

Contactor, Size 14, 3-pole, AC-3, 450 kW, 400/380 V (1000 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	
<ul style="list-style-type: none"> function module for communication auxiliary switch 	No No
insulation voltage	
<ul style="list-style-type: none"> of main circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value 	1 000 V 690 V
surge voltage resistance	
<ul style="list-style-type: none"> of main circuit rated value of auxiliary circuit rated value 	8 kV 6 kV
maximum permissible voltage for safe isolation in networks with grounded star point	
<ul style="list-style-type: none"> between auxiliary and auxiliary circuit between main and auxiliary circuit 	300 V 500 V
shock resistance at rectangular impulse	
<ul style="list-style-type: none"> at DC 	8.6g / 5 ms, 5.1g / 10 ms
shock resistance with sine pulse	
<ul style="list-style-type: none"> at DC 	13.5 g / 5 ms, 7.8 g / 10 ms
mechanical service life (switching cycles)	
<ul style="list-style-type: none"> of contactor typical 	5 000 000
reference code acc. to IEC 81346-2	Q
Substance Prohibition (Date)	01.03.2017 00:00:00
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
<ul style="list-style-type: none"> during operation during storage 	-25 ... +55 °C -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	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
— 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 • at AC-2 at AC-3 maximum 	700 1/h 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 • full-scale value 	0.8 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 • instantaneous contact 	3 3
number of NO contacts for auxiliary contacts	
<ul style="list-style-type: none"> • attachable • instantaneous contact 	3 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 • at 400 V rated value • at 500 V rated value • at 690 V rated value 	5.6 A 3.6 A 2.5 A 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 • 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 	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	
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 mm ² 50 ... 240 mm ² 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"> • solid or stranded • finely stranded with core end processing 	0.5 ... 2.5 mm ² 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 • at 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	
<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	Declaration of Conformity



[Type Examination Certificate](#)



Declaration of Conformity	Test Certificates	Marine / Shipping
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[UK Declaration of Conformity](#)

[Special Test Certificate](#)

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



Marine / Shipping	other	Railway
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[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=3TF6933-8DB4>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6933-8DB4>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-8DB4>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6933-8DB4&lang=en

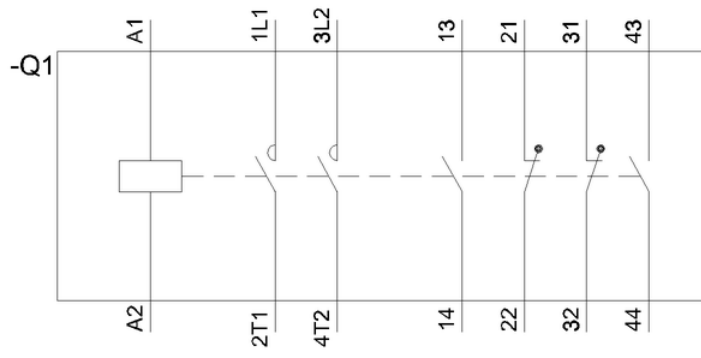
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-8DB4/char>

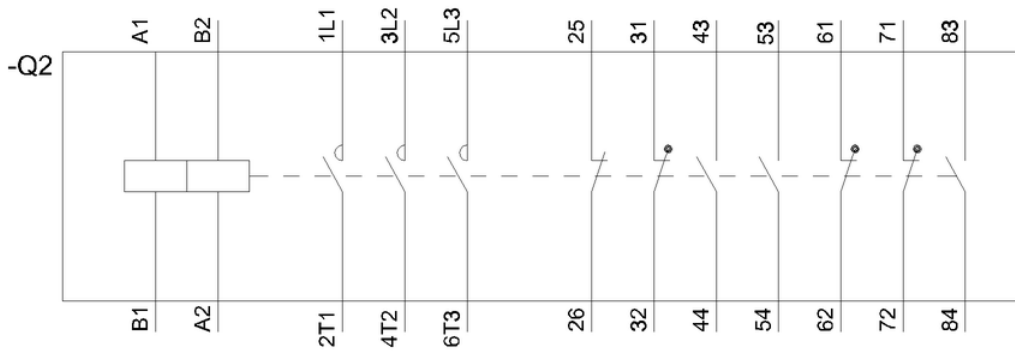
Further characteristics (e.g. electrical endurance, switching frequency)

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6933-8DB4&objecttype=14&gridview=view1>

3TC4417-0Axx



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