

Contactor, Size 14, 3-pole, AC-3, 450 kW, 400/380 V (690 V) Auxiliary switch 33 (3 NO+3 NC) with reversing contactor 3TC4417-4A and series resistor DC economy circuit 24 V DC



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 safe isolation 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 DC	8.6g / 5 ms, 5.1g / 10 ms
shock resistance with sine pulse	
• at DC	13.5 g / 5 ms, 7.8 g / 10 ms
mechanical service life (switching cycles)	
• of contactor typical	5 000 000
reference code acc. to IEC 81346-2	Q
Substance Prohibitation (Date)	01.03.2017 00:00:00
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 acc. 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
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
— up to 1000 V at ambient temperature 55 °C rated value	800 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-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 690 V rated value	800 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 kV·A
• up to 690 V for current peak value n=20 rated value	771 kV·A
• up to 1000 V for current peak value n=20 rated value	1 003 kV·A
operating apparent power at AC-6a	
• up to 400 V for current peak value n=30 rated value	297 kV·A
• up to 690 V for current peak value n=30 rated value	514 kV·A
• up to 1000 V for current peak value n=30 rated value	778 kV·A
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
no-load switching frequency at AC	1 000 1/h
operating frequency	

<ul style="list-style-type: none"> • at AC-1 maximum 	700 1/h
<ul style="list-style-type: none"> • at AC-2 at AC-3 maximum 	200 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC	
<ul style="list-style-type: none"> • rated value 	24 V
operating range factor control supply voltage rated value of magnet coil at DC	
<ul style="list-style-type: none"> • initial value 	0.8
<ul style="list-style-type: none"> • full-scale value 	1.1
closing power of magnet coil at DC	960 W
holding power of magnet coil at DC	20.6 W
closing delay	
<ul style="list-style-type: none"> • at DC 	86 ... 280 ms
opening delay	
<ul style="list-style-type: none"> • at DC 	19 ... 25 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 	3
<ul style="list-style-type: none"> • instantaneous contact 	3
number of NO contacts for auxiliary contacts	
<ul style="list-style-type: none"> • attachable 	3
<ul style="list-style-type: none"> • instantaneous contact 	3
operational current at AC-12 maximum	10 A
operational current at AC-15	
<ul style="list-style-type: none"> • at 230 V rated value 	5.6 A
<ul style="list-style-type: none"> • at 400 V rated value 	3.6 A
<ul style="list-style-type: none"> • at 500 V rated value 	2.5 A
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • at 24 V rated value 	10 A
<ul style="list-style-type: none"> • at 48 V rated value 	10 A
<ul style="list-style-type: none"> • at 110 V rated value 	3.2 A
<ul style="list-style-type: none"> • at 125 V rated value 	2.5 A
<ul style="list-style-type: none"> • at 220 V rated value 	0.9 A
<ul style="list-style-type: none"> • at 600 V rated value 	0.22 A
operational current at DC-13	
<ul style="list-style-type: none"> • at 24 V rated value 	10 A
<ul style="list-style-type: none"> • at 48 V rated value 	5 A
<ul style="list-style-type: none"> • at 110 V rated value 	1.14 A
<ul style="list-style-type: none"> • at 125 V rated value 	0.98 A
<ul style="list-style-type: none"> • at 220 V rated value 	0.48 A
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • at 480 V rated value 	820 A
<ul style="list-style-type: none"> • at 600 V rated value 	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 <ul style="list-style-type: none"> side-by-side mounting 	screw fixing 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	
width of connection bar	40 mm
thickness of connection bar	6 mm
diameter of holes	13.5 mm
number of holes	1
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
type of connectable conductor cross-sections <ul style="list-style-type: none"> for main contacts <ul style="list-style-type: none"> stranded finely stranded with core end processing at AWG cables for main contacts 	50 ... 240 mm² 50 ... 240 mm² 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 mm²
connectable conductor cross-section for auxiliary contacts <ul style="list-style-type: none"> solid or stranded finely stranded with core end processing 	0.5 ... 2.5 mm² 0.5 ... 2.5 mm²
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 at AWG cables for auxiliary contacts 	2x (0.5 ... 1.0 mm²), 2x (1.0 ... 2.5 mm²) 2x (0.5 ... 1.0 mm²), 2x (0.75 ... 2.5 mm²) 2x (18 ... 12)

AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> • for main contacts • for auxiliary contacts 	500 18 ... 12

Safety related data	
product function 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
product function positively driven operation acc. to IEC 60947-5-1	No
protection class IP on the front acc. to IEC 60529	IP00

Certificates/ approvals	
General Product Approval	Functional Safety/Safety of Machinery



[Type Examination Certificate](#)

Declaration of Conformity	Test Certificates	Marine / Shipping
---------------------------	-------------------	-------------------



[UK Declaration of Conformity](#)

[Special Test Certificate](#)

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



Marine / Shipping	other	Railway
-------------------	-------	---------



[Confirmation](#)

[Miscellaneous](#)

[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=3TF6933-1DB4>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6933-1DB4>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-1DB4>

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

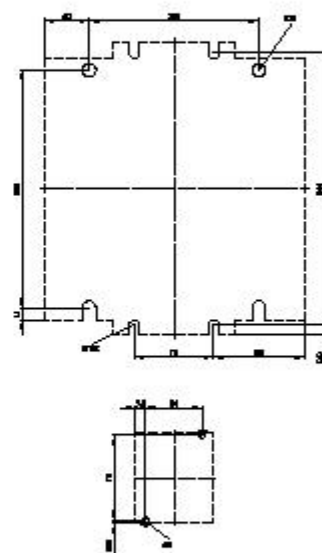
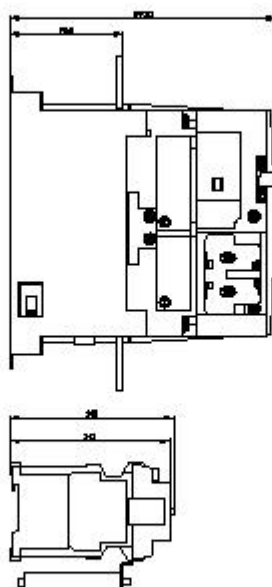
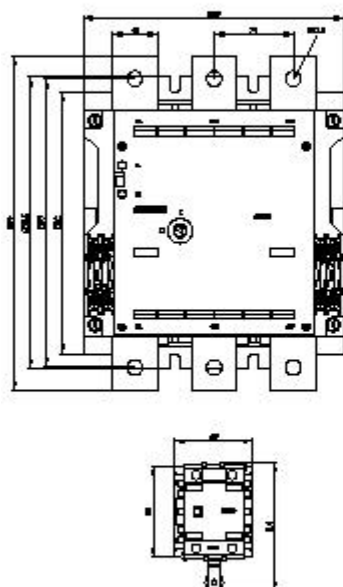
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6933-1DB4&lang=en

Characteristic: Tripping characteristics, I_t, Let-through current

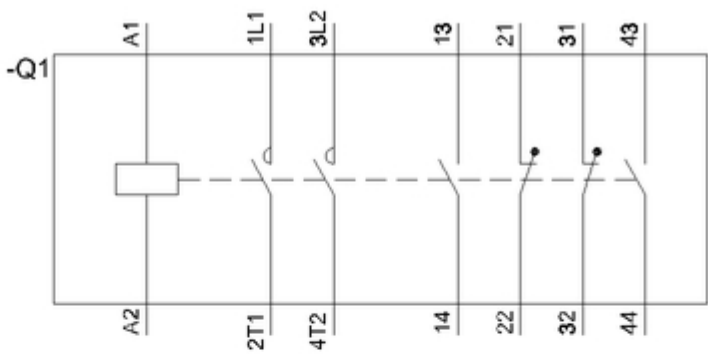
<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-1DB4/char>

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

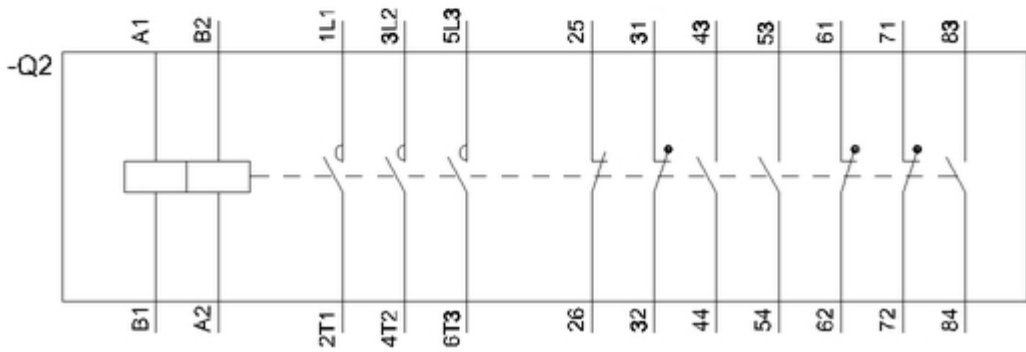
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6933-1DB4&objecttype=14&gridview=view1>



3TC4417-0Axx



3TF(68,69)33-(1D,8D)xx



last modified:

7/2/2021 