



vacuum contactor AC-3e 630 A, 335 kW / 400 V, AC-3 820 A, 450 kW / 400 V, U<sub>e</sub> 690 V, 3-pole, U<sub>c</sub>: 230-276 V AC(50/60 Hz) drive: conventional auxiliary contacts 4 NO + 4 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 AC	9.5g / 5 ms, 5.7g / 10 ms
<b>shock resistance with sine pulse</b>	
• at AC	13.5g / 5 ms, 7.8g / 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 Lead monoxide (lead oxide) - 1317-36-8
<b>Weight</b>	21.202 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	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 AC-3e	
— at 400 V rated value	630 A
— at 500 V rated value	630 A
— at 690 V rated value	630 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 AC-3e	
— at 230 V rated value	200 kW
— at 400 V rated value	355 kW
— at 690 V rated value	600 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
no-load switching frequency at AC	500 1/h
<b>operating frequency</b>	
• at AC-1 maximum	500 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>	AC
<b>control supply voltage at AC</b>	
● at 50 Hz rated value	230 ... 276 V
● at 60 Hz rated value	230 ... 276 V
<b>operating range factor control supply voltage rated value of magnet coil at AC</b>	
● at 50 Hz	0.8 ... 1.1
● at 60 Hz	0.8 ... 1.1
<b>apparent pick-up power</b>	
● at minimum rated control supply voltage at AC	
— at 50 Hz	900 VA
— at 60 Hz	900 VA
● at maximum rated control supply voltage at AC	
— at 60 Hz	1 050 VA
— at 50 Hz	1 050 VA
<b>inductive power factor with closing power of the coil</b>	
● at 50 Hz	1
● at 60 Hz	1
<b>apparent holding power</b>	
● at minimum rated control supply voltage at AC	
— at 50 Hz	7 VA
— at 60 Hz	7 VA
● at maximum rated control supply voltage at AC	
— at 50 Hz	8 VA
— at 60 Hz	8 VA
<b>inductive power factor with the holding power of the coil</b>	
● at 50 Hz	0.4
● at 60 Hz	0.4
<b>closing delay</b>	
● at AC	70 ... 120 ms
<b>opening delay</b>	
● at AC	50 ... 130 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	4
● instantaneous contact	4
<b>number of NO contacts for auxiliary contacts</b>	
● attachable	4
● instantaneous contact	4
<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>	
<ul style="list-style-type: none"> <li>● at 24 V rated value</li> <li>● at 48 V rated value</li> <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>10 A</p> <p>5 A</p> <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)
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### UL/CSA ratings

<b>full-load current (FLA) for 3-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 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>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
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### 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 coordination 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

<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 side-by-side mounting</b>	Yes
<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>	<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>

### Connections/ Terminals

<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>	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 mm <sup>2</sup> 50 ... 240 mm <sup>2</sup>
<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>• for 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 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>	
<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> <li>• suitable for safety function</li> </ul>	Yes; One NC contact each must be connected in series for the right and left auxiliary switch block respectively No Yes
<b>service life maximum</b>	20 a
<b>test wear-related service life necessary</b>	Yes
<b>proportion of dangerous failures</b>	
<ul style="list-style-type: none"> <li>• with low demand rate according to SN 31920</li> <li>• with high demand rate according to SN 31920</li> </ul>	40 % 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
<b>ISO 13849</b>	
<b>device type according to ISO 13849-1</b>	3
<b>overdimensioning according to ISO 13849-2 necessary</b>	Yes
<b>IEC 61508</b>	
<b>safety device type according to IEC 61508-2</b>	Type A
<b>Electrical Safety</b>	
<b>protection class IP on the front according to IEC 60529</b>	IP00; IP20 with cover
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front with cover

**Approvals Certificates**

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

**Test Certificates** **Maritime application**

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



**Maritime application** **other**



[Confirmation](#)



[Miscellaneous](#)

## 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=3TF6944-0CP7>

### Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6944-0CP7>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6944-0CP7>

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

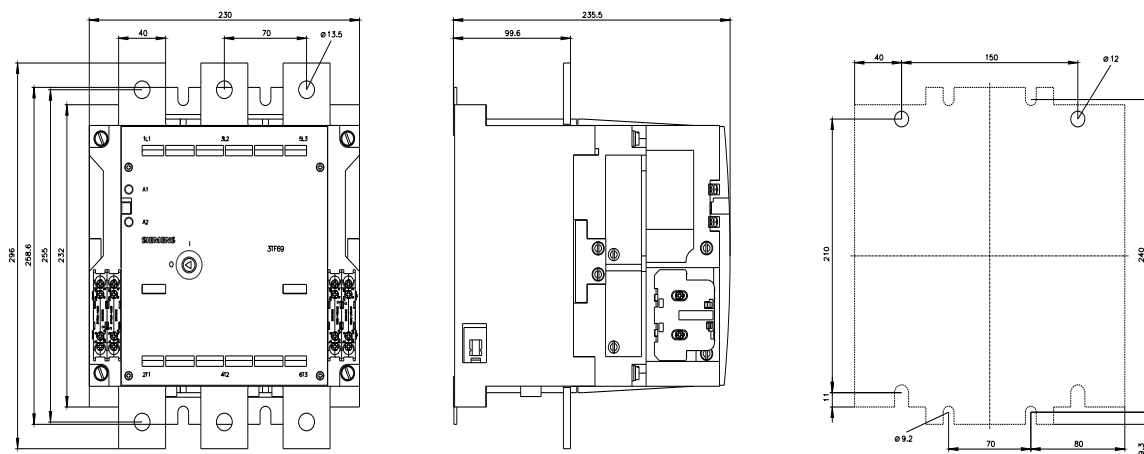
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TF6944-0CP7&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6944-0CP7&lang=en)

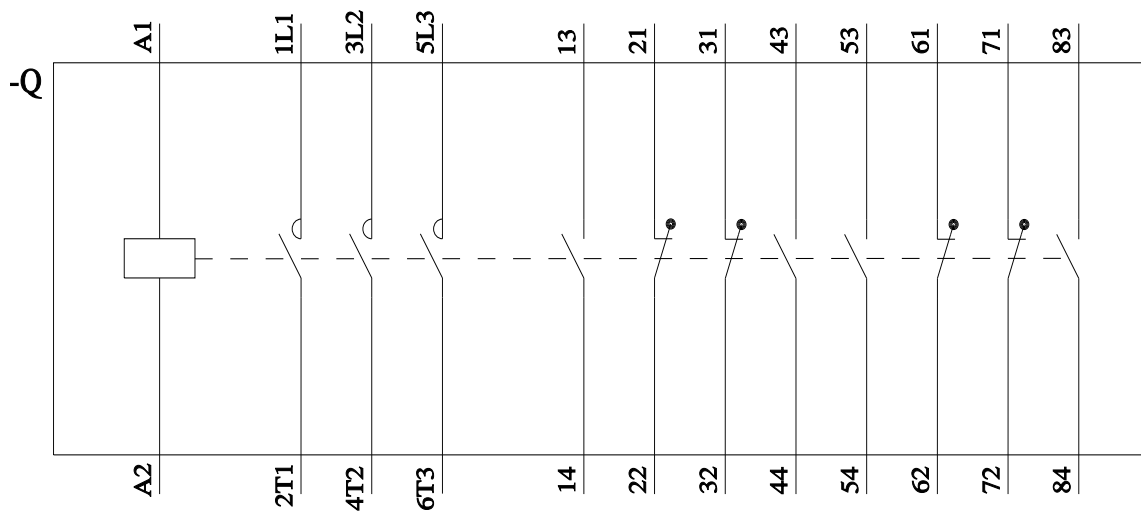
### Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6944-0CP7/char>

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

<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6944-0CP7&objectype=14&gridview=view1>





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