SIEMENS

Data sheet 3TF6944-0CM7

Contactor, Size 14, 3-pole, AC-3, 450 kW, 400/380 V (690 V)
Auxiliary switch 44 (4NO+4NC) AC operation 200...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
• 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	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 (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
• 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
— at 60 Hz rated value	1 000 V
Operating 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 mm²
Operating 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 output 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 output 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 operating current per conductor	70 W
No-load switching frequency at AC	1 000 1/h
Operating frequency	
• at AC-1 maximum	700 1/h

• 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	200 ... 240 V
• at 60 Hz rated value	200 ... 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	600 V·A
• at 60 Hz	600 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	12.9 V·A
• at 60 Hz	12.9 V·A
Inductive power factor with the holding power of the coil	
• at 50 Hz	0.31
• at 60 Hz	0.31
Closing delay	
• at AC	80 ... 120 ms
Opening delay	
• at AC	70 ... 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	4
• instantaneous contact	4
Number of NO contacts for auxiliary contacts	
• attachable	4
• instantaneous contact	4
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
• at 48 V rated value	10 A
• at 110 V rated value	3.2 A
• at 125 V rated value	2.5 A
• at 220 V rated value	0.9 A
• at 600 V rated value	0.22 A
Operating current at DC-13	
• at 24 V rated value	10 A
• at 48 V rated value	5 A
• at 110 V rated value	1.14 A
• at 125 V rated value	0.98 A
• at 220 V rated value	0.48 A
• 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	820 A
• at 600 V rated value	820 A
Yielded mechanical performance [hp]	
• for three-phase AC motor	
— at 200/208 V rated value	290 hp
— at 220/230 V rated value	350 hp
— at 460/480 V rated value	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	gG: 1250 A (690 V, 100 kA)
— with type of assignment 2 required	gG: 630 A (690 V, 50 kA), aM: 630 A (690 V, 50 kA), BS88: 630 A (690 V, 50 kA)
• for short-circuit protection of the auxiliary switch required	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
• Side-by-side mounting	Yes

Height	295 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	40 mm
Thickness of connection bar	6 mm
Diameter of holes	13.5 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
• Type of electrical connection at contactor for auxiliary contacts	Screw-type terminals
Type of connectable conductor cross-sections	
• for main contacts	
— stranded	50 ... 240 mm²
— finely stranded with core end processing	50 ... 240 mm²
• at AWG conductors for main contacts	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	
• single or multi-stranded	0.5 ... 2.5 mm²
• finely stranded with core end processing	0.5 ... 2.5 mm²

Type of connectable conductor cross-sections	
• for auxiliary contacts	
— solid	2x (0.5 ... 1.0 mm²), 2x (1.0 ... 2.5 mm²)
— finely stranded with core end processing	2x (0.5 ... 1.0 mm²), 2x (0.75 ... 2.5 mm²)
• at AWG conductors for auxiliary contacts	2x (18 ... 12)
AWG number as coded connectable conductor cross section	
• for main contacts	500
• for auxiliary contacts	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
• positively driven operation acc. to IEC 60947-5-1	No

Certificates/ approvals

General Product Approval					Functional Safety/Safety of Machinery
CCC	CSA	UR	UL	EAC	Type Examination Certificate

Declaration of Conformity	Test Certificates			Marine / Shipping
EG-Konf.	Miscellaneous	Type Test Certificates/Test Report	Special Test Certificate	Miscellaneous	BUREAU VERITAS

Marine / Shipping		other		Railway
RMRS	DNV·GL DNVGL.COM/AF	Miscellaneous	Confirmation	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=3TF6944-0CM7

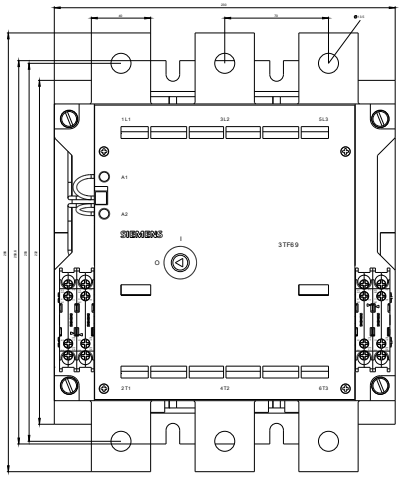
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6944-0CM7

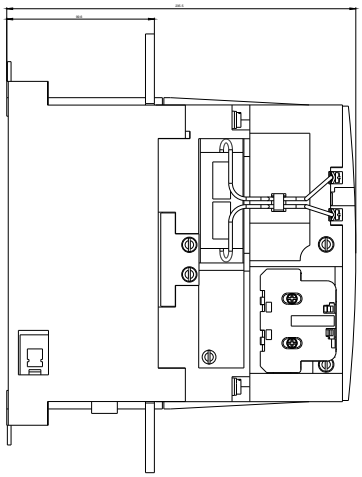
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3TF6944-0CM7

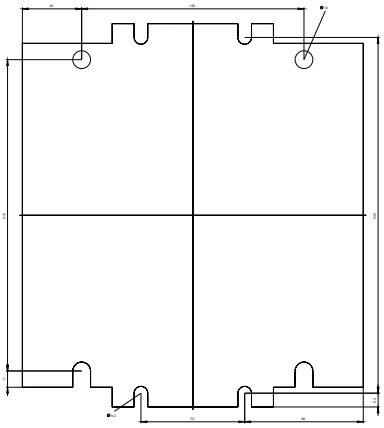
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6944-0CM7&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3TF6944-0CM7/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6944-0CM7&objecttype=14&gridview=view1







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