)	

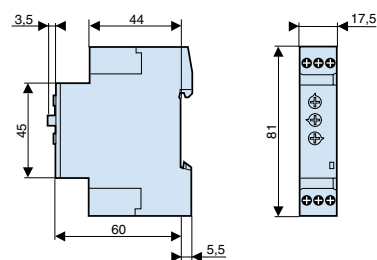
Function diagrams

<p>Function A Delay on Make 1 relay</p>	<p>Function H Interval 1 relay</p>	<p>Function Li Repeat Cycle. On Time First. Pulse start</p>	<p>Function C Delay on Break 1 relay</p>
<p>Function At Accumulative Delay on Make 1 relay</p>	<p>Function Ht Accumulative Interval 1 relay</p>	<p>Function D Repeat Cycle. Equal On/Off Time. Off Time First. Pause start</p>	<p>Function Bw Pulse output (adjustable) 1 relay</p>
<p>Function B Single Shot 1 relay</p>	<p>Function L Repeat Cycle. Off Time First. Pause start</p>	<p>Function Di Repeat Cycle. Equal On/Off Times. On Time First. Pulse start</p>	<p>Function Ac Combo Delay on Make/Delay on Break. Equal On/Off Time. 1 relay</p>

Connections (Y1 = C, Function diagrams)



Dimensions



To order, specify:

1 Type **2** Part number
Example: Chronos 2 Timers MUS2 88 826 004

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