SIEMENS

Data sheet 3RT1056-6AP36





power contactor, AC-3e/AC-3 185 A, 90 kW / 400 V AC (50-60 Hz) / DC Uc: 220-240 V 3-pole, auxiliary contacts 2 NO + 2 NC drive: conventional 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	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 	39 W
 at AC in hot operating state per pole 	13 W
 without load current share typical 	5.2 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)	
SVHC substance name	Lead - 7439-92-1
Weight	3.34 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 at AC-1 	215 A
— up to 690 V at ambient temperature 40 $^{\circ}\text{C}$ rated value	215 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	185 A
— up to 1000 V at ambient temperature 40 $^{\circ}\text{C}$ rated value	100 A
 up to 1000 V at ambient temperature 60 °C rated value at AC-3 	100 A
at AC-3 — at 400 V rated value	185 A
— at 500 V rated value	185 A
— at 690 V rated value	170 A
— at 1000 V rated value	65 A
• at AC-3e	
— at 400 V rated value	185 A
— at 500 V rated value	185 A
— at 690 V rated value	170 A
— at 1000 V rated value	65 A
• at AC-4 at 400 V rated value	160 A
● at AC-5a up to 690 V rated value	189 A
• at AC-5b up to 400 V rated value	153 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	157 A
— up to 400 V for current peak value n=20 rated value	157 A
— up to 500 V for current peak value n=20 rated value	157 A
 up to 690 V for current peak value n=20 rated value up to 1000 V for current peak value n=20 rated value 	157 A 65 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	105 A
— up to 400 V for current peak value n=30 rated value	105 A
— up to 500 V for current peak value n=30 rated value	105 A
 up to 690 V for current peak value n=30 rated value up to 1000 V for current peak value n=30 rated 	105 A 65 A
value minimum cross-section in main circuit at maximum AC-1 rated	95 mm²
value operational current for approx. 200000 operating cycles at	
AC-4	04.4
at 400 V rated value at 600 V rated value	81 A
at 690 V rated value operational current	65 A
at 1 current path at DC-1	
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	18 A
— at 220 V rated value	3.4 A
— at 440 V rated value	0.8 A

1000 1/ 1 1	0.5.4
— at 600 V rated value	0.5 A
with 2 current paths in series at DC-1	400 A
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	160 A
— at 220 V rated value	20 A
— at 440 V rated value	3.2 A
— at 600 V rated value	1.6 A
with 3 current paths in series at DC-1	
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	160 A
— at 220 V rated value	160 A
— at 440 V rated value	11.5 A
— at 600 V rated value	4 A
• at 1 current path at DC-3 at DC-5	400.4
— at 24 V rated value	160 A
— at 60 V rated value	7.5 A
— at 220 V rated value	0.6 A
— at 440 V rated value	0.17 A
— at 600 V rated value	0.12 A
with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	160 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	400.4
— at 24 V rated value	160 A
— at 60 V rated value	160 A
— at 110 V rated value	160 A
— at 220 V rated value	160 A
— at 440 V rated value	1.4 A
— at 600 V rated value	0.75 A
operating power	
• at AC-3	
— at 230 V rated value	55 kW
— at 400 V rated value	90 kW
— at 500 V rated value	132 kW
— at 690 V rated value	160 kW
— at 1000 V rated value	90 kW
• at AC-3e	EE 14W
— at 230 V rated value	55 kW
— at 400 V rated value	90 kW
— at 500 V rated value	132 kW
— at 690 V rated value	160 kW 90 kW
— at 1000 V rated value	90 KVV
operating power for approx. 200000 operating cycles at AC-	
at 400 V rated value	45 kW
at 690 V rated value	65 kW
operating apparent power at AC-6a	
up to 230 V for current peak value n=20 rated value	60 000 kVA
• up to 400 V for current peak value n=20 rated value	100 000 VA
• up to 500 V for current peak value n=20 rated value	130 000 VA
• up to 690 V for current peak value n=20 rated value	180 000 VA
up to 1000 V for current peak value n=20 rated value	110 000 VA
operating apparent power at AC-6a	
up to 230 V for current peak value n=30 rated value	40 000 VA
• up to 400 V for current peak value n=30 rated value	70 000 VA
•	

• up to 500 V for current peak value n=30 rated value	90 000 VA
• up to 690 V for current peak value n=30 rated value	120 000 VA
• up to 1000 V for current peak value n=30 rated value	110 000 VA
short-time withstand current in cold operating state up to 40 °C	
 limited to 1 s switching at zero current maximum 	2 900 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	2 084 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	1 480 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	968 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 60 s switching at zero current maximum 	801 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	2 000 1/h
• at DC	2 000 1/h
operating frequency	
• at AC-1 maximum	800 1/h
• at AC-2 maximum	300 1/h
• at AC-3 maximum	750 1/h
at AC-3e maximum	750 1/h
• at AC-4 maximum	130 1/h
Control circuit/ Control	
	AC/DC
type of voltage of the control supply voltage	AOIDO
control supply voltage at AC	220 240 V
• at 50 Hz rated value	220 240 V
at 60 Hz rated value	220 240 V
control supply voltage at DC rated value	220 240 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	With Valida
at minimum rated control supply voltage at AC	
— at 50 Hz	250 VA
— at 60 Hz	250 VA
at maximum rated control supply voltage at AC	200 VA
— at 60 Hz	300 VA
— at 50 Hz	300 VA
	000 VA
apparent pick-up power of magnet coil at AC	300 \/A
• at 50 Hz	300 VA
• at 60 Hz	300 VA
inductive power factor with closing power of the coil	0.0
• at 50 Hz	0.9
• at 60 Hz	0.9
apparent holding power	
at minimum rated control supply voltage at DC	4.3 VA
at maximum rated control supply voltage at DC	5.2 VA
apparent holding power	
 at minimum rated control supply voltage at AC 	
— at 50 Hz	4.8 VA
— at 60 Hz	4.8 VA
 at maximum rated control supply voltage at AC 	
	5.8 VA
— at 50 Hz	
— at 50 Hz — at 60 Hz	5.8 VA
	5.8 VA
— at 60 Hz	0.8
— at 60 Hz inductive power factor with the holding power of the coil	
— at 60 Hz inductive power factor with the holding power of the coil • at 50 Hz	0.8

closing delay	
• at AC	20 95 ms
• at DC	20 95 ms
opening delay	
• at AC	40 60 ms
• at DC	40 60 ms
arcing time	10 15 ms
control version of the switch operating mechanism	Standard A1 - A2
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 110 V rated value at 125 V rated value	2 A
at 125 V rated value at 220 V rated value	1 A
	0.15 A
at 600 V rated value	0.15 A
operational current at DC-13	40.4
• 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	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	180 A
at 600 V rated value	192 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 230 V rated value	30 hp
• for 3-phase AC motor	
— at 200/208 V rated value	60 hp
— at 220/230 V rated value	75 hp
— at 460/480 V rated value	150 hp
— at 575/600 V rated value	200 hp
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the fuse link	
for short-circuit protection of the main circuit	
with type of coordination 1 required	gG: 355 A (690 V, 100 kA)
with type of coordination required - with type of assignment 2 required	gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 315 A (415 V, 50
— with type of assignment 2 required	(690 V, 100 KA), AWI. 200 A (690 V, 50 KA), BS66. S15 A (415 V, 50 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	screw fixing
height	172 mm
width	120 mm
WIGHT	120 Hill

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 mm
— downwards	10 mm
• for live parts	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 mm
Connections/ Terminals	TO THE
type of electrical connection	
for main current circuit	Connection bar
for main current circuit for auxiliary and control circuit	screw-type terminals
•	•
at contactor for auxiliary contacts of magnet coil	Screw-type terminals
of magnet coil width of connection bar	Screw-type terminals 17 mm
thickness of connection bar	3 mm
diameter of holes	9 mm
number of holes	1
type of connectable conductor cross-sections	4 QEO kamil
for AWG cables for main contacts	4 250 kcmil
connectable conductor cross-section for main contacts	05 400 3
• stranded	25 120 mm²
connectable conductor cross-section for auxiliary contacts	
solid or stranded	0.5 4 mm ²
finely stranded with core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	
for auxiliary contacts	0 (0 5 4 5 2) 0 (0 75 0 5 2) 0 (0 75 4 2)
— 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
service life maximum	20 a
test wear-related service life necessary	Yes
proportion of dangerous failures	
with low demand rate according to SN 31920	40 %
with high demand rate according to SN 31920 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	100 FIT
31920	
ISO 13849	2
device type according to ISO 13849-1	Yes
overdimensioning according to ISO 13849-2 necessary IEC 61508	165
ILO 01000	

safety device type according to IEC 61508-2	Type 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







Confirmation



<u>KC</u>

General Product Approval

EMV

Functional Saftey

Test Certificates





Type Examination Certificate Special Test Certificate Type Test Certificates/Test Report **Miscellaneous**

Marine / Shipping











Confirmation

other

other

Railway

Environment

Miscellaneous

Confirmation

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=3RT1056-6AP36

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1056-6AP36

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6AP36 Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

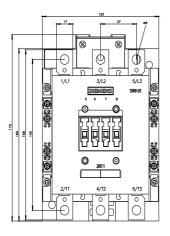
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1056-6AP36&lang=en

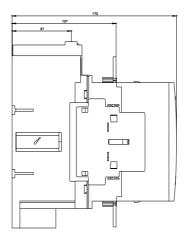
Characteristic: Tripping characteristics, I2t, Let-through current

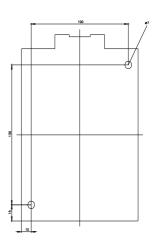
https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6AP36/char

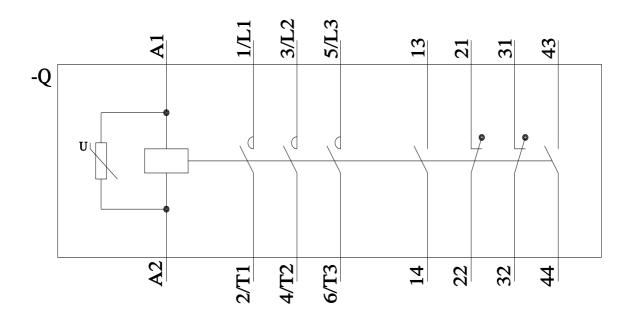
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1056-6AP36&objecttype=14&gridview=view1









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