17.5mm Chronos 2 Timers

Crouzet Products / Automation Controls / Electronic Timers / 17.5mm Chronos 2 Timers

PRODUCT FEATURES

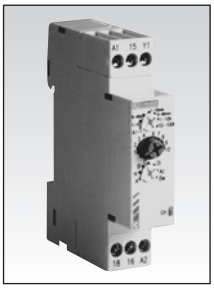
- Multi-function or mono-function
- Multi-range (7 ranges, available options)
- SPDT relay output: 10A - 250V on M_R versions
- Solid-state output: 0.7A - 250V (0.5A UL) on M_S versions
- Screw or spring terminals
- LED status indicator
- 3-wire sensor control option
- cUL, UL listed, CSA recognized, CE Approved

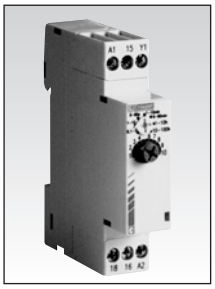
17.5mm Chronos 2

Type	Function	Connection	Supply Voltage	Nominal Rating	Part number	
Relay Output						
MUR1	**Multifunction**	Screw Terminal	24VDC, 24-240VAC	10A SPDT	**88826105**	Check Stock
MAR1	A,At (Delay-on-Make)	Screw Terminal	24VDC, 24-240VAC	10A SPDT	**88826115**	Check Stock
MBR1	B (Single Shot)	Screw Terminal	24VDC, 24-240VAC	10A SPDT	**88826125**	Check Stock
MCR1	C (Delay-on-Break)	Screw Terminal	24VDC, 24-240VAC	10A SPDT	**88826135**	Check Stock
MHR1	H,Ht (Interval)	Screw Terminal	24VDC, 24-240VAC	10A SPDT	**88826145**	Check Stock
MLR1	Li,L (Repeat Cycle)	Screw Terminal	24VDC, 24-240VAC	10A SPDT	**88826155**	Check Stock
MUR4	**Multifunction**	Screw Terminal	12VAC/DC	10A SPDT	**88826100**	Check Stock
MUR3	**Multifunction**	Screw Terminal	12-240VAC/DC	10A SPDT	**88826103**	Check Stock
MURc3	**Multifunction**	Spring Terminal	12VAC/DC	10A SPDT	**88826503**	Check Stock
MXR1	**Multifunction**	Screw Terminal	24VDC, 24-240VAC	10A SPDT	**88826185**	Check Stock
Solid-State Output						
MUS2	**Multifunction**	Screw Terminal	24-240VAC	0.7A SCR	**88826004**	Check Stock

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

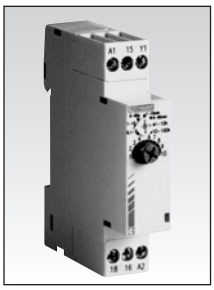
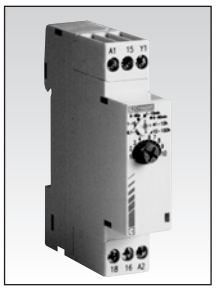
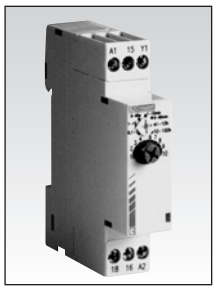
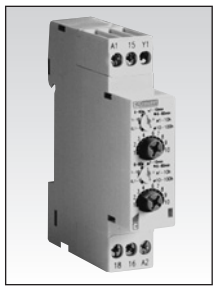
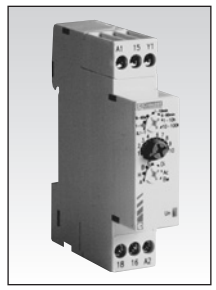
For special features, functions etc. please contact us.

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 A - At - B - C - H - Ht - Di - D - Ac - Bw	Bifunction A - At
Nominal current	10 A	10 A

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

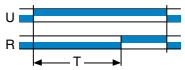
General specifications

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 - stored	 -20 °C + 60 °C -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 - casing - front face (except Tk2R1)	 IP 20 IP 40 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 - with ferrule	 2 x 2.5 mm^2 2 x 1.5 mm^2
Spring terminals, 2 terminals per connection point - flexible wire - rigid wire	 1.5 mm^2 2.5 mm^2
Casing material	Self-extinguishing
Weight: 17.5 mm casing	60 g

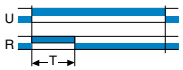
					
0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h
MBR1	**MCR1**	**MHR1**	**MLR1**	**MUR4**	**MUR3**
—	—	—	—	—	—
—	—	—	—	—	**MURc3**
88 826 125	**88 826 135**	**88 826 145**	**88 826 155**	—	—
—	—	—	—	**88 826 100**	—
—	—	—	—	—	**88 826 103**
					88 826 503
Mono-function	Mono-function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

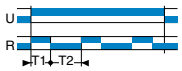
Function A
Delay on Make
1 relay



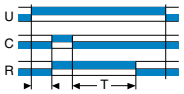
Function H
Interval
1 relay



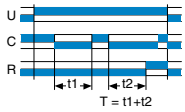
Function Li
Repeat Cycle
On Time First



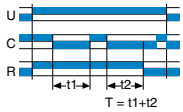
Function C
Delay on Break
1 relay



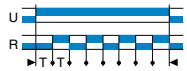
Function At
Accumulative Delay on Make
1 relay



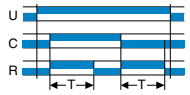
Function Ht
Accumulative Interval
1 relay



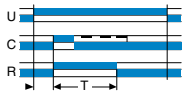
Function D
Repeat Cycle. Equal On/Off Time.
Off Time First
Pause start



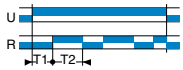
Function Bw
Pulse output (adjustable)
1 relay



Function B
Single Shot
1 relay

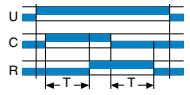


Function L
Repeat Cycle
Offtime First

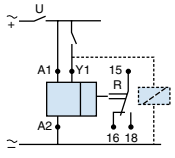


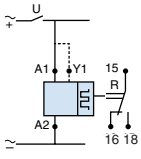
Function Di
Repeat Cycle
Equal On/Off Time. On Time First

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



Connections (Y1 = C, Function diagrams)

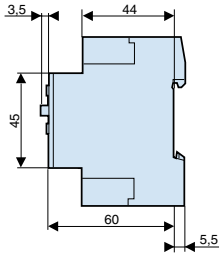


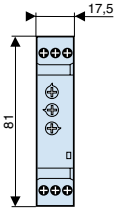


Functions:
A - At / H - Ht / B / C
Di - D / Ac / BW

Li
L :

Dimensions





To order, specify:

1 Type **2** Part number

Example: Chronos 2 Timers MUR1 88 826 105

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

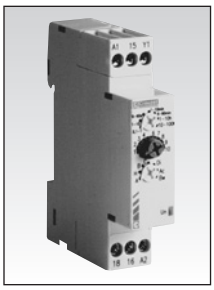
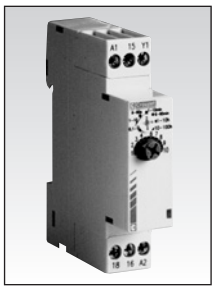
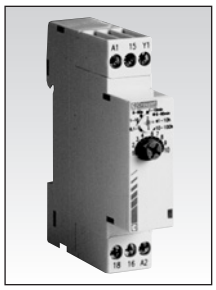
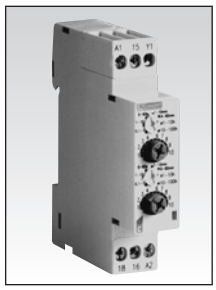
Nominal current

Timing ranges (7 ranges)

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

General specifications

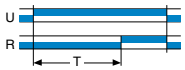
Conforming to standards IEC 1812-1, EN 50081-1/2, EN 50082-1/2, LV directives (73/23/EEC + 93/68/EEC (CE marking) + EMC (89/336/EEC + IEC 669-2-3 (17.5 mm)	
Approvals UL cUL listed CSA recognized	
Temperatures limits	
- use	-20 °C + 60 °C
- stored	-30 °C + 60 °C
Installation category (acc. to IEC 664-1)	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

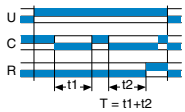
0.1s • 100h	0.1s • 100h	0.1s • 100h	0.1s • 100h	
MUS2	**MAS5**	**MHS2**	**MLS2**	1
				2
88 826 004	—	**88 826 044**	**88 826 054**	
—	**88 826 014**	—	—	
Multi-function	Mono-function	Mono-function	Bifunction	
A - At - B - C - H - Ht - Di - D - Ac - Bw	A	H	Li - L	
0.7 A, 0.5 A (UL)	0.7 A, 0.5 A (UL)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

Function diagrams

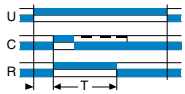
Function A
Delay on Make
1 relay



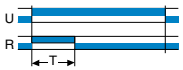
Function At
Accumulative Delay on Make
1 relay



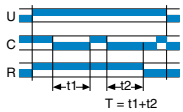
Function B
Single Shot
1 relay



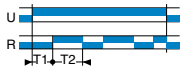
Function H
Interval
1 relay



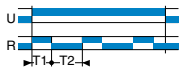
Function Ht
Accumulative Interval
1 relay



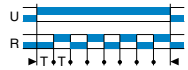
Function L
Repeat Cycle. Off Time First.
Pause start



Function Li
Repeat Cycle. On Time First.
Pulse start

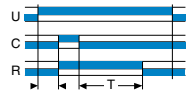


Function D
Repeat Cycle. Equal On/Off Time.
Off Time First.
Pause start

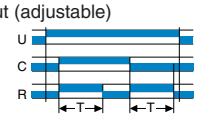


Function Di
Repeat Cycle. Equal On/Off Times.
On Time First.
Pulse start

Function C
Delay on Break
1 relay

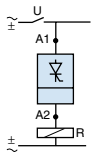


Function Bw
Pulse output (adjustable)
1 relay

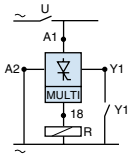


Function Ac
Combo Delay on Make/Delay on Break. Equal On/Off Time.
1 relay

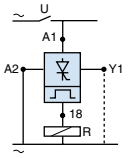
Connections (Y1 = C, Function diagrams)



Functions:
A / H

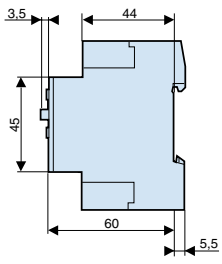


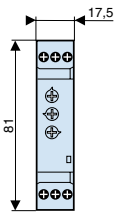
U



Li
L:

Dimensions





To order, specify:

1 Type 2 Part number

Example: Chronos 2 Timers MUS2 88 826 004