SIEMENS

Data sheet

3RT1456-6NP36



power contactor AC-1 275 A / 690 V / 40 °C 3-pole, Uc: 200-277 V AC(50-60 Hz) / DC PLC input 24 V DC drive: electronic auxiliary contacts 2 NO + 2 NC main circuit: busbar control and auxiliary circuit: screw terminal

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
power loss [W] for rated value of the current	
 at AC in hot operating state 	86.4 W
 at AC in hot operating state per pole 	28.8 W
 without load current share typical 	2.8 W
type of calculation of power loss depending on pole	quadratic
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 	500 V
surge voltage resistance	
 of main circuit rated value 	8 kV
 of auxiliary circuit rated value 	6 kV
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 (operating cycles)	
 of contactor typical 	10 000 000
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000
 of the contactor with added auxiliary switch block typical 	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/01/2012
SVHC substance name	Lead - 7439-92-1
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 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
operational current	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated	275 A
value	
— up to 690 V at ambient temperature 55 °C rated	250 A
value — up to 690 V at ambient temperature 60 °C rated	250 A
value	250 A
• at AC-3	
— at 400 V rated value	97 A
— at 690 V rated value	97 A
minimum cross-section in main circuit at maximum AC-1 rated	140 mm ²
value	
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	200 277 V
at 60 Hz rated value	200 277 V
control supply voltage at DC rated value	
	200 277 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
type of PLC-control input according to IEC 60947-1	Type 2
consumed current at PLC-control input according to IEC 60947-1 maximum	20 mA
design of the surge suppressor	with varistor
apparent pick-up power	
 at minimum rated control supply voltage at AC 	
— at 50 Hz	190 VA
— at 60 Hz	190 VA
 at maximum rated control supply voltage at AC 	
— at 60 Hz	280 VA
— at 50 Hz	280 VA
apparent pick-up power of magnet coil at AC	
• at 50 Hz	280 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.8
apparent holding power	
 at minimum rated control supply voltage at DC 	2.1 VA
at maximum rated control supply voltage at DC	2.8 VA
apparent holding power	
 at minimum rated control supply voltage at AC 	
— at 50 Hz	4.3 VA
— at 60 Hz	4.3 VA
at maximum rated control supply voltage at AC	
— at 50 Hz	5.2 VA
— at 60 Hz	5.2 VA

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apparent holding power of magnet coil at AC	4.4.1/A
• at 50 Hz	4.4 VA
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	05 75
• at AC	35 75 ms
• at DC	35 75 ms
opening delay	00 00 mg
• at AC	80 90 ms
• at DC	80 90 ms
arcing time	10 15 ms
control version of the switch operating mechanism Auxiliary circuit	PLC-IN or Standard A1 - A2 (adjustable)
	2
number of NC contacts for auxiliary contacts	2
attachable instantaneous contact	4 2
instantaneous contact	2
number of NO contacts for auxiliary contacts attachable 	
	4
instantaneous contact	2 10 A
operational current at AC-12 maximum	IU A
operational current at AC-15 • at 230 V rated value	6 A
at 400 V rated value	3 A 2 A
at 500 V rated value	2 A
at 690 V rated value	1A
operational current at DC-13	10.4
• 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	1A
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	Ma
product function short circuit protection	No
 design of the fuse link for short-circuit protection of the main circuit 	
-	gG: 355 A (690 V, 100 kA)
 — with type of coordination 1 required — with type of assignment 2 required 	gG: 355 A (690 V, 100 kA) gR: 350 A (690 V, 100 kA)
 for short-circuit protection of the auxiliary switch required 	gR: 350 A (590 V, 100 KA) gG: 10 A (500 V, 1 kA)
 for short-circuit protection of the auxiliary switch required 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
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 m	m				
— downwards			10 mm 10 mm					
 for live parts 			10 111					
— forwards			20 m	m				
— upwards			10 m					
— downwards			10 m					
— at the side			10 m					
Connections/ Terminals			10 111					
type of electrical connection	_							
for main current circuit			Conn	ection bar				
 for auxiliary and control circl 	uit		screw-type terminals					
 at contactor for auxiliary cor 								
	liacio		Screw-type terminals Screw-type terminals					
width of connection bar	of magnet coil			m				
thickness of connection bar			3 mm					
diameter of holes			9 mm					
number of holes			1					
connectable conductor cross-se	ction for main	contacts	1					
 solid or stranded 		contacts	25	120 mm ²				
solid of stranded stranded				120 mm ²				
connectable conductor cross-se	oction for auxili	ary contacte	20	120 11111				
	ction for auxili	ary contacts	0.5	4 mm ²				
 solid or stranded finally stranded with some and 	d ave e e e e in e			. 4 mm² . 2.5 mm²				
finely stranded with core end			0.5	. 2.5 [[][[]-				
type of connectable conductor of	cross-sections							
 for auxiliary contacts 			0 (0		0.5 3) 0.40.75	4 2)		
	— solid			2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²), max. 2x (0.75 4 mm ²)				
— solid or stranded			2x (0,5 1,5 mm ²), 2x (0,75 2,5 mm ²), max. 2x (0,75 4 mm ²)					
— finely stranded with co	-	ng	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)					
 for AWG cables for auxiliary 	contacts		2x (2	0 16), 2x (18 14), 1x	12			
Safety related data			_					
product function								
 mirror contact according to IEC 60947-4-1 		Yes						
 positively driven operation according to IEC 60947-5-1 		No						
Electrical Safety								
-	protection class IP on the front according to IEC 60529		IP00; IP20 with box terminal/cover					
touch protection on the front according to IEC 60529		finger-safe, for vertical contact from the front with box terminal/cover						
Approvals Certificates			_					
General Product Approval								
	· c	UK CA		(m)	Confirmation	Ē		
	G-Konf.							
C34						00		
General Product Approval		EMV		Functional Saftey	Test Certificates			
<u>KC</u>	nr			Type Examination Cer-	Type Test Certific-	Special Test Certific-		
F	AL	- <i>1</i> 0A		tificate	ates/Test Report	ate		
L	11L	RCM						
Marine / Shipping						other		
manno, empping								
	° 8	Lloude		(And a state of the state of th		Confirmation		
	1-43-	Register		(23)	(())			
ADS	DNV	LRS		DPS	PMDS			
ABS	0.114	0.5		Fh2	RMRS			
other		Railway		Environment				

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Miscellaneous	Confirmation	<u>Special Test Certific-</u> <u>ate</u>	Environmental Con- firmations	

Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RT1456-6NP36

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1456-6NP36

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6NP36

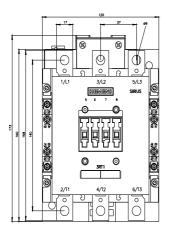
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

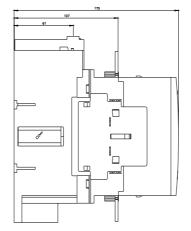
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1456-6NP36&lang=en

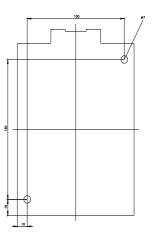
Characteristic: Tripping characteristics, I²t, Let-through current

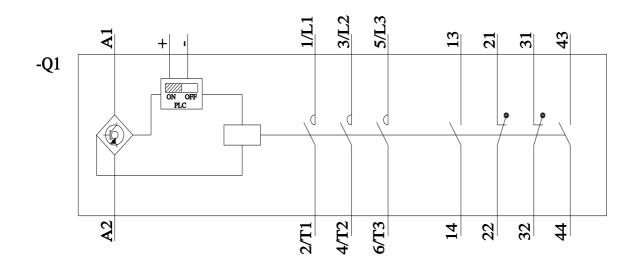
https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6NP36/char Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1456-6NP36&objecttype=14&gridview=view1









last modified:

3/14/2024 🖸