

Data at Ta = 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
	CT-xxx.x4	110-240 V AC
	CT-xxx.x5	220-240 V AC
	CT-xxx.x6	24 V AC/DC
	CT-xxx.x7	100-127 V AC or 110 V DC
	CT-xxx.x8	200-240V 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 current / power consumption		depending on device, see data sheet
Power failure buffering time	24 V DC 230/400 V AC	min. 15 ms min. 20 ms
Input circuit - Control circuit		
Kind of triggering	CT-MVS, CT-MXS, CT-APS	voltage-related triggering
Control input, Control function	A1-Y1	start timing external (CT-MVS, CT-MXS, CT-APS)
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 230 V AC 400 V AC	1.2 mA 8 mA 6 mA
Kind of triggering	CT-MFS, CT-MBS, CT-AHS	volt-free triggering
Control input, Control function	Y1-Z2 X1-Z2	start timing external (CT-MFS, CT-MBS, CT-AHS) 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 Z3-Z2	50 kΩ (CT-MFS, CT-MBS, CT-MVS.21, CT-MXS) 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 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.) 1.5-30 min 8.) 15-300 min 9.) 1.5-30 h 10.) 15-300 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.) 0.5-10 min
Recovery time	24-240 V AC/DC 24-48 V DC, 24-240 V AC 380-440 V AC	<50 ms < 80 ms < 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)		Δt < 0.2 %
Star-delta transition time		fixed 50 ms (CT-SDS, CT-MBS, CT-MFS, CT-MVS.2x)
Star-delta transition time tolerance		±2 ms
Minimum energizing time		100 ms (CT-ARS)
Formatting time ¹⁾		5 min (CT-ARS)

¹⁾ prior to first commissioning and after a six-month stop in operation

CT-S range

Technical data

Indication of operational states

Control supply voltage / timing	U/T: green LED	: control supply voltage applied / : timing
Control supply voltage	U: green LED	: control supply voltage applied
Relay state	R, R1, R2: yellow LED	: output relay energized (R, R1, R2)

Output circuit

Kind of output	15-16/18	relay, 1 c/o contact
	15-16/18; 25-26/28	relay, 2 c/o contacts
	15-16/18; 25(21)-26(22)/28(24)	relay, 2 c/o contacts, 2nd c/o contact selectable as inst. contact
	17-18; 17-28	relay, 2 n/o contacts (CT-SDS)
Contact material		Cd-free, on request
Rated operational voltage U_g	IEC/EN 60947-1	250 V
Minimum switching voltage / minimum switching current		12 V / 10 mA (CT-IRS.2xG: 10 mV / 10 μ A)
Maximum switching voltage / maximum switching current		see load limit curves (CT-IRS.2xG: 10 V / 200 mA)
Rated operational current I_g (IEC/EN 60947-5-1)	AC12 (resistive) at 230 V	4 A
	AC15 (inductive) at 230 V	3 A
	AC15 (inductive) at 230 V	4 A
	DC13 (inductive) at 24 V	2 A (CT-ARS; 1.5 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	at AC12, 230 V, 4 A	0.1×10^6 switching cycles
Max. fuse rating to achieve short-circuit protection (IEC/EN 60947-5-1)	n/c contact	6 A fast-acting
	n/o contact	10 A fast-acting

General data ²⁾

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		depending on device, see ordering details
Mounting		DIN rail (IEC/EN 60715), snap-on mounting without any tool
Mounting position		any
Minimum distance to other units	vertical / horizontal	not necessary / not necessary
Material of housing		UL 94 V-0
Degree of protection	housing / terminals	IP50 / IP20

Electrical connection ²⁾

		Screw connection technology	Easy Connect Technology (Push-in)
Wire size	fine-strand with(out) wire end ferrule	1 x 0.5-2.5 mm ² (1 x 20-14 AWG)	2 x 0.5-1.5 mm ² (2 x 20-16 AWG)
		2 x 0.5-1.5 mm ² (2 x 20-16 AWG)	
	rigid	1 x 0.5-4 mm ² (1 x 20-12 AWG)	2 x 0.5-1.5 mm ² (2 x 20-16 AWG)
		2 x 0.5-2.5 mm ² (2 x 20-14 AWG)	
Stripping length		8 mm (0.32 in)	
Tightening torque		0.6-0.8 Nm (5.31-7.08 lb.in)	-

²⁾ Data for all references 1SVR 730 xxx xxx and 1SVR 740 xxx xxx. For devices with 1SVR 430 xxx xxx and 1SVR 630 xxx xxx please refer to the data sheet.

CT-S range

Technical data

Environmental data

Ambient temperature ranges	operation / storage	-25...+60 °C / -40...+85 °C, -40...+60 °C / -40...+85 °C (CT-MVS.21, CT-MFS.21, CT-ERS.21, CT-APS.21)
Damp heat (cyclic) (IEC/EN 60068-2-30)		6 x 24 h cycle, 55 °C, 95 % RH
Vibration, sinusoidal (IEC/EN 60068-2-6)	functioning	40 m/s ² , 10-58/60-150 Hz
Vibration, seismic (IEC/EN 60068-3-3)	resistance	60 m/s ² , 10-58/60-150 Hz, 20 cycles
	functioning	20 m/s ²
Shock, half-sine (IEC/EN 60068-2-27)	functioning	100 m/s ² , 11 ms, 3 shocks/direction
	resistance	300 m/s ² , 11 ms, 3 shocks/direction

6 Isolation data

Rated insulation voltage U _i	input circuit / output circuit	500 V
Rated impulse withstand voltage U _{imp} between all isolated circuits	VDE 0110, IEC/EN 60664	4 kV; 1.2/50 µs
Power-frequency withstand voltage test between all isolated circuits (test voltage)	routine test	2.0 kV, 50Hz, 1 s
	type test	2.5 kV, 50 Hz, 1 min
Basic insulation (IEC/EN 61140)	input circuit / output circuit	500 V
Protective separation (IEC/EN 61140; IEC/EN 50178; VDE 0106 part 101 and part 101/ A1)	input circuit / output circuit	250 V
Pollution degree (IEC/EN 60664-1, VDE 0110)		3
Overtoltage category (IEC/EN 60664-1, VDE 110)		III

Standards

Product standard	IEC 61812-1, EN 61812-1 + A11, DIN VDE 0435 part 2021
Low Voltage Directive	2006/95/EC
EMC Directive	2004/108/EC
RoHS Directive	2002/95/EC

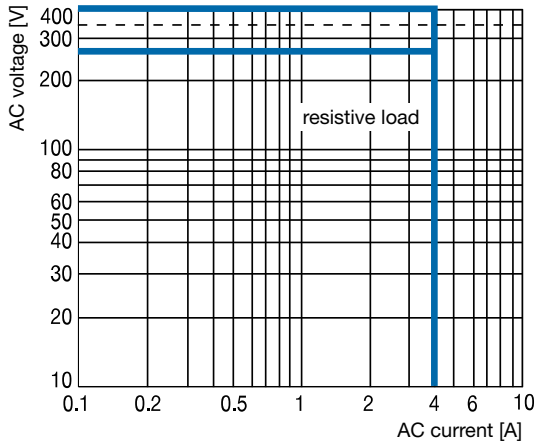
Electromagnetic compatibility

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

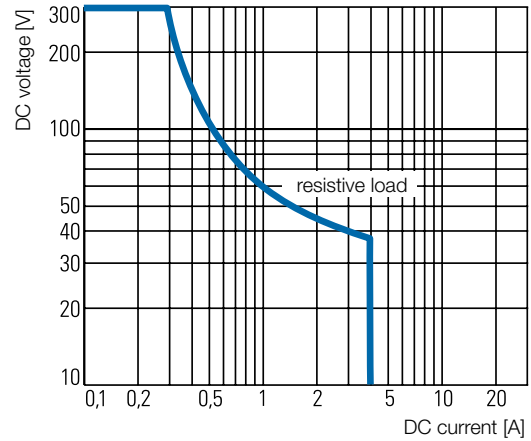
CT-S range Technical diagrams

Technical diagrams Load limit curves

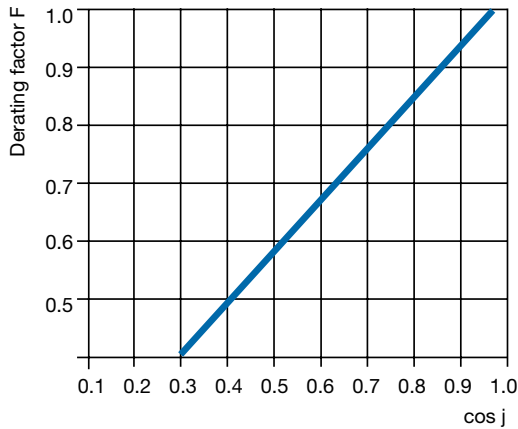
AC load (resistive)



DC load (resistive)



Derating factor F
for inductive AC load



Contact lifetime

