



contactor, DC-3/DC-5, 32 A, 2-pole, 120 V AC 50/60 Hz, auxiliary contacts: 1 NO + 1 NC (solid-state compatible), screw terminal, frame size 2

product designation	Contactor
product type designation	3TC
General technical data	
size of contactor	2
product extension	
• function module for communication	No
• auxiliary switch	Yes
insulation voltage rated value	800 V
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	300 V
shock resistance at rectangular impulse	
• at AC	7,5g / 5 ms, 3,4g / 10 ms
mechanical service life (operating cycles)	
• of contactor typical	10 000 000
• of the contactor with added auxiliary switch block typical	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	02/01/2012
SVHC substance name	Lead - 7439-92-1 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol - 119-47-1
Weight	0.744 kg
Ambient conditions	
ambient temperature	
• during operation	-25 ... +55 °C
• during storage	-50 ... +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
Main circuit	
number of poles	2
number of poles for main current circuit	2
number of NO contacts for main contacts	2
number of NC contacts for main contacts	0
type of voltage	DC
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	32 A
— at 110 V rated value	32 A
— at 220 V rated value	32 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	32 A

— at 110 V rated value	32 A
— at 220 V rated value	32 A
— at 440 V rated value	32 A
— at 600 V rated value	32 A
— at 750 V rated value	32 A
● at DC-3 at DC-5	
— at 220 V rated value	32 A
— at 600 V rated value	21 A
— at 750 V rated value	7.5 A
● at 1 current path at DC-3 at DC-5	
— at 24 V rated value	32 A
— at 110 V rated value	32 A
— at 220 V rated value	32 A
● with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	32 A
— at 110 V rated value	32 A
— at 220 V rated value	32 A
— at 440 V rated value	29 A
— at 600 V rated value	21 A
— at 750 V rated value	7.5 A
operating power	
● at DC-1	
— at 110 V rated value	3.5 kW
— at 220 V rated value	7 kW
— at 440 V rated value	14 kW
— at 750 V rated value	24 kW
● at DC-3 at DC-5	
— at 110 V rated value	2.5 kW
— at 220 V rated value	5 kW
— at 440 V rated value	9 kW
— at 600 V rated value	9 kW
— at 750 V rated value	4 kW
operating frequency	
● at DC-1 maximum	1 500 1/h
● at DC-3 maximum	750 1/h
● at DC-5 maximum	750 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
● at 50 Hz rated value	120 V
● at 60 Hz rated value	120 V
operating range factor control supply voltage rated value of magnet coil at AC	
● at 50 Hz	0.8 ... 1.1
● at 60 Hz	0.85 ... 1.1
apparent pick-up power of magnet coil at AC	
● at 50 Hz	68 VA
● at 60 Hz	95 VA
inductive power factor with closing power of the coil	
● at 50 Hz	0.86
● at 60 Hz	0.79
apparent holding power of magnet coil at AC	
● at 50 Hz	10 VA
● at 60 Hz	12 VA
inductive power factor with the holding power of the coil	
● at 50 Hz	0.29
● at 60 Hz	0.3
arcing time	20 ... 30 ms
Auxiliary circuit	

number of NC contacts for auxiliary contacts	1
• instantaneous contact	2
number of NO contacts for auxiliary contacts	1
• instantaneous contact	2
number of CO contacts for auxiliary contacts	2
operational current at AC-12 maximum	10 A
operational 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
operational current at DC-12	
• at 24 V rated value	10 A
• at 48 V rated value	10 A
• at 60 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
operational current at DC-13	
• at 24 V rated value	10 A
• at 48 V rated value	5 A
• at 60 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
UL/CSA ratings	
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the fuse link	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	2 x 3NA3020 (50 A) in series (750 V, 3 kA)
— with type of coordination 2 required	2 x 3NA3020 (50 A) in series (750 V, 3 kA)
• for short-circuit protection of the auxiliary switch required	gG: 16 A (500 V, 1 kA)
Installation/ mounting/ dimensions	
mounting position	+/-22,5° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
fastening method side-by-side mounting	Yes
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 50022
height	85 mm
width	81 mm
depth	104 mm
required spacing	
• with side-by-side mounting	
— forwards	15 mm
— backwards	0 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 mm
• for grounded parts	
— forwards	30 mm
— backwards	0 mm
— upwards	10 mm
— at the side	10 mm
— downwards	10 mm
• for live parts	
— forwards	30 mm
— backwards	0 mm
— upwards	10 mm

— downwards	10 mm				
— at the side	10 mm				
Connections/ Terminals					
type of electrical connection • for main current circuit • for auxiliary and control circuit	screw terminal screw-type terminals screw-type terminals				
type of connectable conductor cross-sections for main contacts • solid or stranded • finely stranded with core end processing	2x (2,5 ... 10 mm²) 2x (1.5 ... 4 mm²)				
type of connectable conductor cross-sections • for auxiliary contacts — solid or stranded — finely stranded with core end processing	2x (1 ... 2.5 mm²) 2x (0.75 ... 1.5 mm²)				
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				
Electrical Safety					
protection class IP on the front according to IEC 60529	IP00				
Approvals Certificates					
General Product Approval	Functional Safety				
     Type Examination Certificate					
Test Certificates	other	Dangerous goods			
Special Test Certificate	Type Test Certificates/Test Report	Miscellaneous		Confirmation	Transport Information
Environment					
Environmental Conformations					
Further information					
Information on the packaging https://support.industry.siemens.com/cs/ww/en/view/109813875					
Information for data generation and storage https://support.industry.siemens.com/cs/ww/en/view/109995012					
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=3TC4413-0BK2					
Cax online generator https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TC4413-0BK2					
Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3TC4413-0BK2					
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TC4413-0BK2&lang=en					
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3TC4413-0BK2/char					
Further characteristics (e.g. electrical endurance, switching frequency) https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TC4413-0BK2&objecttype=14&gridview=view1					



