SIEMENS

Data sheet 3RT1075-6SP36



power contactor, AC-3e/AC-3 400 A, 200 kW / 400 V AC (50-60 Hz) / DC 200-277 V x (0.8-1.1) F-PLC input 24 V DC 3-pole, auxiliary contacts 2 NO + 2 NC drive: electronic main circuit: busbar control and auxiliary circuit: screw terminal

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT1
General technical data	
size of contactor	S12
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 W
• at AC in hot operating state per pole	35 W
 without load current share typical 	3.6 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
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	690 V
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	10 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
operating voltage	
at AC-3 rated value maximum	1 000 V
 at AC-3e rated value maximum 	1 000 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	430 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	430 A
— up to 690 V at ambient temperature 60 °C rated value	400 A
— up to 1000 V at ambient temperature 40 °C rated value	200 A
 — up to 1000 V at ambient temperature 60 °C rated value ◆ at AC-3 	200 A
— at 400 V rated value	400 A
— at 500 V rated value	400 A
— at 690 V rated value	400 A
— at 1000 V rated value	180 A
• at AC-3e	
— at 400 V rated value	400 A
— at 500 V rated value	400 A
— at 690 V rated value	400 A
— at 1000 V rated value	180 A
• at AC-4 at 400 V rated value	350 A
• at AC-5a up to 690 V rated value	378 A
• at AC-5b up to 400 V rated value	332 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	395 A
— up to 400 V for current peak value n=20 rated value	395 A
— up to 500 V for current peak value n=20 rated value	395 A
— up to 690 V for current peak value n=20 rated value	395 A
 up to 1000 V for current peak value n=20 rated value 	180 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	264 A
— up to 400 V for current peak value n=30 rated value	264 A
— up to 500 V for current peak value n=30 rated value	264 A
— up to 690 V for current peak value n=30 rated value	264 A
— up to 1000 V for current peak value n=30 rated value	180 A
minimum cross-section in main circuit at maximum AC-1 rated value	300 mm ²
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	150 A
at 690 V rated value	135 A
operational current	
at 1 current path at DC-1	
— at 24 V rated value	400 A
— at 60 V rated value	330 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	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 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	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 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	400 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 	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 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	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 A
— at 440 V rated value	1.4 A
— at 600 V rated value	0.75 A
operating power	
• at AC-2 at 400 V rated value	200 kW
• at AC-3	
— at 230 V rated value	132 kW
— at 400 V rated value	200 kW
— at 500 V rated value	250 kW
— at 690 V rated value	400 kW
— at 1000 V rated value	250 kW
• at AC-3e	
— at 230 V rated value	132 kW
— at 400 V rated value	200 kW
— at 500 V rated value	250 kW
— at 690 V rated value	400 kW
— at 1000 V rated value	250 kW
operating power for approx. 200000 operating cycles at AC-	
at 400 V rated value	85 kW
at 690 V rated value	133 kW
operating apparent power at AC-6a	
up to 230 V for current peak value n=20 rated value	150 000 kVA
• up to 400 V for current peak value n=20 rated value	270 000 VA
• up to 500 V for current peak value n=20 rated value	340 000 VA
• up to 690 V for current peak value n=20 rated value	470 000 VA
• up to 1000 V for current peak value n=20 rated value	310 000 VA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	100 000 VA

 up to 400 V for current peak value n=30 rated value 	180 000 VA		
 up to 500 V for current peak value n=30 rated value 	220 000 VA		
 up to 690 V for current peak value n=30 rated value 	310 000 VA		
 up to 1000 V for current peak value n=30 rated value 	310 000 VA		
short-time withstand current in cold operating state up to 40 °C			
 limited to 1 s switching at zero current maximum 	6 600 A; Use minimum cross-section acc. to AC-1 rated value		
 limited to 5 s switching at zero current maximum 	5 761 A; Use minimum cross-section acc. to AC-1 rated value		
 limited to 10 s switching at zero current maximum 	4 143 A; Use minimum cross-section acc. to AC-1 rated value		
 limited to 30 s switching at zero current maximum 	2 635 A; Use minimum cross-section acc. to AC-1 rated value		
 limited to 60 s switching at zero current maximum 	2 088 A; Use minimum cross-section acc. to AC-1 rated value		
no-load switching frequency			
• at AC	500 1/h		
• at DC	500 1/h		
operating frequency			
• at AC-1 maximum	200 1/h		
at AC-2 maximum	200 1/h		
• at AC-3 maximum	200 1/h		
at AC-3e maximum	200 1/h		
• at AC-4 maximum	130 1/h		
Control circuit/ Control			
	AC/DC		
type of voltage of the control supply voltage	ACIDO		
control supply voltage at AC • at 50 Hz rated value	200 277 \/		
	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 1		
consumed current at PLC-control input according to IEC 60947-1 maximum	14 mA		
voltage at PLC-control input rated value	24 V		
operating range factor of the voltage at PLC-control input	0.8 1.1		
design of the surge suppressor	with varistor		
apparent pick-up power			
 at minimum rated control supply voltage at AC 			
— at 50 Hz	560 VA		
— at 60 Hz	560 VA		
 at maximum rated control supply voltage at AC 			
— at 60 Hz	750 VA		
— at 50 Hz	750 VA		
apparent pick-up power of magnet coil at AC			
• at 50 Hz	750 VA		
• at 60 Hz	750 VA		
inductive power factor with closing power of the coil			
• at 50 Hz	0.8		
• at 60 Hz	0.8		
apparent holding power			
at minimum rated control supply voltage at DC	3 VA		
at maximum rated control supply voltage at DC	3.6 VA		
apparent holding power			
at minimum rated control supply voltage at AC			
— at 50 Hz	5.6 VA		
— at 60 Hz	5.6 VA		
at maximum rated control supply voltage at AC			
— at 50 Hz	9 VA		
— at 50 112	VVA		

— at 60 Hz	9 VA		
inductive power factor with the holding power of the coil	3 VA		
at 50 Hz	0.5		
• at 60 Hz	0.4 800 W		
closing power of magnet coil at DC	800 W		
holding power of magnet coil at DC	3.6 W		
closing delay	00 75		
• at AC	60 75 ms		
• at DC	60 75 ms		
opening delay	445 400		
• at AC	115 130 ms		
• at DC	115 130 ms		
recovery time after power failure typical	2 s		
arcing time	10 15 ms		
control version of the switch operating mechanism	Fail-safe PLC input (F-PLC-IN)		
Auxiliary circuit			
number of NC contacts for auxiliary contacts instantaneous contact	2		
number of NO contacts for auxiliary contacts 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-12			
• at 24 V rated value	10 A		
at 48 V rated value	6 A		
at 60 V rated value	6 A		
at 110 V rated value	3 A		
at 125 V rated value	2 A		
at 220 V rated value	1 A		
at 600 V rated value	0.15 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)		
UL/CSA ratings			
full-load current (FLA) for 3-phase AC motor			
• at 480 V rated value	361 A		
at 600 V rated value	382 A		
yielded mechanical performance [hp]			
 ◆ for 3-phase AC motor 			
— at 200/208 V rated value	125 hp		
— at 220/230 V rated value	150 hp		
— at 460/480 V rated value	300 hp		
— at 575/600 V rated value	400 hp		
contact rating of auxiliary contacts according to UL	A600 / P600		
Short-circuit protection			
design of the fuse link			
 for short-circuit protection of the main circuit 			
 — with type of coordination 1 required 	gG: 630 A (690 V, 100 kA)		
 — with type of assignment 2 required 	gG: 500 A (690 V, 100 kA), aM: 400 A (690 V, 50 kA), BS88: 450 A (415 V, 50		
• for short-circuit protection of the auxiliary switch required	kA) gG: 10 A (500 V, 1 kA)		

nstallation/ 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	214 mm		
width	160 mm		
depth	225 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	20 mm		
— forwards	20 mm		
— upwards	10 mm		
— downwards	10 mm		
— at the side onnections/ Terminals	10 mm		
type of electrical connection	Organism has		
for main current circuit for qualificational control circuit	Connection bar		
for auxiliary and control circuit act contactor for auxiliary contactor	screw-type terminals		
at contactor for auxiliary contactsof magnet coil	Screw-type terminals 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			
• 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		
afety 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		
test wear-related service life necessary	Yes		
stop category according to IEC 60204-1	0		
proportion of dangerous failures	40.07		
 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		
MTBF	75 a		
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			

Approvals Certificates

General Product Approval







Confirmation





EMV Functional Saftey Test Certificates other



Type Examination Certificate

Special Test Certificate

Type Test Certificates/Test Report **Miscellaneous**

Confirmation

other Railway Environment

<u>Miscellaneous</u> <u>Special Test Certificate in Firmations</u> <u>Environmental Confirmations</u>

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=3RT1075-6SP36

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1075-6SP36

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1075-6SP36

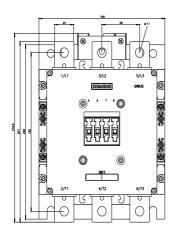
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

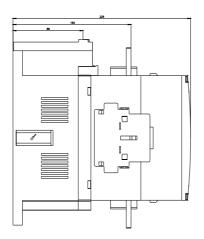
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1075-6SP36&lang=en

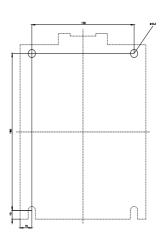
Characteristic: Tripping characteristics, I²t, Let-through current

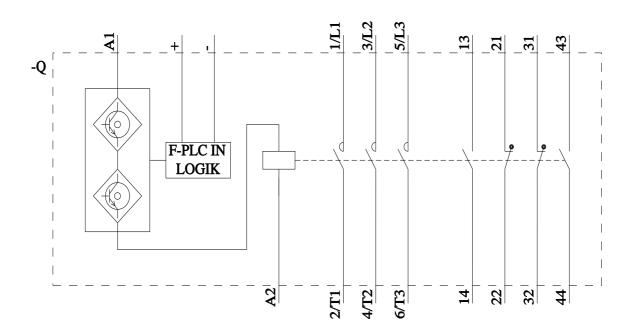
https://support.industry.siemens.com/cs/ww/en/ps/3RT1075-6SP36/char Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1075-6SP36&objecttype=14&gridview=view1









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