



vacuum contactor AC-3e/AC-3 630 A, 335 kW / 400 V, U<sub>e</sub> 690 V, 3-pole, U<sub>c</sub>: 110-132 V AC(50/60 Hz) drive: conventional auxiliary contacts 4 NO + 4 NC main circuit: busbar control and auxiliary circuit: screw terminal without overvoltage damping in main circuit

|                                                                                |                                                                                                                          |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| product designation                                                            | Vacuum contactor                                                                                                         |
| product type designation                                                       | 3TF6                                                                                                                     |
| <b>General technical data</b>                                                  |                                                                                                                          |
| 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                                                                        | 8.1g / 5 ms, 4.7g / 10 ms                                                                                                |
| shock resistance with sine pulse                                               |                                                                                                                          |
| • at AC                                                                        | 12.8g / 5 ms, 7.4g / 10 ms                                                                                               |
| mechanical service life (operating cycles)                                     |                                                                                                                          |
| • of contactor typical                                                         | 5 000 000                                                                                                                |
| reference code according to IEC 81346-2                                        | Q                                                                                                                        |
| Substance Prohibittance (Date)                                                 | 03/01/2017                                                                                                               |
| SVHC substance name                                                            | Lead - 7439-92-1<br>Lead monoxide (lead oxide) - 1317-36-8<br>2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 |
| Weight                                                                         | 19.752 kg                                                                                                                |
| <b>Ambient conditions</b>                                                      |                                                                                                                          |
| 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 %                                                                                                                     |
| <b>Main circuit</b>                                                            |                                                                                                                          |
| number of poles for main current circuit                                       | 3                                                                                                                        |
| number of NO contacts for main contacts                                        | 3                                                                                                                        |

|                                                                                                  |         |
|--------------------------------------------------------------------------------------------------|---------|
| <b>number of NC contacts for main contacts</b>                                                   | 0       |
| <b>type of voltage for main current circuit</b>                                                  | AC      |
| <b>operating voltage</b>                                                                         |         |
| • at AC-3 rated value maximum                                                                    | 690 V   |
| • at AC-3e rated value maximum                                                                   | 690 V   |
| <b>operational current</b>                                                                       |         |
| • at AC-1                                                                                        |         |
| — up to 690 V at ambient temperature 40 °C rated value                                           | 700 A   |
| — up to 690 V at ambient temperature 55 °C rated value                                           | 630 A   |
| • at AC-3                                                                                        |         |
| — at 400 V rated value                                                                           | 630 A   |
| — at 500 V rated value                                                                           | 630 A   |
| — at 690 V rated value                                                                           | 630 A   |
| • at AC-3e                                                                                       |         |
| — at 400 V rated value                                                                           | 552 A   |
| — at 500 V rated value                                                                           | 552 A   |
| — at 690 V rated value                                                                           | 552 A   |
| • at AC-4 at 400 V rated value                                                                   | 610 A   |
| • at AC-6a                                                                                       |         |
| — up to 500 V for current peak value n=20 rated value                                            | 513 A   |
| — up to 690 V for current peak value n=20 rated value                                            | 513 A   |
| • at AC-6a                                                                                       |         |
| — up to 400 V for current peak value n=30 rated value                                            | 342 A   |
| — up to 500 V for current peak value n=30 rated value                                            | 342 A   |
| — up to 690 V for current peak value n=30 rated value                                            | 342 A   |
| <b>connectable conductor cross-section in main circuit at AC-1</b>                               |         |
| • at 40 °C minimum permissible                                                                   | 480 mm² |
| <b>operational current for approx. 200000 operating cycles at AC-4</b>                           |         |
| • at 400 V rated value                                                                           | 300 A   |
| • at 690 V rated value                                                                           | 300 A   |
| <b>operating power</b>                                                                           |         |
| • at AC-3                                                                                        |         |
| — at 230 V rated value                                                                           | 200 kW  |
| — at 400 V rated value                                                                           | 355 kW  |
| — at 500 V rated value                                                                           | 400 kW  |
| — at 690 V rated value                                                                           | 600 kW  |
| • at AC-3e                                                                                       |         |
| — at 230 V rated value                                                                           | 160 kW  |
| — at 400 V rated value                                                                           | 315 kW  |
| — at 690 V rated value                                                                           | 560 kW  |
| <b>operating apparent power at AC-6a</b>                                                         |         |
| • up to 400 V for current peak value n=20 rated value                                            | 338 kVA |
| • up to 690 V for current peak value n=20 rated value                                            | 586 kVA |
| <b>operating apparent power at AC-6a</b>                                                         |         |
| • up to 400 V for current peak value n=30 rated value                                            | 226 kVA |
| • up to 690 V for current peak value n=30 rated value                                            | 390 kVA |
| <b>thermal short-time current limited to 10 s</b>                                                | 5 040 A |
| <b>power loss [W] at AC-3 at 400 V for rated value of the operational current per conductor</b>  | 45 W    |
| <b>power loss [W] at AC-3e at 400 V for rated value of the operational current per conductor</b> | 35 W    |
| <b>no-load switching frequency at AC</b>                                                         | 500 1/h |
| <b>operating frequency</b>                                                                       |         |
| • at AC-1 maximum                                                                                | 500 1/h |
| • at AC-3e                                                                                       |         |
| — at 400 V maximum                                                                               | 500 1/h |
| — at 690 V maximum                                                                               | 500 1/h |
| • at AC-2 at AC-3 maximum                                                                        | 200 1/h |

|                                                                                       |                  |
|---------------------------------------------------------------------------------------|------------------|
| • at AC-2 at AC-3e maximum                                                            | 200 1/h          |
| <b>Control circuit/ Control</b>                                                       |                  |
| <b>type of voltage of the control supply voltage</b>                                  | AC               |
| <b>control supply voltage at AC</b>                                                   |                  |
| • at 50 Hz rated value                                                                | 110 ... 132 V    |
| • at 60 Hz rated value                                                                | 110 ... 132 V    |
| <b>operating range factor control supply voltage rated value of magnet coil at AC</b> |                  |
| • at 50 Hz                                                                            | 0.8 ... 1.1      |
| • at 60 Hz                                                                            | 0.8 ... 1.1      |
| <b>apparent pick-up power</b>                                                         |                  |
| • at minimum rated control supply voltage at AC                                       |                  |
| — at 50 Hz                                                                            | 850 VA           |
| — at 60 Hz                                                                            | 850 VA           |
| • at maximum rated control supply voltage at AC                                       |                  |
| — at 60 Hz                                                                            | 950 VA           |
| — at 50 Hz                                                                            | 950 VA           |
| <b>inductive power factor with closing power of the coil</b>                          |                  |
| • at 50 Hz                                                                            | 1                |
| • at 60 Hz                                                                            | 1                |
| <b>apparent holding power</b>                                                         |                  |
| • at minimum rated control supply voltage at AC                                       |                  |
| — at 50 Hz                                                                            | 7 VA             |
| — at 60 Hz                                                                            | 7 VA             |
| • at maximum rated control supply voltage at AC                                       |                  |
| — at 50 Hz                                                                            | 8 VA             |
| — at 60 Hz                                                                            | 8 VA             |
| <b>inductive power factor with the holding power of the coil</b>                      |                  |
| • at 50 Hz                                                                            | 0.4              |
| • at 60 Hz                                                                            | 0.4              |
| <b>closing delay</b>                                                                  |                  |
| • at AC                                                                               | 70 ... 120 ms    |
| <b>opening delay</b>                                                                  |                  |
| • at AC                                                                               | 50 ... 130 ms    |
| <b>arcing time</b>                                                                    | 10 ... 15 ms     |
| <b>control version of the switch operating mechanism</b>                              | Standard A1 - A2 |
| <b>Auxiliary circuit</b>                                                              |                  |
| <b>number of NC contacts for auxiliary contacts</b>                                   |                  |
| • attachable                                                                          | 4                |
| • instantaneous contact                                                               | 4                |
| <b>number of NO contacts for auxiliary contacts</b>                                   |                  |
| • attachable                                                                          | 4                |
| • instantaneous contact                                                               | 4                |
| <b>operational current at AC-12 maximum</b>                                           | 10 A             |
| <b>operational current at AC-15</b>                                                   |                  |
| • at 230 V rated value                                                                | 5.6 A            |
| • at 400 V rated value                                                                | 3.6 A            |
| • at 500 V rated value                                                                | 2.5 A            |
| • at 690 V rated value                                                                | 2.3 A            |
| <b>operational current at DC-12 at 440 V rated value</b>                              | 0.33 A           |
| <b>operational current at DC-12</b>                                                   |                  |
| • at 24 V rated value                                                                 | 10 A             |
| • at 48 V rated value                                                                 | 10 A             |
| • at 110 V rated value                                                                | 3.2 A            |
| • at 125 V rated value                                                                | 2.5 A            |
| • at 220 V rated value                                                                | 0.9 A            |
| • at 600 V rated value                                                                | 0.22 A           |
| <b>operational current at DC-13</b>                                                   |                  |
| • at 24 V rated value                                                                 | 10 A             |
| • at 48 V rated value                                                                 | 5 A              |
| • at 110 V rated value                                                                | 1.14 A           |

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 125 V rated value</li> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                      | 0.98 A<br>0.48 A<br>0.07 A                                                                                                     |
| <b>contact reliability of auxiliary contacts</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | one incorrect switching operation of 100 million switching operations (17 V, 5 mA)                                             |
| <b>UL/CSA ratings</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                |
| <b>full-load current (FLA) for 3-phase AC motor</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                |
| <ul style="list-style-type: none"> <li>• at 480 V rated value</li> <li>• at 600 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                      | 630 A<br>630 A                                                                                                                 |
| <b>yielded mechanical performance [hp]</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                |
| <ul style="list-style-type: none"> <li>• for 3-phase AC motor <ul style="list-style-type: none"> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </li> </ul>                                                                                                                                                                                                                                                            | 231 hp<br>266 hp<br>530 hp<br>664 hp                                                                                           |
| <b>contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | A600 / Q600                                                                                                                    |
| <b>Short-circuit protection</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                |
| <b>design of the fuse link</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                |
| <ul style="list-style-type: none"> <li>• for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>— with type of coordination 1 required</li> <li>— with type of coordination 2 required</li> </ul> </li> <li>• for short-circuit protection of the auxiliary switch required</li> </ul>                                                                                                                                                                                                       | gG: 1000 A (690 V, 100 kA)<br>gG: 500 A (690 V, 100 kA), aM: 630 A (690 V, 50 kA), BS88: 500 A (415 V, 50 kA)<br>fuse gG: 10 A |
| <b>Installation/ mounting/ dimensions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                |
| <b>mounting position</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 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                                                                                                                            |
| <b>fastening method</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | screw fixing                                                                                                                   |
| <b>height</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 276 mm                                                                                                                         |
| <b>width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 230 mm                                                                                                                         |
| <b>depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 237 mm                                                                                                                         |
| <b>required spacing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                |
| <ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul> | 20 mm<br>10 mm<br>10 mm<br>10 mm<br>20 mm<br>10 mm<br>10 mm<br>10 mm<br>20 mm<br>10 mm<br>10 mm<br>10 mm                       |
| <b>Connections/ Terminals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                |
| <b>type of electrical connection</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                |
| <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control circuit</li> <li>• at contactor for auxiliary contacts</li> </ul>                                                                                                                                                                                                                                                                                                                                                      | Connection bar<br>screw-type terminals<br>Screw-type terminals                                                                 |
| <b>width of connection bar</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 30 mm                                                                                                                          |
| <b>thickness of connection bar</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6 mm                                                                                                                           |
| <b>diameter of holes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 11 mm                                                                                                                          |
| <b>number of holes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1                                                                                                                              |
| type of connectable conductor cross-sections for main contacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                |
| <ul style="list-style-type: none"> <li>• stranded</li> <li>• finely stranded with core end processing</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                              | 70 ... 240 mm²<br>50 ... 240 mm²                                                                                               |
| <b>connectable conductor cross-section for main contacts</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                |
| <ul style="list-style-type: none"> <li>• finely stranded with core end processing</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                  | 240 ... 50 mm²                                                                                                                 |

|                                                                                       |                                                                       |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <b>connectable conductor cross-section for auxiliary contacts</b>                     |                                                                       |
| • solid or stranded                                                                   | 0.5 ... 2.5 mm <sup>2</sup>                                           |
| • finely stranded with core end processing                                            | 0.5 ... 2.5 mm <sup>2</sup>                                           |
| <b>type of connectable conductor cross-sections</b>                                   |                                                                       |
| • for auxiliary contacts                                                              |                                                                       |
| — solid                                                                               | 2x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (1.0 ... 2.5 mm <sup>2</sup> )  |
| — finely stranded with core end processing                                            | 2x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) |
| • for AWG cables for auxiliary contacts                                               | 2x (18 ... 12)                                                        |
| <b>AWG number as coded connectable conductor cross section for main contacts</b>      | 500                                                                   |
| <b>AWG number as coded connectable conductor cross section for auxiliary contacts</b> | 18 ... 12                                                             |

#### Safety related data

|                                                                      |                                                                                                                 |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>product function</b>                                              |                                                                                                                 |
| • mirror contact according to IEC 60947-4-1                          | Yes; One NC contact each must be connected in series for the right and left auxiliary switch block respectively |
| • positively driven operation according to IEC 60947-5-1             | No                                                                                                              |
| • suitable for safety function                                       | Yes                                                                                                             |
| <b>service life maximum</b>                                          | 20 a                                                                                                            |
| <b>test wear-related service life necessary</b>                      | Yes                                                                                                             |
| <b>proportion of dangerous failures</b>                              |                                                                                                                 |
| • with low demand rate according to SN 31920                         | 40 %                                                                                                            |
| • with high demand rate according to SN 31920                        | 73 %                                                                                                            |
| <b>B10 value with high demand rate according to SN 31920</b>         | 1 000 000                                                                                                       |
| <b>failure rate [FIT] with low demand rate according to SN 31920</b> | 100 FIT                                                                                                         |
| <b>ISO 13849</b>                                                     |                                                                                                                 |
| <b>device type according to ISO 13849-1</b>                          | 3                                                                                                               |
| <b>overdimensioning according to ISO 13849-2 necessary</b>           | Yes                                                                                                             |
| <b>IEC 61508</b>                                                     |                                                                                                                 |
| <b>safety device type according to IEC 61508-2</b>                   | Type A                                                                                                          |
| <b>Electrical Safety</b>                                             |                                                                                                                 |
| <b>protection class IP on the front according to IEC 60529</b>       | IP00; IP20 with cover                                                                                           |
| <b>touch protection on the front according to IEC 60529</b>          | finger-safe, for vertical contact from the front with cover                                                     |

#### Approvals Certificates

|                          |                   |
|--------------------------|-------------------|
| General Product Approval | Functional Safety |
|--------------------------|-------------------|



[Type Examination Certificate](#)

|                   |                      |
|-------------------|----------------------|
| Test Certificates | Maritime application |
|-------------------|----------------------|

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Miscellaneous](#)



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



[Confirmation](#)

[Miscellaneous](#)



#### 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=3TF6844-0CF7-Z A02>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6844-0CF7-Z A02>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6844-0CF7-Z A02>

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

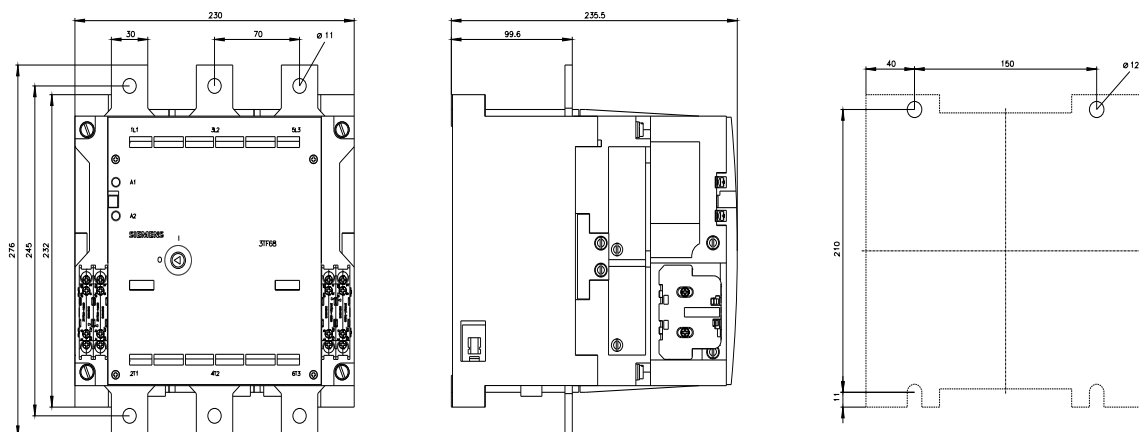
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TF6844-0CF7-Z A02&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6844-0CF7-Z A02&lang=en)

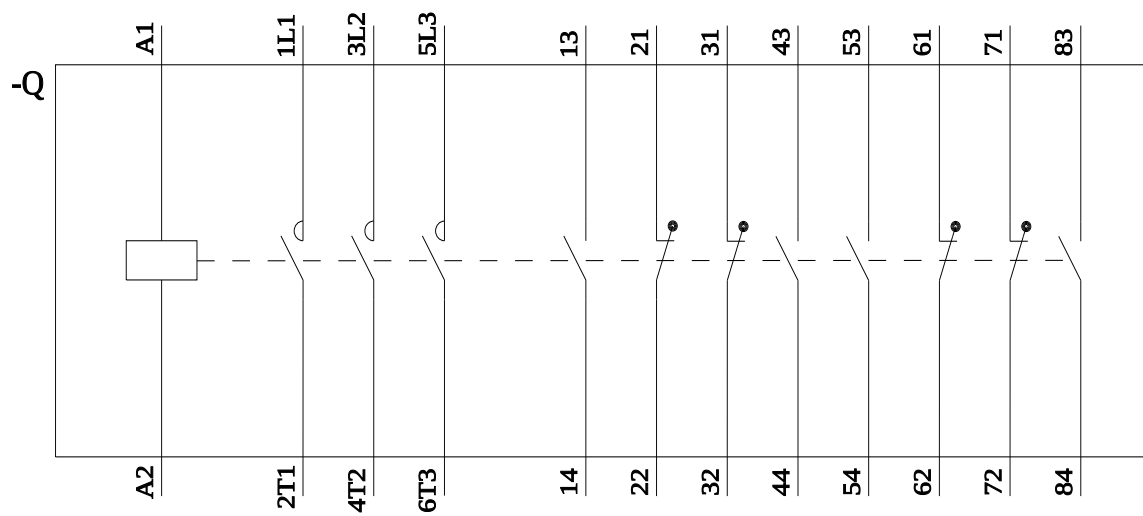
Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6844-0CF7-Z A02/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6844-0CF7-Z A02&objecttype=14&gridview=view1>





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