SIEMENS

Data sheet

3RT1045-3AR60

Power contactor, AC-3 80 A, 37 kW / 400 V 400 V AC, 50 Hz / 60 Hz 440 V, 60 Hz, 3-pole, Size S3, Spring-type terminal !!! Phased-out product !!! Successor is SIRIUS 3RT2



product brand name	SIRIUS		
Product designation	power contactor		
General technical data			
Size of contactor	S3		
 Insulation voltage rated value 	1 000 V		
Degree of pollution	3		
Surge voltage resistance rated value	6 kV		
maximum permissible voltage for safe isolation			
 between coil and main contacts acc. to EN 	690 V		
60947-1			
 protection class IP on the front 	IP20; IP20 on the front with cover / box terminal		
 Protection class IP of the terminal 	IP00		
Shock resistance at rectangular impulse			
• at AC	6,8g / 5 ms, 4g / 10 ms		
Shock resistance with sine pulse			
• at AC	10,6g / 5 ms, 6,2g / 10 ms		
Mechanical service life (switching cycles)			
 of contactor typical 	10 000 000		

 of the contactor with added electronics- compatible auxiliary switch block typical 	5 000 000
 of the contactor with added auxiliary switch block typical 	10 000 000
Reference code acc. to DIN EN 81346-2	Q
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
Main circuit	
Number of poles for main current circuit	3
Number of NO contacts for main contacts	3
Number of NC contacts for main contacts	0
Operating current	
• at AC-1 at 400 V	
— at ambient temperature 40 °C rated value	120 A
● at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	120 A
— up to 690 V at ambient temperature 60 °C rated value	100 A
— up to 1000 V at ambient temperature 40 °C rated value	60 A
— up to 1000 V at ambient temperature 60 °C rated value	50 A
• at AC-3	
— at 400 V rated value	80 A
— at 690 V rated value	58 A
— at 1000 V rated value	30 A
• at AC-4 at 400 V rated value	66 A
Connectable conductor cross-section in main circuit	
at AC-1	
 at 60 °C minimum permissible 	35 mm²
● at 40 °C minimum permissible	50 mm²
Operating current for approx. 200000 operating	
cycles at AC-4	
• at 400 V rated value	34 A
• at 690 V rated value	22 A
Operating current	
• at 1 current path at DC-1	

with 2 current paths in series at DC-1- at 24 V rated value100 A- at 110 V rated value100 A- at 24 V rated value100 A- at 24 V rated value100 A- at 24 V rated value100 A- at 110 V rated value100 A- at 110 V rated value100 A- at 124 V rated value40 A- at 24 V rated value40 A- at 24 V rated value100 A- at 20 V rated value100 A- at 20 V rated value100 A- at 20 V rated value38 kW- at 600 V rated value38 kW- at 600 V rated value114 kW- at 200 V rated value32 kW- at 200 V rated value37 kW- at 200 V rated value45 kW- at 200 V rated value45 kW- at 200 V rated value17.9 kW- at 200 V rated value21.1 kW<	— at 24 V rated value	100 A
	— at 110 V rated value	9 A
	 with 2 current paths in series at DC-1 	
with 3 current paths in series at DC-1100 A- at 24 V rated value100 A- at 110 V rated value100 AOperating current40 A- at 24 V rated value40 A- at 110 V rated value2.5 A- with 2 current paths in series at DC-3 at DC-5 at 24 V rated value100 A- at 110 V rated value100 A- at 24 V rated value100 A- at 250 V rated value88 kW- at 250 V rated value38 kW- at 690 V rated value82 W- at 260 V rated value22 kW- at 270 V rated value37 kW- at 280 V rated value22 kW- at 400 V rated value27 kW- at 400 V rated value37 kW- at 290 V rated value37 kW- at 290 V rated value37 kW- at 400 V rated value37 kW- at 690 V rated value760 AN-back switching frequency60 kM- at 69	— at 24 V rated value	100 A
	— at 110 V rated value	100 A
and 110 V rated value100 AOperating current100 A• at 1 current path at DC-3 at DC-5- at 24 V rated value- at 24 V rated value40 A- at 110 V rated value2.5 A• with 2 current paths in series at DC-3 at DC-5- at 110 V rated value- at 24 V rated value100 A- at 24 V rated value100 A- at 110 V rated value100 A- at 24 V rated value100 A- at 230 V at 60 °C rated value38 kW- at 630 V rated value114 kW- at 630 V rated value114 kW- at 630 V rated value22 kW- at 420 V rated value37 kW• at AC-3- at 230 V rated value- at 230 V rated value37 kW• at AC-3- at 230 V rated value- at 230 V rated value37 kW• at AC-3- at 230 V rated value- at 230 V rated value37 kW• at 400 V rated value37 kW- at 400 V rated value37 kW- at 690 V rated value21 kW- at 690 V rated value55 kW- at 400 V rated value57 kW- at 400 V rated value50 kW- at 690 V rated value50 kW- at 69	 with 3 current paths in series at DC-1 	
Operating current4 at 1 current path at DC-3 at DC-5- at 24 V rated value40 A- at 110 V rated value2.5 A• with 2 current paths in series at DC-3 at DC-5100 A- at 24 V rated value100 A- at 24 V rated value100 A- at 110 V rated value100 A- at 24 V rated value100 A- at 23 V rated value88 kW- at 230 V at 60 °C rated value66 kW- at 230 V at 60 °C rated value114 kW- at 690 V rated value82 W- at 230 V rated value82 W- at 230 V rated value22 kW- at 230 V rated value22 kW- at 230 V rated value37 kW- at 230 V rated value37 kW- at 230 V rated value37 kW- at 230 V rated value55 kW- at 230 V rated value37 kW- at 230 V rated value50 KW- at 230 V rated value50 KW- at 230 V rated value50 KW- at 400 V rated value	— at 24 V rated value	100 A
• at t current path at DC-3 at DC-540 A- at 24 V rated value2.5 A• with 2 current paths in series at DC-3 at DC-5 at 24 V rated value100 A- at 110 V rated value100 A- at 110 V rated value100 A- at 110 V rated value100 A- at 24 V rated value100 A- at 24 V rated value100 A- at 24 V rated value100 A- at 230 V at 60 °C rated value88 kW- at 230 V at 60 °C rated value66 kW- at 400 V rated value66 kW- at 690 V rated value82 W- at 690 V rated value82 W- at 230 V rated value7 kW- at 230 V rated value97 W- at 230 V rated value97 W- at 230 V rated value55 kW- at 600 V rated value7 kW- at 400 V rated value55 kW- at 400 V rated value7 kW- at 400 V rated value114 kW- at 600 V rated value21 kW- at 600 V rated value12 kW- at 600 V rated value55 kW- at 600 V rated value50 kW- at 600 V rated value114 kW- at 600 V rated value50 kW <tr< td=""><td>— at 110 V rated value</td><td>100 A</td></tr<>	— at 110 V rated value	100 A
- at 24 V rated value40 A- at 110 V rated value2.5 A• with 2 current paths in series at DC-3 at DC-5100 A- at 24 V rated value100 A• at 110 V rated value100 A• with 3 current paths in series at DC-3 at DC-5100 A• with 3 current paths in series at DC-3 at DC-5100 A- at 24 V rated value100 A- at 230 V at 60 °C rated value88 kW- at 400 V rated value66 kW- at 690 V rated value82 W- at 690 V rated value82 W- at 600 V rated value82 W- at 230 V rated value77 kW- at 230 V rated value77 kW- at 230 V rated value77 kW- at 230 V rated value77 W- at 690 V rated value77 W- at 690 V rated value71 kW- at 690 V rated value100 A- at 690 V rated value70 A- at 690 V rated value11 kW- at 690 V rated value71 kW- at 690 V rated value12 kW- at 690 V rated value12 kW- at 690 V rated value11 kW- at 690 V rated value12 kW- at 690 V rate	Operating current	
at 110 V rated value2.5 A• with 2 current paths in series at DC-3 at DC-5100 A- at 110 V rated value100 A• with 3 current paths in series at DC-3 at DC-5- at 24 V rated value- at 110 V rated value100 A• with 3 current paths in series at DC-3 at DC-5- at 24 V rated value- at 24 V rated value100 A- at 24 V rated value100 A- at 24 V rated value100 A- at 230 V rated value38 kW- at 230 V rated value66 kW- at 690 V rated value114 kW- at 690 V rated value82 W- at 600 V rated value82 W- at 230 V rated value82 W- at 230 V rated value7 kW- at 230 V rated value37 kW- at 230 V rated value37 kW- at 230 V rated value5 kW- at 230 V rated value7 kW- at 230 V rated value5 kW- at 230 V rated value37 kW- at 230 V rated value5 kW- at 690 V rated value7 kW- at 600 V rated value5 kW- at 600 V rated value17.9 kW- at 600 V rated value114 kW- at 600 V rated value760 A- at 600 V rated value12.1 kW- at 600 V rated value11.1 kW- at 600 V rated value12.1 kW- at 600 V rated value	 at 1 current path at DC-3 at DC-5 	
 with 2 current paths in series at DC-3 at DC-5 at 24 V rated value 100 A at 110 V rated value 100 A with 3 current paths in series at DC-3 at DC-5 at 24 V rated value 100 A with 3 current paths in series at DC-3 at DC-5 at 24 V rated value 100 A at 110 V rated value 100 A at 110 V rated value 100 A at AC-1 at AC-1 at AC 0 V rated value at 690 V rated value at 690 V rated value at AC-3 at AC-3 at 230 V rated value 37 kW at 690 V rated value 56 kW at 690 V rated value 57 kW at 690 V rated value 37 kW at 690 V rated value 37 kW at 690 V rated value 37 kW At 600 V rated value 37 kW at 690 V rated value 37 kW At 600 V rated value 37 kW at 690 V rated value 37 kW at 690 V rated value 37 kW At 600 V rated value 500 t /rh Coperating power for approx. 200000 operating cycles at 690 V	— at 24 V rated value	40 A
- at 24 V rated value100 A- at 110 V rated value100 A• with 3 current paths in series at DC-3 at DC-3100 A- at 24 V rated value100 A- at 110 V rated value100 A- at 110 V rated value100 A• at AC-1- at 230 V at 60 °C rated value- at 230 V at 60 °C rated value38 kW- at 400 V rated value66 kW- at 690 V rated value114 kW- at 690 V rated value82 W- at 1000 V at 60 °C rated value82 W- at 230 V rated value7 kW- at 230 V rated value37 kW- at 230 V rated value37 kW- at 230 V rated value55 kW- at 690 V rated value55 kW- at 690 V rated value55 kW- at 690 V rated value77 W- at 690 V rated value56 kW- at 690 V rated value57 kW- at 690 V rated value57 kW- at 690 V rated value77 W- at 690 V rated value56 kW- at 690 V rated value57 kW- at 690 V rated value50 kW- at 690 V rated value50 kW- at 690 V rated value7.9 kW- at 690 V rated value50	— at 110 V rated value	2.5 A
	 with 2 current paths in series at DC-3 at DC-5 	
 with 3 current paths in series at DC-3 at DC-5 at 24 V rated value 100 A at 110 V rated value 100 A at 110 V rated value 100 A at AC-1 at AC-1 at 230 V at 60 °C rated value 38 kW at 400 V rated value 66 kW at 690 V rated value 114 kW at 690 V rated value 114 kW at 690 V rated value at AC-2 at 400 V rated value at AC-3 at AC-3 at 230 V rated value at 400 V rated value at 690 V rated value 55 kW at 690 V rated value 7 kW at 690 V rated value 56 kW at 690 V rated value 57 kW at AC-3 at 400 V rated value 17.9 kW at 690 V rated value 17.9 kW at 690 V rated value 5000 1/h Coperating frequency at AC-1 at AC-1 maximum 900 1/h 	— at 24 V rated value	100 A
- at 24 V rated value100 A- at 110 V rated value100 AOperating power • at AC-1 at 230 V at 60 °C rated value38 kW- at 400 V rated value66 kW- at 690 V rated value114 kW- at 690 V at 60 °C rated value82 W- at 600 V rated value82 W- at 1000 V at 60 °C rated value82 W- at 1000 V at 60 °C rated value7 kW- at 230 V rated value37 kW- at 230 V rated value7 kW- at 230 V rated value7 kW- at 400 V rated value7 kW- at 400 V rated value7 kW- at 400 V rated value55 kW- at 400 V rated value7 WOperating power for approx. 20000 operating cycles at AC-370 VI at 400 V rated value760 ANo-load switching frequency • at AC-1 maximum500 1/h	— at 110 V rated value	100 A
	 with 3 current paths in series at DC-3 at DC-5 	
Operating power • at AC-138 kW- at 230 V at 60 °C rated value38 kW- at 230 V rated value66 kW- at 690 V rated value114 kW- at 690 V rated value114 kW- at 690 V rated value114 kW- at 600 V rated value22 W• at AC-2 at 400 V rated value37 kW• at AC-3	— at 24 V rated value	100 A
• at 230 V at 60 °C rated value 38 kW - at 400 V rated value 66 kW - at 690 V rated value 114 kW - at 690 V at 60 °C rated value 82 W - at 1000 V at 60 °C rated value 82 W - at 400 V rated value 82 W - at 230 V rated value 7 kW - at 400 V rated value 37 kW - at 690 V rated value 55 kW - at 690 V rated value 55 kW - at 690 V rated value 17.9 kW - at 400 V rated value 17.9 kW - at 400 V rated value 11.1 kW - at 690 V rated value 17.9 kW - at 400 V rated value 11.1 kW - at 400 V rated value 11.1 kW - at 400 V rated value 11.1 kW - at 400 V rated value 500 1/h - at 400 V rated value 500 1/h - at 400 V rated value 500 1/h	— at 110 V rated value	100 A
- at 230 V at 60 °C rated value38 kW- at 400 V rated value66 kW- at 690 V rated value114 kW- at 600 °C rated value82 W- at 1000 V at 60 °C rated value82 W- at AC-2 at 400 V rated value70 kW- at 230 V rated value22 kW- at 230 V rated value70 kW- at 690 V rated value55 kW- at 690 V rated value55 kW- at 690 V rated value55 kW- at 400 V rated value70 W- at 690 V rated value11.1 kW- at 690 V rated value50 kW- at 690 V rated value17.9 kW- at 690 V rated value21.1 kW- at 690 V rated value60 A- at 690 V rated value50 V rated value- at 690 V rated value60 A- at 690 V rated value50 O 1/h- at 690 V rated value50 O 1/h	Operating power	
	● at AC-1	
	— at 230 V at 60 °C rated value	38 kW
	— at 400 V rated value	66 kW
at 1000 V at 60 °C rated value82 W- at AC-2 at 400 V rated value37 kW- at AC-3 at 230 V rated value22 kW- at 400 V rated value37 kW- at 500 V rated value45 kW- at 690 V rated value55 kW- at 1000 V rated value37 WOperating power for approx. 200000 operating cycles at AC-417.9 kW• at 400 V rated value17.9 kW• at 690 V rated value21.1 kWThermal short-time current limited to 10 s760 ANo-load switching frequency • at AC-1 maximum500 1/h	— at 690 V rated value	114 kW
• at AC-2 at 400 V rated value37 kW• at AC-3 at 230 V rated value22 kW- at 400 V rated value37 kW- at 500 V rated value57 kW- at 690 V rated value55 kW- at 1000 V rated value37 WOperating power for approx. 20000 operating cycles at AC-4• at 400 V rated value17.9 kW• at 690 V rated value21.1 kW• at 690 V rated value55 kW• at AC-4500 V rated value• at AC-4900 V rated value• at AC-4500 V rated value• at AC-4900 1/h	— at 690 V at 60 °C rated value	114 kW
• at AC-322 kW- at 230 V rated value37 kW- at 400 V rated value37 kW- at 500 V rated value45 kW- at 690 V rated value55 kW- at 1000 V rated value37 WOperating power for approx. 200000 operating cycles at AC-417.9 kW• at 400 V rated value17.9 kW• at 690 V rated value21.1 kWThermal short-time current limited to 10 s760 ANo-load switching frequency • at AC5 000 1/hOperating frequency • at AC-1 maximum900 1/h	— at 1000 V at 60 °C rated value	82 W
- at 230 V rated value22 kW- at 400 V rated value37 kW- at 500 V rated value45 kW- at 690 V rated value55 kW- at 1000 V rated value37 WOperating power for approx. 200000 operating cycles at AC-47.9 kW• at 400 V rated value17.9 kW• at 690 V rated value21.1 kW• at 690 V rated value500 1/h• at AC-45000 1/h	• at AC-2 at 400 V rated value	37 kW
- at 400 V rated value37 kW- at 500 V rated value45 kW- at 690 V rated value55 kW- at 1000 V rated value37 WOperating power for approx. 200000 operating cycles at AC-417.9 kW• at 400 V rated value17.9 kW• at 690 V rated value21.1 kWThermal short-time current limited to 10 s760 ANo-load switching frequency • at AC5000 1/hOperating frequency • at AC-1 maximum900 1/h	• at AC-3	
- at 500 V rated value45 kW- at 690 V rated value55 kW- at 1000 V rated value37 WOperating power for approx. 200000 operating cycles at AC-417.9 kW• at 400 V rated value17.9 kW• at 690 V rated value21.1 kWThermal short-time current limited to 10 s760 ANo-load switching frequency • at AC5 000 1/h• at AC-1 maximum900 1/h	— at 230 V rated value	22 kW
- at 690 V rated value55 kW- at 1000 V rated value37 WOperating power for approx. 200000 operating cycles at AC-4760 A• at 400 V rated value17.9 kW• at 690 V rated value21.1 kW• at 690 V rated value760 ANo-load switching frequency • at AC5000 1/h• at AC-1 maximum900 1/h	— at 400 V rated value	37 kW
at 1000 V rated value37 WOperating power for approx. 200000 operating cycles at AC-437 W• at 400 V rated value17.9 kW• at 690 V rated value21.1 kW• at 690 V rated value760 ANo-load switching frequency • at AC5 000 1/h• at AC-1 maximum900 1/h	— at 500 V rated value	45 kW
Operating power for approx. 200000 operating cycles at AC-4IT.9 kW• at 400 V rated value17.9 kW• at 690 V rated value21.1 kWThermal short-time current limited to 10 s760 ANo-load switching frequency • at AC5 000 1/hOperating frequency • at AC-1 maximum900 1/h	— at 690 V rated value	55 kW
at AC-417.9 kW• at 400 V rated value17.9 kW• at 690 V rated value21.1 kWThermal short-time current limited to 10 s760 ANo-load switching frequency5000 1/h• at AC5000 1/hOperating frequency900 1/h	— at 1000 V rated value	37 W
• at 400 V rated value17.9 kW• at 690 V rated value21.1 kWThermal short-time current limited to 10 s760 ANo-load switching frequency • at AC5 000 1/hOperating frequency • at AC-1 maximum900 1/h		
• at 690 V rated value21.1 kWThermal short-time current limited to 10 s760 ANo-load switching frequency • at AC5 000 1/hOperating frequency • at AC-1 maximum900 1/h		
Thermal short-time current limited to 10 s 760 A No-load switching frequency 5 000 1/h • at AC 5 000 1/h Operating frequency 900 1/h		
No-load switching frequency • at AC 5 000 1/h Operating frequency • at AC-1 maximum 900 1/h		
• at AC5 000 1/hOperating frequency900 1/h		760 A
Operating frequency 900 1/h		5 000 4/
• at AC-1 maximum 900 1/h		5 000 1/h
		000.1/h
• at AC-2 maximum 400 1/n		
	• at AC-2 maximum	400 1/1

● at AC-3 maximum	1 000 1/h
• at AC-4 maximum	300 1/h
Control circuit/ Control	
Type of voltage of the control supply voltage	AC
Control supply voltage at AC	
• at 50 Hz rated value	400 V
• at 60 Hz rated value	400 440 V
control supply voltage frequency	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
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	300 V·A
Inductive power factor with closing power of the coil	0.52
Apparent holding power of magnet coil at AC	21 V·A
Inductive power factor with the holding power of the coil	0.29
Closing delay	
• at AC	17 90 ms
Opening delay	
• at AC	10 25 ms
Arcing time	10 15 ms
Auxiliary circuit	
Number of NC contacts for auxiliary contacts	
 instantaneous contact 	0
Number of NO contacts for auxiliary contacts	
 instantaneous contact 	0
Operating current at AC-12 maximum	10 A
Operating current at AC-15	
• at 230 V rated value	6 A
• at 400 V rated value	3 A
Operating current at DC-12	
• at 60 V rated value	6 A
• at 110 V rated value	3 A
• at 220 V rated value	1 A
Operating current at DC-13	
• at 24 V rated value	10 A
• at 60 V rated value	2 A
• at 110 V rated value	1 A
• at 220 V rated value	0.3 A

contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)			
UL/CSA ratings				
Contact rating of auxiliary contacts according to UL	A600 / Q600			
Short-circuit protection Design of the fuse link				
• for short-circuit protection of the main circuit				
— with type of coordination 1 required	fuse gL/gG: 250 A			
— with type of assignment 2 required	fuse gL/gG: 160 A			
 for short-circuit protection of the auxiliary switch 	fuse gL/gG: 10 A			
required				
Installation/ mounting/ dimensions				
Mounting type	screw and snap-on mounting onto 35 mm and 75 mm standard mounting rail			
 Side-by-side mounting 	Yes			
Height	146 mm			
Width	70 mm			
Depth	139 mm			
Required spacing				
 for grounded parts 				
— at the side	6 mm			
Connections/ Terminals				
 Type of electrical connection for main current circuit 	screw-type terminals			
 Type of electrical connection for auxiliary and control current circuit 	spring-loaded terminals			
Type of connectable conductor cross-sections				
 for main contacts 				
— solid	2x (2.5 16 mm²)			
— stranded	2x (10 50 mm²)			
— single or multi-stranded	2x (2,5 16 mm²)			
 — finely stranded with core end processing 	2x (2.5 35 mm²)			
 finely stranded without core end processing 	2x (10 35 mm²)			
• at AWG conductors for main contacts	2x (10 1/0)			
Type of connectable conductor cross-sections				
 for auxiliary contacts 				
— solid	2x (0.25 2.5 mm²)			
— finely stranded with core end processing	2x (0.25 1.5 mm²)			
 finely stranded without core end processing 	2x (0.25 2.5 mm²)			
 at AWG conductors for auxiliary contacts 	2x (24 14)			

Certificates/ approv	vals				
General Produc	t Approval			EMC	Functional Safety/Safety
					of Machinery
(m)			гпг	A	Type Examination Certificate
<u>(u</u>)			EAC		
CCC	CSA	UL		RCM	
Declaration of C	Conformity	Test Certificates	•	Marine / Shippin	a
Decidiation of C	Miscellaneous	Special Test Certi-	Type Test Certific-		9
$(\epsilon$		ficate	ates/Test Report	A COMPANY P	Lloyd's Register
				OR SHIPPING	
EG-Konf.				ABS	LRS
Marine / Shippi	ng	other		Railway	
RINA		Confirmation	Miscellaneous	Special Test Certi-	
(•				ficate	
RINA	RMRS				
Further information					
	wnloadcontor (Catal	are Brochurge)			

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=3RT1045-3AR60

Cax online generator

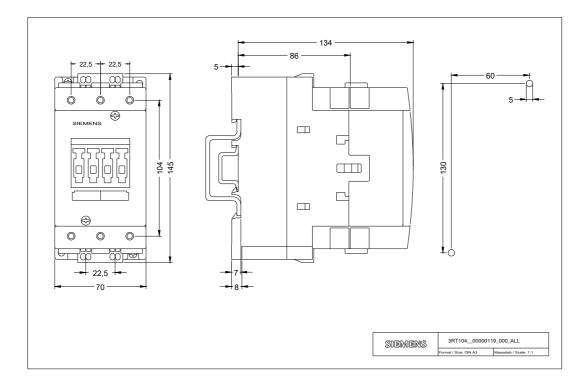
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1045-3AR60

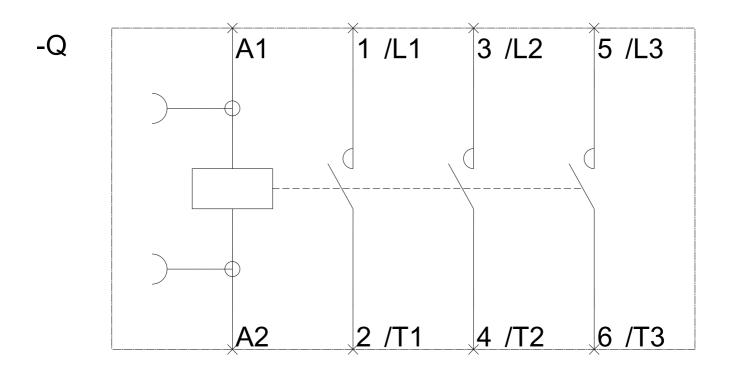
Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RT1045-3AR60

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1045-3AR60&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT1045-3AR60/char

Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1045-3AR60&objecttype=14&gridview=view1





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