



vacuum contactor AC-3e 630 A, 335 kW / 400 V, AC-3 820 A, 450 kW / 400 V, U_e 690 V, 3-pole, U_c: 200-240 V AC(50/60 Hz) drive: conventional auxiliary contacts 4 NO + 4 NC main circuit: busbar control and auxiliary circuit: screw terminal without overvoltage damping in main circuit

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
• 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
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

<ul style="list-style-type: none"> • at AC-3e rated value maximum 	690 V
operational current	
<ul style="list-style-type: none"> • at AC-1 <ul style="list-style-type: none"> — up to 690 V at ambient temperature 40 °C rated value — up to 690 V at ambient temperature 55 °C rated value 	910 A 850 A
<ul style="list-style-type: none"> • at AC-3 <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value — at 1000 V rated value 	820 A 820 A 820 A 580 A
<ul style="list-style-type: none"> • at AC-3e <ul style="list-style-type: none"> — at 400 V rated value — at 500 V rated value — at 690 V rated value — at 1000 V rated value 	630 A 630 A 630 A 580 A
<ul style="list-style-type: none"> • at AC-4 at 400 V rated value 	690 A
<ul style="list-style-type: none"> • at AC-6a <ul style="list-style-type: none"> — up to 500 V for current peak value n=20 rated value — up to 690 V for current peak value n=20 rated value 	675 A 675 A
<ul style="list-style-type: none"> • at AC-6a <ul style="list-style-type: none"> — up to 400 V for current peak value n=30 rated value — up to 500 V for current peak value n=30 rated value — up to 690 V for current peak value n=30 rated value 	450 A 450 A 450 A
connectable conductor cross-section in main circuit at AC-1	
<ul style="list-style-type: none"> • at 40 °C minimum permissible 	600 mm²
operational current for approx. 200000 operating cycles at AC-4	
<ul style="list-style-type: none"> • at 400 V rated value • at 690 V rated value 	360 A 360 A
operating power	
<ul style="list-style-type: none"> • at AC-3 <ul style="list-style-type: none"> — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value — at 1000 V rated value 	260 kW 450 kW 600 kW 800 kW 800 kW
<ul style="list-style-type: none"> • at AC-3e <ul style="list-style-type: none"> — at 230 V rated value — at 400 V rated value — at 690 V rated value — at 1000 V rated value 	200 kW 355 kW 600 kW 800 kW
operating apparent power at AC-6a	
<ul style="list-style-type: none"> • up to 400 V for current peak value n=20 rated value • up to 690 V for current peak value n=20 rated value 	445 kVA 771 kVA
operating apparent power at AC-6a	
<ul style="list-style-type: none"> • up to 400 V for current peak value n=30 rated value • up to 690 V for current peak value n=30 rated value 	297 kVA 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	70 W
no-load switching frequency at AC	500 1/h
operating frequency	
<ul style="list-style-type: none"> • at AC-1 maximum • at AC-3e <ul style="list-style-type: none"> — at 400 V maximum — at 690 V maximum • at AC-2 at AC-3 maximum 	500 1/h 500 1/h 500 1/h 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	200 ... 240 V
• at 60 Hz rated value	200 ... 240 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	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
apparent pick-up power of magnet coil at AC	
• at 50 Hz	600 VA
• at 60 Hz	600 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	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
apparent holding power of magnet coil at AC	
• at 50 Hz	12.9 VA
• at 60 Hz	12.9 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.31
• at 60 Hz	0.31
closing delay	
• at AC	80 ... 120 ms
opening delay	
• at AC	70 ... 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

<ul style="list-style-type: none"> • at 220 V rated value • at 600 V rated value 	0.9 A 0.22 A
operational current at DC-13	
<ul style="list-style-type: none"> • at 24 V rated value • at 48 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value 	10 A 5 A 1.14 A 0.98 A 0.48 A 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	
<ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value 	820 A 820 A
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 	290 hp 350 hp 700 hp 860 hp
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 assignment 2 required • for short-circuit protection of the auxiliary switch required 	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
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	screw fixing
<ul style="list-style-type: none"> • side-by-side mounting 	Yes
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 	20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm
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 	Connection bar screw-type terminals 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
B10 value with high demand rate according to SN 31920	1 000 000
proportion of dangerous failures	
• with high demand rate according to SN 31920	73 %
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
Certificates/ approvals	
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=3TF6944-0CM7-Z A02>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6944-0CM7-Z A02>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6944-0CM7-Z A02>

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

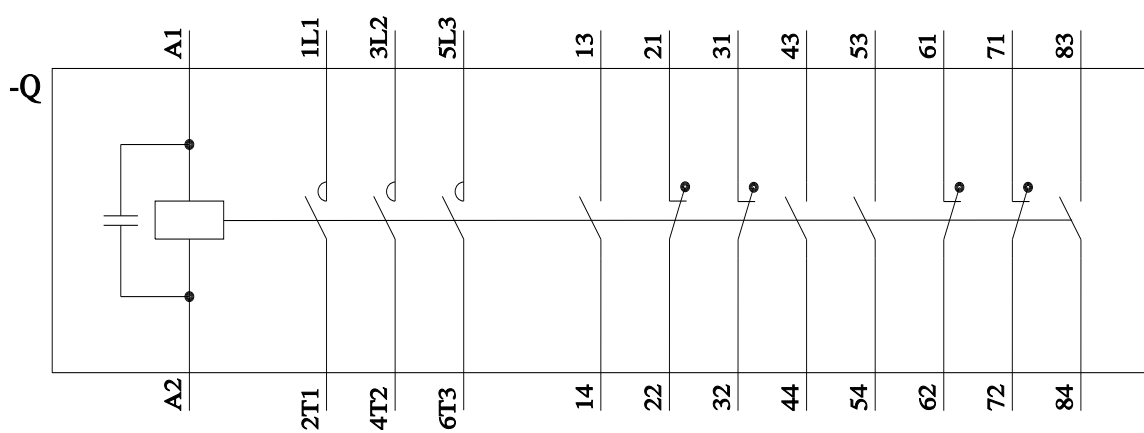
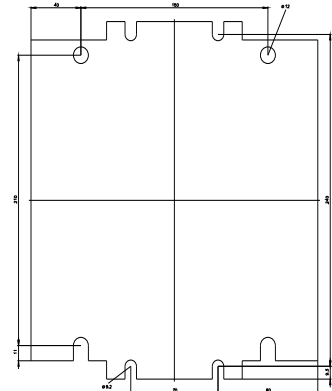
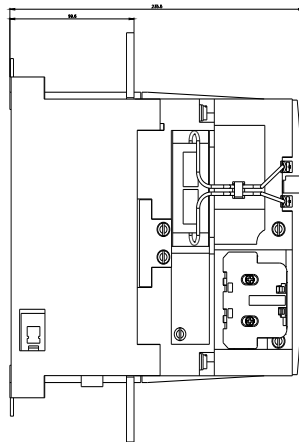
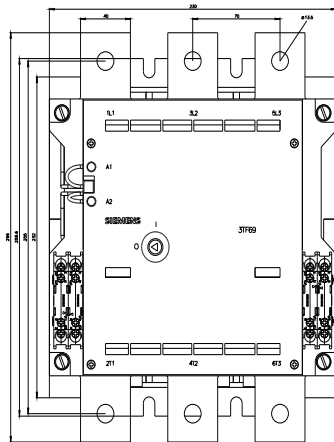
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6944-0CM7-Z A02&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6944-0CM7-Z A02/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6944-0CM7-Z A02&objecttype=14&gridview=view1>



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