SIEMENS

Data sheet 3RT2016-1VB42



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 24 V DC, 0.85-1.85* Us, with integrated diode, auxiliary contacts: 1 NC, screw terminal, size: S00, not expandable with auxiliary switch

product designation 3RT2 General technical data size of contactor product extension • function module for communication • auxiliary switch • auxiliary switch • auxiliary switch • at AC in hot operating state • at AC in hot operating state per pole • without load current share typical 1,6 W type of calculation of power loss depending on pole 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 auxiliary circuit vith degree of pollution 3 rated value • of auxiliary circuit vith degree of pollution 3 rated value • of auxiliary circuit value • of auxiliary circuit rated value • of auxiliary circuit value • of auxiliary circuit value • of auxiliary circuit value	product brand name	SIRIUS
Size of contactor Sixe of Cont	product designation	Coupling contactor
size of contactor product extension • function module for communication • auxillary switch • auxillary switch • at AC in hot operating state per pole • at AC in hot operating state per pole • 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 auxillary circuit with degree of pollution 3 rated value • of auxillary circuit with degree of pollution 3 rated value • of auxillary circuit rated value • at DC • of contactor typical • of con	product type designation	3RT2
product extension • function module for communication • auxiliary switch power loss [W] for rated value of the current • at AC in hot operating state 0.9 W • at AC in hot operating state 0.9 W • at AC in hot operating state per pole 0.3 W • without load current share typical 1.6 W type of calculation of power loss depending on pole insulation voltage • 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 an in circuit rated value 6 kV • of auxiliary circuit rated value 6 kV • of contactor resistance at rectangular impulse 6 kV • at DC 6,7g / 5 ms, 4,2g / 10 ms shock resistance with sine pulse 10,5g / 5 ms, 6,6g / 10 ms mechanical service life (operating cycles) 0.75 ms, 6,6g / 10 ms mechanical service life (operating cycles) 0.70 ms • of contactor typical 30 000 000 reference code according to IEC 81346-2 Q Substance Prohibitance (Date) 10/01/2009 SVHC substance name Lead - 7439-92-1 Weight 0.296 kg Ambient conditions 25 +60 °C • during operation 25 +60 °C	General technical data	
• function module for communication • auxillary switch No auxillary switch And in hot operating state • at AC in hot operating state per pole • without load current share typical • without load current share typical • of auxillary 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 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 main circuit rated value • of auxillary circuit rated value • of uxillary circuit rated value • of auxillary circuit rated value • of ouxillary circui	size of contactor	S00
auxillary switch power loss [W] for rated value of the current at AC in hot operating state 0.9 W without load current share typical 1.6 W type of calculation of power loss depending on pole insulation voltage of main circuit with degree of pollution 3 rated value of auxillary circuit with degree of opoliution 3 rated value of auxillary circuit rat	product extension	
power loss [W] for rated value of the current at AC in hot operating state 0.9 W at AC in hot operating state per pole 0.3 W without load current share typical 1.6 W type of calculation of power loss depending on pole quadratic insulation voltage of main circuit with degree of pollution 3 rated value 690 V of auxiliary circuit with degree of pollution 3 rated value 690 V surge voltage resistance of main circuit value 6 kV maximum permissible voltage for protective separation between coll and main contacts according to EN 60947-1 shock resistance at rectangular impulse at DC shock resistance at rectangular impulse at DC shock resistance with sine pulse at DC mechanical service life (operating cycles) of contactor typical 30 000 000 reference code according to EC 81346-2 Q Substance Prohibitance (Date) 100/1/2009 SVHC substance name Lead - 7439-92-1 Weight 0.296 kg Ambient conditions installation altitude at height above sea level maximum 2 000 m ambient temperature during operation - 25 +60 °C relative humidity at 55 °C according to IEC 60068-2-30 maximum Environmental footprint en 1.6 W 1.6 W 1.6 W 4.0 W 6.8 W 6.9 V 6.8 V 4.0 V 6. V 6.8 V 4.0 V 6.	 function module for communication 	No
at AC in hot operating state at AC in hot operating state per pole without load current share typical 1.6 W type of calculation of power loss depending on pole 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 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 main circuit rated value of main circuit rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of with with degree of pollution 3 rated value of on with with degree of pollution 3 rated value of on with with degree of pollution 3 rated value of on with with degree of pollution 3 rated value of on with with degree of pollution 3 rated value of on with with degree of pollution 3 rated value of on with with degree of pollution 4 of with with degree of pollution 4 of with degree of with with degree of pollution 4 of with with degree of with with with degree of with with with degree of with with with with with with with with	auxiliary switch	No
at AC in hot operating state per pole without load current share typical type of calculation of power loss depending on pole 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 surge voltage resistance of main circuit rated value of avxiliary circuit rated value of auxiliary circuit rated value of auxiliary circuit rated value of avxiliary circuit r	power loss [W] for rated value of the current	
without load current share typical type of calculation of power loss depending on pole 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 auxiliary circuit rated value of main circuit rated value of main circuit rated value of auxiliary circuit rated value of AV maximum permissible voltage for protective separation between coll and main contacts according to EN 60947-1 shock resistance at rectangular impulse ot DC of,7g / 5 ms, 4,2g / 10 ms shock resistance with sine pulse ot DC of,7g / 5 ms, 6,6g / 10 ms mechanical service life (operating cycles) of contactor typical of typical	 at AC in hot operating state 	0.9 W
type of calculation of power loss depending on pole 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 auxiliary circuit with degree of pollution 3 rated value • of main circuit rated value • of auxiliary circuit rated value • of contact according to EN 60947-1 shock resistance at rectangular impulse • at DC • of, 7g / 5 ms, 4,2g / 10 ms shock resistance with sine pulse • at DC 10,5g / 5 ms, 6,6g / 10 ms mechanical service life (operating cycles) • of contactor typical • of contactor typical reference code according to IEC 81346-2 Q Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Weight 0.296 kg Ambient conditions installation altitude at height above sea level maximum ambient temperature • during operation • during operation • during storage relative humidity minimum 10 % relative humidity at 55 °C according to IEC 60068-2-30 maximum Environmental footprint	 at AC in hot operating state per pole 	0.3 W
insulation voltage • of main 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 contain contacts according to EN 60947-1 shock resistance at rectangular impulse • at DC • at DC • of contactor typical • of contactor typical • of contactor typical • of contactor typical reference code according to IEC 81346-2 Q Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Weight 0.296 kg Ambient conditions installation altitude at height above sea level maximum ambient temperature • during operation • during storage relative humidity minimum relative humidity minimum relative humidity minimum Environmental footprint	without load current share typical	1.6 W
of main 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 kV of value rated value of kV	type of calculation of power loss depending on pole	quadratic
of auxiliary circuit with degree of pollution 3 rated value surge voltage resistance 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 ot DC of A,7g / 5 ms, 4,2g / 10 ms shock resistance with sine pulse ot DC of contactor typical of c	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 kV maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1 shock resistance at rectangular impulse of cortactor with sine pulse of cortactor typical of contactor typical reference code according to IEC 81346-2 Substance Prohibitance (Date) SYHC substance name Lead - 7439-92-1 Weight 0.296 kg Ambient conditions installation altitude at height above sea level maximum ambient temperature of during storage relative humidity an 55 °C according to IEC 60068-2-30 maximum Environmental footprint over 100 V 6 kV 6	 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 ad NV maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1 shock resistance at rectangular impulse ot DC of,7g / 5 ms, 4,2g / 10 ms shock resistance with sine pulse ot DC of the contact of typical of contactor typical of contactor typical of contactor typical of volution of typical Substance Prohibitance (Date) SYHC substance name Lead - 7439-92-1 Weight of conditions installation altitude at height above sea level maximum ambient temperature of during storage of caccording to IEC 60068-2-30 maximum Environmental footprint of kV during operation of the VU during department of the VU during to rage of the VU during	 of auxiliary circuit with degree of pollution 3 rated value 	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 oat DC fo,7g / 5 ms, 4,2g / 10 ms shock resistance with sine pulse oat DC 10,5g / 5 ms, 6,6g / 10 ms mechanical service life (operating cycles) of contactor typical of contactor typical of contactor typical of contactor typical substance Prohibitance (Date) SyHC substance name Lead - 7439-92-1 Weight 0.296 kg Ambient conditions installation altitude at height above sea level maximum ambient temperature oduring operation oduring storage during storage relative humidity minimum relative humidity minimum relative humidity at 55 °C according to IEC 60068-2-30 maximum Environmental footprint	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 shock resistance with sine pulse • at DC nechanical service life (operating cycles) • of contactor typical reference code according to IEC 81346-2 Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Weight 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 Environmental footprint	of main circuit rated value	6 kV
coil and main contacts according to EN 60947-1 shock resistance at rectangular impulse • at DC shock resistance with sine pulse • at DC 10,5g / 5 ms, 4,2g / 10 ms 10,5g / 5 ms, 6,6g / 10 ms mechanical service life (operating cycles) • of contactor typical reference code according to IEC 81346-2 Q Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Weight 0.296 kg 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 Environmental footprint	of auxiliary circuit rated value	6 kV
• at DC shock resistance with sine pulse • at DC 10,5g / 5 ms, 6,6g / 10 ms mechanical service life (operating cycles) • of contactor typical 30 000 000 reference code according to IEC 81346-2 Q Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Weight 0.296 kg 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 Environmental footprint		400 V
shock resistance with sine pulse • at DC 10,5g / 5 ms, 6,6g / 10 ms mechanical service life (operating cycles) • of contactor typical 30 000 000 reference code according to IEC 81346-2 Q Substance Prohibitance (Date) 10/01/2009 SVHC substance name Lead - 7439-92-1 Weight 0.296 kg 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 Environmental footprint	shock resistance at rectangular impulse	
of contactor typical of contactor typical reference code according to IEC 81346-2 Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Weight Ambient conditions installation altitude at height above sea level maximum ambient temperature oduring operation oduring storage relative humidity at 55 °C according to IEC 60068-2-30 maximum Environmental footprint	• at DC	6,7g / 5 ms, 4,2g / 10 ms
mechanical service life (operating cycles) ● of contactor typical reference code according to IEC 81346-2 Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Weight 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 Environmental footprint	shock resistance with sine pulse	
of contactor typical reference code according to IEC 81346-2 Q Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Weight O.296 kg Ambient conditions installation altitude at height above sea level maximum ambient temperature o during operation o during storage during storage relative humidity minimum relative humidity at 55 °C according to IEC 60068-2-30 maximum Environmental footprint	• at DC	10,5g / 5 ms, 6,6g / 10 ms
reference code according to IEC 81346-2 Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Weight 0.296 kg Ambient conditions installation altitude at height above sea level maximum ambient temperature • during operation • during storage • during storage relative humidity minimum relative humidity at 55 °C according to IEC 60068-2-30 maximum Environmental footprint	mechanical service life (operating cycles)	
Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Weight 0.296 kg 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 Environmental footprint	of contactor typical	30 000 000
SVHC substance name Lead - 7439-92-1 Weight 0.296 kg 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 Environmental footprint	reference code according to IEC 81346-2	Q
Weight 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 Environmental footprint	Substance Prohibitance (Date)	10/01/2009
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 Environmental footprint	SVHC substance name	Lead - 7439-92-1
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 Environmental footprint	Weight	0.296 kg
ambient temperature	Ambient conditions	
● during operation ● during storage ● during storage	installation altitude at height above sea level maximum	2 000 m
during storage	ambient temperature	
relative humidity minimum relative humidity at 55 °C according to IEC 60068-2-30 maximum Environmental footprint	 during operation 	-25 +60 °C
relative humidity at 55 °C according to IEC 60068-2-30 95 % maximum Environmental footprint	during storage	-55 +80 °C
Environmental footprint	relative humidity minimum	10 %
		95 %
Environmental Product Declaration(EPD) Yes	Environmental footprint	
	Environmental Product Declaration(EPD)	Yes

Global Warming Potential [CO2 eq] total	153 kg
Global Warming Potential [CO2 eq] during manufacturing	1.42 kg
Global Warming Potential [CO2 eq] during operation	152 kg
Global Warming Potential [CO2 eq] after end of life	-0.305 kg
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
operating voltage	2001
at AC-3 rated value maximum	690 V
at AC-3e rated value maximum	690 V
operational current	00.4
 at AC-1 at 400 V at ambient temperature 40 °C rated value 	22 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	22 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	20 A
• at AC-3	
— at 400 V rated value	9 A
— at 500 V rated value	7.7 A
— at 690 V rated value	6.7 A
• at AC-3e	
— at 400 V rated value	9 A
— at 500 V rated value	7.7 A
— at 690 V rated value	6.7 A
 at AC-4 at 400 V rated value 	8.5 A
 at AC-5a up to 690 V rated value 	19.4 A
 at AC-5b up to 400 V rated value 	7.4 A
• at AC-6a	
 up to 230 V for current peak value n=20 rated value 	5.3 A
— up to 400 V for current peak value n=20 rated value	5.3 A
— up to 500 V for current peak value n=20 rated value	5.3 A
— up to 690 V for current peak value n=20 rated valueat AC-6a	5 A
— up to 230 V for current peak value n=30 rated value	3.5 A
 up to 400 V for current peak value n=30 rated value 	3.5 A
 up to 500 V for current peak value n=30 rated value 	3.6 A
— up to 690 V for current peak value n=30 rated value	3.3 A
minimum cross-section in main circuit at maximum AC-1 rated value	4 mm ²
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	4.1 A
at 690 V rated value	3.3 A
operational current	
at 1 current path at DC-1	
— at 24 V rated value	20 A
— at 60 V rated value	20 A
— at 110 V rated value	2.1 A
— at 220 V rated value	0.8 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
 with 2 current paths in series at DC-1 	
— at 24 V rated value	20 A
— at 60 V rated value	20 A
— at 110 V rated value	12 A
— at 220 V rated value	1.6 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.7 A
 with 3 current paths in series at DC-1 	
— at 24 V rated value	20 A

1001/11/1	00.4
— at 60 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	20 A
— at 440 V rated value	1.3 A
— at 600 V rated value	1 A
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 60 V rated value	0.5 A
— at 110 V rated value	0.15 A
 with 2 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	20 A
— at 60 V rated value	5 A
— at 110 V rated value	0.35 A
 with 3 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	20 A
— at 60 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	1.5 A
— at 440 V rated value	0.2 A
— at 600 V rated value	0.2 A
operating power	
• at AC-3	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	5.5 kW
• at AC-3e	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	5.5 kW
operating power for approx. 200000 operating cycles at AC-	
• at 400 V rated value	2 kW
• at 690 V rated value	2.5 kW
operating apparent power at AC-6a	
	2 kVA
 up to 230 V for current peak value n=20 rated value 	
·	3.6 kVA
• up to 400 V for current peak value n=20 rated value	3.6 kVA 4.6 kVA
·	
 up to 400 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value 	4.6 kVA
 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 	4.6 kVA
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	4.6 kVA 5.9 kVA
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	4.6 kVA 5.9 kVA
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	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA
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	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA
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	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA
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 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	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 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 Ilimited to 5 s switching at zero current maximum	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 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 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 Ilimited to 10 s switching at zero current maximum	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 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 Ilimited to 5 s switching at zero current maximum Ilimited to 30 s switching at zero current maximum	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 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 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 Ilimited to 10 s switching at zero current maximum Ilimited to 30 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 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 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 Ilimited to 10 s switching at zero current maximum Ilimited to 30 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 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 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 Ilimited to 5 s switching at zero current maximum Ilimited to 30 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum no-load switching frequency at DC	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 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 Ilimited to 5 s switching at zero current maximum Ilimited to 30 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum a limited to 60 s switching at zero current maximum ro-load switching frequency at DC operating frequency	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h
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 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 Ilimited to 5 s switching at zero current maximum Ilimited to 30 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum no-load switching frequency at DC operating frequency at AC-1 maximum	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h
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 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 Ilimited to 5 s switching at zero current maximum Ilimited to 30 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum no-load switching frequency at DC operating frequency at AC-1 maximum at AC-2 maximum	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h 1 000 1/h 1 000 1/h
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 Ilimited to 5 s switching at zero current maximum Ilimited to 30 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum alimited to 60 s switching at zero current maximum ro-load switching frequency at DC operating frequency at AC-1 maximum at AC-2 maximum at AC-3 maximum	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h 1 000 1/h 1 750 1/h 750 1/h
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 Ilimited to 5 s switching at zero current maximum Ilimited to 10 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum Ilimited 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	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h 1 000 1/h 1 000 1/h 750 1/h 750 1/h 750 1/h
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 Ilimited to 5 s switching at zero current maximum Ilimited to 30 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum alimited to 60 s switching at zero current maximum ro-load switching frequency at DC operating frequency at AC-1 maximum at AC-2 maximum at AC-3 maximum	4.6 kVA 5.9 kVA 1.3 kVA 2.4 kVA 3.1 kVA 4 kVA 155 A; Use minimum cross-section acc. to AC-1 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h 1 000 1/h 1 750 1/h 750 1/h

tune of voltage of the control cumply voltage	DC
type of voltage of the control supply voltage	DC 24 V
control supply voltage at DC rated value operating range factor control supply voltage rated value of	27 V
magnet coil at DC	
initial value	0.85
• full-scale value	1.85
design of the surge suppressor	diode
closing power of magnet coil at DC	1.6 W
holding power of magnet coil at DC	1.6 W
closing delay	
• at DC	25 120 ms
opening delay	
• at DC	20 80 ms
arcing time	10 15 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC 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	
at 24 V rated value	10 A
at 48 V rated value	6 A
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	1A
at 600 V rated value	0.15 A
operational current at DC-13	40.4
• at 24 V rated value	10 A
• at 48 V rated value	2 A
at 60 V rated value at 110 V rated value	2 A
 at 110 V rated value at 125 V rated value 	1 A 0.9 A
	0.3 A
 at 220 V rated value at 600 V rated value 	0.3 A 0.1 A
contact reliability of auxiliary contacts UL/CSA ratings	1 faulty switching per 100 million (17 V, 1 mA)
full-load current (FLA) for 3-phase AC motor	
at 480 V rated value	7.6 A
at 600 V rated value at 600 V rated value	9 A
yielded mechanical performance [hp]	1.7
• for single-phase AC motor	
— at 110/120 V rated value	0.33 hp
— at 230 V rated value	1 hp
• for 3-phase AC motor	
— at 200/208 V rated value	2 hp
— at 220/230 V rated value	3 hp
— at 460/480 V rated value	5 hp
— at 575/600 V rated value	7.5 hp
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	gG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)
with type of assignment 2 required	gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)
for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)
is. short should protoction of the during synton required	3

nstallation/ 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 side-by-side mounting	Yes
·	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
fastening method	·
height	58 mm
width	45 mm
depth	73 mm
required spacing	
with side-by-side mounting	40
— 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	Colon type terminals
• for main contacts	
— solid	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2,5 mm²), 2x 4 mm²
	2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)
— finely stranded with core end processing	
for AWG cables for main contacts	2x (20 16), 2x (18 14), 2x 12
connectable conductor cross-section for main contacts	0.5
• solid	0.5 4 mm ²
• stranded	0.5 4 mm²
finely stranded with core end processing	0.5 2.5 mm²
connectable conductor cross-section for auxiliary contacts	
 solid or stranded 	0.5 4 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), 2x 4 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), 2x 12
AWG number as coded connectable conductor cross section	
• for main contacts	20 12
for auxiliary contacts	20 12
afety related data	
product function	
mirror contact according to IEC 60947-4-1	Yes
	No
a nocitively driven operation according to IEC 60047 F 4	INO
positively driven operation according to IEC 60947-5-1 pultable for sofety function.	Voc
suitable for safety function	Yes
suitable for safety function suitability for use safety-related switching OFF	Yes
suitable for safety function	

 with low demand rate according to SN 31920 	40 %
 with high demand rate according to SN 31920 	73 %
B10 value with high demand rate according to SN 31920	1 000 000
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
ISO 13849	
device type according to ISO 13849-1	3
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
safety device type according to IEC 61508-2	Type A
Electrical Safety	
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
Approvals Certificates	

General Product Approval







Confirmation





General Product Approval

EMV

Test Certificates

Marine / Shipping

<u>KC</u>





Type Test Certificates/Test Report

Special Test Certificate



Marine / Shipping











Miscellaneous

other

other

Railway

Dangerous goods

Environment

Confirmation

Special Test Certificate

Transport Information



Environmental Confirmations

Further information

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=3RT2016-1VB42

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-1VB42

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1VB42

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

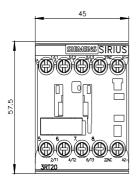
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-1VB42&lang=en

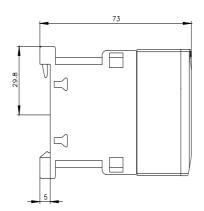
Characteristic: Tripping characteristics, I²t, Let-through current

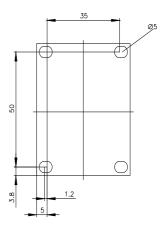
 $\underline{\text{https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1VB42/char}}$

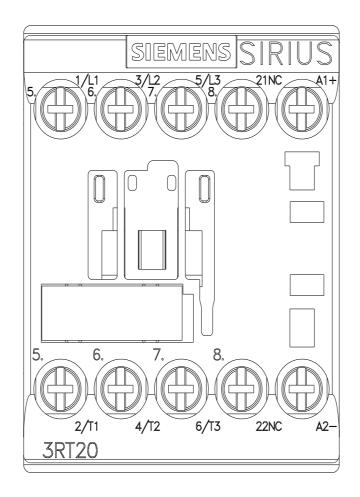
Further characteristics (e.g. electrical endurance, switching frequency)

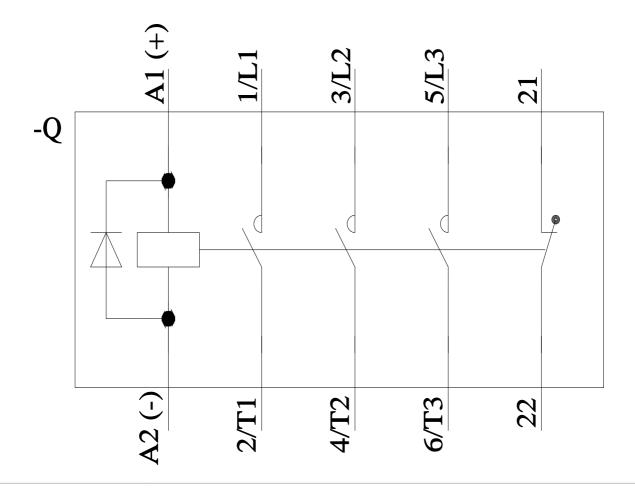
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2016-1VB42&objecttype=14&gridview=view1











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