

vacuum contactor AC-3e 630 A, 335 kW / 400 V, AC-3 820 A, 450 kW / 400 V, Ue 1000 V, 3-pole, Uc: 110-120 V AC(50/60 Hz) drive: conventional rectifier bridge built-in with reversing contactor 3TC44 auxiliary contacts 3 NO + 3 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
Weight	21.9 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	1 000 V
• at AC-3e rated value maximum	1 000 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 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
— up to 1000 V for current peak value n=20 rated value	580 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
— up to 1000 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 AC-3e	
— at 230 V rated value	200 kW
— at 400 V rated value	355 kW
— at 690 V rated value	600 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
• up to 1000 V for current peak value n=20 rated value	1 003 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
• up to 1000 V for current peak value n=30 rated value	778 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	1 000 1/h
operating frequency	
• 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
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
• at 50 Hz rated value	110 ... 120 V
• at 60 Hz rated value	110 ... 120 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 of magnet coil at AC	
• at 50 Hz	1 150 VA
• at 60 Hz	1 150 VA
inductive power factor with closing power of the coil	
• at 50 Hz	1
• at 60 Hz	1
apparent holding power of magnet coil at AC	
• at 50 Hz	11 VA
• at 60 Hz	11 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	1
• at 60 Hz	1
closing delay	
• at AC	45 ... 160 ms
opening delay	
• at AC	30 ... 80 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	3
• instantaneous contact	3
number of NO contacts for auxiliary contacts	
• attachable	3
• instantaneous contact	3
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

<ul style="list-style-type: none"> • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value 	<p>1.14 A</p> <p>0.98 A</p> <p>0.48 A</p> <p>0.07 A</p>
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	
<ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value 	<p>820 A</p> <p>820 A</p>
yielded mechanical performance [hp]	
<ul style="list-style-type: none"> • for 3-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 	<p>290 hp</p> <p>350 hp</p> <p>700 hp</p> <p>860 hp</p>
contact rating of auxiliary contacts according to UL	A600 / Q600

Short-circuit protection

design of the fuse link	
<ul style="list-style-type: none"> • for short-circuit protection of the main circuit <ul style="list-style-type: none"> — with type of coordination 1 required — with type of coordination 2 required • for short-circuit protection of the auxiliary switch required 	<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

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	
<ul style="list-style-type: none"> • with side-by-side mounting <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side • for grounded parts <ul style="list-style-type: none"> — forwards — upwards — at the side — downwards • for live parts <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side 	<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




type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts 	<p>Connection bar</p> <p>screw-type terminals</p> <p>Screw-type terminals</p>
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	
<ul style="list-style-type: none"> • stranded • finely stranded with core end processing 	<p>50 ... 240 mm²</p> <p>50 ... 240 mm²</p>

connectable conductor cross-section for main contacts	
<ul style="list-style-type: none"> finely stranded with core end processing 	240 ... 50 mm ²
connectable conductor cross-section for auxiliary contacts	
<ul style="list-style-type: none"> solid or stranded 	0.5 ... 2.5 mm ²
<ul style="list-style-type: none"> finely stranded with core end processing 	0.5 ... 2.5 mm ²
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> for auxiliary contacts <ul style="list-style-type: none"> — solid — finely stranded with core end processing for AWG cables for auxiliary contacts 	2x (0.5 ... 1.0 mm ²), 2x (1.0 ... 2.5 mm ²) 2x (0.5 ... 1.0 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (18 ... 12)
AWG number as coded connectable conductor cross section for main contacts	500
AWG number as coded connectable conductor cross section for auxiliary contacts	18 ... 12






Safety related data

product function	
<ul style="list-style-type: none"> mirror contact according to IEC 60947-4-1 positively driven operation according to IEC 60947-5-1 suitable for safety function 	Yes; One NC contact each must be connected in series for the right and left auxiliary switch block respectively No Yes
service life maximum	20 a
test wear-related service life necessary	Yes
proportion of dangerous failures	
<ul style="list-style-type: none"> with low demand rate according to SN 31920 with high demand rate according to SN 31920 	40 % 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

Approvals Certificates

General Product Approval	Functional Safety	Test Certificates
  	Type Examination Certificate	Miscellaneous Special Test Certificate

Maritime application

   	Miscellaneous	
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other

Confirmation	Dangerous goods Transport Information
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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=3TF6933-8QG7>

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6933-8QG7>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-8QG7>

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

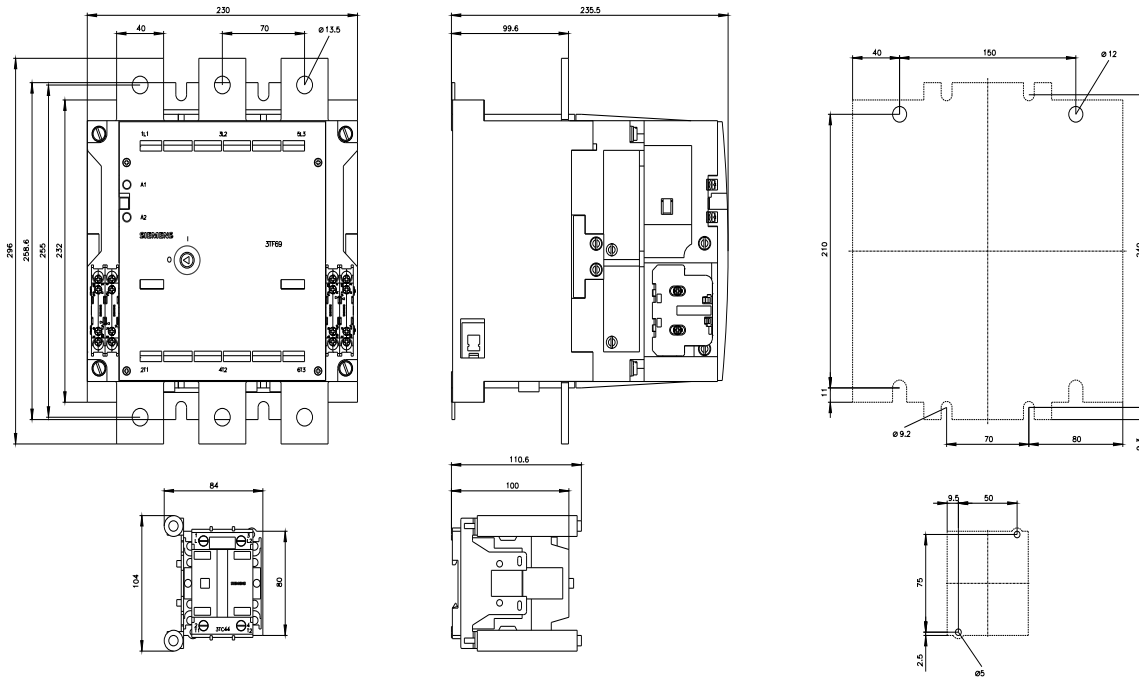
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6933-8QG7&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

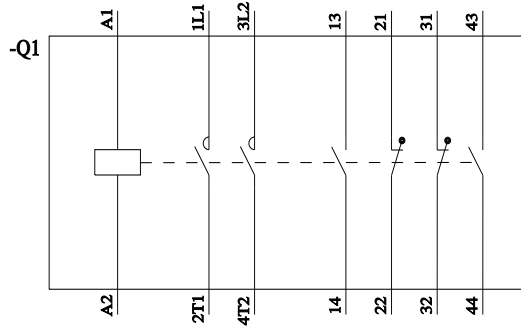
<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-8QG7/char>

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

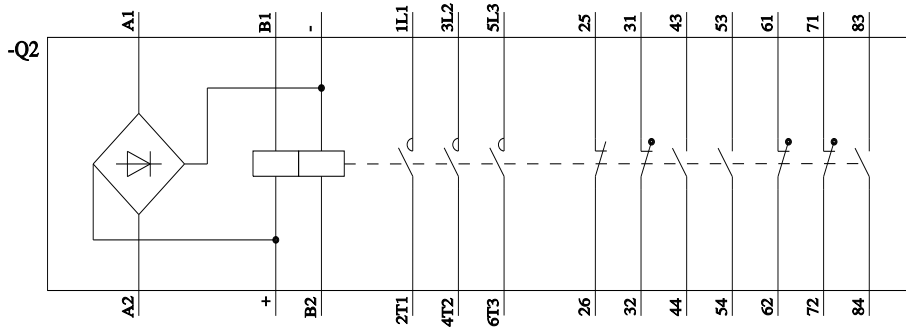
<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6933-8QG7&objecttype=14&gridview=view1>



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