## **SIEMENS**

Data sheet 3RT2028-1AP04



Power contactor, AC-3 38 A, 18.5 kW / 400 V 2 NO + 2 NC, 230 V AC 50 Hz, 3-pole, size S0 screw terminals Removable auxiliary switch

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	SO
product extension	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	No
power loss [W] for rated value of the current at AC in hot operating state	11.4 W
• per pole	3.8 W
power loss [W] for rated value of the current without load current share typical	9.8 W
surge voltage resistance	
<ul> <li>of main circuit rated value</li> </ul>	6 kV
of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	8,3g / 5 ms, 5,3g / 10 ms
shock resistance with sine pulse	
• at AC	13,5g / 5 ms, 8,3g / 10 ms
mechanical service life (switching cycles)	
of contactor typical	10 000 000
<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 acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	01.10.2009 00:00:00
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
<ul><li>during operation</li></ul>	-25 +60 °C
during storage	-55 +80 °C
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

operational current	
<ul> <li>at AC-1 at 400 V at ambient temperature 40 °C rated value</li> </ul>	50 A
• at AC-1	
<ul> <li>up to 690 V at ambient temperature 40 °C rated value</li> </ul>	50 A
<ul> <li>up to 690 V at ambient temperature 60 °C rated value</li> </ul>	42 A
• at AC-3	
— at 400 V rated value	38 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
<ul> <li>at AC-4 at 400 V rated value</li> </ul>	22 A
<ul> <li>at AC-5a up to 690 V rated value</li> </ul>	44 A
<ul> <li>at AC-5b up to 400 V rated value</li> </ul>	31.5 A
• at AC-6a	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	30.8 A
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	30.8 A
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	30.8 A
<ul> <li>up to 690 V for current peak value n=20 rated value</li> <li>at AC-6a</li> </ul>	21 A
— up to 230 V for current peak value n=30 rated value	20.5 A
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	20.5 A
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	21.4 A
— up to 690 V for current peak value n=30 rated value	21 A
minimum cross-section in main circuit at maximum AC-1 rated value	10 mm²
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	12 A
at 690 V rated value	12 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	35 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 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	05.4
— 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	0.8 A
with 3 current paths in series at DC-1     at 24 V reted value.	25 A
— 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
operational current	
at 1 current path at DC-3 at DC-5     at 24 V reted value.	20.4
— at 24 V rated value	20 A

<ul><li>— at 110 V rated value</li></ul>	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
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— 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
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
— 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	11 kW
— at 400 V rated value	18.5 kW
— at 500 V rated value	18.5 kW
— at 690 V rated value	18.5 kW
operating power for approx. 200000 operating cycles	1000
at AC-4	
<ul> <li>at 400 V rated value</li> </ul>	6 kW
<ul> <li>at 690 V rated value</li> </ul>	10.3 kW
operating apparent power at AC-6a	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	12.2 kV·A
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	21.3 kV·A
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	26.6 kV·A
<ul> <li>up to 690 V for current peak value n=20 rated value</li> </ul>	25 kV·A
operating apparent power at AC-6a	
<ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul>	8.1 kV·A
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	14.2 kV·A
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	18.5 kV·A
• up to 690 V for current peak value n=30 rated value	25 kV·A
short-time withstand current in cold operating state	
up to 40 °C	
Iimited to 1 s switching at zero current maximum	593 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 5 s switching at zero current maximum	395 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 10 s switching at zero current maximum	260 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 30 s switching at zero current maximum	186 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 60 s switching at zero current maximum	152 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	5 000 1/h
• at AC	5 000 1/11
operating frequency	1 000 1/b
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	750 1/h
<ul><li>at AC-3 maximum</li><li>at AC-4 maximum</li></ul>	750 1/h 250 1/h
	200 1/11
Control circuit/ Control	AC
type of voltage of the control supply voltage	AC
control supply voltage at AC	220 V
at 50 Hz rated value      appraising range factor control supply voltage rated.	230 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz	77 V·A

inductive power factor with closing power of the coil	
● at 50 Hz	0.82
apparent holding power of magnet coil at AC	
● at 50 Hz	9.8 V·A
inductive power factor with the holding power of the coil	
• at 50 Hz	0.25
closing delay	0.23
• at AC	8 40 ms
opening delay	0 40 IIIS
• at AC	4 16 ms
arcing time	10 10 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	otanida (4) / I
number of NC contacts for auxiliary contacts	2
instantaneous contact	2
number of NO contacts for auxiliary contacts	2
instantaneous contact	
operational current at AC-12 maximum	10 A
operational current at AC-15	
• at 230 V rated value	6 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	
<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
<ul> <li>at 220 V rated value</li> </ul>	1 A
at 600 V rated value	0.15 A
operational current at DC-13	
<ul><li>at 24 V rated value</li></ul>	6 A
<ul><li>at 48 V rated value</li></ul>	2 A
<ul> <li>at 60 V rated value</li> </ul>	2 A
• at 110 V rated value	1 A
<ul> <li>at 125 V rated value</li> </ul>	0.9 A
<ul> <li>at 220 V rated value</li> </ul>	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	34 A
at 600 V rated value	27 A
yielded mechanical performance [hp]	
<ul> <li>for single-phase AC motor</li> </ul>	
— at 110/120 V rated value	3 hp
— at 230 V rated value	5 hp
• for 3-phase AC motor	
— at 200/208 V rated value	10 hp
— at 220/230 V rated value	10 hp
— at 460/480 V rated value	25 hp
— at 575/600 V rated value	25 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: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A
man type of ocordination i required	30. 120/1 (000 t), 100/10 t), aivi. 00/1 (000 t), 100/10 t), D000. 120/1

with type of assignment 2 required  • for short circuit protection of the auxiliary switch  • for short circuit protection of the auxiliary switch  required  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for short circuit protection of the auxiliary switch  * for switch protection of the auxiliary switch		(A45)/ 90kA)
* for short-circuit protection of the auxiliary switch required installation incurrent circuited installation incurrent circuits incurred incurrent series in the side of wards of the side of the side of wards of the side of wards of the side of the side of wards of the side	with type of assignment 2 required	(415V,80kA)
required missalfation mounting dimensions  mounting position  fastening method  side-by-side mounting  height  side-by-side mounting  height  side-by-side mounting  required spacing  with side-by-side mounting  - forwards  - upwards  - upwards  - upwards  - upwards  - of orwards  - upwards  - of rowards  - ownwards  -	— with type of assignment 2 required	
mounting position forward and backward by 4'.2.2.5 in own vertical mounting surface. can be titled forward and backward by 4'.2.2.5 in own?  side-by-side mounting  e-side-by-side mounting  required spacing  with depth  forwards  - downwards  - downwards  - at the side  of orgrounded parts  - forwards  - downwards  - downwards  - forwards  - forwards  - for live parts  - forwards  - at the side  - downwards  - for live parts  - forwards  - for live parts  - forwards  - for live parts  - for live parts  - for wards  - at the side  - downwards  - for live parts  - for wards  - for main current circuit  of or auxillary and control circuit  of ro auxillary and control circuit  - solid or stranded  - finely stranded with core end processing  or at AWG cables for main contacts  - solid  - solid or stranded  of finely stranded with core end processing  of normal contacts  or stranded  of inely stranded with core end processing  onnectable conductor cross-section for main contacts  onnectable conductor cross-section for auxilliary contacts  onnectable conductor cross-section for auxilliary contacts  of finely stranded with core end processing  onnectable conductor cross-section for auxilliary contacts  of or auxillary contacts  of or auxil		gG: 10 A (500 V, 1 kA)
forward and backward by +f-225' on vertical mounting surface  side-by-side mounting  view of the side-by-side mounting view of the side-by-side mounting surface with mounting surface with mounting surface or fide the side-by-side mounting surface with mounting sufface or fide the side of min of the side-by-side mounting sufface or fide the side-by-side mounting sufface or fide the side-by-side mounting sufface or fide mounting	Installation/ mounting/ dimensions	
Fastening method  • side-by-side mounting  height  width  depth  - forwards  - upwards  - downwards  - at the side  - forgrounded parts  - forwards  - the side  - forgrounded parts  - forwards  - the side  - forwards  - the side  - forwards  - the side  - downwards  - to mm  - upwards  - to mm  - the side  - downwards  - for live parts  - forwards  - to live parts  - forwards  - to main current circuit  - otor auxiliary and control circuit  - for auxiliary and control circuit  - at the side  - solid  - solid  - solid or stranded  - finely stranded with core end processing  - solid  - sinely canned the conductor cross-sections  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing  - solid or stranded  - finely stranded with core end processing	mounting position	
e side-by-side mounting  yes height width dopth 14.1 mm  required spacing • with side-by-side mounting — forwards — upwards — downwards — ownwards — 10 mm — ownwards — ownwards — 10 mm — ownwards — ownwards — ownwards — 10 mm — ownwards — ownwards — ownwards — 10 mm — ownwards — ownw		
helght width 45 mm 45 mm 45 mm 46 mm 46 mm 46 mm 46 mm 47 mm 48 mm	· ·	according to DIN EN 60715
width   depth   dept		
required spacing  • with side-by-side mounting  — forwards — upwards — downwards — at the side • for grounded parts — forwards — upwards — towards — upwards — towards — upwards — towards — upwards — towards — upwards — towards — upwards — upwards — towards — towards — to mm  Connections/ Terminals  type of electrical connection • for main current circuit • for auxiliary and control circuit • for auxiliary and control circuit • for for main contacts • of magnet coil  type of connectable conductor cross-sections • for main contacts — solid — solid or stranded — finely stranded with core end processing • finely stranded with core end processing • for auxiliary contacts • solid or stranded • finely stranded with core end processing • finely stranded with core end processing • for auxiliary contacts • solid or stranded • finely stranded with core end processing • for auxiliary contacts • solid or stranded • finely stranded with core end processing • for auxiliary contacts • solid or stranded • finely stranded with core end processing • for auxiliary contacts • solid or stranded • finely stranded with core end processing • for auxiliary contacts • solid or stranded — finely stranded with core end processing • for auxiliary contacts • solid or stranded — finely stranded with core end processing • for auxiliary contacts • solid or stranded — finely stranded with core end processing • for auxiliary contacts — solid or stranded — finely stranded with core end processing		
required spacing  with side-by-side mounting — forwards — upwards — downwards — at the side — of grounded parts — to rawards — upwards — to repards — to repards — to man — to rive parts — forwards — to man — to rive parts — forwards — downwards — downwards — to man — to rive parts — forwards — to man — to rive parts — forwards — to man — upwards — to man — to rawards — to rawards — to rawards — to man — to rawards — solid — solid or stranded — finely stranded with core end processing  very part of the core and processing  type of connectable conductor cross-section for main contacts — solid — solid or stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the stranded — finely stranded with core end processing  very part of the strander — to man  to mm  to man  to mm  to man  to man  to mm  to mm  to mm  to mm  to man  to mm  to mm  to m		
with side-by-side mounting  - forwards - upwards - downwards - at the side - for grounded parts - forwards - upwards - at the side - for grounded parts - forwards - at the side - downwards - at the side - downwards - at the side - downwards - for live parts - forwards - for live parts - forwards - upwards - forwards - upwards - forwards - upwards - downwards - upwards - downwards - at the side - downwards - at the side - for auxiliary and source circuit - for auxiliary and control circuit - for auxiliary and control circuit - at contactor for auxiliary contacts - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - finely stranded w	•	141 111111
forwards upwards upwards downwards downwards at the side downwards at the side for grounded parts forwards upwards upwards upwards upwards upwards upwards downwards upwards downwards upwards downwards upwards for live parts forwards upwards		
- upwards - downwards - at the side • for grounded parts - forwards - upwards - at the side - upwards - at the side - downwards - at the side - downwards - for live parts - forwards - upwards - downwards - downwards - downwards - at the side - for auxiliary and control circuit - for auxiliary and control circuit - for auxiliary and control circuit - so for auxiliary and control circuit - so for auxiliary and control circuit - for auxiliary and control circuit - so for agent coil  type of electrical connection - for main contacts - solid - solid - solid or stranded - finely stranded with core end processing - solid - stranded - finely stranded with core end processing - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - solid or stranded - solid		10 mm
downwards at the side for grounded parts forwards upwards upwards at the side downwards at the side downwards at the side downwards forwards upwards forwards upwards forwards upwards forwards upwards downwards downwards downwards downwards at the side solid solid art contactor for auxiliary contacts solid solid art anded finely stranded with core end processing at AWG cables for main contacts solid		
- 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  - upwards 10 mm  - upwards 10 mm  - upwards 10 mm  - at the side 6 mm  Connections/ Terminals  type of electrical connection  • for main current circuit screw-type terminals  • for auxillary and control circuit screw-type terminals  • at contactor for auxillary contacts screw-type terminals  • of magnet coil type of connectable conductor cross-sections  • for main contacts  - solid	•	
• for grounded parts  - forwards - upwards - at the side - downwards • for live parts - forwards - upwards • for live parts - forwards - upwards - upwards - upwards - upwards - upwards - at the side - downwards - at the side - downwards - at the side - forwards - at the side - for auxiliary and control circuit - for auxiliary and control circuit - for auxiliary and control circuit - at contactor for auxiliary contacts - of magnet coil  type of connectable conductor cross-sections - for main contacts - solid - solid - solid or stranded - finely stranded with core end processing - at AWG cables for main contacts - solid - solid - solid - stranded - finely stranded with core end processing - ta AWG cables for main contacts - solid - solid - stranded - finely stranded with core end processing - tinely stranded with core end processing - finely stranded with core end processing - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - for auxiliary contacts - solid or stranded - finely stranded with core end processing - for auxiliary contacts - solid or stranded - finely stranded with core end processing - for auxiliary contacts - solid or stranded - finely stranded with core end processing - for auxiliary contacts - solid or stranded - finely stranded with core end processing - for auxiliary contacts - solid or stranded - finely stranded with core end processing - for auxiliary contacts - solid or stranded - finely stranded with core end processing		10.000
- forwards - upwards - at the side - downwards - for live parts - forwards - upwards - for live parts - forwards - upwards - forwards - upwards - downwards - downwards - downwards - downwards - downwards - at the side - formal connections - for axiliary contacts - for axiliary and control circuit - for axiliary contacts - solid - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - for axiliary contacts - solid - stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing		O IIIIII
- upwards - at the side 6 mm - downwards • for live parts - forwards - upwards - downwards - upwards - downwards - downwards - downwards - downwards - at the side 6 mm   Connections/ Terminals  type of electrical connection • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil type of connectable conductor cross-sections • for main contacts - solid - solid or stranded - finely stranded with core end processing • stranded • finely stranded with core end processing connectable conductor cross-section for auxiliary contacts • solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing		10 mm
- at the side — downwards — 10 mm  • for live parts — forwards — 10 mm — at the side — downwards — 10 mm — at the side — 10 mm — at the side — 6 mm  Connections/ Torminals  type of electrical connection • for main current circuit screw-type terminals • at contactor for auxiliary contacts Screw-type terminals • of mayiliary and control circuit screw-type terminals • of magnet coil Screw-type terminals • for main contacts — solid Screw-type terminals • for main contacts — solid — solid or stranded — finely stranded with core end processing • at AWG cables for main contacts • solid 1 10 mm² • stranded stranded 1 10 mm² • finely stranded with core end processing 1 10 mm² • finely stranded with core end processing 1 10 mm² • stranded • finely stranded with core end processing 1 10 mm² • solid or stranded • finely stranded with core end processing 1 10 mm² • solid or stranded • finely stranded with core end processing 1 10 mm² • solid or stranded • finely stranded with core end processing 1 10 mm² • solid or stranded • finely stranded with core end processing 1 10 mm² • solid or stranded • finely stranded with core end processing 1 10 mm² • solid or stranded • finely stranded with core end processing 2x (0.5 1,5 mm²), 2x (0.75 2,5 mm²) • for auxiliary contacts — solid or stranded 2x (0,5 1,5 mm²), 2x (0.75 2,5 mm²) — finely stranded with core end processing 2x (0.5 1,5 mm²), 2x (0.75 2,5 mm²)		
- downwards  • for live parts  - forwards  - upwards  - downwards  - at the side  Connections/ Terminals  type of electrical connection  • for main contacts  - solid  - solid or stranded  - finely stranded with core end processing  • solid or stranded  • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing • stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • for auxiliary contacts  - solid or stranded - finely stranded with core end processing • for auxiliary contacts - solid or stranded - finely stranded with core end processing • for auxiliary contacts - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing	·	10.000
• for live parts  — forwards — upwards — downwards — at the side  Connections/ Terminals  type of electrical connection • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil  type of connectable conductor cross-sections • for main contacts — solid — solid or stranded — finely stranded with core end processing • stranded • finely stranded with core end processing • finely stranded of stranded • finely stranded with core end processing • for auxiliary contacts  — solid or stranded — finely stranded with core end processing • for auxiliary contacts — solid or stranded — finely stranded with core end processing • for auxiliary contacts — solid or stranded — finely stranded with core end processing  2x (1 2.5 mm²), 2x (2.5 1.5 mm²), 2x (0.75 2.5 mm²)  2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)		
forwards upwards downwards at the side  Connections/ Terminals  type of electrical connection  • for main current circuit • at contactor for auxiliary contacts • of magnet coil  type of connectable conductor cross-sections • for main contacts solid solid or stranded finely stranded with core end processing • stranded • finely stranded with core end processing • stranded • finely stranded with core end processing • finely stranded with core end processing • finely stranded with core end processing • solid 0 1 10 mm²  solid 0 2 10 mm²  ton 10 mm²  t		10 111111
- upwards - downwards - at the side  Connections/ Terminals  type of electrical connection	•	10 mm
- downwards - at the side  Connections/ Terminals  type of electrical connection  • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil  type of connectable conductor cross-sections • for main contacts  - solid - solid or stranded - finely stranded with core end processing • stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • for auxiliary contacts  - solid or stranded - finely stranded with core end processing • for auxiliary contacts - solid or stranded - finely stranded with core end processing  2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²) - finely stranded with core end processing		
- at the side  Connections/ Terminals  type of electrical connection  • for main current circuit screw-type terminals  • at contactor for auxiliary and control circuit screw-type terminals  • of magnet coil Screw-type terminals  • of magnet coil Screw-type terminals  • of main contacts  - solid  - solid 2x (1 2.5 mm²), 2x (2.5 10 mm²)  - snelid or stranded 2x (1 2.5 mm²), 2x (2.5 10 mm²)  • at AWG cables for main contacts  • solid  • stranded 1 10 mm²  • stranded 5 10 mm²  • inely stranded with core end processing 2x (1 2.5 mm²), 2x (14 8)  connectable conductor cross-section for main contacts  • solid 1 10 mm²  • finely stranded with core end processing 1 10 mm²  • finely stranded with core end processing 2 10 mm²  connectable conductor cross-section for auxiliary contacts  • solid or stranded 0.5 2.5 mm²  • 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)  - finely stranded with core end processing 2x (0.5 1,5 mm²), 2x (0.75 2,5 mm²)	·	
type of electrical connection  • for main current circuit  • for auxiliary and control circuit  • at contactor for auxiliary contacts  • of magnet coil  type of connectable conductor cross-sections  • for main contacts  — solid — solid or stranded with core end processing  • at AWG cables for main contacts  connectable conductor cross-section for main contacts  • solid  • stranded • finely stranded with core end processing  • stranded • finely stranded with core end processing  • solid • stranded • finely stranded with core end processing  • solid • stranded • finely stranded with core end processing  • solid • stranded • finely stranded with core end processing  • solid • stranded • finely stranded with core end processing  connectable conductor cross-section for auxiliary contacts  • solid or stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • for auxiliary contacts  • solid or stranded • finely stranded with core end processing  • for auxiliary contacts  • solid or stranded — stranded — stranded with core end processing  • for auxiliary contacts  • solid or stranded — stranded with core end processing  • for auxiliary contacts  - solid or stranded — stranded with core end processing  2x (0.5 1,5 mm²), 2x (0.75 2,5 mm²)		
type of electrical connection  • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil  type of connectable conductor cross-sections • for main contacts  — solid — solid or stranded — finely stranded with core end processing • stranded • stranded • stranded • stranded • finely stranded with core end processing • solid • stranded • finely stranded with core end processing • solid • stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid • stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • for auxiliary contacts  — solid or stranded — finely stranded with core end processing • for auxiliary contacts  — solid or stranded — finely stranded with core end processing  2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)  2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)		6 111111
• for main current circuit     • for auxiliary and control circuit     • at contactor for auxiliary contacts     • at contactor for auxiliary contacts     • of magnet coil     • screw-type terminals     • Screw-type termina		
<ul> <li>for auxiliary and control circuit</li> <li>at contactor for auxiliary contacts</li> <li>of magnet coil</li> <li>Screw-type terminals</li> <li>2x (1 2.5 mm²), 2x (2.5 10 mm²)</li> <li>2x (1 2.5 mm²), 2x (2.5 10 mm²)</li> <li>1 10 mm²</li> <li>2 10 mm²</li> <li>3 10 mm²</li> <li>3 10 mm²</li> <li>3 10 mm²</li> <li>4 10 mm²</li> <li>5 2.5 mm²</li> <li>2 x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)</li> <li>2 x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)</li> </ul>	**	
<ul> <li>at contactor for auxiliary contacts</li> <li>of magnet coil</li> <li>type of connectable conductor cross-sections</li> <li>for main contacts</li> <li>— solid</li> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> <li>at AWG cables for main contacts</li> <li>— solid</li> <li>— tinely stranded with core end processing</li> <li>at AWG cables for main contacts</li> <li>at I 10 mm²</li> <li< td=""><td></td><td></td></li<></ul>		
• of magnet coil  type of connectable conductor cross-sections  • for main contacts  — solid — solid or stranded — finely stranded with core end processing  • at AWG cables for main contacts  2x (1 2.5 mm²), 2x (2.5 10 mm²)  2x (1 2.5 mm²), 2x (2.5 10 mm²)  2x (1 2.5 mm²), 2x (2.5 10 mm²)  2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²  2x (16 12), 2x (14 8)  connectable conductor cross-section for main contacts  • solid • stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • for auxiliary contacts — solid or stranded — finely stranded with core end processing  • for auxiliary contacts — solid or stranded — finely stranded with core end processing  2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)  2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)		•
type of connectable conductor cross-sections  • for main contacts  — solid  — solid or stranded — finely stranded with core end processing  • at AWG cables for main contacts  connectable conductor cross-section for main contacts  • solid  • stranded • finely stranded with core end processing  • finely stranded with core end processing  • solid  • stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • for auxiliary contacts  — solid or stranded — finely stranded with core end processing  • for auxiliary contacts — solid or stranded — finely stranded with core end processing  2x (1 2.5 mm²), 2x (2.5 10 mm²)  2x (1 2.5 mm²), 2x (0.75 2.5 mm²)  2x (1 2.5 mm²)  2x (1 2.5 mm²), 2x (0.75 2.5 mm²)	•	
<ul> <li>for main contacts  — solid  — solid or stranded — finely stranded with core end processing  • at AWG cables for main contacts  • solid  • stranded • finely stranded with core end processing  • finely stranded with core end processing  • stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • solid or stranded • finely stranded with core end processing  • for auxiliary contacts  • for auxiliary contacts  • for auxiliary contacts  — solid or stranded — finely stranded with core end processing  • for auxiliary contacts  — solid or stranded — finely stranded with core end processing  2x (1 2.5 mm²), 2x (2.5 10 mm²)  2x (16 12), 2x (14 8)  1 10 mm²  1 10 mm²  1 10 mm²  2 10 mm</li></ul>	<u>_</u>	Screw-type terminals
- solid		
- solid or stranded - finely stranded with core end processing • at AWG cables for main contacts  • at AWG cables for main contacts  • solid • stranded • stranded • finely stranded with core end processing • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • solid or stranded • finely stranded with core end processing • finely stranded with core end processing  • finely stranded with core end processing • for auxiliary contacts - solid or stranded - finely stranded with core end processing • for auxiliary contacts - solid or stranded - finely stranded with core end processing  2x (1 2,5 mm²), 2x (2.5 6 mm²), 1x 10 mm²  2x (1 2,5 mm²), 2x (1 2,5 2,5 mm²)  2x (1 2,5 mm²), 2x (2.5 6 mm²), 1x 10 mm²  2x (1 2,5 mm²), 2x (1 2,5 mm²)  2x (1 2,5 mm²), 2x (1 2,5 mm²)  2x (1 2,5 mm²), 2x (0.75 2,5 mm²)		2v (1 2 5 mm²) 2v (2 5 10 mm²)
<ul> <li>finely stranded with core end processing</li> <li>at AWG cables for main contacts</li> <li>connectable conductor cross-section for main contacts</li> <li>solid</li> <li>stranded</li> <li>finely stranded with core end processing</li> <li>tonnectable conductor cross-section for auxiliary contacts</li> <li>solid or stranded</li> <li>finely stranded with core end processing</li> <li>solid or stranded</li> <li>finely stranded with core end processing</li> <li>type of connectable conductor cross-sections</li> <li>for auxiliary contacts</li> <li>solid or stranded</li> <li>for auxiliary contacts</li> <li>for auxiliary contacts<td></td><td></td></li></ul>		
<ul> <li>◆ at AWG cables for main contacts</li> <li>Connectable conductor cross-section for main contacts</li> <li>◆ solid</li> <li>◆ stranded</li> <li>◆ finely stranded with core end processing</li> <li>Connectable conductor cross-section for auxiliary contacts</li> <li>◆ solid or stranded</li> <li>◆ finely stranded with core end processing</li> <li>Tund 10 mm²</li> <li>1 und 10 mm²</li> <li>2 und 10 mm²</li> <li< td=""><td></td><td></td></li<></ul>		
connectable conductor cross-section for main contacts  • solid • stranded • stranded vith core end processing  connectable conductor cross-section for auxiliary contacts • solid or stranded • finely stranded with core end processing  type of connectable conductor cross-sections • for auxiliary contacts  - solid or stranded - stranded - finely stranded with core end processing  2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)  - type of connectable conductor cross-sections - solid or stranded - finely stranded with core end processing - solid or stranded - finely stranded with core end processing		
<ul> <li>contacts <ul> <li>solid</li> <li>stranded</li> <li>finely stranded with core end processing</li> <li>finely stranded with core end processing</li> <li>solid or stranded</li> <li>finely stranded with core end processing</li> <li>finely stranded with core end processing</li> <li>for auxiliary contacts</li> <li>for auxiliary contacts</li> <li>solid or stranded</li> <li>for auxiliary contacts</li> <li>solid or stranded</li> <li>for auxiliary contacts</li> <li>solid or stranded</li> <li>finely stranded with core end processing</li> </ul> </li> <li>2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)</li> <li>finely stranded with core end processing</li> <li>2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)</li> </ul>		ZX (10 12), ZX (14 0)
<ul> <li>solid</li> <li>stranded</li> <li>finely stranded with core end processing</li> <li>connectable conductor cross-section for auxiliary contacts</li> <li>solid or stranded</li> <li>finely stranded with core end processing</li> <li>type of connectable conductor cross-sections</li> <li>for auxiliary contacts</li> <li>solid or stranded</li> <li>for auxiliary contacts</li> <li>solid or stranded</li> <li>for auxiliary contacts</li> <li>for auxiliary contacts</li> <li>finely stranded with core end processing</li> <li>2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)</li> <li>finely stranded with core end processing</li> <li>2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)</li> </ul>		
<ul> <li>stranded</li> <li>finely stranded with core end processing</li> <li>connectable conductor cross-section for auxiliary contacts</li> <li>solid or stranded</li> <li>finely stranded with core end processing</li> <li>type of connectable conductor cross-sections</li> <li>for auxiliary contacts</li> <li>solid or stranded</li> <li>for auxiliary contacts</li> <li>for auxiliary contacts</li> <li>finely stranded with core end processing</li> <li>2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)</li> <li>finely stranded with core end processing</li> <li>2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)</li> </ul>		1 10 mm²
connectable conductor cross-section for auxiliary contacts  • solid or stranded • finely stranded with core end processing  type of connectable conductor cross-sections • for auxiliary contacts — solid or stranded — finely stranded with core end processing  2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)  - finely stranded with core end processing  2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)	stranded	1 10 mm²
connectable conductor cross-section for auxiliary contacts  • solid or stranded • finely stranded with core end processing  type of connectable conductor cross-sections • for auxiliary contacts — solid or stranded — finely stranded with core end processing  2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²) — finely stranded with core end processing  2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)		
contacts  • solid or stranded • finely stranded with core end processing  • for auxiliary contacts — solid or stranded — finely stranded with core end processing  2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)  - finely stranded with core end processing  2x (0.5 1.5 mm²), 2x (0.75 2,5 mm²)		
<ul> <li>◆ finely stranded with core end processing</li> <li>type of connectable conductor cross-sections</li> <li>◆ for auxiliary contacts</li> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> <li>2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)</li> <li>2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)</li> </ul>	•	
type of connectable conductor cross-sections  • for auxiliary contacts  — solid or stranded  — finely stranded with core end processing  2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)  2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)	<ul> <li>solid or stranded</li> </ul>	0.5 2.5 mm²
<ul> <li>◆ for auxiliary contacts</li> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> <li>2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)</li> <li>2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)</li> </ul>	<ul> <li>finely stranded with core end processing</li> </ul>	0.5 2.5 mm²
— solid or stranded       2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)         — finely stranded with core end processing       2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)	type of connectable conductor cross-sections	
— finely stranded with core end processing 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)	<ul> <li>for auxiliary contacts</li> </ul>	
	<ul><li>— solid or stranded</li></ul>	2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)
	<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
AWG number as coded connectable conductor cross		
section	section	
• for main contacts 16 8		16 8
• for auxiliary contacts 20 14	<ul> <li>for auxiliary contacts</li> </ul>	20 14

Safety related data	
product function mirror contact acc. to IEC 60947-4-1	Yes
B10 value with high demand rate acc. to SN 31920	450 000
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	100 FIT
product function positively driven operation acc. to IEC 60947-5-1	No
T1 value for proof test interval or service life acc. to IEC 61508	20 y
protection class IP on the front acc. to IEC 60529	IP20
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front
suitability for use	
<ul> <li>safety-related switching OFF</li> </ul>	Yes
Cartificates / approvale	

Certificates/ approvals

**General Product Approval** 

**EMC** 







<u>KC</u>





**Functional** Safety/Safety of Machinery

**Declaration of Conformity** 

**Test Certificates** 

Marine / Shipping

**Type Examination** Certificate



**UK Declaration of** Conformity

Type Test Certificates/Test Report

**Special Test Certific**ate



Marine / Shipping











Confirmation

other

other



Confirmation

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=3RT2028-1AP04

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT2028-1AP04}$ 

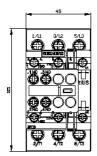
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

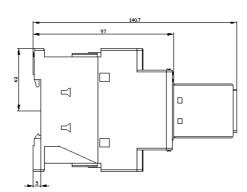
https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-1AP04

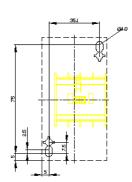
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

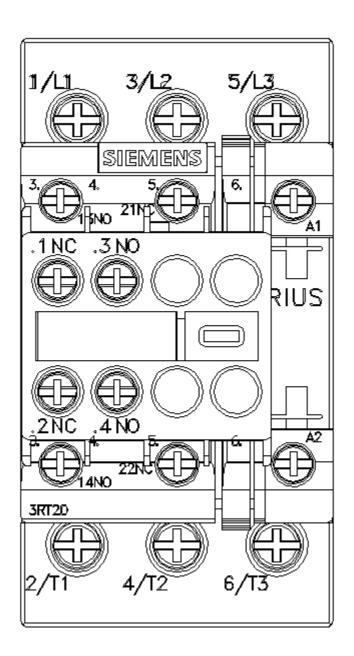
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2028-1AP04&lang=en

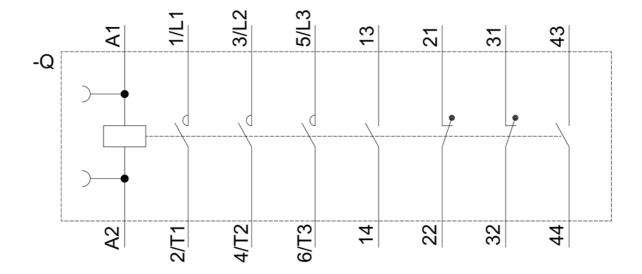
Characteristic: Tripping characteristics, I2t, Let-through current











last modified: 2/5/2021 🖸