

vacuum contactor AC-3e 630 A, 335 kW / 400 V, AC-3 820 A, 450 kW / 400 V, Ue 690 V, 3-pole, Uc: 110-120 V AC(50/60 Hz) drive: conventional rectifier bridge built-in with reversing contactor 3TC44 auxiliary contacts 3 NO + 3 NC main circuit: busbar control and auxiliary circuit: screw terminal



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| product designation | Vacuum contactor |
| product type designation | 3TF6 |
| General technical data | |
| size of contactor | 14 |
| product extension | |
| • function module for communication | No |
| • auxiliary switch | No |
| insulation voltage | |
| • of main circuit with degree of pollution 3 rated value | 1 000 V |
| • of auxiliary circuit with degree of pollution 3 rated value | 690 V |
| surge voltage resistance | |
| • of main circuit rated value | 8 kV |
| • of auxiliary circuit rated value | 6 kV |
| maximum permissible voltage for protective separation | |
| • in networks with grounded star point between auxiliary and auxiliary circuit | 300 V |
| • in networks with grounded star point between main and auxiliary circuit | 500 V |
| shock resistance at rectangular impulse | |
| • at AC | 9.5g / 5 ms, 5.7g / 10 ms |
| shock resistance with sine pulse | |
| • at AC | 13.5g / 5 ms, 7.8g / 10 ms |
| mechanical service life (operating cycles) | |
| • of contactor typical | 5 000 000 |
| reference code according to IEC 81346-2 | Q |
| Substance Prohibitance (Date) | 03/01/2017 |
| SVHC substance name | Lead - 7439-92-1 |
| Weight | 22.938 kg |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 2 000 m |
| ambient temperature | |
| • during operation | -25 ... +55 °C |
| • during storage | -55 ... +80 °C |
| relative humidity minimum | 10 % |
| relative humidity during operation | 10 ... 95 % |
| 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 |

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| number of NC contacts for main contacts | 0 |
| type of voltage for main current circuit | AC |
| operating voltage | |
| • at AC-3 rated value maximum | 690 V |
| • at AC-3e rated value maximum | 690 V |
| operational current | |
| • at AC-1 | |
| — up to 690 V at ambient temperature 40 °C rated value | 910 A |
| — up to 690 V at ambient temperature 55 °C rated value | 850 A |
| • at AC-3 | |
| — at 400 V rated value | 820 A |
| — at 500 V rated value | 820 A |
| — at 690 V rated value | 820 A |
| • at AC-3e | |
| — at 400 V rated value | 630 A |
| — at 500 V rated value | 630 A |
| — at 690 V rated value | 630 A |
| • at AC-4 at 400 V rated value | 690 A |
| • at AC-6a | |
| — up to 500 V for current peak value n=20 rated value | 675 A |
| — up to 690 V for current peak value n=20 rated value | 675 A |
| • at AC-6a | |
| — up to 400 V for current peak value n=30 rated value | 450 A |
| — up to 500 V for current peak value n=30 rated value | 450 A |
| — up to 690 V for current peak value n=30 rated value | 450 A |
| connectable conductor cross-section in main circuit at AC-1 | |
| • at 40 °C minimum permissible | 600 mm ² |
| operational current for approx. 200000 operating cycles at AC-4 | |
| • at 400 V rated value | 360 A |
| • at 690 V rated value | 360 A |
| operating power | |
| • at AC-3 | |
| — at 230 V rated value | 260 kW |
| — at 400 V rated value | 450 kW |
| — at 500 V rated value | 600 kW |
| — at 690 V rated value | 800 kW |
| • at AC-3e | |
| — at 230 V rated value | 200 kW |
| — at 400 V rated value | 355 kW |
| — at 690 V rated value | 600 kW |
| operating apparent power at AC-6a | |
| • up to 400 V for current peak value n=20 rated value | 445 kVA |
| • up to 690 V for current peak value n=20 rated value | 771 kVA |
| operating apparent power at AC-6a | |
| • up to 400 V for current peak value n=30 rated value | 297 kVA |
| • up to 690 V for current peak value n=30 rated value | 514 kVA |
| thermal short-time current limited to 10 s | 7 000 A |
| power loss [W] at AC-3 at 400 V for rated value of the operational current per conductor | 70 W |
| power loss [W] at AC-3e at 400 V for rated value of the operational current per conductor | 42 W |
| no-load switching frequency at AC | 1 000 1/h |
| operating frequency | |
| • at AC-1 maximum | 700 1/h |
| • at AC-3e | |
| — at 400 V maximum | 500 1/h |
| — at 690 V maximum | 500 1/h |

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| <ul style="list-style-type: none"> • at AC-2 at AC-3 maximum | 200 1/h |
| <ul style="list-style-type: none"> • at AC-2 at AC-3e maximum | 200 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 | 110 ... 120 V |
| <ul style="list-style-type: none"> • at 60 Hz rated value | 110 ... 120 V |
| operating range factor control supply voltage rated value of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz | 0.8 ... 1.1 |
| <ul style="list-style-type: none"> • at 60 Hz | 0.8 ... 1.1 |
| apparent pick-up power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz | 1 150 VA |
| <ul style="list-style-type: none"> • at 60 Hz | 1 150 VA |
| inductive power factor with closing power of the coil | |
| <ul style="list-style-type: none"> • at 50 Hz | 1 |
| <ul style="list-style-type: none"> • at 60 Hz | 1 |
| apparent holding power of magnet coil at AC | |
| <ul style="list-style-type: none"> • at 50 Hz | 11 VA |
| <ul style="list-style-type: none"> • at 60 Hz | 11 VA |
| inductive power factor with the holding power of the coil | |
| <ul style="list-style-type: none"> • at 50 Hz | 1 |
| <ul style="list-style-type: none"> • at 60 Hz | 1 |
| closing delay | |
| <ul style="list-style-type: none"> • at AC | 45 ... 160 ms |
| opening delay | |
| <ul style="list-style-type: none"> • at AC | 30 ... 80 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 | |
| <ul style="list-style-type: none"> • attachable | 3 |
| <ul style="list-style-type: none"> • instantaneous contact | 3 |
| number of NO contacts for auxiliary contacts | |
| <ul style="list-style-type: none"> • attachable | 3 |
| <ul style="list-style-type: none"> • instantaneous contact | 3 |
| operational current at AC-12 maximum | 10 A |
| operational current at AC-15 | |
| <ul style="list-style-type: none"> • at 230 V rated value | 5.6 A |
| <ul style="list-style-type: none"> • at 400 V rated value | 3.6 A |
| <ul style="list-style-type: none"> • at 500 V rated value | 2.5 A |
| <ul style="list-style-type: none"> • at 690 V rated value | 2.3 A |
| operational current at DC-12 at 440 V rated value | 0.33 A |
| operational current at DC-12 | |
| <ul style="list-style-type: none"> • at 24 V rated value | 10 A |
| <ul style="list-style-type: none"> • at 48 V rated value | 10 A |
| <ul style="list-style-type: none"> • at 110 V rated value | 3.2 A |
| <ul style="list-style-type: none"> • at 125 V rated value | 2.5 A |
| <ul style="list-style-type: none"> • at 220 V rated value | 0.9 A |
| <ul style="list-style-type: none"> • at 600 V rated value | 0.22 A |
| operational current at DC-13 | |
| <ul style="list-style-type: none"> • at 24 V rated value | 10 A |
| <ul style="list-style-type: none"> • at 48 V rated value | 5 A |
| <ul style="list-style-type: none"> • at 110 V rated value | 1.14 A |
| <ul style="list-style-type: none"> • at 125 V rated value | 0.98 A |
| <ul style="list-style-type: none"> • at 220 V rated value | 0.48 A |
| <ul style="list-style-type: none"> • at 600 V rated value | 0.07 A |
| contact reliability of auxiliary contacts | one incorrect switching operation of 100 million switching operations (17 V, 5 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 | <p>820 A</p> <p>820 A</p> |
| yielded mechanical performance [hp] | |
| <ul style="list-style-type: none"> ● 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>290 hp</p> <p>350 hp</p> <p>700 hp</p> <p>860 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 coordination 2 required ● for short-circuit protection of the auxiliary switch required | <p>gG: 1250 A (690 V, 100 kA)</p> <p>gG: 630 A (690 V, 50 kA), aM: 630 A (690 V, 50 kA), BS88: 630 A (690 V, 50 kA)</p> <p>fuse gG: 10 A</p> |
| Installation/ mounting/ dimensions | |
| mounting position | with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back |
| fastening method side-by-side mounting | Yes |
| fastening method | screw fixing |
| height | 295 mm |
| width | 230 mm |
| depth | 237 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>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>20 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 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 | <p>Connection bar</p> <p>screw-type terminals</p> <p>Screw-type terminals</p> |
| width of connection bar | 40 mm |
| thickness of connection bar | 6 mm |
| diameter of holes | 13.5 mm |
| number of holes | 1 |
| type of connectable conductor cross-sections for main contacts | |
| <ul style="list-style-type: none"> ● stranded ● finely stranded with core end processing | <p>50 ... 240 mm²</p> <p>50 ... 240 mm²</p> |
| connectable conductor cross-section for main contacts | |
| <ul style="list-style-type: none"> ● finely stranded with core end processing | 240 ... 50 mm ² |
| 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 ... 2.5 mm²</p> <p>0.5 ... 2.5 mm²</p> |

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| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> ● for auxiliary contacts <ul style="list-style-type: none"> — solid — finely stranded with core end processing ● for AWG cables for auxiliary contacts | <p>2x (0.5 ... 1.0 mm²), 2x (1.0 ... 2.5 mm²)</p> <p>2x (0.5 ... 1.0 mm²), 2x (0.75 ... 2.5 mm²)</p> <p>2x (18 ... 12)</p> |
| AWG number as coded connectable conductor cross section for main contacts | 500 |
| AWG number as coded connectable conductor cross section for auxiliary contacts | 18 ... 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 ● suitable for safety function | <p>Yes; One NC contact each must be connected in series for the right and left auxiliary switch block respectively</p> <p>No</p> <p>Yes</p> |
| service life maximum | 20 a |
| test wear-related service life necessary | Yes |
| 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 | <p>40 %</p> <p>73 %</p> |
| B10 value with high demand rate according to SN 31920 | 1 000 000 |
| failure rate [FIT] with low demand rate according to SN 31920 | 100 FIT |
| ISO 13849 | |
| device type according to ISO 13849-1 | 3 |
| overdimensioning according to ISO 13849-2 necessary | Yes |
| IEC 61508 | |
| safety device type according to IEC 61508-2 | Type A |
| Electrical Safety | |
| protection class IP on the front according to IEC 60529 | IP00 |

Approvals Certificates

| | | |
|--------------------------|-------------------|-------------------|
| General Product Approval | Functional Safety | Test Certificates |
|--------------------------|-------------------|-------------------|



[Type Examination Certificate](#)

[Special Test Certificate](#)

[Miscellaneous](#)

| | |
|----------------------|-------|
| Maritime application | other |
|----------------------|-------|



[Miscellaneous](#)



| | |
|-------|-----------------|
| other | Dangerous goods |
|-------|-----------------|

[Confirmation](#)

[Transport Information](#)

Further information

- Information on the packaging
<https://support.industry.siemens.com/cs/ww/en/view/109813875>
- Information for data generation and storage
<https://support.industry.siemens.com/cs/ww/en/view/109995012>
- 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=3TF6933-1QG7>
- Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6933-1QG7>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-1QG7>

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

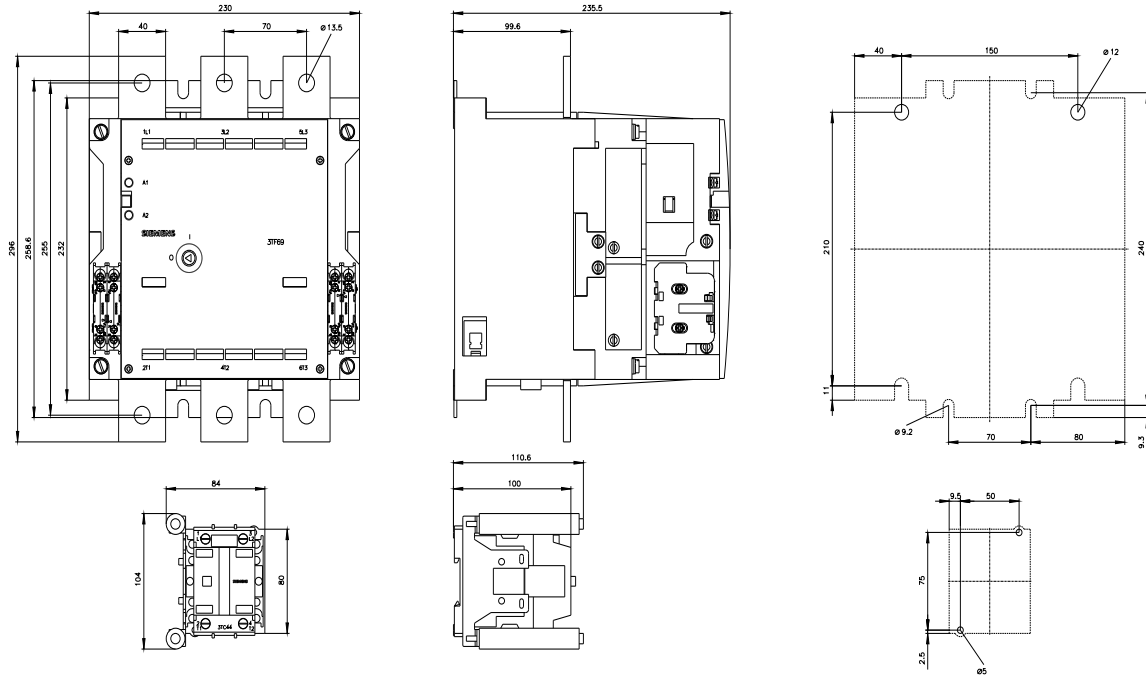
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6933-1QG7&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

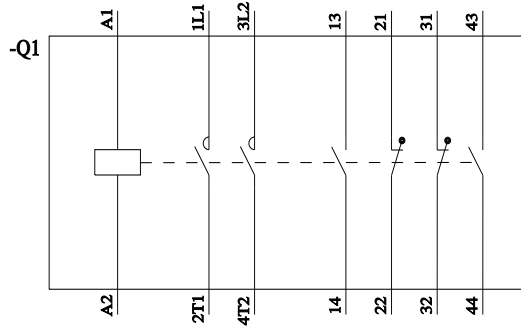
<https://support.industry.siemens.com/cs/ww/en/ps/3TF6933-1QG7/char>

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

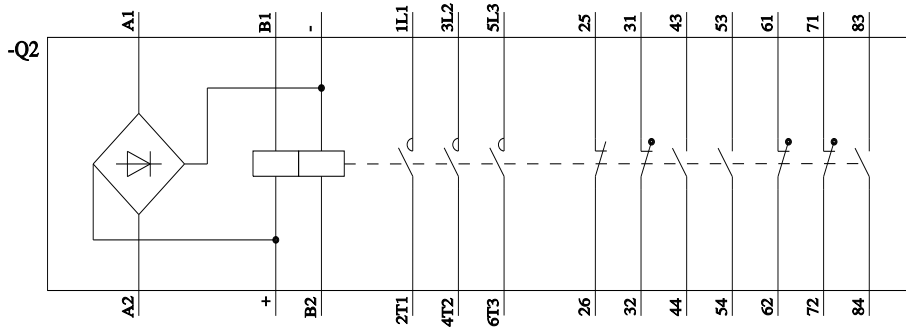
<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6933-1QG7&objecttype=14&gridview=view1>



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last modified:

7/31/2025 