



power contactor, AC-3e/AC-3, 80 A, 37 kW / 400 V, 3-pole, 20-33 V AC/DC, 50/60 Hz, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, screw terminal

| | |
|--------------------------|-----------------|
| product brand name | SIRIUS |
| product designation | Power contactor |
| product type designation | 3RT2 |

General technical data

| | |
|---|--|
| size of contactor | S3 |
| product extension | |
| <ul style="list-style-type: none"> function module for communication auxiliary switch | No Yes |
| 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 | 15.9 W 5.3 W 3.5 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 | 1 000 V 690 V |
| surge voltage resistance | |
| <ul style="list-style-type: none"> of main circuit rated value of auxiliary circuit rated value | 8 kV 6 kV |
| maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1 | 690 V |
| shock resistance at rectangular impulse | |
| <ul style="list-style-type: none"> at AC at DC | 10.3g / 5 ms, 6.g / 10 ms 6.7 g / 5 ms, 4g / 10 ms |
| shock resistance with sine pulse | |
| <ul style="list-style-type: none"> at AC at DC | 16.3g / 5 ms, 10.g / 10 ms 10.6 g / 5 ms, 6.3 g / 10 ms |
| mechanical service life (operating 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 Prohibition (Date) | 03/01/2017 |

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 | |
| • at AC-3 rated value maximum | 1 000 V |
| • at AC-3e rated value maximum | 1 000 V |
| operational current | |
| • at AC-1 at 400 V at ambient temperature 40 °C rated value | 125 A |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 125 A |
| — up to 690 V at ambient temperature 60 °C rated value | 105 A |
| • at AC-3 | |
| — at 400 V rated value | 80 A |
| — at 500 V rated value | 80 A |
| — at 690 V rated value | 58 A |
| — at 1000 V rated value | 30 A |
| • at AC-3e | |
| — at 400 V rated value | 80 A |
| — at 500 V rated value | 80 A |
| — at 690 V rated value | 58 A |
| — at 1000 V rated value | 30 A |
| • at AC-4 at 400 V rated value | 66 A |
| • at AC-5a up to 690 V rated value | 110 A |
| • at AC-5b up to 400 V rated value | 80 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=20 rated value | 80 A |
| — up to 400 V for current peak value n=20 rated value | 80 A |
| — up to 500 V for current peak value n=20 rated value | 80 A |
| — up to 690 V for current peak value n=20 rated value | 58 A |
| • at AC-6a | |
| — up to 230 V for current peak value n=30 rated value | 54 A |
| — up to 400 V for current peak value n=30 rated value | 54 A |
| — up to 500 V for current peak value n=30 rated value | 54 A |
| — up to 690 V for current peak value n=30 rated value | 54 A |
| minimum cross-section in main circuit at maximum AC-1 rated value | 50 mm ² |
| operational current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 34 A |
| • at 690 V rated value | 24 A |
| operational current | |
| • at 1 current path at DC-1 | |
| — at 24 V rated value | 100 A |
| — at 60 V rated value | 60 A |
| — at 110 V rated value | 9 A |
| — at 220 V rated value | 2 A |
| — at 440 V rated value | 0.6 A |
| — at 600 V rated value | 0.4 A |
| • with 2 current paths in series at DC-1 | |
| — at 24 V rated value | 100 A |
| — at 60 V rated value | 100 A |
| — at 110 V rated value | 100 A |
| — at 220 V rated value | 10 A |
| — at 440 V rated value | 1.8 A |
| — at 600 V rated value | 1 A |

| | | |
|---|--|---|
| <ul style="list-style-type: none"> • with 3 current paths in series at DC-1 <ul style="list-style-type: none"> — at 24 V rated value — at 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • at 1 current path at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 60 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-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value • with 3 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> — at 24 V rated value — at 60 V rated value — at 110 V rated value — at 220 V rated value — at 440 V rated value — at 600 V rated value | | 100 A 100 A 100 A 80 A 4.5 A 2.6 A |
| | | 40 A 6 A 2.5 A 1 A 0.15 A 0.06 A |
| | | 100 A 100 A 100 A 7 A 0.42 A 0.16 A |
| | | 100 A 100 A 100 A 35 A 0.8 A 0.35 A |
| operating power | | |
| <ul style="list-style-type: none"> • at AC-2 at 400 V rated value • at AC-3 <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 — at 1000 V rated value • at AC-3e <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 — at 1000 V rated value | | 37 kW 22 kW 37 kW 45 kW 55 kW 37 kW 22 kW 37 kW 45 kW 55 kW 37 kW |
| operating power for approx. 200000 operating cycles at AC-4 | | |
| <ul style="list-style-type: none"> • at 400 V rated value • at 690 V rated value | | 17.9 kW 21.8 kW |
| operating apparent power at AC-6a | | |
| <ul style="list-style-type: none"> • up to 230 V for current peak value n=20 rated value • up to 400 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 690 V for current peak value n=20 rated value | | 31 kVA 55 kVA 69 kVA 69 kVA |
| operating apparent power at AC-6a | | |
| <ul style="list-style-type: none"> • up to 230 V for current peak value n=30 rated 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 | | 21.5 kVA 37.4 kVA 46.7 kVA 64.5 kVA |
| short-time withstand current in cold operating state up to 40 °C | | |
| <ul style="list-style-type: none"> • limited to 1 s switching at zero current maximum • limited to 5 s switching at zero current maximum • limited to 10 s switching at zero current maximum • limited to 30 s switching at zero current maximum • limited to 60 s switching at zero current maximum | | 1 500 A; Use minimum cross-section acc. to AC-1 rated value 1 186 A; Use minimum cross-section acc. to AC-1 rated value 851 A; Use minimum cross-section acc. to AC-1 rated value 538 A; Use minimum cross-section acc. to AC-1 rated value 423 A; Use minimum cross-section acc. to AC-1 rated value |
| no-load switching frequency | | |

| | |
|---|---|
| <ul style="list-style-type: none"> • at AC • at DC | 1 000 1/h 1 000 1/h |
| operating frequency | |
| <ul style="list-style-type: none"> • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-3e maximum • at AC-4 maximum | 900 1/h 400 1/h 1 000 1/h 1 000 1/h 300 1/h |
| Control circuit/ Control | |
| type of voltage of the control supply voltage | AC/DC |
| control supply voltage at AC | |
| <ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value | 20 ... 33 V 20 ... 33 V |
| control supply voltage at DC | |
| <ul style="list-style-type: none"> • rated value | 20 ... 33 V |
| operating range factor control supply voltage rated value of magnet coil at DC | |
| <ul style="list-style-type: none"> • initial value • full-scale value | 0.8 1.1 |
| 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 |
| design of the surge suppressor | with varistor |
| inrush current peak | 6.5 A |
| duration of inrush current peak | 50 µs |
| locked-rotor current mean value | 3.2 A |
| locked-rotor current peak | 6.5 A |
| duration of locked-rotor current | 150 ms |
| holding current mean value | 75 mA |
| apparent pick-up power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 151 VA 151 VA |
| apparent holding power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 3.5 VA 3.5 VA |
| closing power of magnet coil at DC | 76 W |
| holding power of magnet coil at DC | 2.7 W |
| closing delay | |
| <ul style="list-style-type: none"> • at AC • at DC | 50 ... 70 ms 50 ... 70 ms |
| opening delay | |
| <ul style="list-style-type: none"> • at AC • at DC | 38 ... 57 ms 38 ... 57 ms |
| arcing time | 10 ... 20 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 | |
| <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 | 10 A 6 A 6 A 3 A 2 A 1 A |

| | |
|---|---|
| <ul style="list-style-type: none"> • at 600 V rated value | 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 | 10 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 | 77 A 62 A |
| yielded mechanical performance [hp] | |
| <ul style="list-style-type: none"> • for single-phase AC motor <ul style="list-style-type: none"> — at 110/120 V rated value — 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 | 7.5 hp 15 hp 25 hp 30 hp 60 hp 60 hp |
| contact rating of auxiliary contacts according to UL | A600 / P600 |
| 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 | gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA) gG: 160A (690V,100kA), aM: 80A (690V,100kA), BS88: 125A (415V,80kA) 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 DIN rail according to DIN EN 60715 |
| <ul style="list-style-type: none"> • side-by-side mounting | Yes |
| height | 140 mm |
| width | 70 mm |
| depth | 152 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 | 20 mm 10 mm 10 mm 0 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm |
| 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 | screw-type terminals screw-type terminals Screw-type terminals Screw-type terminals |

type of connectable conductor cross-sections for main contacts

- finely stranded with core end processing

2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)

connectable conductor cross-section for main contacts

- solid
- stranded
- finely stranded with core end processing

2.5 ... 16 mm²

6 ... 70 mm²

2.5 ... 50 mm²

connectable conductor cross-section for auxiliary contacts

- solid or stranded
- finely stranded with core end processing

0.5 ... 2.5 mm²

0.5 ... 2.5 mm²

type of connectable conductor cross-sections

- for auxiliary contacts
 - solid or stranded
 - finely stranded with core end processing
- at AWG cables for auxiliary contacts

2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)

2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)

2x (20 ... 16), 2x (18 ... 14)

AWG number as coded connectable conductor cross section

- for main contacts
- for auxiliary contacts

10 ... 2

20 ... 14

Safety related data

product function

- 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

- 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 a

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

- safety-related switching on
- safety-related switching OFF

No

Yes

Certificates/ approvals

General Product Approval



[Confirmation](#)



[KC](#)



| EMC | Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates |
|-----|---------------------------------------|---------------------------|-------------------|
|-----|---------------------------------------|---------------------------|-------------------|



[Type Examination Certificate](#)



EG-Konf.

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

Marine / Shipping



| | | |
|-------|---------|----------------|
| other | Railway | Dangerous Good |
|-------|---------|----------------|

[Confirmation](#)

[Vibration and Shock](#)

[Transport Information](#)

Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3RT2045-1NB30>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2045-1NB30>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2045-1NB30>

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

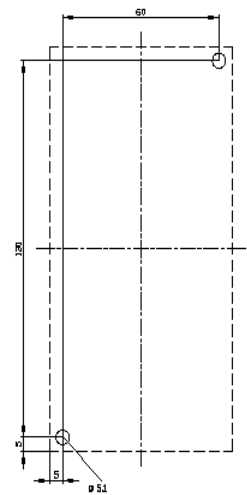
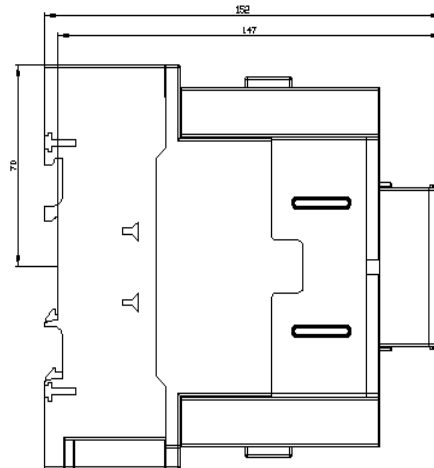
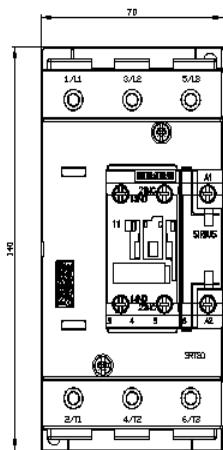
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2045-1NB30&lang=en

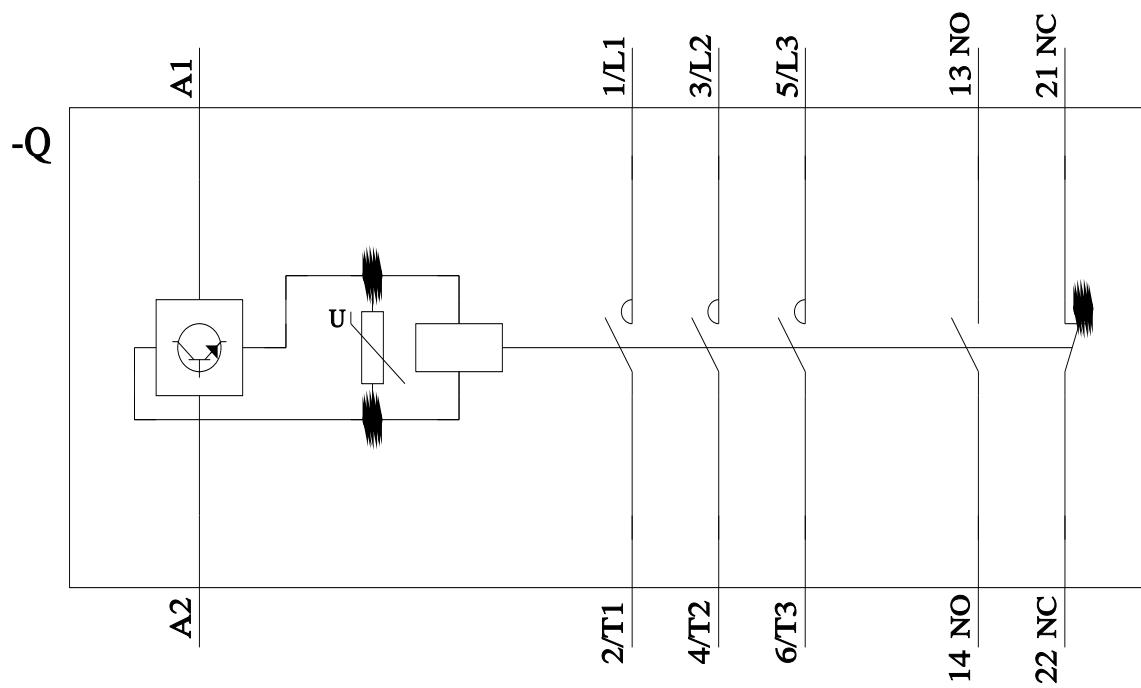
Characteristic: Tripping characteristics, I^2t , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2045-1NB30/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2045-1NB30&objecttype=14&gridview=view1>





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