

vacuum contactor AC-3e/AC-3 630 A, 335 kW / 400 V, U_e 1000 V, 3-pole, U_c: 110 V DC drive: conventional installed with series resistor with reversing contactor
3TC4417-4A DC economy circuit auxiliary contacts 3 NO + 3 NC main circuit:
busbar control and auxiliary circuit: screw terminal without overvoltage damping in main circuit



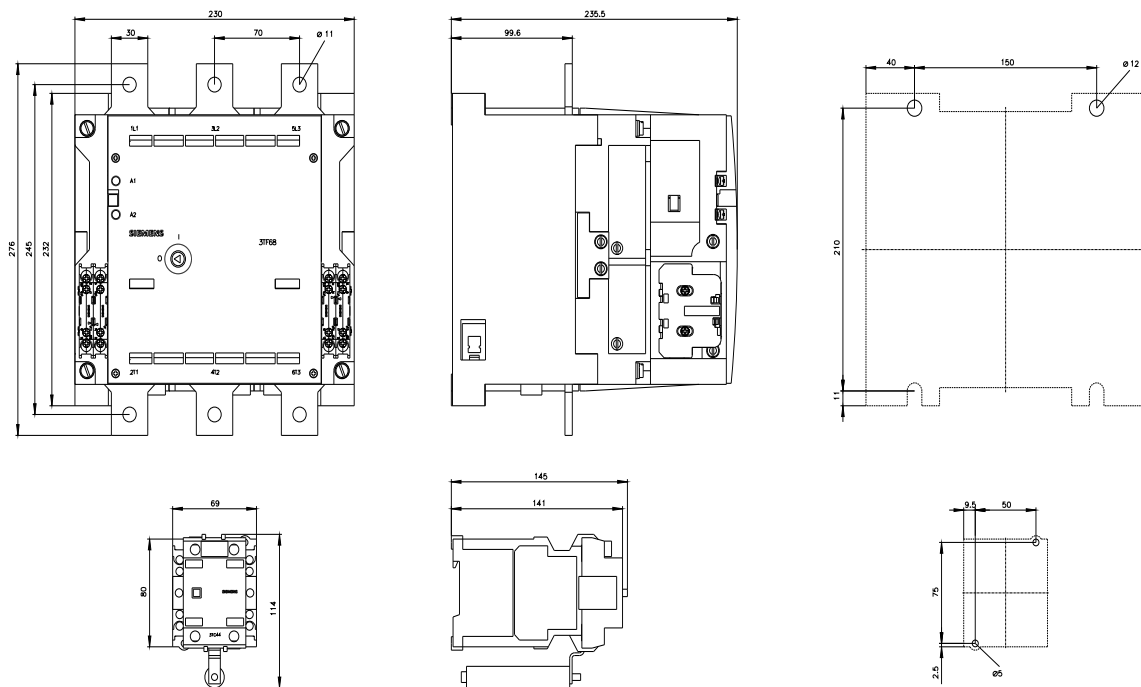
product designation	Vacuum contactor
product type designation	3TF6
General technical data	
size of contactor	14
product extension	
• function module for communication	No
• auxiliary switch	No
insulation voltage	
• of main circuit with degree of pollution 3 rated value	1 000 V
• of auxiliary circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
• of main circuit rated value	8 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for protective separation	
• in networks with grounded star point between auxiliary and auxiliary circuit	300 V
• in networks with grounded star point between main and auxiliary circuit	500 V
shock resistance at rectangular impulse	
• at DC	9.5g / 5 ms, 5.7g / 10 ms
shock resistance with sine pulse	
• at DC	14.5 g / 5 ms, 9.1 g / 10 ms
mechanical service life (operating cycles)	
• of contactor typical	5 000 000
reference code according to IEC 81346-2	Q
Substance Prohibittance (Date)	03/01/2017
Weight	19.5 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
• during operation	-25 ... +55 °C
• during storage	-55 ... +80 °C
relative humidity minimum	10 %
relative humidity during operation	10 ... 95 %
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
type of voltage for main current circuit	AC

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	
— up to 690 V at ambient temperature 40 °C rated value	700 A
— up to 690 V at ambient temperature 55 °C rated value	630 A
— up to 1000 V at ambient temperature 55 °C rated value	450 A
• at AC-3	
— at 400 V rated value	630 A
— at 500 V rated value	630 A
— at 690 V rated value	630 A
— at 1000 V rated value	435 A
• at AC-3e	
— at 400 V rated value	552 A
— at 500 V rated value	552 A
— at 690 V rated value	552 A
— at 1000 V rated value	435 A
• at AC-4 at 400 V rated value	610 A
• at AC-6a	
— up to 500 V for current peak value n=20 rated value	513 A
— up to 690 V for current peak value n=20 rated value	513 A
— up to 1000 V for current peak value n=20 rated value	435 A
• at AC-6a	
— up to 400 V for current peak value n=30 rated value	342 A
— up to 500 V for current peak value n=30 rated value	342 A
— up to 690 V for current peak value n=30 rated value	342 A
— up to 1000 V for current peak value n=30 rated value	342 A
connectable conductor cross-section in main circuit at AC-1	
• at 40 °C minimum permissible	480 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	300 A
• at 690 V rated value	300 A
operating power	
• at AC-3	
— at 230 V rated value	200 kW
— at 400 V rated value	355 kW
— at 500 V rated value	400 kW
— at 690 V rated value	600 kW
— at 1000 V rated value	600 kW
• at AC-3e	
— at 230 V rated value	160 kW
— at 400 V rated value	315 kW
— at 690 V rated value	560 kW
— at 1000 V rated value	600 kW
operating apparent power at AC-6a	
• up to 400 V for current peak value n=20 rated value	338 kVA
• up to 690 V for current peak value n=20 rated value	586 kVA
• up to 1000 V for current peak value n=20 rated value	752 kVA
operating apparent power at AC-6a	
• up to 400 V for current peak value n=30 rated value	226 kVA
• up to 690 V for current peak value n=30 rated value	390 kVA
• up to 1000 V for current peak value n=30 rated value	592 kVA
thermal short-time current limited to 10 s	5 040 A
power loss [W] at AC-3 at 400 V for rated value of the operational current per conductor	45 W

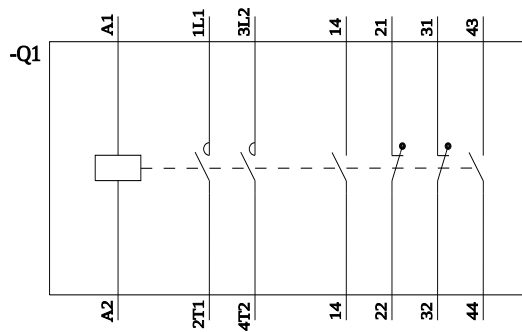
power loss [W] at AC-3e at 400 V for rated value of the operational current per conductor	35 W
no-load switching frequency at AC	2 000 1/h
operating frequency	
• at AC-1 maximum	700 1/h
• at AC-3e	
— at 400 V maximum	500 1/h
— at 690 V maximum	500 1/h
— at 1000 V maximum	250 1/h
• at AC-2 at AC-3 maximum	200 1/h
• at AC-2 at AC-3e maximum	200 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC rated value	110 V
operating range factor control supply voltage rated value of magnet coil at DC	
• initial value	0.8
• full-scale value	1.1
apparent holding power	
• at minimum rated control supply voltage at DC	28 VA
closing power of magnet coil at DC	1 010 W
holding power of magnet coil at DC	28 W
closing delay	
• at DC	76 ... 110 ms
opening delay	
• at DC	10 ... 50 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	
• attachable	3
• instantaneous contact	3
number of NO contacts for auxiliary contacts	
• attachable	3
• instantaneous contact	3
operational current at AC-12 maximum	10 A
operational current at AC-15	
• at 230 V rated value	5.6 A
• at 400 V rated value	3.6 A
• at 500 V rated value	2.5 A
• at 690 V rated value	2.3 A
operational current at DC-12 at 440 V rated value	0.33 A
operational current at DC-12	
• at 24 V rated value	10 A
• at 48 V rated value	10 A
• at 110 V rated value	3.2 A
• at 125 V rated value	2.5 A
• at 220 V rated value	0.9 A
• at 600 V rated value	0.22 A
operational current at DC-13	
• at 24 V rated value	10 A
• at 48 V rated value	5 A
• at 110 V rated value	1.14 A
• at 125 V rated value	0.98 A
• at 220 V rated value	0.48 A
• at 600 V rated value	0.07 A
contact reliability of auxiliary contacts	one incorrect switching operation of 100 million switching operations (17 V, 5 mA)
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
• at 480 V rated value	630 A

• at 600 V rated value	630 A
yielded mechanical performance [hp]	
• for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value	231 hp 266 hp 530 hp 664 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 — with type of assignment 2 required • for short-circuit protection of the auxiliary switch required	gG: 1000 A (690 V, 100 kA) gG: 500 A (690 V, 100 kA), aM: 630 A (690 V, 50 kA), BS88: 500 A (415 V, 50 kA) fuse gG: 10 A
Installation/ mounting/ dimensions	
mounting position	standing, on horizontal mounting surface
fastening method side-by-side mounting	Yes
fastening method	screw fixing
height	276 mm
width	230 mm
depth	237 mm
required spacing	
• with side-by-side mounting — forwards — upwards — downwards — at the side • for grounded parts — forwards — upwards — at the side — downwards • for live parts — forwards — upwards — downwards — at the side	20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm
Connections/ Terminals	
type of electrical connection	
• for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts	Connection bar screw-type terminals Screw-type terminals
width of connection bar	30 mm
thickness of connection bar	6 mm
diameter of holes	11 mm
number of holes	1
type of connectable conductor cross-sections for main contacts	
• stranded • finely stranded with core end processing	70 ... 240 mm ² 50 ... 240 mm ²
connectable conductor cross-section for main contacts	
• finely stranded with core end processing	240 ... 50 mm ²
connectable conductor cross-section for auxiliary contacts	
• solid or stranded • finely stranded with core end processing	0.5 ... 2.5 mm ² 0.5 ... 2.5 mm ²
type of connectable conductor cross-sections	
• for auxiliary contacts — solid — finely stranded with core end processing • for AWG cables for auxiliary contacts	2x (0.5 ... 1.0 mm ²), 2x (1.0 ... 2.5 mm ²) 2x (0.5 ... 1.0 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (18 ... 12)
AWG number as coded connectable conductor cross	

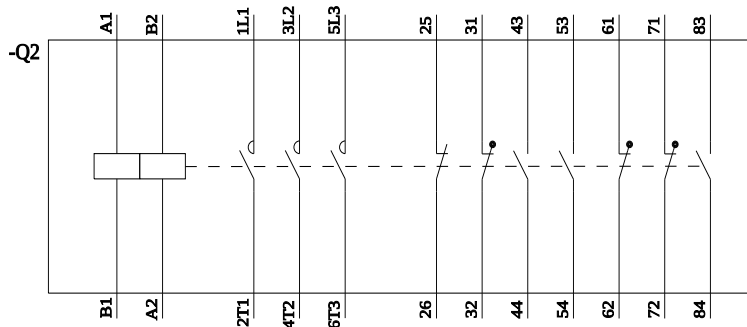
section			
• for main contacts • for auxiliary contacts		500	18 ... 12
Safety related data			
product function			
• mirror contact according to IEC 60947-4-1		Yes; One NC contact each must be connected in series for the right and left auxiliary switch block respectively	
• positively driven operation according to IEC 60947-5-1		No	
• suitable for safety function		Yes	
service life maximum		20 a	
test wear-related service life necessary		Yes	
proportion of dangerous failures			
• 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		IP00	
Approvals Certificates			
General Product Approval		Functional Safety	Test Certificates
		Type Examination Certificate	Type Test Certificates/Test Report
		Miscellaneous	
Test Certificates	Marine / Shipping		other
Special Test Certificate	   	Confirmation	
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=3TF6833-8DF4-Z A02+B01			
Cax online generator http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6833-8DF4-Z A02+B01			
Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3TF6833-8DF4-Z A02+B01			
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6833-8DF4-Z A02+B01&lang=en			
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3TF6833-8DF4-Z A02+B01/char			
Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6833-8DF4-Z A02+B01&objecttype=14&gridview=view1			



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3TF6(8,9)33-(1,8)D..



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