# **SIEMENS**

Data sheet 3RT2036-3AL16

power contactor, AC-3 50 A, 22 kW / 400 V 2 NO + 2 NC, 230 V AC, 60 Hz 3-pole, Size S2, Spring-type terminal lateral auxiliary switch block



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	No	
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	
power loss [W] for rated value of the current without	18.5 W	
load current share typical		
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 safe isolation		
<ul> <li>between coil and main contacts acc. to EN</li> </ul>	400 V	
60947-1		

protection class IP	
• on the front	IP20
• of the terminal	IP00
shock resistance at rectangular impulse	
• at AC	9.1g / 5 ms, 6.2g / 10 ms
shock resistance with sine pulse	
• at AC	14.2g / 5 ms, 9.6g / 10 ms
mechanical service life (switching cycles)	
of contactor typical	10 000 000
<ul> <li>of the contactor with added electronics-</li> </ul>	5 000 000
compatible auxiliary switch block typical	
<ul> <li>of the contactor with added auxiliary switch</li> </ul>	10 000 000
block typical	
reference code acc. to DIN EN 81346-2	Q
Ambient conditions	
<ul> <li>installation altitude at height above sea level</li> </ul>	2 000 m
maximum	
ambient temperature	
<ul><li>during operation</li></ul>	-25 +60 °C
during storage	-55 +80 °C
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
operating voltage	
<ul> <li>at AC-3 rated value maximum</li> </ul>	690 V
operating current	
• at AC-1 at 400 V	
— at ambient temperature 40 °C rated value	70 4
	70 A
• at AC-1	70 A
<ul> <li>at AC-1</li> <li>up to 690 V at ambient temperature 40 °C rated value</li> </ul>	70 A
— up to 690 V at ambient temperature 40 °C	
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> <li>up to 690 V at ambient temperature 60 °C</li> </ul>	70 A
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> <li>up to 690 V at ambient temperature 60 °C rated value</li> </ul>	70 A
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> <li>up to 690 V at ambient temperature 60 °C rated value</li> <li>at AC-3</li> </ul>	70 A 60 A
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> <li>up to 690 V at ambient temperature 60 °C rated value</li> <li>at AC-3</li> <li>at 400 V rated value</li> </ul>	70 A 60 A 51 A
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> <li>up to 690 V at ambient temperature 60 °C rated value</li> <li>at AC-3</li> <li>at 400 V rated value</li> <li>at 500 V rated value</li> </ul>	70 A 60 A 51 A 51 A
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> <li>up to 690 V at ambient temperature 60 °C rated value</li> <li>at AC-3</li> <li>at 400 V rated value</li> <li>at 500 V rated value</li> <li>at 690 V rated value</li> <li>at AC-4 at 400 V rated value</li> </ul>	70 A 60 A 51 A 51 A 24 A
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> <li>up to 690 V at ambient temperature 60 °C rated value</li> <li>at AC-3</li> <li>at 400 V rated value</li> <li>at 500 V rated value</li> <li>at 690 V rated value</li> </ul>	70 A 60 A 51 A 51 A 24 A 41 A

<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	43.2 A
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	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	
<ul> <li>at maximum AC-1 rated value</li> </ul>	25 mm²
operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	24 A
• at 690 V rated value	20 A
operating current	
• at 1 current path at DC-1	
— at 24 V rated value	55 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
<ul> <li>with 2 current paths in series at DC-1</li> </ul>	
— at 24 V rated value	55 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
<ul> <li>with 3 current paths in series at DC-1</li> </ul>	
— at 24 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
operating current	

35 A 2.5 A 1 A
2.5 A
1 A
0.1 A
0.06 A
55 A
25 A
5 A
0.27 A
0.16 A
55 A
55 A
25 A
0.6 A
0.35 A
22 kW
15 kW
22 kW
30 kW
22 kW
12.6 kW
18.2 kW
17.2 kV·A
29.9 kV·A
37.4 kV·A
28.6 kV·A
11.4 kV·A
19.9 kV·A

<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	24.9 kV·A
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	28.6 kV·A
short-time withstand current in cold operating state up to 40 °C	
<ul> <li>limited to 1 s switching at zero current maximum</li> </ul>	937 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	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
<ul> <li>limited to 60 s switching at zero current maximum</li> </ul>	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-4 maximum	250 1/h
Control circuit/ Control	

Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
• at 60 Hz rated value	230 V
operating range factor control supply voltage rated	
value of magnet coil at AC	
● at 60 Hz	0.8 1.1
apparent pick-up power of magnet coil at AC	
● at 60 Hz	212 V·A
inductive power factor with closing power of the coil	
● at 60 Hz	0.67
apparent holding power of magnet coil at AC	
● at 60 Hz	18.5 V·A
inductive power factor with the holding power of the	
coil	
● at 60 Hz	0.37
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	2		
number of NO contacts for auxiliary contacts			
• instantaneous contact	2		
operating current at AC-12 maximum	10 A		
operating 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		
operating 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		
operating current at DC-13			
• at 24 V rated value	6 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 three-phase AC motor			
• at 480 V rated value	52 A		
• at 600 V rated value	52 A		
yielded mechanical performance [hp]			
<ul> <li>for single-phase AC motor</li> </ul>			
— at 110/120 V rated value	3 hp		
— at 230 V rated value	10 hp		
• for three-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 / Q600

0	hort-					
121	hort-	CILC	ilit r	vrot	'ACTI	٦n
v		UIIU	UIL	лО	GUIII	911

## design of the fuse link

- for short-circuit protection of the main circuit
  - with type of coordination 1 required

A (415 V, 80 kA) gG: 80A (690V,100kA), aM: 50A (690V,100kA), BS88: 63A — with type of assignment 2 required

(415V,80kA)

• for short-circuit protection of the auxiliary switch

required

gG: 10 A (500 V, 1 kA)

gG: 160 A (690 V, 100 kA), aM: 80 A (690 V, 100 kA), BS88: 125

mounting position	+/-180° rotation possible on vertical mounting surface; can be
	tilted forward and backward by +/- 22.5° on vertical mounting
	surface
mounting type	screw and snap-on mounting onto 35 mm standard mounting rail
	according to DIN EN 60715
<ul><li>side-by-side mounting</li></ul>	Yes
height	114 mm
width	75 mm
depth	130 mm
required spacing	
<ul><li>with side-by-side mounting</li></ul>	
— 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

• for auxiliary and control current circuit

screw-type terminals

spring-loaded terminals

<ul> <li>at contactor for auxiliary contacts</li> </ul>	Spring-type terminals
<ul><li>of magnet coil</li></ul>	Spring-type terminals
type of connectable conductor cross-sections	
• for main contacts	
<ul><li>— single or multi-stranded</li></ul>	2x (1 35 mm²), 1x (1 50 mm²)
<ul> <li>finely stranded with core end processing</li> </ul>	2x (1 25 mm²), 1x (1 35 mm²)
<ul> <li>at AWG conductors for main contacts</li> </ul>	2x (18 2), 1x (18 1)
connectable conductor cross-section for main contacts	
<ul> <li>finely stranded with core end processing</li> </ul>	1 35 mm²
connectable conductor cross-section for auxiliary contacts	
single or multi-stranded	0.5 2.5 mm²
<ul> <li>finely stranded with core end processing</li> </ul>	0.5 1.5 mm²
• finely stranded without core end processing	0.5 2.5 mm²
<ul> <li>type of connectable conductor cross-sections for auxiliary contacts</li> </ul>	
— single or multi-stranded	2x (0.5 2.5 mm²)
— finely stranded with core end processing	2x (0.5 1.5 mm²)
<ul> <li>finely stranded without core end processing</li> </ul>	2x (0.5 2.5 mm²)
<ul> <li>type of connectable conductor cross-sections at AWG conductors for auxiliary contacts</li> </ul>	2x (20 14)
AWG number as coded connectable conductor cross	
section	
• for main contacts	18 1
• for auxiliary contacts	20 14
Safety related data	

Safety related data	
B10 value	
<ul> <li>with high demand rate acc. to SN 31920</li> </ul>	1 000 000
proportion of dangerous failures	
<ul> <li>with low demand rate acc. to SN 31920</li> </ul>	40 %
<ul> <li>with high demand rate acc. to SN 31920</li> </ul>	73 %
failure rate [FIT]	
<ul> <li>with low demand rate acc. to SN 31920</li> </ul>	100 FIT
product function	
<ul><li>mirror contact acc. to IEC 60947-4-1</li></ul>	Yes
• positively driven operation acc. to IEC 60947-5-	No
1	
T1 value for proof test interval or service life acc. to	20 y
IEC 61508	
protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529
suitability for use safety-related switching OFF	Yes

#### Certificates/ approvals

## **General Product Approval**



CCC





KC





**EMC** 

Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	Marine / Ship- ping
Type Examination  Certificate	Miscellaneous  EG-Konf.	Type Test Certificates/Test Report Special Test Certificate	ABS

# Marine / Shipping





LRS









#### other

Confirmation

## Further information

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=3RT2036-3AL16

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2036-3AL16

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3AL16

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

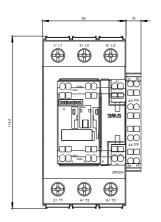
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2036-3AL16&lang=en

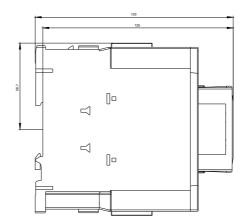
Characteristic: Tripping characteristics, I2t, Let-through current

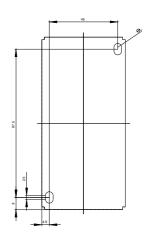
https://support.industry.siemens.com/cs/ww/en/ps/3RT2036-3AL16/char

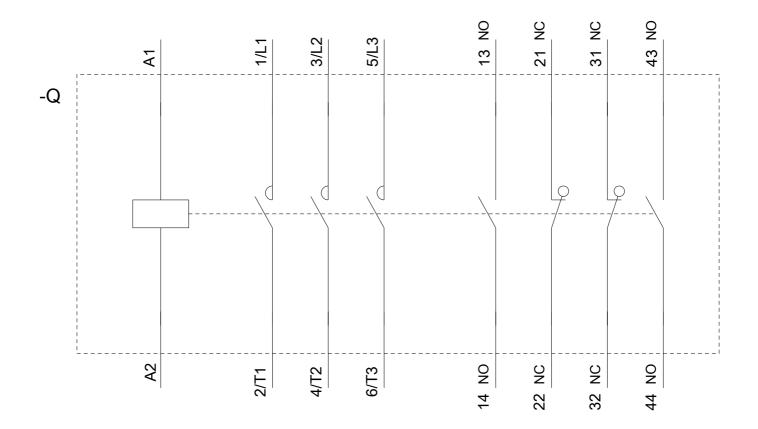
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2036-3AL16&objecttype=14&gridview=view1









last modified: 09/08/2020