SIEMENS

Data sheet 3RT1466-6SF36-3PA0

power contactor AC-1 400 A / 690 V / 40 °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

product brand name	SIRIUS
product designation	Contactor
product type designation	3RT14
General technical data	
size of contactor	S10
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	105.6 W
● at AC in hot operating state per pole	35.2 W
● without load current share typical	3.4 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 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 Perfluorobutane sulfonic acid (PFBS) and its salts - - Melamine - 108-78-1
Weight	6.624 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	

● during operation	-25 ... +60 °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 value	400 A
— up to 690 V at ambient temperature 55 °C rated value	380 A
— up to 690 V at ambient temperature 60 °C rated value	380 A
● at AC-3	
— at 400 V rated value	138 A
— at 690 V rated value	138 A
minimum cross-section in main circuit at maximum AC-1 rated value	240 mm²
operational current	
● at 1 current path at DC-1	
— at 24 V rated value	380 A
— at 60 V rated value	380 A
— at 110 V rated value	33 A
— at 220 V rated value	3.8 A
— at 440 V rated value	0.9 A
— at 600 V rated value	0.6 A
● with 2 current paths in series at DC-1	
— at 24 V rated value	380 A
— at 60 V rated value	380 A
— at 110 V rated value	380 A
— at 220 V rated value	380 A
— at 440 V rated value	4 A
— at 600 V rated value	2 A
● with 3 current paths in series at DC-1	
— at 24 V rated value	380 A
— at 60 V rated value	380 A
— at 110 V rated value	380 A
— at 220 V rated value	380 A
— at 440 V rated value	11 A
— at 600 V rated value	5.2 A
● at 1 current path at DC-3 at DC-5	
— at 24 V rated value	380 A
— at 60 V rated value	11 A
— at 110 V rated value	3 A
— at 220 V rated value	0.6 A
— at 440 V rated value	0.18 A
— at 600 V rated value	0.125 A
● with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	380 A
— at 60 V rated value	380 A
— at 110 V rated value	380 A
— at 220 V rated value	2.5 A
— at 440 V rated value	0.65 A
— at 600 V rated value	0.37 A
● with 3 current paths in series at DC-3 at DC-5	
— at 24 V rated value	380 A
— at 60 V rated value	380 A

— at 110 V rated value	380 A
— at 220 V rated value	380 A
— at 440 V rated value	1.4 A
— at 600 V rated value	0.75 A
no-load switching frequency	
● at AC	1 000 1/h
● at DC	1 000 1/h
operating frequency at AC-1 maximum	200 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
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	30 mA
design of the surge suppressor	with varistor
apparent pick-up power	
● at minimum rated control supply voltage at AC	
— at 50 Hz	400 VA
— at 60 Hz	400 VA
● at maximum rated control supply voltage at AC	
— at 60 Hz	530 VA
— at 50 Hz	530 VA
apparent pick-up power of magnet coil at AC	
● at 50 Hz	530 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	2.8 VA
● at maximum rated control supply voltage at DC	3.4 VA
apparent holding power	
● at minimum rated control supply voltage at AC	
— at 50 Hz	5.5 VA
— at 60 Hz	5.5 VA
● at maximum rated control supply voltage at AC	
— at 50 Hz	8.5 VA
— at 60 Hz	8.5 VA
apparent holding power of magnet coil at AC	
● at 50 Hz	5 VA
inductive power factor with the holding power of the coil	
● at 50 Hz	0.5
closing power of magnet coil at DC	580 W
holding power of magnet coil at DC	3.4 W
closing delay	
● at AC	60 ... 75 ms
● at DC	60 ... 75 ms
opening delay	
● at AC	115 ... 130 ms
● at DC	115 ... 130 ms
arcing time	10 ... 15 ms
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	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
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
Short-circuit protection	
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA
design of the fuse link	
● for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 500 A (690 V, 100 kA)
— with type of coordination 2 required	gR: 500 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	210 mm
width	145 mm
depth	202 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 circuit	screw-type terminals
● at contactor for auxiliary contacts	Screw-type terminals
● of magnet coil	Screw-type terminals

width of connection bar	25 mm
thickness of connection bar	6 mm
diameter of holes	11 mm
number of holes	1
type of connectable conductor cross-sections	
● for AWG cables for main contacts	2/0 ... 500 kcmil
connectable conductor cross-section for main contacts	
● solid or stranded	70 ... 240 mm²
● stranded	70 ... 240 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 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)
— 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
AWG number as coded connectable conductor cross section for auxiliary contacts	18 ... 14
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	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
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
IEC 62061	
Safety Integrity Level (SIL) according to IEC 62061	SIL 2
PFHD with high demand rate according to IEC 62061	4.5E-7 1/h
ISO 13849	
performance level (PL) according to ISO 13849-1	PL c
category according to ISO 13849-1	2
device type according to ISO 13849-1	1
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
Safety Integrity Level (SIL) according to IEC 61508	2
safety device type according to IEC 61508-2	Type B
PFHD with high demand rate according to IEC 61508	4.5E-7 1/h
PFDavg with low demand rate according to IEC 61508	0.007
Safe failure fraction (SFF)	93 %
hardware fault tolerance according to IEC 61508	0
T1 value of service life according to IEC 61508	20 a
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

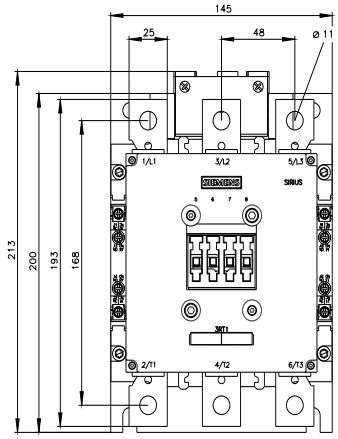
General Product Approval	**EMV**

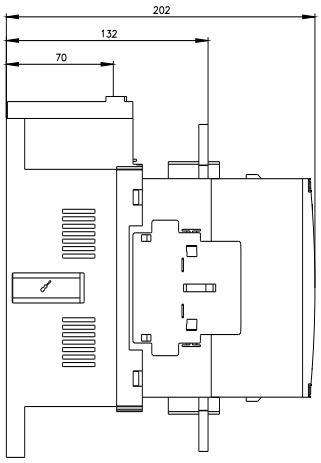
Functional Saftey	Test Certificates		other		
Type Examination Certificate	Special Test Certificate	Type Test Certificates/Test Report	产品合格 QC PASS	Confirmation	Miscellaneous

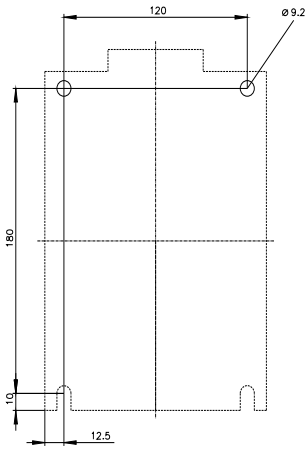
Railway	Environment
Special Test Certificate	Environmental Confirmations

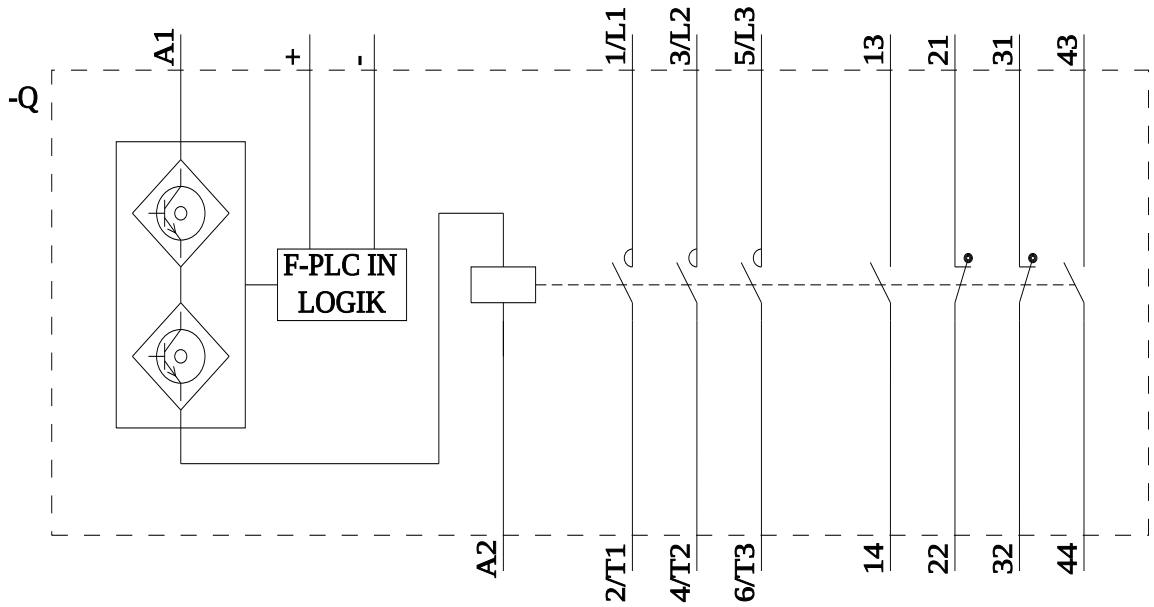
Further information

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=3RT1466-6SF36-3PA0
Cax online generator
https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1466-6SF36-3PA0
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RT1466-6SF36-3PA0
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1466-6SF36-3PA0&lang=en
Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RT1466-6SF36-3PA0/char
Further characteristics (e.g. electrical endurance, switching frequency)
https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1466-6SF36-3PA0&objecttype=14&gridview=view1









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