

Electronic timer CT-ARS.11

OFF-delayed without auxiliary voltage with 1 c/o (SPDT) contact

The CT-ARS.11 is an electronic timer from the CT-S range with true OFF-delay. It provides 7 time ranges and a continuous rated control voltage that enables worldwide use regardless of the supply voltage.

All electronic timers from the CT-S range are available with two different terminal versions. You can choose between the proven screw connection technology (double-chamber cage connection terminals) and the completely tool-free Easy Connect Technology (push-in terminals).



2CDC 251 034 V0011

Characteristics

- Rated control supply voltage 24-240 V AC/DC
- OFF-delay timer without auxiliary voltage
- 7 time ranges (0.05 s - 10 min)
- Precise adjustment by front-face operating controls
- Screw connection technology or Easy Connect Technology available
- Housing material for highest fire protection classification UL 94 V-0
- Tool-free mounting on DIN rail as well as demounting
- 1 c/o (SPDT) contact
- 22.5 mm (0.89 in) width
- 1 LED for the indication of operational states

Approvals

- UL 508, CAN/GSA C22.2 No.14
- EAC
- CCC
- RMRS

Marks

- CE
- C-Tick

Order data

Electronic timers

Type	Rated control supply voltage	Connection technology	Time ranges	Order code
CT-ARS.11P	24-240 V AC/DC	Push-in terminals	0.05 s - 10 min	1SVR 740 120 R3100
CT-ARS.11S	24-240 V AC/DC	Screw type terminals	0.05 s - 10 min	1SVR 730 120 R3100

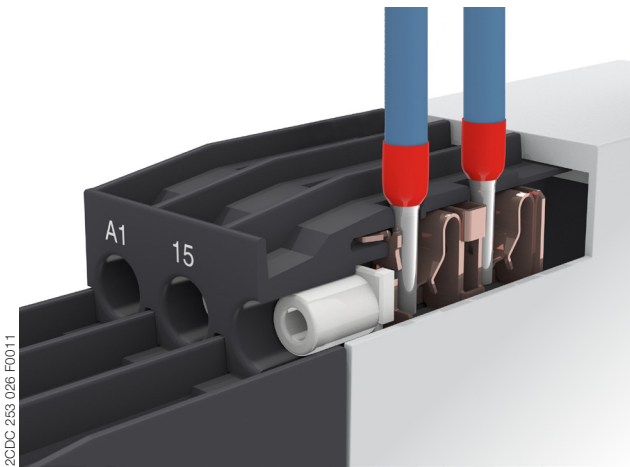
Accessories

Type	Description	Order code
ADP.01	Adapter for screw mounting	1SVR 430 029 R0100
MAR.01	Marker label for devices without DIP switches	1SVR 366 017 R0100
COV.11	Sealable transparent cover	1SVR 730 005 R0100

Connection technology

Maintenance free Easy Connect Technology with push-in terminals

Type designation CT-xxS.yyP

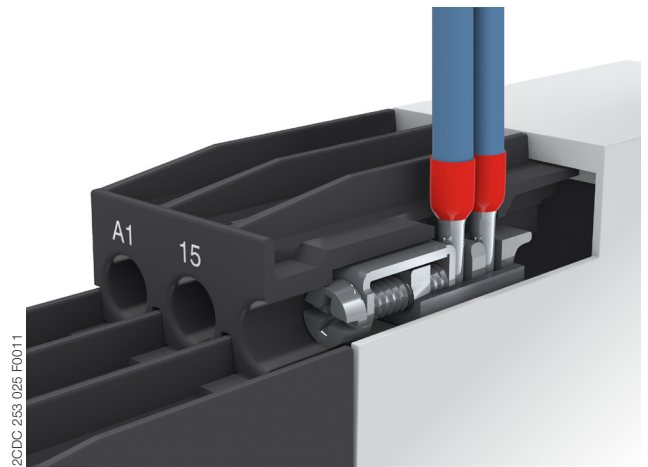


Push-in terminals

- Tool-free connection of rigid and flexible wires with wire end ferrule
- Easy connection of flexible wires without wire end ferrule by opening the terminals
- No retightening necessary
- One operation lever for opening both connection terminals
- For triggering the lever and disconnecting of wires you can use the same tool (Screwdriver according to DIN ISO 2380-1 Form A 0.8 x 4 mm (0.0315 x 0.157 in), DIN ISO 8764-1 PZ1 \varnothing 4.5 mm (0.177 in))
- Constant spring force on terminal point independent of the applied wire type, wire size or ambient conditions (e. g. vibrations or temperature changes)
- Opening for testing the electrical contacting
- Gas-tight

Approved screw connection technology with double-chamber cage connection terminals

Type designation CT-xxS.yyS



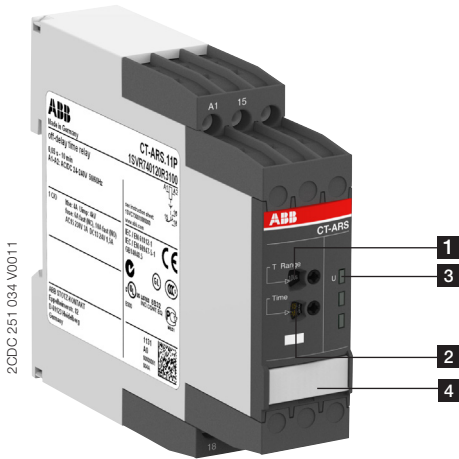
Double-chamber cage connection terminals

- Terminal spaces for different wire sizes
- One screw for opening and closing of both cages
- Pozidrive screws for pan- or crosshead screwdrivers according to DIN ISO 2380-1 Form A 0.8 x 4 mm (0.0315 x 0.157 in), DIN ISO 8764-1 PZ1 \varnothing 4.5 mm (0.177 in)

Both the Easy Connect Technology with push-in terminals and screw connection technology with double-chamber cage connection terminals have the same connection geometry as well as terminal position.

Functions

Operating controls



1 Rotary switch for the preselection of the time range

2 Fine adjustment of the time delay

3 Indication of operational states

U: green LED - control supply voltage

4 Marker label

Application

The CT-S range timers are designed for use in industrial applications. They operate over an universal range of supply voltages and a large time delay range, within compact dimensions. The easy-to-set front-face potentiometers, with direct reading scales, provide accurate time delay adjustment.

Operating mode

The CT-ARS.11 with 1 c/o contact offers 7 time ranges, from 0.05 s to 10 min, for the adjustment of the time delay. The time delay range is rotary switch selectable. The fine adjustment of the time delay is made via an internal potentiometer, with a direct reading scale, on the front of the unit.

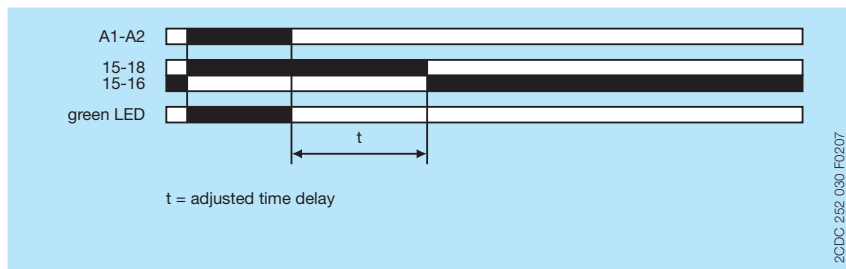
Function diagram

■ OFF-delay without auxiliary voltage

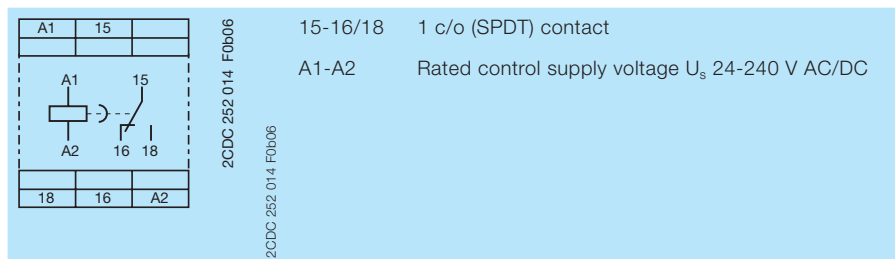
The OFF-delay function without auxiliary voltage does not require continuous control supply voltage for timing. Prior to first commissioning and after a six-month stop in operation, a formatting time of 5 minutes is necessary.

Applying control supply voltage energizes the output relay immediately. Applied control supply voltage is displayed by the glowing green LED. If control supply voltage is interrupted, the OFF-delay starts and the LED turns off. When timing is complete, the output relay de-energizes.

For correct operation of the unit, it is necessary to complete the minimum energizing time.



Electrical connection



Connection diagram


Technical data

Data at $T_a = 25\text{ °C}$ and rated values, unless otherwise indicated

Input circuits

Supply circuit		A1-A2
Rated control supply voltage U_s		24-240 V AC/DC
Rated control supply voltage U_s tolerance		-15...+10 %
Rated frequency	DC	n/a
	AC	50/60 Hz
Frequency range	AC	47-63 Hz
Typical current / power consumption	24 V DC	1 mA / 0.1 W
	115 V AC	2.5 mA / 0.3 VA
	230 V AC	3.1 mA / 0.75 VA
Formatting time (prior to 1st commissioning and after a six-month stop in operation)		5 min
Minimum energizing time		100 ms
Release voltage		> 10 % of the min. rated control supply voltage U_s
Timing circuit		
Kind of timer	Single-function timer	OFF-delay without auxiliary voltage
Time ranges 0.05 s - 10 min		0.05-1 s, 0.15-3 s, 0.5-10 s, 1.5-30 s, 5-100 s, 15-300 s, 0.5-10 min
Recovery time		< 50 ms
Repeat accuracy (constant parameters)		$\Delta t < \pm 0.2\%$
Accuracy within the rated control supply voltage tolerance		$\Delta t < 0.004\%/V$
Accuracy within the temperature range		$\Delta t < 0.03\%/^{\circ}C$
Setting accuracy of time delay		$\pm 6\%$ of full-scale value

User interface

Indication of operational states		
Control supply voltage	U: green LED	 : control supply voltage applied

Output circuits

Kind of output	15-16/18	Relay, 1 c/o (SPDT) contact
Contact material		Cd-free
Rated operational voltage U_o		250 V
Minimum switching voltage / Minimum switching current		12 V / 10 mA
Maximum switching voltage / Maximum switching current		see 'Load limit curves' on page 6
Rated operational current I_o	AC-12 (resistive) at 230 V	4 A
	AC-15 (inductive) at 230 V	3 A
	DC-12 (resistive) at 24 V	4 A
	DC-13 (inductive) at 24 V	1.5 A
AC rating (UL 508)	utilization category (Control Circuit Rating Code)	B 300
	max. rated operational voltage	300 V AC
	max. continuous thermal current at B 300	5 A
	max. making / breaking apparent power at B 300	3600/360 VA
Mechanical lifetime		30×10^6 switching cycles
Electrical lifetime	AC-12, 230 V, 4 A	0.1×10^6 switching cycles
Frequency of operation, with/without load		1200/18000 h ⁻¹
Maximum fuse rating to achieve short-circuit protection	n/c contact	6 A fast-acting
	n/o contact	10 A fast-acting

General data

MTBF		on request
Duty time		100 %
Dimensions (W x H x D)	product dimensions	22.5 x 85.6 x 103.7 mm (0.89 x 3.37 x 4.08 in)
	packaging dimensions	97 x 109 x 30 mm (3.82 x 4.29 x 1.18 in)
Weight		Screw connection technology
		Easy Connect Technology (push-in)
	net weight	0.106 kg (0.234 lb)
	gross weight	0.128 kg (0.282 lb)
Mounting		DIN rail (IEC/EN 60715), snap-on mounting without any tool
Mounting position		any
Minimum distance to other units	vertical	not necessary
	horizontal	not necessary
Material of housing		UL 94 V-0
Degree of protection	housing	IP50
	terminals	IP20

Electrical connection

		Screw connection technology	Easy Connect Technology (push-in)
Connecting capacity	fine-strand with(out) wire end ferrule	1 x 0.5-2.5 mm ² (1 x 18-14 AWG) 2 x 0.5-1.5 mm ² (2 x 18-16 AWG)	2 x 0.5-1.5 mm ² (2 x 18-16 AWG)
	rigid	1 x 0.5-4 mm ² (1 x 20-12 AWG) 2 x 0.5-2.5 mm ² (2 x 20-14 AWG)	2 x 0.5-1.5 mm ² (2 x 20-16 AWG)
Stripping length		8 mm (0.32 in)	
Tightening torque		0.6 - 0.8 Nm (7.08 lb.in)	-

Environmental data

Ambient temperature rangess	operation	-25...+60 °C
	storage	-40...+85 °C
Relative humidity range		25 % to 85 %
Vibration, sinusoidal (IEC/EN 60068-2-6)	functioning	40 m/s ² , 10-58/60-150 Hz
	resistance	60 m/s ² , 10-58/60-150 Hz, 20 cycles
Vibration, seismic (IEC/EN 60068-3-3)	functioning	20 m/s ²
Shock, half-sine (IEC/EN 60068-2-27)	functioning	150 m/s ² , 11 ms, 3 shocks/direction
	resistance	300 m/s ² , 11 ms, 3 shocks/direction

Isolation data

Rated insulation voltage U _i	input circuit / output circuit	500 V
Rated impulse withstand voltage U _{imp} between all isolated circuits		4 kV; 1.2/50 μs
Power-frequency withstand voltage between all isolated circuits (test voltage)		2.0 kV; 50 Hz, 1 min
Basic insulation (IEC/EN 61140)	input circuit / output circuit	500 V
Protective separation (IEC/EN 61140; EN 50178)	input circuit / output circuit	250 V
Pollution degree		3
Overvoltage category		III

Standards / Directives

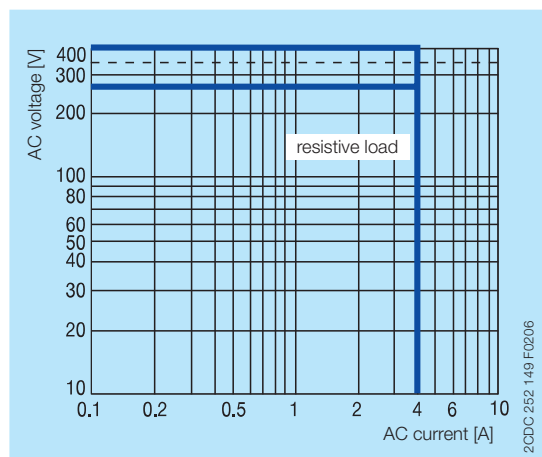
Standards	IEC/EN 61812-1
Low Voltage Directive	2014/35/EU
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU

Electromagnetic compatibility

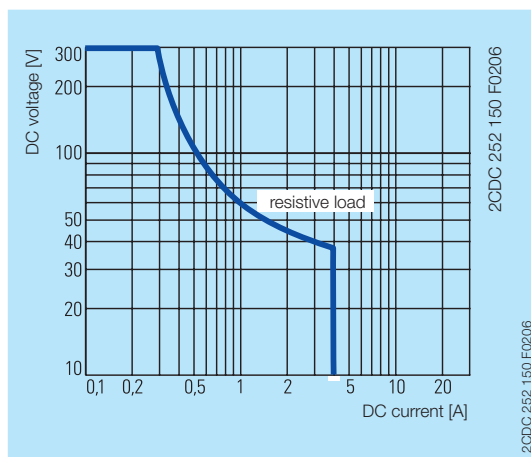
Interference immunity to		IEC/EN 61000-6-2
electrostatic discharge	IEC/EN 61000-4-2	Level 3, 6 kV / 8 kV
radiated, radio-frequency, electromagnetic field	IEC/EN 61000-4-3	Level 3, 10 V/m (1 GHz) / 3 V/m (2 GHz) / 1 V/m (2.7 GHz)
electrical fast transient / burst	IEC/EN 61000-4-4	Level 3, 2 kV / 5 kHz
surge	IEC/EN 61000-4-5	Level 4, 2 kV A1-A2
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6	Level 3, 10 V
harmonics and interharmonics	IEC/EN 61000-4-13	Class 3
Interference emission		IEC/EN 61000-6-3
high-frequency radiated	IEC/CISPR 22, EN 55022	Class B
high-frequency conducted	IEC/CISPR 22, EN 55022	Class B

Technical diagrams

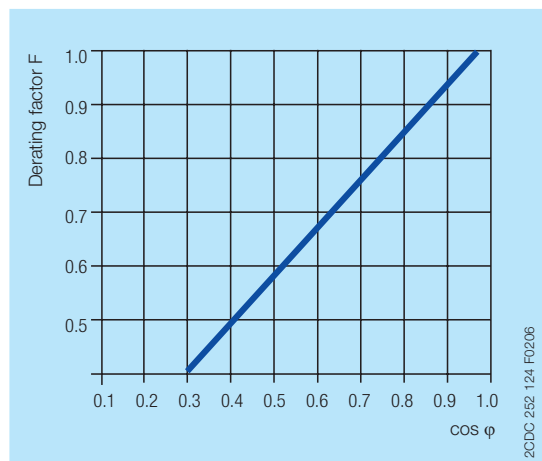
Load limit curves



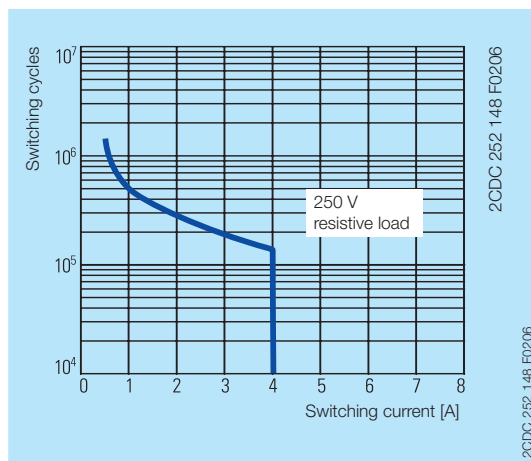
AC load (resistive)



DC load (resistive)



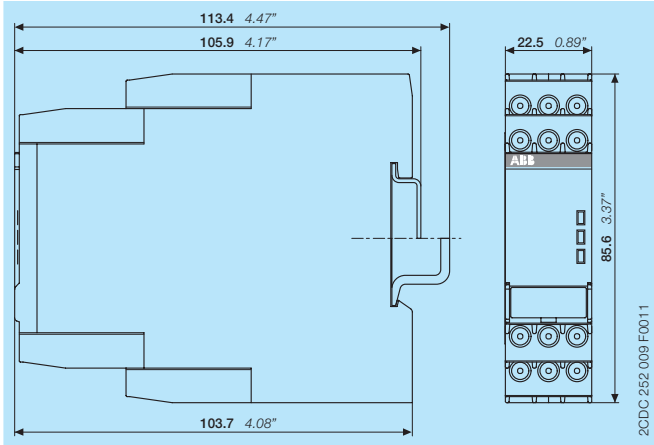
Derating factor F for inductive AC load



Contact lifetime

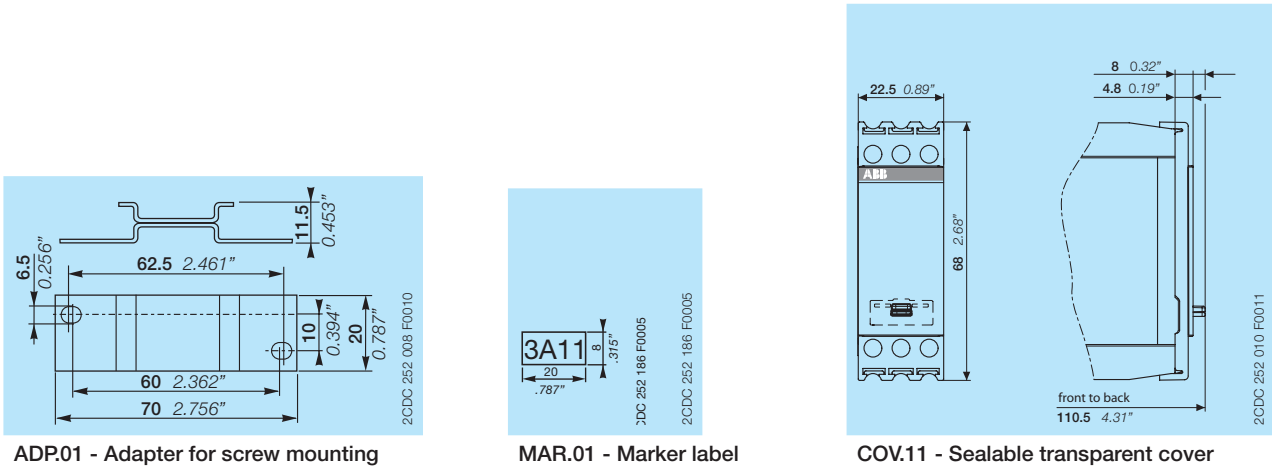
Dimensions

in **mm** and *inches*



Accessories

in **mm** and *inches*



ADP.01 - Adapter for screw mounting

MAR.01 - Marker label

COV.11 - Sealable transparent cover

Further documentation

Document title	Document type	Document number
Electronic Products and Relays	Technical catalogue	2CDC 110 004 C02xx
CT-AHS, CT-ARS, CT-MBS, CT-MFS	Instruction manual	1SVC 730 010 M0000

You can find the documentation on the internet at www.abb.com/lowvoltage
 -> Automation, control and protection -> Electronic relays and controls -> Electronic timers.

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.

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