# **SIEMENS**

Data sheet 3RT2036-1AP60



power contactor, AC-3e/AC-3, 51 A, 22 kW / 400 V, 3-pole, 220 V AC, 50 Hz / 240 V, 60 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S2

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S2
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>	12 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	4 W
<ul> <li>without load current share typical</li> </ul>	18.5 W
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	690 V
<ul> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>	690 V
surge voltage resistance	
<ul> <li>of main circuit rated value</li> </ul>	6 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	400 V
shock resistance at rectangular impulse	
• at AC	11.8g / 5 ms, 7.4g / 10 ms
shock resistance with sine pulse	
• at AC	18.5g / 5 ms, 11.6g / 10 ms
mechanical service life (operating cycles)	
<ul> <li>of contactor typical</li> </ul>	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)	10/01/2014
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 %
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	690 V
at AC-3e rated value maximum	690 V
operational current	
<ul> <li>at AC-1 at 400 V at ambient temperature 40 °C rated</li> </ul>	70 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated	70 A
value	CO A
<ul> <li>up to 690 V at ambient temperature 60 °C rated value</li> </ul>	60 A
• at AC-3	
— at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
• at AC-3e	277
— at 400 V rated value	51 A
— at 500 V rated value	51 A
— at 690 V rated value	24 A
at AC-4 at 400 V rated value     at AC-5 aug to 600 V rated value	41 A
at AC-5a up to 690 V rated value	61.6 A
at AC-5b up to 400 V rated value	41.5 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	43.2 A
— up to 400 V for current peak value n=20 rated value	43.2 A
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	43.2 A
<ul> <li>up to 690 V for current peak value n=20 rated value</li> </ul>	24 A
• at AC-6a	
<ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul>	28.8 A
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	28.8 A
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	28.8 A
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	24 A
minimum cross-section in main circuit at maximum AC-1 rated value	25 mm <sup>2</sup>
operational current for approx. 200000 operating cycles at	
AC-4	
• at 400 V rated value	24 A
• at 690 V rated value	20 A
operational current	
at 1 current path at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	23 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A
with 2 current paths in series at DC-1	
— at 24 V rated value	55 A
— at 60 V rated value	45 A
— at 110 V rated value	45 A
— at 220 V rated value	5 A
— at 440 V rated value	1 A
— at 600 V rated value	0.8 A
with 3 current paths in series at DC-1	55.4
— at 24 V rated value	55 A
— at 60 V rated value	55 A
— at 110 V rated value	55 A
— at 220 V rated value	45 A
— at 440 V rated value	2.9 A
— at 600 V rated value	1.4 A
<ul> <li>at 1 current path at DC-3 at DC-5</li> </ul>	

at OAN and a distance	05.4
— at 24 V rated value	35 A
— at 60 V rated value	6 A
— at 220 V rated value	1 A
— at 440 V rated value	0.1 A
— at 600 V rated value	0.06 A
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 V rated value	55 A
— at 60 V rated value	45 A
— at 110 V rated value	25 A
— at 220 V rated value	5 A
— at 440 V rated value	0.27 A
— at 600 V rated value	0.16 A
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 V rated value	55 A
— at 60 V rated value	55 A
— at 110 V rated value	55 A
— at 220 V rated value	25 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.35 A
operating power	
• at AC-2 at 400 V rated value	22 kW
• at AC-3	
— at 230 V rated value	15 kW
— at 400 V rated value	22 kW
— at 500 V rated value	30 kW
— at 690 V rated value	22 kW
• at AC-3e	
— at 400 V rated value	22 kW
— at 500 V rated value	30 kW
— at 690 V rated value	22 kW
operating power for approx. 200000 operating cycles at AC-	
4	
at 400 V rated value	12.6 kW
at 690 V rated value	18.2 kW
operating apparent power at AC-6a	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	17.2 kVA
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	29.9 kVA
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	37.4 kVA
up to 690 V for current peak value n=20 rated value	28.6 kVA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	11.4 kVA
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	19.9 kVA
• up to 500 V for current peak value n=30 rated value	24.9 kVA
• up to 690 V for current peak value n=30 rated value	28.6 kVA
short-time withstand current in cold operating state up to	
40 °C	007 A II
Iimited to 1 s switching at zero current maximum	937 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 5 s switching at zero current maximum	697 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	468 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	282 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 60 s switching at zero current maximum	229 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	5 000 1/h
operating frequency	
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	600 1/h
• at AC-3 maximum	800 1/h
• at AC-3e maximum	800 1/h
• at AC-4 maximum	250 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC

control supply voltage at AC	
at 50 Hz rated value	220 V
at 60 Hz rated value	240 V
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
apparent pick-up power of magnet coil at AC	
● at 50 Hz	212 VA
● at 60 Hz	188 VA
inductive power factor with closing power of the coil	
● at 50 Hz	0.69
● at 60 Hz	0.65
apparent holding power of magnet coil at AC	
● at 50 Hz	18.5 VA
● at 60 Hz	16.5 VA
inductive power factor with the holding power of the coil	
● at 50 Hz	0.36
● at 60 Hz	0.39
closing delay	
• at AC	10 80 ms
opening delay	
• at AC	10 18 ms
arcing time	10 20 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	1
number of NO contacts for auxiliary contacts instantaneous contact	1
operational current at AC-12 maximum	10 A
operational current at AC-15	
<ul> <li>at 230 V rated value</li> </ul>	10 A
• at 400 V rated value	3 A
<ul> <li>at 500 V rated value</li> </ul>	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
<ul> <li>at 60 V rated value</li> </ul>	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	52 A
at 600 V rated value	52 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	3 hp
— at 230 V rated value	10 hp

• for 3-phase AC motor		
— at 200/208 V rated value	15 hp	
— at 220/230 V rated value	15 hp	
— at 460/480 V rated value	40 hp	
— at 575/600 V rated value	50 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		
•	aC: 160 A (600 V 100 kA) aM: 90 A (600 V 100 kA) BC99: 125 A (415 V 90	
<ul><li>— with type of coordination 1 required</li></ul>	gG: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA)	
<ul> <li>— with type of assignment 2 required</li> </ul>	gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A (415V,80kA)	
for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)	
Installation/ mounting/ dimensions		
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface	
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715	
side-by-side mounting	Yes	
height	114 mm	
width	55 mm	
depth	130 mm	
required spacing		
with side-by-side mounting		
— forwards	10 mm	
— upwards	10 mm	
— downwards	10 mm	
— at the side	0 mm	
for grounded parts		
— forwards	10 mm	
— upwards	10 mm	
— at the side	6 mm	
— downwards	10 mm	
• for live parts		
— forwards	10 mm	
— upwards	10 mm	
— downwards	10 mm	
— at the side	6 mm	
Connections/ Terminals		
type of electrical connection		
for main current circuit	screw-type terminals	
for auxiliary and control circuit	screw-type terminals	
at contactor for auxiliary contacts	Screw-type terminals	
of magnet coil	Screw-type terminals	
type of connectable conductor cross-sections for main contacts	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
solid or stranded	2x (1 35 mm²), 1x (1 50 mm²)	
finely stranded with core end processing	2x (1 35 mm²), 1x (1 35 mm²) 2x (1 25 mm²), 1x (1 35 mm²)	
connectable conductor cross-section for main contacts	2. (1 20 IIIII ), 1. (1 00 IIIII )	
	1 25 mm²	
• finely stranded with core end processing	1 35 mm²	
connectable conductor cross-section for auxiliary contacts	0.5 0.5	
solid or stranded	0.5 2.5 mm <sup>2</sup>	
finely stranded with core end processing	0.5 2.5 mm <sup>2</sup>	
type of connectable conductor cross-sections		
for auxiliary contacts		
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)	
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)	
<ul> <li>for AWG cables for auxiliary contacts</li> </ul>	2x (20 16), 2x (18 14)	
AWG number as coded connectable conductor cross section		
	18 1	
section	18 1 20 14	

product function	
<ul> <li>mirror contact according to IEC 60947-4-1</li> </ul>	Yes
<ul> <li>positively driven operation according to IEC 60947-5-1</li> </ul>	No
B10 value with high demand rate according to SN 31920	1 000 000
proportion of dangerous failures	
<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 %
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
T1 value for proof test interval or service life according to IEC 61508	20 a
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
suitability for use	
safety-related switching OFF	Yes

#### Certificates/ approvals

### **General Product Approval**





Confirmation



<u>KC</u>





Type Examination Certificate





Type Test Certificates/Test Report

Special Test Certificate

## Marine / Shipping













Marine / Shipping	other	Railway	Dangerous Good	Environment
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Confirmation

Confirmation

Vibration and Shock

Transport Information

Environmental Confirmations

#### Further information

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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=3RT2036-1AP60

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2036-1AP60

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

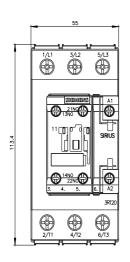
https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1AP60

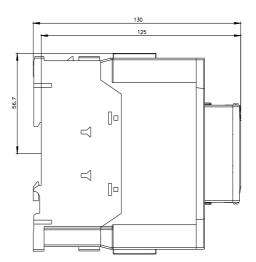
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

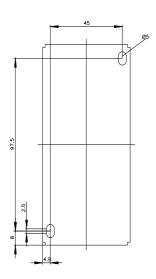
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2036-1AP60&lang=en

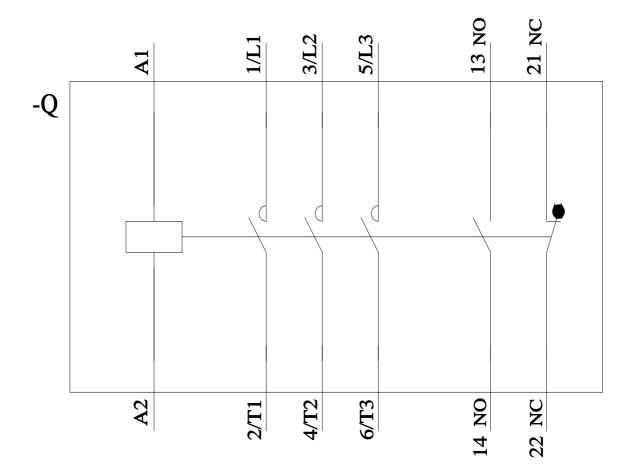
Characteristic: Tripping characteristics, I²t, Let-through current

https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-1AP60/char Further characteristics (e.g. electrical endurance, switching frequency)









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