Data sheet



power contactor AC-1 275 A / 690 V / 40 $^{\circ}$ C 3-pole, Uc: 96-127 V AC(50-60 Hz) / DC F-PLC input 24 V DC drive: electronic auxiliary contacts 2 NO + 2 NC main circuit: busbar control and auxiliary circuit: screw terminal

3RT1456-6SF36-3PA0

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)	03/01/2017
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 Perfluorobutane sulfonic acid (PFBS) and its salts
Weight	3.341 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
during operation	-25 +60 °C

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• during storage	-55 +80 °C
during storage relative humidity minimum	-55 +80 C
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 $^{\circ}\text{C}$ rated value	275 A
— up to 690 V at ambient temperature 55 $^{\circ}\text{C}$ rated value	250 A
 up to 690 V at ambient temperature 60 °C rated value at AC-3 	250 A
— 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 mm²
value	
no-load switching frequency	4.000.4%
• at AC	1 000 1/h
at DC aporting frequency at AC 1 maximum	1 000 1/h
operating frequency at AC-1 maximum Control circuit/ Control	200 1/h
	AC/DC
type of voltage	AC/DC AC/DC
type of voltage of the control supply voltage control supply voltage at AC	AUDU
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
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 1
consumed current at PLC-control input according to IEC 60947-1 maximum design of the surge suppressor	30 mA with varistor
apparent pick-up power	with van3(OI
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
apparent holding power of magnet coil at AC	0.2 V/
• 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	2.0 **
• at AC	60 75 ms
• at DC	60 75 ms
opening delay	00 75 IIIS
• at AC	115 130 ms
	115 130 ms
• at DC	10 15 ms
arcing time	10.10.10.10
control version of the switch operating mechanism	Fail-safe PLC input (F-PLC-IN)
Auxiliary circuit	
design of the auxiliary switch	lateral, permanently connected
number of NC contacts for auxiliary contacts	2
attachable	4
instantaneous contact	2
number of NO contacts for auxiliary contacts	2
attachable	4
instantaneous contact	2
operational current at AC-12 maximum	10 A
operational 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
operational 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	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	,
product function short circuit protection	No
design of the fuse link	
for short-circuit protection of the main circuit	
·	aC: 355 A (600 V 100 kA)
— 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
fastening method side-by-side mounting	Yes
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
— upwarus	TO THILL

— downwards	10 mm
	0 mm
for grounded parts — forwards 2	20 mm
	20 mm
	10 mm
	10 mm
• for live parts	20
	20 mm
	10 mm
	10 mm
	10 mm
Connections/ Terminals	
type of electrical connection	
	Connection bar
•	screw-type terminals
·	Screw-type terminals
•	Screw-type terminals
	17 mm
	3 mm
	9 mm
	1
connectable conductor cross-section for main contacts	
	25 120 mm²
• stranded 2	25 120 mm²
connectable conductor cross-section for auxiliary contacts	
• solid or stranded	0.5 4 mm²
• finely stranded with core end processing	0.5 2.5 mm ²
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)
— solid or 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)
• for AWG cables for auxiliary contacts	2x (20 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
suitable for safety function	Yes
suitability for use safety-related switching OFF	Yes
safe state c	off
stop category according to IEC 60204-1	0
proportion of dangerous failures	
• with low demand rate according to SN 31920	40 %
• with high demand rate according to SN 31920	73 %
B10 value with high demand rate according to SN 31920	1 000 000
	100 FIT
31920	
IEC 62061	
	4.5E-7 1/h
ISO 13849	
performance level (PL) according to ISO 13849-1	
	Yes
IEC 61508	
3 6 3 7 7 6	2
	Type B
PFHD with high demand rate according to IEC 61508	
	4.5E-7 1/h
	4.5E-7 1/h 0.007
PFDavg with low demand rate according to IEC 61508	
PFDavg with low demand rate according to IEC 61508 Safe failure fraction (SFF)	0.007

Electrical Safety

protection class IP on the front according to IEC 60529

touch protection on the front according to IEC 60529

IP00; IP20 with box terminal/cover

finger-safe, for vertical contact from the front with box terminal/cover

Approvals Certificates

General Product Approval







Confirmation



<u>KC</u>

General	Product	Ap-
proval		

EMV

Functional Saftey

Test Certificates

other





Type Examination Certificate

Type Test Certificates/Test Report

Special Test Certificate

Confirmation

other

Railway

Environment

Miscellaneous

Special Test Certificate Environmental Confirmations

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=3RT1456-6SF36-3PA0

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1456-6SF36-3PA0

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6SF36-3PA0

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

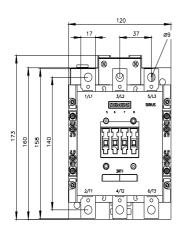
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1456-6SF36-3PA0&lang=en

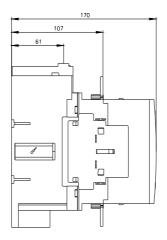
Characteristic: Tripping characteristics, I2t, Let-through current

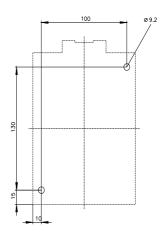
https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6SF36-3PA0/char

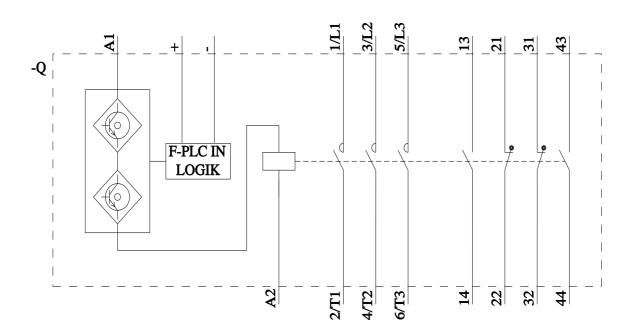
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1456-6SF36-3PA0&objecttype=14&gridview=view1









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