

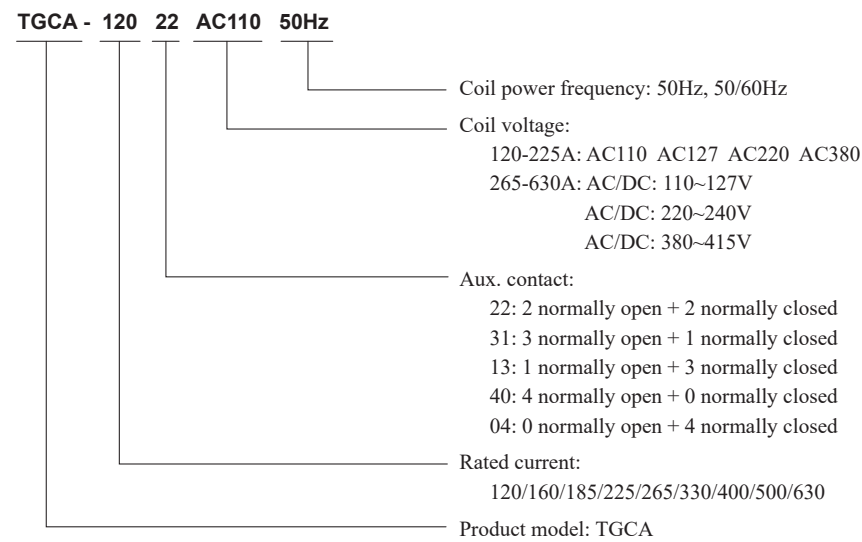
TGCA (120~630A) Series AC Contactor



1 Overview

TGCA (120 ~ 630A) full series AC contactor is primarily used in AC 50Hz (or 60 Hz) power system with the rated operating voltage up to 690V, the rated operating voltage of 380V/400V under the AC-3 use category, and with the rated operating voltage up to 630A. Under the AC-3 use category at 380V/400V, it can be used to start and control the AC motor frequently, and to connect and disconnect the circuit remotely, and can be combined with the appropriate thermal overload relay to form an electromagnetic starter.

2 Type Designation



3 Main Parameters

| | |
|-----------------------------------|---|
| Rated operating current | 120A/160A/185A/225A/265A/330A/400A/500A/630A |
| Rated insulation voltage Ui | 1000V |
| Number of poles | Three-poles |
| AC coil (225 frame) | 110/127/220/380V (50Hz) |
| AC/DC universal wide voltage coil | 110~127V, 220~240V, 380~415V (50/60Hz) |
| Accessories | Top aux., side aux., air delay head, dust cover |
| Certification | CE |

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4 Product Highlights

4.1 With the volume reduced by 20%~40% by comparing with the similar products on the market, save the space in the cabinet



TGCA
Compact



CJ20
Wide 20%



CJX2F
Wider 40%

4.2 400, 630 frame DC coil holding, with low power consumption, no noise, and energy saving and mute

5 Conditions and Installation Conditions

5.1 Ambient air temperature: The ultimate operating temperature is -35°C~+70°C, the normal operating temperature is -5°C~+40°C, and the mean temperature within 24h does not higher than +35°C. The derating shall be considered if out of the normal working range; the table below gives the correction coefficients for different rated operating currents when the working ambient temperature exceeds +40°C but the rated operating voltage is unchanged;

| Ambient temperature °C | 40 | 50 | 60 | 70 |
|------------------------|----|-------|------|-------|
| Correction factor | 1 | 0.875 | 0.75 | 0.625 |

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5.2 Humidity: The relative humidity of the air does not exceed 50% when the maximum temperature is +70°C, and a higher relative humidity can be allowed at lower temperatures, such as 90% at +20°C. Special measures should be taken for condensation occasionally occurred due to temperature changes;

5.3 Altitude: The altitude at the installation site does not exceed 2000m; the table below gives the correction coefficients for the rated impulse withstand voltage and rated operating current when the altitude exceeds 2000m and the rated operating voltage remains unchanged;

| Altitude (m) | 2000 | 3000 | 4000 |
|---|------|------|------|
| Rated impulse withstand voltage correction factor | 1 | 0.88 | 0.78 |
| Rated operating current correction factor | 1 | 0.92 | 0.90 |

5.4 Pollution degree: 3;

5.5 Installation category (overvoltage category): Class III;

5.6 protection grade: The enclosure protection grade of the main circuit of contactor is IP00, and the enclosure protection grade of the control circuit and auxiliary circuit is IP20;

5.7 Installed in a place where there is no severe shaking, shock and vibration without conductive dust and rain and snow invasion. The inclination between the mounting surface and the vertical surface is not greater than $\pm 5^\circ$;

5.8 The applicable temperature range during transportation and storage is -25°C to +55°C, and up to +70°C in a short time (24h). The storage place should be ventilated and dry free from rain and snow invasion and direct sunlight.

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6 Main Circuit Parameters and Performance Indicators

| Model | | | TGCA-120 | TGCA-160 | TGCA-185 | TGCA-225 |
|---|-----------------|------|---|--------------------------------------|----------|--------------------------------------|
| Rated working current (A) | 220V/230V | AC-3 | 120 | 160 | 185 | 225 |
| | | AC-4 | | | 160 | 185 |
| | 380V/400V | AC-3 | 120 | 160 | 185 | 225 |
| | | AC-4 | | | 160 | 185 |
| | 660V/690V | AC-3 | 86 | 107 | 107 | 118 |
| | | AC-4 | | | | 107 |
| Conventional heating current (A) | | | 200 | | 275 | |
| Rated insulation voltage (V) | | | 1000 | | | |
| Rated impulse withstand voltage (kV) | | | 12 | | | |
| Rated making capacity | | | Rated making current: 10×Ie(AC-3) or 12×Ie(AC-4) | | | |
| Rated breaking capacity | | | Rated breaking current: 8×Ie(AC-3) or 10×Ie(AC-4) | | | |
| Rated limit short-circuit current Iq (kA) | | | 50 | | | |
| Power of controlled 3-phase motor (kW) | 220V/230V | | 37 | 45 | 55 | 63 |
| | 380V/400V | | 55 | 75 | 90 | 110 |
| | 660V/690V | | 80 | 100 | 100 | 110 |
| Electrical life (×10 ⁴ times) 400V | AC-3 | | 130 | | 120 | |
| | AC-4 | | 1.5 | | | 1 |
| Flashover distance (mm) | 380V/400V | | 15 | | | |
| | 660V/690V | | 35 | | | |
| Mechanical life (10,000 times) | | | 1000 | | | |
| Model and rated current of matched fuse | | | gG224 | | gG315 | |
| Matched thermal overload relay | | | JRS2-135 Stand-alone installation | JRS2-180 Stand-alone installation | | JRS2-400 Stand-alone installation |
| Coil power (50Hz) | Pull-in VA | | 500 | | | |
| | Hold VA | | 50 | | | |
| Action range | Pull-in voltage | | (80% ~ 110%) Us | | | |
| | Release voltage | | (20% ~ 75%) Us | | | |

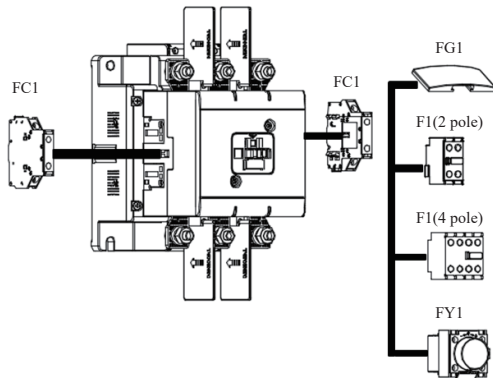
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Table, continued

| 型号 | | | TGCA-265 | TGCA-330 | TGCA-400 | TGCA-500 | TGCA-630 |
|---|-----------------|----------------|---|----------|----------|--------------------------------------|----------|
| Rated working current (A) | 220V/230V | AC-3 | 265 | 330 | 400 | 500 | 630 |
| | | AC-4 | | | 330 | | 500 |
| | 380V/400V | AC-3 | 265 | 330 | 400 | 500 | 630 |
| | | AC-4 | | | 330 | | 500 |
| | 660V/690V | AC-3 | 170 | 235 | 303 | 353 | 400 |
| | | AC-4 | 137 | 170 | 235 | 303 | 353 |
| Conventional heating current (A) | | | 315 | 380 | 450 | 630 | 700 |
| Rated insulation voltage (V) | | | 1000 | | | | |
| Rated impulse withstand voltage (kV) | | | 12 | | | | |
| Rated making capacity | | | Rated making current: 10×Ie(AC-3) or 12×Ie(AC-4) | | | | |
| Rated breaking capacity | | | Rated breaking current: 8×Ie(AC-3) or 10×Ie(AC-4) | | | | |
| Rated limit short-circuit current Iq (kA) | | | 50 | | | | |
| Power of controlled 3-phase motor (kW) | 220V/230V | 75 | 90 | 132 | 160 | 200 | |
| | 380V/400V | 132 | 160 | 200 | 250 | 335 | |
| | 660V/690V | 160 | 200 | 300 | 335 | 350 | |
| Electrical life (×10 ⁴ times) 400V | AC-3 | 100 | | | 90 | | |
| | AC-4 | 1.2 | | 1 | 0.6 | | |
| Flashover distance (mm) | 380V/400V | 15 | | 20 | | | |
| | 660V/690V | 35 | | 40 | | | |
| Mechanical life (×10 ³ times) | | | 600 | | | | |
| Model and rated current of matched fuse | | | gG400 | | gG500 | gG630 | gG800 |
| Matched thermal overload relay | | | JRS2-400 Stand-alone installation | | | JRS2-630 Stand-alone installation | |
| Coil power (50Hz) | Pull-in VA | 700 | | | 800 | | |
| | Hold VA | 20 | | | 20 | | |
| Action range | Pull-in voltage | (75% ~ 110%)Us | | | | | |
| | Release voltage | (10% ~ 75%)Us | | | | | |

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7 Accessories Installation Diagram

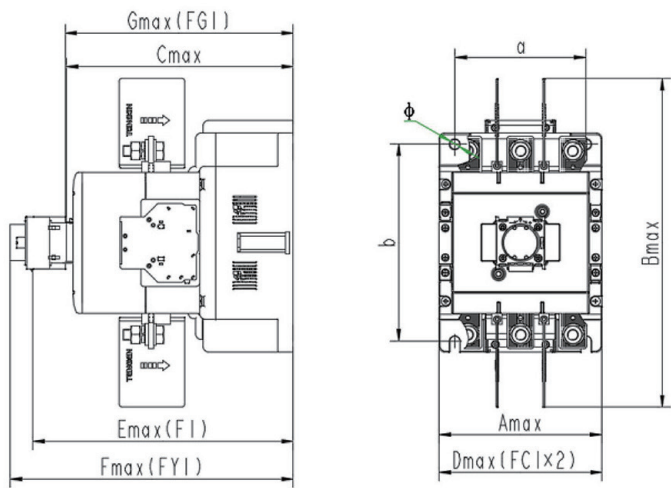


| Code | Name |
|-----------------|----------------------|
| FC1 | Side assist |
| F1 | Top assist |
| FY1 | Delay head |
| FG1 | Dust cover |
| To be developed | Mechanical interlock |

The standard insulation spacer coils of all specifications can satisfy the upper and lower wiring requirements for more convenient connection.

| | |
|---|---|
| Conventional heating current Ith | 10A |
| Rated insulation voltage Ui (V) | 690 |
| Control capacity of auxiliary contact | AC-15:1.6A /220V ,0.95A/380V; DC -13:0.15A/220V |
| Rated impulse withstand voltage Umip (kV) | 6 |
| Wiring capacity (N.m) | 0.8(M3.5) |

8 Outline and Installation Dimensions



Unit: mm

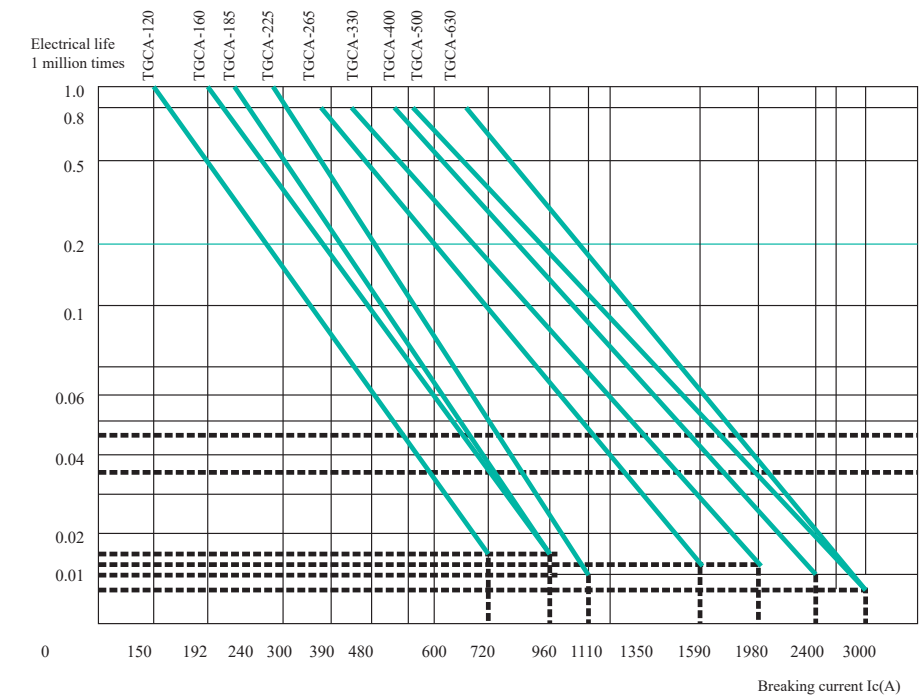
| Spec. & Model | Amax | Bmax | Cmax | Dmax | Emax | Fmax | Gmax | a | b | φ |
|----------------|------|------|------|------|------|------|------|---------|---------|---|
| TGCA-120 ~ 225 | 121 | 282 | 167 | 125 | 201 | 220 | 169 | 96±0.5 | 134±0.8 | 7 |
| TGCA-265 ~ 400 | 150 | 300 | 208 | 151 | 241 | 261 | 210 | 120±0.5 | 180±0.8 | 9 |
| TGCA-500 ~ 630 | 165 | 313 | 226 | 166 | 263 | 284 | 228 | 130±0.5 | 180±0.8 | 9 |

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9 Product Wiring Capacity

| Product sepcification | | | TGCA-120~225 | TGCA-265~400 | TGCA-500~630 |
|-------------------------------|--|--------------------------------|--------------|--------------|--------------|
| Main circuit | Copper wire | Qty. | 1/2 | 1/2 | 1/2 |
| | | Sectional area mm ² | 10 ~ 150 | 50 ~ 240 | 50 ~ 240 |
| | Copper busbar | Qty. | 2 | 2 | 2 |
| | | Size mm | 25×3 | 30×5 | 40×5 |
| | Fastening screw size and tightening torque N.m | | M10 14N.m | | |
| Control and auxiliary circuit | Non-prefabricated terminal soft (hard) wire | 1 wire mm ² | 1 ~ 4 | | |
| | | 2 wires mm ² | 1 ~ 4 | | |
| | Prefabricated terminal | 1 wire mm ² | 1 ~ 4 | | |
| | | 2 wires mm ² | 1 ~ 2.5 | | |
| | Fastening screw size and tightening torque N.m | | M3.5 0.8N.m | | |

10 Electrical life curve



AC-4 Electrical life curve