SIEMENS

Data sheet 3RT2446-1NP30

Contactor, AC-1, 140 A/690 V/40 °C, S3, 3-pole, 175-280 V AC/DC, with varistor, 1 NO+1 NC, box terminal/screw terminal

Product brand name	SIRIUS
Product designation	Contactor
Product type designation	3RT24

General technical data	
Size of contactor	S3
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	IP20; Finger-safe, for vertical contact from the front acc. to IEC 60529

• of the terminal	IP00
Shock resistance at rectangular impulse	
• at AC	6.7 g / 5 ms, 4.0 g / 10 ms
• at DC	6.7 g / 5 ms, 4.0 g / 10 ms
Shock resistance with sine pulse	
• at AC	10.6 g / 5 ms, 6.3 g / 10 ms
• at DC	10.6 g / 5 ms, 6.3 g / 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	0 ... 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	175 V
— at 60 Hz rated value	280 V
Operating current	
• at AC-1 at 400 V	
— rated value	130 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	140 A
— up to 690 V at ambient temperature 60 °C rated value	130 A
• at AC-3	
— at 400 V rated value	44 A
Minimum cross-section in main circuit	
• at maximum AC-1 rated value	50 mm²
No-load switching frequency	
• at AC	1 000 1/h
• at DC	1 000 1/h
Operating frequency	

• at AC-1 maximum	650 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	175 ... 280 V
• at 60 Hz rated value	175 ... 280 V
Control supply voltage at DC	
• rated value	175 ... 280 V
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	202 V·A
• at 60 Hz	202 V·A
Apparent holding power of magnet coil at AC	
• at 50 Hz	3.5 V·A
• at 60 Hz	3.5 V·A
Closing power of magnet coil at DC	76 W
Holding power of magnet coil at DC	2.7 W
Closing delay	
• at DC	50 ... 70 ms
Opening delay	
• at DC	38 ... 57 ms
Arcing time	10 ... 20 ms
Control version of the switch operating mechanism	Standard A1 - A2

Auxiliary circuit	
Number of NC contacts for auxiliary contacts	1
• attachable	2
• instantaneous contact	1
Number of NO contacts for auxiliary contacts	1
• attachable	2
• instantaneous contact	1
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: 250 A (690 V,100 kA)
— with type of assignment 2 required	gR: 250 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	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
• Side-by-side mounting	Yes
Height	140 mm
Width	70 mm
Depth	152 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	box terminal
• at contactor for auxiliary contacts	Screw-type terminals
• of magnet coil	Screw-type terminals
Type of connectable conductor cross-sections	
• for main contacts	
— solid	2x (2.5 ... 16 mm²)
— stranded	2x (2,5 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²)
— single or multi-stranded	2x (2.5 ... 16 mm²), 2x (10 ... 50 mm²), 1x (10 ... 70 mm²)
— finely stranded with core end processing	2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)
• at AWG conductors for main contacts	2x (10 ... 1/0), 1x (10 ... 2)
Connectable conductor cross-section for main contacts	
• solid	2.5 ... 16 mm²
• single or multi-stranded	4 ... 70 mm²
• stranded	6 ... 70 mm²
• finely stranded with core end processing	2.5 ... 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 ... 1,5mm²), 2x (0.75 ... 2.5 mm²)
— single or multi-stranded	2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 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)

Safety related data

Proportion of dangerous failures	
• with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	73 %
Product function	
• Mirror contact acc. to IEC 60947-4-1	Yes

• positively driven operation acc. to IEC 60947-5-1	No
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529

Certificates/ approvals

General Product Approval				EMC	Declaration of Conformity
CCC	CSA	UL	EAC	RCM	EG-Konf.

Declaration of Conformity	Test Certificates		Marine / Shipping		
Miscellaneous	Type Test Certificates/Test Report	Special Test Certificate	ABS	LRS	PRS

Marine / Shipping		other	Railway
RINA		Confirmation	Vibration and Shock

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
www.siemens.com/ic10

Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2446-1NP30

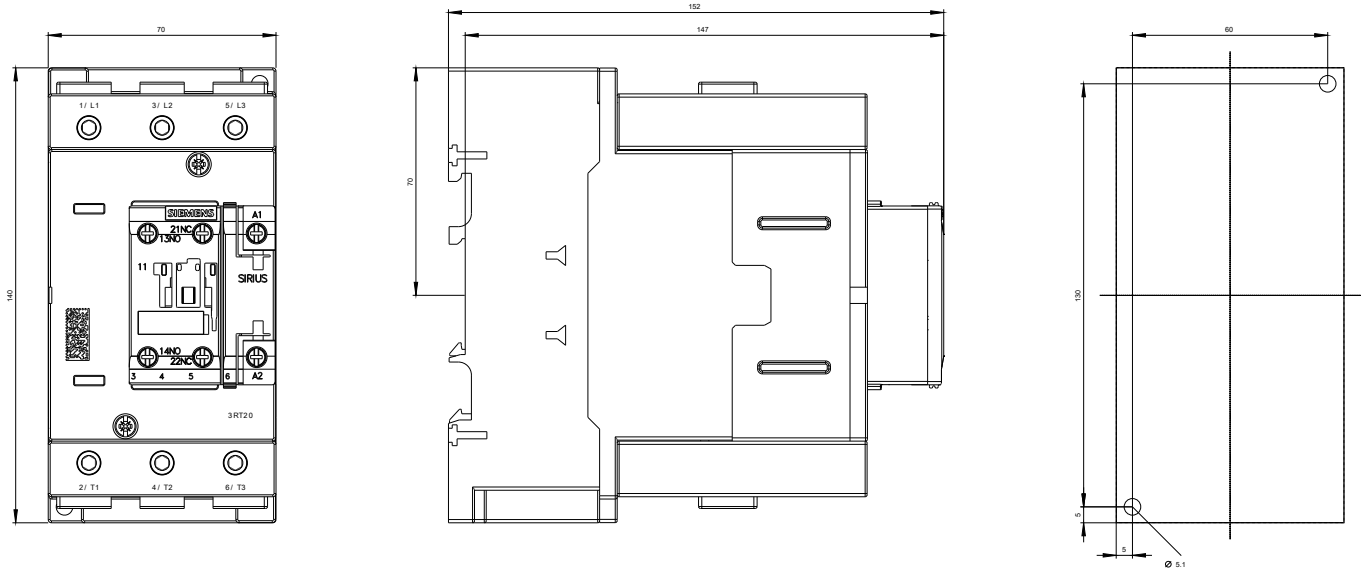
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2446-1NP30

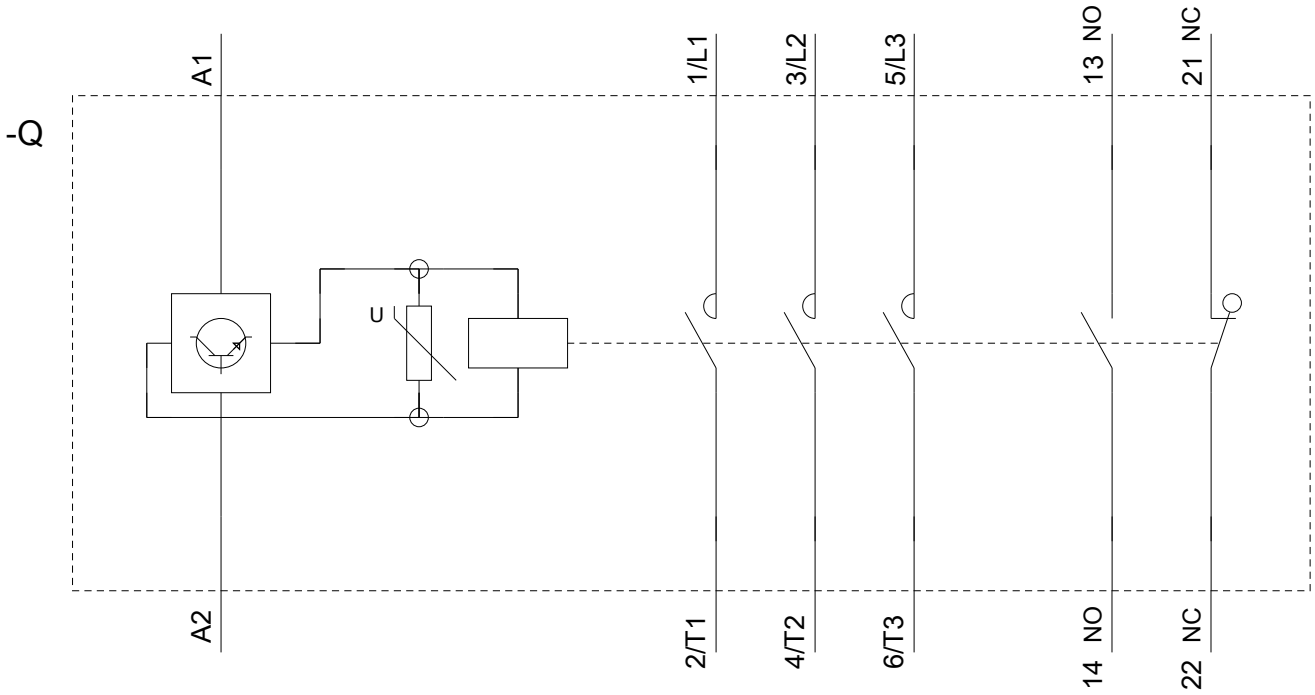
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RT2446-1NP30

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2446-1NP30&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RT2446-1NP30/char

Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2446-1NP30&objecttype=14&gridview=view1





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