## **SIEMENS**

Data sheet 3RT1056-6AP36

SIRIUS





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	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	Yes
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	39 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	13 W
<ul> <li>without load current share typical</li> </ul>	5.2 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	1 000 V
<ul> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>	500 V
surge voltage resistance	
<ul> <li>of main circuit rated value</li> </ul>	8 kV
<ul> <li>of auxiliary circuit rated value</li> </ul>	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
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/01/2012
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	
<ul> <li>during operation</li> </ul>	-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 %
Environmental footprint	
Global Warming Potential [CO2 eq] total	379 kg
Global Warming Potential [CO2 eq] during manufacturing	17 kg
global warming potential [CO2 eq] during sales	0.901 kg
Global Warming Potential [CO2 eq] during operation	363 kg
Global Warming Potential [CO2 eq] after end of life	-2.28 kg
Siemens Eco Profile (SEP)	Siemens EcoTech
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	
<ul> <li>at AC-1 at 400 V at ambient temperature 40 °C rated value</li> </ul>	215 A
• at AC-1	
— 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
<ul> <li>up to 1000 V at ambient temperature 60 °C rated value</li> </ul>	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  We to 220 V for surrent pook value n=20 reted value.	457.0
— 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	157 A
<ul> <li>up to 1000 V for current peak value n=20 rated value</li> </ul>	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	105 A
<ul> <li>up to 1000 V for current peak value n=30 rated value</li> </ul>	65 A
value	
minimum cross-section in main circuit at maximum AC-1 rated value	95 mm²
minimum cross-section in main circuit at maximum AC-1 rated	
minimum cross-section in main circuit at maximum AC-1 rated value  operational current for approx. 200000 operating cycles at	

operational current	
• at 1 current path at DC-1	400.4
— 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
— at 600 V rated value	0.5 A
<ul> <li>with 2 current paths in series at DC-1</li> </ul>	
— 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
<ul> <li>with 3 current paths in series at DC-1</li> </ul>	
— 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
<ul> <li>at 1 current path at DC-3 at DC-5</li> </ul>	
— 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
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— 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
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— 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	
— 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
operating power for approx. 200000 operating cycles at AC-	
at 400 V rated value	45 kW
<ul> <li>at 690 V rated value</li> </ul>	65 kW
at 690 V rated value  operating apparent power at AC-6a	OS KVV

• up to 400 V for current peak value n=20 rated value	100 000 VA
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	130 000 VA
<ul> <li>up to 690 V for current peak value n=20 rated value</li> </ul>	180 000 VA
<ul> <li>up to 1000 V for current peak value n=20 rated value</li> </ul>	110 000 VA
operating apparent power at AC-6a	
<ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul>	40 000 VA
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	70 000 VA
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	90 000 VA
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	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	2 000 At Lies minimum areas section ago to AC 1 reted value
limited to 1 s switching at zero current maximum     limited to 5 s switching at zero current maximum	2 900 A; Use minimum cross-section acc. to AC-1 rated value 2 084 A; Use minimum cross-section acc. to AC-1 rated value
limited to 5 s switching at zero current maximum     limited to 10 s switching at zero current maximum	
limited to 10 s switching at zero current maximum     limited to 20 s switching at zero current maximum	1 480 A; Use minimum cross-section acc. to AC-1 rated value 968 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 30 s switching at zero current maximum</li> <li>limited to 60 s switching at zero current maximum</li> </ul>	801 A; Use minimum cross-section acc. to AC-1 rated value
	out A, use minimum cross-section acc. to AC-1 fated value
no-load switching frequency  • at AC	2 000 1/h
• at DC	2 000 1/h
operating frequency	2 000 1/11
at AC-1 maximum	800 1/h
at AC-1 maximum     at AC-2 maximum	300 1/h
at AC-2 maximum     at AC-3 maximum	750 1/h
at AC-3 maximum     at AC-3e maximum	750 1/h
at AC-3e maximum     at AC-4 maximum	130 1/h
Control circuit/ Control	100 1/11
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	ACIDO
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	220 240 V
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	
<ul> <li>at minimum rated control supply voltage at AC</li> </ul>	
— at 50 Hz	250 VA
— at 60 Hz	250 VA
at maximum rated control supply voltage at AC	
— at 60 Hz	300 VA
— at 50 Hz	300 VA
apparent pick-up power of magnet coil at AC	200.14
• 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	42.1/A
at minimum rated control supply voltage at DC     at maximum 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	40.7/4
— at 50 Hz	4.8 VA
— at 60 Hz  at maximum rated control supply voltage at AC	4.8 VA

— at 50 Hz	5.8 VA
— at 50 пz — at 60 Hz	5.8 VA
inductive power factor with the holding power of the coil	0.0 4/1
• at 50 Hz	0.8
• at 60 Hz	0.8
closing power of magnet coil at DC	360 W
holding power of magnet coil at DC	5.2 W
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 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	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	0.055 4 (000 ) ( 400 ) 4)
— with type of coordination 1 required	gG: 355 A (690 V, 100 kA)
— 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

	LAN
	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
·	170 111111
required spacing  • with side-by-side mounting	
,	00
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
<ul> <li>for grounded parts</li> </ul>	
— 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	17 mm
thickness of connection bar	3 mm
diameter of holes	9 mm
number of holes	1
type of connectable conductor cross-sections	
• for AWG cables for main contacts	4 250 kcmil
connectable conductor cross-section for main contacts	4 250 KOTIII
	25 120 mm²
stranded  connectable conductor gross section for auxiliary contacts.	ZJ 1ZU IIIII
connectable conductor cross-section for auxiliary contacts	0.5 4 *****2
solid or stranded     finally attended with care and precessing.	0.5 4 mm <sup>2</sup>
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)
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
for AWG cables for auxiliary contacts	
AWG number as coded connectable conductor cross	2x (20 16), 2x (18 14), 1x 12
section	2x (20 16), 2x (18 14), 1x 12
<ul> <li>for auxiliary contacts</li> </ul>	
·	2x (20 16), 2x (18 14), 1x 12  18 14
Safety related data	
Safety related data product function	
Safety related data	
Safety related data product function	18 14
Safety related data  product function  ■ mirror contact according to IEC 60947-4-1	18 14 Yes
Product function  • mirror contact according to IEC 60947-4-1  • positively driven operation according to IEC 60947-5-1	18 14  Yes No
Product function  mirror contact according to IEC 60947-4-1  positively driven operation according to IEC 60947-5-1  suitable for safety function	18 14  Yes No Yes
Product function  • mirror contact according to IEC 60947-4-1  • positively driven operation according to IEC 60947-5-1  • suitable for safety function  suitability for use safety-related switching OFF	Yes No Yes Yes

<ul> <li>with low demand rate according to SN 31920</li> </ul>	40 %
<ul> <li>with high demand rate according to SN 31920</li> </ul>	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
ISO 13849	
device type according to ISO 13849-1	3
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
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 Ap**proval

EMV

**Functional Saftey** 

**Test Certificates** 





Type Examination Certificate

Special Test Certificate

Type Test Certificates/Test Report

**Miscellaneous** 

Marine / Shipping











**Miscellaneous** 

other

other

Railway

**Environment** 

Confirmation

Confirmation

**Special Test Certific-**<u>ate</u>



Siemens EcoTech



**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

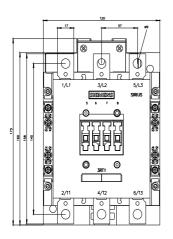
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

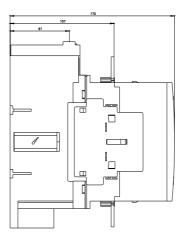
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT1056-6AP36&lang=en

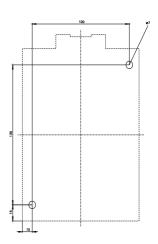
Characteristic: Tripping characteristics, I²t, Let-through current

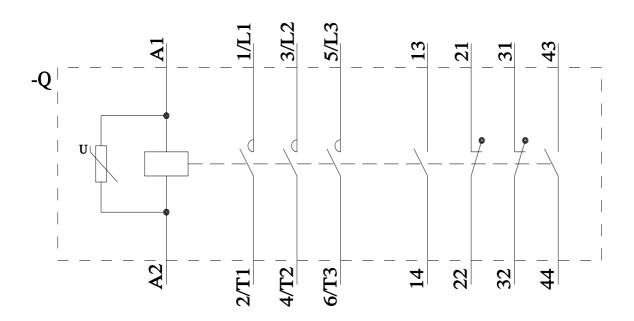
https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6AP36/char

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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