## **SIEMENS**

Data sheet 3RT2028-1BB40



power contactor, AC-3e/AC-3, 38 A, 18.5 kW / 400 V, 3-pole, 24 V DC, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0  $\,$ 

product type designation 98T2  Size of contactor \$0  product extension   No	product brand name	SIRIUS
product type designation 3RT2  General technical data  size of contactor Size of contactor  **Unuclion module for communication No examinary switch Yes  power loss [W] for rated value of the current  **at AC in hot operating state 9 s. W  **at AC in hot operating state 9 s. W  **without load current share typical 5.9 W  Insulation voitage  **of main circuit with degree of pollution 3 rated value 690 V  **of auxiliary circuit with degree of pollution 3 rated value 690 V  **of auxiliary circuit with degree of pollution 3 rated value 690 V  **of auxiliary circuit with degree of pollution 3 rated value 690 V  **of auxiliary circuit rated value 600 V  **of auxiliary circuit value factorialy circuit	•	Power contactor
Size of contactor  Foroduct extension  • function module for communication • auxiliary switch  • at AC in hot operating state • of main circuit with degree of pollution 3 rated value • of main circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit rated value • of auxiliary switch block typical • at DC  mechanical service life (operating cycles) • of contactor typical • of the contactor with added electronically optimized auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of the contactor wit		3RT2
product extension  • function module for communication • auxilliary switch  power loss [W] for rated value of the current • at AC in hot operating state • at AC in hot operating state per pole • without load current share typical • of main circuit with degree of poliution 3 rated value • of auxilliary circuit with degree of poliution 3 rated value • of auxilliary circuit with degree of poliution 3 rated value • of main circuit rated value • of auxillary circuit vith degree of poliution 3 rated value • of auxillary circuit vith degree of poliution 3 rated value • of auxillary circuit vith degree of poliution 3 rated value • of auxillary circuit vith degree of poliution 3 rated value • of auxillary circuit vith degree of poliution 3 rated value • of main circuit rated value • of auxillary circuit vated value • of the contactor with sine pulse • at DC • 15g / 5 ms, 7.5g / 10 ms  mechanical service life (operating cycles) • of contactor with added electronically optimized auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block ty	General technical data	
• function module for communication • auxiliary switch  • auxiliary switch  • at AC in hot operating state • at AC in hot operating state per pole • at AC in hot operating state per pole • at AC in main circuit with degree of pollution 3 rated value • of main circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit with degree of pollution 3 rated value • of auxiliary circuit rated value • at DC • at	size of contactor	SO
• auxillary switch  • at AC in hot operating state per pole • at AC in hot operating state per pole • without load current share typical • of main circuit with degree of pollution 3 rated value • of main circuit with degree of pollution 3 rated value • of auxillary circuit with degree of pollution 3 rated value • of auxillary circuit with degree of pollution 3 rated value • of main circuit rated value • of auxillary switch suce year attack of the contactor with sine pulse • at DC  10g / 5 ms, 7,5g / 10 ms  **Bhock resistance at rectangular impulse • at DC  15g / 5 ms, 10g / 10 ms  **Bhock resistance at rectangular impulse • at DC  15g / 5 ms, 10g / 10 ms  **Bhock resistance at rectangular impulse • at DC  1000 000 • of contactor typical • of the contactor with added electronically optimized auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxillary switch block typical • of the contactor with added auxilla	product extension	
power loss [W] for rated value of the current  at AC in hot operating state 9.6 W  at AC in hot operating state prople 3.2 W  ewithout load current share typical 5.9 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  of auxiliary circuit rated value 6 kV  anximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1 400 V  shock resistance at rectangular impulse  at DC 10g / 5 ms, 7,5g / 10 ms  shock resistance with sine pulse  of contactor typical 10000 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) 1000 000  reference code according to IEC 81346-2 Q  Substance Prohibitance (Date) 1000 000  mabient conditions  installation altitude at height above sea level maximum 2 000 m  ambient temperature  of utring storage 55 m. +80 °C  relative humildity minimum 10 %  relative humildity at 55 °C according to IEC 60068-2-30 maximum  maximum Binn circuit	• function module for communication	No
at AC in hot operating state at AC in hot operating state per pole at AC in hot operating state per pole without load current share typical  insulation voltage  of main circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value of main circuit rated value of auxiliary circuit rated value of the contactoring to EN 60947-1  shock resistance at rectangular impulse of at DC of contactor With sine pulse of the Contactor with sine pulse of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary swi	auxiliary switch	Yes
at AC in hot operating state per pole without load current share typical without load current share typical solution voltage of main circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value of auxiliary circuit rated value of auxiliary site saccording cycles of auxiliary site of au	power loss [W] for rated value of the current	
insulation voltage  of main circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value of auxiliary circuit rated value of main circuit rated value of auxiliary circuit rated value of main circuit rated value of auxiliary circuit rated value of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added of auxiliary switch block typical of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added electronically optimized auxilia	at AC in hot operating state	9.6 W
insulation voltage  of main circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value 690 V  surge voltage resistance of main circuit rated value 680 V  of auxiliary circuit rated value 6 kV  naximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1  shock resistance at rectangular impulse of at DC  10g / 5 ms, 7,5g / 10 ms  shock resistance with sine pulse of contactor typical of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added auxiliary switch block typical reference code according to EC 81346-2 Q Substance Prohibitance (Date)  Armbient conditions  installation altitude at height above sea level maximum ambient temperature of during storage  during storage  elative humidity minimum  relative humidity minimum  Main circuit  Main circuit  690 V  690	<ul> <li>at AC in hot operating state per pole</li> </ul>	3.2 W
of main circuit with degree of pollution 3 rated value     of auxiliary circuit with degree of pollution 3 rated value     surge voltage resistance     of main circuit rated value     of auxiliary circuit rated value     of kV  maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1  shock resistance at rectangular impulse     ot at DC     10g / 5 ms, 7,5g / 10 ms  shock resistance with sine pulse     of contactor typical     of the contactor with added electronically optimized auxiliary switch block typical     of the contactor with added electronically optimized auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the cont	without load current share typical	5.9 W
of auxiliary circuit with degree of pollution 3 rated value  surge voltage resistance     of main circuit rated value     of of auxiliary circuit rated value  a for of auxiliary circuit rated value  of over auxiliary circuit rated value  of auxiliary circuit rated value  of auxiliary circuit rated value  of over auxiliary circuit rated value  of auxiliary circuit rated value  of over auxiliary circuit rated value  of over resistance value  of auxiliary site of block resistance at rectangular impulse  of the contactor with added electronically optimized  auxiliary switch block typical  of the contactor with added electronically optimized  auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  reference code according to IEC 81346-2  Q  Substance Prohibitance (Date)  10/01/2009  Ambient conditions  installation altitude at height above sea level maximum  2 000 m  ambient temperature  of during operation  of currently humidity minimum  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30  maximum  Main circuit	insulation voltage	
surge voltage resistance  of main circuit rated value  of auxiliary circuit rated value  of auxiliary circuit rated value  of auxiliary circuit rated value  of avxiliary circuit rated value  of kV  maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1  shock resistance at rectangular impulse  o at DC  10g / 5 ms, 7,5g / 10 ms  shock resistance with sine pulse  o at DC  15g / 5 ms, 10g / 10 ms  mechanical service life (operating cycles)  of contactor typical  of the contactor with added electronically optimized auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added electronically optimized  auxiliary switch block typical  of the contactor with added electronically optimized  auxiliary switch block typical  of the contactor with added electronically optimized  auxiliary switch block typical  of the contactor with added electronically optimized  auxiliary switch block typical  of the contactor wi	• of main circuit with degree of pollution 3 rated value	690 V
of main circuit rated value     of auxiliary circuit rated value     of auxiliary circuit rated value     of auxiliary circuit rated value     of kV  maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1  shock resistance at rectangular impulse     oat DC     10g / 5 ms, 7,5g / 10 ms  shock resistance with sine pulse     oat DC     15g / 5 ms, 10g / 10 ms  mechanical service life (operating cycles)     of contactor typical     of the contactor with added electronically optimized auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added electronically optimized     auxiliary switch block typical     of the contactor with added electronically optimized     of the contactor wi	<ul> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>	690 V
of auxiliary circuit rated value     maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1      shock resistance at rectangular impulse	surge voltage resistance	
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1  shock resistance at rectangular impulse  • at DC  10g / 5 ms, 7,5g / 10 ms  shock resistance with sine pulse  • at DC  15g / 5 ms, 10g / 10 ms  mechanical service life (operating cycles)  • of contactor typical  • of the contactor with added electronically optimized auxiliary switch block typical  • of the contactor with added auxiliary switch block typical  • of the contactor with a	of main circuit rated value	6 kV
shock resistance at rectangular impulse  • at DC  shock resistance with sine pulse  • at DC  15g / 5 ms, 10g / 10 ms  mechanical service life (operating cycles)  • of contactor typical • of the contactor with added electronically optimized auxiliary switch block typical • of the contactor with added auxiliary switch block typical • of t	<ul> <li>of auxiliary circuit rated value</li> </ul>	6 kV
at DC  shock resistance with sine pulse  at DC  15g / 5 ms, 10g / 10 ms  mechanical service life (operating cycles)  of contactor typical  of the contactor with added electronically optimized auxiliary switch block typical  of the contactor with added auxiliary switch block typical  of the contactor with added auxiliary switch block typical  10 000 000  reference code according to IEC 81346-2  Q  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  of during operation  of during storage  relative humidity minimum  10 %  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit		400 V
shock resistance with sine pulse	shock resistance at rectangular impulse	
at DC  mechanical service life (operating cycles)     of contactor typical     of the contactor with added electronically optimized auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     10 000 000  reference code according to IEC 81346-2 Q Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum     2 000 m  ambient temperature     oduring operation     oduring storage     -25 +60 °C relative humidity minimum     10 %  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  10 000 000  10 000 000  10 000 000  10 000 00	• at DC	10g / 5 ms, 7,5g / 10 ms
mechanical service life (operating cycles)  • of contactor typical  • of the contactor with added electronically optimized auxiliary switch block typical  • of the contactor with added auxiliary switch block typical  • of the contactor with added auxiliary switch block typical  • of the contactor with added auxiliary switch block typical  reference code according to IEC 81346-2  Q  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation  • during storage  -25 +60 °C  • during storage  relative humidity minimum  10 %  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit	shock resistance with sine pulse	
of contactor typical     of the contactor with added electronically optimized auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical     10 000 000  reference code according to IEC 81346-2 Q Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum 2 000 m  ambient temperature     oduring operation     -25 +60 °C     oduring storage     relative humidity minimum 10 %  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  10 000 000  10 000 000  10 000 000  10 000 00	• at DC	15g / 5 ms, 10g / 10 ms
of the contactor with added electronically optimized auxiliary switch block typical     of the contactor with added auxiliary switch block typical     of the contactor with added auxiliary switch block typical      reference code according to IEC 81346-2  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature     oduring operation     oduring storage  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 maximum  multiput 10 000 000  Q  2000 m  200	mechanical service life (operating cycles)	
auxiliary switch block typical  of the contactor with added auxiliary switch block typical  reference code according to IEC 81346-2  Q  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  of during operation  during storage  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  10 000 000  10	<ul> <li>of contactor typical</li> </ul>	10 000 000
reference code according to IEC 81346-2  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation • during storage  relative humidity minimum  10 %  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit		5 000 000
Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation • during storage  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit	<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	10 000 000
installation altitude at height above sea level maximum  ambient temperature  during operation during storage  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit  2 000 m  -25 +60 °C  -25 +80 °C  10 %  95 %	reference code according to IEC 81346-2	Q
installation altitude at height above sea level maximum  ambient temperature  • during operation  • during storage  relative humidity minimum  10 %  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit	Substance Prohibitance (Date)	10/01/2009
ambient temperature  • during operation • during storage  relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit	Ambient conditions	
<ul> <li>during operation</li> <li>during storage</li> <li>-55 +80 °C</li> <li>relative humidity minimum</li> <li>relative humidity at 55 °C according to IEC 60068-2-30 maximum</li> <li>Main circuit</li> </ul>	installation altitude at height above sea level maximum	2 000 m
• during storage  relative humidity minimum  10 %  relative humidity at 55 °C according to IEC 60068-2-30 maximum  Main circuit	ambient temperature	
relative humidity minimum  relative humidity at 55 °C according to IEC 60068-2-30 95 % maximum  Main circuit	<ul> <li>during operation</li> </ul>	-25 +60 °C
relative humidity at 55 °C according to IEC 60068-2-30 95 % maximum  Main circuit	during storage	-55 +80 °C
maximum Main circuit	relative humidity minimum	10 %
		95 %
number of poles for main current circuit 3	Main circuit	
	number of poles for main current circuit	3

	3
operating voltage	
<ul> <li>at AC-3 rated value maximum</li> </ul>	690 V
at AC-3e rated value maximum	690 V
operational current	
<ul> <li>at AC-1 at 400 V at ambient temperature 40 °C rated</li> </ul>	50 A
value	
• at AC-1	
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> </ul>	50 A
— up to 690 V at ambient temperature 60 °C rated	42 A
value	
• at AC-3	
— 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	
— up to 230 V for current peak value n=30 rated value	20.5 A
— up to 400 V for current peak value n=30 rated value	20.5 A
— up to 500 V for current peak value n=30 rated value	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	10 mm²
	10 111111-
value	10 1111117
	10 min
value operational current for approx. 200000 operating cycles at	12 A
value operational current for approx. 200000 operating cycles at AC-4	
value operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value	12 A
value operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value	12 A
value operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value operational current	12 A
value operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value operational current • at 1 current path at DC-1	12 A 12 A
value  operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current • at 1 current path at DC-1  — at 24 V rated value	12 A 12 A 35 A
value  operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value	12 A 12 A 35 A 20 A
value  operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value	12 A 12 A 35 A 20 A 4.5 A
value  operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value	12 A 12 A 35 A 20 A 4.5 A 1 A
value  operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value  — at 440 V rated value	12 A 12 A 35 A 20 A 4.5 A 1 A 0.4 A
value  operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value  — at 440 V rated value  — at 600 V rated value  — at 600 V rated value  — at 600 V rated value	12 A 12 A 35 A 20 A 4.5 A 1 A 0.4 A
value  operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value  — at 440 V rated value  — at 600 V rated value  — at 600 V rated value  • with 2 current paths in series at DC-1	12 A 12 A 35 A 20 A 4.5 A 1 A 0.4 A 0.25 A
value  operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value  — at 440 V rated value  — at 600 V rated value  — at 600 V rated value  — at 600 V rated value  — at 220 V rated value  — at 440 V rated value  — at 600 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value	12 A 12 A 35 A 20 A 4.5 A 1 A 0.4 A 0.25 A
operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value  — at 440 V rated value  — at 600 V rated value  — at 600 V rated value  — at 600 V rated value  — at 24 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value	12 A 12 A 35 A 20 A 4.5 A 1 A 0.4 A 0.25 A
value  operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value  — at 440 V rated value  — at 600 V rated value  — at 600 V rated value  — at 600 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value  — at 60 V rated value  — at 110 V rated value  — at 110 V rated value	12 A 12 A 35 A 20 A 4.5 A 1 A 0.4 A 0.25 A
operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value  — at 600 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value	12 A 12 A 35 A 20 A 4.5 A 1 A 0.4 A 0.25 A 35 A 35 A 35 A
operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value  — at 440 V rated value  — at 600 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value  — at 440 V rated value  — at 600 V rated value  — at 440 V rated value  — at 440 V rated value  — at 600 V rated value	12 A 12 A 35 A 20 A 4.5 A 1 A 0.4 A 0.25 A 35 A 35 A 35 A 35 A 36 A 37 A 38 A 38 A 39 A 30 A
operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value  — at 440 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  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value  — at 440 V rated value  — at 600 V rated value	12 A 12 A 12 A 35 A 20 A 4.5 A 1 A 0.4 A 0.25 A 35 A 35 A 35 A 35 A 36 A 37 A 38 A 38 A 39 A 30 A 30 A 31 A 32 A 33 A 34 A 35 A 36 A 37 A 38
operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 600 V rated value  — at 110 V rated value  — at 220 V rated value  — at 440 V rated value  — at 600 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 600 V rated value  — at 440 V rated value  — at 600 V rated value  — at 220 V rated value  — at 240 V rated value  — at 440 V rated value  — at 440 V rated value  — at 600 V rated value	12 A 12 A 35 A 20 A 4.5 A 1 A 0.4 A 0.25 A 35 A 35 A 35 A 36 A 37 A 38
value  operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 440 V rated value  — at 600 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 110 V rated value  — at 110 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value  — at 10 V rated value  — at 10 V rated value  — at 220 V rated value  — at 220 V rated value  — at 220 V rated value  — at 24 V rated value  — at 24 V rated value  — at 600 V rated value  — at 600 V rated value  • with 3 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value  • with 3 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value	12 A 12 A 35 A 20 A 4.5 A 1 A 0.4 A 0.25 A 35 A 35 A 35 A 36 A 37 A 38
operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 110 V rated value  — at 1220 V rated value  — at 440 V rated value  — at 600 V rated value  — at 600 V rated value  — at 24 V rated value  — at 600 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 110 V rated value  — at 60 V rated value  — at 60 V rated value  — at 220 V rated value  — at 24 V rated value  — at 24 V rated value  — at 440 V rated value  — at 600 V rated value  — at 600 V rated value  — at 600 V rated value  • with 3 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value  — at 60 V rated value  — at 110 V rated value  — at 110 V rated value  — at 110 V rated value	12 A 12 A 12 A 20 A 4.5 A 1 A 0.4 A 0.25 A 35 A 3
operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 60 V rated value  — at 110 V rated value  — at 220 V rated value  — at 600 V rated value  — at 600 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value  — at 220 V rated value  — at 24 V rated value  — at 24 V rated value  — at 440 V rated value  — at 600 V rated value  — at 24 V rated value  — at 24 V rated value  — at 20 V rated value	12 A 12 A 12 A 12 A 20 A 4.5 A 1 A 0.4 A 0.25 A  35 A 35 A 35 A 35 A 35 A 5 A 1 A 0.8 A
operational current for approx. 200000 operating cycles at AC-4  • at 400 V rated value • at 690 V rated value  operational current  • at 1 current path at DC-1  — at 24 V rated value  — at 110 V rated value  — at 1220 V rated value  — at 440 V rated value  — at 600 V rated value  — at 600 V rated value  — at 24 V rated value  — at 600 V rated value  • with 2 current paths in series at DC-1  — at 24 V rated value  — at 110 V rated value  — at 60 V rated value  — at 60 V rated value  — at 220 V rated value  — at 24 V rated value  — at 24 V rated value  — at 440 V rated value  — at 600 V rated value  — at 600 V rated value  — at 600 V rated value  • with 3 current paths in series at DC-1  — at 24 V rated value  — at 60 V rated value  — at 60 V rated value  — at 110 V rated value  — at 110 V rated value  — at 110 V rated value	12 A 12 A 12 A 20 A 4.5 A 1 A 0.4 A 0.25 A  35 A 35 A 35 A 35 A 35 A 35 A 35 A

-4.04.1/41	00.4
— at 24 V rated value	20 A
— at 60 V rated value	5 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 A
— at 600 V rated value	0.06 A
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— 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
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— 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-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-	
at 400 V rated value	6 kW
at 690 V rated value	10.3 kW
	10.3 kW
• at 690 V rated value	10.3 kW 12.2 kVA
at 690 V rated value     operating apparent power at AC-6a     up to 230 V for current peak value n=20 rated value	
<ul> <li>at 690 V rated value</li> <li>operating apparent power at AC-6a</li> <li>up to 230 V for current peak value n=20 rated value</li> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	12.2 kVA
at 690 V rated value     operating apparent power at AC-6a     up to 230 V for current peak value n=20 rated value	12.2 kVA 21.3 kVA
at 690 V rated value  operating apparent power at AC-6a      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	12.2 kVA 21.3 kVA 26.6 kVA
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value	12.2 kVA 21.3 kVA 26.6 kVA
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  operating apparent power at AC-6a	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA
at 690 V rated value  operating apparent power at AC-6a      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 690 V for current peak value n=20 rated value  operating apparent power at AC-6a     up to 230 V for current peak value n=30 rated value     up to 400 V for current peak value n=30 rated value	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA 8.1 kVA 14.2 kVA
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA 8.1 kVA 14.2 kVA
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C  limited to 1 s switching at zero current maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  up to 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C  Ilimited to 1 s switching at zero current maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C  limited to 1 s switching at zero current maximum  limited to 10 s switching at zero current maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value 260 A; Use minimum cross-section acc. to AC-1 rated value
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C  Ilimited to 1 s switching at zero current maximum  limited to 10 s switching at zero current maximum  limited to 30 s switching at zero current maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value 260 A; Use minimum cross-section acc. to AC-1 rated value
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  up to 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C  Ilimited to 1 s switching at zero current maximum  limited to 5 s switching at zero current maximum  limited to 30 s switching at zero current maximum  limited to 60 s switching at zero current maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value 260 A; Use minimum cross-section acc. to AC-1 rated value
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  up to 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C  ilimited to 1 s switching at zero current maximum  limited to 5 s switching at zero current maximum  limited to 30 s switching at zero current maximum  limited to 60 s switching at zero current maximum  limited to 60 s switching at zero current maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value 260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  up to 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C  Ilimited to 1 s switching at zero current maximum  limited to 5 s switching at zero current maximum  limited to 30 s switching at zero current maximum  limited to 60 s switching at zero current maximum  limited to 60 s switching at zero current maximum  limited to 60 s switching at zero current maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value 260 A; Use minimum cross-section acc. to AC-1 rated value
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  up to 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C  Ilimited to 1 s switching at zero current maximum  limited to 5 s switching at zero current maximum  limited to 30 s switching at zero current maximum  limited to 60 s switching at zero current maximum  limited to 60 s switching at zero current maximum  ro-load switching frequency  at DC  operating frequency	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value 260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value
at 690 V rated value  operating apparent power at AC-6a      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 690 V for current peak value n=20 rated value     up to 230 V for current peak value n=30 rated value     up to 230 V for current peak value n=30 rated value     up to 400 V for current peak value n=30 rated value     up to 500 V for current peak value n=30 rated value     up to 690 V for current peak value n=30 rated value     short-time withstand current in cold operating state up to 40 °C      Ilmited to 1 s switching at zero current maximum     Ilmited to 5 s switching at zero current maximum     Ilmited to 30 s switching at zero current maximum     Ilmited to 60 s switching at zero current maximum  no-load switching frequency     at DC  operating frequency     at AC-1 maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value 260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value
at 690 V rated value  operating apparent power at AC-6a      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 690 V for current peak value n=20 rated value     up to 690 V for current peak value n=20 rated value     operating apparent power at AC-6a     up to 230 V for current peak value n=30 rated value     up to 400 V for current peak value n=30 rated value     up to 500 V for current peak value n=30 rated value     up to 690 V for current peak value n=30 rated value     short-time withstand current in cold operating state up to 40 °C      limited to 1 s switching at zero current maximum     limited to 5 s switching at zero current maximum     limited to 30 s switching at zero current maximum     limited to 60 s switching at zero current maximum  no-load switching frequency     at DC  operating frequency     at AC-1 maximum  at AC-2 maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value 260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 1 500 1/h  1 000 1/h 750 1/h
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  up to 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C  ilimited to 1 s switching at zero current maximum  limited to 5 s switching at zero current maximum  limited to 30 s switching at zero current maximum  limited to 60 s switching at zero current maximum  limited to 60 s switching at zero current maximum  at AC-1 maximum  at AC-2 maximum  at AC-3 maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value 260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 1 500 1/h 1 000 1/h 750 1/h 750 1/h
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  up to 690 V for current peak value n=20 rated value  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C  limited to 1 s switching at zero current maximum  limited to 5 s switching at zero current maximum  limited to 30 s switching at zero current maximum  limited to 60 s switching at zero current maximum  limited to 60 s switching at zero current maximum  at AC-1 maximum  at AC-2 maximum  at AC-3 maximum  at AC-3 maximum  at AC-3 maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value 260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 1 500 1/h 1 000 1/h 750 1/h 750 1/h 750 1/h
at 690 V rated value  operating apparent power at AC-6a  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 690 V for current peak value n=20 rated value  up to 690 V for current peak value n=20 rated value  operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value  up to 690 V for current peak value n=30 rated value  short-time withstand current in cold operating state up to 40 °C  ilimited to 1 s switching at zero current maximum  limited to 5 s switching at zero current maximum  limited to 30 s switching at zero current maximum  limited to 60 s switching at zero current maximum  limited to 60 s switching at zero current maximum  at AC-1 maximum  at AC-2 maximum  at AC-3 maximum	12.2 kVA 21.3 kVA 26.6 kVA 25 kVA  8.1 kVA 14.2 kVA 18.5 kVA 25 kVA  593 A; Use minimum cross-section acc. to AC-1 rated value 341 A; Use minimum cross-section acc. to AC-1 rated value 260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 1 500 1/h 1 000 1/h 750 1/h 750 1/h

type of voltage of the control supply voltage	DC
control supply voltage at DC	241/
rated value     operating range factor control supply voltage rated value of magnet coil at DC	24 V
• initial value	0.8
• full-scale value	1.1
closing power of magnet coil at DC	5.9 W
holding power of magnet coil at DC	5.9 W
closing delay	
• at DC	50 170 ms
opening delay	
• at DC	15 18 ms
arcing time	10 10 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	1
number of NO contacts for auxiliary contacts instantaneous contact	1
operational current at AC-12 maximum	10 A
operational current at AC-15	
at 230 V rated value	10 A
at 400 V rated value	3 A
at 500 V rated value	2 A
at 690 V rated value	1 A
operational current at DC-12	40.4
• at 24 V rated value	10 A
<ul><li>at 48 V rated value</li><li>at 60 V rated value</li></ul>	6 A 6 A
at 100 V rated value     at 110 V rated value	3 A
at 175 V rated value     at 125 V rated value	2 A
at 220 V rated value	1A
at 600 V rated value	0.15 A
operational current at DC-13	
at 24 V rated value	10 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	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	40.1
— 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	
<ul> <li>design of the fuse link</li> <li>for short-circuit protection of the main circuit</li> </ul>	
with type of coordination 1 required	gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)
man type of operaniation i required	30. 1207 (410 v, 100 v), alm. our (000 v, 100 v), 5000. 1207 (410 v, 00 lA)

— 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	
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
<ul><li>side-by-side mounting</li></ul>	Yes
height	85 mm
width	45 mm
depth	107 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	Ociew-type terminals
solid	2x (1 2.5 mm²), 2x (2.5 10 mm²)
solid or stranded	2x (1 2.5 mm²), 2x (2.5 10 mm²)
finely stranded with core end processing	2x (1 2.5 mm²), 2x (2.5 10 mm²) 2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
connectable conductor cross-section for main contacts	27 (1 2.3 11111 ), 27 (2.3 0 11111 ), 17 10 11111
solid	1 10 mm²
stranded	1 10 mm²
finely stranded with core end processing  connectable conductor cross section for auxiliary contacts.	1 10 mm²
connectable conductor cross-section for auxiliary contacts  • solid or stranded	0.5 2.5 mm²
	0.5 2.5 mm <sup>2</sup>
finely stranded with core end processing  type of connectable conductor cross sections.	0.5 2.5 mm²
type of connectable conductor cross-sections	
for auxiliary contacts      action are stronged.	2v /0 F 1 F mm²\ 2v /0 7F 2 F mm²\
— 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	16 8
for auxiliary contacts	20 14
Safety related data	
product function	
mirror contact according to IEC 60947-4-1	Yes
B10 value with high demand rate according to SN 31920	450 000
proportion of dangerous failures	
<ul> <li>with low demand rate according to SN 31920</li> </ul>	40 %
<ul> <li>with high demand rate according to SN 31920</li> </ul>	73 %
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
T1 value for proof test interval or service life according to IEC	20 a

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
suitability for use
• safety-related switching OFF Yes

Certificates/ approvals

## **General Product Approval**





Confirmation



<u>KC</u>



**EMC** 

Functional Safety/Safety of Machinery

**Declaration of Conformity** 

**Test Certificates** 



Type Examination Certificate





Type Test Certificates/Test Report

Special Test Certificate

## Marine / Shipping













other

Railway

**Dangerous Good** 

**Environment** 

Confirmation



Vibration and Shock

**Transport Information** 

Environmental Confirmations

## **Further information**

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=3RT2028-1BB40

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2028-1BB40

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-1BB40

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

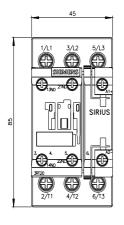
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2028-1BB40&lang=en

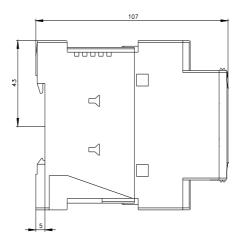
Characteristic: Tripping characteristics, I2t, Let-through current

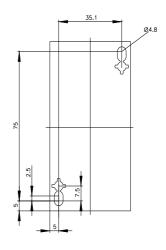
https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-1BB40/char

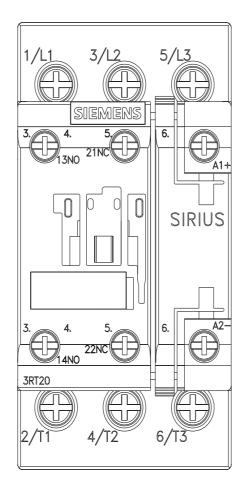
Further characteristics (e.g. electrical endurance, switching frequency)

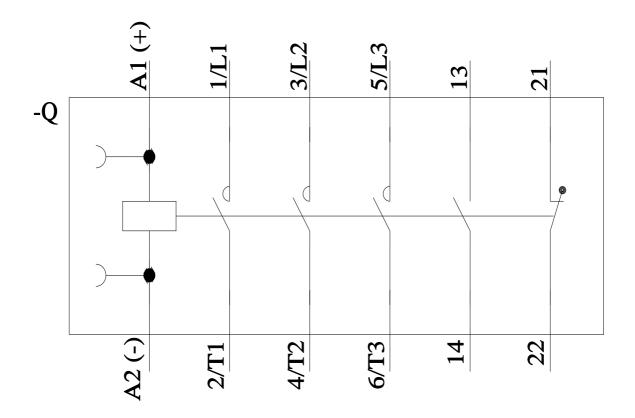
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2028-1BB40&objecttype=14&gridview=view1











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