Chronos 2 timers

➜ 22.5 mm DIN rail mounting

- Multi-function or mono-function
- Multi-range
- Multi-voltage
- Screw or spring terminals
- LED status indicator
- Option of connecting an external power supply to the control input
- 3-wire sensor control option

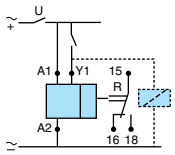


Specifications

Type	Functions	Output	Nominal rating	Connections	Supply voltage	Code
TUR1	A - At - B - C - H - Ht - Di - D - Ac - Bw	1 changeover relay	8 A	Screw terminals	24V DC / 24 →240 V AC	88 865 105
TAR1	A - At	1 changeover relay	8 A	Screw terminals	24 V DC / 24 →240 V AC	88 865 115
TBR1	B	1 changeover relay	8 A	Screw terminals	24 V DC/ 24 →240 V AC	88 865 125
TCR1	C	1 changeover relay	8 A	Screw terminals	24 V DC / 24 →240 V AC	88 865 135
THR1	H - Ht	1 changeover relay	8 A	Screw terminals	24 V DC / 24 →240 V AC	88 865 145
TLR1	Li - L	1 changeover relay	8 A	Screw terminals	24 V DC / 24 →240 V AC	88 865 155
TQR1	Q	1 changeover relay	8 A	Screw terminals	24 V DC / 24 →240 V AC	88 865 175
TUR4	A - At - B - C - H - Ht - Di - D - Ac - Bw	1 changeover relay	8 A	Screw terminals	24V DC / 24 →240 V AC	88 865 100
TUR3	A - At - B - C - H - Ht - Di - D - Ac - Bw	1 changeover relay	8 A	Screw terminals	12 →240 V AC/ DC	88 865 103
TURc3	A - At - B - C - H - Ht - Di - D - Ac - Bw	1 changeover relay	8 A	Spring terminals	12 →240 V AC / DC	88 865 503
TXR1	Ad - Ah - N - O - P- Pt - TL - Tt - W	1 change over relay	8 A	Screw terminals	24 V DC / 24 →240 V AC	88 865 185
TU2R1	A - At - B - C - H - Ht - Di - D - Ac -Bw	2 timed changeover relays including 1 instantaneous	8 A	Screw terminals	24 V DC / 24 →240 V AC	88 865 305
TA2R1	A - At	2 changeover relays	8 A	Screw terminals	24 V DC / 24 →240 V AC	88 865 215
TK2R1	K	2 change over relays	8 A	Screw terminals	24 V DC / 24 →240 V AC	88 865 265
TU2R4	A - At - B - C - H - Ht - Di - D - Ac - Bw	2 timed changeover relays including 1 instantaneous	8 A	Screw terminals	12 V AC / DC	88 865 300
TQR6	Q : Star / Delta	1 change over relay	8 A	Screw terminals	24 V DC / 24 →240 V AC	88 865 176
TU2R3	A, B, C, H, Di, Ac, Bw + (At, Ht, D)	2 timed changeover relays including 1 instantaneous	8 A	Screw terminals	12 →230 V AC	88 865 303
TX2R1	Ad - Ah - N - O - P - Pt - TL - Tt - W	2 timed changeover relays including 1 instantaneous	8 A	Screw terminals	24 V DC / 24 →240 V AC	88 865 385

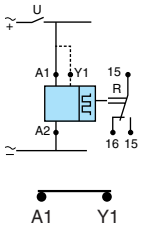
Connections

1 changeover relay output



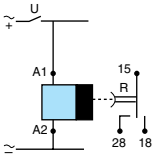
A - At - B - C - H - Ht - Di - D - Ac - Bw - Ad - Ah - N - O - P - Pt - TL - Tt -

1 changeover relay output



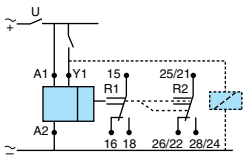
Li - L

1 changeover relay output



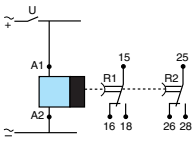
Q

2 changeover relay outputs



A - At - B - C - H - Ht - Di - D - Ac - Bw - Ad - Ah - N - O - P - Pt - TL - Tt - W

2 changeover relay outputs



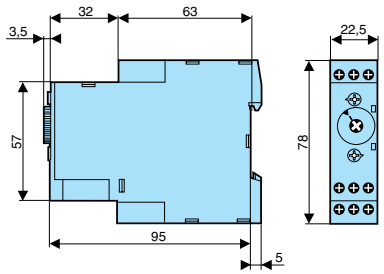
K

General characteristics

see page 45

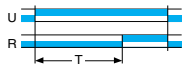
To order, see page 6

Dimensions



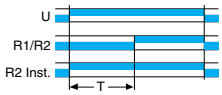
Curves

Function A



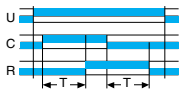
Delay on energisation

Function A



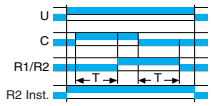
Delay on energisation with 2 timed outputs or 1 timed and 1 instantaneous

Function Ac



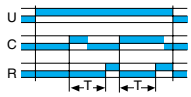
Timing after closing and opening of control contact 1 relay

Function Ac



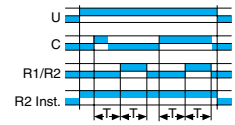
Timing after closing and opening of control contact 2 timers or 2 relays, including 1 instantaneous

Fonction Ad



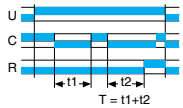
Delay on energisation by switch (non resettable)

Function Ah



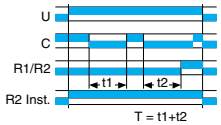
Flashing single cycle by switch (non resettable) 1 relay

Function At



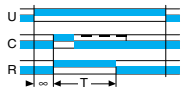
Timing on energisation with memory 1 relay output

Function At



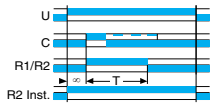
Timing on energisation with memory with 2 timed outputs or 1 timed and 1 instantaneous

Fonction B



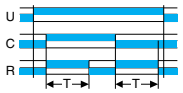
Timing on impulse one shot 1 relay output

Function B



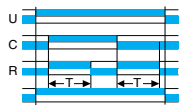
Timing on impulse one shot with 2 timed outputs or 1 timed and 1 instantaneous

Function Bw



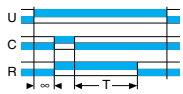
Pulse output (adjustable) 1 relay output

Function Bw



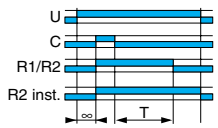
Pulse output (adjustable) with 2 timed outputs or 1 timed and 1 instantaneous

Function C



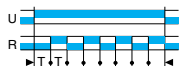
Timing after impulse 1 timer

Function C



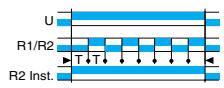
Timing after impulse with 2 timed outputs or 1 timed and 1 instantaneous

Function D



Flip-flop 1 relay output Pause start

Function D

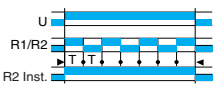


Flip-flop Pulse start with 2 timed outputs or 1 timed and 1 instantaneous

Function Di

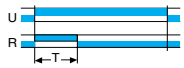
Flip-flop 1 relay output Pulse start

Function Di



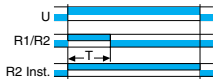
Flip-flop Pulse start with 2 timed outputs or 1 timed and 1 instantaneous

Function H



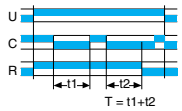
Timing on energisation 1 relay output

Function H



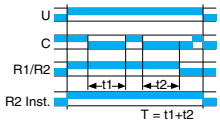
Timing on energisation with 2 timed outputs or 1 timed and 1 instantaneous

Function Ht



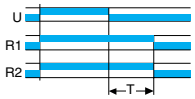
Delay on energisation with memory 1 relay output

Function Ht



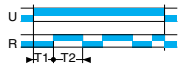
Delay on energisation with memory with 2 timed outputs or 1 timed and 1 instantaneous

Function K



Delay on de-energisation True delay OFF 2 relay outputs

Function L

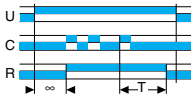


Asymetrical recycler 1 relay output Pause start

Function Li

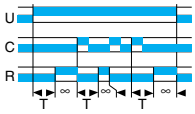
Asymmetrical recycler 1 relay output Pulse start

Function N



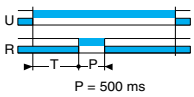
Safe-guard

Function O



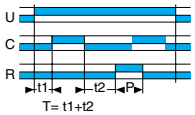
Delayed safe-guard

Function P



Delayed fixed-length pulse 1 relay output

Function Pt

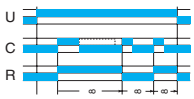


Impulse counter (delay on)

Function Q

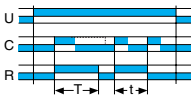
Star-delta

Function TI



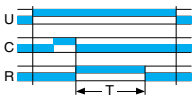
Impulse relay output

Function Tt



Timed impulse relay output

Function W



Timing after pulse on control contact

Chronos 2 timers: general characteristics

➜ 17.5 mm
➜ 22.5 mm
➜ Plug-in

Timing	
Repetition accuracy with constant parameters	± 0.5 % (IEC 1812-1)
Temperature drift	± 0.05 % / °C
Voltage drift	± 0.2 % / V
Display accuracy according to IEC 1812-1	± 10 % / 25°C
Minimum pulse duration typically (relay version)	30 ms
Minimum pulse duration typically (solid state version)	50 ms
Minimum pulse duration typically (relay version under load)	100 ms
Maximum reset time by de-energisation typically (relay version)	100 ms
Maximum reset time by de-energisation typically (solid state version)	350 ms
Immunity from micro power cuts : typical	> 10 ms
Supply	
Multi-voltage power supply	Depending on version
Frequency (Hz)	50 / 60
Operating range	85 to 110 % Un (85 to 120 % Un for 12V AC/DC)
Operator factor	100 %
Max. absorbed power	0.6 W 24 V AC/DC 1.5 W 230 V AC 32 VA 230 V AC
Output specification **Relay output**	
1 or 2 changeover relays, AgNi (cadmium-free)	2000 VA/80 W
Rated power	2000 VA/80 W
Maximum breaking current	8 A AC 8A DC
Minimum breaking current	10 mA / 5 V DC
Voltage breaking capacity	250 V AC/V DC
Electrical life (operations)	10 ^{5} operations 8 A 250 V resistive
Mechanical life (operations)	5x10^{6}
Breakdown voltage acc. to IEC 1812-1	2.5 kV /1 min / 1 mA / 50 Hz
Impulse voltage acc. to IEC 664-1, IEC 1812-1	5 kV, wave 1.2 / 50 µs
Solid state output 17.5 mm	
Rated power	0.7 A AC/DC 20 °C (0.5 A UL)
Derating	5 mA / °C
Maximum admissible current	20 A ≤ 10 ms
Minimum breaking current	10 mA
Leakage current	< 5 mA
Voltage breaking capacity	250 V AC/V DC
Maximum voltage drop at terminals	3 wire 4V - 2 wire 8V
Electrical life (operations)	10^{8}
Mechanical life (operations)	10^{8}
Breakdown voltage acc. to IEC 664, IEC 255-5	2.5 kV to 1 mA / 1 min
Input type	Volt-free contact 3-wire PNP output control option residual voltage : 0.4V whatever the timer power supply
Timing ranges (7 ranges)	1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h

Other characteristics	
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 - CSA - cUL pending**	•
Temperatures limits use (°C)	-20 → +60
Temperature limits stored (°C)	-30 → +60
Installation category (acc. to IEC 664-1)	Voltage surge category
Creepage distance and clearance acc. to IEC 664-1	4 kV / 3
Protection (IEC 529) Terminal	IP 20
Protection (IEC 529) Housing	IP 40
Degree of protection acc. to IEC 529 Front face (except Tk2R1)	IP 50
Vibration resistance acc. to IEC 68-2-6	f = 10 - 55 Hz A = 0.35 mm
Relative humidity no condensation acc. to 68-2-3	93 % without condensation
Electromagnetic compatibility - Immunity to electrostatic discharges acc to IEC 1000-42	Level III (Air 8 KV / Contact 6 KV)
Immunity to electrostatic fields acc. 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 (2 KV / common mode 2 KV/residual current mode 1KV)
Immunity to radiofrequency in common mode acc. to ENV (CEI 1000-4-6)	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}
Connection capacity - with ferrule	2 x 1.5 mm^{2}
Spring terminals, 2 terminals per connection point - flexible wire	1.5 mm^{2}
Spring terminals, 2 terminals per connection point - rigid wire	2.5 mm^{2}
Material housing	Self-extinguishing
Weight : casing 17.5 mm	60 g
Weight : casing 22.5 mm	90 g
Weight : plug-in casing	80 g