SIEMENS

Data sheet

3RT2036-1AV04



power contactor, AC-3e/AC-3, 51 A, 22 kW / 400 V, 3-pole, 400 V AC, 50 Hz, auxiliary contacts: 2 NO + 2 NC, screw terminal, size: S2, removable auxiliary switch

product brand name	SIRIUS		
product designation	Power contactor		
product type designation	3RT2		
General technical data			
size of contactor	S2		
product extension			
 function module for communication 	No		
 auxiliary switch 	No		
power loss [W] for rated value of the current			
 at AC in hot operating state 	12 W		
 at AC in hot operating state per pole 	4 W		
 without load current share typical 	16 W		
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	9.8g / 5 ms, 6.5g / 10 ms		
shock resistance with sine pulse			
• at AC	15.3g / 5 ms, 10.1g / 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)	10/01/2014		
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 %		
Main circuit			
number of poles for main current circuit	3		

number of NO contacts for main contacts	3
operating voltage	5
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	70 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated	70 A
value	20 A
— up to 690 V at ambient temperature 60 °C rated value	60 A
• at AC-3	
— at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
• at AC-3e	
— at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
• at AC-4 at 400 V rated value	41 A
• at AC-5a up to 690 V rated value	61.6 A
• at AC-5b up to 400 V rated value	41.5 A
• at AC-6a	
 — up to 230 V for current peak value n=20 rated value 	43.2 A
 — up to 400 V for current peak value n=20 rated value 	43.2 A
 — up to 500 V for current peak value n=20 rated value 	43.2 A
 — up to 690 V for current peak value n=20 rated value 	24 A
● at AC-6a	
 — up to 230 V for current peak value n=30 rated value 	28.8 A
 — up to 400 V for current peak value n=30 rated value 	28.8 A
 — up to 500 V for current peak value n=30 rated value 	28.8 A
— up to 690 V for current peak value n=30 rated value	24 A
minimum cross-section in main circuit at maximum AC-1 rated value	25 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	24 A
• at 690 V rated value	20 A
operational current	
 at 1 current path at DC-1 	
— at 24 V rated value	55 A
— at 60 V rated value	23 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— 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	55 A
— at 60 V rated value	45 A
— at 110 V rated value	45 A
- at 220 V rated value	5 A
— at 440 V rated value	1A
— at 600 V rated value	0.8 A
with 3 current paths in series at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	55 A
— at 110 V rated value	55 A
— at 220 V rated value	45 A
— at 440 V rated value	2.9 A
- at 600 V rated value	1.4 A
 at 1 current path at DC-3 at DC-5 	

- alt 2V relativation 35 Å - alt 22V relativation 6 Å - alt 22V relativation 0.1 Å - alt 22V relativation 0.06 Å - alt 24V relativation 0.06 Å - alt 25V relativation 0.06 Å		
	— at 24 V rated value	35 A
	— at 60 V rated value	6 A
	— at 220 V rated value	1 A
• with 2 current paths in series at DC-3 at DC-5- at 24 V rated value5A- at 100 V rated value5A- at 24 V rated value5A- at 24 V rated value5A- at 24 V rated value0.16A- at 240 V rated value0.16A- at 240 V rated value55A- at 240 V rated value56A- at 240 V rated value52 kW- at 250 V for current pack value n=20 rated value52 kW-	— at 440 V rated value	0.1 A
	— at 600 V rated value	0.06 A
	 with 2 current paths in series at DC-3 at DC-5 	
	— at 24 V rated value	55 A
	— at 60 V rated value	45 A
- at 40 V rated value 0.27 A - at 60 V rated value 0.6 A - at 24 V rated value 55 A - at 24 V rated value 55 A - at 24 V rated value 55 A - at 20 V rated value 56 A - at 20 V rated value 56 A - at 20 V rated value 0.8 A - at 400 V rated value 22 KW - at 400 V rated value 28 KW - at 400 V rated value 20 KW - at 600 V rated value 20 KW - at 600 V for c	— at 110 V rated value	25 A
	— at 220 V rated value	5 A
 with 3 current paths in series at DC-3 at DC-5 at 22 V rated value 55 A at 110 V rated value 55 A at 110 V rated value 55 A at 110 V rated value 56 A at 22 V rated value 57 A at 400 V rated value 58 A at 400 V rated value 59 A at AC-2 at 400 V rated value 50 A at AC-2 at 400 V rated value 50 V rated value 50	— 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	55 A
	— at 60 V rated value	55 A
	— at 110 V rated value	55 A
	— at 220 V rated value	25 A
		0.6 A
operating power at AC-2 at 400 V rated value 22 kW • at AC-3		
• at AC-2 at 400 V rated value 22 kW • at AC-3		
ext AC-3 at 230 V rated value 15 kW at 230 V rated value 22 kW at 600 V rated value 22 kW operating power for approx. 200000 operating cycles at AC-4 4 400 V rated value 12 kW operating apparent power at AC-6a up to 230 V for current peak value n=20 rated value 12 kW operating apparent power at AC-6a up to 500 V for current peak value n=20 rated value 23 kVA op to 500 V for current peak value n=20 rated value 24 kVA op to 500 V for current peak value n=30 rated value 25 kVA operating apparent power at AC-6a up to 500 V for current peak value n=30 rated value 28 kVA op to 500 V for current peak value n=30 rated value 24 kVA at AC-1 rated value n=30 rated value 25 kVA op to 500 V for current peak value n=30 rated value 28 kVA op to 500 V for current peak value n=30 rated value 24 s kVA at AC-1 rated value at AC-1 rated value at AC-1 rated		22 kW
	• at AC-3	
		15 kW
		30 kW
et at AC-3e - at 400 V frated value - at 690 V for current peak value n=20 rated value - at 000 V for current peak value n=20 rated value - at 000 V for current peak value n=20 rated value - at 000 V for current peak value n=20 rated value - at 000 V for current peak value n=20 rated value - at 000 V for current peak value n=20 rated value - at 000 V for current peak value n=30 rated value - at 000 V for current peak value n=30 rated value - at 000 V for current peak value n=30 rated value - at 000 V for current peak value n=30 rated value - binted to 1 s witching at zero current maximum - at 000 V for current peak value n=30 rated value - at 000 V for current peak value n=30 rated value - at AC-1 maximum - at AC-1 is switching at zero current maximum - 297 A; Use minimum cross-section acc. to AC-1 rated value - at AC-1 is switching at zero current maximum - 298 A; Use minimum cross-section acc. to AC		
at 400 V rated value 22 kW at 630 V rated value 30 kW at 630 V rated value 22 kW operating power for approx. 200000 operating cycles at AC- 4 2 kW • at 400 V rated value 12.6 kW • at 600 V rated value 12.6 kW • at 600 V rated value 12.6 kW • up to 230 V for current peak value n=20 rated value 29.9 kVA • up to 500 V for current peak value n=20 rated value 29.8 kVA • up to 500 V for current peak value n=20 rated value 29.8 kVA • up to 500 V for current peak value n=20 rated value 29.8 kVA • up to 500 V for current peak value n=20 rated value 28.6 kVA • up to 500 V for current peak value n=30 rated value 11.4 kVA • up to 500 V for current peak value n=30 rated value 24.9 kVA • up to 500 V for current peak value n=30 rated value 24.9 kVA • up to 500 V for current peak value n=30 rated value 28.6 kVA • up to 500 V for current maximum 697 rk, Use minimum cross-section acc. to AC-1 rated value • up to 500 V for current maximum 697 rk, Use minimum cross-section acc. to AC-1 rated value • up to 500 switching at zero current maximum 697 rk, Use minimum cross-section acc. to AC-1 rated value • limited to 10 s switching at zero current maximum 282 k, Use minimum cross-section acc. to AC-1 rated value		
		22 kW
		30 kW
operating power for approx. 200000 operating cycles at AC-4 • at 400 V rated value • at 690 V rated value • at 690 V rated value • up to 230 V for current peak value n=20 rated value • up to 400 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 600 V for current peak value n=30 rated value 24. VXA • up to 500 V for current peak value n=30 rated value 25. KVA • up to 600 V for current peak value n=30 rated value 26. KVA short-time withstand current in cold operating state up to 40 *C • limited to 10 s switching at zero current maximum <		
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40 °C• limited to 1 s switching at zero current maximum937 A; Use minimum cross-section acc. to AC-1 rated value• limited to 5 s switching at zero current maximum697 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum468 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum282 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum229 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum229 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching frequency5 000 1/h• at AC5 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum600 1/h• at AC-3 maximum800 1/h• at AC-3 maximum800 1/h• at AC-4 maximum250 1/h	 up to 690 V for current peak value n=30 rated value 	28.6 kVA
• limited to 1 s switching at zero current maximum937 A; Use minimum cross-section acc. to AC-1 rated value• limited to 5 s switching at zero current maximum697 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum468 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum282 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum282 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum229 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum229 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum200 1/h• at AC5 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum600 1/h• at AC-3 maximum800 1/h• at AC-3 maximum800 1/h• at AC-4 maximum250 1/hControl circuit/ ControlImage: Section acc.		
• limited to 5 s switching at zero current maximum697 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum468 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum282 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum229 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum229 A; Use minimum cross-section acc. to AC-1 rated value• at AC5 000 1/hoperating frequency • at AC-1 maximum1 000 1/h• at AC-2 maximum600 1/h• at AC-3 maximum800 1/h• at AC-3e maximum800 1/h• at AC-4 maximum250 1/hControl Circuit/ Control1000 1/h		
• limited to 10 s switching at zero current maximum468 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum282 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum229 A; Use minimum cross-section acc. to AC-1 rated valueno-load switching frequency229 A; Use minimum cross-section acc. to AC-1 rated value• at AC5 000 1/hoperating frequency5 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum600 1/h• at AC-3 maximum800 1/h• at AC-3 maximum800 1/h• at AC-4 maximum250 1/h	C C	
• limited to 30 s switching at zero current maximum282 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum229 A; Use minimum cross-section acc. to AC-1 rated valueno-load switching frequency • at AC5 000 1/hoperating frequency • at AC-1 maximum1 000 1/h• at AC-2 maximum600 1/h• at AC-3 maximum800 1/h• at AC-3 maximum800 1/h• at AC-4 maximum250 1/h	-	
• limited to 60 s switching at zero current maximum 229 A; Use minimum cross-section acc. to AC-1 rated value no-load switching frequency - • at AC 5 000 1/h operating frequency - • at AC-1 maximum 1 000 1/h • at AC-2 maximum 600 1/h • at AC-3 maximum 800 1/h • at AC-3 maximum 800 1/h • at AC-4 maximum 250 1/h	-	
no-load switching frequency• at AC5 000 1/hoperating frequency• at AC-1 maximum1 000 1/h• at AC-2 maximum600 1/h• at AC-3 maximum800 1/h• at AC-3e maximum800 1/h• at AC-3e maximum800 1/h• at AC-4 maximum250 1/hControl circuit/ Control		
• at AC5 000 1/hoperating frequency1 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum600 1/h• at AC-3 maximum800 1/h• at AC-3e maximum800 1/h• at AC-3e maximum800 1/h• at AC-4 maximum250 1/hControl circuit/ Control		229 A; Use minimum cross-section acc. to AC-1 rated value
operating frequency• at AC-1 maximum1 000 1/h• at AC-2 maximum600 1/h• at AC-3 maximum800 1/h• at AC-3e maximum800 1/h• at AC-3e maximum800 1/h• at AC-4 maximum250 1/hControl circuit/ Control		
• at AC-1 maximum1 000 1/h• at AC-2 maximum600 1/h• at AC-3 maximum800 1/h• at AC-3e maximum800 1/h• at AC-3e maximum800 1/h• at AC-4 maximum250 1/hControl circuit/ Control		5 UUU 1/N
• at AC-2 maximum600 1/h• at AC-3 maximum800 1/h• at AC-3e maximum800 1/h• at AC-4 maximum250 1/hControl circuit/ Control		4 000 4/1
at AC-3 maximum at AC-3e maximum at AC-3e maximum at AC-4 maximum 250 1/h Control circuit/ Control		
at AC-3e maximum at AC-4 maximum 250 1/h Control circuit/ Control		
• at AC-4 maximum 250 1/h Control circuit/ Control		
Control circuit/ Control		
		250 1/h
type of voltage of the control supply voltage AC		
	type of voltage of the control supply voltage	AC

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control supply voltage at AC	400 \/
• at 50 Hz rated value	400 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz	190 VA
inductive power factor with closing power of the coil • at 50 Hz	0.70
	0.72
apparent holding power of magnet coil at AC	
• at 50 Hz	16 VA
inductive power factor with the holding power of the coil	0.07
• at 50 Hz	0.37
closing delay	
• at AC	10 80 ms
opening delay	
• at AC	10 18 ms
arcing time	10 20 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	2
number of NO contacts for auxiliary contacts instantaneous	2
contacts for auxiliary contacts instantaneous	2
operational current at AC-12 maximum	10 A
operational current at AC-15	
at 230 V rated value	6 A
at 400 V rated value	3 A
at 500 V rated value	2 A
at 690 V rated value	1A
operational current at DC-12	
• at 24 V rated value	10 A
• at 48 V rated value	6A
at 40 V rated value at 60 V rated value	
	6 A
• at 110 V rated value	3 A
• at 125 V rated value	2 A
• at 220 V rated value	1 A
• at 600 V rated value	0.15 A
operational current at DC-13	
• at 24 V rated value	6 A
• at 48 V rated value	2 A
• at 60 V rated value	2 A
• at 110 V rated value	1 A
• at 125 V rated value	0.9 A
• at 220 V rated value	0.3 A
• at 600 V rated value	0.1 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	52 A
• at 600 V rated value	52 A
yielded mechanical performance [hp]	
for single-phase AC motor	
— at 110/120 V rated value	3 hp
— at 230 V rated value	10 hp
• for 3-phase AC motor	
— at 200/208 V rated value	15 hp
— at 220/230 V rated value	15 hp
— at 460/480 V rated value	40 hp
— at 575/600 V rated value	50 hp
contact rating of auxiliary contacts according to UL	A600 / Q600

design of the fuse link				
 for short-circuit protection of the main circuit 				
— with type of coordination 1 required	gG: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 8 kA)			
- with type of assignment 2 required	gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (415V,80kA)			
 for short-circuit protection of the auxiliary switch required 	gG: 10 A (500 V, 1 kA)			
Installation/ mounting/ dimensions				
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface			
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715			
 side-by-side mounting 	Yes			
height	114 mm			
width	55 mm			
depth	174 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 				
— forwards	10 mm			
— upwards	10 mm			
— at the side	6 mm			
— downwards	10 mm			
for live parts				
— forwards	10 mm			
— upwards	10 mm			
— downwards	10 mm			
— at the side	6 mm			
Connections/ Terminals				
type of electrical connection				
 for main current circuit 	screw-type terminals			
 for auxiliary and control circuit 	screw-type terminals			
 at contactor for auxiliary contacts 	Screw-type terminals			
 of magnet coil 	Screw-type terminals			
type of connectable conductor cross-sections for main contacts				
 solid or stranded 	2x (1 35 mm²), 1x (1 50 mm²)			
 finely stranded with core end processing 	2x (1 25 mm²), 1x (1 35 mm²)			
connectable conductor cross-section for main contacts				
 finely stranded with core end processing 	1 35 mm²			
connectable conductor cross-section for auxiliary contacts				
solid or stranded	0.5 2.5 mm²			
 finely stranded with core end processing 	0.5 2.5 mm²			
type of connectable conductor cross-sections				
for auxiliary contacts				
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)			
 finely stranded with core end processing 	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)			
 for AWG cables for auxiliary contacts 	2x (20 16), 2x (18 14)			
AWG number as coded connectable conductor cross section				
for main contacts	18 1			
 for auxiliary contacts 	20 14			
Safety related data				
product function				
 mirror contact according to IEC 60947-4-1 	Yes			
 positively driven operation according to IEC 60947-5-1 	No			
B10 value with high demand rate according to SN 31920	1 000 000			
· · · · · · · · · · · · · · · · · · ·				
proportion of dangerous failures				

 with high demar 	nd rate according to SN 319	920	73 %			
failure rate [FIT] with low demand rate according to SN 31920		100 FI	Т			
T1 value for proof test interval or service life according to IEC 61508		20 a				
protection class IP o	n the front according to I	EC 60529	IP20			
touch protection on t	the front according to IEC	60529	finger-s	safe, for vertical contact	from the front	
suitability for use						
 safety-related system 	witching OFF		Yes			
Certificates/ approvals	3					
General Product App	proval					
		<u>Confirmatio</u>	n	(UL)	KC	EAC
EMC	Functional Safety/Safety of Ma- chinery	Declaration of	Conform	nity	Test Certificates	
RCM	<u>Type Examination Cer-</u> <u>tificate</u>	CE EG-Konf.		UK CA	Type Test Certific- ates/Test Report	Special Test Certific- ate
Marine / Shipping						
ABS	B UREAU VERITAS			Llovd's Register us	PRS	RINA
Marine / Shipping	other			Railway	Dangerous Good	Environment
KMRS	<u>Confirmation</u>	<u>Confirmatio</u>	n	Vibration and Shock	Transport Information	Environmental Con- firmations
urther information	d to exit the Russian mark	et (see here).				

Siemens has decided to exit the Russian market (see here). https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

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

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=3RT2036-1AV04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2036-1AV04

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1AV04

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

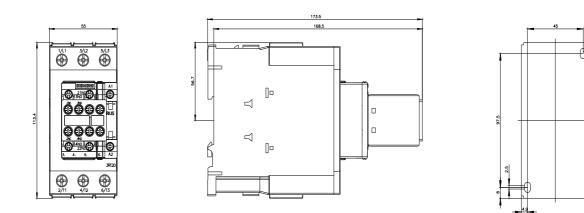
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2036-1AV04&lang=en

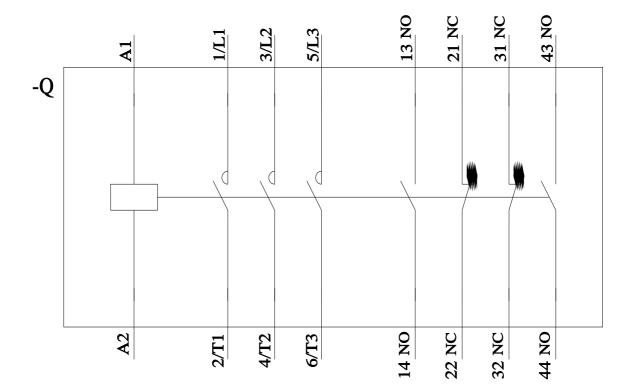
Characteristic: Tripping characteristics, I²t, Let-through current

https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1AV04/char

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

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2036-1AV04&objecttype=14&gridview=view1





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