## SIEMENS

## Data sheet

## 3RT2018-2AN22



Power contactor, AC-3 16 A, 7.5 kW / 400 V 1 NC, 220 V AC, 50/60 Hz 3-pole, Size S00 Spring-type terminals

was doned being a series	
product brand name	SIRIUS Bauar contenter
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S00
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>	3 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	1 W
without load current share typical	5.7 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 safe isolation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	7,3g / 5 ms, 4,7g / 10 ms
shock resistance with sine pulse	
• at AC	11,4g / 5 ms, 7,3g / 10 ms
mechanical service life (switching cycles)	
<ul> <li>of contactor typical</li> </ul>	30 000 000
<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)	10/01/2009
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
during operation	-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	
<ul> <li>at AC-3 rated value maximum</li> </ul>	690 V
<ul> <li>at AC-3e rated value maximum</li> </ul>	690 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	22 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	22 A
— up to 690 V at ambient temperature 60 °C rated value	20 A
• at AC-3	
— at 400 V rated value	16 A
— at 500 V rated value	12.4 A
— at 690 V rated value	8.9 A
• at AC-3e	
— at 400 V rated value	16 A
— at 500 V rated value	12.4 A
— at 690 V rated value	8.9 A
• at AC-4 at 400 V rated value	11.5 A
• at AC-5a up to 690 V rated value	19.4 A
• at AC-5b up to 400 V rated value	13.2 A
• at AC-6a	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	9.6 A
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	9.6 A
<ul> <li>— up to 500 V for current peak value n=20 rated value</li> </ul>	9.6 A
<ul> <li>— up to 690 V for current peak value n=20 rated value</li> </ul>	8.9 A
<ul> <li>at AC-6a         <ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul> </li> </ul>	6.6 A
— up to 400 V for current peak value n=30 rated value	6.4 A
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	6.4 A
<ul> <li>— up to 690 V for current peak value n=30 rated value</li> </ul>	6.4 A
minimum cross-section in main circuit at maximum AC-1 rated value	4 mm²
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	5.5 A
at 690 V rated value	4.4 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	20 A
— at 110 V rated value	2.1 A
— at 220 V rated value	0.8 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
<ul> <li>with 2 current paths in series at DC-1</li> </ul>	
— at 24 V rated value	20 A
— at 110 V rated value	12 A
— at 220 V rated value	1.6 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.7 A
• with 3 current paths in series at DC-1	

at 04 V/ rated volu-	20.4			
— at 24 V rated value	20 A			
— at 110 V rated value	20 A			
— at 220 V rated value	20 A			
— at 440 V rated value	1.3 A			
— at 600 V rated value	1 A			
<ul> <li>at 1 current path at DC-3 at DC-5</li> </ul>				
— at 24 V rated value	20 A			
— at 110 V rated value	0.1 A			
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>				
— at 24 V rated value	20 A			
— at 110 V rated value	0.35 A			
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>				
— at 24 V rated value	20 A			
— at 110 V rated value	20 A			
— at 220 V rated value	1.5 A			
— at 440 V rated value	0.2 A			
— at 600 V rated value	0.2 A			
operating power				
at AC-2 at 400 V rated value	7.5 kW			
• at AC-3	7.5 KW			
• at AG-3 — at 230 V rated value	4 kW			
	7.5 kW			
- at 400 V rated value	7.5 kW			
— at 500 V rated value				
— at 690 V rated value	7.5 kW			
• at AC-3e	4.134			
— at 230 V rated value	4 kW			
— at 400 V rated value	7.5 kW			
— at 500 V rated value	7.5 kW			
— at 690 V rated value	7.5 kW			
operating power for approx. 200000 operating cycles at AC-4				
<ul> <li>at 400 V rated value</li> </ul>	2.5 kW			
at 690 V rated value	3.5 kW			
operating apparent power at AC-6a				
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	3.8 kVA			
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	6.6 kVA			
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	8.3 kVA			
<ul> <li>up to 690 V for current peak value n=20 rated value</li> </ul>	10.6 kVA			
operating apparent power at AC-6a				
<ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul>	2.5 kVA			
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	4.4 kVA			
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	5.5 kVA			
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	7.6 kVA			
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>	300 A; Use minimum cross-section acc. to AC-1 rated value			
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	169 A; Use minimum cross-section acc. to AC-1 rated value			
<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	128 A; Use minimum cross-section acc. to AC-1 rated value			
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	92 A; Use minimum cross-section acc. to AC-1 rated value			
<ul> <li>limited to 60 s switching at zero current maximum</li> </ul>	74 A; Use minimum cross-section acc. to AC-1 rated value			
no-load switching frequency				
• at AC	10 000 1/h			
operating frequency				
• at AC-1 maximum	1 000 1/h			
• at AC-2 maximum	750 1/h			
• at AC-3 maximum	750 1/h			
• at AC-3e maximum	750 1/h			
• at AC-3e maximum • 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	220 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
• at 60 Hz	0.85 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz	37 VA
• at 60 Hz	33 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.8
• at 60 Hz	0.75
apparent holding power of magnet coil at AC	
• at 50 Hz	5.7 VA
• at 60 Hz	4.4 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.25
• at 60 Hz	0.25
closing delay	
• at AC	9 35 ms
opening delay	
• at AC	7 13 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	1
instantaneous contact	
operational current at AC-12 maximum	10 A
operational current at AC-15	
<ul> <li>at 230 V rated value</li> </ul>	10 A
<ul> <li>at 400 V rated value</li> </ul>	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	
<ul> <li>at 24 V rated value</li> </ul>	10 A
<ul> <li>at 48 V rated value</li> </ul>	6 A
<ul> <li>at 60 V rated value</li> </ul>	6 A
<ul> <li>at 110 V rated value</li> </ul>	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	14 A
at 600 V rated value	11 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	1 hp
— at 230 V rated value	
	2 hp
for 3-phase AC motor	2 hp

— at 200/208 V rated value	3 hp		
— at 220/230 V rated value	5 hp		
— at 460/480 V rated value	10 hp		
— at 575/600 V rated value	10 hp		
contact rating of auxiliary contacts according to UL	A600 / Q600		
Short-circuit protection			
design of the fuse link			
<ul> <li>for short-circuit protection of the main circuit</li> </ul>			
<ul> <li>— with type of coordination 1 required</li> </ul>	gG: 50A (690V,100kA), aM: 25A (690V,100kA), BS88: 50A (415V,80kA)		
<ul> <li>— with type of assignment 2 required</li> </ul>	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)		
<ul> <li>for short-circuit protection of the auxiliary switch</li> </ul>	gG: 10 A (500 V, 1 kA)		
required			
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 standard mounting rail		
	according to DIN EN 60715		
<ul> <li>side-by-side mounting</li> </ul>	Yes		
height	70 mm		
width	45 mm		
depth	73 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		
<ul> <li>for grounded parts</li> </ul>			
— forwards	10 mm		
— upwards	10 mm		
— at the side	6 mm		
— downwards	10 mm		
<ul> <li>for live parts</li> </ul>			
— forwards	10 mm		
— upwards	10 mm		
— downwards	10 mm		
— at the side	6 mm		
Connections/ Terminals			
type of electrical connection			
<ul> <li>for main current circuit</li> </ul>	spring-loaded terminals		
<ul> <li>for auxiliary and control circuit</li> </ul>	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			
— solid	2x (0.5 4 mm²)		
— solid or stranded	2x (0,5 4 mm <sup>2</sup> )		
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 2.5 mm <sup>2</sup> )		
— finely stranded without core end processing	2x (0.5 2.5 mm <sup>2</sup> )		
at AWG cables for main contacts	2x (20 12)		
connectable conductor cross-section for main			
contacts			
• solid	0.5 4 mm²		
stranded	0.5 4 mm²		
<ul> <li>finely stranded with core end processing</li> </ul>	0.5 2.5 mm <sup>2</sup>		
<ul> <li>finely stranded without core end processing</li> </ul>	0.5 2.5 mm²		
connectable conductor cross-section for auxiliary contacts			
<ul> <li>solid or stranded</li> </ul>	0.5 4 mm²		
<ul> <li>finely stranded with core end processing</li> </ul>	0.5 2.5 mm²		
<ul> <li>finely stranded without core end processing</li> </ul>	0.5 2.5 mm²		

type of connectable	conductor cross-sect	ions					
<ul> <li>for auxiliary cor</li> </ul>	ntacts						
— solid or str	randed		2x (0,5 4 mm²)				
— finely strar	nded with core end proc	essing	2x (0.5 2.5 mm <sup>2</sup> )				
— finely strar	nded without core end p	rocessing	2x (0.5 2.5 mm²)				
<ul> <li>at AWG cables</li> </ul>	for auxiliary contacts		2x (20 12)				
AWG number as co	ded connectable cond	uctor cross					
section							
<ul> <li>for main contact</li> </ul>	ets		20 12				
<ul> <li>for auxiliary cor</li> </ul>	ntacts		20 12				
Safety related data							
product function							
<ul> <li>mirror contact a</li> </ul>	mirror contact according to IEC 60947-4-1			Yes			
B10 value with high d	lemand rate according t	o SN 31920	1 000 000				
proportion of dange	rous failures						
	nd rate according to SN	31920	40 %				
	nd rate according to SN		73 %				
	low demand rate accord		100 FIT				
31920							
T1 value for proof tes IEC 61508	t interval or service life	according to	20 у				
	on the front according	to IEC	IP20				
	the front according to	IEC 60529	finger-safe, for vertical con	tact from the front			
suitability for use			.g				
<ul> <li>safety-related s</li> </ul>	witching OFF		Yes				
Certificates/ approval	-						
General Product Ap		_					
CSA			UL		LIIL		
EMC	Functional Safety/Safety of Machinery	Declaration o	f Conformity	Test Certificates			
RCM	<u>Type Examination</u> <u>Certificate</u>	CE EG-Konf.	UK CA	<u>Special Test Certific-</u> <u>ate</u>	<u>Type Test Certific-</u> ates/Test Report		
Marine / Shipping							
ABS	BUREAU VERITAS		Lloyds Register urs	PRS	RINA		
Marine / Shipping	other						
RMRS	<u>Confirmation</u>		<u>Confirmation</u>				
Further information							

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Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2018-2AN22

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2018-2AN22

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-2AN22

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

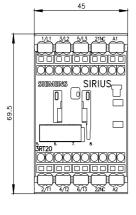
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2018-2AN22&lang=en

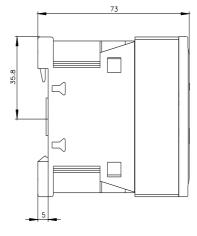
Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

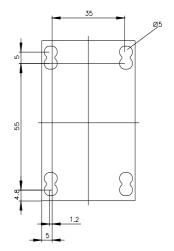
https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-2AN22/char

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

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