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Data sheet 3RT1276-6AV36



vacuum contactor AC-3e/AC-3 500 A, 250 kW / 400 V, 3-pole, Uc: 380-420 V AC(50-60 Hz) / DC drive: conventional auxiliary contacts 2 NO + 2 NC main circuit: busbar control and auxiliary circuit: screw terminal

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT12
General technical data	
size of contactor	S12
product extension	
● function module for communication	No
● auxiliary switch	Yes
power loss [W] for rated value of the current	
● at AC in hot operating state	96 W
● at AC in hot operating state per pole	32 W
● without load current share typical	10 W
type of calculation of power loss current-dependent	quadratic
insulation voltage	
● of main circuit with degree of pollution 3 rated value	1 000 V
● of auxiliary circuit with degree of pollution 3 rated value	500 V
surge voltage resistance	
● of main circuit rated value	8 kV
● of auxiliary circuit rated value	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	690 V
shock resistance at rectangular impulse	
● at AC	8,5 g / 5 ms, 4,2 g / 10 ms
● at DC	8,5 g / 5 ms, 4,2 g / 10 ms
shock resistance with sine pulse	
● at AC	13,4 g / 5 ms, 6,5 g / 10 ms
● at DC	13,4 g / 5 ms, 6,5 g / 10 ms
mechanical service life (operating cycles)	
● of contactor typical	10 000 000
● of the contactor with added electronically optimized auxiliary switch block typical	5 000 000
● of the contactor with added auxiliary switch block typical	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (day/month/year)	05/01/2012
SVHC substance name	Lead CAS-No. 7439-92-1
Net Weight	10.473 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
● during operation	-25 ... +60 °C

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● during storage	-55 ... +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
number of NC contacts for main contacts	0
operating voltage	
● at AC-3 rated value maximum	1 000 V
● at AC-3e rated value maximum	1 000 V
operational current	
● at AC-1 at 400 V at ambient temperature 40 °C rated value	610 A
● at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	610 A
— up to 690 V at ambient temperature 60 °C rated value	550 A
● at AC-3	
— at 400 V rated value	500 A
— at 500 V rated value	500 A
— at 690 V rated value	500 A
● at AC-3e	
— at 400 V rated value	500 A
— at 500 V rated value	500 A
— at 690 V rated value	500 A
● at AC-4 at 400 V rated value	430 A
● at AC-6a	
— up to 230 V for current peak value n=20 rated value	439 A
— up to 400 V for current peak value n=20 rated value	439 A
— up to 500 V for current peak value n=20 rated value	439 A
— up to 690 V for current peak value n=20 rated value	439 A
● at AC-6a	
— up to 230 V for current peak value n=30 rated value	293 A
— up to 400 V for current peak value n=30 rated value	293 A
— up to 500 V for current peak value n=30 rated value	293 A
— up to 690 V for current peak value n=30 rated value	293 A
minimum cross-section in main circuit at maximum AC-1 rated value	370 mm²
operational current for approx. 200000 operating cycles at AC-4	
● at 400 V rated value	215 A
● at 690 V rated value	215 A
operating power	
● at AC-3	
— at 230 V rated value	160 kW
— at 400 V rated value	250 kW
— at 500 V rated value	355 kW
— at 690 V rated value	500 kW
● at AC-3e	
— at 230 V rated value	160 kW
— at 400 V rated value	250 kW
— at 500 V rated value	355 kW
— at 690 V rated value	500 kW
operating power for approx. 200000 operating cycles at AC-4	
● at 400 V rated value	122 kW
● at 690 V rated value	212 kW
operating apparent power at AC-6a	
● up to 230 V for current peak value n=20 rated value	170 kVA

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● up to 400 V for current peak value n=20 rated value	300 kVA
● up to 500 V for current peak value n=20 rated value	380 kVA
● up to 690 V for current peak value n=20 rated value	520 kVA
operating apparent power at AC-6a	
● up to 230 V for current peak value n=30 rated value	110 kVA
● up to 400 V for current peak value n=30 rated value	200 kVA
● up to 500 V for current peak value n=30 rated value	250 kVA
● up to 690 V for current peak value n=30 rated value	350 kVA
● up to 1000 V for current peak value n=30 rated value	500 kVA
no-load switching frequency	
● at AC	2 000 1/h
● at DC	2 000 1/h
operating frequency	
● at AC-1 maximum	700 1/h
● at AC-2 maximum	250 1/h
● at AC-3 maximum	750 1/h
● at AC-3e	
— maximum	750 1/h
● at AC-4 maximum	250 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	
● at 50 Hz rated value	380 ... 420 V
● at 60 Hz rated value	380 ... 420 V
control supply voltage at DC rated value	380 ... 420 V
operating range factor control supply voltage rated value of magnet coil at DC	
● initial value	0.8
● full-scale value	1.1
operating range factor control supply voltage rated value of magnet coil at AC	
● at 50 Hz	0.8 ... 1.1
● at 60 Hz	0.8 ... 1.1
design of the surge suppressor	with varistor
apparent pick-up power	
● at minimum rated control supply voltage at AC	
— at 50 Hz	700 V·A
— at 60 Hz	700 V·A
● at maximum rated control supply voltage at AC	
— at 60 Hz	830 V·A
— at 50 Hz	830 V·A
apparent pick-up power of magnet coil at AC	
● at 50 Hz	830 V·A
● at 60 Hz	830 V·A
inductive power factor with closing power of the coil	
● at 50 Hz	0.9
● at 60 Hz	0.9
apparent holding power	
● at minimum rated control supply voltage at DC	8.5 V·A
● at maximum rated control supply voltage at DC	10 V·A
apparent holding power	
● at minimum rated control supply voltage at AC	
— at 50 Hz	7.6 V·A
— at 60 Hz	7.6 V·A
● at maximum rated control supply voltage at AC	
— at 50 Hz	9.2 V·A
— at 60 Hz	9.2 V·A
inductive power factor with the holding power of the coil	
● at 50 Hz	0.9

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● at 60 Hz	0.9
closing power of magnet coil at DC	920 W
holding power of magnet coil at DC	10 W
closing delay	
● at AC	45 ... 100 ms
● at DC	45 ... 100 ms
opening delay	
● at AC	60 ... 100 ms
● at DC	60 ... 100 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	2
number of NO contacts for auxiliary contacts instantaneous contact	2
operational current at AC-12 maximum	10 A
operational current at AC-15	
● at 230 V rated value	6 A
● at 400 V rated value	3 A
● at 500 V rated value	2 A
● at 690 V rated value	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	1 A
● 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	477 A
● at 600 V rated value	472 A
yielded mechanical performance [hp]	
● for 3-phase AC motor	
— at 200/208 V rated value	150 hp
— at 220/230 V rated value	200 hp
— at 460/480 V rated value	400 hp
— at 575/600 V rated value	500 hp
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA
design of the fuse link	
● for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 800 A (690 V, 100 kA)
— with type of coordination 2 required	gG: 800 A (690 V, 50 kA), aM: 630 A (690 V, 50 kA), BS88: 800 A (415 V, 50 kA)
● for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)
Installation/ mounting/ dimensions	

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mounting position	+/-22,5° 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
fastening method	screw fixing
height	217 mm
width	160 mm
depth	225 mm
required spacing	
● with side-by-side mounting	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
● for grounded parts	
— forwards	20 mm
— upwards	10 mm
— at the side	10 mm
— downwards	10 mm
● for live parts	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 mm
Connections/ Terminals	
type of electrical connection	
● for main current circuit	Connection bar
● for auxiliary and control circuit	screw-type terminals
● at contactor for auxiliary contacts	Screw-type terminals
● of magnet coil	screw terminal
width of connection bar	25 mm
thickness of connection bar	6 mm
diameter of holes	11 mm
number of holes	1
type of connectable conductor cross-sections	
● for AWG cables for main contacts	2/0 ... 500 kcmil
connectable conductor cross-section for main contacts	
● stranded	70 ... 240 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	2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²)
— solid or stranded	2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), max. 2x (0,75 ... 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), 1x 12
AWG number as coded connectable conductor cross section for auxiliary contacts	18 ... 14
Safety related data	
product function	
● **mirror contact according to IEC 60947-4-1**	Yes
● **positively driven operation according to IEC 60947-5-1**	No
Electrical Safety	
protection class IP on the front according to IEC 60529	IP00; IP20 with box terminal/cover
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with box terminal/cover
Approvals Certificates	

Environment	**General Product Approval**

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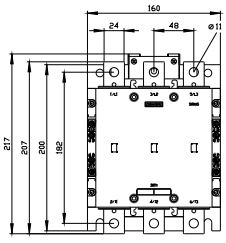
Environmental Confirmations

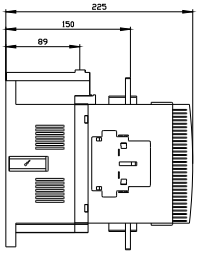
General Product Approval	EMV	Functional Saftey	Test Certificates		Maritime application
		Type Examination Certificate	Type Test Certificates/Test Report	Special Test Certificate	

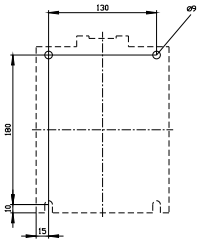
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Further information

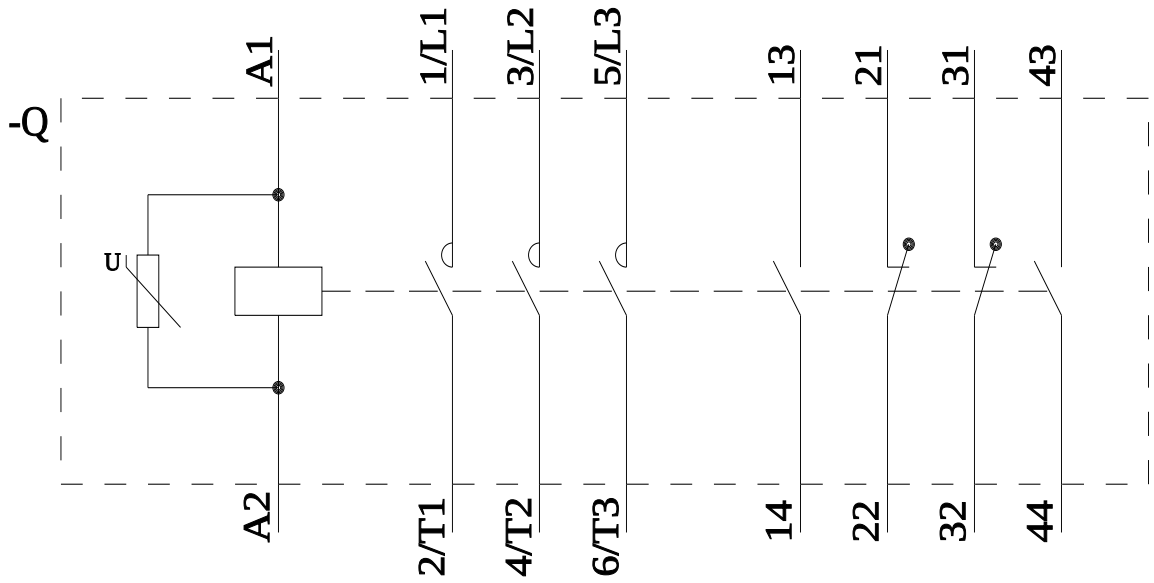
Information on the packaging
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