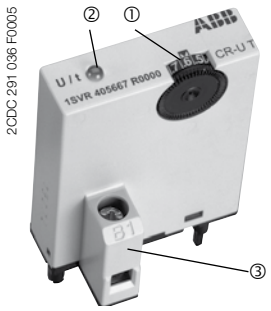
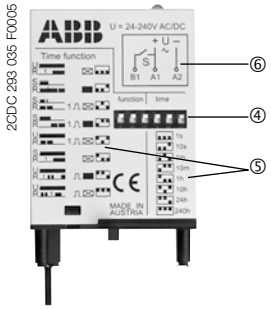
# Accessories for pluggable interface relays CR-U
# Pluggable multifunction time module CR-U T
Data sheet




CR-U T

① Thumbwheel for the fine adjustment of the desired time

② U/t: green LED -
⎍‾‾‾⎍ :
Control supply voltage applied
⎍⎍⎍⎍⎍ :
Timing active

③ Control contact connection B1

④ DIP switch to pre-select
- one of the 8 timing functions and
- one of the 8 time ranges from 50 ms - 240 h

⑤ DIP switch position

⑥ Circuit diagram

## Features

- Rated control supply voltage $U_S$ 24-240 V AC/DC
- Multifunction time module with 8 timing functions:
  ON-delay, ON-delay with control contact, OFF-delay, Impulse-ON, Impulse-ON with control contact (pulse forming), Impulse-OFF, Flasher starting with ON, Flasher starting with OFF
- One device includes 8 time ranges from 50 ms to 240 h
- Voltage-related (wet/non-floating) control contact, capable of switching a parallel load
- LED for status indication
- 35 mm width
- can be combined with the universal relay CR-U, pluggable into the sockets CR-U2S and CR-U3S

## Approvals

## Marks

CE CE

## Order data

| Type | Rated control supply voltage $U_S$ | Order code |
|---|---|---|
| Multifunction timer module | | |
| **CR-U T** | **24-240 V AC/DC** | **1SVR 405 667 R0000** |

## Application

The multifunction time module CR-U T can be plugged into the sockets CR-U2S and CR-U3S for the CR-U range 2- or 3-pole pluggable interface relays. This creates very compact 2- or 3-pole time relays with a rated operational current of up to 10 A. The easy adjustment of the timing function and the time delay via DIP switches, and the fine adjustment of the time delay with the thumbwheel, provide maximum operating convenience.

## Operating mode

The CR-U T provides 8 timing functions, adjustable with DIP switches. One of the time delay ranges, from 0.05 s to 240 h, can be selected with other DIP switches. The fine adjustment of the time delay is made via the thumbwheel on the front of the unit.

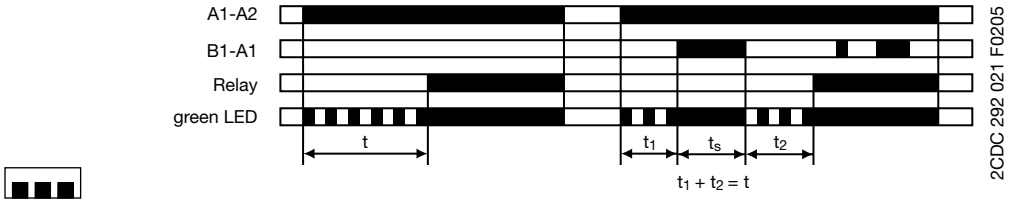
Timing is displayed by a flashing LED labelled U/t.

## Function diagrams

**⌧ ON-delay with control contact to pause timing / store time**

If control contact B1-A1 is open, timing t begins when the control supply voltage $U_S$ is applied. The green LED flashes during timing. When the selected time t is complete, the output relay energizes and the flashing green LED turns steady. If $U_S$ is interrupted, the output relay de-energizes and the time delay is reset.

Timing can be paused by closing the control contact. The elapsed time $t_1$ is stored and continues from this value ($t_2 = t - t_1$) when the control contact is re-opened.



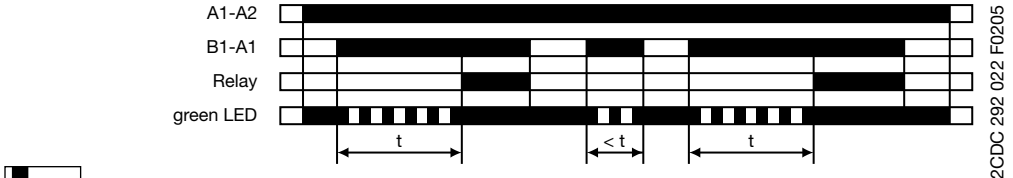



**⌧ ON-delay with control contact to start timing**

This function requires continuous control supply voltage $U_S$ for timing. Applied $U_S$ is displayed by the glowing green LED.

Timing is controlled by control contact B1-A1. Timing t begins when the control contact closes. The green LED flashes during timing. When the selected time t is complete, the output relay energizes. Opening the control contact de-energizes the output relay.

If the control contact opens before the time t is complete, the elapsed time is reset. Timing starts again when the control contact re-closes.

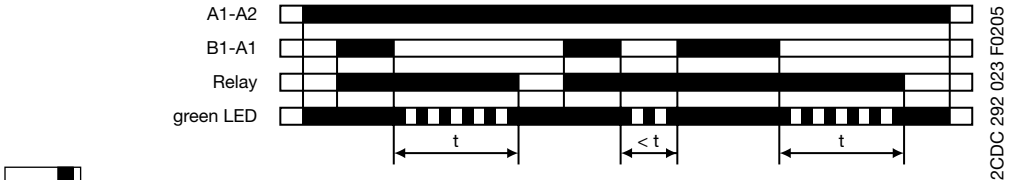



**■ OFF-delay with control contact to start timing**

This function requires continuous control supply voltage $U_S$ for timing. Applied $U_S$ is displayed by the glowing green LED.

Timing is controlled by control contact B1-A1. When the control contact closes, the output relay energizes. Opening the control contact starts timing t. The green LED flashes during timing. When the selected time t is complete, the output relay de-energizes.

If the control contact closes before the time t is complete, the elapsed time is reset. Timing starts again when the control contact re-opens.

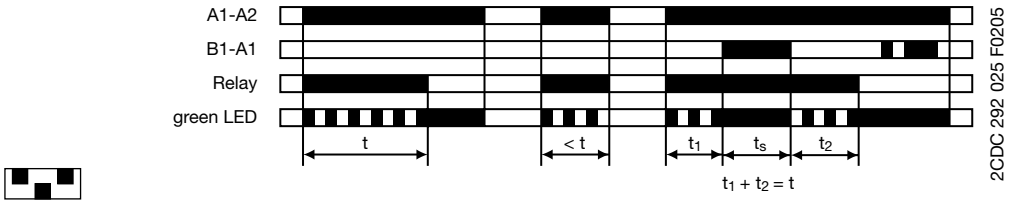



**Impulse-ON with control contact to pause timing / store time**

With control contact B1-A1 open, applying the control supply voltage $U_S$ starts timing t and energizes the output relay. The green LED flashes during timing. When the selected time t is complete, the output relay de-energizes and the flashing green LED turns steady. If $U_S$ is interrupted, before the time delay is complete, the output relay de-energizes and the time delay is reset.

Timing can be paused by closing the control contact. The elapsed time $t_1$ is stored and continues from this value ($t_2 = t - t_1$) when the control contact is re-opened.

The control contact is disabled when the time t is complete.

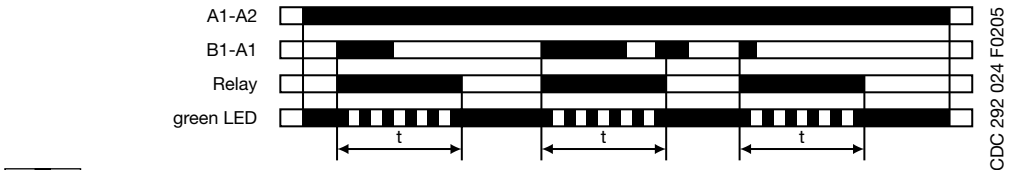



**Impulse-ON with control contact to start timing (pulse forming)**

This function requires continuous control supply voltage $U_S$ for timing. Applied $U_S$ is displayed by the glowing green LED.

Timing is controlled by control contact B1-A1. Closing the control contact starts timing t and energizes the output relay. The green LED flashes during timing. When the selected time t is complete, the output relay de-energizes.

During timing t, the control contact has no influence on the function. Timing does not restart if the control contact is still closed when the time delay t is complete. Re-closing the control contact, after the time t is complete, restarts timing.

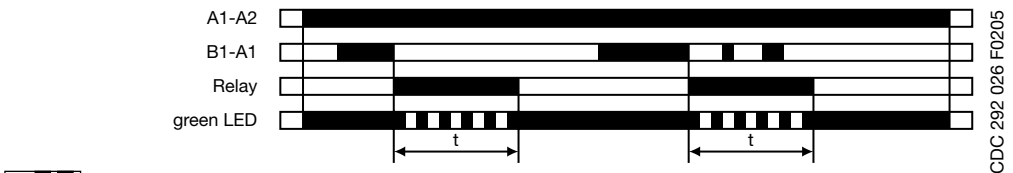



**Impulse-OFF with control contact to start timing**

This function requires continuous control supply voltage $U_S$ for timing. Applied $U_S$ is displayed by the glowing green LED.

Timing is controlled by control contact B1-A1. Closing the control contact has no influence on the function. Opening the control contact starts timing t and energizes the output relay. The green LED flashes during timing. When the selected time t is complete, the output relay de-energizes.

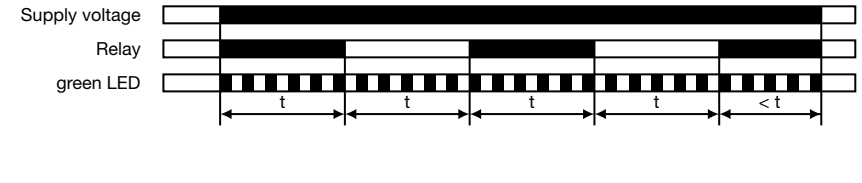
Re-closing the control contact during timing t, does not affect timing. Re-closing and opening the control contact, after the time delay t is complete, restarts timing.



**Flasher starting with ON**

Applying the control supply voltage $U_S$ starts timing with symmetrical ON & OFF times. The cycle starts with an ON time first.

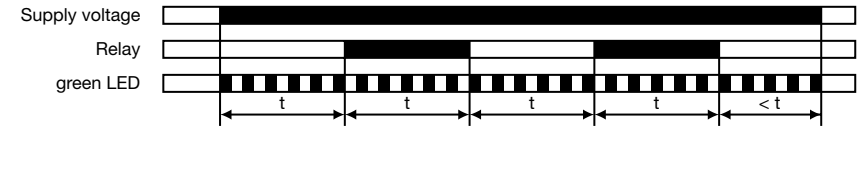
If $U_S$ is interrupted, the output relay de-energizes and timing is reset.



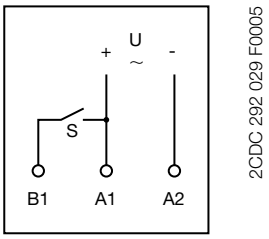

**Flasher starting with OFF**

Applying the control supply voltage $U_S$ starts timing with symmetrical ON & OFF times. The cycle starts with an OFF time first.

If $U_S$ is interrupted, the output relay de-energizes and timing is reset.



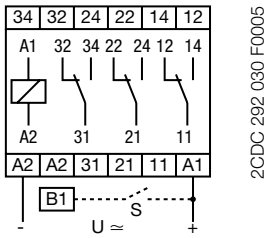

## Connection diagram




A1-A2 Rated control supply voltage $U_S$

B1-A1 Control contact connection

## Wiring instruction




## DIP switch position

| Time ranges | Timing functions | |
|---|---|---|
| 1 s | ⊠ | ON-delay with control contact to pause timing / store timing |
| 10 s | ▬ | OFF-delay with control contact to start timing |
| 1 min | 1⎍⊠ | Impulse-ON with control contact to start timing (pulse forming) |
| 10 min | 1⎍▬ | Impulse-OFF with control contact to start timing |
| 1 h | 1⎍⊠ | Impulse-ON with control contact to pause timing / store timing |
| 10 h | ⊠ | ON-delay with control contact to start timing |
| 24 h | ⎍▬ | Flasher starting with the OFF time |
| 240 h | ⎍⊠ | Flasher starting with the ON time |

# Accessories for pluggable interface relays CR-U
# Pluggable multifunction time module CR-U T
Data sheet

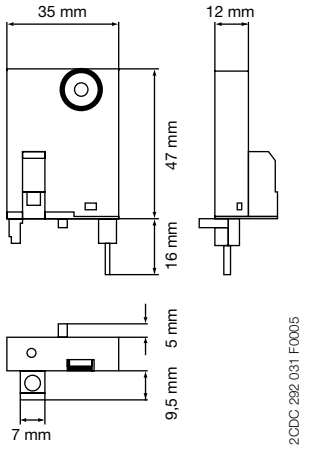
## Technical data

| **Type** | | **CR-U T** |
|---|---|---|
| **Input circuit - Supply circuit** | | **A1-A2** |
| Rated control supply voltage $U_s$ | | 24-240 V AC/DC |
| Rated control supply voltage tolerance | | -15...+10 % |
| Frequency range | | 45-65 Hz |
| Typ. power consumption | at 24 V DC | 60 mW |
| | at 240 V DC | 765 mW |
| | at 24 V AC | 80 mVA (54 mW) |
| | at 230 V AC | 940 mVA (520 mW) |
| Residual ripple at DC | | 10 % |
| Release voltage | | > 10 V AC or 10 V DC |
| **Input circuit - Control circuit** | | **A1-B1** |
| Control contact connection | | voltage-related |
| Load capacity of the control contact connection | | capable of switching a parallel load,<br>Minimum load 1 VA ( 0.5 W) at terminal A2-B1 |
| Maximum cable length to the control contact connections | | 10 m (twisted) |
| Minimum control pulse length | DC | 60 ms |
| | AC | 80 ms |
| Recovery time | | 150 ms |
| **Timing circuit** | | |
| Timing functions | with control contact<br>to pause timing / store timing | ⊠ ON-delay,<br>1⎍⊠ Impulse-ON |
| | with control contact<br>to start timing | ⊠ ON-delay,<br>■ OFF-delay,<br>1⎍⊠ Impulse-ON<br>1⎍■ Impulse-OFF |
| | without control contact | ⎍⊠ Flasher starting with the ON time,<br>⎍■ Flasher starting with the OFF time |
| Time ranges | 1 s | 50 ms - 1 s |
| | 10 s | 500 ms - 10 s |
| | 1 min | 3 s - 1 min |
| | 10 min | 30 s - 10 min |
| | 1 h | 3 min - 1 h |
| | 10 h | 30 min - 10 h |
| | 24 h | 72 min - 24 h |
| | 240 h | 12 h - 240 h |
| Base accuracy | | ±1 % (of full-scale) |
| Timing error within the rated control supply voltage tolerance | | - |
| Timing error within the temperature range | | ≤ 0.01 % / °C |
| **Output circuit** | | |
| | | depending on the<br>universal relay CR-U used |
| **Environmental data** | | |
| Temperature range | operation (IEC 68-1) | -25...+55 °C |
| | storage | -25...+70 °C |
| Climatic category | IEC 721-3-3 | 3K3 |
| Pollution degree | IEC 664-1 | II, III when mounted |

| | | |
|---|---|---|
| **Indication of operational states** | | |
| U/t: green LED | ⎍ | Control supply voltage applied |
| | ⎍⎍⎍ | Timing active |
| **Operating controls** | | |
| Tolerance of setting | | < 5 % (of setting) |
| **General data** | | |
| Duty time ED | | 100 % |
| Repeat accuracy (constant parameters) | | < 0.5 % or ±5 ms |
| Dimensions (W x H x D) | when mounted | 35 mm x 47 mm x 21,5 mm |
| Material of enclosure | | self-extinguishing plastic |
| Degree of protection | | IP 40 |
| Mounting | IEC 67-1-18a | pluggable into socket CR-U2S or CR-U3S |
| Mounting position | | any |

## Dimensions

in mm




## Further documentation

| Document title | Document type | Document number |
|---|---|---|
| Sockets CR-U | Data sheet | 2CDC 117 006 D0203 |
| Relays CR-U | Data sheet | 2CDC 117 003 D0204 |

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