

Contactor, Size 14, 3-pole, AC-3, 335kW, 400/380 V (690 V)
Auxiliary switch 33 (3NO+3NC) Rectifier bridge built-in with reversing
contactor 3TC44 AC operation 220 to 240 V AC 50/60 Hz



product designation	Vacuum contactor
product type designation	3TF6
General technical data	
Size of contactor	14
• Product extension function module for communication	No
• product extension auxiliary switch	No
• Insulation voltage of main circuit with degree of pollution 3 rated value	1 000 V
• Insulation voltage 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 safe isolation in networks with grounded star point	
• between auxiliary and auxiliary circuit	300 V
• between main and auxiliary circuit	500 V
protection class IP	

• on the front	IP00
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 (switching cycles)	
• of contactor typical	5 000 000
reference code acc. to DIN EN 81346-2	Q

Ambient conditions	
• installation altitude at height above sea level maximum	2 000 m
• ambient temperature during operation	-25 ... +55 °C
• ambient temperature during storage	-55 ... +80 °C
relative humidity during operation	10 ... 100 %

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 at 50 Hz rated value	1 000 V
— operating voltage at AC at 60 Hz rated value	1 000 V
• Operating 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
— up to 1000 V at ambient temperature 55 °C rated value	450 A
•	
— operating current at AC-3 at 400 V rated value	630 A
— Operating current at AC-3 at 500 V rated value	630 A
— Operating current at AC-3 at 690 V rated value	630 A
— Operating current at AC-3 at 1000 V rated value	435 A
• Operating current at AC-4 at 400 V rated value	610 A
• Operating current 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
— up to 1000 V for current peak value n=20 rated value	435 A
• Operating current 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
— up to 1000 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
Operating 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
— operating power at AC-3 at 400 V rated value	335 kW
— operating power at AC-3 at 690 V rated value	600 kW
— Operating power at AC-3 at 1000 V rated value	600 kW
Operating apparent output at AC-6a	
• up to 400 V for current peak value n=20 rated value	338 kV·A
• up to 690 V for current peak value n=20 rated value	586 kV·A
• up to 1000 V for current peak value n=20 rated value	752 kV·A
Operating apparent output at AC-6a	
• up to 400 V for current peak value n=30 rated value	226 kV·A
• up to 690 V for current peak value n=30 rated value	390 kV·A
• up to 1000 V for current peak value n=30 rated value	592 kV·A

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 operating current per conductor	45 W
No-load switching frequency at AC	2 000 1/h
• Operating frequency at AC-1 maximum	700 1/h
• Operating frequency at AC-2 at AC-3 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	220 ... 240 V
• control supply voltage at AC at 60 Hz rated value	220 ... 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 of magnet coil at AC	
• at 50 Hz	1 000 V·A
• at 60 Hz	1 000 V·A
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 V·A
• at 60 Hz	11 V·A
Inductive power factor with the holding power of the coil	
• at 50 Hz	1
• at 60 Hz	1
Closing delay	
• at AC	35 ... 90 ms
Opening delay	
• at AC	65 ... 90 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
• Number of NC contacts for auxiliary contacts instantaneous contact	3
Number of NO contacts for auxiliary contacts	
• attachable	3

• instantaneous contact	3
Operating current at AC-12 maximum	10 A
Operating 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
Operating current at DC-12 at 440 V rated value	0.33 A
• Operating current at DC-12 at 24 V rated value	10 A
• operating current at DC-12 at 48 V rated value	10 A
• operating current at DC-12 at 110 V rated value	3.2 A
• Operating current at DC-12 at 125 V rated value	2.5 A
• Operating current at DC-12 at 220 V rated value	0.9 A
• Operating current at DC-12 at 600 V rated value	0.22 A
• Operating current at DC-13 at 24 V rated value	10 A
• operating current at DC-13 at 48 V rated value	5 A
• operating current at DC-13 at 110 V rated value	1.14 A
• Operating current at DC-13 at 125 V rated value	0.98 A
• Operating current at DC-13 at 220 V rated value	0.48 A
• Operating current at DC-13 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 three-phase AC motor	
• at 480 V rated value	630 A
• at 600 V rated value	630 A
yielded mechanical performance [hp]	
• for three-phase AC motor	
— at 200/208 V rated value	231 hp
— at 220/230 V rated value	266 hp
— at 460/480 V rated value	530 hp
— at 575/600 V rated value	664 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
- Design of the fuse link for short-circuit protection of the main circuit with type of assignment 2 required
- design of the fuse link 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
• mounting type	screw fixing
• mounting type side-by-side mounting	Yes
height	232 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

Width of connection bar	30 mm
Thickness of connection bar	6 mm
Diameter of holes	11 mm
Number of holes	1
• type of electrical connection for main current circuit	Connection bar
• type of electrical connection for auxiliary and control current circuit	screw-type terminals

<ul style="list-style-type: none"> • Type of electrical connection at contactor for auxiliary contacts 	Screw-type terminals
<ul style="list-style-type: none"> • Type of connectable conductor cross-sections for main contacts stranded 	70 ... 240 mm ²
<ul style="list-style-type: none"> • type of connectable conductor cross-sections for main contacts finely stranded with core end processing 	50 ... 240 mm ²
<ul style="list-style-type: none"> • type of connectable conductor cross-sections at AWG conductors for main contacts 	2/0 ... 500 kcmil
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"> • single or multi-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
<ul style="list-style-type: none"> • type of connectable conductor cross-sections for auxiliary contacts solid 	2x (0.5 ... 1.0 mm ²), 2x (1.0 ... 2.5 mm ²)
<ul style="list-style-type: none"> • type of connectable conductor cross-sections for auxiliary contacts 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"> • type of connectable conductor cross-sections at AWG conductors 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 acc. 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 acc. to IEC 60947-5-1 	No

Certificates/ approvals

General Product Approval	Functional Safety/Safety of Machinery
--------------------------	---------------------------------------



[Type Examination Certificate](#)

Test Certificates	Marine / Shipping	other
-------------------	-------------------	-------

[Special Test Certificate](#)

[Miscellaneous](#)



[Confirmation](#)

Railway

[Special Test Certificate](#)

Further information

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=3TF6833-1QL7>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6833-1QL7>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6833-1QL7>

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

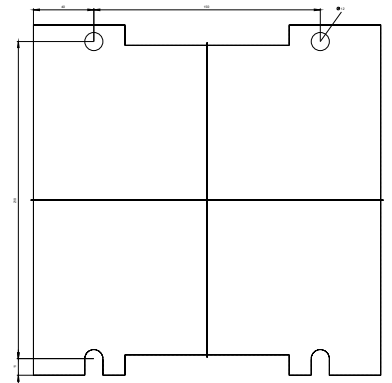
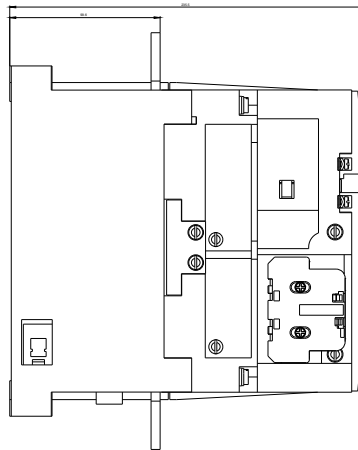
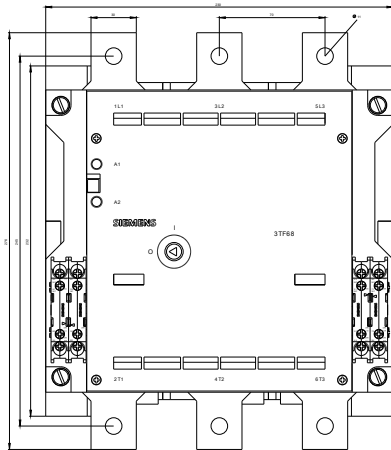
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6833-1QL7&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6833-1QL7/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6833-1QL7&objecttype=14&gridview=view1>



last modified:

08/25/2020