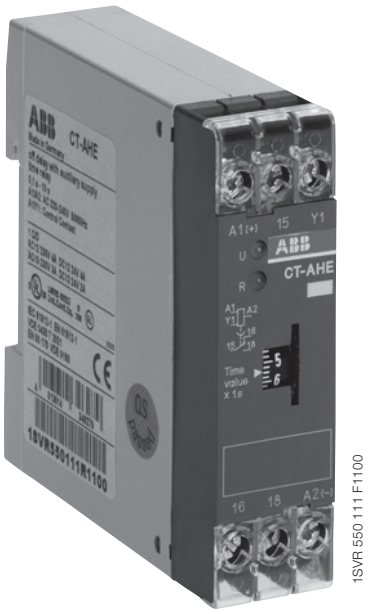
Data sheet

Electronic timer CT-AHE
OFF-delayed with 1 c/o (SPDT) contact

The CT-AHE is an electronic time relay with OFF-delay. It is from the CT-E range.

The CT-E range is the economic range of ABB‘s time relays and offers a cost effective price-performance ratio for OEM users. This is achieved by simplified functionality and results in the simplest of setup procedures. The CT-E range is ideally suited for repeat applications.



1SVR 550 111 F1100

Characteristics

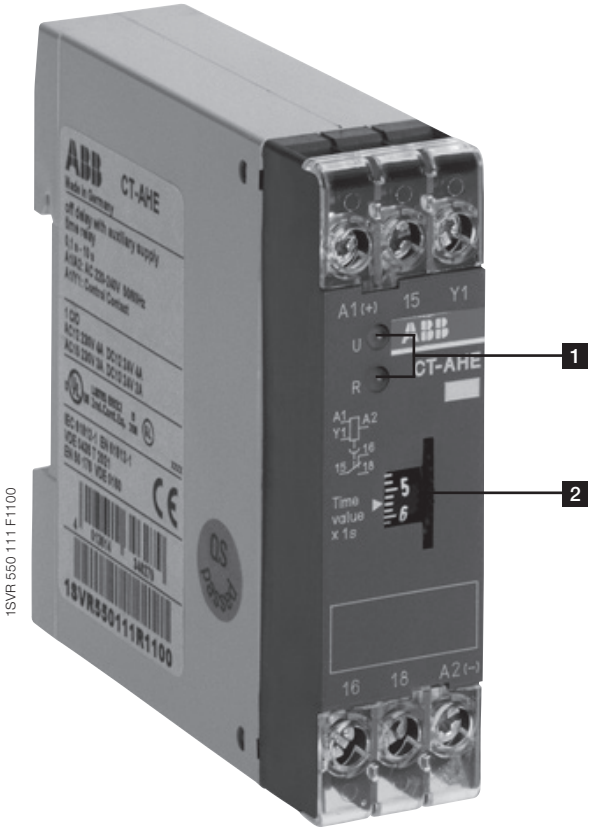
- 9 versions:
  3 different single time ranges (0.1-10 s, 0.3-30 s and 3-300 s) and
  3 different rated control supply voltage ranges (24 V AC/DC, 110-130 V AC and 220-240 V AC)
- Single-function OFF-delay timer without auxiliary voltage
- Timing can be started via an external, voltage-related control input
- 1 c/o (SPDT) contact
- 22.5 mm (0.89 in) width
- 2 LEDs for the indication of operational states

Order data

Type	Rated control supply voltage	Time range	Order code
CT-AHE	24 V AC/DC	0.1-10 s	1SVR 550 118 R1100
		0.3-30 s	1SVR 550 118 R4100
		3-300 s	1SVR 550 118 R2100
	110-130 V AC	0.1-10 s	1SVR 550 110 R1100
		0.3-30 s	1SVR 550 110 R4100
		3-300 s	1SVR 550 110 R2100
	220-240 V AC	0.1-10 s	1SVR 550 111 R1100
		0.3-30 s	1SVR 550 111 R4100
		3-300 s	1SVR 550 111 R2100

Functions

Operating controls



1 Indication of operational states

U: green LED – Control supply voltage applied

R: red LED – Output relay energized

2 Thumbwheel for the fine adjustment of the time delay

Application

Their conception makes the CT-E range timers ideal for repeat applications.

Operating mode

The fine adjustment of the time delay is made via the front-face thumbwheel.

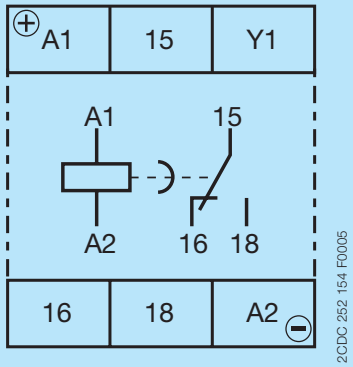
Function diagram

OFF-delay with auxiliary voltage (Delay on break)

This function requires continuous control supply voltage for timing. Timing is controlled by control input A1-Y1. If the control input is closed, the output relay energizes. If control input A1-Y1 is opened, the selected time delay starts. When the time delay is complete, the output relay de-energizes. If control input A1-Y1 is closed before the time delay is complete, the time delay is reset. Timing starts again when the control input re-opens.

t = adjusted delay time

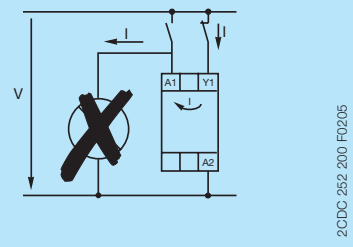
Electrical connection

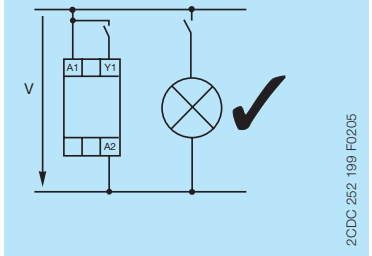


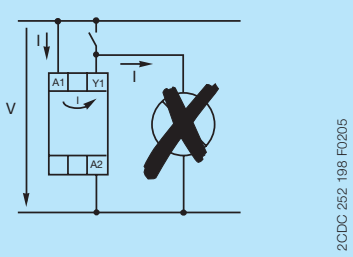
Connection diagram

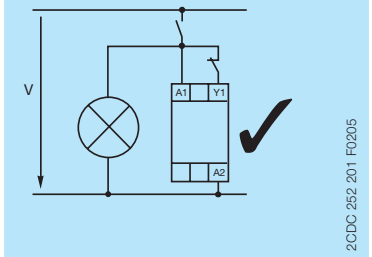
A1(+)-A2(-)	Rated control supply voltage U_s: Depending on device
	24 V AC/DC: 1SVR 550 118 R1100, 1SVR 550 118 R4100, 1SVR 550 118 R2100
	110-130 V AC: 1SVR 550 110 R1100, 1SVR 550 110 R4100, 1SVR 550 110 R2100
	220-240 V AC: 1SVR 550 111 R1100, 1SVR 550 111 R4100, 1SVR 550 111 R2100
A1-Y1	Control input to start timing
15-16/18	1 c/o (SPDT) contact

Wiring notes









Technical data

Data at T_a = 25 °C and rated values, unless otherwise indicated

Input circuits

Supply circuit		
Rated control supply voltage U_s	A1-A2	depending on device: 24 V AC/DC, 110-130 V AC, 220-240 V AC
Rated control supply voltage U_s tolerance		-15...+10 %
Rated frequency	AC/DC version	DC or 50/60 Hz
	AC version	50/60 Hz
Typical current / power consumption	24 V AC/DC	approx. 1.0 VA/W
	110-130 V AC	approx. 2.0 VA
	220-240 V AC	approx. 2.0 VA
Release voltage		> 10 % of the minimum control supply voltage

Control circuit		
Control input, control function	A1-Y1	start timing external
Kind of triggering		voltage-related
Parallel load		no
Polarized		yes
Control voltage potential		rated control supply voltage
Minimum control pulse length		20 ms

Timing circuit	
Time range	depending on device: 0.1-10 s, 0.3-30 s or 3-300 s
Recovery time	< 50 ms
Repeat accuracy (constant parameters)	Δt < 1 %
Accuracy within the rated control supply voltage tolerance	Δt < 0.5 % / V
Accuracy within the temperature range	Δt < 0.1 % / °C
Setting accuracy of time delay	± 10 % of full-scale value

User interface

Indication of operational states		
Control supply voltage	U: green LED	⎍⎍: control supply voltage applied
Relay status	R: red LED	⎍⎍: output relay energized

Output circuit

Kind of output	15-16/18	relay, 1 c/o (SPDT) contact
Contact material		silver alloy
Rated operational voltage U_e		250 V
Minimum switching voltage / current		12 V / 100 mA
Maximum switching voltage / current		see ‚Load limit curves'
Rated operational current I_e	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	2 A
AC rating (UL 508)	Utilization category (Control Circuit Rating Code)	B 300
	max. rated operational voltage	300 V AC
	Maximum continuous thermal current at B300	5 A
	max. making/breaking apparent power at B300	3600 VA / 360 VA
Mechanical lifetime		10 x 10^6 switching cycles
Electrical lifetime	AC-12, 230 V, 4 A	0.1 x 10^6 switching cycles
Frequency of operation	with/without load	$360/72000^{-1}$
Maximum fuse rating to achieve short-circuit protection	n/c contact	10 A fast
	n/o contact	10 A fast

General data

MTBF			on request
Duty time			100 %
Dimensions			see 'Dimensional drawings'
Weight	net weight	1SVR550118R1100	0.064 kg (0.141 lb)
		1SVR550118R4100	0.070 kg (0.154 lb)
		1SVR550118R2100	0.064 kg (0.141 lb)
		1SVR550110R1100	0.067 kg (0.148 lb)
		1SVR550110R4100	0.068 kg (1.450 lb)
		1SVR550110R2100	0.067 kg (0.148 lb)
		1SVR550111R1100	0.067 kg (0.148 lb)
		1SVR550111R4100	0.067 kg (0.148 lb)
		1SVR550111R2100	0.068 kg (1.450 lb)
	gross weight	1SVR550118R1100	0.077 kg (0.170 lb)
		1SVR550118R4100	0.081 kg (0.179 lb)
		1SVR550118R2100	0.077 kg (0.170 lb)
		1SVR550110R1100	0.080 kg (0.176 lb)
		1SVR550110R4100	0.081 kg (0.179 lb)
		1SVR550110R2100	0.080 kg (0.176 lb)
		1SVR550111R1100	0.080 kg (0.176 lb)
		1SVR550111R4100	0.080 kg (0.176 lb)
		1SVR550111R2100	0.081 kg (0.179 lb)
Mounting			DIN rail (IEC/EN 60715), snap-on mounting without any tool
Mounting position			any
Minimum distance to other units			not necessary
Material of housing		lower section	UL 94 V-0
		upper section	UL 94 V-2
Degree of protection		housing	IP50
		terminals	IP20

Electrical connection

Connecting capacity	fine-strand with wire end ferrule	2 x 0.75-1.5 mm² (2 x 18-16 AWG)
	fine-strand without wire end ferrule	2 x 1-1.5 mm² (2 x 18-16 AWG)
	rigid	2 x 0.75-1.5 mm² (2 x 18-16 AWG)
Stripping length		10 mm (0.39 in)
Tightening torque		0.6-0.8 Nm (5.31-7.08 lb.in)

Environmental data

Ambient temperature ranges	operation	-20...+60 °C
	storage	-40...+85 °C
Relative humidity range		4 x 24 h cycle, 40 °C, 93 % RH
Vibration, sinusoidal	IEC/EN 60068-2-6	20 m/s², 10-58/60-150 Hz
Shock, half-sine	IEC/EN 60068-2-27	150 m/s², 11 ms, 3 shocks/direction

Isolation data

Rated insulation voltage U_i	between all isolated circuits	Control supply voltage up to 240 V: 300 V
		Control supply voltage up to 440 V: 500 V
Rated impulse withstand voltage U_{imp}	between all isolated circuits	4 kV / 1.2-50 µs
Power frequency withstand voltage (test voltage)	between all isolated circuits	2.5 kV, 50 Hz, 1 min.
Basic insulation (IEC/EN 61140)	input/output	300 V
Protective separation (IEC/EN 61140, EN 50178)	input/output	-
Pollution degree		3
Overvoltage category		III

Standards / Directives

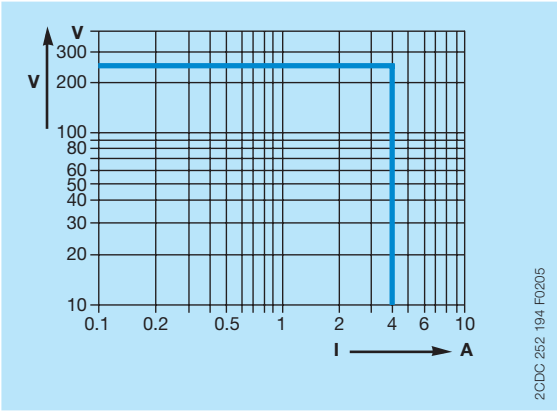
Standards	IEC/EN 61812-1
Low Voltage Directive	2014/35/EU
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU

Electromagnetic compatibility

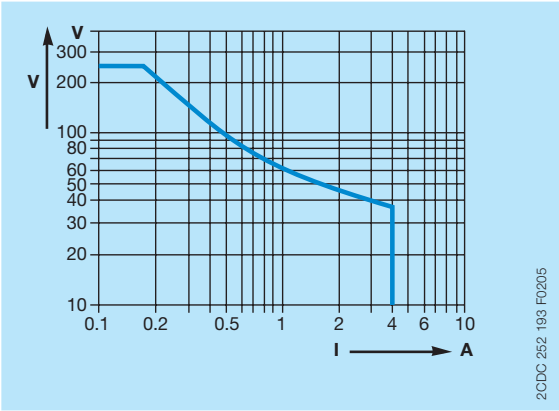
Interference immunity to		IEC/EN 61000-6-2
electrostatic discharge	IEC/EN 61000-4-2	Level 3 (6 kV / 8 kV)
radiated, radio-frequency, electromagnetic field	IEC/EN 61000-4-3	10 V/m (1 GHz), 3 V/m (2 GHz), 1 V/m (2.7 GHz)
electrical fast transient / burst	IEC/EN 61000-4-4	Level 3 (2 kV / 5 kHz)
surge	IEC/EN 61000-4-5	Level 4 (2 kV L-L)
conducted disturbances, induced by radio-frequency fields	IEC/EN 61000-4-6	Level 3 (10 V)
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

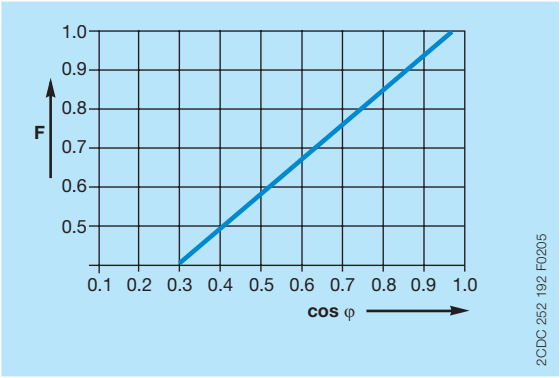
Load limit curves



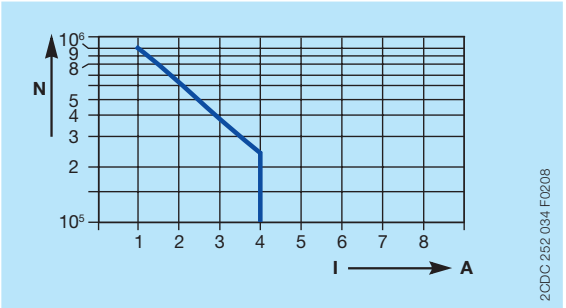
AC load (resistive)



DC load (resistive)



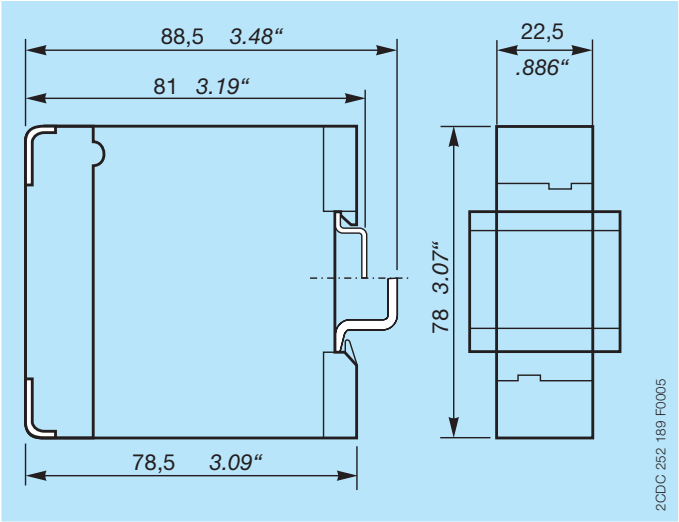
Derating factor F for inductive AC load



Contact lifetime /switching cycles N
220 V AC 50 Hz AC1, 360 cycles/h

Dimensions

in **mm** and *inches*



Further documentation

Document title	Document type	Document number
Electronic relays and controls	Catalog	2CDC 110 004 C02xx

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

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.

Contact us

ABB STOTZ-KONTAKT GmbH
P. O. Box 10 16 80
69006 Heidelberg, Germany
Phone: +49 (0) 6221 7 01-0
Fax: +49 (0) 6221 7 01-13 25
E-mail: info.desto@de.abb.com

You can find the address of your
local sales organisation on the
ABB home page
http://www.abb.com/contacts
-> Low Voltage Products and Systems

Document number 2CDC 111 136 D0201 (03.2017)

Note:
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.