SIEMENS

Data sheet 3RT1456-6NF36

Power contactor, AC-1 275 A, 400 V AC/DC operation 96-127 V UC, Auxiliary contacts 2 NO + 2 NC, 3-pole, Size S6, Busbar connections Drive: electronic with PLC interface 24 V DC

Product brand name	SIRIUS
Product designation	Contactor
Product type designation	3RT14

General technical data	
Size of contactor	S6
Product extension	
• function module for communication	No
• Auxiliary switch	Yes
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
Protection class IP	
• on the front	IP00; IP20 on the front with cover / box terminal
• of the terminal	IP00

Shock resistance at rectangular impulse	
• at AC	8,5g / 5 ms, 4,2g / 10 ms
• at DC	8,5g / 5 ms, 4,2g / 10 ms
Shock resistance with sine pulse	
• at AC	13,4g / 5 ms, 6,5g / 10 ms
• at DC	13,4g / 5 ms, 6,5g / 10 ms
Mechanical service life (switching cycles)	
• of contactor typical	10 000 000
• of the contactor with added electronics-compatible auxiliary switch block typical	5 000 000
• of the contactor with added auxiliary switch block typical	10 000 000
Reference code acc. to DIN EN 81346-2	Q

Ambient conditions

Installation altitude at height above sea level	
• maximum	2 000 m
Relative humidity during operation	95 %

Main circuit

Number of poles for main current circuit	3
Number of NO contacts for main contacts	3
Type of voltage for main current circuit	AC
Operating voltage	
• at AC	
— at 50 Hz rated value	127 V
— at 60 Hz rated value	96 ... 127 V
Operating current	
• at AC-1 at 400 V	
— rated value	250 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	275 A
— up to 690 V at ambient temperature 60 °C rated value	250 A
• at AC-3	
— at 400 V rated value	97 A
Minimum cross-section in main circuit	
• at maximum AC-1 rated value	140 mm²
No-load switching frequency	
• at AC	1 000 1/h
• at DC	1 000 1/h
Operating frequency	
• at AC-1 maximum	600 1/h

Control circuit/ Control	
Type of voltage	AC/DC
Type of voltage of the control supply voltage	AC/DC
Control supply voltage at AC	
• at 50 Hz rated value	96 ... 127 V
• at 60 Hz rated value	96 ... 127 V
Control supply voltage at DC	
• rated value	96 ... 127 V
Type of PLC-control input acc. to IEC 60947-1	Type 2
Consumed current at PLC-control input acc. to IEC 60947-1 maximum	20 mA
Operating range factor control supply voltage rated value of magnet coil at DC	
• initial value	0.8
• Full-scale value	1.1
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
Design of the surge suppressor	with varistor
Apparent pick-up power of magnet coil at AC	
• at 50 Hz	280 V·A
Inductive power factor with closing power of the coil	
• at 50 Hz	0.8
Apparent holding power of magnet coil at AC	
• at 50 Hz	4.4 V·A
Inductive power factor with the holding power of the coil	
• at 50 Hz	0.5
Closing power of magnet coil at DC	320 W
Holding power of magnet coil at DC	2.8 W
Closing delay	
• at AC	35 ... 75 ms
• at DC	35 ... 75 ms
Opening delay	
• at AC	80 ... 90 ms
• at DC	80 ... 90 ms
Arcing time	10 ... 15 ms
Control version of the switch operating mechanism	PLC-IN or Standard A1 - A2 (adjustable)

Auxiliary circuit	
Number of NC contacts for auxiliary contacts	2
• attachable	4

• instantaneous contact	2
• lagging switching	0
Number of NO contacts for auxiliary contacts	2
• attachable	4
• instantaneous contact	2
• leading contact	0
Operating current at AC-12 maximum	10 A
Operating current at AC-15	
• at 230 V rated value	6 A
• at 400 V rated value	3 A
• at 500 V rated value	2 A
• at 690 V rated value	1 A
Operating current at DC-13	
• at 24 V rated value	10 A
• at 48 V rated value	2 A
• at 60 V rated value	2 A
• at 110 V rated value	1 A
• at 125 V rated value	0.9 A
• at 220 V rated value	0.3 A
• at 600 V rated value	0.1 A
Design of the miniature circuit breaker	
• for short-circuit protection of the auxiliary switch required	gG: 10 A (230 V, 400 A)
Contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)

Short-circuit protection

Product function Short circuit protection	No
Design of the fuse link	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 355 A (690 V, 100 kA)
— with type of assignment 2 required	gR: 350 A (690 V, 100 kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)

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	172 mm
Width	120 mm
Depth	170 mm
Required spacing	
• with side-by-side mounting	

— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 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 current circuit	screw-type terminals
• at contactor for auxiliary contacts	Screw-type terminals
• of magnet coil	Screw-type terminals
Type of connectable conductor cross-sections	
• at AWG conductors for main contacts	4 ... 250 kcmil
Connectable conductor cross-section for main contacts	
• single or multi-stranded	25 ... 120 mm²
• stranded	25 ... 120 mm²
Connectable conductor cross-section for auxiliary contacts	
• single or multi-stranded	0.5 ... 4 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 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²)
— single or multi-stranded	2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), max. 2x (0,75 ... 4 mm²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)
• at AWG conductors for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14), 1x 12

Safety related data

Product function	
• Mirror contact acc. to IEC 60947-4-1	Yes
• positively driven operation acc. to IEC 60947-5-1	No

Protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529

Certificates/ approvals

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

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

Marine / Shipping	other	
DNVGL.COM/AF	Confirmation	Miscellaneous

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
www.siemens.com/sirius/catalogs

Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT1456-6NF36

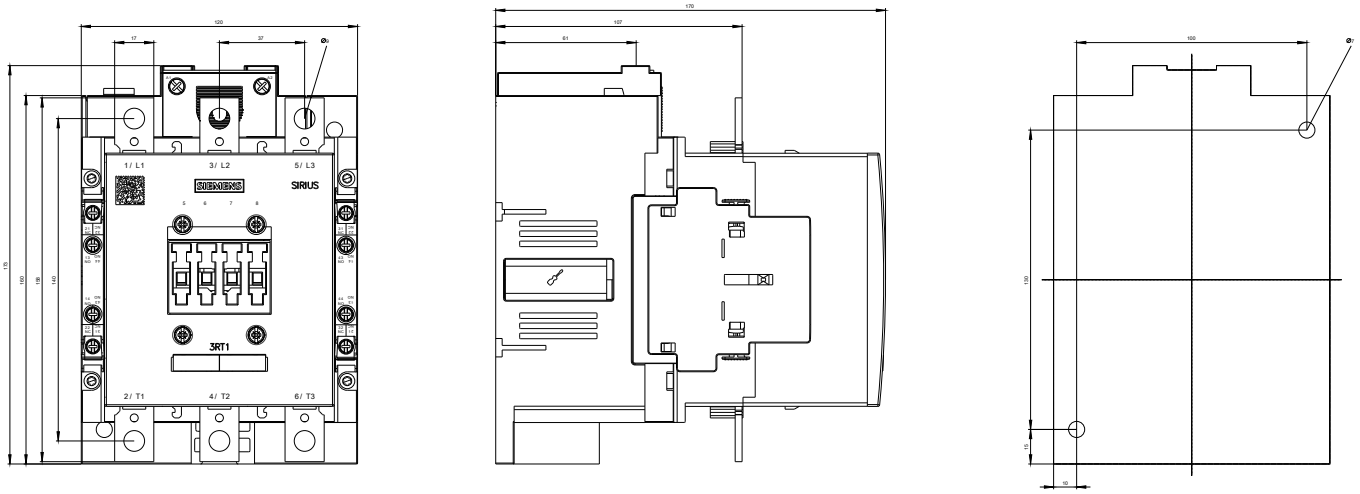
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1456-6NF36

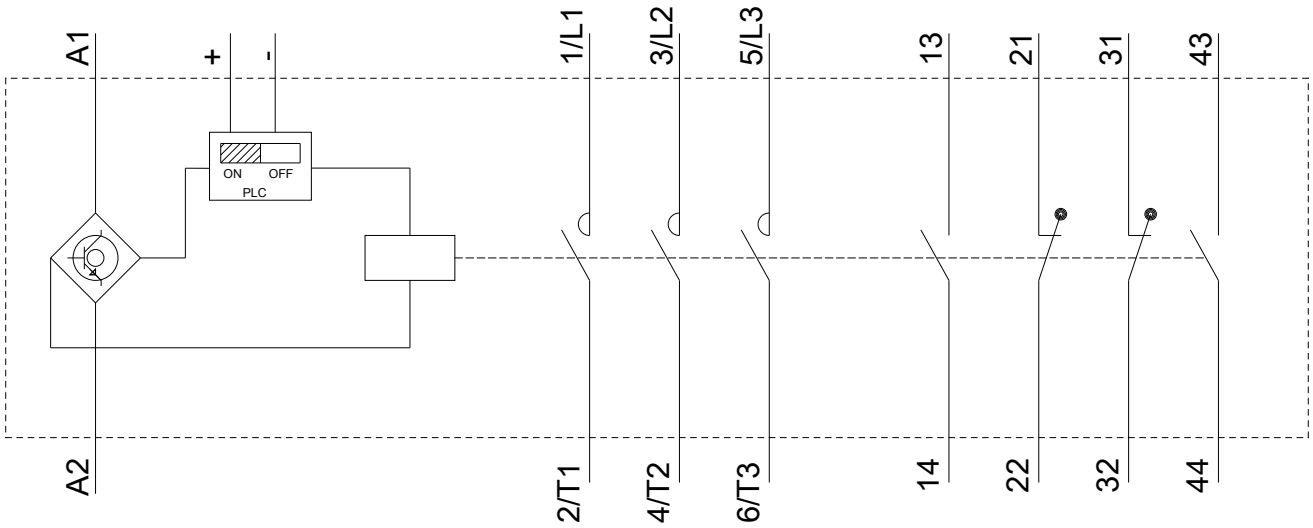
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6NF36

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1456-6NF36&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6NF36/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1456-6NF36&objecttype=14&gridview=view1





last modified: 08/12/2019