## **SIEMENS**

Data sheet 3RT2038-1AL20



CONTACTOR,AC3:37KW/400V, 1NO+1NC, 230V AC 50/60HZ, 3-POLE, SIZE S2, SCREW TERMINAL

Figure similar

product brand name	SIRIUS
Product designation	3RT2 contactor

Inculation voltage			
Insulation voltage			
Rated value	V	690	
Degree of pollution		3	
Surge voltage resistance Rated value	kV	6	
Mechanical service life (switching cycles)			
<ul> <li>of the contactor typical</li> </ul>		10 000 000	
<ul> <li>of the contactor with added electronics- compatible 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	
Thermal short-time current restricted to 10 s	Α	640	
Protection class IP			
• on the front		IP20	
• of the terminal		IP00	
Equipment marking			
• acc. to DIN EN 61346-2		Q	
• acc. to DIN EN 81346-2		Q	

Main circuit:	
Number of poles for main current circuit	3
Number of NC contacts for main contacts	0
Number of NO contacts for main contacts	3
Operating voltage	

<ul> <li>at AC-3 Rated value maximum</li> </ul>	V	690
Operating current		
• at AC-1		
— at 400 V at ambient temperature 40 °C Rated value	Α	90
— up to 690 V at ambient temperature 40 $^{\circ}\mathrm{C}$ Rated value	Α	90
— up to 690 V at ambient temperature 60 °C Rated value	Α	80
• at AC-2 at 400 V Rated value	Α	80
• at AC-3		
— at 400 V Rated value	Α	80
— at 500 V Rated value	Α	80
— at 690 V Rated value	Α	58
• at AC-4 at 400 V Rated value	Α	55
Operating current with 1 current path		
• at DC-1		
— at 24 V Rated value	Α	75
— at 110 V Rated value	Α	4.5
— at 220 V Rated value	Α	2
— at 440 V Rated value	Α	0.4
— at 600 V Rated value	Α	0.25
• at DC-3 at DC-5		
— at 24 V Rated value	Α	35
— at 110 V Rated value	Α	2.5
— at 220 V Rated value	Α	2
— at 440 V Rated value	Α	0.1
— at 600 V Rated value	Α	0.06
Operating current with 2 current paths in series		
• at DC-1		
— at 24 V Rated value	Α	75
— at 110 V Rated value	Α	45
— at 220 V Rated value	Α	5
— at 440 V Rated value	Α	1
— at 600 V Rated value	Α	0.8
• at DC-3 at DC-5		
— at 110 V Rated value	Α	25
— at 220 V Rated value	Α	5
— at 24 V Rated value	Α	55
— at 440 V Rated value	Α	0.27
— at 600 V Rated value	Α	0.16
Operating current with 3 current paths in series		

• at DC-1		
— at 24 V Rated value	Α	55
— at 110 V Rated value	Α	45
— at 220 V Rated value	Α	45
— at 440 V Rated value	Α	2.9
— at 600 V Rated value	Α	1.4
• at DC-3 at DC-5		
— at 110 V Rated value	Α	45
— at 220 V Rated value	Α	25
— at 24 V Rated value	Α	55
— at 440 V Rated value	Α	0.6
— at 600 V Rated value	Α	0.6
Operating power		
● at AC-1 at 400 V Rated value	kW	59
● at AC-2 at 400 V Rated value	kW	37
● at AC-4 at 400 V Rated value	kW	30
Operating power		
● at AC-1		
— at 230 V at 60 °C Rated value	kW	28
— at 230 V Rated value	kW	34
— at 400 V at 60 °C Rated value	kW	49
— at 690 V at 60 °C Rated value	kW	85
— at 690 V Rated value	kW	102
● at AC-3		
— at 230 V Rated value	kW	22
— at 400 V Rated value	kW	37
— at 500 V Rated value	kW	37
— at 690 V Rated value	kW	45
Operating power for ≥ 200000 operating cycles at		
AC-4		
● at 400 V Rated value	kW	15.8
● at 690 V Rated value	kW	21.8
Operating frequency		
• at AC-3 maximum	1/h	500
Control circuit/ Control:		
Type of voltage of the control supply voltage		AC
Control supply voltage with AC		
● at 50 Hz Rated value	V	230
● at 60 Hz Rated value	V	230
Operating range factor control supply voltage rated		
value of the magnet coil with AC		

● at 50 Hz	0.8 1.1
• at 60 Hz	0.85 1.1

Auxiliary circuit:		
Number of NC contacts		
for auxiliary contacts		
<ul><li>instantaneous contact</li></ul>		1
Number of NO contacts		
for auxiliary contacts		
<ul> <li>instantaneous contact</li> </ul>		1
Product expansion Auxiliary switch		Yes
Operating current at AC-15		
● at 230 V Rated value	Α	10
● at 400 V Rated value	Α	3
• at 690 V Rated value	Α	1
Operating current		
• at DC-12 at 125 V Rated value	Α	2
• at DC-12 at 220 V Rated value	Α	1
• at DC-12 at 600 V Rated value	Α	0.15
• at DC-13 at 125 V Rated value	Α	0.9
● at DC-13 at 220 V Rated value	Α	0.3
● at DC-13 at 600 V Rated value	Α	0.1
Operating current		
• at DC-12		
— at 60 V Rated value	Α	6
— at 110 V Rated value	Α	3
● at DC-13		
— at 24 V Rated value	Α	10
— at 60 V Rated value	Α	2
— at 110 V Rated value	Α	1
Contact reliability of the 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	Α	65
● at 600 V Rated value	Α	62
yielded mechanical performance [hp]		
<ul> <li>for single-phase AC motor at 110/120 V Rated value</li> </ul>	metric hp	5
<ul> <li>for single-phase AC motor at 230 V Rated value</li> </ul>	metric hp	15

value

• for three-phase AC motor at 200/208 V Rated

20

metric

hp

<ul> <li>for three-phase AC motor at 220/230 V Rated value</li> </ul>	metric hp	25
• for three-phase AC motor at 460/480 V Rated value	metric hp	50
• for three-phase AC motor at 575/600 V Rated value	metric hp	60
Contact rating of the auxiliary contacts acc. to UL		A600 / P600

Short-circuit:	
Design of the fuse link	
• for short-circuit protection of the main circuit	
— with type of assignment 1 required	gL/gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 250 A
— with type of assignment 2 required	gL/gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 160 A
<ul> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	fuse gL/gG: 10 A

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 50022
Side-by-side mounting		Yes
Height	mm	113.4
Width	mm	55
Depth	mm	130
Required spacing		
<ul><li>with side-by-side mounting</li></ul>		
— forwards	mm	0
— Backwards	mm	0
— upwards	mm	0
— downwards	mm	0
— at the side	mm	0
• for grounded parts		
— forwards	mm	0
— Backwards	mm	0
— upwards	mm	50
— at the side	mm	6
— downwards	mm	50
• for live parts		
— forwards	mm	0
— Backwards	mm	0
— upwards	mm	50
— downwards	mm	50

Connections/ Terminals:		
Type of electrical connection		
• for main current circuit		screw-type terminals
<ul> <li>for auxiliary and control current circuit</li> </ul>		screw-type terminals
Type of connectable conductor cross-section		
• 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>for AWG conductors for main contacts</li> </ul>		2x (18 2), 1x (18 1)
<ul> <li>for auxiliary contacts</li> </ul>		
<ul> <li>single or multi-stranded</li> </ul>		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 conductors for auxiliary contacts</li> </ul>		2x (20 16), 2x (18 14)
Apparent pick-up power of the magnet coil with AC		
● at 50 Hz	V·A	210
● at 60 Hz	V·A	188

Safety related data:		
Proportion of dangerous failures		
<ul> <li>with low demand rate acc. to SN 31920</li> </ul>	%	40
• with high demand rate acc. to SN 31920	%	73
Product function Mirror contact acc. to IEC 60947-4-1		Yes
Protection against electrical shock		finger-safe when touched vertically from front acc. to IEC 60529

Mechanical data:		
Size of contactor	S2	

Ambient conditions:			
Installation altitude at height above sea level	m	2 000	
maximum			
Ambient temperature			
<ul><li>during operation</li></ul>	°C	-25 +60	
during storage	°C	-55 <b>+</b> 80	

### Certificates/ approvals:

General Product Approval other







Confirmation

Environmental Confirmations

#### Further informatior

#### Information- and Downloadcenter (Catalogs, Brochures,...)

http://www.siemens.com/industrial-controls/catalogs

#### Industry Mall (Online ordering system)

http://www.siemens.com/industrymall

#### Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT20381AL20

# Service&Support (Manuals, Certificates, Characteristics, FAQs,...) <a href="http://support.automation.siemens.com/WW/view/en/3RT20381AL20/all">http://support.automation.siemens.com/WW/view/en/3RT20381AL20/all</a>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT20381AL20&lang=en







