



vacuum contactor AC-3e 630 A, 335 kW / 400 V, AC-3 820 A, 450 kW / 400 V, Ue 690 V, 3-pole, Uc: 380-460 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
General technical data	
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	9.5g / 5 ms, 5.7g / 10 ms
shock resistance with sine pulse	
• at AC	13.5g / 5 ms, 7.8g / 10 ms
mechanical service life (operating cycles)	
• of contactor typical	5 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	03/01/2017
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
Weight	21.97 kg
Ambient conditions	
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 %
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	3

number of NC contacts for main contacts	0
type of voltage for main current circuit	AC
operating voltage	
• at AC-3 rated value maximum	690 V
• at AC-3e rated value maximum	690 V
operational current	
• 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 1000 V rated value	580 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 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
• 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
connectable conductor cross-section in main circuit at AC-1	
• at 40 °C minimum permissible	600 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	360 A
• at 690 V rated value	360 A
operating power	
• 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 1000 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
— at 1000 V rated value	800 kW
operating apparent power at AC-6a	
• 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
operating apparent power at AC-6a	
• 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
thermal short-time current limited to 10 s	7 000 A
power loss [W] at AC-3 at 400 V for rated value of the operational current per conductor	70 W
power loss [W] at AC-3e at 400 V for rated value of the operational current per conductor	42 W
no-load switching frequency at AC	500 1/h
operating frequency	
• 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
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
• at 50 Hz rated value	380 ... 460 V
• at 60 Hz rated value	380 ... 460 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 ... 1.1
• at 60 Hz	0.8 ... 1.1
apparent pick-up power	
• 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
inductive power factor with closing power of the coil	
• at 50 Hz	1
• at 60 Hz	1
apparent holding power	
• at minimum rated control supply voltage at AC	
— at 50 Hz	18 VA
— at 60 Hz	18 VA
• at maximum rated control supply voltage at AC	
— at 50 Hz	25 VA
— at 60 Hz	25 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.2
• at 60 Hz	0.2
closing delay	
• at AC	70 ... 120 ms
opening delay	
• at AC	50 ... 130 ms
arcing time	10 ... 15 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts	
• attachable	4
• instantaneous contact	4
number of NO contacts for auxiliary contacts	
• attachable	4
• instantaneous contact	4
operational current at AC-12 maximum	10 A
operational current at AC-15	
• 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
operational current at DC-12 at 440 V rated value	0.33 A
operational current at DC-12	
• 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

operational current at DC-13	
• 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
contact reliability of auxiliary contacts	one incorrect switching operation of 100 million switching operations (17 V, 5 mA)
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
• at 480 V rated value	820 A
• at 600 V rated value	820 A
yielded mechanical performance [hp]	
• for 3-phase AC motor	
— at 200/208 V rated value	290 hp
— at 220/230 V rated value	350 hp
— at 460/480 V rated value	700 hp
— at 575/600 V rated value	860 hp
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the fuse link	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 1250 A (690 V, 100 kA)
— with type of assignment 2 required	gG: 630 A (690 V, 50 kA), aM: 630 A (690 V, 50 kA), BS88: 630 A (690 V, 50 kA)
• for short-circuit protection of the auxiliary switch required	fuse gG: 10 A
Installation/ mounting/ dimensions	
mounting position	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
fastening method	screw fixing
height	295 mm
width	230 mm
depth	237 mm
required spacing	
• with side-by-side mounting	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 mm
• for grounded parts	
— forwards	20 mm
— 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	
type of electrical connection	
• for main current circuit	Connection bar
• for auxiliary and control circuit	screw-type terminals
• at contactor for auxiliary contacts	Screw-type terminals
width of connection bar	40 mm
thickness of connection bar	6 mm
diameter of holes	13.5 mm
number of holes	1
type of connectable conductor cross-sections for main contacts	

• stranded	50 ... 240 mm ²
• finely stranded with core end processing	50 ... 240 mm ²
connectable conductor cross-section for main contacts	
• finely stranded with core end processing	240 ... 50 mm ²
connectable conductor cross-section for auxiliary contacts	
• solid or stranded	0.5 ... 2.5 mm ²
• finely stranded with core end processing	0.5 ... 2.5 mm ²
type of connectable conductor cross-sections	
• for auxiliary contacts	
— solid	2x (0.5 ... 1.0 mm ²), 2x (1.0 ... 2.5 mm ²)
— finely stranded with core end processing	2x (0.5 ... 1.0 mm ²), 2x (0.75 ... 2.5 mm ²)
• for AWG cables for auxiliary contacts	2x (18 ... 12)
AWG number as coded connectable conductor cross-section	
• for main contacts	500
• for auxiliary contacts	18 ... 12

Safety related data

product function	
• 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
service life maximum	20 a
test wear-related service life necessary	Yes
proportion of dangerous failures	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	73 %
B10 value with high demand rate according to SN 31920	1 000 000
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
ISO 13849	
device type according to ISO 13849-1	3
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
safety device type according to IEC 61508-2	Type A
Electrical Safety	
protection class IP on the front according to IEC 60529	IP00; IP20 with cover
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with cover

Approvals Certificates

General Product Approval	Functional Safety
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Test Certificates	Marine / Shipping
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[Type Test Certificates/Test Report](#)

[Miscellaneous](#)

[Special Test Certificate](#)



Marine / Shipping

other



[Confirmation](#)

[Miscellaneous](#)

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=3TF6944-0CQ7>

Cax online generator

<http://support.automation.siemens.com/WW/CAOrder/default.aspx?lang=en&mlfb=3TF6944-0CQ7>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6944-0CQ7>

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

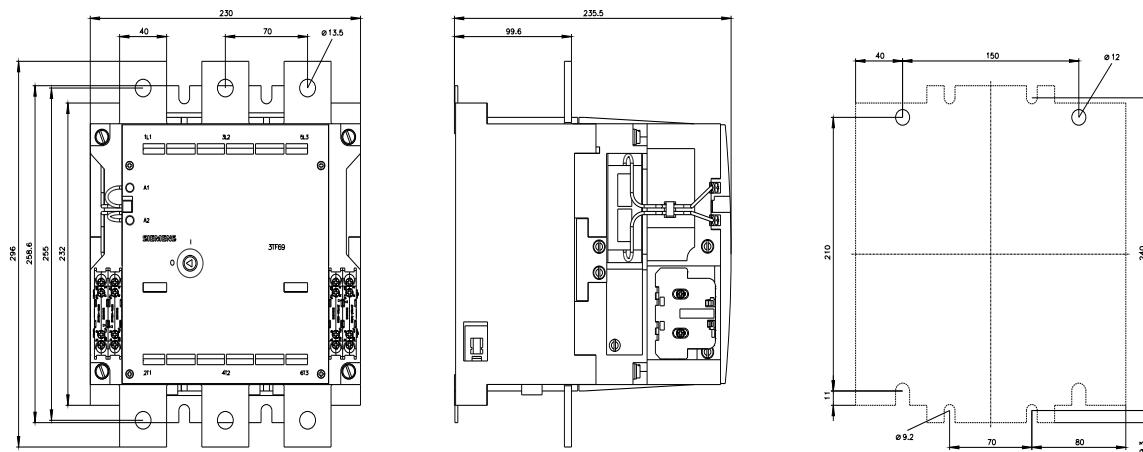
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6944-0CQ7&lang=en

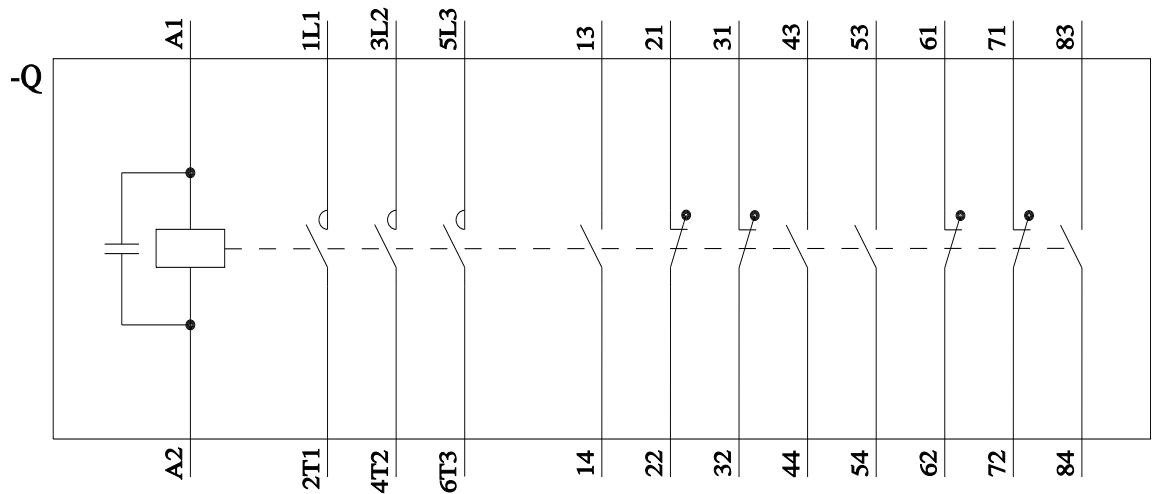
Characteristic: Tripping characteristics, I^2t , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6944-0CQ7/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6944-0CQ7&objecttype=14&gridview=view1>





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