

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

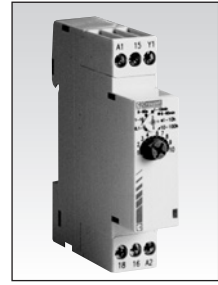
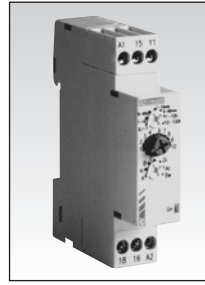
- Multi-function or mono-function
- Multi-range (7 ranges, available options)
- Multi-voltage
- SPDT relay output: 10A - 250V
- Screw or spring terminals
- 1 LED status indicator
- Option of connecting a small cord to the control input
- 3-wire sensor control option

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 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

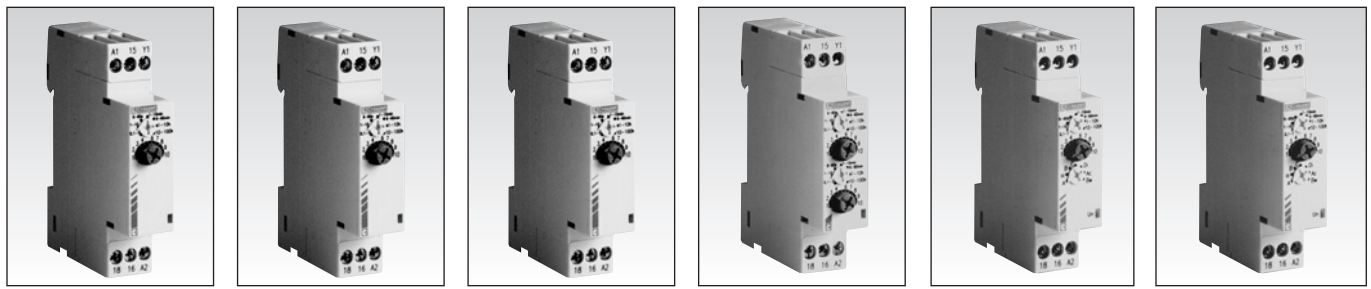
For special features, functions etc. please contact us.



| Timing | 0.1s • 100h | 0.1s • 100h |
|--|---|-------------------|
| Types | | |
| Screw terminals | MUR1 | MAR1 |
| Spring terminals | — | — |
| Part numbers and voltage | | |
| 24V $\overline{\text{---}}$ / 24 • 240V \sim | 88 826 105 | 88 826 115 |
| 12V \sim / $\overline{\text{---}}$ | — | — |
| 12 • 240V \sim / $\overline{\text{---}}$ | — | — |
| Functions | | |
| | Multi-function | Bifunction |
| | A - At - B - C - H - Ht - Di - D - Ac - Bw | 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

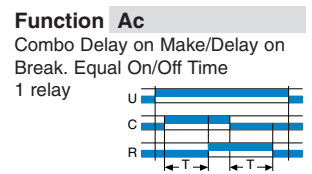
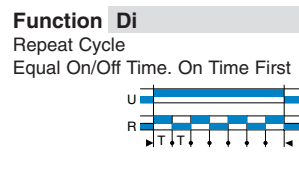
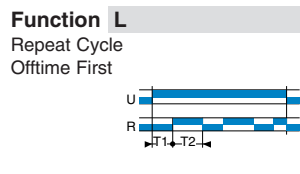
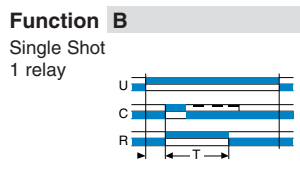
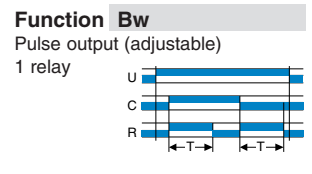
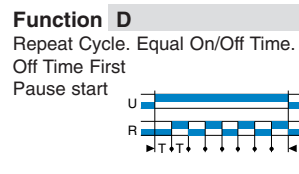
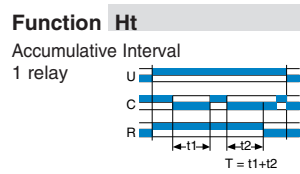
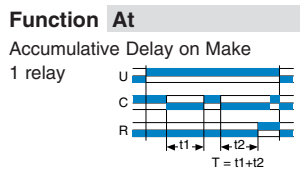
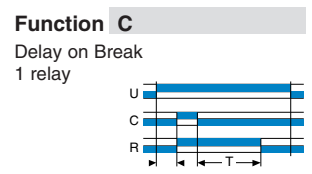
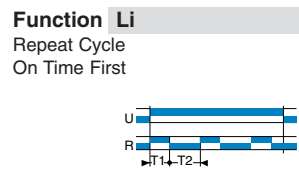
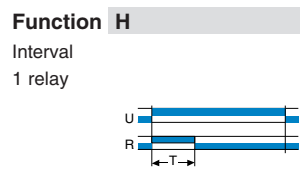
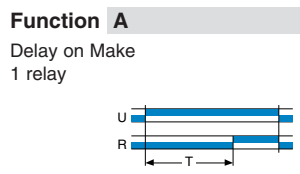
| | |
|---|--|
| Conforming to standards IEC 1812-1, EN 50081-1/2, EN 50082-1/2, LV directives (73/23/EEC + 93/68/EEC (CE marking) + EMC (89/336/EEC + IEC 669-2-3 (17.5 mm) | |
| Approvals cUL listed UL listed CSA recognized | |
| Temperatures limits | |
| - use | -20 °C + 60 °C |
| - stored | -30 °C + 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 (Air 8 K / Contact 6 KV) |
| - Immunity to electrostatic discharges acc. to IEC 1000-42 | Level III (10V/m: 80 MHz to 1 GHz) |
| - Immunity to electrostatic fields acc. to ENV 50140/204 (IEC 1000-4-3) | Level III (direct 2kV/ Capacitive coupling clamp 1 KV) |
| - Immunity to rapid transient bursts acc. to IEC 1000-4-4 | Level III (common mode 2 KV / residual current mode 1KV) |
| - Immunity to shock waves on power supply acc. to IEC 1000-4-5 | Level III (10V rms: 0.15 MHz to 80 MHz) |
| - Immunity to radiofrequency in common mode acc. to ENV | 30 % / 10 ms 60 % / 100 ms > 95 % / 5 s |
| - Immunity to voltage dips and breaks acc. to IEC 1000-4-11 | |
| - 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 |



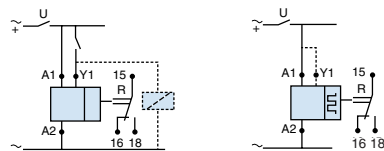
| | | | | | |
|--------------------|--------------------|----------------------|----------------------|---|--|
| 0.1s • 100h | 0.1s • 100h | 0.1s • 100h | 0.1s • 100h | 0.1s • 100h | 0.1s • 100h |
| MBR1 | MCR1 | MHR1 | MLR1 | MUR4 | MUR3 |
| — | — | — | — | — | MURc3 |
| 88 826 125 | 88 826 135 | 88 826 145 | 88 826 155 | — | — |
| — | — | — | — | 88 826 100 | — |
| Mono-function B | Mono-function C | Bifunction H - Ht | Bifunction Li - L | Multi-function A - At - B - C - H - Ht - Di - D - Ac - Bw | 88 826 103 88 826 503 Multi-function A - At - B - C - H - Ht - Di - D - Ac - Bw |
| 10 A | 10 A | 10 A | 10 A | 10 A | 10 A |

4

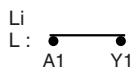
Function diagrams



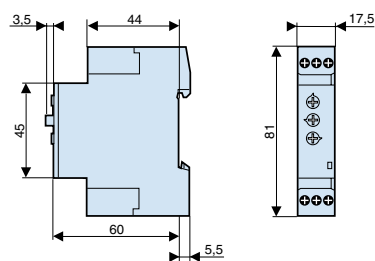
Connections (Y1 = C, Function diagrams)



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

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

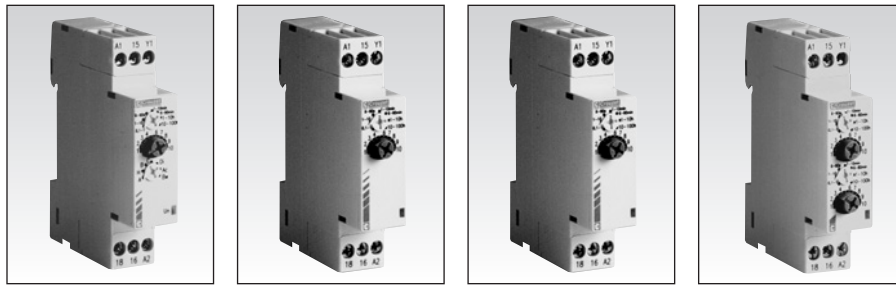
Nominal current

Timing ranges (7 ranges)

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

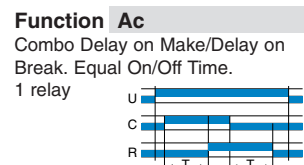
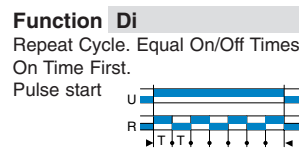
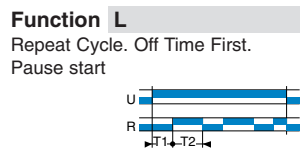
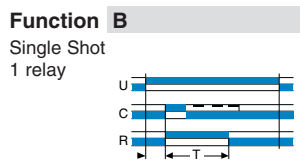
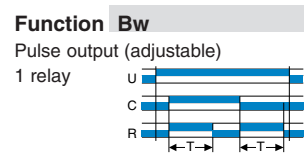
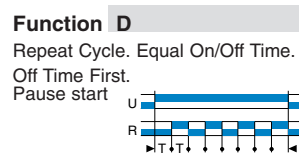
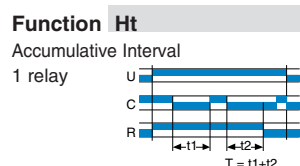
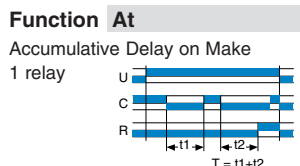
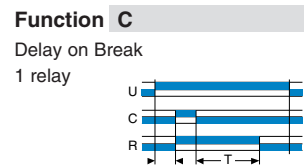
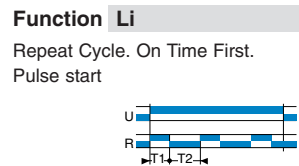
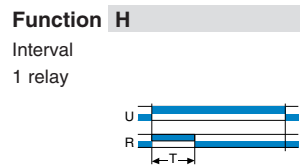
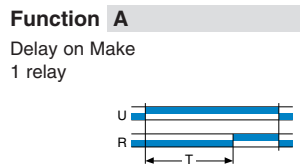
General specifications

| | |
|---|--|
| 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 | Level III (Air 8 K / Contact 6 KV) |
| - Immunity to electrostatic discharges acc. to IEC 1000-42 | Level III 10V/m: 80 MHz to 1 GHz) |
| - Immunity to electrostatic fields acc. to ENV 50140/204 (IEC 1000-4-3) | Level III (direct 2kV/ Capacitive coupling clamp 1 KV) |
| - Immunity to rapid transient bursts acc. to IEC 1000-4-4 | Level III (common mode 2 KV / residual current mode 1KV) |
| - Immunity to shock waves on power supply acc. to IEC 1000-4-5 | Level III (10V rms: 0.15 MHz to 80 MHz) |
| - Immunity to radiofrequency in common mode acc. to ENV | 30 % / 10 ms 60 % / 100 ms > 95 % / 5 s |
| - Immunity to voltage dips and breaks acc. to IEC 1000-4-11 | |
| - 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 |

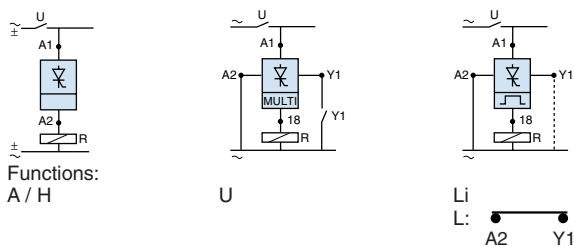


| | | | |
|---|--------------------|--------------------|----------------------|
| 0.1s • 100h | 0.1s • 100h | 0.1s • 100h | 0.1s • 100h |
| MUS2 | MAS5 | MHS2 | MLS2 |
| 1 | | | |
| 2 | | | |
| 88 826 004 | — | 88 826 044 | 88 826 054 |
| — | 88 826 014 | — | — |
| Multi-function A - At - B - C - H - 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) |

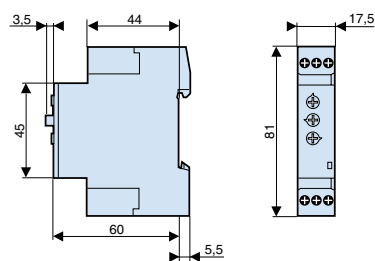
Function diagrams



Connections (Y1 = C, Function diagrams)



Dimensions



To order, specify:

1 Type

2 Part number

Example: Chronos 2 Timers MUS2 88 826 004