

Contactor, Size 14, 3-pole, AC-3, 450 kW, 400/380 V (690 V) Auxiliary switch 33 (3 NO+3 NC) with reversing contactor 3TC4417-4A and series resistor DC economy circuit 110 V DC



<b>product designation</b>	Vacuum contactor
<b>product type designation</b>	3TF6
<b>General technical data</b>	
<b>size of contactor</b>	14
<b>product extension</b>	
• function module for communication	No
• auxiliary switch	No
<b>insulation voltage</b>	
• 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
<b>surge voltage resistance</b>	
• of main circuit rated value	8 kV
• of auxiliary circuit rated value	6 kV
<b>maximum permissible voltage for safe isolation in networks with grounded star point</b>	
• between auxiliary and auxiliary circuit	300 V
• between main and auxiliary circuit	500 V
<b>shock resistance at rectangular impulse</b>	
• at DC	8.6g / 5 ms, 5.1g / 10 ms
<b>shock resistance with sine pulse</b>	
• at DC	13.5 g / 5 ms, 7.8 g / 10 ms
<b>mechanical service life (switching cycles)</b>	
• of contactor typical	5 000 000
<b>reference code acc. to IEC 81346-2</b>	Q
Substance Prohibition (Date)	01.03.2017 00:00:00
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	
• during operation	-25 ... +55 °C
• during storage	-55 ... +80 °C
<b>relative humidity minimum</b>	10 %
relative humidity during operation	10 ... 95 %
<b>relative humidity at 55 °C acc. to IEC 60068-2-30 maximum</b>	95 %
<b>Main circuit</b>	
<b>number of poles for main current circuit</b>	3
<b>number of NO contacts for main contacts</b>	3

<b>number of NC contacts for main contacts</b>	0
<b>type of voltage for main current circuit</b>	AC
<b>operating voltage</b>	
• at AC-3 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
— up to 1000 V at ambient temperature 55 °C rated value	800 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-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
— up to 1000 V for current peak value n=20 rated value	580 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
— up to 1000 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 690 V rated value	800 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 kV·A
• up to 690 V for current peak value n=20 rated value	771 kV·A
• up to 1000 V for current peak value n=20 rated value	1 003 kV·A
<b>operating apparent power at AC-6a</b>	
• up to 400 V for current peak value n=30 rated value	297 kV·A
• up to 690 V for current peak value n=30 rated value	514 kV·A
• up to 1000 V for current peak value n=30 rated value	778 kV·A
<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
no-load switching frequency at AC	1 000 1/h
<b>operating frequency</b>	

<ul style="list-style-type: none"> <li>• at AC-1 maximum</li> </ul>	700 1/h
<ul style="list-style-type: none"> <li>• at AC-2 at AC-3 maximum</li> </ul>	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</b>	
<ul style="list-style-type: none"> <li>• rated value</li> </ul>	110 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>	
<ul style="list-style-type: none"> <li>• initial value</li> </ul>	0.8
<ul style="list-style-type: none"> <li>• full-scale value</li> </ul>	1.1
<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>	
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	86 ... 280 ms
<b>opening delay</b>	
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	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>	
<ul style="list-style-type: none"> <li>• attachable</li> </ul>	3
<ul style="list-style-type: none"> <li>• instantaneous contact</li> </ul>	3
<b>number of NO contacts for auxiliary contacts</b>	
<ul style="list-style-type: none"> <li>• attachable</li> </ul>	3
<ul style="list-style-type: none"> <li>• instantaneous contact</li> </ul>	3
<b>operational current at AC-12 maximum</b>	10 A
<b>operational current at AC-15</b>	
<ul style="list-style-type: none"> <li>• at 230 V rated value</li> </ul>	5.6 A
<ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>	3.6 A
<ul style="list-style-type: none"> <li>• at 500 V rated value</li> </ul>	2.5 A
<ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>	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>	
<ul style="list-style-type: none"> <li>• at 24 V rated value</li> </ul>	10 A
<ul style="list-style-type: none"> <li>• at 48 V rated value</li> </ul>	10 A
<ul style="list-style-type: none"> <li>• at 110 V rated value</li> </ul>	3.2 A
<ul style="list-style-type: none"> <li>• at 125 V rated value</li> </ul>	2.5 A
<ul style="list-style-type: none"> <li>• at 220 V rated value</li> </ul>	0.9 A
<ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>	0.22 A
<b>operational current at DC-13</b>	
<ul style="list-style-type: none"> <li>• at 24 V rated value</li> </ul>	10 A
<ul style="list-style-type: none"> <li>• at 48 V rated value</li> </ul>	5 A
<ul style="list-style-type: none"> <li>• at 110 V rated value</li> </ul>	1.14 A
<ul style="list-style-type: none"> <li>• at 125 V rated value</li> </ul>	0.98 A
<ul style="list-style-type: none"> <li>• at 220 V rated value</li> </ul>	0.48 A
<ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>	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>	
<ul style="list-style-type: none"> <li>• at 480 V rated value</li> </ul>	820 A
<ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>	820 A
<b>yielded mechanical performance [hp]</b>	
<ul style="list-style-type: none"> <li>• for 3-phase AC motor <ul style="list-style-type: none"> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </li> </ul>	290 hp 350 hp 700 hp 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
<ul style="list-style-type: none"> <li>• side-by-side mounting</li> </ul>	Yes
<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>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
<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>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG cables for main contacts</li> </ul>	50 ... 240 mm <sup>2</sup> 50 ... 240 mm <sup>2</sup> 2/0 ... 500 kcmil
<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 mm <sup>2</sup>
<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 mm <sup>2</sup> 0.5 ... 2.5 mm <sup>2</sup>
<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>• at AWG cables for auxiliary contacts</li> </ul>	2x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (1.0 ... 2.5 mm <sup>2</sup> ) 2x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) 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

**Safety related data**

<b>product function mirror contact acc. to IEC 60947-4-1</b>	Yes; One NC contact each must be connected in series for the right and left auxiliary switch block respectively
product function positively driven operation acc. to IEC 60947-5-1	No
<b>protection class IP on the front acc. to IEC 60529</b>	IP00

**Certificates/ approvals**

<b>General Product Approval</b>	<b>Functional Safety/Safety of Machinery</b>
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[Type Examination Certificate](#)

<b>Declaration of Conformity</b>	<b>Test Certificates</b>	<b>Marine / Shipping</b>
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[UK Declaration of Conformity](#)



[Type Test Certificates/Test Report](#)

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[Special Test Certificate](#)



<b>Marine / Shipping</b>	<b>other</b>	<b>Railway</b>
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[Miscellaneous](#)

[Confirmation](#)

[Special Test Certificate](#)

**Further information**

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>t</sup>, Let-through current

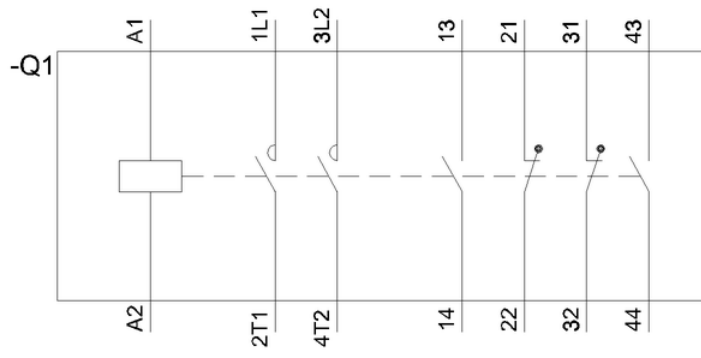
<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-1DF4/char>

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

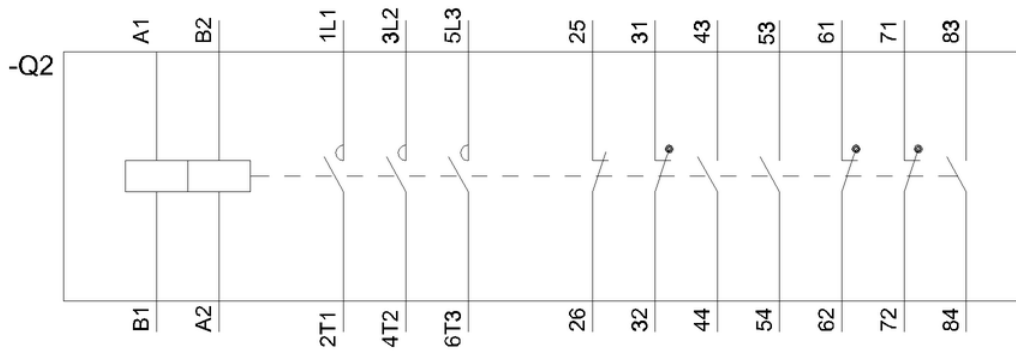
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6933-1DF4&objecttype=14&gridview=view1>



3TC4417-0Axx



3TF(68,69)33-(1D,8D)xx



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