CATALOG

Time relays

CT-C, CT-S, CT-D

- From economic to high end
- A reliable solution for every application
- World wide approvals and support

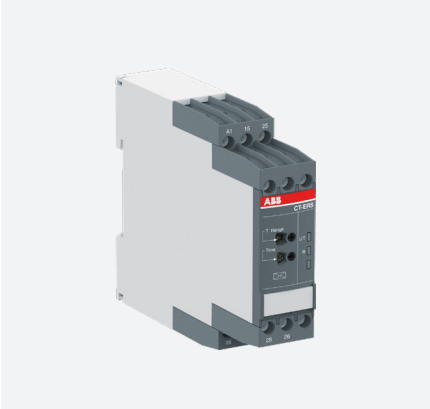
Available in three different ranges to cover every application, CT range time relays are used to provide reliable timing functions worldwide. They have proven their excellent functionality in daily use under the toughest conditions.

Choose ABB as the partner for all your low voltage timing control needs to leverage our wide variety of product options. From economic to high-end solutions – the range offers maximum value.


CT-ERC
CT-MFC
CT-AHS
CT-MVS
ABB
A1
15
25
Z2
Y1/B1
Z1
Range
Time
Function
T Range
U/T
R
R1
R2
Inst. Del. 2.c/o
18
16
A2
26
28
Y1
22
24

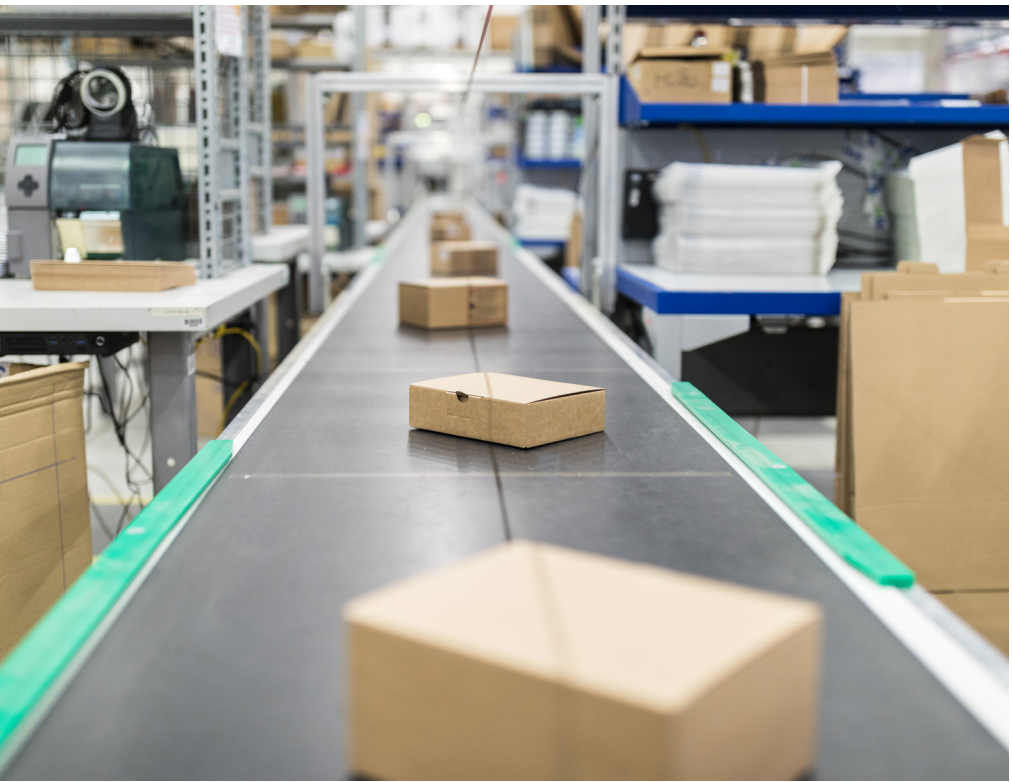
Time relays for industrial applications
Offer overview

CT-C: the compact range
The CT-C range combines lower cost with higher value and performance by offering essential functions in a space-saving 17.5 mm housing. The range offers a choice of 11 devices, including single and multifunctional types, with timing functions that range from 0.05 seconds to 100 hours. Equipped with a wide voltage range, the CT-C range is suitable for a huge variety of applications worldwide.



CT-S: the high-performance range
The advanced CT-S range is ABB´s universal range of electronic timers. It includes 22 single-function devices and 16 multifunction time relays, offering flexibility in operation with up to 13 functions. The devices feature seven or ten time ranges, adjustable from 0.05 seconds to 300 hours. Additionally, every device is available in two different connection technologies: familiar double-chamber cage connection terminals (screw terminals) and ABB's vibration-resistant Easy Connect technology (push-in terminals).


OASIS of the SEAS




CT-ERC
CT-SDC
CT-MFC
CT-TGC
ABB
A1
A2
15
16
17
18
25
26
28
Y1/B1
Range
Time
Function
Pulse on Time
Pulse off Time

CT-C range
Benefits and advantages

The CT-C range combines lower cost with higher value and performance by offering essential functions in a 17.5 mm housing, freeing up room in any control cabinet. The range includes 11 devices, offering both single and multifunctional types, with a time range from 0.05 seconds to 100 hours. Equipped with wide voltage ranges, CT-C time relays allow for use across a huge variety of applications worldwide.

Space savings

With a width of just 17.5 mm, the CT-C range is 22% smaller than standard industrial housings for time relays. Its reduced overall footprint saves space in control cabinets. For more flexibility both 1 c/o and 2 c/o output versions are offered in the compact housing.

Cost effective solution

The CT-C range is an economical range that combines lower cost with higher value and performance. It suits basic applications where a time relay is needed, while offering improved functionality in each device.

Optimized logistics

By combining more functions into each device, the CT-C range makes it possible to reduce stock by up to 75% compared to other ranges. All devices in the CT-C range offer a wide supply voltage range as well as a wide time setting range from 0.05 seconds to 100 hours. This significantly reduces order code variance, making the range more compact with just 11 order codes covering every requirement.

CT-C range
Selection table

	Order number	1SVR508010R1300	1SVR508020R0000	1SVR508020R1100	1SVR508120R0000	1SVR508100R0000	1SVR508100R0100	1SVR508110R0000	1SVR508110R0100	1SVR508130R0000	1SVR508150R0000	1SVR508160R0000	1SVR508160R0100	1SVR508210R0100	1SVR508211R0100
	Type	CT-MKC.31	CT-MFC.12	CT-MFC.21	CT-ARC.12	CT-ERC.12	CT-ERC.22	CT-AHC.12	CT-AHC.22	CT-VWC.12	CT-EBC.12	CT-TGC.12	CT-TGC.22	CT-SAC.22	CT-SDC.22
Timing function															
ON-delay		■	■	■		■	■								
OFF-delay with aux. voltage		■	■	■				■	■						
OFF-delay w/o aux. voltage					■										
Impulse-ON	1	■	■	■						■					
Impulse-OFF with aux. voltage	1	■	■	■											
Impulse-OFF w/o aux. voltage	1				■										
Flasher starting with ON		■	■	■							■				
Flasher starting with OFF		■	■	■							■				
Pulse generator starting with ON or OFF												■	■		
Pulse former	1	■	■	■											
Star-delta change-over														■	■
Features															
Control input, voltage-related triggering		■	■	■				■	■			■	■		
Time range															
0.05 s - 100 h		■	■	■		■	■	■	■	■	■	2	2		
0.05 s - 10 min					■									■	■
Supply voltage															
12-240 V AC/DC		■		■											
24-48 V DC			■		■	■	■	■	■	■	■	■	■	■	■
24-240 V AC			■		■	■	■	■	■	■	■	■	■	■	■
Output															
Solid state		■													
c/o contact			1	2	1	1	2	1	2	1	1	1	2		
n/o contact														2	2

CT-C range
Technical data

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

		CT-C with 1 c/o contact	CT-C with 2 c/o contacts	CT-MFC.21 CT-MKC.31
Input circuit - Supply circuit				
Rated control supply voltage U_s		24-240 V AC / 24-48 V DC		12-240 V AC/DC
Rated control supply voltage U_s tolerance		-15...+10 %		
Rated frequency		DC or 50/60 Hz		
Frequency range AC		47-63 Hz		
Typical power consumption		max. 3.5 VA		
Power failure buffering time		min. 20 ms		
Release voltage		> 10 % of the minimum rated control supply voltage U_s		
Minimum energizing time		100 ms (CT-ARC)		
Formatting time[1)]		5 min (CT-ARC)		
Input circuit - Control circuit				
Control input, control function	A1-Y1/B1	start timing external		
Kind of triggering		voltage-related triggering		
Resistance to reverse polarity		yes		
Parallel load / polarized		yes / yes		
Maximum cable length to the control inputs		50 m - 100 pF/m		
Minimum control pulse length		20 ms		
Control voltage potential		see rated control supply voltage		
Timing circuit				
Time ranges	7 time ranges 0.05 s - 100 h	1.) 0.05-1 s 2.) 0.5-10 s 3.) 5-100 s 4.) 0.5-10 min 5.) 5-100 min 6.) 0.5-10 h 7.) 5-100 h		
	4 time ranges 0.05 s - 10 min (CT-SDC, CT-SAC, CT-ARC)	1.) 0.05-1 s 2.) 0.5-10 s 3.) 5-100 s 4.) 0.5-10 min		
Recovery time		< 50 ms		
Accuracy within the rated control supply voltage tolerance		Δt < 0.005 % / V		
Accuracy within the temperature range		Δt < 0.06 % / °C		
Repeat accuracy (constant parameters)		Δt < ± 0.5 %		
Setting accuracy of time delay		± 10% of full-scale value		
Star-delta transition time	CT-SDC / CT-SAC	fixed 50 ms / adjustable: 20 ms, 30 ms, 40 ms, 50 ms, 60 ms, 80 ms or 100 ms		
Star-delta transition time tolerance	CT-SDC / CT-SAC	±3 ms		
Indication of operational states				
Control supply voltage / timing	U: green LED	⎍: control supply voltage applied ⎍⎍⎍: timing		
Relay energized	R, R1, R2: yellow LED	⎍: output relay energized		
Operating elements and controls				
Adjustment of the time range		front-face rotary switch, direct reading scales		
Fine adjustment of the time value		front-face potentiometer		
Preselection of the timing function at multifunction devices		front-face rotary switch, direct reading scales		
Adjustment of the transition time	CT-SAC	front-face potentiometer		

[1)] Prior to first commissioning and after a six month stop of operation.

Output circuit

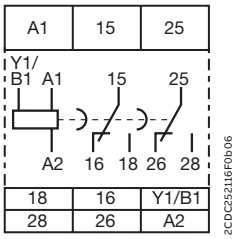
CT-C range
Technical data

			CT-C with 1 c/o contact	CT-C with 2 c/o contacts	CT-MFC.21 CT-MKC.31
Environmental data					
Ambient temperature range		operation / storage	-20 ... +60 °C / -40 ... +85 °C		
Climatic class		EC/EN 60068-2-30	3K3		
Relative humidity range			25-85%		
Vibration, sinusoidal		IEC/EN 60068-2-6	20 m/s²; 10 cycles, 10...150...10 Hz		
Shock (half-sine)		IEC/EN 60068-2-27	150 m/s², 11 ms		
Isolation data					
Rated insulation voltage U_i	input circuit / output circuit		300 V		
	output circuit 1 / output circuit 2		not available	300 V	300 V
Rated impulse withstand voltage U_{imp}	between all isolated circuits		4 kV; 1.2/50 µs		
Power-frequency withstand voltage test (test voltage)	between all isolated circuits		2.5 kV; 50 Hz; 60 s		
Basic insulation (IEC/EN 61140)	input circuit / output circuit		300 V		
Protective separation (pollution degree 2 / overvoltage category II)	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 incl. 2015/863/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)		
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					
high-frequency radiated		IEC/CISPR 22, EN 55022	class B		
high-frequency conducted		IEC/CISPR 22, EN 55022	class B		

CT-C range
Technical diagrams

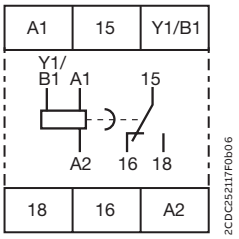
Connection diagrams

CT-AHC.22



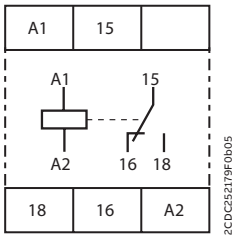
A1-A2	Supply: 24-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact
25-26/28	2nd c/o contact

CT-AHC.12



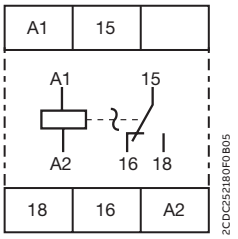
A1-A2	Supply: 24-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact

CT-VWC.12



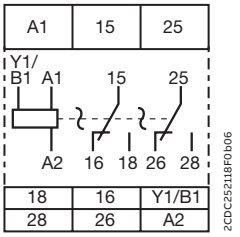
A1-A2	Supply: 24-48 V DC or 24-240 V AC
15-16/18	1st c/o contact

CT-EBC.12



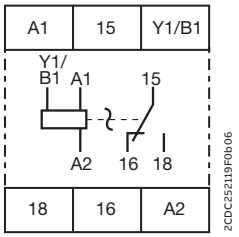
A1-A2	Supply: 24-48 V DC or 24-240 V AC
15-16/18	1st c/o contact

CT-TGC.22



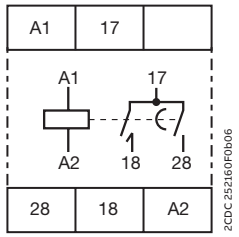
A1-A2	Supply: 24-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact
25-26/28	2nd c/o contact

CT-TGC.12



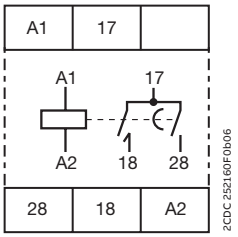
A1-A2	Supply: 24-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact

CT-SDC.22



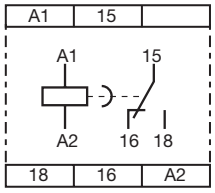
A1-A2	Supply: 24-48 V DC or 24-240 V AC
17-18	1st n/o contact (star contactor)
17-28	2nd n/o contact (delta contactor)

CT-SAC.22



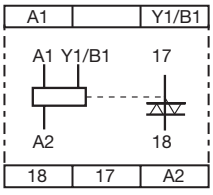
A1-A2	Supply: 24-48 V DC or 24-240 V AC
17-18	1st n/o contact (star contactor)
17-28	2nd n/o contact (delta contactor)

CT-ARC.12



A1-A2	Supply: 12-240 V AC/DC
15-16/18	1st c/o contact

CT-MKC.31



A1-A2	Supply: 12-240 V AC/DC
15-16/18	1st c/o contact


A1
15
25
ABB
CT-ERS
T Range
Time
U/T
R
18
28
26
A1
15
25 21
Y1/B1
Z2
Z1
ABB
CT-MVS
Inst. Del. 2.c/o
T Range
Time
Function
U/T
R1
R2
18
28 24
26 22
A1
17
ABB
CT-SDS
T Range
Time
U/T
R1
R2
18
A1
15
25
Z2
ABB
CT-AHS
T Range
Time
U/T
R
18
28
26
Y1

CT-S range
Benefits and advantages

The advanced CT-S range includes 22 single-function devices and 16 multifunction timers with up to 13 functions. The devices feature seven or ten time ranges, which are adjustable from 0.05 seconds to 300 hours. Every device is available in two different connection technologies: double-chamber cage connection terminals or ABB's vibration-resistant Push-in Technology.

Improve installation efficiency

The CT-S range allows simple tool free mounting and demounting on the DIN rail. Thanks to the easy connect and the double-chamber cage connection technology simplified wiring with or without wire end ferrules is no problem. Both allow simple and easy installation, even in case of different cable diameters.

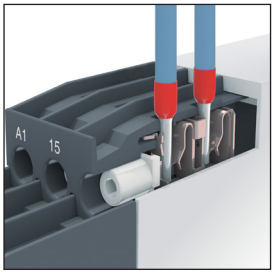
Reliable in harsh conditions

The CT-S range's extended features make it especially suited for harsh environments. The housing material has the highest UL fire protection classification. All functions are available with Push-in terminals, making operations in environments with high vibrations possible without retightening. Additionally, the CT-S range offers devices with an extended temperature range, running operations in temperatures as low as -40 °C effortlessly. Specific types are tested according to the latest rail industry standards, making them a perfect solution for rolling stock and other rail applications

Global availability

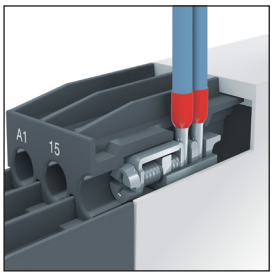
Every device in the CT-S range is designed to provide a wide supply voltage range, making global differences irrelevant. Additionally, the CT-S range meets a broad range of standards and requirements. Together with ABB's global support and sales network, using CT-S gives customers the confidence of worldwide sourcing – no matter where they build, install or operate their equipment.

CT-S range
Benefits and advantages



01 Tool-free mounting of wires

Easy Connect Technology
Tool-free wiring and excellent vibration resistance. Easy Connect (Push-in terminals) provide connection of wires up to 2 x 0.5 - 1.5 mm² (2 x 20 -16 AWG), rigid or fine-strand with or without wire end ferrules. The extended type designators for products with push-in terminals are indicated by a **P** following the extended type designator e.g. CT-xxS.xx**P**.



02 Wiring of double-cage chamber connection terminals with screw driver

Double-chamber cage connection terminals
According to IEC/EN 60947-1 double-chamber cage connection terminals provide connection of wires up to 2 x 0.5-2.5 mm² (2 x 20-14 AWG) rigid or fine-strand, with or without wire end ferrules. Thanks to the technology, using different cable diameters in one terminal is easy and simple to install. Potential distribution does not require additional terminals. The extended type designators for products with double-chamber cage connection terminals (screw terminals) are indicated by an **S** following the extended type designator, e.g. CT-xxS.xx**S**.

CT-S range
Selection table

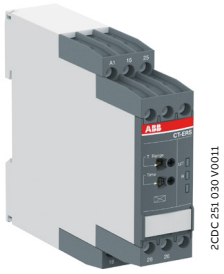
Order number and type
All devices are available either with push-in terminals (P-type) or double-chamber cage connection terminals (S-type).

Terminal	Type	Order number
Push-in	● = P	■ = 4
Screw	● = S	■ = 3

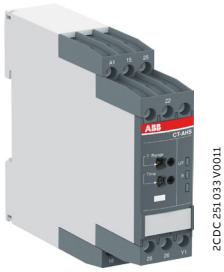
	Order number*	1SVR7■0020R0200	1SVR7■0020R3300	1SVR7■0021R2300	1SVR7■0020R3100	1SVR7■0030R3300	1SVR7■0010R0200	1SVR7■0010R3200	1SVR7■0040R3300	1SVR7■0100R0300	1SVR7■0100R3300	1SVR7■0100R3100	1SVR7■0180R0300	1SVR7■0180R3300	1SVR7■0180R3100	1SVR7■0110R3300	1SVR7■0120R3100	1SVR7■0120R3300	1SVR7■0210R3300	1SVR7■0211R2300
	Type*	CT-MVS.21●	CT-MVS.22●	CT-MVS.23●	CT-MVS.12●	CT-MXS.22●	CT-MFS.21●	CT-MBS.22●	CT-WBS.22●	CT-ERS.21●	CT-ERS.22●	CT-ERS.12●	CT-APS.21●	CT-APS.22●	CT-APS.12●	CT-AHS.22●	CT-ARS.11●	CT-ARS.21●	CT-SDS.22●	CT-SDS.23●
Timing function																				
ON-delay	⊠	■	■	■	■		■	■	■	■	■	■								
ON-delay, accumulative	⊠(+)	■	■	■	■		■													
OFF-delay w. aux. voltage	▬	■	■	■	■		■	■					■	■	■	■				
OFF-delay w. aux. voltage, accumulative	▬						■													
OFF-delay w/o aux. voltage	▬																■	■		
ON- and OFF-delay, symmetrical	⊠▬	■	■	■	■		■	■												
ON- and OFF-delay, symmetrical, accumulative	⊠▬						■													
ON- and OFF-delay, asymmetrical	⊠▬					■														
ON/OFF function	▭	■	■	■	■	■	■	■	■											
Impulse-ON	1⊓⊠	■	■	■	■		■	■	■											
Impulse-ON, accumulative	1⊓⊠						■													
Impulse-OFF w. aux. voltage	1⊓▬	■	■	■	■		■	■												
Impulse-OFF w. aux. voltage, accumulative	1⊓▬						■													
Impulse-ON and OFF	1⊓▩					■														
Fixed impulse with adjustable time delay	⊠1⊓								■											
Adjustable impulse with fixed time delay	⊠1⊓								■											
Flasher starting with ON	⊓⊠						■	■	■											
Flasher with reset, starting with ON	⊓⊠						■	■												
Flasher starting with OFF	⊓▬						■	■	■											
Flasher with reset, starting with OFF	⊓▬						■	■												
Flasher starting with ON or OFF	⊓▩	■	■	■	■															
Pulse generator starting with ON or OFF	▩⊓					■														
Single pulse generator	▩1⊓					■														
Pulse former	1⊓	■	■	■	■		■	■												
Star-delta change-over	⧋																		■	■
Star-delta change-over with impulse	⧋1⊓	■	■	■			■	■												
Features																				
Control input, voltage-related triggering		■	■	■	■	■							■	■	■					
Control input, volt-free triggering							2	1								■				
Remote potentiometer connection		■				2	■	■												
2nd c/o contact selectable as instantaneous contact		■					■	■												
Extended temperature range (-40...+60 °C)		■					■			■			■							
Time range																				
0.05 s - 10 min																	■	■	■	■
0.05 s - 300 h		■	■	■	■	2	■	■	■	■	■	■	■	■	■	■				
Supply voltage																				
24-48 V DC			■		■	■		■	■		■	■		■	■	■			■	
24-240 V AC			■		■	■		■	■		■	■		■	■	■			■	
24-240 V AC/DC		■					■			■			■				■	■		
380-440 V AC				■																■
Output																				
c/o contact		2	2	2	1	2	2	2	2	2	2	1	2	2	1	2	1	2		
n/o contact																			2	2

CT-S range

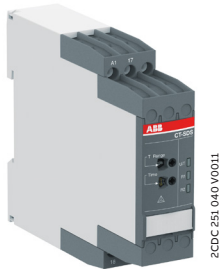
Ordering details - singlefunctional devices



CT-ERS.21P



CT-AHS.22P



CT-SDS.23P

■ Control input with voltage-related triggering

□ Control input with volt-free triggering

□ / □ Two control inputs with volt-free triggering

\- No triggering

Ordering details

Timing function	Rated control supply voltage	Time ranges	Control input	Output	Type	Order code	Weight (1 pc) kg (lb)
ON-delay	24-240 V AC/ DC	10 (0.05 s - 300 h)	-	2 c/o	CT-ERS.21S[1)]	1SVR730100R0300	0.13 (0.287)
					CT-ERS.21P[1)]	1SVR740100R0300	0.121 (0.267)
	24-48 V DC, 24-240 V AC				CT-ERS.22S	1SVR730100R3300	0.121 (0.267)
					CT-ERS.22P	1SVR740100R3300	0.113 (0.249)
	24-48 V DC, 24-240 V AC		-	1 c/o	CT-ERS.12S	1SVR730100R3100	0.106 (0.234)
					CT-ERS.12P	1SVR740100R3100	0.101 (0.222)
OFF-delay	24-240 V AC/ DC	10 (0.05 s - 300 h)	■	2 c/o	CT-APS.21S[1)]	1SVR730180R0300	0.146 (0.322)
					CT-APS.21P[1)]	1SVR740180R0300	0.125 (0.276)
	24-48 V DC, 24-240 V AC				CT-APS.22S	1SVR730180R3300	0.138 (0.304)
					CT-APS.22P	1SVR740180R3300	0.127 (0.28)
			■	1 c/o	CT-APS.12S	1SVR730180R3100	0.109 (0.24)
					CT-APS.12P	1SVR740180R3100	0.103 (0.227)
	24-48 V DC, 24-240 V AC	10 (0.05 s - 300 h)	□	2 c/o	CT-AHS.22S	1SVR730110R3300	0.136 (0.30)
					CT-AHS.22P	1SVR740110R3300	0.125 (0.276)
OFF-delay[2)]	24-240 V AC/DC	7 (0.05 s - 10 min)	-	1 c/o	CT-ARS.11S	1SVR730120R3100	0.106 (0.234)
					CT-ARS.11P	1SVR740120R3100	0.10 (0.22)
			-	2 c/o	CT-ARS.21S	1SVR730120R3300	0.124 (0.273)
					CT-ARS.21P	1SVR740120R3300	0.115 (0.254)
Star-delta change-over[3)]	24-48 V DC, 24-240 V AC	7 (0.05 s - 10 min)	-	2 n/o	CT-SDS.22S	1SVR730210R3300	0.114 (0.251)
					CT-SDS.22P	1SVR740210R3300	0.108 (0.238)
	380-440 V AC				CT-SDS.23S	1SVR730211R2300	0.118 (0.26)
					CT-SDS.23P	1SVR740211R2300	0.112 (0.247)

[1)] Extended temperature range -40 °C
[2)] Without auxiliary voltage
[3)] 50 ms transition time

S: Screw connection
P: Push-in / easy connect

CT-S range
Technical data

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

			CT-S
Input circuit - Supply circuit			
Rated control supply voltage U_s		CT-xxx.x1	24-240 V AC/DC
		CT-xxx.x2	24-48 V DC, 24-240 V AC
		CT-xxx.x3	380-440 V AC
Rated control supply voltage U_s tolerance			-15...+10 %
Rated frequency			DC or 50/60 Hz
Frequency range AC			47-63 Hz
Typical power consumption			max. 16 VA
Power failure buffering time		24 V DC	min. 15 ms
		230/400 V AC	min. 20 ms
Release voltage			> 10 % of the minimum rated control supply voltage U_s
Minimum energizing time			100 ms (CT-ARS)
Formatting time [1]			5 min (CT-ARS)
Input circuit - Control circuit			
Kind of triggering		CT-MVS, CT-MXS, CT-APS	voltage-related triggering
Control input, Control function		A1-Y1/B1	start timing external
Parallel load / polarized			yes / no
Maximum cable length to the control input			50 m - 100 pF/m
Minimum control pulse length			20 ms
Control voltage potential			see rated control supply voltage
Current consumption of the control input		24 V DC	1.2 mA
		230 V AC	8 mA
		400 V AC	6 mA
Kind of triggering		CT-MFS, CT-MBS, CT-AHS	volt-free triggering
Control input, Control function		Y1-Z2	start timing external
		X1-Z2	pause timing / accumulative functions (CT-MFS)
Maximum switching current in the control circuit			1 mA
Maximum cable length to the control input			50 m - 100 pF/m
Minimum control pulse length			20 ms
No-load voltage at the control inputs			10-40 V DC
Remote potentiometer			
Remote potentiometer connections, resistance value		Z1-Z2	50 kΩ (CT-MFS, CT-MBS, CT-MVS.21, CT-MXS)
		Z3-Z2	50 kΩ (CT-MXS)
Maximum cable length to remote potentiometer			2 x 25 m, shielded with 100 pF/m
Shield connection			Z2
Timing circuit			
Time ranges	10 time ranges 0.05 s - 300 h		1.) 0.05-1 s 2.) 0.15-3 s 3.) 0.5-10 s 4.) 1.5-30 s 5.) 5-100 s 6.) 15-300 s 7.) 1.5-30 min 8.) 15-300 min 9.) 1.5-30 h 10.) 15-300 h
	7 time ranges 0.05 s - 10 min (CT-SDS, CT-ARS)		1.) 0.05-1 s 2.) 0.15-3 s 3.) 0.5-10 s 4.) 1.5-30 s 5.) 5-100 s 6.) 15-300 s 7.) 0.5-10 min
Recovery time		24-240 V AC/DC	< 50 ms
		24-48 V DC, 24-240 V AC	< 80 ms
		380-440 V AC	< 60 ms
Accuracy within the rated control supply voltage tolerance			Δt < 0.004 % / V
Accuracy within the temperature range			Δt < 0.03 % / °C
Repeat accuracy (constant parameters)			< ±0.2 %
Setting accuracy of time delay			±6 % of full-scale value
Star-delta transition time			fixed 50 ms (CT-SDS, CT-MBS, CT-MFS, CT-MVS.2x)
Star-delta transition time tolerance			±2 ms

[1] Prior to first commisioning and after a six-month stop in operation

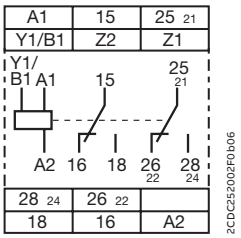
CT-S range
Technical data

Environmental data			
Ambient temperature ranges	operation / storage	-25...+60 °C / -40...+85 °C, -40...+60 °C / -40...+85 °C for CT-MVS.21, CT-MFS.21, CT-ERS.21, CT-APS.21	
Relative humidity range		25 % to 85 %	
Vibration, sinusoidal (IEC/EN 60068-2-6)	functioning	40 m/s², 10-58/60-150 Hz	
	resistance	60 m/s², 10-58/60-150 Hz, 20 cycles	
Vibration, seismic (IEC/EN 60068-3-3)	functioning	20 m/s²	
Shock, half-sine (IEC/EN 60068-2-27)	functioning	150 m/s², 11 ms, 3 shocks/direction	
	resistance	300 m/s² , 11 ms, 3 shocks/direction	
Isolation data		**CT-S with 1 c/o**	**CT-S with 2 c/o**
Rated insulation voltage U_i	input circuit / output circuit	500 V	
	output circuit 1 / output circuit 2	not available	300 V
Rated impulse withstand voltage U_{imp}	between all isolated circuits	4 kV; 1.2/50 µs except devices CT-xxx.23: input / output: 6 kV; 1.2/50 µs output 1 / output 2: 4 kV; 1.2/50 µs	
Power-frequency withstand voltage (test voltage)	between all isolated circuits	2.0 kV; 50 Hz; 60 s	
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	

CT-S range
Technical diagrams

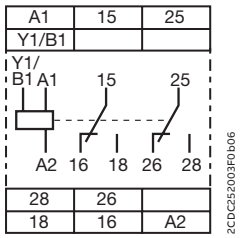
Connection diagrams

CT-MVS.21



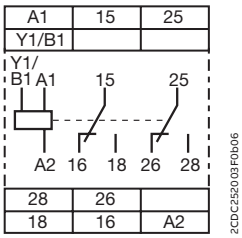
A1-A2	Supply: 24-240 V AC/DC
A1-Y1/B1	Control input
15-16/18	1st c/o contact
25-26/28	2nd c/o contact
21-22/24	2nd c/o contact as instantaneous contact
Z1-Z2	Remote potentiometer connection

CT-MVS.22



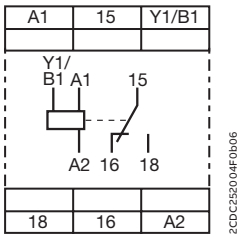
A1-A2	Supply: 224-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact
25-26/28	2nd c/o contact

CT-MVS.23



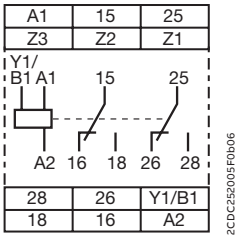
A1-A2	Supply: 380-440V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact
25-26/28	2nd c/o contact

CT-MVS.12



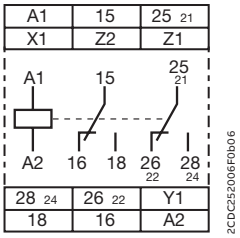
A1-A2	Supply: 24-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact

CT-MXS.22



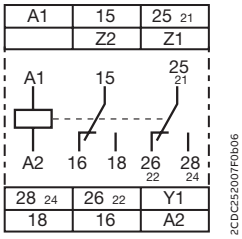
A1-A2	Supply: 24-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact
25-26/28	2nd c/o contact
Z1-Z2	Remote potentiometer connection
Z3-Z2	Remote potentiometer connection

CT-MFS.21



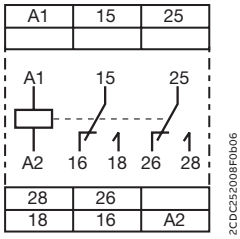
A1-A2	Supply: 24-240 V AC/DC
15-16/18	1st c/o contact
25-26/28	2nd c/o contact
21-22/24	2nd c/o contact as instantaneous contact
Y1-Z2	Control input
X1-Z2	Control input
Z1-Z2	Remote potentiometer connection

CT-MBS.22



A1-A2	Supply: 24-48 V DC or 24-240 V AC
15-16/18	1st c/o contact
25-26/28	2nd c/o contact
21-22/24	2nd c/o contact as instantaneous contact
Y1-Z2	Control input
Z1-Z2	Remote potentiometer connection

CT-WBS.22

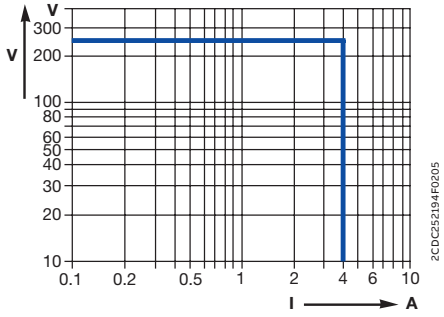


A1-A2	Supply: 24-48 V DC or 24-240 V AC
15-16/18	1st c/o contact
25-26/28	2nd c/o contact

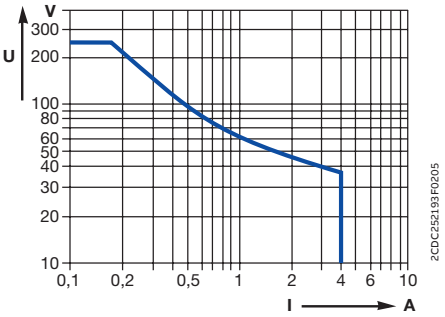
CT-S range
Technical diagrams

Load limit curves

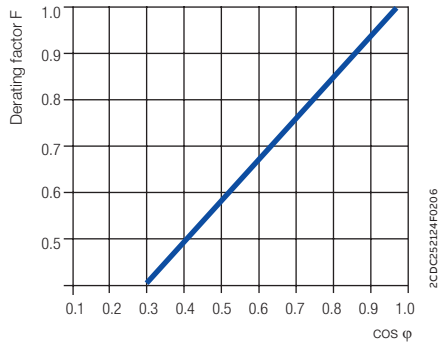
AC load (resistive)



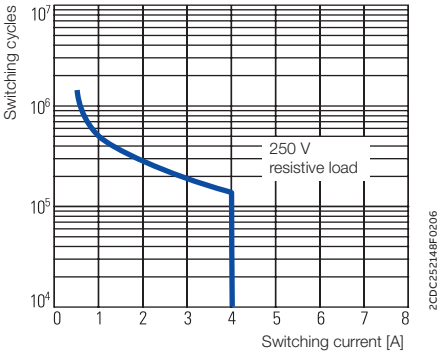
DC load (resistive)



Derating factor F for inductive AC load

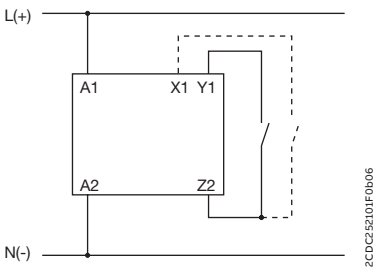


Contact lifetime



Wiring notes

Control inputs (volt-free triggering)



Triggering of the control inputs (volt-free) with a proximity switch (3 wire)

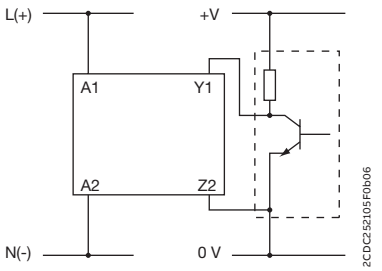
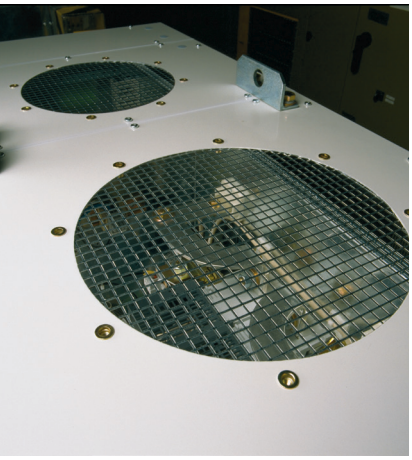
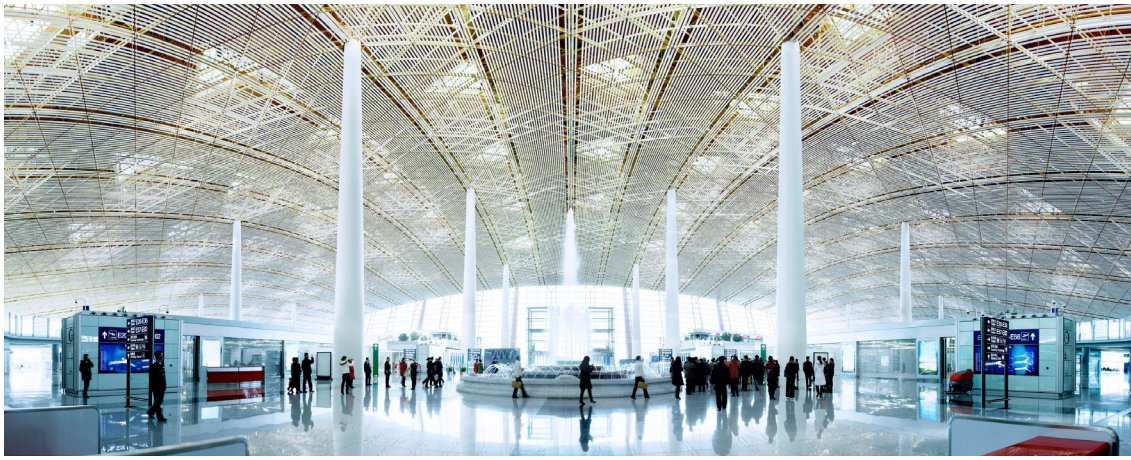



ABB
E 234 CT-ERD
A1 15
18 16 A2
ABB
E 234 CT-SDD
A1 17
28 18 A2
ABB
E 234 CT-MFD
A1 15 25
18 16 Y1/B1
28 26 A2
ABB
E 234 CT-TGD
A1 15 25
18 16 Y1/B1
28 26 A2





CT-D range
Benefits and advantages

The CT-D range is ideal for building applications and installation panels, due to its compact modular housing. For maximum flexibility in operation, nine single-function as well as two multifunction devices with seven timing functions are available. The devices offer four or seven time ranges from 0.05 seconds up to 100 hours. Their wide supply voltage range allows their use in applications worldwide.

Space savings

The CT-D range is ideal for installation panels thanks to its compact modular housing. The housing's design helps make the status and configuration more clearly visible. The CT-D range also offers a higher output current than standard industrial types. As well as the 1 c/o contacts, ABB offers devices with 2 c/o contacts for maximum flexibility.

Easy to install

Direct reading scales help make time setting quick and easy. A pre-selection for the time range together with an additional scale for fine adjustments help improve installation efficiency. For more flexibility, the delay time can even be changed when processes are running, making optimization to fit the application even simpler. All devices can be mounted and demounted tool-free.

Global availabilty

The CT-D range fulfills various global standards and approvals, supporting business worldwide. Additionally, all devices from the CT-D range have a wide supply voltage from 24-48 V DC and 24-240 V AC, making it ideal for the use in installation panels around the world.

CT-D range
Selection table

	Order number	1SVR500020R0000	1SVR500020R1100	1SVR500100R0000	1SVR500100R0100	1SVR500110R0000	1SVR500110R0100	1SVR500130R0000	1SVR500150R0000	1SVR500160R0000	1SVR500160R0100	1SVR500210R0100	1SVR500211R0100
	Type	CT-MFD.12	CT-MFD.21	CT-ERD.12	CT-ERD.22	CT-AHD.12	CT-AHD.22	CT-VWD.12	CT-EBD.12	CT-TGD.12	CT-TGD.22	CT-SAD.22	CT-SDD.22
Timing function													
ON-delay		■	■	■	■								
OFF-delay with aux. voltage		■	■			■	■						
Impulse-ON		■	■					■					
Impulse-OFF with aux. voltage		■	■										
Flasher starting with ON		■	■						■				
Flasher starting with OFF		■	■										
Pulse generator starting with ON or OFF										■	■		
Pulse former		■	■										
Star-delta change-over												■	■
Features													
Control input, voltage-related triggering		■	■			■	■			■	■		
Time range													
0.05 s - 100 h		■	■	■	■	■	■	■	■	2	2		
0.05 s - 10 min												■	■
Supply voltage													
12-240 V AC/DC			■										
24-48 V DC		■		■	■	■	■	■	■	■	■	■	■
24-240 V AC		■		■	■	■	■	■	■	■	■	■	■
Output													
c/o contact		1	2	1	2	1	2	1	1	1	2		
n/o contact												2	2

CT-D range
Technical data

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

		CT-D with 1 c/o contact	CT-D with 2 c/o contacts	CT-MFD.21
Input circuit - Supply circuit				
Rated control supply voltage U_s		24-240 V AC / 24-48 V DC		12-240 V AC/DC
Rated control supply voltage U_S tolerance		-15...+10 %		
Rated frequency		DC or 50/60 Hz		
Frequency range AC		47-63 Hz		
Typical power consumption		max. 3.5 VA		
Power failure buffering time		min. 20 ms		
Release voltage		> 10 % of the minimum rated control supply voltage U_s		
Input circuit - Control circuit				
Control input, control function	A1-Y1/B1	start timing external		
Kind of triggering		voltage-related triggering		
Resistance to reverse polarity		yes		
Parallel load / polarized		yes / yes		
Maximum cable length to the control inputs		50 m - 100 pF/m		
Minimum control pulse length		20 ms		
Control voltage potential		see rated control supply voltage		
Current consumption of the control input		see data sheet		
Timing circuit				
Time ranges	7 time ranges 0.05 s - 100 h	1.) 0.05-1 s 2.) 0.5-10 s 3.) 5-100 s 4.) 0.5-10 min 5.) 5-100 min 6.) 0.5-10 h 7.) 5-100 h		
	4 time ranges 0.05 s - 10 min (CT-SDD, CT-SAD)	1.) 0.05-1 s 2.) 0.5-10 s 3.) 5-100 s 4.) 0.5-10 min		
Recovery time		< 50 ms		
Accuracy within the rated control supply voltage tolerance		Δt < 0.005 % / V		
Accuracy within the temperature range		Δt < 0.06 % / °C		
Repeat accuracy (constant parameters)		Δt < ± 0.5 %		
Setting accuracy of time delay		± 10% of full-scale value		
Star-delta transition time	CT-SDD/ CT-SAD	fixed 50 ms / adjustable: 20 ms, 30 ms, 40 ms, 50 ms, 60 ms, 80 ms or 100 ms		
Star-delta transition time tolerance	CT-SDD / CT-SAD	±3 ms		
Indication of operational states				
Control supply voltage / timing	U: green LED	⎍: control supply voltage applied ⎍⎍⎍: timing		
Relay energized	R, R1, R2: yellow LED	⎍: output relay energized		
Operating elements and controls				
Adjustment of the time range		front-face rotary switch, direct reading scales		
Fine adjustment of the time value		front-face potentiometer		
Preselection of the timing function at multifunction devices		front-face rotary switch, direct reading scales		
Adjustment of the transition time	CT-SAC	front-face potentiometer		

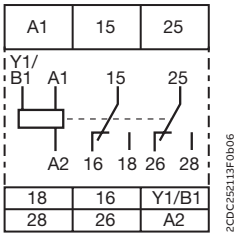
CT-D range
Technical data

		CT-D with 1 c/o contact	CT-D with 2 c/o contacts	CT-MFC.21
Isolation data				
Rated insulation voltage U_i	input circuit / output circuit	300 V		
	output circuit 1 / output circuit 2	not available	300 V	300 V
Rated impulse withstand voltage U_{imp}	between all isolated circuits	4 kV; 1.2/50 µs		
Power-frequency withstand voltage test(test voltage)	between all isolated circuits	2.5 kV; 50 Hz; 60 s		
Basic insulation (IEC/EN 61140)	input circuit / output circuit	300 V		
Protective separation (pollution degree 2 / overvoltage category II)	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)		
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		

CT-D range
Technical diagrams

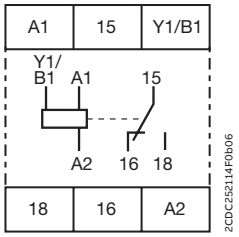
Connection diagrams

CT-MFD.21



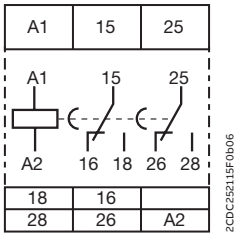
A1-A2	Supply: 12-240 V AC/DC
A1-Y1/B1	Control input
15-16/18	1st c/o contact
25-26/28	2nd c/o contact

CT-MFD.12



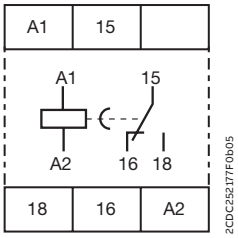
A1-A2	Supply: 24-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact

CT-ERD.22



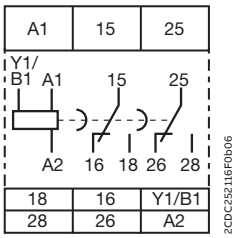
A1-A2	Supply: 24-48 V DC or 24-240 V AC
15-16/18	1st c/o contact
25-26/28	2nd c/o contact

CT-ERD.12



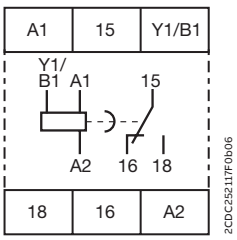
A1-A2	Supply: 24-48 V DC or 24-240 V AC
15-16/18	1st c/o contact

CT-AHD.22



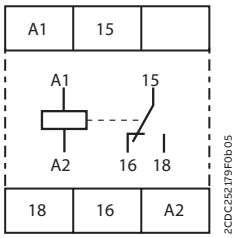
A1-A2	Supply: 24-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact
25-26/28	2nd c/o contact

CT-AHD.12



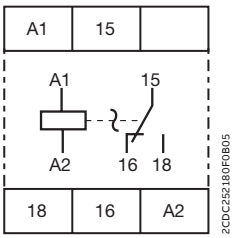
A1-A2	Supply: 24-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact

CT-VWD.12



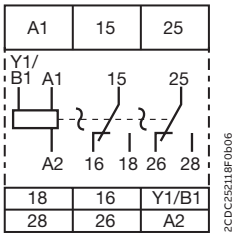
A1-A2	Supply: 24-48 V DC or 24-240 V AC
15-16/18	1st c/o contact

CT-EBD.12



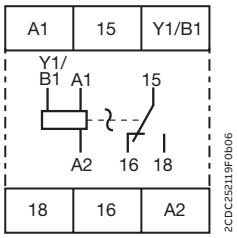
A1-A2	Supply: 24-48 V DC or 24-240 V AC
15-16/18	1st c/o contact

CT-TGD.22



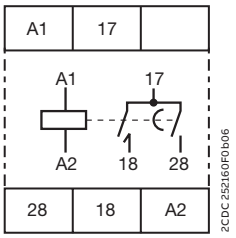
A1-A2	Supply: 24-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact
25-26/28	2nd c/o contact

CT-TGD.12



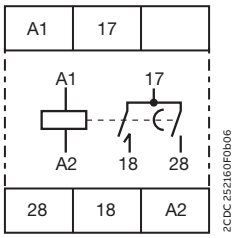
A1-A2	Supply: 24-48 V DC or 24-240 V AC
A1-Y1/B1	Control input
15-16/18	1st c/o contact

CT-SDD.22



A1-A2	Supply: 24-48 V DC or 24-240 V AC
17-18	1st n/o contact (star contactor)
17-28	2nd n/o contact (delta contactor)

CT-SAD.22



A1-A2	Supply: 24-48 V DC or 24-240 V AC
17-18	1st n/o contact (star contactor)
17-28	2nd n/o contact (delta contactor)


ABB
E 234 CT-ERD
E 234 CT-MFD
CT-ERC
CT-MFC
CT-AHS
CT-MVS
A1 15 25
18 16 A2
18 16 Y1/B1
28 26 Y1
Y1/B1 Z2 Z1
T Range
Time
Function

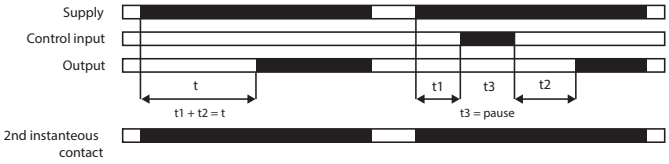
Timing functions
CT-C, CT-S, CT-D

On delay functions (Delay on make) ⊠

On-delay

This function requires a continuous control supply voltage for timing. Timing begins when a control supply voltage is applied. When the selected time delay is complete, the output relay energizes. If the control supply voltage is interrupted, the output relay de-energizes and the time delay is reset.

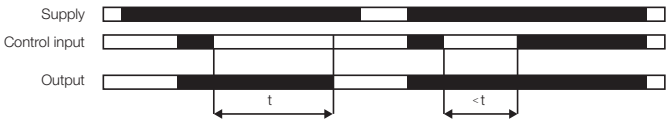
ON-delay accumulative



This function requires a continuous control supply voltage for timing. Timing begins when a control supply voltage is applied. When the selected time delay is complete, the output relay energizes. Timing can be paused by closing the control input.
The elapsed time t1 is stored and continues from this time value when the control input is re-opened. If the control supply voltage is interrupted, the output relay de-energizes and the time delay is reset.

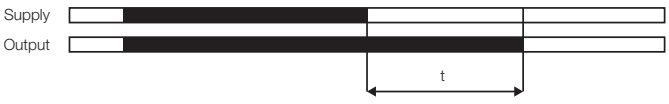
OFF delay functions (Delay on break) ■

OFF-delay with auxiliary voltage



This function requires a continuous control supply voltage for timing. If the control input is closed, the output relay energizes immediately. If the control input is opened, the time delay starts. When the selected time delay is complete, the output relay de-energizes.
If control input re-closes before the time delay is complete, the time delay is reset and the output relay does not change state. Timing starts again when the control input re-opens.
If the control supply voltage is interrupted, the output relay de-energizes and the time delay is reset.

OFF-delay without auxiliary voltage



The OFF-delay function without auxiliary voltage does not require a continuous control supply voltage for timing. Applying a control supply voltage energizes the output relay. If the control supply voltage is interrupted, the OFF-delay starts. When timing is complete, the output relay de-energizes.
If a control supply voltage is re-applied before the time delay is complete, the time delay is reset and the output relay remains energized. A control supply voltage must be applied for the minimum energizing time (200 ms), for correct operation.

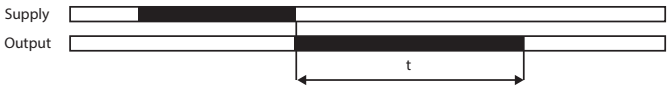
Timing functions
CT-C, CT-S, CT-D

Impulse-OFF functions 1⎍■

Impulse-OFF with auxiliary voltage

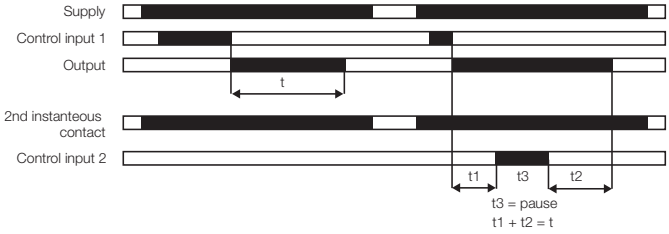
This function requires a continuous control supply voltage for timing. The output relay energizes immediately when the control input is de-energized and the output de-energizes after the set pulse time is complete. If the control supply voltage is interrupted, the output relay de-energizes and the time delay is reset.

Impulse-OFF without auxiliary voltage



This function does not require a continuous control supply voltage for timing.
If the control supply voltage is interrupted, the output relay energizes and the OFF time starts. When timing is complete, the output relay de-energizes. If a control supply voltage is re-applied before the time delay is complete, the time delay is reset and the output relay de-energizes. A control supply voltage must be applied for the minimum energizing time (200 ms), for proper operation.

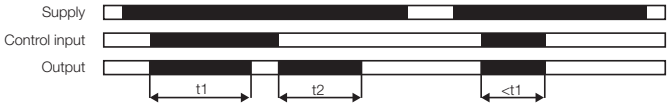
Impulse-OFF with auxiliary voltage
(Trailing edge interval) accumulative



This function requires a continuous control supply voltage for timing. If a control supply voltage is applied, opening control input 1 energizes the output relay immediately and starts timing. When the selected pulse time is complete, the output relay de-energizes. Closing control input 1, before the pulse time is complete, de-energizes the output relay and resets the pulse time.
Pause timing / Accumulative impulse-OFF:
Timing can be paused by closing control input 2. The elapsed time t1 is stored and continues from this time value when control input 2 is re-opened. This can be repeated as often as required. If the control supply voltage is interrupted, the output relay de- energizes and the time delay is reset.

Impulse-ON and Impulse-OFF functions 1⎍⊠

Impulse-ON and impulse-OFF

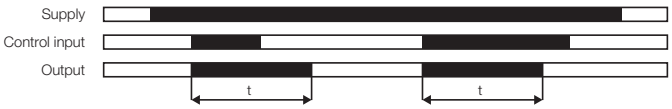


This function requires a continuous control supply voltage for timing. If a control supply voltage is applied, closing the control input energizes the output relay immediately and starts the pulse time t1. When t1 is complete, the output relay de-energizes. Re-opening the control input energizes the output relay immediately and starts the pulse time t2. When t2 is complete, the output relay de-energizes. t1 and t2 are independently adjustable. If the control input changes state before the pulse time is complete, the output relay de-energizes and the pulse time is reset. If the control input changes state again, the interrupted pulse time restarts. If the control supply voltage is interrupted, the output relay de-energizes and the time delay is reset.

Timing functions
CT-C, CT-S, CT-D

Pulse former

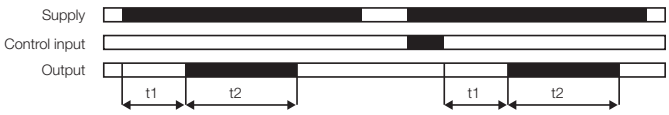
Puls former (single shot)



This function requires a continuous control supply voltage for timing. Closing the control input energizes the output relay immediately and starts timing. Operating the control input during the time delay has no effect. When the selected ON time is complete, the output relay de-energizes. After the ON time is complete, it can be restarted by closing the control input. If control supply voltage is interrupted, the output relay de-energizes and the time delay is reset.

Single-pulse generator

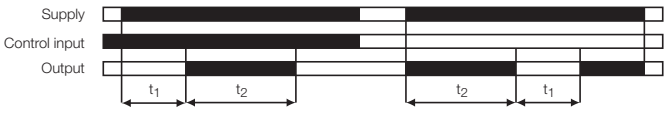
Single-pulse generator, starting with OFF



This function requires a continuous control supply voltage for timing. Applying a control supply voltage while the control input is open energizes the output relay after the OFF time t1 is complete. When the following ON time t2 is complete, the output relay de-energizes. Alternatively, when a control supply voltage is already applied, the timing process can be started by opening control input. Closing the control input with a control supply voltage applied, de-energizes the output relay and re- sets the time delay. The ON & OFF times are independently adjustable.

Pulse generator

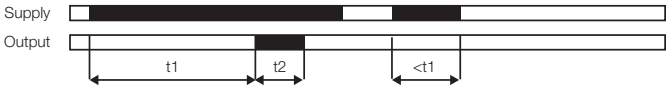
Starting with the ON or OFF time
(Recycling unequal times, ON or OFF first)



This function requires a continuous control supply voltage for timing. Applying a control supply voltage, with closed control input, starts timing with an OFF time first. Applying a control supply voltage, with open control input, starts timing with an ON time first. If the control supply voltage is interrupted, the output relay de-energizes and the time delay is reset.

Impulse with delay

Fixed impulse with adjustable time delay



This function requires a continuous control supply voltage for timing. The time delay t1 starts when a control supply voltage is applied. When t1 is complete, the output relay energizes for the fixed impulse time t2 of 500 ms.
If the control supply voltage is interrupted, the time delay is re- set. The output relay does not change state.

Adjustable impulse with fixed time delay

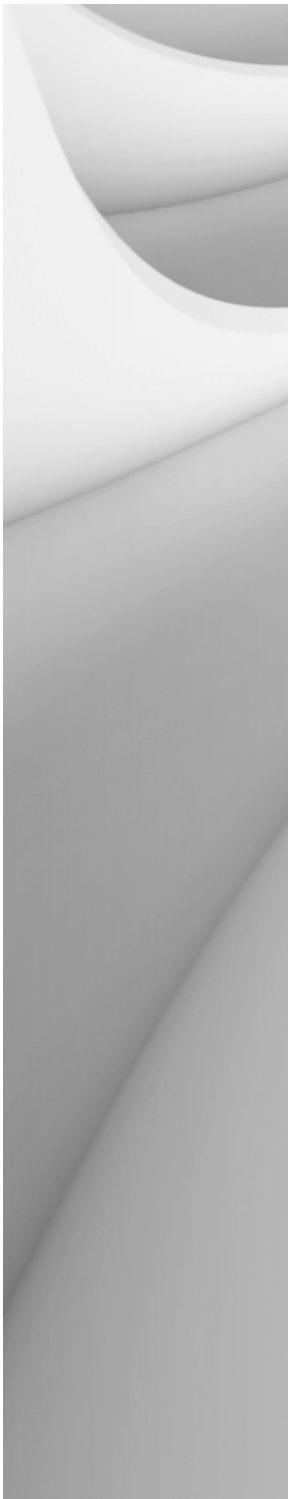
This function requires a continuous control supply voltage for timing. As soon as the control supply voltage is applied the output relay will close after 500 ms. When t2 is complete, the output relay energizes and the selected pulse time t1 starts. When t1 is complete, the output relay de-energizes. If the control supply voltage is interrupted, the pulse time is reset and the output relay de-energizes.

Index
Product type

ABB STOTZ-KONTAKT GmbH
Eppelheimer Strasse 82
69123 Heidelberg
Germany

You can find the address of your local sales organization on the ABB homepage

abb.com/lowvoltage



2CDC111004C0210_01 Rev. H (04/2020)

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Timers ***category:***

Click to view products by ABB ***manufacturer:***

Other Similar products are found below :

79237785 H5AN-4DM DC12-24 H5CN-YAN AC100-240 H5CX-L8S-N AC100-240 H5S-WFB2D H5AN-4D DC12-24 THR2U-110A 81506944 88225029 H5S-YB4-X H7AN-2D DC12-24 H5CN-XANS DC12-48 H7AN-W4DM DC12-24 H7AN-4DM DC12-24 H7AN-4D DC12-24 H7AN-RT6M AC100-240 LT4H-AC24VS 1SVR508020R1100 1SVR508100R0000 1SVR550127R4100 1SVR730010R3200 1SVR730020R3300 1SVR730211R2300 1SVR740100R3300 PCU-511UNI 732-0030 H3C-R H3CR-A8-301 24-48AC/12-48DC H3CR-A8E 24-48AC/DC H3CR-F8 100-240AC/100-125DC H3CR-FN 100-240AC/100-125DC H3DK-G 24-230AC/DC H3DK-HBL AC/DC24-48 H3DK-M1A DC12 H3DT-A1 24-240AC/DC LT4H-AC24V LT4HW8-AC240V LT4HW-AC240V LT4HW-AC240VS LT4HW-AC24VS LT4HW-DC24V LT4HW-DC24VS 31L48AP 31L48TPM240 RC302 RC312 RE48ACV12MW REV-201M RG AT78041