



Power contactor, AC-3 9 A, 4 kW / 400 V 2NC+2C 110 V AC, 50 Hz 120 V, 60 Hz 3-pole, Size S00 Screw terminal Captive auxiliary switch

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S00
product extension	
<ul style="list-style-type: none"> function module for communication auxiliary switch 	No No
power loss [W] for rated value of the current	
<ul style="list-style-type: none"> at AC in hot operating state at AC in hot operating state per pole without load current share typical 	0.9 W 0.3 W 4.4 W
insulation voltage	
<ul style="list-style-type: none"> of main circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value 	690 V 690 V
surge voltage resistance	
<ul style="list-style-type: none"> of main circuit rated value of auxiliary circuit rated value 	6 kV 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	
<ul style="list-style-type: none"> at AC 	6,7g / 5 ms, 4,2g / 10 ms
shock resistance with sine pulse	
<ul style="list-style-type: none"> at AC 	10,5g / 5 ms, 6,6g / 10 ms
mechanical service life (switching cycles)	
<ul style="list-style-type: none"> of contactor typical of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added auxiliary switch block typical 	10 000 000 5 000 000 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	
<ul style="list-style-type: none"> during operation during storage 	-25 ... +60 °C -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 style="list-style-type: none"> ● at AC-3 rated value maximum 	690 V
<ul style="list-style-type: none"> ● at AC-3e rated value maximum 	690 V
operational current	
<ul style="list-style-type: none"> ● at AC-1 at 400 V at ambient temperature 40 °C rated value 	22 A
<ul style="list-style-type: none"> ● at AC-1 <ul style="list-style-type: none"> — up to 690 V at ambient temperature 40 °C rated value 	22 A
<ul style="list-style-type: none"> — up to 690 V at ambient temperature 60 °C rated value 	20 A
<ul style="list-style-type: none"> ● at AC-3 <ul style="list-style-type: none"> — at 400 V rated value 	9 A
<ul style="list-style-type: none"> — at 500 V rated value 	7.7 A
<ul style="list-style-type: none"> — at 690 V rated value 	6.7 A
<ul style="list-style-type: none"> ● at AC-3e <ul style="list-style-type: none"> — at 400 V rated value 	9 A
<ul style="list-style-type: none"> — at 500 V rated value 	7.7 A
<ul style="list-style-type: none"> — at 690 V rated value 	6.7 A
<ul style="list-style-type: none"> ● at AC-4 at 400 V rated value 	8.5 A
<ul style="list-style-type: none"> ● at AC-5a up to 690 V rated value 	19.4 A
<ul style="list-style-type: none"> ● at AC-5b up to 400 V rated value 	7.4 A
<ul style="list-style-type: none"> ● at AC-6a <ul style="list-style-type: none"> — up to 230 V for current peak value n=20 rated value 	5.3 A
<ul style="list-style-type: none"> — up to 400 V for current peak value n=20 rated value 	5.3 A
<ul style="list-style-type: none"> — up to 500 V for current peak value n=20 rated value 	5.3 A
<ul style="list-style-type: none"> — up to 690 V for current peak value n=20 rated value 	5 A
<ul style="list-style-type: none"> ● at AC-6a <ul style="list-style-type: none"> — up to 230 V for current peak value n=30 rated value 	3.5 A
<ul style="list-style-type: none"> — up to 400 V for current peak value n=30 rated value 	3.5 A
<ul style="list-style-type: none"> — up to 500 V for current peak value n=30 rated value 	3.6 A
<ul style="list-style-type: none"> — up to 690 V for current peak value n=30 rated value 	3.3 A
minimum cross-section in main circuit at maximum AC-1 rated value	4 mm ²
operational current for approx. 200000 operating cycles at AC-4	
<ul style="list-style-type: none"> ● at 400 V rated value 	4.1 A
<ul style="list-style-type: none"> ● at 690 V rated value 	3.3 A
operational current	
<ul style="list-style-type: none"> ● at 1 current path at DC-1 <ul style="list-style-type: none"> — at 24 V rated value 	20 A
<ul style="list-style-type: none"> — at 110 V rated value 	2.1 A
<ul style="list-style-type: none"> — at 220 V rated value 	0.8 A
<ul style="list-style-type: none"> — at 440 V rated value 	0.6 A
<ul style="list-style-type: none"> — at 600 V rated value 	0.6 A
<ul style="list-style-type: none"> ● with 2 current paths in series at DC-1 <ul style="list-style-type: none"> — at 24 V rated value 	20 A
<ul style="list-style-type: none"> — at 110 V rated value 	12 A
<ul style="list-style-type: none"> — at 220 V rated value 	1.6 A
<ul style="list-style-type: none"> — at 440 V rated value 	0.8 A
<ul style="list-style-type: none"> — at 600 V rated value 	0.7 A
<ul style="list-style-type: none"> ● with 3 current paths in series at DC-1 	

— 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	4 kW
● at AC-3	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	5.5 kW
● at AC-3e	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	5 kW
operating power for approx. 200000 operating cycles at AC-4	
● at 400 V rated value	2 kW
● at 690 V rated value	2.5 kW
operating apparent power at AC-6a	
● up to 230 V for current peak value n=20 rated value	2 kVA
● up to 400 V for current peak value n=20 rated value	3.6 kVA
● up to 500 V for current peak value n=20 rated value	4.6 kVA
● up to 690 V for current peak value n=20 rated value	5.9 kVA
operating apparent power at AC-6a	
● up to 230 V for current peak value n=30 rated value	1.3 kVA
● up to 400 V for current peak value n=30 rated value	2.4 kVA
● up to 500 V for current peak value n=30 rated value	3.1 kVA
● up to 690 V for current peak value n=30 rated value	4 kVA
short-time withstand current in cold operating state up to 40 °C	
● limited to 1 s switching at zero current maximum	155 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 5 s switching at zero current maximum	111 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 10 s switching at zero current maximum	86 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 30 s switching at zero current maximum	66 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 60 s switching at zero current maximum	55 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-4 maximum	250 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	AC

control supply voltage at AC	
<ul style="list-style-type: none"> at 50 Hz rated value at 60 Hz rated value 	110 V 120 V
operating range factor control supply voltage rated value of magnet coil at AC	
<ul style="list-style-type: none"> at 50 Hz at 60 Hz 	0.8 ... 1.1 0.8 ... 1.1
apparent pick-up power of magnet coil at AC	
<ul style="list-style-type: none"> at 50 Hz at 60 Hz 	26.4 VA 26.4 VA
inductive power factor with closing power of the coil	
<ul style="list-style-type: none"> at 50 Hz at 60 Hz 	0.81 0.81
apparent holding power of magnet coil at AC	
<ul style="list-style-type: none"> at 50 Hz at 60 Hz 	4.4 VA 4.4 VA
inductive power factor with the holding power of the coil	
<ul style="list-style-type: none"> at 50 Hz at 60 Hz 	0.24 0.24
closing delay	
<ul style="list-style-type: none"> at AC 	9 ... 35 ms
opening delay	
<ul style="list-style-type: none"> 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 instantaneous contact	2
number of NO contacts for auxiliary contacts instantaneous contact	2
operational current at AC-12 maximum	10 A
operational current at AC-15	
<ul style="list-style-type: none"> at 230 V rated value at 400 V rated value at 500 V rated value at 690 V rated value 	6 A 3 A 2 A 1 A
operational current at DC-12	
<ul style="list-style-type: none"> at 24 V rated value 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 	10 A 6 A 6 A 3 A 2 A 1 A 0.15 A
operational current at DC-13	
<ul style="list-style-type: none"> at 24 V rated value 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 	6 A 2 A 2 A 1 A 0.9 A 0.3 A 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	
<ul style="list-style-type: none"> at 480 V rated value at 600 V rated value 	7.6 A 9 A
yielded mechanical performance [hp]	
<ul style="list-style-type: none"> for single-phase AC motor — at 110/120 V rated value 	0.33 hp

<ul style="list-style-type: none"> — at 230 V rated value ● for 3-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 	<p>1 hp</p> <p>2 hp</p> <p>3 hp</p> <p>5 hp</p> <p>7.5 hp</p>
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the fuse link	
<ul style="list-style-type: none"> ● for short-circuit protection of the main circuit <ul style="list-style-type: none"> — with type of coordination 1 required — with type of assignment 2 required ● for short-circuit protection of the auxiliary switch required 	<p>gG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)</p> <p>gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)</p> <p>gG: 10 A (500 V, 1 kA)</p>
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 style="list-style-type: none"> ● side-by-side mounting 	Yes
height	58 mm
width	45 mm
depth	117 mm
required spacing	
<ul style="list-style-type: none"> ● with side-by-side mounting <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side ● for grounded parts <ul style="list-style-type: none"> — forwards — upwards — at the side — downwards ● for live parts <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side 	<p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>0 mm</p> <p>10 mm</p> <p>10 mm</p> <p>6 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>6 mm</p>
Connections/ Terminals	
type of electrical connection	
<ul style="list-style-type: none"> ● for main current circuit ● for auxiliary and control circuit ● at contactor for auxiliary contacts ● of magnet coil 	<p>screw-type terminals</p> <p>screw-type terminals</p> <p>Screw-type terminals</p> <p>Screw-type terminals</p>
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> ● for main contacts <ul style="list-style-type: none"> — solid — solid or stranded — finely stranded with core end processing ● at AWG cables for main contacts 	<p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), 2x 4 mm²</p> <p>2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), 2x 4 mm²</p> <p>2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (20 ... 16), 2x (18 ... 14), 2x 12</p>
connectable conductor cross-section for main contacts	
<ul style="list-style-type: none"> ● solid ● stranded ● finely stranded with core end processing 	<p>0.5 ... 4 mm²</p> <p>0.5 ... 4 mm²</p> <p>0.5 ... 2.5 mm²</p>
connectable conductor cross-section for auxiliary contacts	
<ul style="list-style-type: none"> ● solid or stranded ● finely stranded with core end processing 	<p>0.5 ... 4 mm²</p> <p>0.5 ... 2.5 mm²</p>

type of connectable conductor cross-sections	
<ul style="list-style-type: none"> for auxiliary contacts <ul style="list-style-type: none"> — solid or stranded — finely stranded with core end processing at AWG cables for auxiliary contacts 	2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²), 2x 4 mm ² 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14), 2x 12
AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> for main contacts for auxiliary contacts 	20 ... 12 20 ... 12

Safety related data	
product function	
<ul style="list-style-type: none"> mirror contact according to IEC 60947-4-1 positively driven operation according to IEC 60947-5-1 	Yes No
B10 value with high demand rate according to SN 31920	1 000 000
proportion of dangerous failures	
<ul style="list-style-type: none"> with low demand rate according to SN 31920 with high demand rate according to SN 31920 	40 % 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	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
suitability for use	
<ul style="list-style-type: none"> safety-related switching OFF 	Yes

Certificates/ approvals

General Product Approval



[Confirmation](#)



[KC](#)



EMC	Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates
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[Type Examination Certificate](#)



EG-Konf.

[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=3RT2016-1AK64-3MA0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-1AK64-3MA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1AK64-3MA0>

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

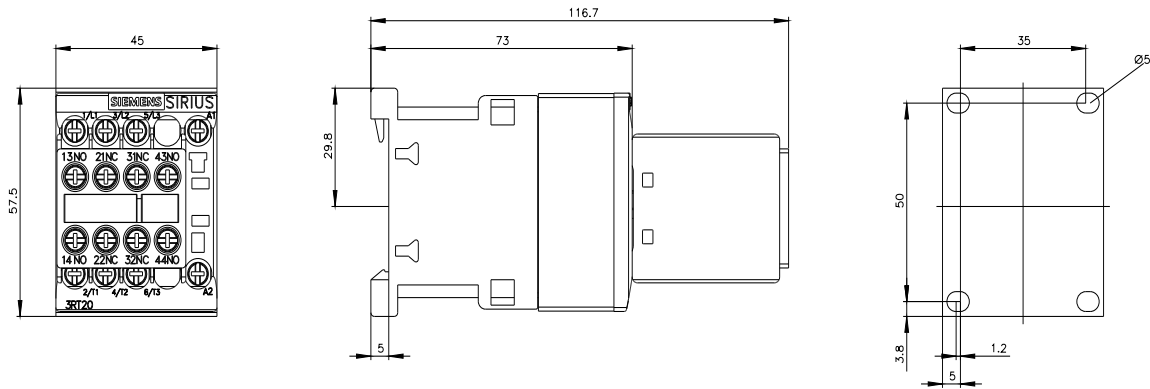
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-1AK64-3MA0&lang=en

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1AK64-3MA0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2016-1AK64-3MA0&objecttype=14&gridview=view1>



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