SIEMENS

Data sheet

3RT2018-1AN22



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

product brand name	SIRIUS			
product designation	Power contactor			
product type designation	3RT2			
General technical data				
size of contactor	S00			
product extension				
 function module for communication 	No			
auxiliary switch	Yes			
power loss [W] for rated value of the current				
 at AC in hot operating state 	3 W			
 at AC in hot operating state per pole 	1 W			
without load current share typical	5.7 W			
insulation voltage				
 of main circuit with degree of pollution 3 rated value 	690 V			
 of auxiliary circuit with degree of pollution 3 rated value 	690 V			
surge voltage resistance				
 of main circuit rated value 	6 kV			
 of auxiliary circuit rated value 	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)				
 of contactor typical 	30 000 000			
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000			
 of the contactor with added auxiliary switch block typical 	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	
 at AC-3 rated value maximum 	690 V
 at AC-3e rated value maximum 	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	
 up to 230 V for current peak value n=20 rated value 	9.6 A
 up to 400 V for current peak value n=20 rated value 	9.6 A
 — up to 500 V for current peak value n=20 rated value 	9.6 A
 — up to 690 V for current peak value n=20 rated value 	8.9 A
 at AC-6a up to 230 V for current peak value n=30 rated value 	6.6 A
— up to 400 V for current peak value n=30 rated value	6.4 A
 up to 500 V for current peak value n=30 rated value 	6.4 A
 — up to 690 V for current peak value n=30 rated value 	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
 with 2 current paths in series at DC-1 	
— 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				
 at 1 current path at DC-3 at DC-5 					
— at 24 V rated value	20 A				
— at 110 V rated value	0.1 A				
 with 2 current paths in series at DC-3 at DC-5 					
— at 24 V rated value	20 A				
— at 110 V rated value	0.35 A				
 with 3 current paths in series at DC-3 at DC-5 					
— 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					
 at 400 V rated value 	2.5 kW				
at 690 V rated value	3.5 kW				
operating apparent power at AC-6a					
 up to 230 V for current peak value n=20 rated value 	3.8 kVA				
 up to 400 V for current peak value n=20 rated value 	6.6 kVA				
 up to 500 V for current peak value n=20 rated value 	8.3 kVA				
 up to 690 V for current peak value n=20 rated value 	10.6 kVA				
operating apparent power at AC-6a					
 up to 230 V for current peak value n=30 rated value 	2.5 kVA				
 up to 400 V for current peak value n=30 rated value 	4.4 kVA				
 up to 500 V for current peak value n=30 rated value 	5.5 kVA				
 up to 690 V for current peak value n=30 rated value 	7.6 kVA				
short-time withstand current in cold operating state up to 40 °C					
 limited to 1 s switching at zero current maximum 	300 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 5 s switching at zero current maximum 	169 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 10 s switching at zero current maximum 	128 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 30 s switching at zero current maximum 	92 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 60 s switching at zero current maximum 	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	
 at 230 V rated value 	10 A
 at 400 V rated value 	3 A
 at 500 V rated value 	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
 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
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					
 for short-circuit protection of the main circuit 					
 — with type of coordination 1 required 	gG: 50A (690V,100kA), aM: 25A (690V,100kA), BS88: 50A (415V,80kA)				
 — with type of assignment 2 required 	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA				
 for short-circuit protection of the auxiliary switch 	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				
• side-by-side mounting	Yes				
height	58 mm				
width	45 mm				
depth	73 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	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²				
— solid — solid or stranded	2x (0.5 1.5 mm ²), 2x (0.75 2,5 mm ²), 2x 4 mm ²				
 — finely stranded with core end processing 	2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²), 2x 4 mm² 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)				
at AWG cables for main contacts	2x (20 16), 2x (18 14), 2x 12				
connectable conductor cross-section for main					
contacts					
• solid	0.5 4 mm ²				
• stranded	0.5 4 mm ²				
 finely stranded with core end processing 	0.5 2.5 mm ²				
connectable conductor cross-section for auxiliary					
contacts	0.5 4 mm²				
solid or stranded	0.5 4 mm ²				
finely stranded with core end processing	0.5 2.5 mm²				
type of connectable conductor cross-sections					
for auxiliary contacts					
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²				

— finely strar	nded with core end proc	essing	2x (0.5	1.5 mm²), 2x (0.	75 2.5 mm²)		
at AWG cables	for auxiliary contacts		2x (20	16), 2x (18 14)), 2x 12		
	ded connectable cond	uctor cross					
 section for main contact 	ts		20 12				
 for auxiliary cor 			20 12				
Safety related data	•			20 12			
product function							
	ecording to IEC 60047	11	Yes				
	emand rate according to IEC 60947-		1 000 000				
proportion of dange		0 311 31920	1 000 000				
		31020	40 %				
	id rate according to SN nd rate according to SN		40 % 73 %				
failure rate [FIT] with	low demand rate accord		100 FIT				
31920 T1 value for proof tes IEC 61508	t interval or service life	according to	20 y				
	on the front according	to IEC	IP20				
	the front according to	IEC 60529	finger-sef	e for vertical con	tact from the front		
suitability for use		120 00020	inger-sai				
 safety-related s 	witching OFF		Yes				
Certificates/ approval	-		163				
General Product Ap			_				
(Str.	<u>Confirmation</u>		1	Ű	<u>KC</u>	EHC	
EMC	Functional Safety/Safety of Machinery	Declaration o	of Conformi	ty	Test Certificates		
RCM	<u>Type Examination</u> <u>Certificate</u>	UK CA		CE EG-Konf.	Special Test Certific- ate	Type Test Certific- ates/Test Report	
Marine / Shipping							
ABS				Lloyd's Register us	PRS	RINA	
Marine / Shipping	other						
RMRS	<u>Confirmation</u>	UDE VDE)	<u>Confirmation</u>			
Further information Information- and Do https://www.siemens. Industry Mall (Online https://mall.industry.si	e ordering system)	-					

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2018-1AN22

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

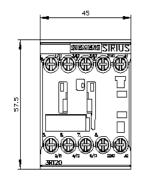
https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-1AN22

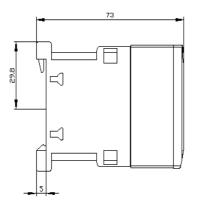
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2018-1AN22&lang=en

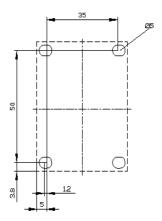
Characteristic: Tripping characteristics, I²t, Let-through current

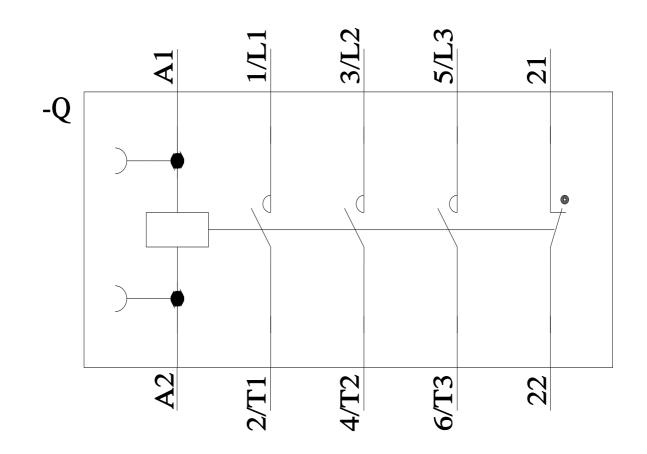
https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-1AN22/char

Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2018-1AN22&objecttype=14&gridview=view1









last modified:

6/2/2022 🖸