



vacuum contactor AC-3e/AC-3 630 A, 335 kW / 400 V, U_e 690 V, 3-pole, U_c: 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	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 Lead monoxide (lead oxide) - 1317-36-8
Weight	19.684 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	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
connectable conductor cross-section in main circuit at AC-1	
• at 40 °C minimum permissible	480 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	300 A
• at 690 V rated value	300 A
operating power	
• 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
operating apparent power at AC-6a	
• 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
operating apparent power at AC-6a	
• 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
thermal short-time current limited to 10 s	5 040 A
power loss [W] at AC-3 at 400 V for rated value of the operational current per conductor	45 W
power loss [W] at AC-3e at 400 V for rated value of the operational current per conductor	35 W
no-load switching frequency at AC	2 000 1/h
operating frequency	
• at AC-1 maximum	700 1/h

<ul style="list-style-type: none"> ● at AC-3e <ul style="list-style-type: none"> — at 400 V maximum — at 690 V maximum ● at AC-2 at AC-3 maximum ● at AC-2 at AC-3e maximum 	<p>500 1/h</p> <p>500 1/h</p> <p>200 1/h</p> <p>200 1/h</p>
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
<ul style="list-style-type: none"> ● at 50 Hz rated value ● at 60 Hz rated value 	<p>380 ... 460 V</p> <p>380 ... 460 V</p>
operating range factor control supply voltage rated value of magnet coil at AC	
<ul style="list-style-type: none"> ● at 50 Hz ● at 60 Hz 	<p>0.8 ... 1.1</p> <p>0.8 ... 1.1</p>
apparent pick-up power	
<ul style="list-style-type: none"> ● at minimum rated control supply voltage at AC <ul style="list-style-type: none"> — at 50 Hz — at 60 Hz ● at maximum rated control supply voltage at AC <ul style="list-style-type: none"> — at 60 Hz — at 50 Hz 	<p>1 200 VA</p> <p>1 200 VA</p> <p>1 850 VA</p> <p>1 850 VA</p>
apparent pick-up power of magnet coil at AC	
<ul style="list-style-type: none"> ● at 50 Hz ● at 60 Hz 	<p>1 200 VA</p> <p>1 200 VA</p>
inductive power factor with closing power of the coil	
<ul style="list-style-type: none"> ● at 50 Hz ● at 60 Hz 	<p>1</p> <p>1</p>
apparent holding power	
<ul style="list-style-type: none"> ● at minimum rated control supply voltage at AC <ul style="list-style-type: none"> — at 50 Hz — at 60 Hz ● at maximum rated control supply voltage at AC <ul style="list-style-type: none"> — at 50 Hz — at 60 Hz 	<p>13.5 VA</p> <p>13.5 VA</p> <p>49 VA</p> <p>49 VA</p>
apparent holding power of magnet coil at AC	
<ul style="list-style-type: none"> ● at 50 Hz ● at 60 Hz 	<p>13.5 VA</p> <p>13.5 VA</p>
inductive power factor with the holding power of the coil	
<ul style="list-style-type: none"> ● at 50 Hz ● at 60 Hz 	<p>0.15</p> <p>0.15</p>
closing delay	
<ul style="list-style-type: none"> ● at AC 	70 ... 120 ms
opening delay	
<ul style="list-style-type: none"> ● at AC 	70 ... 100 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	
<ul style="list-style-type: none"> ● attachable ● instantaneous contact 	<p>4</p> <p>4</p>
number of NO contacts for auxiliary contacts	
<ul style="list-style-type: none"> ● attachable ● instantaneous contact 	<p>4</p> <p>4</p>
operational current at AC-12 maximum	10 A
operational current at AC-15	
<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 	<p>5.6 A</p> <p>3.6 A</p> <p>2.5 A</p> <p>2.3 A</p>
operational current at DC-12 at 440 V rated value	0.33 A
operational current at DC-12	

<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 10 A 3.2 A 2.5 A 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 	630 A 630 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 	231 hp 266 hp 530 hp 664 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: 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
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	276 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 	Connection bar screw-type terminals

<ul style="list-style-type: none"> • at contactor for auxiliary contacts 	Screw-type terminals
width of connection bar	30 mm
thickness of connection bar	6 mm
diameter of holes	11 mm
number of holes	1
type of connectable conductor cross-sections for main contacts	
<ul style="list-style-type: none"> • stranded 	70 ... 240 mm ²
<ul style="list-style-type: none"> • finely stranded with core end processing 	50 ... 240 mm ²
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 	2x (0.5 ... 1.0 mm ²), 2x (1.0 ... 2.5 mm ²)
<ul style="list-style-type: none"> — finely stranded with core end processing 	2x (0.5 ... 1.0 mm ²), 2x (0.75 ... 2.5 mm ²)
<ul style="list-style-type: none"> • for AWG cables for auxiliary contacts 	2x (18 ... 12)
AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> • for main contacts 	500
<ul style="list-style-type: none"> • for auxiliary contacts 	18 ... 12

Safety related data

product function	
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • positively driven operation according to IEC 60947-5-1 	No
<ul style="list-style-type: none"> • suitable for safety function 	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 	40 %
<ul style="list-style-type: none"> • 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

Test Certificates

[Type Test Certificates/Test Report](#)

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=3TF6844-0CQ71>
- Cax online generator
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6844-0CQ71>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
<https://support.industry.siemens.com/cs/ww/en/ps/3TF6844-0CQ71>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

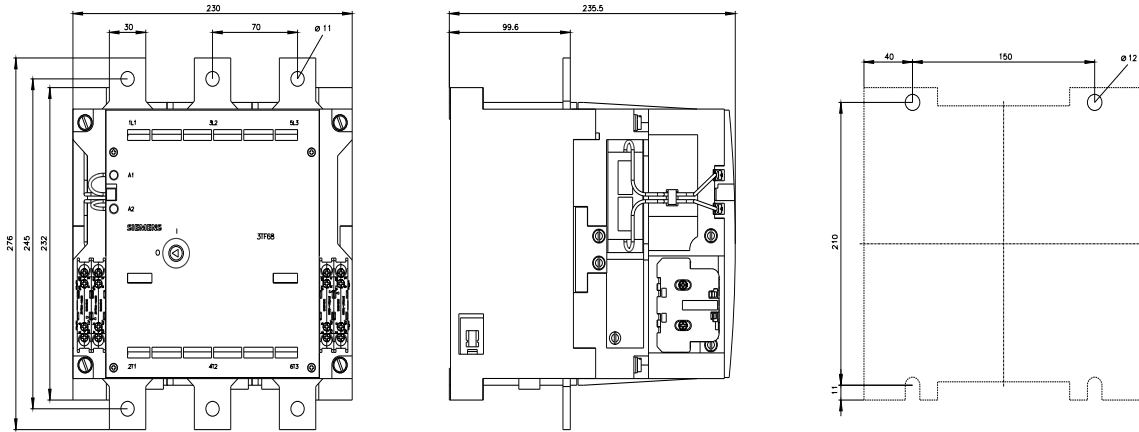
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6844-0CQ71&lang=en

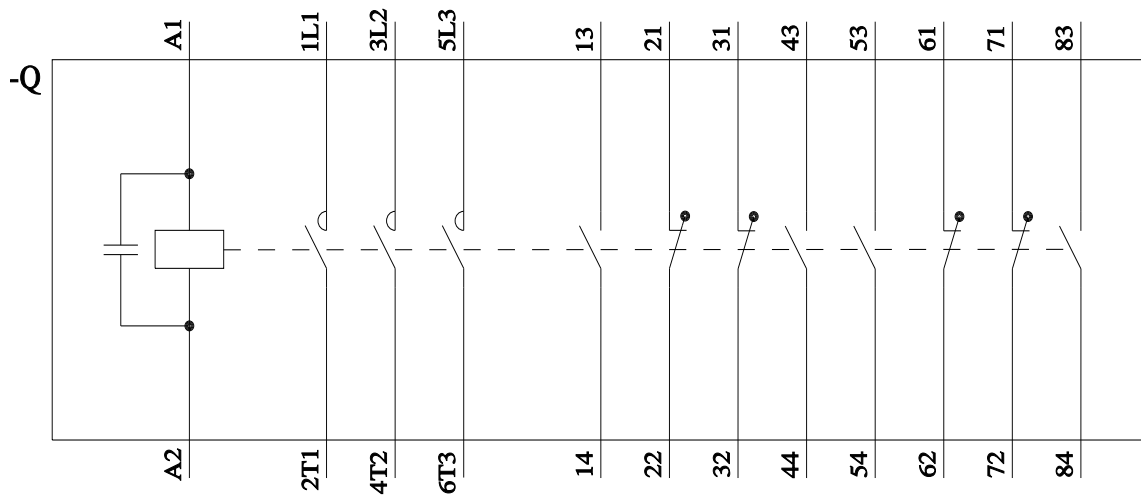
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6844-0CQ71/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6844-0CQ71&objecttype=14&gridview=view1>





last modified:

6/19/2024 