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
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 (switching 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 	910 A
 up to 690 V at ambient temperature 55 °C rated value 	850 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 AC-3e	
— at 400 V rated value	630 A
— at 500 V rated value	630 A
— at 690 V rated value	630 A
at AC-4 at 400 V rated value	690 A
at AC-4 at 400 v rated value at AC-6a	00071
— up to 500 V for current peak value n=20 rated	675 A
— up to 500 V for current peak value n=20 rated value	0/3 A
 up to 690 V for current peak value n=20 rated value 	675 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
connectable conductor cross-section in main circuit at AC-1	
 at 40 °C minimum permissible 	600 mm²
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 AC-3e	
— at 230 V rated value	200 kW
— at 400 V rated value	335 kW
— at 690 V rated value	600 kW
operating apparent power at AC-6a	
• up to 400 V for current peak value n=20 rated value	445 kVA
• up to 690 V for current peak value n=20 rated value	771 kVA
operating apparent power at AC-6a	
• up to 400 V for current peak value n=30 rated value	297 kVA
• up to 690 V for current peak value n=30 rated value	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
	1 000 1/11
operating frequency	700.1/h
• at AC 30	700 1/h
• at AC-3e	
	E00.1/b
— at 400 V maximum — at 690 V maximum	500 1/h 500 1/h

e at AC-2 at AG-3e maximum		
Section Control Circuit/ Control		
Type of voltage of the control supply voltage AC	at AC-2 at AC-3e maximum	200 1/h
Control supply voltage at AC	Control circuit/ Control	
	type of voltage of the control supply voltage	AC
■ at 80 Hz rated value operating range factor control supply voltage rated value of magnet coll at AC ■ at 50 Hz ■ at 80 Hz apparent pick-up power of magnet coll at AC ■ at 50 Hz ■ at 80 Hz ■ at 80 Hz ■ at 80 Hz ■ at 80 Hz apparent holding power of magnet coll at AC ■ at 50 Hz ■ at 80 Hz apparent holding power of magnet coll at AC ■ at 50 Hz ■ at 80 Hz apparent holding power of magnet coll at AC ■ at 50 Hz ■ at 80 Hz apparent holding power of magnet coll at AC ■ at 50 Hz ■ at 80 Hz apparent holding power of magnet coll at AC ■ at 50 Hz ■ at 80 Hz apparent holding power of magnet coll at AC ■ at 50 Hz ■ at 80 Hz ■	control supply voltage at AC	
operating range factor control supply voltage rated value of magnet coil at AC	at 50 Hz rated value	200 240 V
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• at 50 Hz	● at 60 Hz	600 VA
• at 50 Hz	inductive power factor with closing power of the coil	
apparent holding power of magnet coil at AC at 150 Hz tal 60 Hz 12.9 VA 10.31 10.9 Wall of Wall 4.1 4.0 Valed value 10.4 Valed value 10.5 Valed value 10.6 Valed value 10.7 Valed value 10.8 Valed value 10.9 Valed value 10.4 Valed valu		1
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* at 50 Hz		
at 160 Hz 12.9 VA 10.0		12 9 VA
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Closing delay		
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 at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts 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) 	number of NC contacts for auxiliary contacts	4 4 4 10 A 5.6 A 3.6 A 2.5 A 2.3 A 0.33 A 10 A 10 A 3.2 A 2.5 A 0.9 A 0.22 A
 at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts 0.98 A 0.48 A 0.07 A one incorrect switching operation of 100 million switching operations (17 	number of NC contacts for auxiliary contacts	4 4 4 10 A 5.6 A 3.6 A 2.5 A 2.3 A 0.33 A 10 A 10 A 3.2 A 2.5 A 0.9 A 0.22 A
 at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts 0.48 A 0.07 A one incorrect switching operation of 100 million switching operations (17 	number of NC contacts for auxiliary contacts	4 4 4 10 A 5.6 A 3.6 A 2.5 A 2.3 A 0.33 A 10 A 10 A 3.2 A 2.5 A 0.9 A 0.22 A
• at 600 V rated value contact reliability of auxiliary contacts 0.07 A one incorrect switching operation of 100 million switching operations (17	number of NC contacts for auxiliary contacts	4 4 4 10 A 5.6 A 3.6 A 2.5 A 2.3 A 0.33 A 10 A 10 A 3.2 A 2.5 A 0.9 A 0.22 A 10 A 5 A 1.14 A
contact reliability of auxiliary contacts one incorrect switching operation of 100 million switching operations (17	number of NC contacts for auxiliary contacts	4 4 4 10 A 5.6 A 3.6 A 2.5 A 2.3 A 0.33 A 10 A 10 A 3.2 A 2.5 A 0.9 A 0.22 A 10 A 5 A 1.14 A 0.98 A
	number of NC contacts for auxiliary contacts	4 4 4 10 A 5.6 A 3.6 A 2.5 A 2.3 A 0.33 A 10 A 10 A 3.2 A 2.5 A 0.9 A 0.22 A 10 A 5 A 1.14 A 0.98 A 0.48 A
V, 5 mA)	number of NC contacts for auxiliary contacts	4 4 4 10 A 5.6 A 3.6 A 2.5 A 2.3 A 0.33 A 10 A 10 A 3.2 A 2.5 A 0.9 A 0.22 A 10 A 5 A 1.14 A 0.98 A 0.48 A 0.07 A

UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
• at 480 V rated value	820 A
at 400 V rated value at 600 V rated value	820 A
yielded mechanical performance [hp]	02077
• for 3-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	7,000 / 4,000
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
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	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	
type of electrical connection	
for main current circuit	Connection bar
 for auxiliary and control circuit 	screw-type terminals
at contactor for auxiliary contacts	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	F0 040 3
— stranded	50 240 mm²
— finely stranded with core end processing	50 240 mm²
at AWG cables 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	
 solid or 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 cables 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 according 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 according to IEC 60947- 5-1 	No
protection class IP on the front according to IEC 60529	IP00; IP20 with cover
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with cover
Cortificatos/approvals	

Certificates/ approvals

General Product Approval

Functional Safety/Safety of Machinery











Type Examination Certificate

Declaration of Conformity

Test Certificates

Marine / Shipping





Type Test Certificates/Test Report

Special Test Certificate

Miscellaneous



Marine / Shipping

other







Confirmation

Miscellaneous

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, ...)

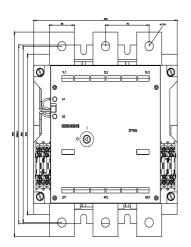
 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6944-0CM7\&lang=en}}$

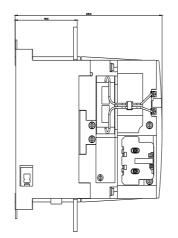
Characteristic: Tripping characteristics, I2t, Let-through current

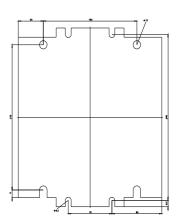
https://support.industry.siemens.com/cs/ww/en/ps/3TF6944-0CM7/char

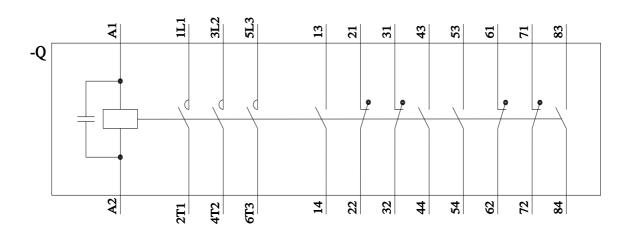
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6944-0CM7&objecttype=14&gridview=view1









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