3RT2028-2AL20-1AA0

Data sheet



power contactor, AC-3e/AC-3, 38 A, 18.5 kW / 400 V, 3-pole, 230 V AC, 50/60 Hz, auxiliary contacts: 1 NO + 1 NC, spring-loaded terminal, size: S0, upright mounting position

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S0
product extension	
 function module for communication 	No
auxiliary switch	Yes
power loss [W] for rated value of the current	
 at AC in hot operating state 	9.6 W
 at AC in hot operating state per pole 	3.2 W
 without load current share typical 	2.7 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
 of main circuit with degree of pollution 3 rated value 	690 V
 of auxiliary circuit with degree of pollution 3 rated value 	690 V
surge voltage resistance	
of main circuit rated value	6 kV
of auxiliary circuit rated value	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	8,3g / 5 ms, 5,3g / 10 ms
shock resistance with sine pulse	
• at AC	13,5g / 5 ms, 8,3g / 10 ms
mechanical service life (operating cycles)	
of contactor typical	10 000 000
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000
 of the contactor with added auxiliary switch block typical 	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	
Weight	0.468 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
during operation	-25 +60 °C
during storage	-55 +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %

Environmental footprint	
Environmental Product Declaration(EPD)	Yes
Global Warming Potential [CO2 eq] total	74.2 kg
Global Warming Potential [CO2 eq] during manufacturing	1.9 kg
Global Warming Potential [CO2 eq] during mandiacturing Global Warming Potential [CO2 eq] during operation	72.4 kg
Global Warming Potential [CO2 eq] after end of life	-0.117 kg
Main circuit	·····g
number of poles for main current circuit	3
number of NO contacts for main contacts	3
operating voltage	
at AC-3 rated value maximum	690 V
 at AC-3e rated value maximum 	690 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	50 A
• at AC-1	TO A
— up to 690 V at ambient temperature 40 °C rated value	50 A
 up to 690 V at ambient temperature 60 °C rated value at AC-3 	42 A
■ at 400 V rated value	38 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-3e	
— at 400 V rated value	38 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
 at AC-4 at 400 V rated value 	22 A
• at AC-5a up to 690 V rated value	44 A
 at AC-5b up to 400 V rated value 	31.5 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	30.8 A
— up to 400 V for current peak value n=20 rated value	30.8 A
— up to 500 V for current peak value n=20 rated value	30.8 A
— up to 690 V for current peak value n=20 rated value	21 A
• at AC-6a	20.5.4
 up to 230 V for current peak value n=30 rated value up to 400 V for current peak value n=30 rated value 	20.5 A
up to 400 V for current peak value n=30 rated value up to 500 V for current peak value n=30 rated value	20.5 A 21.4 A
— up to 690 V for current peak value n=30 rated value	21 A
minimum cross-section in main circuit at maximum AC-1 rated value	10 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	12 A
at 690 V rated value	12 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	35 A
— at 60 V rated value	20 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A
with 2 current paths in series at DC-1 at 24 V rated value.	35 A
— at 24 V rated value— at 60 V rated value	35 A 35 A
	35 A 35 A
— at 110 V rated value— at 220 V rated value	5 A
— at 440 V rated value	1A
— at 600 V rated value	0.8 A
at 555 + Tateu value	V.V.

with 3 current paths in series at DC-1	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	35 A
— at 440 V rated value	2.9 A
— at 600 V rated value	1.4 A
	1.4 A
at 1 current path at DC-3 at DC-5 at 24 V rated value	20.4
	20 A
— at 60 V rated value	5 A
— at 220 V rated value	1.4
— at 440 V rated value	0.09 A
— at 600 V rated value	0.06 A
• with 2 current paths in series at DC-3 at DC-5	05.4
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 A
— at 440 V rated value	0.27 A
— at 600 V rated value	0.16 A
 with 3 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	10 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
operating power	
at AC-2 at 400 V rated value	18.5 kW
• at AC-3	
— at 230 V rated value	11 kW
— at 400 V rated value	18.5 kW
— at 500 V rated value	18.5 kW
— at 690 V rated value	18.5 kW
• at AC-3e	
— at 230 V rated value	11 kW
— at 400 V rated value	18.5 kW
— at 500 V rated value	18.5 kW
— at 690 V rated value	18.5 kW
operating power for approx. 200000 operating cycles at AC-	
4	
at 400 V rated value	6 kW
at 690 V rated value	10.3 kW
operating apparent power at AC-6a	
 up to 230 V for current peak value n=20 rated value 	12.2 kVA
• up to 400 V for current peak value n=20 rated value	21.3 kVA
 up to 500 V for current peak value n=20 rated value 	26.6 kVA
• up to 690 V for current peak value n=20 rated value	25 kVA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	8.1 kVA
• up to 400 V for current peak value n=30 rated value	14.2 kVA
• up to 500 V for current peak value n=30 rated value	18.5 kVA
• up to 690 V for current peak value n=30 rated value	25 kVA
short-time with stand current in cold operating state up to 40 $^{\circ}\text{C}$	
 limited to 1 s switching at zero current maximum 	593 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	341 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	260 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum	199 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	162 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	

• at AC	5 000 1/h
operating frequency	0 000 1/11
at AC-1 maximum	1 000 1/h
	750 1/h
• at AC-2 maximum	750 1/h
• at AC 3a maximum	
• at AC-3e maximum	750 1/h
• at AC-4 maximum	250 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
• at 50 Hz rated value	230 V
at 60 Hz rated value	230 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
● at 60 Hz	0.85 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz	81 VA
● at 60 Hz	79 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.72
● at 60 Hz	0.74
apparent holding power of magnet coil at AC	
• at 50 Hz	10.5 VA
● at 60 Hz	8.5 VA
inductive power factor with the holding power of the coil	
● at 50 Hz	0.25
● at 60 Hz	0.28
closing delay	
• at AC	8 40 ms
opening delay	
• at AC	4 16 ms
arcing time	10 10 ms
arcing time control version of the switch operating mechanism	
arcing time control version of the switch operating mechanism Auxiliary circuit	10 10 ms Standard A1 - A2
arcing time control version of the switch operating mechanism	10 10 ms
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous	10 10 ms Standard A1 - A2
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous	10 10 ms Standard A1 - A2
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact	10 10 ms Standard A1 - A2 1
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum	10 10 ms Standard A1 - A2 1
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15	10 10 ms Standard A1 - A2 1 1 1 10 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value	10 10 ms Standard A1 - A2 1 1 10 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value	10 10 ms Standard A1 - A2 1 1 1 10 A 10 A 3 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A 1 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A 1 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 60 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A 6 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 60 V rated value • at 60 V rated value • at 110 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A 6 A 6 A 3 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 60 V rated value • at 60 V rated value • at 110 V rated value • at 110 V rated value • at 125 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A 6 A 6 A 3 A 2 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A 6 A 3 A 2 A 1 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A 6 A 3 A 2 A 1 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A 6 A 6 A 3 A 2 A 1 A 0.15 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 220 V rated value	10 10 ms Standard A1 - A2 1 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A 6 A 6 A 3 A 2 A 1 A 1 A 10 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 110 V rated value • at 125 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value • at 24 V rated value • at 24 V rated value • at 600 V rated value	10 10 ms Standard A1 - A2 1 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A 6 A 6 A 3 A 2 A 1 A 0.15 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 110 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value • at 220 V rated value • at 600 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A 6 A 6 A 3 A 2 A 1 A 0.15 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value • at 48 V rated value	10 10 ms Standard A1 - A2 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A 6 A 6 A 3 A 2 A 1 A 0.15 A
arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 240 V rated value • at 240 V rated value • at 240 V rated value • at 600 V rated value • at 148 V rated value • at 148 V rated value • at 140 V rated value • at 150 V rated value • at 170 V rated value	10 10 ms Standard A1 - A2 1 1 1 10 A 10 A 3 A 2 A 1 A 10 A 6 A 6 A 6 A 3 A 2 A 1 A 0.15 A

contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
at 480 V rated value	34 A
at 600 V rated value	27 A
yielded mechanical performance [hp]	
for single-phase AC motor	
— at 110/120 V rated value	3 hp
— at 230 V rated value	5 hp
• for 3-phase AC motor	
— at 200/208 V rated value	10 hp
— at 220/230 V rated value	10 hp
— at 460/480 V rated value	25 hp
— at 575/600 V rated value	25 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	7,00071 000
design of the fuse link	
for short-circuit protection of the main circuit	
with type of coordination 1 required	gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)
with type of assignment 2 required	gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (415V, 80kA)
for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)
Installation/ mounting/ dimensions	35(000 v, 1 io i)
mounting position	standing, on horizontal mounting surface
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
height	102 mm
width	45 mm
depth	97 mm
required spacing	
with side-by-side mounting	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
for grounded parts	O THILL
— forwards	10 mm
— upwards	10 mm
— upwards — at the side	6 mm
— at the side — downwards	10 mm
	I VIIIII
• for live parts	40
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm
Connections/ Terminals	
type of electrical connection	anring landed terminals
for main current circuit for applications and control circuit	spring-loaded terminals
for auxiliary and control circuit	spring-loaded terminals
at contactor for auxiliary contacts of magnet coil	Spring-type terminals
of magnet coil	Spring-type terminals
type of connectable conductor cross-sections	
• for main contacts	2v /4
— solid	2x (1 10 mm²)
— solid or stranded	2x (1 10 mm²)
— finely stranded with core end processing	2x (1 6 mm²)
— finely stranded without core end processing	2x (1 6 mm²)
for AWG cables for main contacts	2x (18 8)
connectable conductor cross-section for main contacts	4 40 2
• solid	1 10 mm²
• stranded	1 10 mm²
 finely stranded with core end processing 	1 6 mm²

Inley standed without order end processing of inely stranded without core end processing of inely stranded without core end processing of new stranded without core end processing of auxiliary contacts of auxiliary contacts of auxiliary contacts of auxiliary contacts of a stranded without core end processing of inely stranded without core end processing of inely stranded without core end processing of the without core end processing of with levid cables for auxiliary contacts of the with low demand rate according to IEC 60947-5-1 of the with low demand rate according to SN 31920 of the with low demand rate according to SN 31920 of the with light demand rate according to SN 31920 of with light demand rate according to SN 31920 of with light demand rate according to SN 31920 of with light demand rate according to SN 31920 solution with light demand rate according to SN 31920 of the with low demand rate according to SN 31920 solution with light demand rate according to SN 31920 of the with light demand rate according to SN 31920 of the with light demand rate according to SN 31920 of the with light demand rate according to SN 31920 of the with light demand rate according to SN 31920 of the with light demand rate according to SN 31920 of the with light demand rate according to SN 31920 of the with light demand rate according to SN 31920 of the with light demand rate according to SN 31920 of the with light demand rate acco	a finally atranded without ears and proceeding	1 6 mm²
solid or stranded infely stranded with core end processing infely stranded without core end processing infely stranded with core end processing infely stranded without core end processing infel stranded without core end proc	finely stranded without core end processing	1 0 mm
• finely stranded with core end processing • finely stranded without core end processing type of connectable conductor cross-sections • for auxiliary contacts - solid or stranded - finely stranded without core end processing - finely stranded with core end processing - finely stranded without core end processing - finely stranded without core end processing - finely stranded without core end processing - for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross-section • for main contacts • for auxiliary contacts - for auxiliary contact	•	0.5 0.5
Interview of connectable conductor cross-sections		
type of connectable conductor cross-sections • for auxiliary contacts — solid or stranded — finely stranded with core end processing — inely stranded without core end processing — for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross-section • for main contacts • for rauxiliary contacts • for auxiliary domain according to SN 31920 • for safety function • for auxiliary contacts • for		
• for auxiliary contacts solid or stranded finely stranded with core end processing finely stranded without core end processing for AWG cables for auxiliary contacts for auxiliary contacts for auxiliary contacts for auxiliary contacts finely stranded connectable conductor cross-section for main contacts for auxiliary contacts finely stranded without core end processing finely stranded contacts finely stranded without core end processing finely stranded without core will stranded	·	0.5 2.5 mm²
- solid or stranded		
- finely stranded with core end processing - finely stranded without core end processing - for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross section - for main contacts - for auxiliary	for auxiliary contacts	
- finely stranded without core end processing	— solid or stranded	2x (0.5 2.5 mm²)
• for AWG cables for auxiliary contacts 2x (20 14) AWG number as coded connectable conductor cross section • for main contacts • for auxiliary contacts 20 14 Safety rolated data product function • mirror contact according to IEC 60947-4-1 • positively driven operation according to IEC 60947-5-1 • suitable for safety function • suitable for safety function • suitable for safety related switching OFF • service life maximum 20 a test wear-related service life necessary Yes proportion of dangerous failures • with low demand rate according to SN 31920 • with high demand rate according to SN 31920 • with high demand rate according to SN 31920 100 000 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary PICE 61508 safety device type according to IEC 61508-2 Type A Electrical Safety protection class IP on the front according to IEC 60529 finger-safe, for vertical contact from the front	 finely stranded with core end processing 	2x (0.5 1.5 mm²)
AWG number as coded connectable conductor cross section • for main contacts • for auxiliary contacts 20 14 Safety related data product function • mirror contact according to IEC 60947-4-1 • positively driven operation according to IEC 60947-5-1 • positively driven operation according to IEC 60947-5-1 • suitable for safety function suitablity for use safety-related switching OFF yes service life maximum 20 a test wear-related service life necessary yes proportion of dangerous failures • with low demand rate according to SN 31920 • with high demand rate according to SN 31920 suituble with high demand rate according to SN 31920 1000 000 failure rate [FIT] with low demand rate according to SN 31920 failur	 finely stranded without core end processing 	2x (0.5 2.5 mm²)
• for main contacts • for auxiliary contacts • for auxiliary contacts • for auxiliary contacts 20 14 Safety rolated data product function • mirror contact according to IEC 60947-4-1 • positively driven operation according to IEC 60947-5-1 • suitable for safety function • with rouse safety-related switching OFF service life maximum 20 a test wear-related service life necessary • with low demand rate according to SN 31920 • with low demand rate according to SN 31920 • with high demand rate according to SN 31920 B10 value with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Type A Electrical Safety protection class IP on the front according to IEC 60529 finger-safe, for vertical contact from the front	 for AWG cables for auxiliary contacts 	2x (20 14)
• for auxiliary contacts Safety related data product function • mirror contact according to IEC 60947-4-1 • positively driven operation according to IEC 60947-5-1 • suitable for safety function • suitable for safety function • suitablity for use safety-related switching OFF service life maximum 20 a test wear-related service life necessary proportion of dangerous failures • with low demand rate according to SN 31920 • with high demand rate according to SN 31920 B10 value with high demand rate according to SN 31920 B10 value with high demand rate according to SN 31920 SSO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Type A Electrical Safety protection class IP on the front according to IEC 60529 finger-safe, for vertical contact from the front		
product function	• for main contacts	18 8
product function	 for auxiliary contacts 	20 14
 mirror contact according to IEC 60947-4-1 positively driven operation according to IEC 60947-5-1 suitable for safety function yes suitability for use safety-related switching OFF yes service life maximum 20 a test wear-related service life necessary proportion of dangerous failures with low demand rate according to SN 31920 with high demand rate according to SN 31920 with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Type A Electrical Safety protection class IP on the front according to IEC 60529 finger-safe, for vertical contact from the front 	Safety related data	
positively driven operation according to IEC 60947-5-1 suitable for safety function Yes suitability for use safety-related switching OFF Yes service life maximum 20 a test wear-related service life necessary Yes proportion of dangerous failures with low demand rate according to SN 31920 with high demand rate according to SN 31920 with high demand rate according to SN 31920 B10 value with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 finger-safe, for vertical contact from the front	product function	
suitable for safety function suitability for use safety-related switching OFF yes service life maximum 20 a test wear-related service life necessary Yes proportion of dangerous failures • with low demand rate according to SN 31920 • with high demand rate according to SN 31920 * with high demand rate according to SN 31920 B10 value with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Type A Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	 mirror contact according to IEC 60947-4-1 	Yes
suitability for use safety-related switching OFF service life maximum 20 a test wear-related service life necessary proportion of dangerous failures • with low demand rate according to SN 31920 • with high demand rate according to SN 31920 B10 value with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 finger-safe, for vertical contact from the front finger-safe, for vertical contact from the front	 positively driven operation according to IEC 60947-5-1 	No
service life maximum test wear-related service life necessary proportion of dangerous failures with low demand rate according to SN 31920 with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front front 20 a Yes 1000 Type 40 %	suitable for safety function	Yes
test wear-related service life necessary proportion of dangerous failures • with low demand rate according to SN 31920 • with high demand rate according to SN 31920 B10 value with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	suitability for use safety-related switching OFF	Yes
proportion of dangerous failures • with low demand rate according to SN 31920 • with high demand rate according to SN 31920 B10 value with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	service life maximum	20 a
with low demand rate according to SN 31920 with high demand rate according to SN 31920 B10 value with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	test wear-related service life necessary	Yes
with high demand rate according to SN 31920 B10 value with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	proportion of dangerous failures	
B10 value with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 3 overdimensioning according to ISO 13849-2 necessary Yes IEC 61508 safety device type according to IEC 61508-2 Type A Electrical Safety protection class IP on the front according to IEC 60529 IP20 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	 with low demand rate according to SN 31920 	40 %
failure rate [FIT] with low demand rate according to SN 31920 ISO 13849 device type according to ISO 13849-1 3 overdimensioning according to ISO 13849-2 necessary Yes IEC 61508 safety device type according to IEC 61508-2 Type A Electrical Safety protection class IP on the front according to IEC 60529 IP20 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	 with high demand rate according to SN 31920 	73 %
ISO 13849 device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	B10 value with high demand rate according to SN 31920	1 000 000
device type according to ISO 13849-1 overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front		100 FIT
overdimensioning according to ISO 13849-2 necessary IEC 61508 safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	ISO 13849	
safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	device type according to ISO 13849-1	3
safety device type according to IEC 61508-2 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	overdimensioning according to ISO 13849-2 necessary	Yes
Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	IEC 61508	
protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	safety device type according to IEC 61508-2	Type A
touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front	Electrical Safety	
•	protection class IP on the front according to IEC 60529	IP20
Approvals Certificates	touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
	Approvals Certificates	

General Product Approval









Confirmation



<u>KC</u>

General Product Approval

EMV

Functional Saftey

Test Certificates

Marine / Shipping





Type Examination Certificate Type Test Certificates/Test Report

Special Test Certificate



Marine / Shipping











Miscellaneous

other Railway Environment

other



Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

Confirmation

Information- and Downloadcenter (Catalogs, Brochures,...)

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2028-2AL20-1AA0

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2028-2AL20-1AA0

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-2AL20-1AA0

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

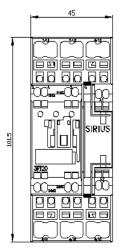
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2028-2AL20-1AA0&lang=en

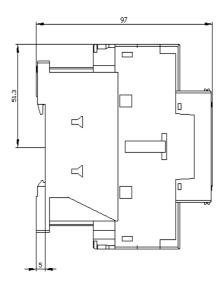
Characteristic: Tripping characteristics, I2t, Let-through current

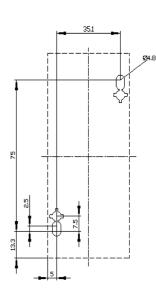
https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-2AL20-1AA0/char

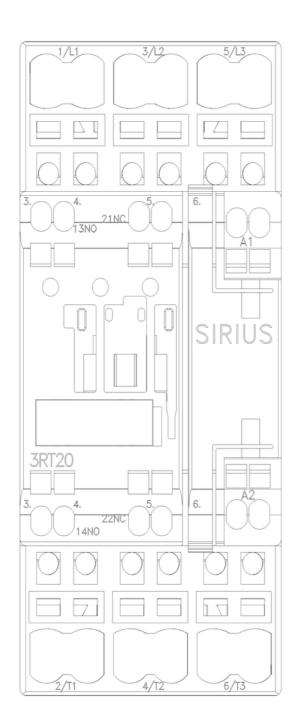
Further characteristics (e.g. electrical endurance, switching frequency)

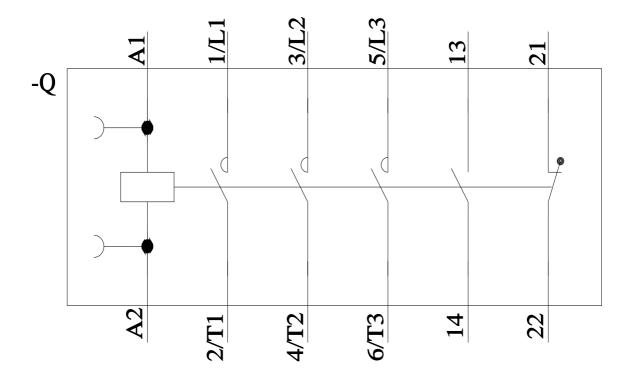
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2028-2AL20-1AA0&objecttype=14&gridview=view1











last modified: