SIEMENS

Data sheet 3RT2025-4AK60



power contactor, AC-3 17 A, 7.5 kW / 400 V 1 NO + 1 NC, 110 V AC, 50 Hz, 120 V, 60 Hz, 3-pole, Size S0, ring cable lug connection

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S0
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 	1.8 W
 at AC in hot operating state per pole 	0.6 W
without load current share typical	7.9 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	7,5g / 5 ms, 4,7g / 10 ms
shock resistance with sine pulse	
• at AC	11,8g / 5 ms, 7,4g / 10 ms
mechanical service life (switching cycles)	
 of contactor typical 	10 000 000
 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 %

number of poles for main current circuit number of Not contacts for main current circuit number of Not contacts for main current circuit number of Not contacts for main current at AC-3 relad value maximum at AC-3 relad value maximum at AC-3 at 400 V at ambient temperature 40 °C rated value — up to 690 V at ambient temperature 40 °C rated value — up to 690 V at ambient temperature 60 °C rated value — up to 690 V at ambient temperature 60 °C rated value — at 400 V rated value — at 500 V rated value — at 500 V rated value — at 600 V rated value 15.6 A 33.4 34.4 35.5 A 36.4 36.4 37.6 38.2 38.	Main circuit	
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value — up to 400 V for current peak value n=30 rated value — up to 500 V for current peak value n=30 rated value — up to 690 V for current peak value n=30 rated value — up to 690 V for current peak value n=30 rated value — up to 690 V for current peak value n=30 rated value — up to 690 V for current peak value n=30 rated value — up to 690 V for current peak value n=30 rated value — operational current for approx. 200000 operating cycles at AC-4 • at 400 V rated value • at 690 V rated value • at 1 current path at DC-1 — at 24 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 2 current paths in series at DC-1 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 24 V rated value — at 25 A • with 2 current paths in series at DC-1 — at 220 V rated value — at 440 V rated value — at 220 V rated value — at 440 V rated value	• at AC-6a	
— up to 400 V for current peak value n=30 rated value — up to 500 V for current peak value n=30 rated value — up to 690 V for current peak value n=30 rated value — up to 690 V for current peak value n=30 rated value minimum cross-section in main circuit at maximum AC-1 rated value operational current for approx. 200000 operating cycles at AC-4 • at 400 V rated value • at 690 V rated value • at 1 current path at DC-1 — at 24 V rated value — at 110 V rated value — at 440 V rated value — at 440 V rated value — at 600 V rated value — at 600 V rated value — at 220 V rated value — at 600 V rated value • with 2 current paths in series at DC-1 — at 24 V rated value — at 20 V rated value — at 110 V rated value — at 20 V rated value — at 440 V rated value	 up to 230 V for current peak value n=30 rated 	7.6 A
value — up to 500 V for current peak value n=30 rated value — up to 690 V for current peak value n=30 rated value — up to 690 V for current peak value n=30 rated value minimum cross-section in main circuit at maximum AC-1 rated value operational current for approx. 200000 operating cycles at AC-4 • at 400 V rated value • at 690 V rated value 7.7 A operational current • at 1 current path at DC-1 — at 24 V rated value — at 110 V rated value — at 440 V rated value — at 600 V rated value — at 24 V rated value — at 24 V rated value — at 24 V rated value • with 2 current paths in series at DC-1 — at 24 V rated value — at 20 V rated value — at 440 V rated value — a		
- up to 500 V for current peak value n=30 rated value - up to 690 V for current peak value n=30 rated value minimum cross-section in main circuit at maximum AC-1 rated value operational current for approx. 200000 operating cycles at AC-4 • at 400 V rated value • at 690 V rated value • at 1 current path at DC-1 — at 24 V rated value — at 110 V rated value — at 110 V rated value — at 400 V rated value — at 400 V rated value 35 A — at 220 V rated value 1 A — at 440 V rated value — at 440 V rated value — at 424 V rated value — at 424 V rated value — at 24 V rated value — at 24 V rated value 35 A • with 2 current paths in series at DC-1 — at 24 V rated value 35 A - at 110 V rated value 35 A - at 110 V rated value 35 A - at 220 V rated value 35 A - at 220 V rated value 35 A - at 220 V rated value 35 A		7.6 A
value up to 690 V for current peak value n=30 rated value minimum cross-section in main circuit at maximum AC-1 rated value operational current for approx. 200000 operating cycles at AC-4 • at 400 V rated value • at 690 V rated value • at 1 current path at DC-1 at 24 V rated value at 110 V rated value at 440 V rated value at 440 V rated value at 440 V rated value at 600 V rated value at 440 V rated value at 24 V rated value at 25 A at 220 V rated value at 24 V rated value at 25 V rated value at 26 V rated value at 27 V rated value at 28 V rated value at 29 V rated value at 24 V rated value at 24 V rated value at 24 V rated value at 25 V rated value at 26 V rated value at 27 V rated value at 28 V rated value at 29 V rated value at 20 V rated value		
- up to 690 V for current peak value n=30 rated value minimum cross-section in main circuit at maximum AC-1 rated value operational current for approx. 200000 operating cycles at AC-4 • at 400 V rated value • at 690 V rated value • at 1 current path at DC-1 — at 24 V rated value — at 110 V rated value — at 440 V rated value — at 440 V rated value — at 600 V rated value — at 600 V rated value — at 24 V rated value — at 220 V rated value — at 24 V rated value — at 25 A • with 2 current paths in series at DC-1 — at 24 V rated value — at 24 V rated value — at 24 V rated value 5 A — at 110 V rated value — at 220 V rated value — at 24 V rated value — at 25 V rated value — at 26 V rated value — at 27 V rated value — at 28 V rated value — at 29 V rated value — at 20 V rated value		7.6 A
walue minimum cross-section in main circuit at maximum AC-1 rated value operational current for approx. 200000 operating cycles at AC-4 • at 400 V rated value • at 690 V rated value • at 1 current path at DC-1 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value — at 600 V rated value — at 24 V rated value — at 220 V rated value — at 440 V rated value — at 440 V rated value — at 600 V rated value — at 24 V rated value — at 220 V rated value — at 220 V rated value — at 24 V rated value — at 220 V rated value — at 440 V rated value		7.6 A
minimum cross-section in main circuit at maximum AC-1 rated value operational current for approx. 200000 operating cycles at AC-4 • at 400 V rated value • at 690 V rated value • at 1 current path at DC-1 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value — at 600 V rated value — at 600 V rated value — at 220 V rated value — at 24 V rated value — at 24 V rated value • with 2 current paths in series at DC-1 — at 24 V rated value — at 20 V rated value — at 440 V rated value		1.07
rated value operational current for approx. 200000 operating cycles at AC-4		10 mm²
cycles at AC-4		
 at 400 V rated value at 690 V rated value 7.7 A operational current at 1 current path at DC-1 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value — at 600 V rated value — at 24 V rated value — at 24 V rated value — at 25 A • with 2 current paths in series at DC-1 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 220 V rated value — at 440 V rated value — at 440 V rated value 		
● at 690 V rated value operational current ● at 1 current path at DC-1 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value — at 600 V rated value ● with 2 current paths in series at DC-1 — at 24 V rated value — at 110 V rated value — at 110 V rated value — at 220 V rated value — at 24 V rated value — at 110 V rated value — at 24 V rated value — at 24 V rated value — at 24 V rated value — at 110 V rated value — at 110 V rated value — at 110 V rated value — at 440 V rated value		
operational current		
 at 1 current path at DC-1 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value — at 600 V rated value — at 24 V rated value — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 240 V rated value — at 440 V rated v		7.7 A
 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 2 current paths in series at DC-1 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value 	•	
 — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 2 current paths in series at DC-1 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value 		
 — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 2 current paths in series at DC-1 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 440 V rated value 1 A 	— at 24 V rated value	35 A
 — at 440 V rated value 0.4 A — at 600 V rated value 0.25 A • with 2 current paths in series at DC-1 — at 24 V rated value 35 A — at 110 V rated value 35 A — at 220 V rated value 5 A — at 440 V rated value 1 A 	— at 110 V rated value	4.5 A
 at 600 V rated value with 2 current paths in series at DC-1 at 24 V rated value at 110 V rated value at 220 V rated value at 240 V rated value 1 A 	— at 220 V rated value	1 A
 with 2 current paths in series at DC-1 — at 24 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value 1 A 	— at 440 V rated value	0.4 A
— at 24 V rated value 35 A — at 110 V rated value 35 A — at 220 V rated value 5 A — at 440 V rated value 1 A	— at 600 V rated value	0.25 A
 at 110 V rated value at 220 V rated value at 440 V rated value 1 A 	 with 2 current paths in series at DC-1 	
 — at 220 V rated value — at 440 V rated value 5 A 1 A 	— at 24 V rated value	35 A
— at 440 V rated value 1 A	— at 110 V rated value	35 A
	— at 220 V rated value	5 A
— at 600 V rated value 0.8 A	— at 440 V rated value	1 A
	— at 600 V rated value	0.8 A
• with 3 current paths in series at DC-1		

— at 24 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	35 A
— at 440 V rated value	2.9 A
at 600 V rated value	1.4 A
 at 1 current path at DC-3 at DC-5 	
— at 24 V rated value	20 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 A
— at 600 V rated value	0.06 A
 with 2 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 A
— at 440 V rated value	0.27 A
— at 600 V rated value	0.16 A
 with 3 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	10 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
operating power	
• at AC-3	
— 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	11 kW
• at AC-3e	
— at 230 V rated value	4 kW
— at 400 V rated value	4.5 kW
— at 500 V rated value	7.5 kW
— at 690 V rated value	11 kW
operating power for approx. 200000 operating cycles	
at AC-4	
at 400 V rated value	3.5 kW
at 690 V rated value	6 kW
operating apparent power at AC-6a	
 up to 230 V for current peak value n=20 rated value 	4.5 kVA
 up to 400 V for current peak value n=20 rated value 	7.8 kVA
 up to 500 V for current peak value n=20 rated value 	9.9 kVA
up to 690 V for current peak value n=20 rated value	13.6 kVA
operating apparent power at AC-6a	
 up to 230 V for current peak value n=30 rated value 	3 kVA
 up to 400 V for current peak value n=30 rated value 	5.2 kVA
 up to 500 V for current peak value n=30 rated value 	6.6 kVA
• up to 690 V for current peak value n=30 rated value	9.1 kVA
short-time withstand current in cold operating state up to 40 °C	
 limited to 1 s switching at zero current maximum 	225 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	225 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	180 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	115 A; Use minimum cross-section acc. to AC-1 rated value
limited to 60 s switching at zero current maximum	96 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	1 000 1/h
at AC-3 maximum	1 000 1/h

a at AC 2a manifement	1 000 1/b
• at AC-3e maximum	1 000 1/h
at AC-4 maximum Control sirevit/ Control	300 1/h
Control circuit/ Control	10
type of voltage of the control supply voltage	AC
control supply voltage at AC	440.1/
at 50 Hz rated value	110 V
at 60 Hz rated value	120 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
• at 60 Hz	0.8 1.1
apparent pick-up power of magnet coil at AC	0.0 1.1
• at 50 Hz	68 VA
• at 60 Hz	67 VA
inductive power factor with closing power of the coil	• • • • • • • • • • • • • • • • • • • •
• at 50 Hz	0.72
• at 60 Hz	0.74
apparent holding power of magnet coil at AC	
• at 50 Hz	7.9 VA
• at 60 Hz	6.5 VA
inductive power factor with the holding power of the	
coil	
● at 50 Hz	0.25
● at 60 Hz	0.28
closing delay	
• at AC	8 40 ms
opening delay	
• at AC	4 16 ms
arcing time	10 10 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	1
number of NO contacts for auxiliary contacts instantaneous contact	1
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	
10437 1 1 :	10 A
 at 24 V rated value 	
• at 48 V rated value	2 A
at 48 V rated valueat 60 V rated value	2 A
• at 48 V rated value	2 A 1 A
at 48 V rated valueat 60 V rated value	2 A 1 A 0.9 A
 at 48 V rated value at 60 V rated value at 110 V rated value 	2 A 1 A 0.9 A 0.3 A
 at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value 	2 A 1 A 0.9 A 0.3 A 0.1 A
 at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts	2 A 1 A 0.9 A 0.3 A
 at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts UL/CSA ratings	2 A 1 A 0.9 A 0.3 A 0.1 A
 at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts	2 A 1 A 0.9 A 0.3 A 0.1 A
 at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts UL/CSA ratings	2 A 1 A 0.9 A 0.3 A 0.1 A

a at 600 V rated value	17 A
• at 600 V rated value	17 A
yielded mechanical performance [hp]	
• for single-phase AC motor	4 h
— at 110/120 V rated value	1 hp
— at 230 V rated value	3 hp
• for 3-phase AC motor	2 has
— 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	15 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the fuse link	
for short-circuit protection of the main circuit	O 004 (000) (400) A) NA 004 (000) (400) A) D000 004 (445) (00) A)
— with type of coordination 1 required	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (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 required 	gG: 10 A (500 V, 1 kA)
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	85 mm
width	45 mm
depth	97 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	Ring cable lug connection
 for auxiliary and control circuit 	ring terminal lug connection
 at contactor for auxiliary contacts 	Ring cable lug connection
of magnet coil	Ring cable lug connection
Safety related data	
product function	
mirror contact according to IEC 60947-4-1	Yes
B10 value with high demand rate according to SN 31920	450 000
proportion of dangerous failures	
 with low demand rate according to SN 31920 	40 %
with high demand rate according to SN 31920	73 %
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
T1 value for proof test interval or service life according to IEC 61508	20 y
protection class IP on the front according to IEC	

60529

suitability for use

• safety-related switching OFF

Yes

Certificates/ approvals

General Product Approval





Confirmation



<u>KC</u>



EMC

Functional Safety/Safety of Machinery

Declaration of Conformity

Test Certificates



Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

Marine / Shipping













Marine / Shipping

other



Confirmation



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=3RT2025-4AK60

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-4AK60

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-4AK60

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

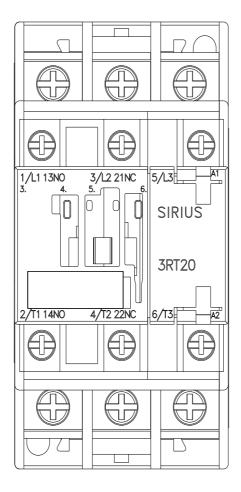
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2025-4AK60&lang=en

Characteristic: Tripping characteristics, I^2t , Let-through current

https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-4AK60/char

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

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2025-4AK60&objecttype=14&gridview=view1



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