



vacuum contactor AC-3e/AC-3 630 A, 335 kW / 400 V, U<sub>e</sub> 690 V, 3-pole, U<sub>c</sub>: 110-132 V AC(50/60 Hz) drive: conventional auxiliary contacts 4 NO + 4 NC main circuit: busbar control and auxiliary circuit: screw terminal

product designation	Vacuum contactor
product type designation	3TF6
<b>General technical data</b>	
size of contactor	14
product extension	
• function module for communication	No
• auxiliary switch	No
insulation voltage	
• 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
surge voltage resistance	
• of main circuit rated value	8 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for protective separation	
• 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
shock resistance at rectangular impulse	
• at AC	8.1g / 5 ms, 4.7g / 10 ms
shock resistance with sine pulse	
• at AC	12.8g / 5 ms, 7.4g / 10 ms
mechanical service life (operating cycles)	
• of contactor typical	5 000 000
reference code according to IEC 81346-2	Q
Substance Prohibittance (Date)	03/01/2017
SVHC substance name	Lead - 7439-92-1
Weight	19.971 kg
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
• during operation	-25 ... +55 °C
• during storage	-55 ... +80 °C
relative humidity minimum	10 %
relative humidity during operation	10 ... 95 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
<b>Main circuit</b>	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
number of NC contacts for main contacts	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	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 1000 V rated value	435 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 1000 V rated value	435 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
• 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
<b>connectable conductor cross-section in main circuit at AC-1</b>	
• at 40 °C minimum permissible	480 mm²
<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 1000 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
— at 1000 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	338 kVA
• up to 690 V for current peak value n=20 rated value	586 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
<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
<b>no-load switching frequency at AC</b>	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>	AC
<b>control supply voltage at AC</b>	
• at 50 Hz rated value	110 ... 132 V
• at 60 Hz rated value	110 ... 132 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	1 200 VA
— at 60 Hz	1 200 VA
• at maximum rated control supply voltage at AC	
— at 60 Hz	1 850 VA
— at 50 Hz	1 850 VA
<b>apparent pick-up power of magnet coil at AC</b>	
• at 50 Hz	1 200 VA
• at 60 Hz	1 200 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	13.5 VA
— at 60 Hz	13.5 VA
• at maximum rated control supply voltage at AC	
— at 50 Hz	49 VA
— at 60 Hz	49 VA
<b>apparent holding power of magnet coil at AC</b>	
• at 50 Hz	13.5 VA
• at 60 Hz	13.5 VA
<b>inductive power factor with the holding power of the coil</b>	
• at 50 Hz	0.15
• at 60 Hz	0.15
<b>closing delay</b>	
• at AC	70 ... 120 ms
<b>opening delay</b>	
• at AC	70 ... 100 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

<ul style="list-style-type: none"> <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 3.2 A 2.5 A 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>	630 A 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>	231 hp 266 hp 530 hp 664 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: 1000 A (690 V, 100 kA) gG: 500 A (690 V, 100 kA), aM: 630 A (690 V, 50 kA), BS88: 500 A (415 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
<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>	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>	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	
• stranded	70 ... 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
• 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; 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

##### General Product Approval



Functional Safety	Test Certificates	Marine / Shipping
<a href="#">Type Examination Certificate</a>	<a href="#">Special Test Certificate</a>	<a href="#">Miscellaneous</a>
	<a href="#">Type Test Certificates/Test Report</a>	
Marine / Shipping	other	



[Confirmation](#)

[Miscellaneous](#)

[Confirmation](#)

#### Further information

##### 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=3TF6844-0CF7>

##### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6844-0CF7>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6844-0CF7>

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

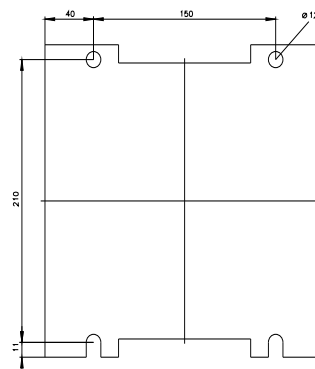
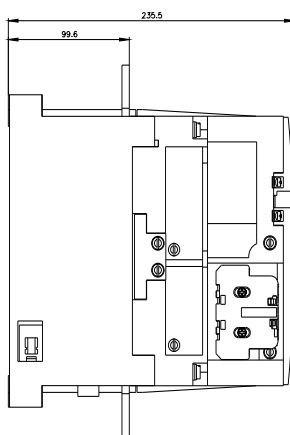
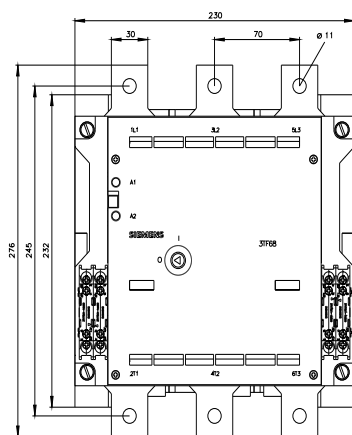
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TF6844-0CF7&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6844-0CF7&lang=en)

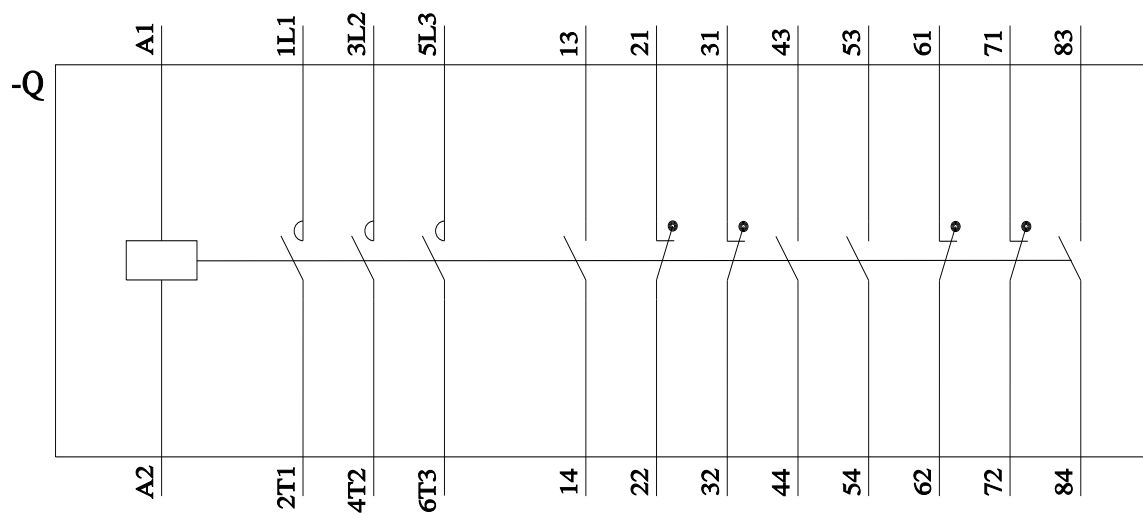
##### Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6844-0CF7/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6844-0CF7&objecttype=14&gridview=view1>





last modified:

6/19/2024 