



Contactor, Size 14, 3-pole, AC-3, 450 kW, 400/380 V (690 V) Auxiliary switch 44 (4NO+4NC) AC operation 500...600 V AC 50/60 Hz

<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 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 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>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

<ul style="list-style-type: none"> <li>• at AC-3e rated value maximum</li> </ul>	690 V
<b>operational current</b>	
<ul style="list-style-type: none"> <li>• at AC-1 <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 40 °C rated value</li> <li>— up to 690 V at ambient temperature 55 °C rated value</li> </ul> </li> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> <li>— at 1000 V rated value</li> </ul> </li> <li>• at AC-3e <ul style="list-style-type: none"> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> <li>— at 1000 V rated value</li> </ul> </li> <li>• at AC-4 at 400 V rated value</li> <li>• at AC-6a <ul style="list-style-type: none"> <li>— up to 500 V for current peak value n=20 rated value</li> <li>— up to 690 V for current peak value n=20 rated value</li> </ul> </li> <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> </ul> </li> </ul>	910 A 850 A 820 A 820 A 820 A 580 A 630 A 630 A 630 A 580 A 690 A 675 A 675 A 450 A 450 A 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 mm²
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
<ul style="list-style-type: none"> <li>• at 400 V rated value</li> <li>• at 690 V rated value</li> </ul>	360 A 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 500 V rated value</li> <li>— at 690 V rated value</li> <li>— at 1000 V rated value</li> </ul> </li> <li>• at AC-3e <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 600 kW 800 kW 800 kW 200 kW 355 kW 600 kW 800 kW
<b>operating apparent power at AC-6a</b>	
<ul style="list-style-type: none"> <li>• up to 400 V for current peak value n=20 rated value</li> <li>• up to 690 V for current peak value n=20 rated value</li> </ul>	445 kVA 771 kVA
<b>operating apparent power at AC-6a</b>	
<ul style="list-style-type: none"> <li>• up to 400 V for current peak value n=30 rated value</li> <li>• up to 690 V for current peak value n=30 rated value</li> </ul>	297 kVA 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>	70 W
<b>no-load switching frequency at AC</b>	500 1/h
<b>operating frequency</b>	
<ul style="list-style-type: none"> <li>• at AC-1 maximum</li> <li>• at AC-3e <ul style="list-style-type: none"> <li>— at 400 V maximum</li> <li>— at 690 V maximum</li> </ul> </li> <li>• at AC-2 at AC-3 maximum</li> </ul>	500 1/h 500 1/h 500 1/h 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	500 ... 600 V
• at 60 Hz rated value	500 ... 600 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	600 VA
— at 60 Hz	600 VA
• at maximum rated control supply voltage at AC	
— at 60 Hz	950 VA
— at 50 Hz	950 VA
<b>apparent pick-up power of magnet coil at AC</b>	
• at 50 Hz	600 VA
• at 60 Hz	600 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	12.9 VA
— at 60 Hz	12.9 VA
• at maximum rated control supply voltage at AC	
— at 50 Hz	30.6 VA
— at 60 Hz	30.6 VA
<b>apparent holding power of magnet coil at AC</b>	
• at 50 Hz	12.9 VA
• at 60 Hz	12.9 VA
<b>inductive power factor with the holding power of the coil</b>	
• at 50 Hz	0.31
• at 60 Hz	0.31
<b>closing delay</b>	
• at AC	80 ... 120 ms
<b>opening delay</b>	
• at AC	70 ... 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

<ul style="list-style-type: none"> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul>	0.9 A 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>	10 A 5 A 1.14 A 0.98 A 0.48 A 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> <li>• at 600 V rated value</li> </ul>	820 A 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>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	
• stranded	50 ... 240 mm <sup>2</sup>
• finely stranded with core end processing	50 ... 240 mm <sup>2</sup>
<b>connectable conductor cross-section for main contacts</b>	
• finely stranded with core end processing	240 ... 50 mm <sup>2</sup>
<b>connectable conductor cross-section for auxiliary contacts</b>	
• solid or stranded	0.5 ... 2.5 mm <sup>2</sup>
• finely stranded with core end processing	0.5 ... 2.5 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— solid	2x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (1.0 ... 2.5 mm <sup>2</sup> )
— finely stranded with core end processing	2x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )
• for AWG cables for auxiliary contacts	2x (18 ... 12)
<b>AWG number as coded connectable conductor cross section</b>	
• for main contacts	500
• for auxiliary contacts	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
B10 value with high demand rate according to SN 31920	1 000 000
<b>proportion of dangerous failures</b>	
• with high demand rate according to SN 31920	73 %
<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

#### Certificates/ approvals

General Product Approval	Functional Safety/Safety of Machinery	Declaration of Conformity
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[Type Examination Certificate](#)



Declaration of Conformity	Test Certificates	Marine / Shipping
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[Special Test Certificate](#)

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



Marine / Shipping	other
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[Miscellaneous](#)

[Confirmation](#)

#### Further information

Siemens has decided to exit the Russian market (see here).

<https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business>

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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=3TF6944-0CS7>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6944-0CS7>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6944-0CS7>

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

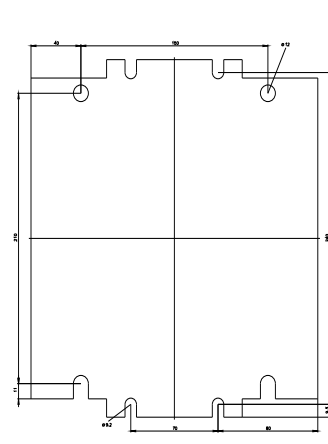
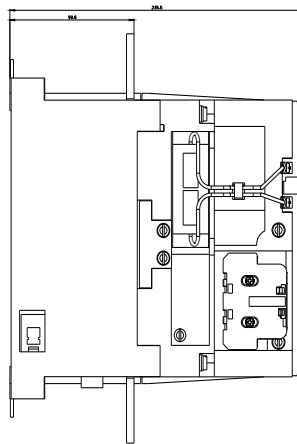
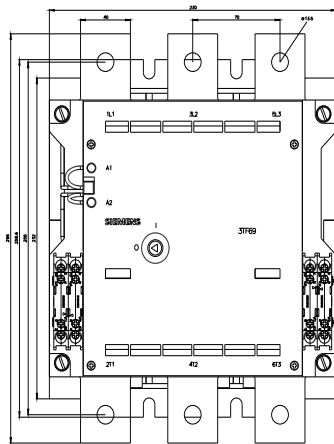
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TF6944-0CS7&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6944-0CS7&lang=en)

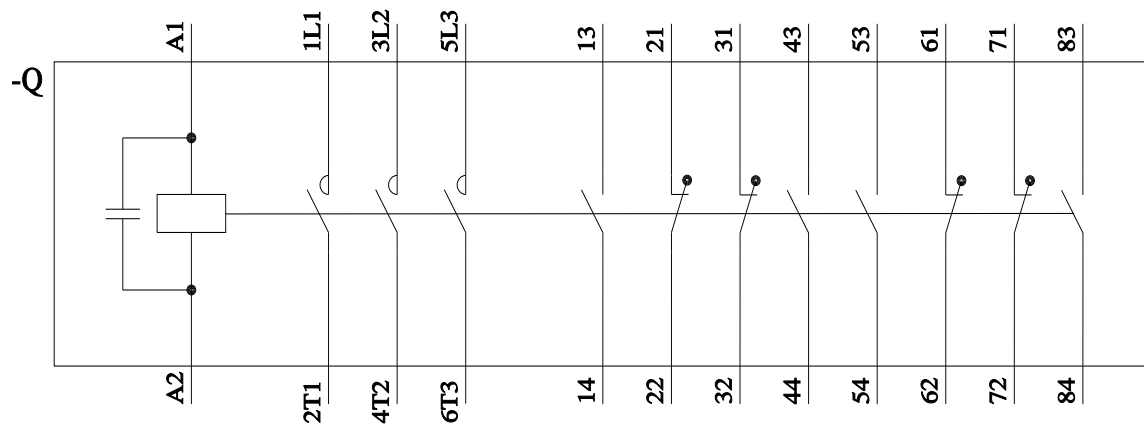
Characteristic: Tripping characteristics,  $I^2t$ , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6944-0CS7/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6944-0CS7&objecttype=14&gridview=view1>





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