

Accessories for pluggable interface relays CR-U

Pluggable multifunction time module CR-U T



2CDC 291 036 F0005

Characteristics

- 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 (1.380 in)
- Can be combined with the universal relay CR-U, pluggable into the sockets CR-U2S and CR-U3S

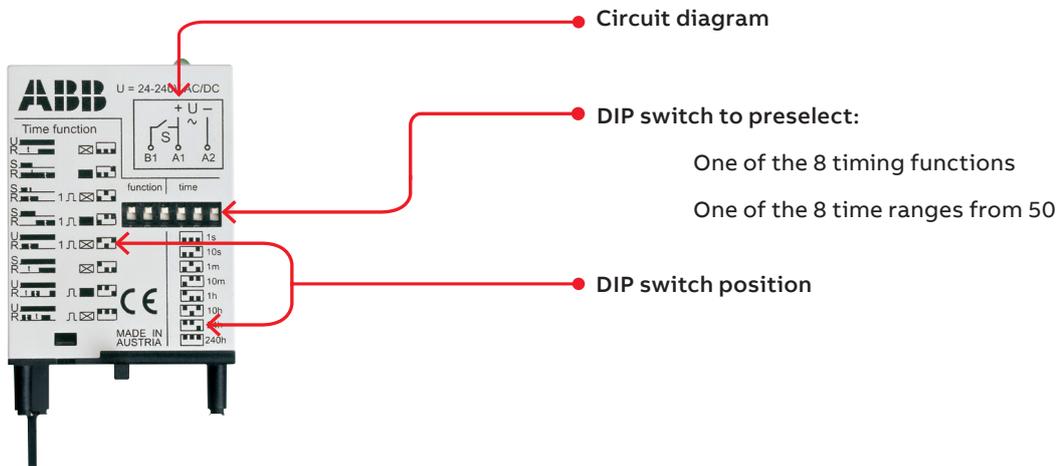
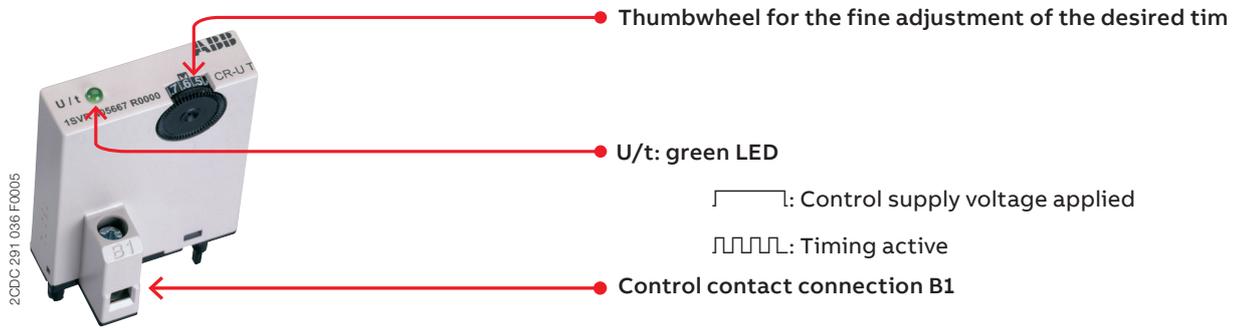
Order data

Multifunction time module

Type	Rated control supply voltage U_s	Order code
CR-U T	24-240 V AC/DC	1SVR405667R0000

Functions

Operating controls



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

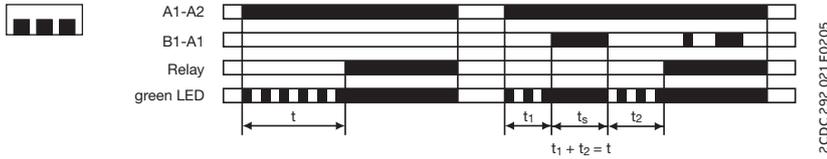
The CR-U T provides 8 timing functions, adjustable with DIP switches. One of the time delay ranges, from 0.05 s to 240 h, can be selected with other DIP switches. The fine adjustment of the time delay is made via the thumbwheel on the front of the unit.

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

Function diagrams

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

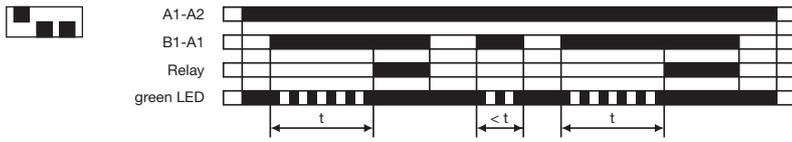
If control contact B1-A1 is open, timing t begins when the control supply voltage U_s is applied. The green LED flashes during timing. When the selected time t is complete, the output relay energizes and the flashing green LED turns steady. If U_s is interrupted, the output relay de-energizes and the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



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ON-delay with control contact to start timing

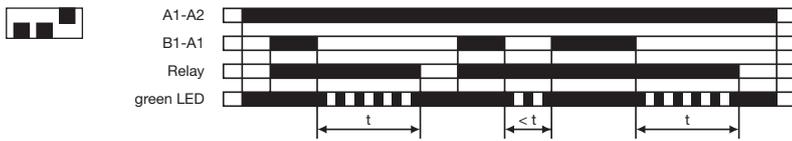
This function requires continuous control supply voltage U_s for timing. Applied U_s is displayed by the glowing green LED. Timing is controlled by control contact B1-A1. Timing t begins when the control contact closes. The green LED flashes during timing. When the selected time t is complete, the output 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.



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OFF-delay with control contact to start timing

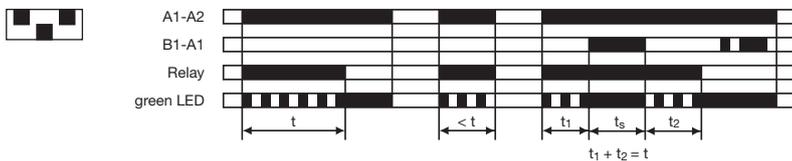
This function requires continuous control supply voltage U_s for timing. Applied U_s is displayed by the glowing green LED. Timing is controlled by control contact B1-A1. When the control contact closes, the output relay energizes. Opening the control contact starts timing t . The green LED flashes during 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.



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

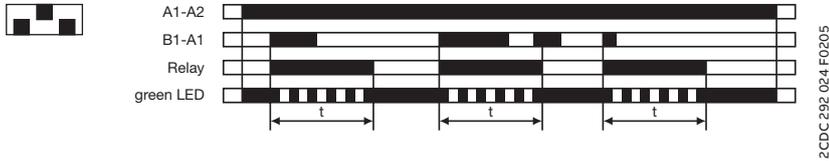
With control contact B1-A1 open, applying the control supply voltage U_s starts timing t and energizes the output relay. The green LED flashes during timing. When the selected time t is complete, the output relay de-energizes and the flashing green LED turns steady. If U_s is interrupted, before the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



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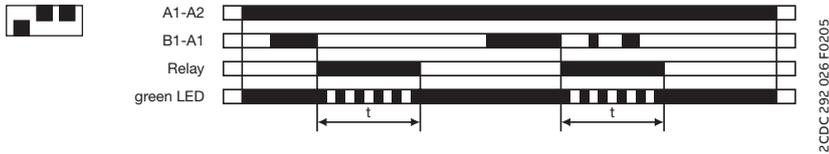
Impulse-ON with control contact to start timing (pulse forming)

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.



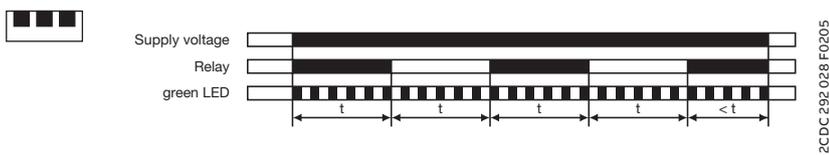
Impulse-OFF with control contact to start timing

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.



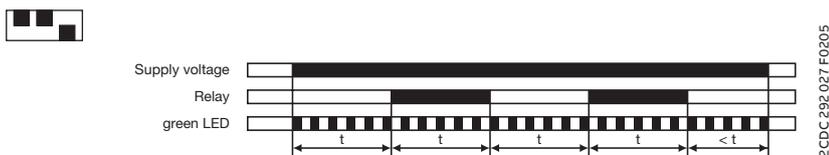
Flasher starting with ON

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.

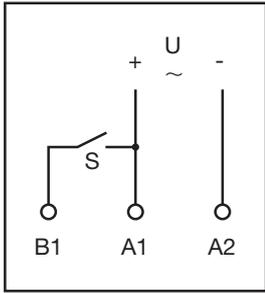


Flasher starting with OFF

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.



Electrical connection

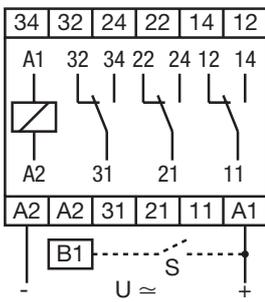


A1-A2 Rated control supply voltage U_s
 B1-A1 Control contact connection

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Connection diagram

Wiring notes



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DIP switches

Time ranges

	1 s
	10 s
	1 min
	10 min
	1 h
	10 h
	24 h
	240 h

Timing functions

		ON-delay with control contact to pause timing / store timing
		OFF-delay with control contact to start timing
		Impulse-ON with control contact to start timing (pulse forming)
		Impulse-OFF with control contact to start timing
		Impulse-ON with control contact to pause timing / store timing
		ON-delay with control contact to start timing
		Flasher starting with the OFF time
		Flasher starting with the ON time

Technical data

Input circuit - Supply circuit

Type	CR-U T	
Supply circuit	A1-A2	
Rated control supply voltage U_s	24-240 V AC/DC	
Rated control supply voltage U_s 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

Control circuit	A1-B1	
Control contact connection	voltage-related	
Load capacity of the control contact connection	capable of switching a parallel load, 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 to pause timing / store timing	 ON-delay,  Impulse-ON
	with control contact to start timing	 ON-delay,  OFF-delay,  Impulse-ON,  Impulse-OFF
	without control contact	 Flasher starting with the ON time,  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)
Accuracy within the rated control supply voltage U_s tolerance		-
Accuracy within the temperature range		≤ 0.01 % / °C

Output circuit

depending on the universal relay CR-U used

Environmental data

Ambient temperature range	operation	-25...+55 °C
	storage	-25...+70 °C
Climatic category	IEC/EN 60721-3-3	3K3
Pollution degree	IEC/EN 60664-1	II, III when mounted

User interface

Indication of operational states

Control supply voltage / timing	U/t: green LED	 Control supply voltage applied
	U/t: green LED	 Timing active

Operating controls

Tolerance of setting	< 5 % (of setting)
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General data

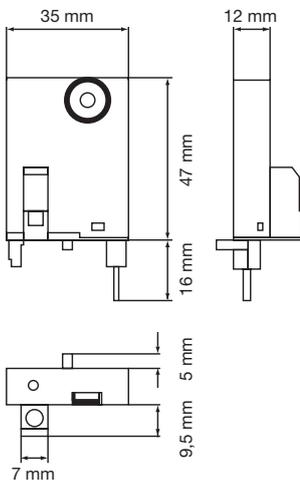
Duty time ED	100 %
Repeat accuracy (constant parameters)	< 0.5 % or \pm 5 ms
Dimensions (W x H x D)	when mounted 35 x 47 x 21.5 mm (1.380 x 1.850 x 0.850 in)
Material of enclosure	self-extinguishing plastic
Degree of protection	IP 40
Mounting	IEC/EN 60067-1-18a pluggable onto socket CR-U2S or CR-U3S
Mounting position	any

Standards/Directives

Standards	IEC/EN 61812-1
Low Voltage Directive	2014/35/EU
RoHS Directive	2011/65/EU

Dimensions

in mm



2CDC252.031.F0005

Further documentation

Document title	Document type	Document number
Electronic Products and Relays	Technical catalog	2CDC110004C02xx
Sockets CR-U	Data sheet	2CDC117006D020x
Relays CR-U	Data sheet	2CDC117003D020x

You can find the documentation on the internet at www.abb.com/lowvoltage

-> Automation, control and protection -> Electronic relays and controls

-> Interface relays and optocouplers.

CAD system files

You can find the CAD files for CAD systems at <http://abb-control-products.partcommunity.com>

-> Low Voltage Products & Systems -> Control Products -> Electronic Relays and Controls.



ABB STOTZ-KONTAKT GmbH
Eppelheimer Straße 82
69123 Heidelberg, Germany

abb.com/lowvoltage

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