

vacuum contactor AC-3e/AC-3 630 A, 335 kW / 400 V, U<sub>e</sub> 1000 V, 3-pole, U<sub>c</sub>: 230 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



<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 protective separation</b>	
• 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
<b>shock resistance at rectangular impulse</b>	
• at DC	9.5g / 5 ms, 5.7g / 10 ms
<b>shock resistance with sine pulse</b>	
• at DC	14.5 g / 5 ms, 9.1 g / 10 ms
<b>mechanical service life (operating cycles)</b>	
• of contactor typical	5 000 000
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (Date)</b>	03/01/2017
<b>SVHC substance name</b>	Lead - 7439-92-1
<b>Weight</b>	20.297 kg
<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 according 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	1 000 V
• at AC-3e rated value maximum	1 000 V
<b>operational current</b>	
• 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
• 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 AC-3e	
— at 400 V rated value	552 A
— at 500 V rated value	552 A
— at 690 V rated value	552 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
<b>connectable conductor cross-section in main circuit at AC-1</b>	
• at 40 °C minimum permissible	480 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	300 A
• at 690 V rated value	300 A
<b>operating power</b>	
• 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 AC-3e	
— at 230 V rated value	160 kW
— at 400 V rated value	315 kW
— at 690 V rated value	560 kW
<b>operating apparent power at AC-6a</b>	
• 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
<b>operating apparent power at AC-6a</b>	
• 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
<b>thermal short-time current limited to 10 s</b>	5 040 A
<b>power loss [W] at AC-3 at 400 V for rated value of the operational current per conductor</b>	45 W
<b>power loss [W] at AC-3e at 400 V for rated value of the operational current per conductor</b>	35 W

no-load switching frequency at AC	2 000 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>	230 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	28 VA
<b>closing power of magnet coil at DC</b>	1 010 W
<b>holding power of magnet coil at DC</b>	28 W
<b>closing delay</b>	
• at DC	76 ... 110 ms
<b>opening delay</b>	
• at DC	10 ... 50 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	630 A
• at 600 V rated value	630 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>	<p>231 hp</p> <p>266 hp</p> <p>530 hp</p> <p>664 hp</p>
<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 coordination 2 required</li> </ul> </li> <li>● for short-circuit protection of the auxiliary switch required</li> </ul>	<p>gG: 1000 A (690 V, 100 kA)</p> <p>gG: 500 A (690 V, 100 kA), aM: 630 A (690 V, 50 kA), BS88: 500 A (415 V, 50 kA)</p> <p>fuse gG: 10 A</p>
<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
fastening method side-by-side mounting	Yes
<b>fastening method</b>	screw fixing
<b>height</b>	276 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>	<p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p>
<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>	<p>Connection bar</p> <p>screw-type terminals</p> <p>Screw-type terminals</p>
<b>width of connection bar</b>	30 mm
<b>thickness of connection bar</b>	6 mm
<b>diameter of holes</b>	11 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>	<p>70 ... 240 mm<sup>2</sup></p> <p>50 ... 240 mm<sup>2</sup></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>● solid or 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> </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>

• for AWG cables for auxiliary contacts	2x (18 ... 12)
<b>AWG number as coded connectable conductor cross section for main contacts</b>	500
<b>AWG number as coded connectable conductor cross section for auxiliary contacts</b>	18 ... 12



#### Safety related data

<b>product function</b>	
• 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
<b>service life maximum</b>	20 a
<b>test wear-related service life necessary</b>	Yes
<b>proportion of dangerous failures</b>	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	73 %
<b>B10 value with high demand rate according to SN 31920</b>	1 000 000
<b>failure rate [FIT] with low demand rate according to SN 31920</b>	100 FIT
ISO 13849	
<b>device type according to ISO 13849-1</b>	3
<b>overdimensioning according to ISO 13849-2 necessary</b>	Yes
IEC 61508	
<b>safety device type according to IEC 61508-2</b>	Type A
Electrical Safety	
<b>protection class IP on the front according to IEC 60529</b>	IP00


#### Approvals Certificates

<b>General Product Approval</b>	<b>Functional Safety</b>
    	<a href="#">Type Examination Certificate</a>

#### Test Certificates

<a href="#">Type Test Certificates/Test Report</a>	<a href="#">Special Test Certificate</a>	<a href="#">Miscellaneous</a>			
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#### Maritime application

		<a href="#">Confirmation</a>
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#### Further information

Information on the packaging  
<https://support.industry.siemens.com/cs/ww/en/view/109813875>

Information for data generation and storage  
<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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=3TF6833-8DP4>

Cax online generator  
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6833-8DP4>

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)  
<https://support.industry.siemens.com/cs/ww/en/ps/3TF6833-8DP4>

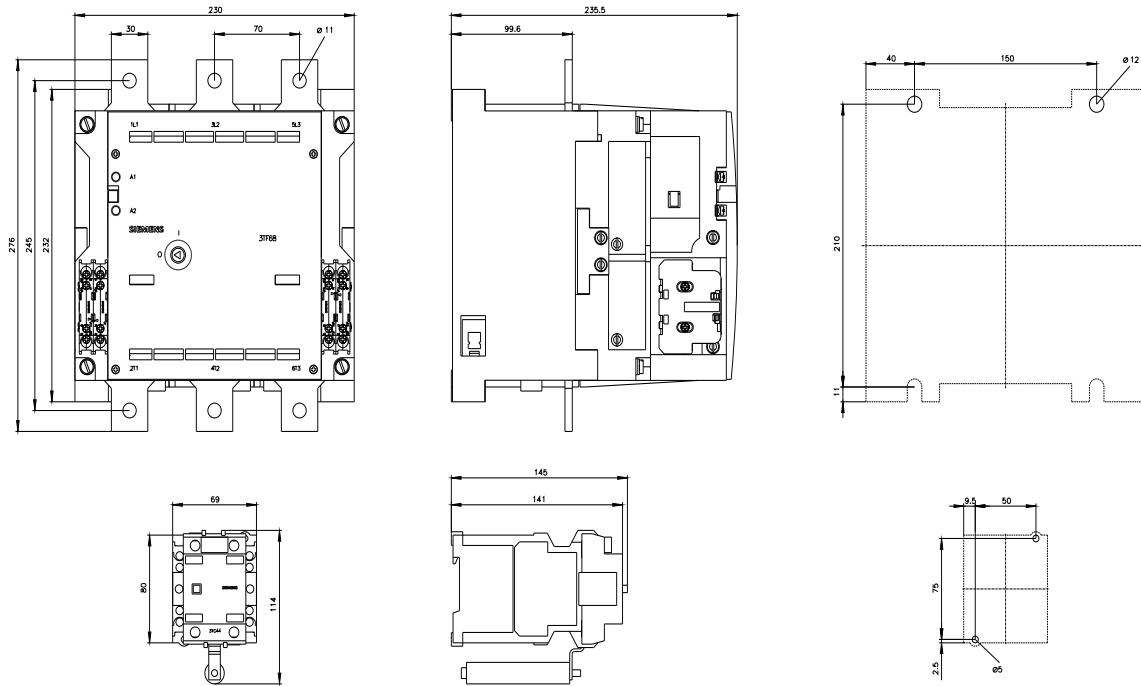
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)  
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TF6833-8DP4&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6833-8DP4&lang=en)

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

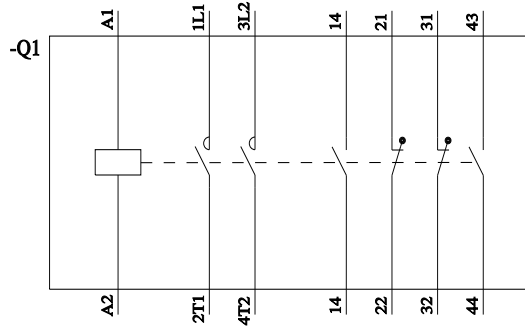
<https://support.industry.siemens.com/cs/ww/en/ps/3TF6833-8DP4/char>

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

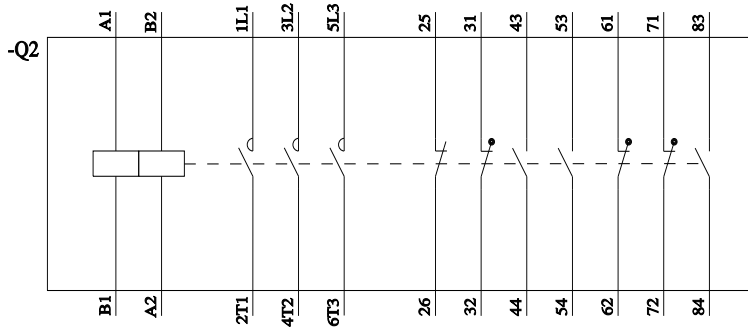
<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6833-8DP4&objecttype=14&gridview=view1>



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