# **SIEMENS**

Data sheet 3RT2016-1AP62



CONTACTOR, AC-3, 4KW/400V, 1NC, AC 220V 50HZ 240V 60 HZ, 3-POLE, SZ S00 SCREW TERMINAL

197900	
product brand name	SIRIUS
Product designation	3RT2 contactor

General technical data:		
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>		30 000 000
<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	72
Protection class IP		
• on the front		IP20
• of the terminal		IP20
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	

• at AC-3 Rated value maximum	V	690
Operating current		
• at AC-1		
— at 400 V at ambient temperature 40 °C Rated value	Α	22
<ul> <li>up to 690 V at ambient temperature 40 °C</li> <li>Rated value</li> </ul>	Α	22
<ul> <li>up to 690 V at ambient temperature 60 °C</li> <li>Rated value</li> </ul>	Α	20
• at AC-2 at 400 V Rated value	Α	9
• at AC-3		
— at 400 V Rated value	Α	9
— at 500 V Rated value	Α	7.7
— at 690 V Rated value	Α	6.7
• at AC-4 at 400 V Rated value	Α	8.5
Operating current with 1 current path		
• at DC-1		
— at 24 V Rated value	Α	20
— at 110 V Rated value	Α	2.1
— at 220 V Rated value	Α	0.8
— at 440 V Rated value	Α	0.6
— at 600 V Rated value	Α	0.6
• at DC-3 at DC-5		
— at 24 V Rated value	Α	20
— at 110 V Rated value	Α	0.1
Operating current with 2 current paths in series		
• at DC-1		
— at 24 V Rated value	Α	20
— at 110 V Rated value	Α	12
— at 220 V Rated value	Α	1.6
— at 440 V Rated value	Α	0.8
— at 600 V Rated value	Α	0.7
• at DC-3 at DC-5		
— at 110 V Rated value	Α	0.35
— at 24 V Rated value	Α	20
Operating current with 3 current paths in series		
• at DC-1		
— at 24 V Rated value	Α	20
— at 110 V Rated value	Α	20
— at 220 V Rated value	Α	20
— at 440 V Rated value	Α	1.3
— at 600 V Rated value	Α	1

	a -4 DO 2 -4 DO 5		
— at 220 V Rated value — at 24 V Rated value — at 440 V Rated value — at 600 V Rated value  • at AC-1 at 400 V Rated value • at AC-2 at 400 V Rated value • at AC-2 at 400 V Rated value • at AC-3 at 400 V Rated value • at AC-4 at 400 V Rated value • at AC-4 at 400 V Rated value  • at AC-3 at 400 V Rated value — at 230 V Rated value — at 230 V Rated value — at 230 V Rated value — at 690 V Rated value — at 690 V Rated value • at AC-3 — at 230 V Rated value — at 690 V Rated value	• at DC-3 at DC-5	٨	20
- at 24 V Rated value - at 440 V Rated value - at 600 V Rated value - at 600 V Rated value - at 600 V Rated value  • at AC-1 at 400 V Rated value • at AC-2 at 400 V Rated value • at AC-2 at 400 V Rated value • at AC-3 at 400 V Rated value • at AC-4 at 400 V Rated value • at AC-1 - at 230 V Rated value • at AC-1 - at 230 V Rated value • at AC-1 - at 230 V Rated value • www 7.5 - at 230 V Rated value • at 400 V at 60 °C Rated value • www 7.5 - at 690 V Rated value • at AC-3 - at 230 V Rated value • at AC-3 - at 230 V Rated value • www 22 • at 690 V Rated value • at 400 V Rated value • www 4 - at 690 V Rated value • www 5.5  Coperating power for ≥ 200000 operating cycles at AC-4 • at 400 V Rated value • at 690 V Rated value • at 50 Hz Rated value • at 600 V Rated value • a			
— at 500 V Rated value A 0.2  Operating power			
Operating power              • at AC-1 at 400 ∨ Rated value             • at AC-2 at 400 ∨ Rated value             • at AC-2 at 400 ∨ Rated value             • at AC-4 at 400 ∨ Rated value             • at AC-1             • at AC-1             — at 230 ∨ at 60 °C Rated value             • at AC-1             — at 230 ∨ at 60 °C Rated value             — at 230 ∨ at 60 °C Rated value             — at 400 ∨ at 60 °C Rated value             — at 400 ∨ at 60 °C Rated value             — at 690 ∨ Rated value             — at 690 ∨ Rated value             — at 690 ∨ Rated value             — at 400 ∨ Rated value             — at 600 ∨ Rated value             — at 400 ∨ Rated value             — at 600 ∨ Rated value             — at 600 ∨ Rated value             • AC-4             • at 400 ∨ Rated value             • AC-3             — at 400 ∨ Rated value             • AC-4             • at 400 ∨ Rated value             • AC-5  Control supply voltage of the control supply voltage             • AC  Control supply voltage with AC             • at 60 Hz Rated value             • AC  Operating range factor control supply voltage rated value of the magnet coil with AC             • at 60 Hz             • AC  Auxiliary circuit:  Number of NC contacts             • for auxiliary contacts             — instantaneous contact             • for auxiliary contacts             — instantaneous			
• at AC-1 at 400 V Rated value     • at AC-2 at 400 V Rated value     • at AC-2 at 400 V Rated value     • at AC-4 at 400 V Rated value     • at AC-4 at 400 V Rated value     • at AC-1     — at 230 V Rated value     • at AC-1     — at 230 V Rated value     — at 400 V at 60 °C Rated value     — at 400 V at 60 °C Rated value     — at 690 V at 60 °C Rated value     — at 690 V Rated value     — at 690 V Rated value     • at AC-3     — at 230 V Rated value     • at AC-3     — at 230 V Rated value     • at AC-3     — at 230 V Rated value     — at 400 V Rated value     — at 400 V Rated value     — at 690 V Rated value     • at 400 V Rated value     • at 690 V Rated value     • at 690 V Ra		Α	0.2
• at AC-2 at 400 V Rated value	Operating power		
• at AC-4 at 400 V Rated value  Operating power  • at AC-1  — at 230 V at 60 °C Rated value — at 230 V Rated value — at 230 V Rated value — at 690 V Rated value — at 400 V Rated value — at 690 V Rated value — at 690 V Rated value	• at AC-1 at 400 V Rated value	kW	13
Operating power  • at AC-1  — at 230 V at 60 °C Rated value — at 230 V Rated value — at 400 V at 60 °C Rated value — at 690 V Rated value  • at AC-3  — at 230 V Rated value  • at AC-3  — at 230 V Rated value — at 690 V Rated value  • at 400 V Rated value • at 690 V Rated value  • at 690 V Rated value  • at 690 V Rated value  • at 690 V Rated value  • at 690 V Rated value  • at 690 V Rated value  • at 690 V Rated value  • at 60 V Rated value  • at 60 Hz • at 6	• at AC-2 at 400 V Rated value	kW	4
• at AC-1             — at 230 V at 60 °C Rated value             — at 230 V Rated value             — at 400 V at 60 °C Rated value             — at 490 V at 60 °C Rated value             — at 690 V Rated value             — at 690 V Rated value             — at 690 V Rated value             — at 230 V Rated value             — at 230 V Rated value             • at AC-3             —— at 230 V Rated value             —— at 230 V Rated value             —— at 290 V Rated value             —— at 400 V Rated value             —— at 690 V Rated value             —— at 400 V Rated value             —— at 690 V Rated value              —— at 690 V Rated value             —— at 690 V Rated value              —— at 69	• at AC-4 at 400 V Rated value	kW	4
— at 230 V at 60 °C Rated value	Operating power		
— at 230 V Rated value	• at AC-1		
— at 400 V at 60 °C Rated value	— at 230 V at 60 °C Rated value	kW	7.5
— at 690 V at 60 °C Rated value	— at 230 V Rated value	kW	7.5
- at 690 V Rated value  • at AC-3  — at 230 V Rated value  — at 400 V Rated value  — at 690 V Rated value  — at 690 V Rated value  — at 690 V Rated value  (kW 5.5)  Operating power for ≥ 200000 operating cycles at AC-4  • at 400 V Rated value  • at 690 V Rated value  • at 690 V Rated value  (kW 2.5)  Operating frequency  • at AC-3 maximum  1/h 750  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage with AC  • at 50 Hz Rated value  V 220  • at 60 Hz Rated value  V 240  Operating range factor control supply voltage rated value of the magnet coil with AC  • at 50 Hz  • at 60 Hz	— at 400 V at 60 °C Rated value	kW	13
at AC-3  — at 230 V Rated value  — at 400 V Rated value  — at 690 V Rated value  kW 5.5  Operating power for ≥ 200000 operating cycles at AC-4  • at 400 V Rated value  • at 690 V Rated value  • at 690 V Rated value  • at AC-3 maximum  1/h 750  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage with AC  • at 50 Hz Rated value  • at 60 Hz Rated value  Operating range factor control supply voltage rated value of the magnet coil with AC  • at 50 Hz  • at 60 Hz  Auxillary circuit:  Number of NC contacts  • for auxiliary contacts  — instantaneous contact  1	— at 690 V at 60 °C Rated value	kW	22
— at 230 V Rated value — at 400 V Rated value    — at 690 V Rated value    — by V Rated value  — at 690 V Rated value  • at 400 V Rated value  • at 400 V Rated value  • at 400 V Rated value  • at 690 V Rated value  • at AC-3 maximum  1/h  750  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage with AC  • at 50 Hz Rated value  • at 60 Hz Rated value  • at 50 Hz  • at 50 Hz  • at 60 Hz  • at 60 Hz  Auxiliary circuit:  Number of NC contacts  • for auxiliary contacts — instantaneous contact  1	— at 690 V Rated value	kW	22
— at 400 ∨ Rated value — at 690 ∨ Rated value  Operating power for ≥ 200000 operating cycles at AC-4  • at 400 ∨ Rated value • at 690 ∨ Rated value  • at 690 ∨ Rated value  • at AC-3 maximum  1/h  750  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage with AC  • at 50 Hz Rated value  • at 60 Hz Rated value  • at 50 Hz • at 50 Hz • at 50 Hz • at 60 Hz  Auxiliary circuit:  Number of NC contacts • for auxiliary contacts — instantaneous contact  1   kW  4  4  4  4  4  4  4  4  4  4  4  4  4	• at AC-3		
— at 690 V Rated value	— at 230 V Rated value	kW	2.2
Operating power for ≥ 200000 operating cycles at AC-4  • at 400 V Rated value • at 690 V Rated value  • at AC-3 maximum  1/h  750  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage with AC • at 50 Hz Rated value • at 60 Hz Rated value  V 220 • at 60 Hz Rated value V 240  Operating range factor control supply voltage rated value of the magnet coil with AC • at 50 Hz • at 60 Hz  Auxiliary circuit:  Number of NC contacts • for auxiliary contacts — instantaneous contact  1	— at 400 V Rated value	kW	4
AC-4  • at 400 V Rated value • at 690 V Rated value  (by 2.5  Operating frequency • at AC-3 maximum  1/h  750  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage with AC • at 50 Hz Rated value • at 60 Hz Rated value  Operating range factor control supply voltage rated value of the magnet coll with AC • at 50 Hz • at 60 Hz  Auxiliary circuit:  Number of NC contacts • for auxiliary contacts — instantaneous contact  1	— at 690 V Rated value	kW	5.5
at 690 V Rated value  Operating frequency at AC-3 maximum  1/h  750  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage with AC at 50 Hz Rated value V 220 at 60 Hz Rated value V 240  Operating range factor control supply voltage rated value of the magnet coil with AC at 50 Hz at 60 Hz  Onerating range factor control supply voltage rated value of the magnet coil with AC at 50 Hz for at 50 Hz for at 50 Hz for at 50 Hz for auxiliary circuit:  Number of NC contacts for auxiliary c			
Operating frequency  • at AC-3 maximum  1/h  750  Control circuit/ Control:  Type of voltage of the control supply voltage  AC  Control supply voltage with AC  • at 50 Hz Rated value  • at 60 Hz Rated value  Operating range factor control supply voltage rated value of the magnet coil with AC  • at 50 Hz  • at 60 Hz  Auxiliary circuit:  Number of NC contacts  • for auxiliary contacts  — instantaneous contact  1	• at 400 V Rated value	kW	2
at AC-3 maximum  1/h  750  Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage with AC      at 50 Hz Rated value     v 220      at 60 Hz Rated value  Operating range factor control supply voltage rated value of the magnet coil with AC      at 50 Hz     at 60 Hz  Auxiliary circuit:  Number of NC contacts     for auxiliary contacts     instantaneous contact  1	• at 690 V Rated value	kW	2.5
Control circuit/ Control:  Type of voltage of the control supply voltage  Control supply voltage with AC  • at 50 Hz Rated value  • at 60 Hz Rated value  Operating range factor control supply voltage rated value of the magnet coil with AC  • at 50 Hz  • at 60 Hz  0.8 1.1  Auxiliary circuit:  Number of NC contacts  • for auxiliary contacts  — instantaneous contact  1	Operating frequency		
Type of voltage of the control supply voltage  Control supply voltage with AC  • at 50 Hz Rated value  • at 60 Hz Rated value  V 240  Operating range factor control supply voltage rated value of the magnet coil with AC  • at 50 Hz  • at 60 Hz  Oxider to the magnet coil with AC  • at 50 Hz  • at 60 Hz  Auxiliary circuit:  Number of NC contacts  • for auxiliary contacts  — instantaneous contact  1	• at AC-3 maximum	1/h	750
Control supply voltage with AC  • at 50 Hz Rated value  • at 60 Hz Rated value  V 240  Operating range factor control supply voltage rated value of the magnet coil with AC  • at 50 Hz  • at 60 Hz  Auxiliary circuit:  Number of NC contacts  • for auxiliary contacts  — instantaneous contact  1	Control circuit/ Control:		
<ul> <li>at 50 Hz Rated value</li> <li>at 60 Hz Rated value</li> <li>V 240</li> </ul> Operating range factor control supply voltage rated value of the magnet coil with AC <ul> <li>at 50 Hz</li> <li>at 60 Hz</li> <li>0.8 1.1</li> </ul> Auxiliary circuit: Number of NC contacts <ul> <li>for auxiliary contacts</li> <li>instantaneous contact</li> </ul> 1	Type of voltage of the control supply voltage		AC
<ul> <li>at 60 Hz Rated value</li> <li>Operating range factor control supply voltage rated value of the magnet coil with AC</li> <li>at 50 Hz</li> <li>at 60 Hz</li> <li>at 60 Hz</li> <li>0.8 1.1</li> <li>Auxiliary circuit:</li> <li>Number of NC contacts</li> <li>for auxiliary contacts</li> <li>instantaneous contact</li> <li>1</li> </ul>	Control supply voltage with AC		
Operating range factor control supply voltage rated value of the magnet coil with AC  • at 50 Hz • at 60 Hz  Auxiliary circuit:  Number of NC contacts • for auxiliary contacts — instantaneous contact  1	● at 50 Hz Rated value	V	220
value of the magnet coil with AC  • at 50 Hz • at 60 Hz  Auxiliary circuit:  Number of NC contacts • for auxiliary contacts — instantaneous contact  1	● at 60 Hz Rated value	V	240
<ul> <li>at 50 Hz</li> <li>at 60 Hz</li> <li>0.8 1.1</li> <li>0.85 1.1</li> </ul> Auxiliary circuit: Number of NC contacts <ul> <li>for auxiliary contacts</li> <li>instantaneous contact</li> </ul> 1			
at 60 Hz  O.85 1.1  Auxiliary circuit:  Number of NC contacts      for auxiliary contacts      — instantaneous contact  1			
Auxiliary circuit:  Number of NC contacts  • for auxiliary contacts  — instantaneous contact  1	● at 50 Hz		
Number of NC contacts  ● for auxiliary contacts  — instantaneous contact  1	● at 60 Hz		0.85 1.1
• for auxiliary contacts  — instantaneous contact  1	Auxiliary circuit:		
— instantaneous contact 1	Number of NC contacts		
	• for auxiliary contacts		
Number of NO contacts	— instantaneous contact		1
	Number of NO contacts		

• for auxiliary contacts		
— instantaneous contact		0
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	7.6
• at 600 V Rated value	Α	9
yielded mechanical performance [hp]		
<ul> <li>for single-phase AC motor at 110/120 V Rated value</li> </ul>	metric hp	0.33
<ul> <li>for single-phase AC motor at 230 V Rated value</li> </ul>	metric hp	1

Tall load dallott (LD t) for throo phago 7to motor		
• at 480 V Rated value	Α	7.6
• at 600 V Rated value	Α	9
yielded mechanical performance [hp]		
● for single-phase AC motor at 110/120 V Rated value	metric hp	0.33
<ul> <li>for single-phase AC motor at 230 V Rated value</li> </ul>	metric hp	1
<ul> <li>for three-phase AC motor at 200/208 V Rated value</li> </ul>	metric hp	2
<ul> <li>for three-phase AC motor at 220/230 V Rated value</li> </ul>	metric hp	3
<ul> <li>for three-phase AC motor at 460/480 V Rated value</li> </ul>	metric hp	5
• for three-phase AC motor at 575/600 V Rated value	metric hp	7.5
Contact rating of the auxiliary contacts acc. to UL		A600 / Q600

Short-circuit:

### Design of the fuse link

- for short-circuit protection of the main circuit
  - with type of assignment 1 required
  - with type of assignment 2 required
- for short-circuit protection of the auxiliary switch required

gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 35 A
gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE:

gL/gG LV HRC 3NA, DIAZED 55B, NEOZED 55E 20 A

fuse gL/gG: 10 A

stallation/ mounting/ dimensions: mounting position		+/-180° rotation possible on vertical mounting
mounting position		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
wiodriung type		mounting rail according to DIN EN 50022
• Cide by side mounting		Yes
Side-by-side mounting		
Height	mm	57.5
Width	mm	45
Depth	mm	73
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	0
— at the side	mm	6
— downwards	mm	0
• for live parts		
— forwards	mm	0
— Backwards	mm	0
— upwards	mm	0
— downwards	mm	0
— at the side	mm	6

Type of electrical connection	
<ul> <li>for main current circuit</li> </ul>	screw-type terminals
<ul> <li>for auxiliary and control current circuit</li> </ul>	screw-type terminals

Type of connectable conductor cross-section

Connections/ Terminals:

• for main contacts		
<ul> <li>single or multi-stranded</li> </ul>		2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²), 2x 4 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 main contacts</li> </ul>		2x (20 16), 2x (18 14), 2x 12
• for auxiliary contacts		
<ul> <li>single or multi-stranded</li> </ul>		2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²), 2x 4 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), 2x 12
Apparent pick-up power of the magnet coil with AC		
● at 50 Hz	V·A	27
● at 60 Hz	V·A	24.3
Safety related data:		

Safety related data:		
B10 value with high demand rate acc. to SN 31920		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] with low demand rate acc. to SN 31920	FIT	100
Product function Mirror contact acc. to IEC 60947-4-1		Yes
T1 value for proof test interval or service life acc. to IEC 61508	У	20
Protection against electrical shock		finger-safe

Mechanical data:		
Size of contactor		S00
Ambient conditions:		
Installation altitude at height above sea level	m	2 000

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

### Certificates/ approvals:

### **General Product Approval**

Functional Safety/Safety of Machinery Declaration of Conformity









Type Examination



I est	
0-46-4-	

**Shipping Approval** 

## Certificates

Special Test Certificate













LRS

### **Shipping Approval**

other







Environmental Confirmations

Confirmation



### Further information

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

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT20161AP62}\\$ 

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

 $\underline{\text{http://support.automation.siemens.com/WW/view/en/3RT20161AP62/all}}$ 

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT20161AP62&lang=en



