

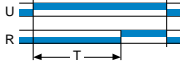
Guide to selecting a range

Timing multi-range 0.1 s to 100 h
1 s - 10s - 1min - 10min - 1h - 10h - 100h

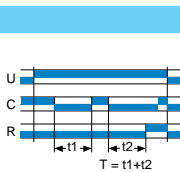
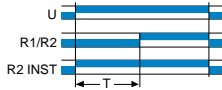
Multi-function U : A-At - B - C - H-Ht - Di-D - Ac - Bw
Mono-function : A-At / B / C / H-Ht / Li-L / Q / K

Function A

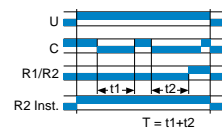
Delay on energisation
1 relay



2 timers or
2 relays, including 1 instantaneous



2 timers or
2 relays, including 1 instantaneous

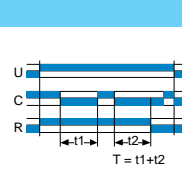
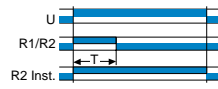


Function H

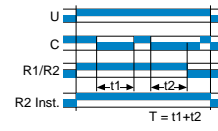
Timing on energisation
1 relay



2 relays, including 1 instantaneous



2 relays, including 1 instantaneous

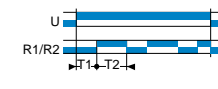


Function L

Asymmetrical recycler 1 relay
Pause start



2 timers

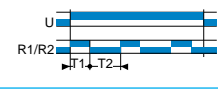


Function Li

Asymmetrical recycler 1 relay
Pulse start

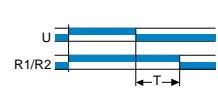


2 timers



Function K

Delay on de-energisation
True delay OFF
2 relays



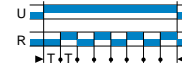
Function Q

Star-delta

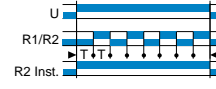


Function D

Flip-flop 1 relay
Pause start

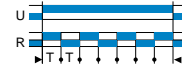


2 relays, including 1 instantaneous

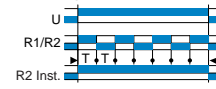


Function Di

Flip-flop 1 relay
Pulse start



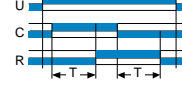
2 relays, including 1 instantaneous



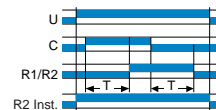
Function Ac

Timing after closing and opening
of control contact

1 relay



2 relays, including 1 instantaneous

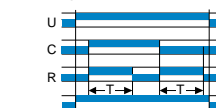


Function Bw

Pulse output (adjustable)
1 relay



2 relays, including 1 instantaneous



Presentation	Type	Function	Output	Connection	Voltage	Part number	
17.5 mm	Relay	MUR1	Multi-function U	1 relay	Screw terminals	24V DC / 24...240V AC	88 826 105
		MAR1	Mono-function A-At	1 relay	Screw terminals	24V DC / 24...240V AC	88 826 115
		MBR1	Mono-function B	1 relay	Screw terminals	24V DC / 24...240V AC	88 826 125
		MCR1	Mono-function C	1 relay	Screw terminals	24V DC / 24...240V AC	88 826 135
		MHR1	Mono-function H-Ht	1 relay	Screw terminals	24V DC / 24...240V AC	88 826 145
		MLR1	Mono-function Li-L	1 relay	Screw terminals	24V DC / 24...240V AC	88 826 155
		MUR4	Multi-function U	1 relay	Screw terminals	12V AC/DC	88 826 100
		MUR3	Multi-function U	1 relay	Screw terminals	12...240V AC/DC	88 826 103
		MURc3	Multi-function U	1 relay	Spring terminals	12...240V AC/DC	88 826 503
		Solid state	MUS2	Multi-function U	Solid state relay	Screw terminals	24...240V AC
MAS5	Mono-function A		Solid state relay	Screw terminals	24...240V AC/DC	88 826 014	
MHS2	Mono-function H		Solid state relay	Screw terminals	24...240V AC	88 826 044	
MLS2	Mono-function Li-L		Solid state relay	Screw terminals	24...240V AC	88 826 054	

22.5 mm	Relay	TUR1	Multi-function U	1 relay	Screw terminals	24V DC / 24...240V AC	88 865 105
		TU2R1	Multi-function U	2 relays (1 inst.)	Screw terminals	24V DC / 24...240V AC	88 865 305
		TAR1	Mono-function A-At	1 relay	Screw terminals	24V DC / 24...240V AC	88 865 115
		TA2R1	Mono-function A-At	2 relays	Screw terminals	24V DC / 24...240V AC	88 865 215
		TBR1	Mono-function B	1 relay	Screw terminals	24V DC / 24...240V AC	88 865 125
		TCR1	Mono-function C	1 relay	Screw terminals	24V DC / 24...240V AC	88 865 135
		THR1	Mono-function H-Ht	1 relay	Screw terminals	24V DC / 24...240V AC	88 865 145
		TLR1	Mono-function Li-L	1 relay	Screw terminals	24V DC / 24...240V AC	88 865 155
		TQR1	Mono-function Q	1 relay	Screw terminals	24V DC / 24...240V AC	88 865 175
		TK2R1	Mono-function K	2 relays	Screw terminals	24V DC / 24...240V AC	88 865 265
		TUR4	Multi-function U	1 relay	Screw terminals	12V AC/DC	88 865 100
		TU2R4	Multi-function U	2 relays (1 inst.)	Screw terminals	12V AC/DC	88 865 300
		TUR3	Multi-function U	1 relay	Screw terminals	12...240V AC/DC	88 865 103
		TURc3	Multi-function U	1 relay	Spring terminals	12...240V AC/DC	88 865 503

Plug-in	8-pin	OUR1	Multi-function U	1 relay	Plug-in	24V DC / 24...240V AC	88 867 105
		OA2R1	Mono-function A	2 relays	Plug-in	24V DC / 24...240V AC	88 867 215
		OCR1	Mono-function C	1 relay	Plug-in	24V DC / 24...240V AC	88 867 135
		OLR1	Mono-function Li-L	1 relay	Plug-in	24V DC / 24...240V AC	88 867 155
		OUR4	Multi-function U	1 relay	Plug-in	12V AC/DC	88 867 100
		OUR3	Multi-function U	1 relay	Plug-in	12...240V AC/DC	88 867 103
	11-pin	PU2R1	Multi-function U	2 relays (1 inst.)	Plug-in	24V DC / 24...240V AC	88 867 305
		PA2R1	Mono-function A-At	2 relays	Plug-in	24V DC / 24...240V AC	88 867 415
		PC2R1	Mono-function C	2 relays	Plug-in	24V DC / 24...240V AC	88 867 435
		PL2R1	Mono-function Li-L	2 relays	Plug-in	24V DC / 24...240V AC	88 867 455
		PU2R4	Multi-function U	2 relays (1 inst.)	Plug-in	12V AC/DC	88 867 300
		PU2R3	Multi-function U	2 relays (1 inst.)	Plug-in	12...240V AC/DC	88 867 303

Chronos 2 electronic timers - 17.5 mm - 22.5 mm - Plug-in

Technical specifications

Functions

Multi-function U : A-At - B - C - H-Ht - Di-D - Ac - Bw.

Mono-function A-At / B / C / H-Ht / Li-L / Q / K.

Depending on the version, see table page 8/9.

Timing

Multiple timing ranges : 0.1s to 100h, 7 timing ranges

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

for all the range except TK2R1.

- 0.6s - 2.5s - 20s - 160s for type TK2R1.

Repetition accuracy (with constant parameters) :

- $\pm 0.5\%$ (IEC 1812-1).

Drift :

- temperature $\pm 0.05\%$ / °C

- voltage $\pm 0.2\%$ / V.

Display precision according to IEC 1812-1 : 0 +10 % / 25 °C.

Minimum pulse duration :

- typically 30 ms (relay version) / typically 50 ms (solid state version).

- typically 100 ms under load (relay version).

Maximum reset time by de-energisation :

- typically 100 ms (relay version) / typically 350 ms (solid state version).

Immunity to breaks in supply voltage : typically >10 ms.

Selectable switching time (TQR1) :

20/40/60/80/100/120/140 ms.

Power supply

Multi-voltage power supply : Depending on version, see page 8/9.

Frequency : 50/60 Hz.

Operating range : 85 to 115 % 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 : 8 A AC 8 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 : 5×10^6 operations.

Breakdown voltage acc. to IEC 1812-1 : 2.5 kV / 1 min / 1 mA / 50Hz.

Impulse voltage acc. to IEC 664-1 IEC 1812-1 :

- 5 kV, 1.2 / 50 μ s wave.

Solid state output

Rated power : 0.7 A AC/DC / 20 °C (0.5A UL).

Derating : 5 mA/°C.

Maximum admissible current : 20 A \leq 10 ms.

Minimum breaking current : 10 mA.

Off-state leakage : < 5 mA.

Voltage breaking capacity : 250V AC/VDC.

Maximum voltage drop at terminals : 3-wire, 4V - 2-wire 8V.

Electrical life : 10^8 operations.

Mechanical life : 10^8 operations.

Breakdown voltage acc. to IEC 664, IEC 255-5 : 2.5 kV at 1 mA / 1 min.

Display

State displayed by 1 or 2 LEDs :

- Flashing green when on
- Relay LED yellow during timing.

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.

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 - CSA - cUL pending

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 IP 50 (except Tk2R1)

Vibration resistance acc. to IEC 68-2-6 : $f = 10 \bullet 55$ Hz - A = 0.35 mm

Relative humidity acc. to IEC 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. 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 2 kV / 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

50141 (IEC 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 35 mm DIN rail (EN 50022)

- 8 and 11-pin plug-in bases

Connection capacity :

- without ferrule 2 x 2.5 mm²

- with ferrule 2 x 2.5 mm²

Spring terminals, 2 terminals per connection point

- 1.5 mm² flexible wire

- 2.5 mm² rigid wire

Casing material : Self-extinguishing

Weight : 22.5 mm casing : 90 g

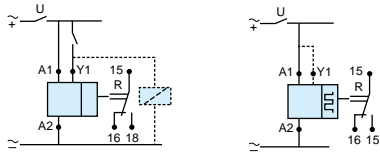
17.5 mm casing : 60 g

Plug-in casing : 80 g

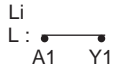
Chronos 2 electronic timers - 17.5 mm - 22.5 mm - Plug-in

Connections

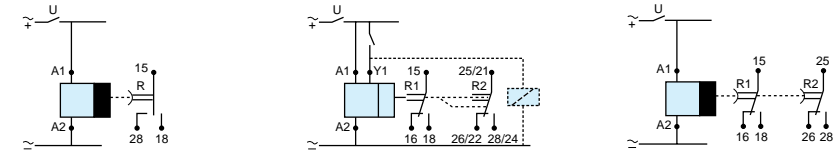
17.5 and 22.5 mm casing 1 relay



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



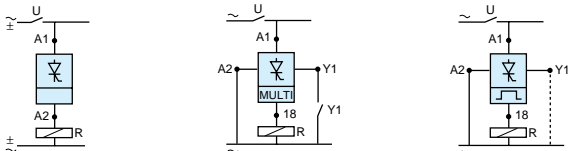
22.5 mm casing 2 relays



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

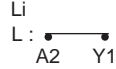
K

17.5 mm casing solid state output

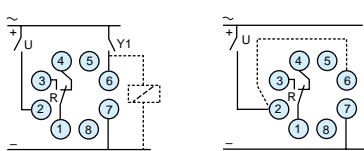


Functions :
A / H

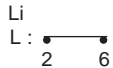
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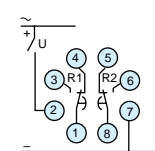
8-pin plug-in casing 1 relay



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

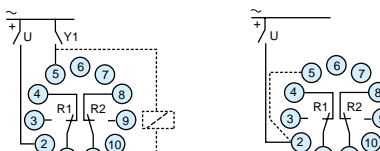


8-pin 2 relays

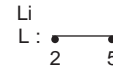


A

11-pin plug-in casing 2 relays

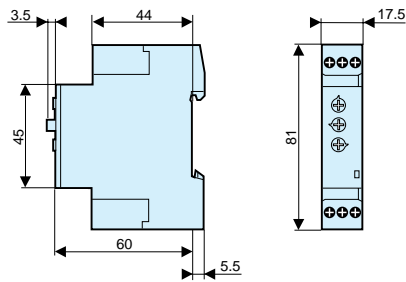


Functions :
A-At / H-Ht / B / C
Di-D / Ac / BW

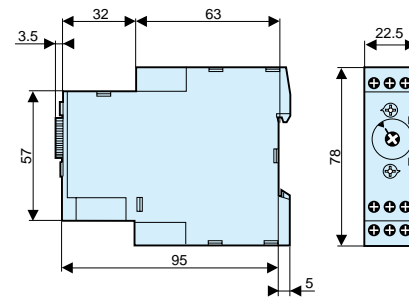


Dimensions

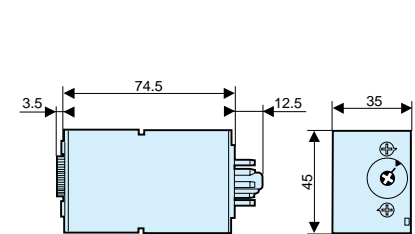
17.5 mm casing



22.5 mm casing

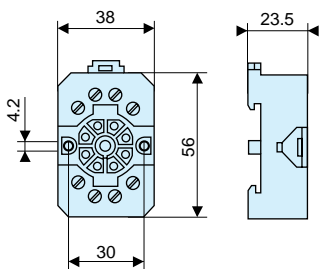


Plug-in casing



Accessories

Screw terminal block or 8-pin connector base
25 622 128



Screw terminal block or 11-pin connector base
25 622 077

