

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

Approvals

- UL LISTED UL 508, CAN/CSA C22.2 No. 14
- GL
- GOST
- CB CB scheme
- CCC
- RMRS

Marks

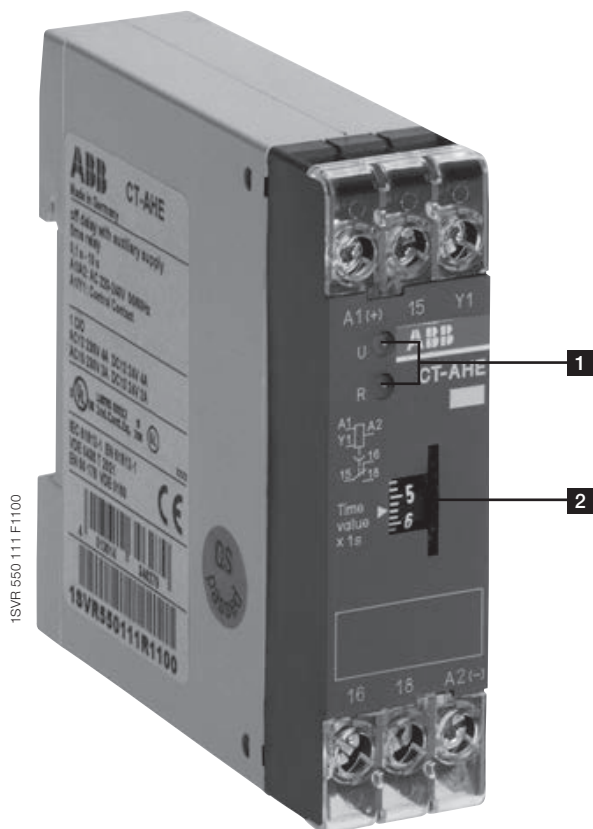
- CE CE
- C-Tick

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.

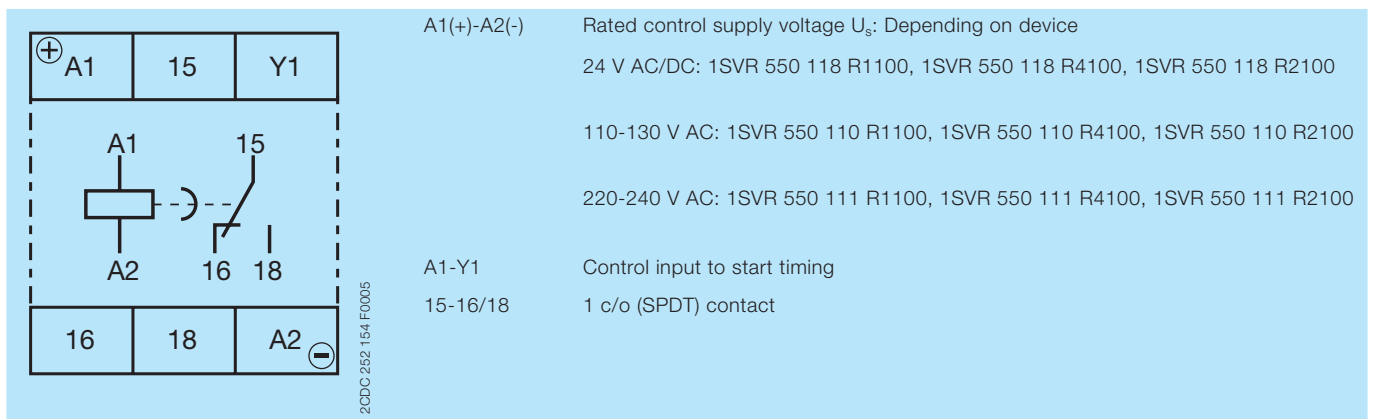
Function diagram

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.

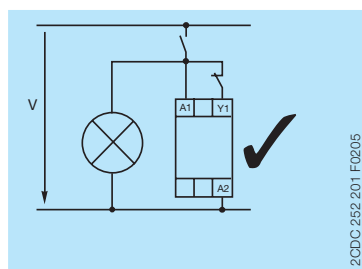
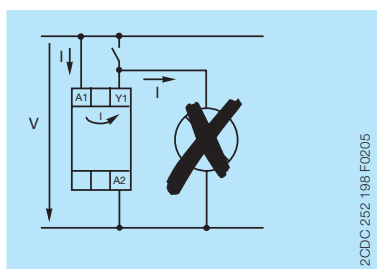
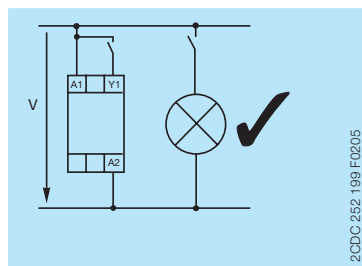
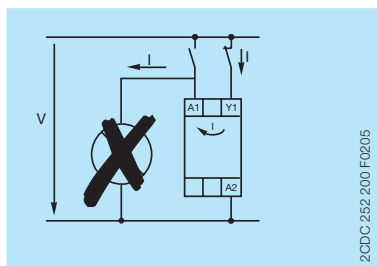


Electrical connection



Connection diagram

Wiring notes





Technical data

Data at $T_a = 25\text{ °C}$ 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 %
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
Rated frequency	AC/DC version	DC or 50/60 Hz
	AC version	50/60 Hz
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)		$\Delta t < 1\%$
Accuracy within the rated control supply voltage tolerance		$\Delta t < 0.5\% / V$
Accuracy within the temperature range		$\Delta t < 0.1\% / \text{°C}$

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		AgCdO
Rated operational voltage U_o (IEC/EN 60947-1)		250 V
Maximum switching voltage		250 V AC, 250 V DC
Rated operational current I_o (IEC/EN 60947-5-1)	AC12 (resistive) at 230 V	4 A
	AC15 (inductive) at 230 V	3 A
	DC12 (resistive) at 24 V	4 A
	DC13 (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		30×10^6 switching cycles
Electrical lifetime	AC12, 230 V, 4 A	0.1×10^6 switching cycles
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 (W x H x D)	product dimensions	22.5 x 78.0 x 78.5 mm (0.89 x 3.07 x 3.09 in)	
	packaging dimensions	84.2 x 83.1 x 24.6 mm (3.31 x 3.27 x 0.97 in)	
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)
	gross weight	1SVR550111R4100	0.067 kg (0.148 lb)
		1SVR550111R2100	0.068 kg (1.450 lb)
		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)
Mounting	DIN rail (IEC/EN 60715), snap-on mounting without any tool		
	Mounting position	any	
	Degree of protection	housing	IP50
		terminals	IP20

Electrical connection

Wire size	fine-strand with wire end ferrule	2 x 0.75-1.5 mm ² (2 x 18-16 AWG)
	fine-strand without wire end ferrule	2 x 1-1.5 mm ² (2 x 18-16 AWG)
	rigid	2 x 0.75-1.5 mm ² (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
Operational reliability	IEC/EN 60068-2-6	6 g
Mechanical resistance	IEC/EN 60068-2-6	10 g
Damp heat, cyclic	IEC/EN 60068-2-30	24 h cycle, 55 °C, 93 % rel., 96 h

Isolation data

Rated insulation voltage between supply, control and output circuit (IEC/EN 60947-1)	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 (IEC/EN 60664)	4 kV / 1.2-50 μ s
Test voltage between all isolated circuits (routine test)	2.5 kV, 50 Hz, 1 min.
Pollution degree (IEC/EN 60664, IEC/EN 60255-5)	III/C
Overvoltage category (IEC/EN 60664, IEC/EN 60255-5)	III/C

Standards

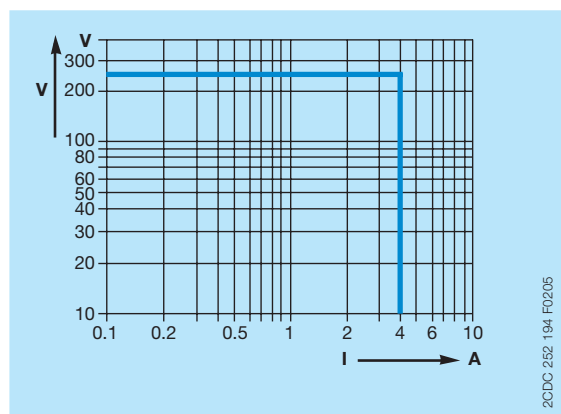
Product standard	IEC 61812-1, EN 61812-1 +A11
Low Voltage Directive	2006/95/EC
EMC directive	2004/108/EC

Electromagnetic compatibility

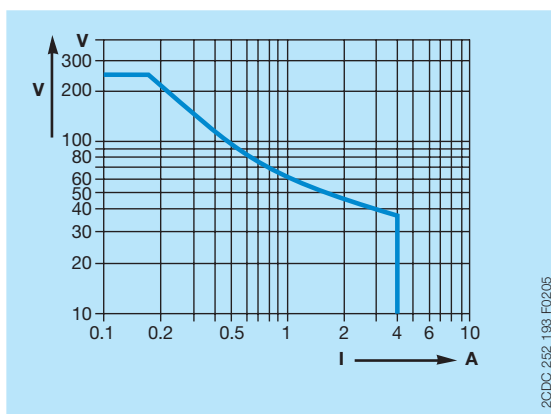
Interference immunity to	IEC/EN 61000-6-2	
electrostatic discharge	IEC/EN 61000-4-2	Level 3 (6 kV / 8 kV)
radiated, radio-frequency, electromagnetic field	IEC/EN 61000-4-3	Level 3 (10 V/m)
electrical fast transient / burst surge	IEC/EN 61000-4-4	Level 3 (2 kV / 5 kHz)
conducted disturbances, induced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

Technical diagrams

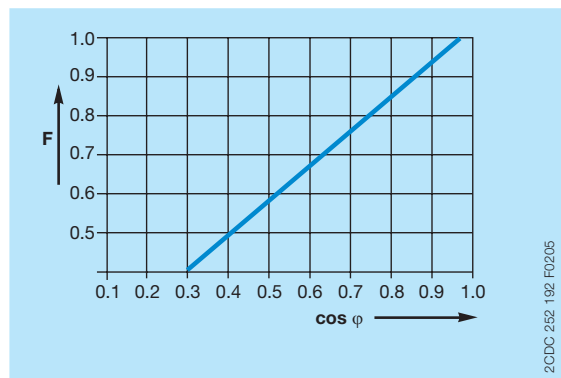
Load limit curves



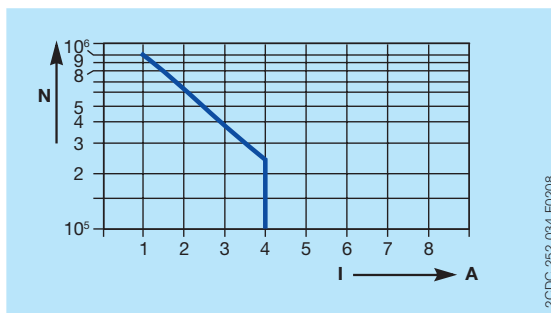
AC load (resistive)



DC load (resistive)



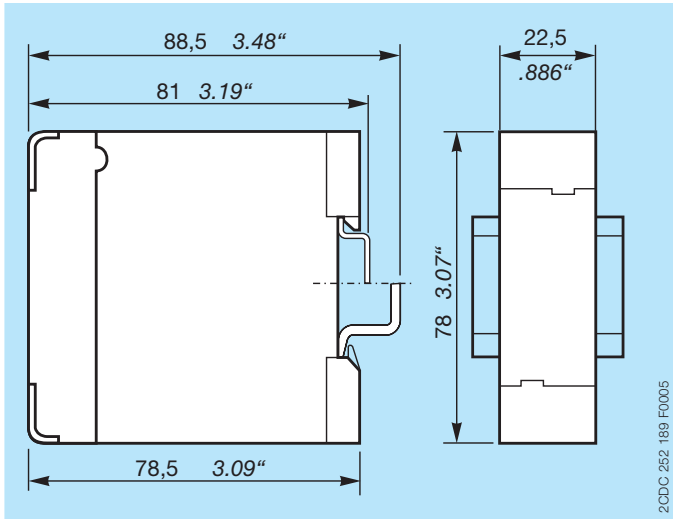
Derating factor F for inductive AC load



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 products and relays	Technical catalogue	2CDC 110 004 C02xx

You can find the documentation on the internet at www.abb.com/lowvoltage -> Control Products -> 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/PARTcommunity/Portal/abb-control-products> -> Low Voltage Products & Systems -> Control Products -> Electronic Relays and Controls -> Time Relays -> CT-E - Time Relays.

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