

Contactor, Size 14, 3-pole, AC-3 450 kW, 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 without overvoltage attenuation in main circuit



product designation
product type designation

Vacuum contactor
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 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

• at AC-3e rated value maximum	690 V
operational current	
• at AC-1 — up to 690 V at ambient temperature 40 °C rated value — up to 690 V at ambient temperature 55 °C rated value • at AC-3 — at 400 V rated value — at 500 V rated value — at 690 V rated value • at AC-3e — at 400 V rated value — at 500 V rated value — at 690 V rated value • at AC-4 at 400 V rated value • at AC-6a — up to 500 V for current peak value n=20 rated value — up to 690 V for current peak value n=20 rated value • at AC-6a — 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	910 A 850 A 820 A 820 A 820 A 630 A 630 A 630 A 690 A 675 A 675 A 450 A 450 A 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 • at 690 V rated value	360 A 360 A
operating power	
• at AC-3 — at 230 V rated value — at 400 V rated value — at 690 V rated value • at AC-3e — at 230 V rated value — at 400 V rated value — at 690 V rated value	260 kW 450 kW 800 kW 200 kW 335 kW 600 kW
operating apparent power at AC-6a	
• 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	
• 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	1 000 1/h
operating frequency	
• at AC-1 maximum • at AC-3e — at 400 V maximum — at 690 V maximum • at AC-2 at AC-3 maximum • at AC-2 at AC-3e maximum	700 1/h 500 1/h 500 1/h 200 1/h 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 • at 60 Hz rated value	220 ... 240 V
operating range factor control supply voltage rated value of magnet coil at AC	220 ... 240 V
• at 50 Hz • at 60 Hz	0.8 ... 1.1
apparent pick-up power of magnet coil at AC	0.8 ... 1.1
• at 50 Hz • at 60 Hz	1 150 VA
inductive power factor with closing power of the coil	1 150 VA
• at 50 Hz • at 60 Hz	1
apparent holding power of magnet coil at AC	1
• at 50 Hz • at 60 Hz	11 VA
inductive power factor with the holding power of the coil	11 VA
• at 50 Hz • at 60 Hz	1
closing delay	1
• at AC	45 ... 160 ms
opening delay	
• at AC	30 ... 80 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 • instantaneous contact	3
number of NO contacts for auxiliary contacts	3
• attachable • instantaneous contact	3
operational current at AC-12 maximum	10 A
operational current at AC-15	
• at 230 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value	5.6 A
operational current at DC-12 at 440 V rated value	3.6 A
operational current at DC-12	2.5 A
• 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	2.3 A
operational current at DC-13	0.33 A
• 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
contact reliability of auxiliary contacts	10 A
	5 A
	1.14 A
	0.98 A
	0.48 A
	0.07 A
	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	
• at 480 V rated value • at 600 V rated value	820 A
yielded mechanical performance [hp]	820 A
• for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value	290 hp
	350 hp
	700 hp

— at 575/600 V rated value	860 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 - 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
side-by-side mounting	Yes
height	295 mm
width	230 mm
depth	237 mm
required spacing	
- with side-by-side mounting - forwards - upwards - downwards - at the side - for grounded parts - forwards - upwards - at the side - downwards - for live parts - 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	
- 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 - 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	
finely stranded with core end processing	240 ... 50 mm²
connectable conductor cross-section for auxiliary contacts	
- 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	
- for auxiliary contacts - 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	
- for main contacts - for auxiliary contacts	500 18 ... 12

Safety related data

product function

- mirror contact according to IEC 60947-4-1
- positively driven operation according to IEC 60947-5-1

protection class IP on the front according to IEC 60529

Yes; One NC contact each must be connected in series for the right and left auxiliary switch block respectively

No

IP00

Certificates/ approvals

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=3TF6933-1QL7-Z A02>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6933-1QL7-Z A02>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-1QL7-Z A02>

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

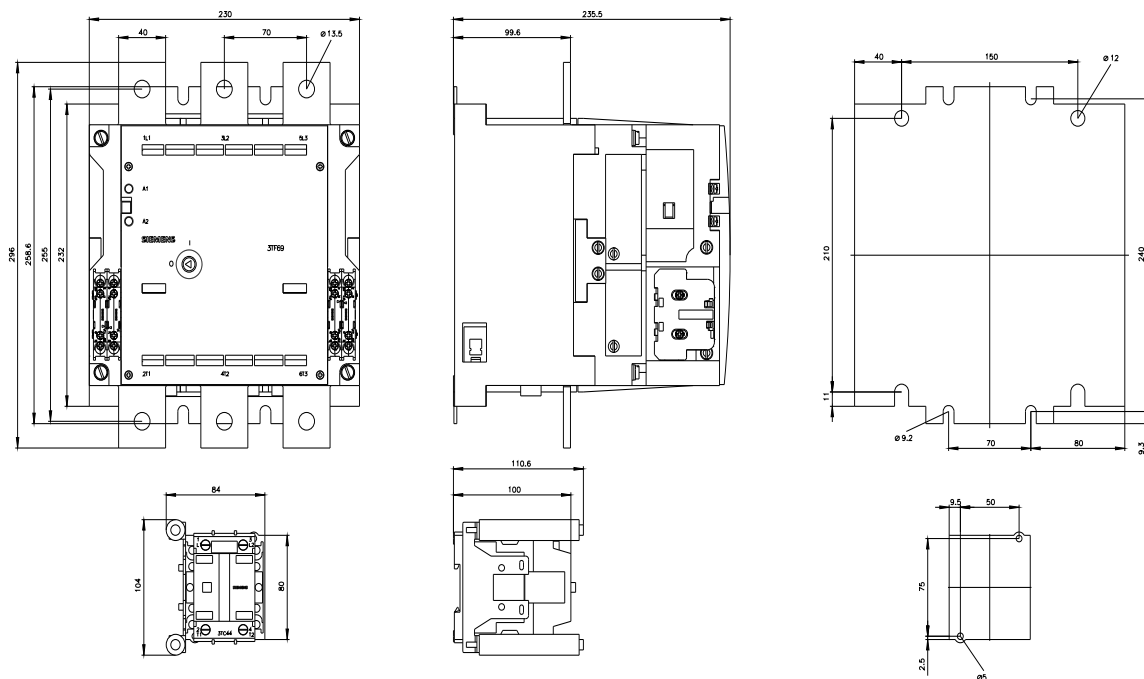
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6933-1QL7-Z A02&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

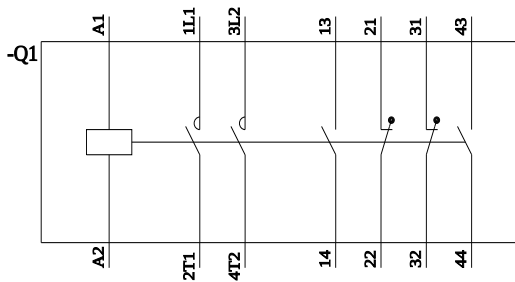
<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-1QL7-Z A02/char>

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

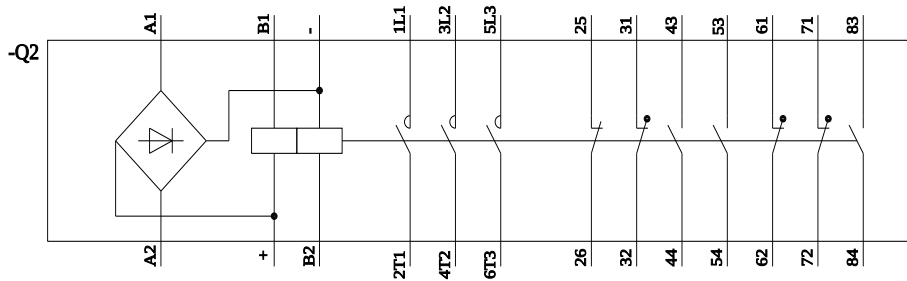
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6933-1QL7-Z A02&objecttype=14&gridview=view1>



3TY7684-0Qxx



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



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