

Contactor, Size 14, 3-pole, AC-3, 335kW, 400/380 V (690 V)  
 Auxiliary switch 33 (3NO+3NC) Rectifier bridge built-in with reversing  
 contactor 3TC44 AC operation 110 to 120 V AC 50/60 Hz



|   |                        |
|---|------------------------|
| <b>Product designation</b>  | Vacuum contactor       |
| <b>Product type designation</b>   | 3TF6                   |
| <b>General technical data</b>   |                        |
| <b>Size of contactor</b>  | 14                     |
| <b>Product extension</b>  |                        |
| <ul style="list-style-type: none"> <li>• function module for communication</li> <li>• Auxiliary switch</li> </ul>   | No                     |
| <ul style="list-style-type: none"> <li>• Insulation voltage of main circuit with degree of pollution 3 rated value</li> <li>• Insulation voltage of auxiliary circuit with degree of pollution 3 rated value</li> </ul> | 1 000 V<br>690 V       |
| <b>Surge voltage resistance</b>   |                        |
| <ul style="list-style-type: none"> <li>• of main circuit rated value</li> <li>• of auxiliary circuit rated value</li> </ul>   | 8 kV<br>6 kV           |
| <b>maximum permissible voltage for safe isolation in networks with grounded star point</b>  |                        |
| <ul style="list-style-type: none"> <li>• between auxiliary and auxiliary circuit</li> <li>• between main and auxiliary circuit</li> <li>• protection class IP on the front</li> </ul>                                   | 300 V<br>500 V<br>IP00 |

|   |                            |
|---|----------------------------|
| <b>Shock resistance at rectangular impulse</b>    |                            |
| • at AC   | 8.1g / 5 ms, 4.7g / 10 ms  |
| <b>Shock resistance with sine pulse</b>           |                            |
| • at AC   | 12.8g / 5 ms, 7.4g / 10 ms |
| <b>Mechanical service life (switching cycles)</b> |                            |
| • of contactor typical                            | 5 000 000                  |
| <b>Reference code acc. to DIN EN 81346-2</b>      | Q                          |

### Ambient conditions

|  |                |
|--|----------------|
| <b>Installation altitude at height above sea level</b> |                |
| • maximum  | 2 000 m        |
| <b>Ambient temperature</b>                             |                |
| • during operation                                     | -25 ... +55 °C |
| • during storage                                       | -55 ... +80 °C |
| Relative humidity during operation                     | 10 ... 100 %   |

### Main circuit

|   |         |
|---|---------|
| <b>Number of poles for main current circuit</b>         | 3       |
| <b>Number of NO contacts for main contacts</b>          | 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   |         |
| — at 50 Hz rated value                                  | 1 000 V |
| — at 60 Hz rated value                                  | 1 000 V |
| <b>Operating 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   |
| — up to 1000 V at ambient temperature 55 °C rated value | 450 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 1000 V rated value                                 | 435 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   |

|   |                     |
|---|---------------------|
| <ul style="list-style-type: none"> <li>— up to 1000 V for current peak value n=20 rated value</li> </ul>  | 435 A               |
| <ul style="list-style-type: none"> <li>• at AC-6a <ul style="list-style-type: none"> <li>— up to 400 V for current peak value n=30 rated value</li> <li>— up to 500 V for current peak value n=30 rated value</li> <li>— up to 690 V for current peak value n=30 rated value</li> <li>— up to 1000 V for current peak value n=30 rated value</li> </ul> </li> </ul> | 342 A               |
| <b>Connectable conductor cross-section in main circuit at AC-1</b>  |                     |
| <ul style="list-style-type: none"> <li>• at 40 °C minimum permissible</li> </ul>  | 480 mm <sup>2</sup> |
| <b>Operating current for approx. 200000 operating cycles at AC-4</b>  |                     |
| <ul style="list-style-type: none"> <li>• at 400 V rated value</li> <li>• at 690 V rated value</li> </ul>  | 300 A               |
| <b>Operating power</b>  |                     |
| <ul style="list-style-type: none"> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 690 V rated value</li> <li>— at 1000 V rated value</li> </ul> </li> </ul>  | 200 kW              |
|   | 335 kW              |
|   | 600 kW              |
|   | 600 kW              |
| <b>Operating apparent output at AC-6a</b>   |                     |
| <ul style="list-style-type: none"> <li>• up to 400 V for current peak value n=20 rated value</li> </ul>   | 338 kV·A            |
| <ul style="list-style-type: none"> <li>• up to 690 V for current peak value n=20 rated value</li> </ul>   | 586 kV·A            |
| <ul style="list-style-type: none"> <li>• up to 1000 V for current peak value n=20 rated value</li> </ul>  | 752 kV·A            |
| <b>Operating apparent output at AC-6a</b>   |                     |
| <ul style="list-style-type: none"> <li>• up to 400 V for current peak value n=30 rated value</li> </ul>   | 226 kV·A            |
| <ul style="list-style-type: none"> <li>• up to 690 V for current peak value n=30 rated value</li> </ul>   | 390 kV·A            |
| <ul style="list-style-type: none"> <li>• up to 1000 V for current peak value n=30 rated value</li> </ul>  | 592 kV·A            |
| <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 operating current per conductor</b>   |                     |
|   | 45 W                |
| <b>No-load switching frequency at AC</b>  |                     |
|   | 2 000 1/h           |
| <b>Operating frequency</b>  |                     |
| <ul style="list-style-type: none"> <li>• at AC-1 maximum</li> </ul>   | 700 1/h             |

- at AC-2 at AC-3 maximum

200 1/h

### Control circuit/ Control

|   |                  |
|---|------------------|
| <b>Type of voltage of the control supply voltage</b>                                  | AC               |
| <b>Control supply voltage at AC</b>   |                  |
| • at 50 Hz rated value  | 110 ... 120 V    |
| • at 60 Hz rated value  | 110 ... 120 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 of magnet coil at AC</b>                                    |                  |
| • at 50 Hz  | 1 000 V·A        |
| • at 60 Hz  | 1 000 V·A        |
| <b>Inductive power factor with closing power of the coil</b>                          |                  |
| • at 50 Hz  | 1                |
| • at 60 Hz  | 1                |
| <b>Apparent holding power of magnet coil at AC</b>                                    |                  |
| • at 50 Hz  | 11 V·A           |
| • at 60 Hz  | 11 V·A           |
| <b>Inductive power factor with the holding power of the coil</b>                      |                  |
| • at 50 Hz  | 1                |
| • at 60 Hz  | 1                |
| <b>Closing delay</b>  |                  |
| • at AC   | 35 ... 90 ms     |
| <b>Opening delay</b>  |                  |
| • at AC   | 65 ... 90 ms     |
| <b>Arcing time</b>  | 10 ... 15 ms     |
| <b>Control version of the switch operating mechanism</b>                              | Standard A1 - A2 |

### Auxiliary circuit

|   |       |
|---|-------|
| <b>Number of NC contacts for auxiliary contacts</b> |       |
| • attachable  | 3     |
| • instantaneous contact                             | 3     |
| <b>Number of NO contacts for auxiliary contacts</b> |       |
| • attachable  | 3     |
| • instantaneous contact                             | 3     |
| <b>Operating current at AC-12 maximum</b>           | 10 A  |
| <b>Operating 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>Operating current at DC-12 at 440 V rated value</b> | 0.33 A   |
| <b>Operating 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>Operating 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   |
| • at 125 V rated value                                 | 0.98 A   |
| • at 220 V rated value                                 | 0.48 A   |
| • at 600 V rated value                                 | 0.07 A   |
| <b>contact reliability of auxiliary contacts</b>       | one incorrect switching operation of 100 million switching operations (17 V, 5 mA) |

### UL/CSA ratings

|   |             |
|---|-------------|
| <b>Full-load current (FLA) for three-phase AC motor</b>     |             |
| • at 480 V rated value                                      | 630 A       |
| • at 600 V rated value                                      | 630 A       |
| <b>Yielded mechanical performance [hp]</b>                  |             |
| • for three-phase AC motor                                  |             |
| — at 200/208 V rated value                                  | 231 hp      |
| — at 220/230 V rated value                                  | 266 hp      |
| — at 460/480 V rated value                                  | 530 hp      |
| — at 575/600 V rated value                                  | 664 hp      |
| <b>Contact rating of auxiliary contacts according to UL</b> | A600 / Q600 |

### Short-circuit protection

|   |   |
|---|---|
| <b>Design of the fuse link</b>                                  |   |
| • for short-circuit protection of the main circuit              |   |
| — with type of coordination 1 required                          | gG: 1000 A (690 V, 100 kA)  |
| — with type of assignment 2 required                            | gG: 500 A (690 V, 100 kA), aM: 630 A (690 V, 50 kA), BS88: 500 A (415 V, 50 kA) |
| • for short-circuit protection of the auxiliary switch required | fuse gG: 10 A   |

### Installation/ mounting/ dimensions

|                            |  |
|----------------------------|--|
| • <b>mounting position</b> | with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back |
| <b>Mounting type</b>       | screw fixing   |
| • Side-by-side mounting    | Yes  |

|   |        |
|---|--------|
| <b>Height</b>   | 232 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 20 mm</li> <li>— upwards 10 mm</li> <li>— downwards 10 mm</li> <li>— at the side 10 mm</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards 20 mm</li> <li>— upwards 10 mm</li> <li>— at the side 10 mm</li> <li>— downwards 10 mm</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards 20 mm</li> <li>— upwards 10 mm</li> <li>— downwards 10 mm</li> <li>— at the side 10 mm</li> </ul> </li> </ul> |        |

### Connections/ 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   |
| <ul style="list-style-type: none"> <li>• Type of electrical connection for main current circuit</li> <li>• Type of electrical connection for auxiliary and control current circuit</li> <li>• Type of electrical connection at contactor for auxiliary contacts</li> </ul>                                   | <p>Connection bar</p> <p>screw-type terminals</p> <p>Screw-type terminals</p> |
| <b>Type of connectable conductor cross-sections</b>  |   |
| <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— stranded 70 ... 240 mm<sup>2</sup></li> <li>— finely stranded with core end processing 50 ... 240 mm<sup>2</sup></li> </ul> </li> <li>• at AWG conductors for main contacts 2/0 ... 500 kcmil</li> </ul> |   |
| <b>Connectable conductor cross-section for main contacts</b>   |   |
| <ul style="list-style-type: none"> <li>• finely stranded with core end processing 240 ... 50 mm<sup>2</sup></li> </ul>   |   |
| <b>Connectable conductor cross-section for auxiliary contacts</b>  |   |
| <ul style="list-style-type: none"> <li>• single or multi-stranded 0.5 ... 2.5 mm<sup>2</sup></li> <li>• finely stranded with core end processing 0.5 ... 2.5 mm<sup>2</sup></li> </ul>   |   |

|   |   |
|---|---|
| <b>Type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for auxiliary contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG conductors for auxiliary contacts</li> </ul> | 2x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (1.0 ... 2.5 mm <sup>2</sup> )<br>2x (0.5 ... 1.0 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )<br>2x (18 ... 12) |
| <b>AWG number as coded connectable conductor cross section</b> <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• for auxiliary contacts</li> </ul>  | 500<br>18 ... 12  |

### Safety related data

|   |   |
|---|---|
| <b>Product function</b> <ul style="list-style-type: none"> <li>• Mirror contact acc. to IEC 60947-4-1</li> <li>• positively driven operation acc. to IEC 60947-5-1</li> </ul> | Yes; One NC contact each must be connected in series for the right and left auxiliary switch block respectively<br><br>No |
|---|---|

### Certificates/ approvals

|                                 |  |
|---------------------------------|--|
| <b>General Product Approval</b> | <b>Functional Safety/Safety of Machinery</b> |
|---------------------------------|--|



[Type Examination Certificate](#)

|  |                               |                              |
|--|-------------------------------|------------------------------|
| <b>Test Certificates</b>                 | <b>Marine / Shipping</b>      | <b>other</b>                 |
| <a href="#">Special Test Certificate</a> | <a href="#">Miscellaneous</a> | <a href="#">Confirmation</a> |
|  |                               |                              |
|  |                               |                              |

### Railway

|  |
|--|
| <a href="#">Special Test Certificate</a> |
|--|

### Further information

**Information- and Downloadcenter (Catalogs, Brochures,...)**  
<https://www.siemens.com/ic10>

**Industry Mall (Online ordering system)**  
<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3TF6833-1QG7>

**Cax online generator**  
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3TF6833-1QG7>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6833-1QG7>

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

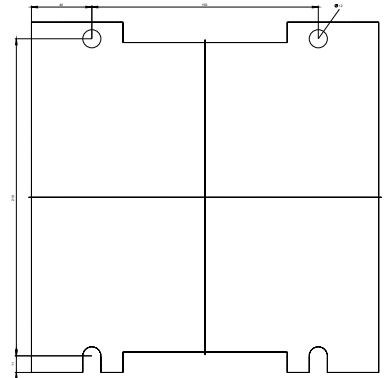
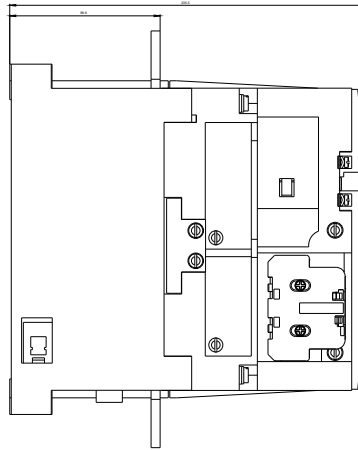
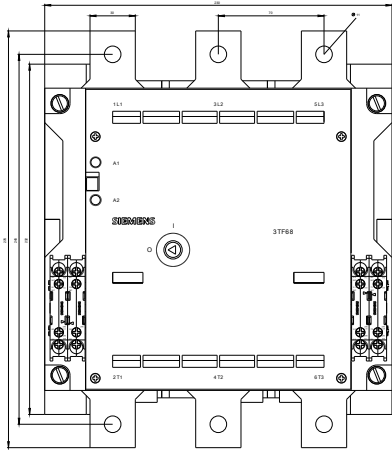
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3TF6833-1QG7&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3TF6833-1QG7&lang=en)

**Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3TF6833-1QG7/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3TF6833-1QG7&objecttype=14&gridview=view1>



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