

Contactor, Size 14, 3-pole, AC-3, 450 kW, 400/380 V (1000 V)  
 Auxiliary switch 33 (3 NO+3 NC) with reversing contactor 3TC4417-4A and series resistor DC economy circuit 125 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>	
<ul style="list-style-type: none"> <li>• function module for communication</li> </ul>	No
<ul style="list-style-type: none"> <li>• Auxiliary switch</li> </ul>	No
<ul style="list-style-type: none"> <li>• Insulation voltage of main circuit with degree of pollution 3 rated value</li> </ul>	1 000 V
<ul style="list-style-type: none"> <li>• Insulation voltage of auxiliary circuit with degree of pollution 3 rated value</li> </ul>	690 V
<b>Surge voltage resistance</b>	
<ul style="list-style-type: none"> <li>• of main circuit rated value</li> </ul>	8 kV
<ul style="list-style-type: none"> <li>• of auxiliary circuit rated value</li> </ul>	6 kV
<b>maximum permissible voltage for safe isolation in networks with grounded star point</b>	
<ul style="list-style-type: none"> <li>• between auxiliary and auxiliary circuit</li> </ul>	300 V
<ul style="list-style-type: none"> <li>• between main and auxiliary circuit</li> </ul>	500 V
<ul style="list-style-type: none"> <li>• protection class IP on the front</li> </ul>	IP00

<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 DIN EN 81346-2</b>	Q

### Ambient conditions

<b>Installation altitude at height above sea level</b>	
• maximum	2 000 m
<b>Ambient temperature</b>	
• during operation	-25 ... +55 °C
• during storage	-55 ... +80 °C
Relative humidity during operation	10 ... 100 %

### Main circuit

<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	
— at 50 Hz rated value	1 000 V
— at 60 Hz rated value	1 000 V
<b>Operating 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

<ul style="list-style-type: none"> <li>— up to 1000 V for current peak value n=20 rated value</li> </ul>	580 A
<ul style="list-style-type: none"> <li>• at AC-6a <ul style="list-style-type: none"> <li>— up to 400 V for current peak value n=30 rated value</li> <li>— up to 500 V for current peak value n=30 rated value</li> <li>— up to 690 V for current peak value n=30 rated value</li> <li>— up to 1000 V for current peak value n=30 rated value</li> </ul> </li> </ul>	450 A
<ul style="list-style-type: none"> <li>— up to 500 V for current peak value n=30 rated value</li> </ul>	450 A
<ul style="list-style-type: none"> <li>— up to 690 V for current peak value n=30 rated value</li> </ul>	450 A
<ul style="list-style-type: none"> <li>— up to 1000 V for current peak value n=30 rated value</li> </ul>	450 A
<b>Connectable conductor cross-section in main circuit at AC-1</b>	
<ul style="list-style-type: none"> <li>• at 40 °C minimum permissible</li> </ul>	600 mm <sup>2</sup>
<b>Operating current for approx. 200000 operating cycles at AC-4</b>	
<ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>	360 A
<ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>	360 A
<b>Operating power</b>	
<ul style="list-style-type: none"> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 690 V rated value</li> <li>— at 1000 V rated value</li> </ul> </li> </ul>	260 kW
	450 kW
	800 kW
	800 kW
<b>Operating apparent output at AC-6a</b>	
<ul style="list-style-type: none"> <li>• up to 400 V for current peak value n=20 rated value</li> </ul>	445 kV·A
<ul style="list-style-type: none"> <li>• up to 690 V for current peak value n=20 rated value</li> </ul>	771 kV·A
<ul style="list-style-type: none"> <li>• up to 1000 V for current peak value n=20 rated value</li> </ul>	1 003 kV·A
<b>Operating apparent output at AC-6a</b>	
<ul style="list-style-type: none"> <li>• up to 400 V for current peak value n=30 rated value</li> </ul>	297 kV·A
<ul style="list-style-type: none"> <li>• up to 690 V for current peak value n=30 rated value</li> </ul>	514 kV·A
<ul style="list-style-type: none"> <li>• up to 1000 V for current peak value n=30 rated value</li> </ul>	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 operating 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

- at AC-2 at AC-3 maximum

200 1/h

### Control circuit/ Control

<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>	125 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>	90 ... 125 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

### Auxiliary circuit

<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>Operating current at AC-12 maximum</b>	10 A
<b>Operating 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>Operating current at DC-12 at 440 V rated value</b>	0.33 A
<b>Operating 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>Operating 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> <li>• at 125 V rated value</li> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul>	<p>1.14 A</p> <p>0.98 A</p> <p>0.48 A</p> <p>0.07 A</p>
<b>contact reliability of auxiliary contacts</b>	one incorrect switching operation of 100 million switching operations (17 V, 5 mA)

UL/CSA ratings	
<b>Full-load current (FLA) for three-phase AC motor</b>	
<ul style="list-style-type: none"> <li>• at 480 V rated value</li> <li>• at 600 V rated value</li> </ul>	<p>820 A</p> <p>820 A</p>
<b>Yielded mechanical performance [hp]</b>	
<ul style="list-style-type: none"> <li>• for three-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>	<p>290 hp</p> <p>350 hp</p> <p>700 hp</p> <p>860 hp</p>
<b>Contact rating of auxiliary contacts according to UL</b>	A600 / Q600

Short-circuit protection	
<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>	<p>gG: 1250 A (690 V, 100 kA)</p> <p>gG: 630 A (690 V, 50 kA), aM: 630 A (690 V, 50 kA), BS88: 630 A (690 V, 50 kA)</p> <p>fuse gG: 10 A</p>

Installation/ mounting/ dimensions	
<ul style="list-style-type: none"> <li>• <b>mounting position</b></li> </ul>	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
<b>Mounting type</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> </ul> </li> </ul>	<p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>20 mm</p>

— 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

<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
<ul style="list-style-type: none"> <li>• Type of electrical connection for main current circuit</li> <li>• Type of electrical connection for auxiliary and control current circuit</li> <li>• Type of electrical connection at contactor for auxiliary contacts</li> </ul>	<p>Connection bar</p> <p>screw-type terminals</p> <p>Screw-type terminals</p>
<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 conductors for main contacts</li> </ul>	<p>50 ... 240 mm<sup>2</sup></p> <p>50 ... 240 mm<sup>2</sup></p> <p>2/0 ... 500 kcmil</p>
<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>• single or multi-stranded</li> <li>• finely stranded with core end processing</li> </ul>	<p>0.5 ... 2.5 mm<sup>2</sup></p> <p>0.5 ... 2.5 mm<sup>2</sup></p>
<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 conductors for auxiliary contacts</li> </ul>	<p>2x (0.5 ... 1.0 mm<sup>2</sup>), 2x (1.0 ... 2.5 mm<sup>2</sup>)</p> <p>2x (0.5 ... 1.0 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)</p> <p>2x (18 ... 12)</p>
<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>	<p>500</p> <p>18 ... 12</p>

## Safety related data

### Product function



- Mirror contact acc. to IEC 60947-4-1
- positively driven operation acc. to IEC 60947-5-1


Yes; One NC contact each must be connected in series for the right and left auxiliary switch block respectively

No

## Certificates/ approvals

General Product Approval				Functional Safety/Safety of Machinery	Declaration of Conformity
				<a href="#">Type Examination Certificate</a>	
CCC	CSA	UL			EG-Konf.

Declaration of Conformity	Test Certificates			Marine / Shipping	
<a href="#">Miscellaneous</a>	<a href="#">Special Test Certificate</a>	<a href="#">Type Test Certificates/Test Report</a>	<a href="#">Miscellaneous</a>		
				BUREAU VERITAS	RMRS

Marine / Shipping	other	Railway	
	<a href="#">Miscellaneous</a>	<a href="#">Confirmation</a>	<a href="#">Special Test Certificate</a>

## 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=3TF6933-8DG4>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6933-8DG4>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-8DG4>

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

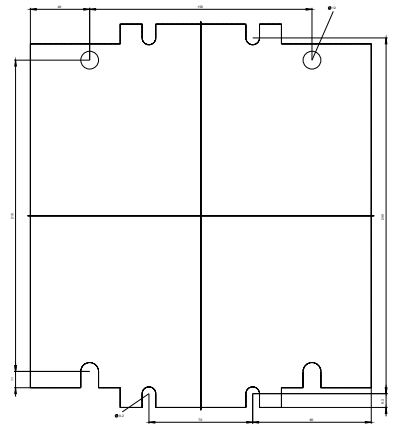
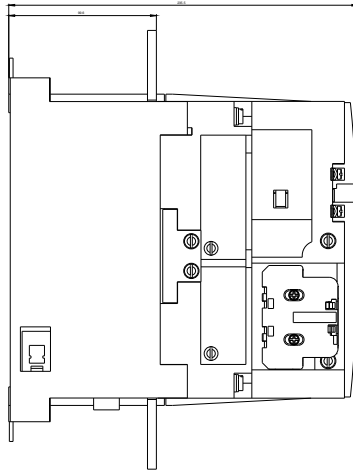
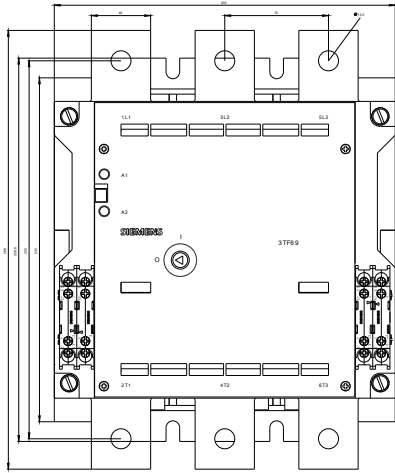
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TF6933-8DG4&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6933-8DG4&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-8DG4/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6933-8DG4&objecttype=14&gridview=view1>



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