

vacuum contactor AC-3e 630 A, 335 kW / 400 V, AC-3 820 A, 450 kW / 400 V, Ue 690 V, 3-pole, Uc: 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



product designation	Vacuum contactor
product type designation	3TF6
<b>General technical data</b>	
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	8.6g / 5 ms, 5.1g / 10 ms
shock resistance with sine pulse	
• at DC	13.5 g / 5 ms, 7.8 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
SVHC substance name	Lead - 7439-92-1
Weight	22.6 kg
<b>Ambient conditions</b>	
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 %
<b>Main circuit</b>	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
number of NC contacts for main contacts	0

<b>type of voltage for main current circuit</b>	AC
<b>operating voltage</b>	
• at AC-3 rated value maximum	690 V
• at AC-3e rated value maximum	690 V
<b>operational current</b>	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	910 A
— up to 690 V at ambient temperature 55 °C rated value	850 A
• at AC-3	
— at 400 V rated value	820 A
— at 500 V rated value	820 A
— at 690 V rated value	820 A
— at 1000 V rated value	580 A
• at AC-3e	
— 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	580 A
• at AC-4 at 400 V rated value	690 A
• at AC-6a	
— up to 500 V for current peak value n=20 rated value	675 A
— up to 690 V for current peak value n=20 rated value	675 A
• at AC-6a	
— up to 400 V for current peak value n=30 rated value	450 A
— up to 500 V for current peak value n=30 rated value	450 A
— up to 690 V for current peak value n=30 rated value	450 A
<b>connectable conductor cross-section in main circuit at AC-1</b>	
• at 40 °C minimum permissible	600 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	360 A
• at 690 V rated value	360 A
<b>operating power</b>	
• at AC-3	
— at 230 V rated value	260 kW
— at 400 V rated value	450 kW
— at 500 V rated value	600 kW
— at 690 V rated value	800 kW
— at 1000 V rated value	800 kW
• at AC-3e	
— at 230 V rated value	200 kW
— at 400 V rated value	355 kW
— at 690 V rated value	600 kW
— at 1000 V rated value	800 kW
<b>operating apparent power at AC-6a</b>	
• up to 400 V for current peak value n=20 rated value	445 kVA
• up to 690 V for current peak value n=20 rated value	771 kVA
<b>operating apparent power at AC-6a</b>	
• up to 400 V for current peak value n=30 rated value	297 kVA
• up to 690 V for current peak value n=30 rated value	514 kVA
<b>thermal short-time current limited to 10 s</b>	7 000 A
<b>power loss [W] at AC-3 at 400 V for rated value of the operational current per conductor</b>	70 W
<b>power loss [W] at AC-3e at 400 V for rated value of the operational current per conductor</b>	42 W
<b>no-load switching frequency at AC</b>	1 000 1/h
<b>operating frequency</b>	
• 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 AC-2 at AC-3 maximum	200 1/h
• at AC-2 at AC-3e maximum	200 1/h
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage at DC rated value</b>	110 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>	
• initial value	0.8
• full-scale value	1.1
<b>apparent holding power</b>	
• at minimum rated control supply voltage at DC	20.6 VA
<b>closing power of magnet coil at DC</b>	960 W
<b>holding power of magnet coil at DC</b>	20.6 W
<b>closing delay</b>	
• at DC	86 ... 280 ms
<b>opening delay</b>	
• at DC	19 ... 25 ms
<b>arcing time</b>	10 ... 15 ms
<b>control version of the switch operating mechanism</b>	Standard A1 - A2
<b>Auxiliary circuit</b>	
<b>number of NC contacts for auxiliary contacts</b>	
• attachable	3
• instantaneous contact	3
<b>number of NO contacts for auxiliary contacts</b>	
• attachable	3
• instantaneous contact	3
<b>operational current at AC-12 maximum</b>	10 A
<b>operational current at AC-15</b>	
• 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
<b>operational current at DC-12 at 440 V rated value</b>	0.33 A
<b>operational current at DC-12</b>	
• 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
<b>operational current at DC-13</b>	
• 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
<b>contact reliability of auxiliary contacts</b>	one incorrect switching operation of 100 million switching operations (17 V, 5 mA)
<b>UL/CSA ratings</b>	
<b>full-load current (FLA) for 3-phase AC motor</b>	
• at 480 V rated value	820 A
• at 600 V rated value	820 A
<b>yielded mechanical performance [hp]</b>	
• for 3-phase AC motor	
— at 200/208 V rated value	290 hp
— at 220/230 V rated value	350 hp
— at 460/480 V rated value	700 hp
— at 575/600 V rated value	860 hp

<b>contact rating of auxiliary contacts according to UL</b>	A600 / Q600
<b>Short-circuit protection</b>	
<b>design of the fuse link</b>	
<ul style="list-style-type: none"> <li>for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>with type of coordination 1 required</li> <li>with type of assignment 2 required</li> </ul> </li> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	gG: 1250 A (690 V, 100 kA) gG: 630 A (690 V, 50 kA), aM: 630 A (690 V, 50 kA), BS88: 630 A (690 V, 50 kA) fuse gG: 10 A
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
<b>fastening method</b>	screw fixing
<b>height</b>	295 mm
<b>width</b>	230 mm
<b>depth</b>	237 mm
<b>required spacing</b>	
<ul style="list-style-type: none"> <li>with side-by-side mounting <ul style="list-style-type: none"> <li>forwards</li> <li>upwards</li> <li>downwards</li> <li>at the side</li> </ul> </li> <li>for grounded parts <ul style="list-style-type: none"> <li>forwards</li> <li>upwards</li> <li>at the side</li> <li>downwards</li> </ul> </li> <li>for live parts <ul style="list-style-type: none"> <li>forwards</li> <li>upwards</li> <li>downwards</li> <li>at the side</li> </ul> </li> </ul>	20 mm 10 mm 10 mm 10 mm  20 mm 10 mm 10 mm 10 mm  20 mm 10 mm 10 mm 10 mm
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>for main current circuit</li> <li>for auxiliary and control circuit</li> <li>at contactor for auxiliary contacts</li> </ul>	Connection bar screw-type terminals Screw-type terminals
<b>width of connection bar</b>	40 mm
<b>thickness of connection bar</b>	6 mm
<b>diameter of holes</b>	13.5 mm
<b>number of holes</b>	1
type of connectable conductor cross-sections for main contacts	
<ul style="list-style-type: none"> <li>stranded</li> <li>finely stranded with core end processing</li> </ul>	50 ... 240 mm² 50 ... 240 mm²
<b>connectable conductor cross-section for main contacts</b>	
<ul style="list-style-type: none"> <li>finely stranded with core end processing</li> </ul>	240 ... 50 mm²
<b>connectable conductor cross-section for auxiliary contacts</b>	
<ul style="list-style-type: none"> <li>solid or stranded</li> <li>finely stranded with core end processing</li> </ul>	0.5 ... 2.5 mm² 0.5 ... 2.5 mm²
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>for auxiliary contacts <ul style="list-style-type: none"> <li>solid</li> <li>finely stranded with core end processing</li> </ul> </li> <li>for AWG cables for auxiliary contacts</li> </ul>	2x (0.5 ... 1.0 mm²), 2x (1.0 ... 2.5 mm²) 2x (0.5 ... 1.0 mm²), 2x (0.75 ... 2.5 mm²) 2x (18 ... 12)
<b>AWG number as coded connectable conductor cross section</b>	
<ul style="list-style-type: none"> <li>for main contacts</li> <li>for auxiliary contacts</li> </ul>	500 18 ... 12
<b>Safety related data</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>mirror contact according to IEC 60947-4-1</li> <li>positively driven operation according to IEC 60947-5-1</li> </ul>	Yes; One NC contact each must be connected in series for the right and left auxiliary switch block respectively 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	Marine / Shipping
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[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)

[Miscellaneous](#)

[Special Test Certificate](#)



Marine / Shipping	other	Dangerous goods
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[Miscellaneous](#)

[Confirmation](#)

[Transport Information](#)

#### 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=3TF6933-1DF4>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6933-1DF4>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-1DF4>

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

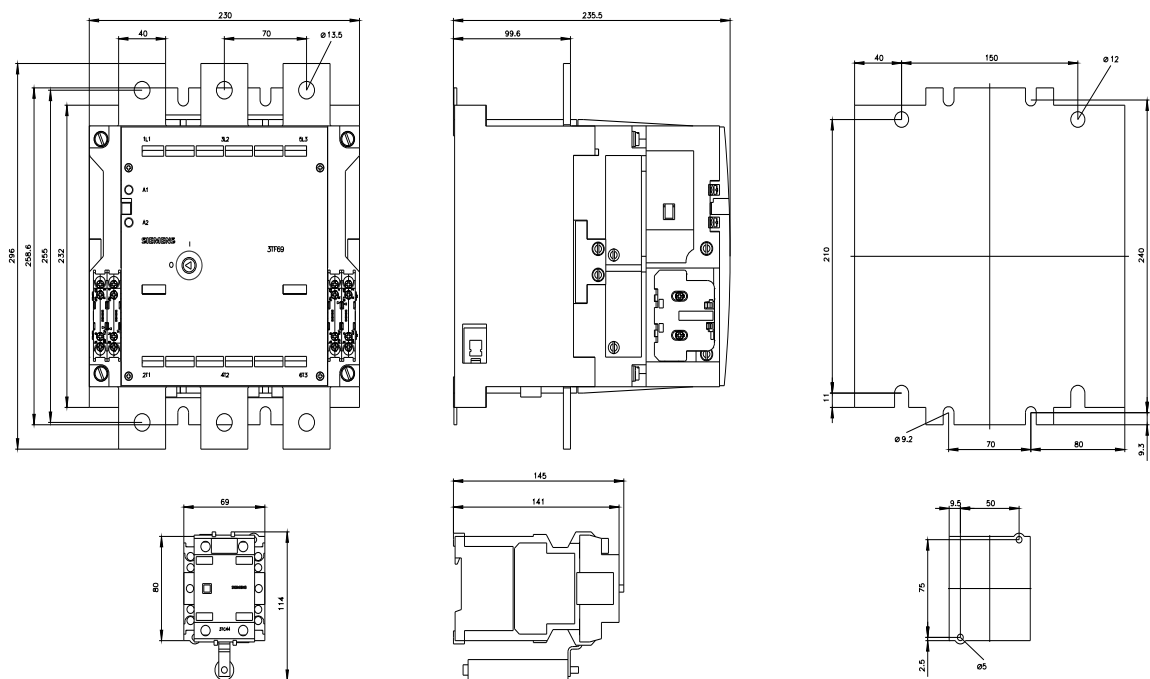
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TF6933-1DF4&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6933-1DF4&lang=en)

Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

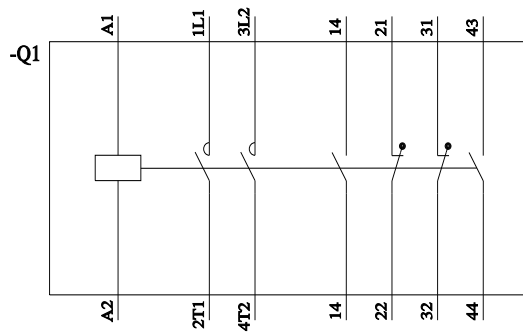
<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-1DF4/char>

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

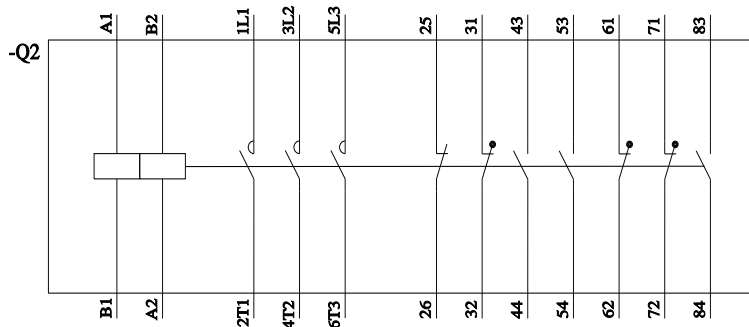
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6933-1DF4&objecttype=14&gridview=view1>



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