

## TGC1 (120 ~ 630A) Series AC Contactor



### 1 Overview

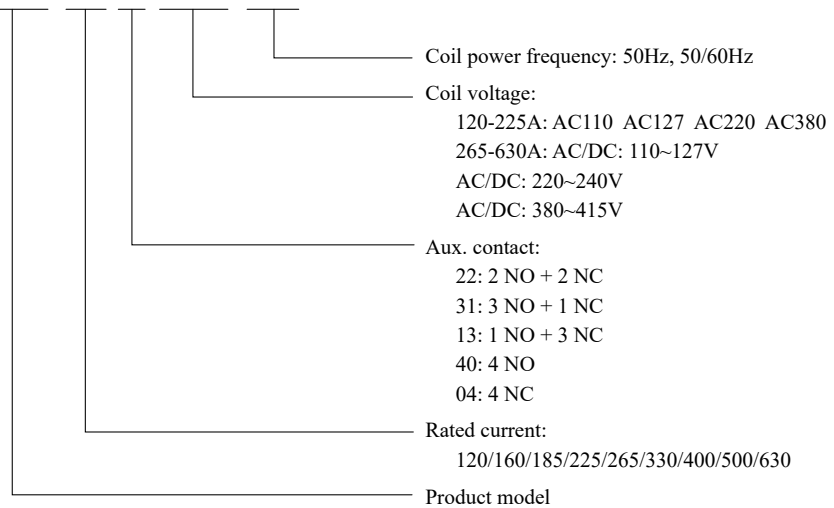
TGC1 (120 ~ 630A) full series AC contactor is primarily used in the AC 50Hz (or 60Hz) power system with the rated working voltage up to 690V and the rated working current up to 630A when the rated working voltage 380V under the AC-3 usage category. When used in the AC motor that is started and controlled frequently under the 400V(380V) AC-3 usage category, it can be suitable for remotely power on/off the circuit. This series can form an electromagnetic starter with an appropriate thermal overload relay.

Standard: IEC60947-4-1

Certificates: CE CB

### 2 Type Designation

**TGC1 - 120 22 AC110 50Hz**



### 3 Main Parameters

Rated working current	120A/160A/185A/225A/265A/330A/400A/500A/630A
Rated insulation voltage $U_i$	1000V
Number of poles	Three-pole
AC coil (225 shell frame)	110/127/220/380V (50Hz)
AC and DC general wide-voltage coil	110~127V, 220~240V, 380~415V (50/60Hz)
Accessories	Top assist, side assist, air delay head, dust cover
Certification	CE/CB

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### 4 Product Highlights

4.1 The size is smaller 20% ~ 40% than that of the similar product on the market, saving space in cabinet.



TGC1

Compact



CJ20

Wide 20%



CJX2F

Wider 40%

4.2 400 and 630 shell frame DC coil holding features with low power consumption, noiseless, and energy saving and silence.

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### 5 Conditions and Installation Conditions

5.1 Ambient air temperature: The limit working temperature is ranged  $-35^{\circ}\text{C}\sim+70^{\circ}\text{C}$ , the normal working temperature is ranged  $-5^{\circ}\text{C}\sim+40^{\circ}\text{C}$ , and the mean temperature within 24h is not higher than  $+35^{\circ}\text{C}$ . Derating is considered if working out of the normal working range; the table below gives the correction factors for different working currents when the ambient temperature exceeds  $+40^{\circ}\text{C}$  with the rated working voltage unchanged;

Ambient temperature $^{\circ}\text{C}$	40	50	60	70
Correction factor	1	0.875	0.75	0.625

5.2 Relative humidity: The relative air humidity does not exceed 50% at the maximum temperature  $+40^{\circ}\text{C}$ , and a higher relative humidity is allowed at a lower temperature, such as up to 90% at  $+20^{\circ}\text{C}$ . Special measures are taken for condensation occurred occasionally due to temperature changes;

5.3 Altitude: The altitude shall not exceed 2,000 meters at the installation site; the table below gives the correction factors for rated impulse withstand voltage and rated working current with the rated working voltage unchanged;

Altitude (m)	2000	3000	4000
Correction factor for rated impulse withstand voltage	1	0.88	0.78
Correction factor for rated working current	1	0.92	0.90

5.4 Pollution degree: 3

5.5 Installation category: Class III

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

5.7 There is no obvious shaking, impact or vibration, conductive dust and rain and snow immersion. The inclination between the mounting plane and the vertical plane is not greater than  $\pm 5^{\circ}$

5.8 The appropriate transport and storage temperature is ranged  $-25^{\circ}\text{C}\sim+55^{\circ}\text{C}$ , and can be up to  $+70^{\circ}\text{C}$  within a short time (24h); the storage place shall be well-ventilated and dry free from rain and snow immersion and sun shining

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### 6 Technical Parameters

Model		TGC1-120	TGC1-160	TGC1-185	TGC1-225	
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: $10 \times I_e(\text{AC-3})$ or $12 \times I_e(\text{AC-4})$				
Rated breaking capacity		Rated breaking current: $8 \times I_e(\text{AC-3})$ or $10 \times I_e(\text{AC-4})$				
Rated limit short-circuit current $I_q$ (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 ( $\times 10^4$ times) 400V	AC-3	120		120		
	AC-4	1.5			1	
Flashover distance (mm)	380V/400V	15				
	660V/690V	35				
Mechanical life ( $\times 10^3$ times)		600				
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	(85% ~ 110%) $U_s$				
	Release voltage	(20% ~ 75%) $U_s$				

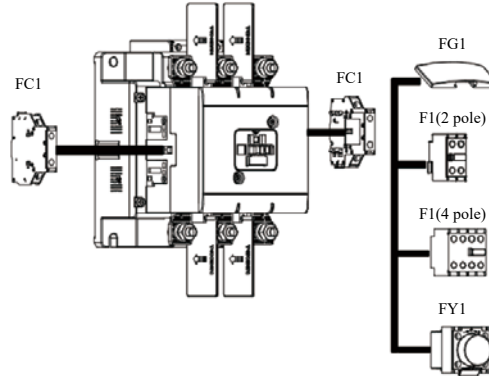
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Table, continued

型号		TGC1-265	TGC1-330	TGC1-400	TGC1-500	TGC1-630	
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: $10 \times I_e(\text{AC-3})$ or $12 \times I_e(\text{AC-4})$					
Rated breaking capacity		Rated breaking current: $8 \times I_e(\text{AC-3})$ or $10 \times I_e(\text{AC-4})$					
Rated limit short-circuit current $I_q$ (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 ( $\times 10^4$ times) 400V	AC-3	80			80		
	AC-4	1.2		1	0.6		
Flashover distance (mm)	380V/400V	15		20			
	660V/690V	35		40			
Mechanical life ( $\times 10^3$ 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	(85% ~ 110%)Us					
	Release voltage	(10% ~ 75%)Us					

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### 7 Accessories Installation Diagram

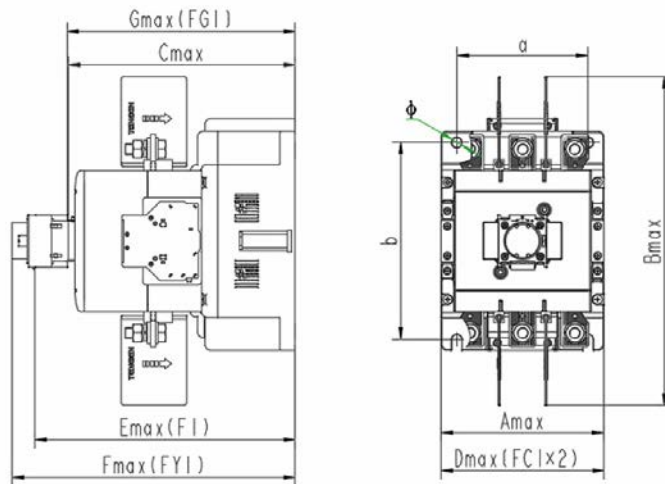


Code	Name
FC1	Side assist
F1	Top assist
FY1	Delay head
FG1	Dust cover
To be developed	Mechanical interlock

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

Conventional heating current I <sub>th</sub>	10A
Rated insulation voltage U <sub>i</sub> (V)	690
Control capacity of auxiliary contact	AC-15:1.6A/220V, 0.95A/380V; DC -13:0.15A/220V
Rated impulse withstand voltage U <sub>mip</sub> (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 specification			TGC1-120~225	TGC1-265~400	TGC1-500~630
Main circuit	Copper wire	Qty.	1/2	1/2	1/2
		Sectional area mm <sup>2</sup>	10 ~ 150	50 ~ 240	50 ~ 240
	Copper busbar	Qty.	2	2	2
		Size mm	25×3	30×5	40×3
	Fastening screw size and tightening torque N.m		M10 14N.m		
Control and auxiliary circuit	Non-prefabricated terminal soft (hard) wire	1 wire mm <sup>2</sup>	1 ~ 4		
		2 wires mm <sup>2</sup>	1 ~ 4		
	Prefabricated terminal	1 wire mm <sup>2</sup>	1 ~ 4		
		2 wires mm <sup>2</sup>	1 ~ 2.5		
	Fastening screw size and tightening torque N.m		M3.5 0.8N.m		