

TGCZ Series High-voltage DC Contactor

1 Overview

The TGCZ series high-voltage DC contactor (hereinafter referred to as a contactor) has a contact cavity that is packaged and brazed with ceramics without arc leakage and fire and explosion; the arc extinguishing chamber of the contact is filled with inert gas to prevent contact oxidation, and the contact resistance works stably and reliably to cool the electric arc and reduce contact ablation when the contact is broken. The contactor is primarily used in DC loads, and in circuits with the rated operating voltage up to 1500V and the rated operating current up to 1000A to remotely turn on and turn off the circuit, and it is widely used in new energy vehicles, hybrid vehicles, battery charging systems, fuel cells, solar energy systems, renewable energy storage, and general industrial equipment.

2 Type Designation



TGCZ Series High-voltage DC Contactor

1	Enterprise code	
2	DC contactors	
3	Product code:	C: Charging piles P: Photovoltaic, energy storage Q: Vehicles
4	Rated current:	150: 150A 200: 200A 250: 250A 300: 300A 400: 400A 500: 500A 600: 600A 800: 800A 1000: 1000A
5	Rated operating voltage:	D: 750VDC; M: 1000VDC H: DC1500V
6	Coil spec.:	12: DC12V 24: DC24V K: 9~36V (wide voltage)
7	Contact form:	F: Normally open type with an auxiliary contact; Default: No auxiliary contacts
8	Coil and aux. contact lead- out method:	C: Connector; L: Lead-out wire
9	Load lead-out method:	5: Female thread
10	Installation method:	Default: Vertical installation; Y: Horizontal installation
11)	Feature number: (XXX);	it may be any number or letter; it can be provided or not according to customer requirements
-		

3 Normal Working Environment

3.1 Temperature: Normal operating temperature: -25°C ~ +70°C

Allowable limit operating temperature: -40°C ~ +80°C

Storage temperature: 85°C max

3.2 Humidity: $5\% \sim 85\%$ RH (no icing and condensation)

3.3 Air pressure: 86kPa ~ 106kPa

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TGCZ Series High-voltage DC Contactor

4 Main Technical Parameters

TGCZC-150 Contact parameters					
Contact form		11	+		
Main contact resistance		≤0.3mΩ (at the initial s	tate, 150A and below)		
Rated operating current		15	DA .		
	150A		Long term		
Withstand current	200A		10min		
	300A		1min		
Short circuit current		6000A 5ms	(Primary)		
Rated operating voltage		1500	VDC		
Max. breaking current		1000A x 300V	DC (Primary)		
Mechanical life		2×10 ⁵	times		
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD0	C: 6×10³ times	
	Aux. c	contact parameters			
Contact form		11	1		
Rated load	0.1A、12V				
Contact resistance		≤100mΩ (Ir	nitial value)		
Electrical life		10,000	times		
	Coil parame	ters (at 23 $^{\circ}{\mathbb C}$ and below)			
Rated oerating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)	
12	≤9	≥1	6	3	
24	≤18	≥2	6	6	
9 ∽ 36	≤9	≥1	46	2.5	
	Perfor	mance parameters			
Pull-in time		≤30	ms		
Release time		≤10	ms		
Bounce time		≤5।	ms		
Insulation resistance		1000MΩ (1 KV	DC and below)		
Dielectric withstand voltage	Between open contacts		4000VAC 1min		
Dielectric withstand voltage	Between contact and coil	4000VAC 1min			
	Functional impact resistance		196m/s ²		
Impact	Destructive impact		490m/s ²		
Vibration	resistance	10 Hz ~ 500			
Weight		29			
Outline dimensions		80×51×			
Outline differisions		00401%	. J. 1111111		

TGCZ Series High-voltage DC Contactor

				Table	
	TGCZC-20	00 Contact parameters			
Contact form		1	Н		
Main contact resistance		≤0.3mΩ (at the initial s	state, 200A and below)		
Rated operating current		20	0A		
	200A		Long term		
Withstand current	300A 10min				
	400A 1min				
Short circuit current		6000A 5ms	s (Primary)		
Rated operating voltage		1500	VDC		
Max. breaking current		1000A x 300V	/DC (Primary)		
Mechanical life		2×10 ⁵	times		
Electrical life	100A×1000VDC: 6×10³ times 50A×1500VDC: 6×10³ times				
	Aux. contact parameters				
Contact form	1H				
Rated load	0.1A、12V				
Contact resistance	≤100mΩ (Initial value)				
Electrical life		10000	times		
	Coil parame	ters (at 23 ℃ and below))		
Rated oerating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)	
12	≤9	≥1	(3	
24	≤18	≥2	(3	
9 ∽ 36	≤9	≥1	46	2.5	
	Perfor	mance parameters			
Pull-in time		≤30	lms		
Release time		≤10)ms		
Bounce time		≤51	ms		
Insulation resistance		1000MΩ(1 KVI	DC and below)		
Dialogatics with stone walters	Between open contacts		4000VAC 1min		
Dielectric withstand voltage	Between contact and coil	4000VAC 1min			
	Functional impact resistance		196m/s ²		
Impact Destructive impact					
impaci	Destructive impact resistance		490m/s ²		
Vibration		10Hz ~ 50			
		10Hz \sim 500	0Hz 49m/s²		

Table 3

				Table
	TGCZC-2	50 Contact parameters		
Contact form		1	Н	
Main contact resistance		≤0.3mΩ (at the initial s	state, 250A and below)	
Rated operating current		25	0A	
	250A Long term			
Withstand current	320A		10min	
Willistand Current				
	500A		1min	
Short circuit current		6000A 5ms	s (Primary)	
Rated operating voltage		1500	IVDC	
Max. breaking current		2000A×300V	DC (Primary)	
Mechanical life		2×10 ⁵	times	
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10³ times
	Aux. c	ontact parameters		
Contact form		1	Н	
Rated load	0.1A、12V			
Contact resistance	≤100mΩ(Initial value)			
Electrical life	10000 times			
Electrical file	On it is a suppose			
		ters (at 23℃ and below)		
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)
12	≤9	≥1	(5
24	≤18	≥2	(5
9 ∽ 36	≤9	≥1	46	2.5
	Perfor	mance parameters		
Pull-in time		≤30)ms	
Release time		≤10)ms	
Bounce time		≤5	ms	
Insulation resistance		1000MΩ(1 KV	DC and below)	
	Between open contacts	,	4000VAC 1min	
Dielectric withstand voltage	Between contact and coil			
	Functional impact			
		196m/s ²		
Impact	resistance			
Impact	Destructive impact		490m/s ²	
Impact Vibration		10Hz \sim 50	490m/s² 0Hz 49m/s²	
	Destructive impact	10Hz ∼ 50	0Hz 49m/s ²	

TGCZ Series High-voltage DC Contactor

				Table -		
	TGCZC-300 Contact parameters					
Contact form 1H						
Main contact resistance		≤0.3mΩ (at the initial s	tate, 300A and below)			
Rated operating current		30	DA .			
	300A Long term					
Withstand current	450A		5min			
	600A		90s			
Short circuit current		6000A 5ms	(Primary)			
Rated operating voltage		1500	VDC			
Max. breaking current		2000A×300V	DC (Primary)			
Mechanical life		2×10 ⁵	times			
Electrical life	100A×1000VDC: 6×10³ times 50A×1500VDC: 6×10³ times					
	Aux. c	contact parameters				
Contact form	1H					
Rated load	0.1A、12V					
Contact resistance	≤100mΩ(Initial value)					
Electrical life		10000	times			
	Coil parame	eters (at 23℃ and below)				
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)		
12	≤9	≥1	6	3		
24	≤18	≥2	6	3		
9 ∽ 36	≤9	≥1	46	2.5		
	Perfor	mance parameters				
Pull-in time		≤30	ms			
Release time		≤10	ms			
Bounce time		≤5i	ms			
Insulation resistance		1000MΩ(1 KVI	DC and below)			
Dielestrie with stand wellen.	Between open contacts		4000VAC 1min			
Dielectric withstand voltage	Between contact and coil	4000VAC 1min				
	Functional impact resistance		196m/s ²			
Impact	Destructive impact resistance		490m/s ²			
Vibration		$10 \text{Hz} \sim 50$	OHz 49m/s²			
Weight		29	5g			
		80×51×	72.1			

Table 5

TGCZP-2	50 Contact parameters			
Contact form 1H				
	≤0.3mΩ (at the initial s	state, 150A and below)		
	15	0A		
150A		Long term		
180A		2h		
320A		2min		
	6000A 5ms	s (Primary)		
	1500	VDC		
	1200A×300V	DC (Primary)		
	2×10 ⁵	times		
100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10³ times	
Aux. c	ontact parameters			
	1	Н		
	0.1A、	. 12V		
≤100mΩ(Initial value)				
	10000	times		
Coil parame	ters (at 23℃ and below)			
Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)	
≤9	≥1	(ô	
≤18	≥2	(6	
≤9	≥1	46	2.5	
Perfor	mance parameters			
	≤30)ms		
	≤10)ms		
	≤51	ms		
	1000MΩ(1 KVI	DC and below)		
Between open contacts		4000VAC 1min		
Between contact and coil		4000VAC 1min		
Functional impact resistance		196m/s ²		
Destructive impact		490m/s ²		
resistance	10Hz ∼ 50	0Hz 49m/s ²		
	89×43×	83.5mm		
	150A 180A 320A 100A×1000VD Aux. c Coil parame Pull-in voltage (VDC) ≤9 ≤18 ≤9 Perfort Between open contacts Between contact and coil Functional impact resistance	≤0.3mΩ (at the initial state	1H ≤0.3mΩ (at the initial state, 150A and below) 150A 150A 150A Long term 180A 2h 320A 2min 6000A 5ms (Primary) 1500VDC 1200A×300VDC (Primary) 2×10° times 100A×1000VDC: 6×10° times 50A×1500VD Aux. contact parameters 1H 0.1A、12V ≤100mΩ(Initial value) 10000 times Coil parameters (at 23°C and below) Pull-in voltage (VDC) Release voltage (VDC) Starting power (W) ≤9 ≥1 ≤18 ≥2 ≤9 ≥1 46 Performance parameters ≤30ms ≤10ms ≤5ms 1000MΩ(1 KVDC and below) Between open contacts 4000VAC 1min Functional impact resistance Destructive impact	

TGCZ Series High-voltage DC Contactor

TGCZP-200 Contact parameters					
Contact form	Contact form 1H				
Main contact resistance		≤0.3mΩ (at the initial s	tate, 200A and below)		
Rated operating current		20	0A		
	200A Long term				
Withstand current	250A		15min		
	320A		5min		
Short circuit current		6000A 5ms	(Primary)		
Rated operating voltage		1500	VDC		
Max. breaking current		2000A×300V	DC (Primary)		
Mechanical life		2×10 ⁵	times		
Electrical life	100A×1000VDC: 6×10³ times 50A×1500VDC: 6×10³ times				
Aux. contact parameters					
Contact form		11	Н		
Rated load		0.1A、	12V		
Contact resistance	≤100mΩ(Initial value)				
Electrical life		10000	times		
	Coil parame	ters (at 23℃ and below)			
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)	
12	≤9	≥1	(ô	
24	≤18	≥2	(6	
9 ∽ 36	≤9	≥1	46	2.5	
	Perfor	mance parameters			
Pull-in time		≤30	ıms		
Release time		≤10	ıms		
Bounce time		≤51	ms		
Insulation resistance		1000MΩ(1 KVI	OC and below)		
Dialogtria with stand voltage	Between open contacts		4000VAC 1min		
Dielectric withstand voltage	Between contact and coil		4000VAC 1min		
	Functional impact resistance		196m/s ²		
Impact	Destructive impact resistance		490m/s ²		
Vibration		10Hz ∼ 500	OHz 49m/s²		
AA7-1-1-1	320g				
Weight		89×43×83.5mm			

	50 Contact parameters 11 ≤0.3mΩ (at the initial s			
2504	≤0.3mΩ (at the initial s			
2504		tate, 250A and below)		
2504				
2504	250	 DA		
250A Long term				
375A		5min		
500A 30s				
	6000A 5ms	(Primary)		
	1500	VDC		
	2000A×300Vi	DC (Primary)		
100A×1000VD	C: 6×10 ³ times	50A×1500VD0	C: 6×10³ times	
		-		
	·	<u> </u>		
Coil paramo				
			Halding a sure (M)	
- ' '			Holding power (W)	
-				
		46	2.5	
Perforr				
	≤30	ms		
	≤10	ms		
	≤5r	ns		
T	1000MΩ(1 KVI	OC and below)		
Between open contacts		4000VAC 1min		
Between contact and coil		4000VAC 1min		
Functional impact resistance		196m/s ²		
Destructive impact		490m/s ²		
resistance				
	10Hz \sim 500Hz 49m/s 2			
	10Hz ~ 500			
	Coil parame Pull-in voltage (VDC) ≤9 ≤18 ≤9 Perfore Between open contacts Between contact and coil Functional impact resistance Destructive impact	6000A 5ms 15000 2000A×300VI 2×10 ⁵ 100A×1000VDC: 6×10 ³ times Aux. contact parameters 11 0.1A. ≤100mΩ(In 10000 Coil parameters (at 23°C and below) Pull-in voltage (VDC) Release voltage (VDC) ≤9 ≥1 ≤18 ≥2 ≤9 ≥1 Performance parameters ≤30 Functional impact resistance Destructive impact	1500VDC 2000A×300VDC (Primary) 2×10 ⁵ times 50A×1500VDC Aux. contact parameters 1H 0.1A、12V ≤100mΩ(Initial value) 10000 times 10000 times 29 ≥1 46 29 ≥1 46 29 ≥1 46 20ms 25ms 1000MΩ(1 KVDC and below) 25ms 1000MΩ(1 KVDC and below) 25ms 1000MΩ(1 KVDC and below) 25ms 25ms	

TGCZ Series High-voltage DC Contactor

TGCZP-300 Contact parameters					
Contact form	Contact form 1H				
Main contact resistance		≤0.3mΩ (at the initial s	tate, 300A and below)		
Rated operating current		30	0A		
	300A		Long term		
Withstand current	450A		5min		
	600A		1min		
Short circuit current		6000A 5ms	(Primary)		
Rated operating voltage		1500	VDC		
Max. breaking current		2000A×300V	DC (Primary)		
Mechanical life		2×10 ⁵	times		
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10³ times	
	Aux. c	ontact parameters			
Contact form	1H				
Rated load	0.1A、12V				
Contact resistance	≤100mΩ(Initial value)				
Electrical life		10000	times		
	Coil parame	ters (at 23℃ and below)			
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)	
12	≤9	≥1	•	5	
24	≤18	≥2	(3	
9 ∽ 36	≤9	≥1	46	2.5	
	Perfor	mance parameters			
Pull-in time		≤30	lms		
Release time		≤10	ims		
Bounce time		≤5ı	ms		
Insulation resistance		1000MΩ(1 KVI	DC and below)		
Distantia with stand walters	Between open contacts		4000VAC 1min		
Dielectric withstand voltage	Between contact and coil		4000VAC 1min		
	Functional impact		196m/s²		
	Destructive impact 490m/s²				
Impact			490m/s ²		
Impact Vibration	Destructive impact	10Hz \sim 500			
	Destructive impact	10Hz \sim 500	0Hz 49m/s²		

	TGCZP-4	00Contact parameters		
Contact form		11	Н	
Main contact resistance		≤0.2mΩ (at the initial s	state, 400A and below)	
Rated operating current		40	0A	
	400A Long term			
Withstand current	500A 3min			
	2000A 20s			
Short circuit current		8000A 5ms	(Primary)	
Rated operating voltage		1500	VDC	
Max. breaking current		2000A×300V	DC (Primary)	
Mechanical life		2×10 ⁵	times	
Electrical life	100A×1000VDC: 6×10³ times 50A×1500VDC: 6×10³ times			
	Aux. c	ontact parameters		
Contact form		11	Н	
Rated load		0.1A、	12V	
Contact resistance	≤100mΩ(Initial value)			
Electrical life		10000	times	
	Coil parame	ters (at 23℃ and below)		
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)
12	≤9	≥1		
24	≤18	≥2	48	4
9 ∽ 36	≤9	≥1		
	Perfor	mance parameters		
Pull-in time		≤50	lms	
Release time		≤20	lms	
Bounce time		≤5ı	ms	
Insulation resistance		1000MΩ(1 KVI	DC and below)	
	Between open contacts		4000VAC 1min	
Dielectric withstand voltage	Between contact and coil		4000VAC 1min	
	Functional impact		196m/s ²	
Impact	resistance Destructive impact			
	resistance		490m/s ²	
Vibration		10Hz ~ 500		
Weight		78		
Outline dimensions		104×52×	<104mm	

Table 10

				Table I	
	TGCZP-5	00Contact parameters			
Contact form		11	Н		
Main contact resistance	≤0.5mΩ (at the initial state, 500A and below)				
Rated operating current		50	0A		
	500A Long term				
Withstand current	600A 10min				
	750A 1min				
Short circuit current		8000A 5ms	s (Primary)		
Rated operating voltage		1500	VDC		
Max. breaking current		2000A×300V	DC (Primary)		
Mechanical life		2×10 ⁵	times		
Electrical life	100A×1000VDC: 6×10³ times 50A×1500VDC: 6×10³ times				
	Aux. c	ontact parameters			
Contact form	1H				
Rated load	0.1A、12V				
Contact resistance	≤100mΩ(Initial value)				
Electrical life		10000	times		
	Coil parame	ters (at 23℃ and below)			
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)	
12	≤9	≥1			
24	≤18	≥2	48	4	
9 ∽ 36	≤9	≥1			
	Perfor	mance parameters			
Pull-in time		≤50)ms		
Release time		≤20)ms		
Bounce time		≤51	ms		
Insulation resistance		1000MΩ(1 KVI	DC and below)		
Dielectric withstand voltage	Between open contacts		4000VAC 1min		
Dielectric withstand voltage	Between contact and coil	4000VAC 1min			
	Functional impact resistance		196m/s ²		
Impact	Destructive impact resistance		490m/s ²		
Vibration	resistance $10 \text{Hz} \sim 500 \text{Hz} \ 49 \text{m/s}^2$				
Vibration		785g			
Weight			5g		

Table 11

	T007P-0	0000		
	TGCZP-6	00Contact parameters		
Contact form		11	H 	
Main contact resistance		≤0.1mΩ (at the initial s	tate, 600A and below)	
Rated operating current		600	0A	
	600A Long term			
Withstand current	720A 10min			
	1000A 100s			
Short circuit current		8000A 5ms	(Primary)	
Rated operating voltage		1500	VDC	
Max. breaking current		2000A×300V	DC (Primary)	
Mechanical life		2×10 ⁵	times	
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10³ times
	Aux. contact parameters			
Contact form		11	Н	
Rated load		0.1A、	12V	
Contact resistance	≤100mΩ(Initial value)			
Electrical life		10000	times	
	Coil parame	ters (at 23℃ and below)		
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)
12	≤9	≥1		
24	≤18	≥2	48	4
9 ∽ 36	≤9	≥1		
	Perfor	mance parameters		
Pull-in time		≤50	lms	
Release time		≤20	lms	
Bounce time		<u>≤</u> 5r	ns	
Insulation resistance		1000MΩ(1 KVI	DC and below)	
	Between open contacts	-	4000VAC 1min	
Dielectric withstand voltage	Between contact and coil		4000VAC 1min	
	Functional impact	196m/s²		
Impact	resistance Destructive impact		490m/s ²	
	resistance			
Vibration		10Hz ∼ 500		
Weight		78:		
Outline dimensions		104×52×	104mm	

Table 12

				Table I
	TGCZP-8	00Contact parameters		
Contact form		11	Н	
Main contact resistance		≤0.15mΩ (at the initial state, 800A and below)		
Rated operating current		80	0A	
	800A Long term			
Withstand current	960A	960A 5min		
	2000A		30s	
Short circuit current		8000A 5ms	(Primary)	
Rated operating voltage		1500	VDC	
Max. breaking current		2000A×750V	DC (Primary)	
Mechanical life		2×10 ⁵	times	
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10³ times
	Aux. c	ontact parameters		
Contact form		11	Н	
Rated load		0.1A、	12V	
Contact resistance	≤100mΩ(Initial value)			
Electrical life		10000	times	
	Coil parame	ters (at 23℃ and below)		
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)
12	≤9	≥1		
24	≤18	≥2	48	4
9 ∽ 36	≤9	≥1		
	Perfor	mance parameters		
Pull-in time		≤50	ıms	
Release time		≤30	ıms	
Bounce time		≤51	ms	
Insulation resistance		1000MΩ(1 KVI	OC and below)	
Dielectric withstand voltage	Between open contacts		4000VAC 1min	
Dielectric withstand voltage	Between contact and coil	coil 4000VAC 1min		
	Functional impact resistance		196m/s ²	
Impact	Destructive impact resistance	mpact 490m/s ²		
Vibration		$10 { m Hz} \sim 500$	OHz 49m/s²	
Weight		104	10g	
	104×75×105mm			

Table 13

		000Contact parameters		
	TGCZP-10			
Contact form	1H			
Main contact resistance		≤0.15mΩ (at the initial state, 1000A and below)		
Rated operating current		100	00A	
	1000A	Long term		
Withstand current	1500A	2min		
	2000A		1min	
Short circuit current		8000A 5ms	(Primary)	
Rated operating voltage		1500	VDC	
Max. breaking current		2000A×750V	DC (Primary)	
Mechanical life		2×10 ⁵	times	
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10 ³ times
	Aux. c	contact parameters		
Contact form		11	Н	
Rated load		0.1A、	12V	
Contact resistance		≤100mΩ(Ir	nitial value)	
Electrical life		10000	times	
	Coil parame	eters (at 23℃ and below)		
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)
12	≤9	≥1		
24	≤18	≥2	48	4
9 ∽ 36	≤9	≥1		
	Perfor	mance parameters		
Pull-in time		≤50	Oms	
Release time		≤30)ms	
Bounce time		≤51		
Insulation resistance		1000MΩ(1 KVI		
	Between open contacts	(4000VAC 1min	
Dielectric withstand voltage			4000VAC 1min	
	Functional impact	Functional impact		
Impact	resistance	196m/s²		
	Destructive impact resistance		490m/s ²	
Vibration		10 Hz ~ 500 Hz 49 m/s 2		
Weight	1040g			
Outline dimensions		104×75>	<105mm	

Table 14

		500		
TGCZQ-150Contact parameters				
Contact form	1H			
Main contact resistance		≤0.5mΩ (at the initial s	tate, 150A and below)	
Rated operating current		15	0A	
	150A		Long term	
Withstand current	200A	10min		
	320A		1min	
Short circuit current		6000A 5ms	(Primary)	
Rated operating voltage		1500	VDC	
Max. breaking current		1000A×300V	DC (Primary)	
Mechanical life		2×10 ⁵	times	
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10³ times
	Coil parame	eters (at 23℃ and below)		
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)
12	≤9	≥1	(6
24	≤18	≥2	(6
	Perfor	mance parameters		
Pull-in time		≤30	ms	
Release time		≤10	ms	
Bounce time		≤5i	ns	
Insulation resistance		1000MΩ(1 KVI	DC and below)	
District Western Street	Between open contacts		4000VAC 1min	
Dielectric withstand voltage	Between contact and coil		4000VAC 1min	
	Functional impact resistance	196m/s²		
Impact	Destructive impact resistance	490m/s ²		
Vibration	10Hz \sim 500Hz 49m/s 2			
Weight	260g			
Outline dimensions	78.7×36×72mm			

Table 15

				Table
	TGCZQ-2	00Contact parameters		
Contact form		1Н		
Main contact resistance		≤0.5mΩ (at the initial s	state, 200A and below)	
Rated operating current		20	0A	
	200A		Long term	
Withstand current	250A	10min		
	320A		1min	
Short circuit current		6000A 5ms	s (Primary)	
Rated operating voltage		1500	VDC	
Max. breaking current		1000A×300V	DC (Primary)	
Mechanical life		2×10 ⁵	times	
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10³ times
	Coil parame	eters (at 23°C and below)		
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)
12	≤9	≥1		6
24	≤18	≥2		6
	Perfor	mance parameters		
Pull-in time		≤30)ms	
Release time		≤10)ms	
Bounce time		≤51	ms	
Insulation resistance		1000MΩ(1 KVI	DC and below)	
Dialogatica withogonal valtage	Between open contacts		4000VAC 1min	
Dielectric withstand voltage	Between contact and coil		4000VAC 1min	
	Functional impact resistance	196m/s²		
Impact	Destructive impact resistance	Destructive impact 490m/s ²		
Vibration		10Hz \sim 500Hz 49m/s 2		
Weight	260g			
Outline dimensions		78.7×36	5×72mm	

Table 16

	TGCZQ-2	50Contact parameters		
Contact form	1H			
Main contact resistance		≤0.3mΩ (at the initial s	state, 250A and below)	
Rated operating current		25	0A	
	250A		Long term	
Withstand current	375A	5min		
	500A		30s	
Short circuit current		6000A 5ms	(Primary)	
Rated operating voltage		1500	VDC	
Max. breaking current		2000A×300V	DC (Primary)	
Mechanical life		2×10 ⁵	times	
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10³ times
	Coil parame	eters (at 23°C and below)		
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)
12	≤9	≥1	(6
24	≤18	≥2		6
	Perfor	mance parameters		
Pull-in time	≤30ms			
Release time		≤10)ms	
Bounce time		≤5	ms	
Insulation resistance		1000MΩ(1 KV	DC and below)	
Dielectric withstand voltage	Between open contacts		4000VAC 1min	
Dielectric withstand voltage	Between contact and coil		4000VAC 1min	
	Functional impact resistance	196m/s²		
Impact	Destructive impact	ive impact 490m/s ²		
Vibration	resistance $10 \text{Hz} \sim 500 \text{Hz} \ 49 \text{m/s}^2$			
Weight	365q			
Outline dimensions	88.3×42.5×74.5mm			
350 12.5 7 15.5				

Table 17

	TGCZQ-3	00Contact parameters		
Contact form	1H			
Main contact resistance		≤0.5mΩ (at the initial s	tate, 300A and below)	
Rated operating current		30	0A	
	300A		Long term	
Withstand current	450A	3min		
	600A		1min	
Short circuit current		6000A 5ms	(Primary)	
Rated operating voltage		1500	VDC	
Max. breaking current		2000A×300V	DC (Primary)	
Mechanical life		2×10 ⁵	times	
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10³ times
	Coil parame	eters (at 23℃ and below)		
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)
12	≤9	≥1	(6
24	≤18	≥2	(6
	Perfor	mance parameters		
Pull-in time		≤30	ms	
Release time		≤10	ms	
Bounce time		≤5ı	ns	
Insulation resistance		1000MΩ(1 KVI	DC and below)	
Dielectric with stand wells	Between open contacts		4000VAC 1min	
Dielectric withstand voltage	Between contact and coil		4000VAC 1min	
	Functional impact resistance	196m/s²		
Impact	Destructive impact resistance	490m/s ²		
Vibration		10Hz ∼ 500	0Hz 49m/s ²	
Weight	365g			
Outline dimensions		88.3×42.5×74.5mm		

Table 18

TGCZQ-400Contact parameters				
Contact form	1H			
Main contact resistance		≤0.5mΩ (at the initial s	state, 400A and below)	
Rated operating current		40	0A	
	400A		Long term	
Withstand current	500A	3min		
	2000A		10s	
Short circuit current		8000A 5ms	s (Primary)	
Rated operating voltage		1500	VDC	
Max. breaking current		2000A×300V	DC (Primary)	
Mechanical life		2×10 ⁵	times	
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10³ times
	Coil parame	eters (at 23°C and below)		
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)
12	≤9	≥1	6	
24	≤18	≥2		6
	Perfor	mance parameters		
Pull-in time		≤50	0ms	
Release time		≤20)ms	
Bounce time		≤5	ms	
Insulation resistance		1000MΩ(1 KV	DC and below)	
Dielectric withstand voltage	Between open contacts		4000VAC 1min	
Dielectric withstand voltage	Between contact and coil		4000VAC 1min	
	Functional impact resistance	196m/s²		
Impact	Destructive impact	ct 490m/s ²		
Vibration	resistance $10 \text{Hz} \sim 500 \text{Hz} \ 49 \text{m/s}^2$			
Weight	740g			
Outline dimensions	95.8×48.2×93mm			
Outilité diffictions	55.5° 45.2° 50HHI			

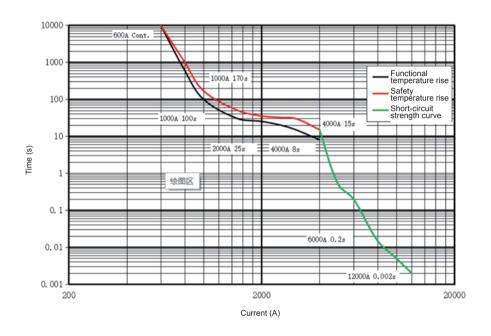
Table 19

	TGCZQ-5	00Contact parameters		
Contact form	1H			
Main contact resistance		≤0.5mΩ (at the initial s	state, 500A and below)	
Rated operating current		50	0A	
	500A		Long term	
Withstand current	600A	3min		
	2000A		10s	
Short circuit current		8000A 5ms	s (Primary)	
Rated operating voltage		1500	IVDC	
Max. breaking current		2000A×300V	DC (Primary)	
Mechanical life		2×10 ⁵	times	
Electrical life	100A×1000VD	C: 6×10³ times	50A×1500VD	C: 6×10³ times
	Coil parame	eters (at 23°C and below)		
Rated operating voltage (VDC)	Pull-in voltage (VDC)	Release voltage (VDC)	Starting power (W)	Holding power (W)
12	≤9	≥1	≥1 6	
24	≤18	≥2	(6
	Perfor	mance parameters		
Pull-in time		≤50)ms	
Release time		≤20)ms	
Bounce time		≤5	ms	
Insulation resistance		1000MΩ(1 KV	DC and below)	
Dielectric withstand voltage	Between open contacts	4000VAC 1min		
Dielectric withstand voltage	Between contact and coil		4000VAC 1min	
lt	Functional impact resistance	196m/s²		
Impact	Destructive impact resistance	490m/s ²		
Vibration	10Hz \sim 500Hz 49m/s 2			
Weight	740g			
Outline dimensions		95.8×48.	2×93mm	

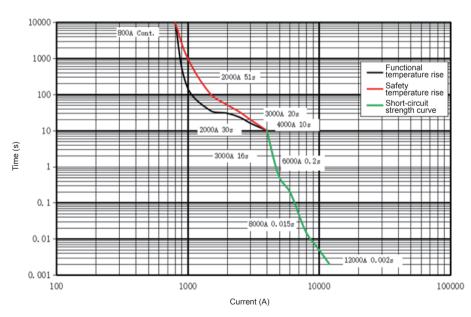
TGCZ Series High-voltage DC Contactor

5 Current Withstand Curve

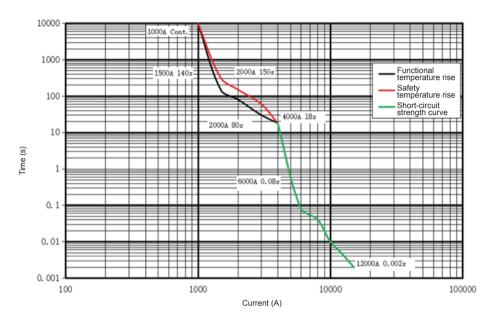
5.1 TGCZP-400 current withstand curve



5.2 TGCZP-600 current withstand curve

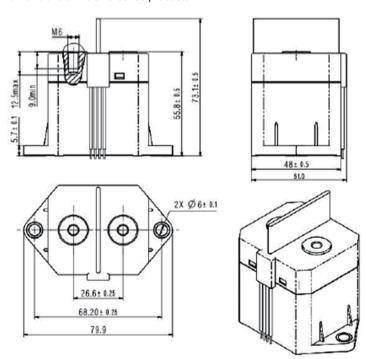


5.3 TGCZP-800 current withstand curve



6 Outline and Installation Dimensions

6.1 Outline and installation dimensions of TGCZC series products



Unit: mm

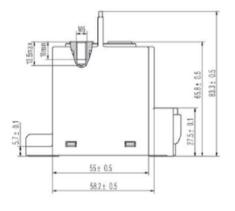
- 6.1.1 A1 and A2 are the load ends, and the load has no polarity (no mark on the shell)
- 6.1.2 +X1 (red wire) and -X2 (black wire) are the coil ends, and the coil has polarity; the line number is 20AWG, and the length is 300 ± 20 mm.
- 6.1.3 B1 (white wire) and B2 (white wire) are auxiliary contacts, and the aux. contact has no polarity; the line number is 20AWG, and the length is $300 \pm 20mm$.

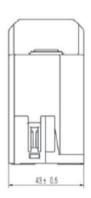
TGCZ Series High-voltage DC Contactor

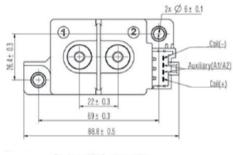
6.2 Outline and Installation Dimensions of TGCZP Series Products

6.2.1 TGCZP-150/200/250/300 outline and installation dimension drawings

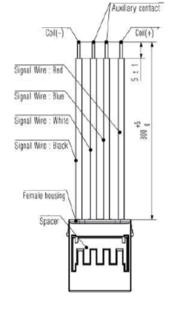
Unit: mm





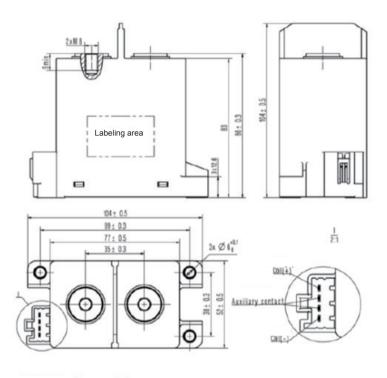


Recommended connector: THB connector: 0488701 Yazaki connector: 7283-1044

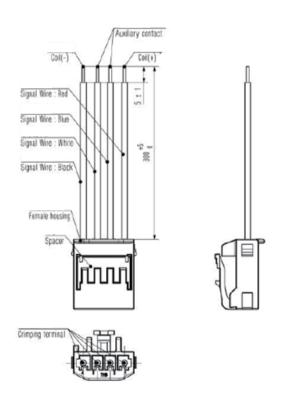




6.2.2 TGCZP-400/500/600 outline and installation dimension drawings

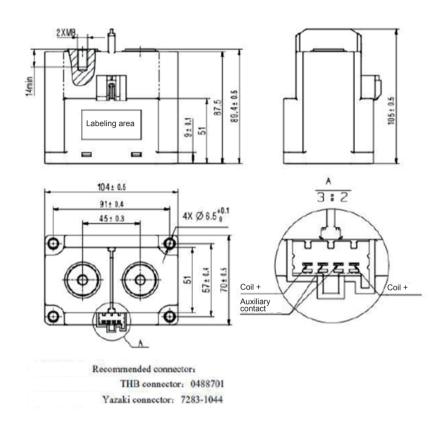


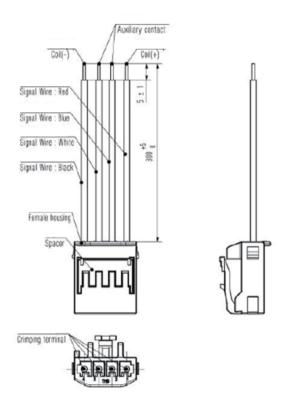
Recommended connector: THB connector: 0488701 Yazaki connector: 7283-1044



TGCZ Series High-voltage DC Contactor

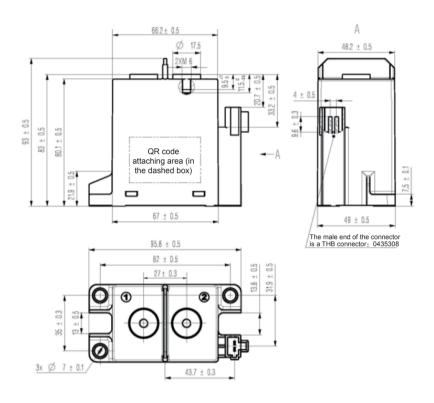
6.2.3 TGCZP-800/1000 outline and installation dimension drawings





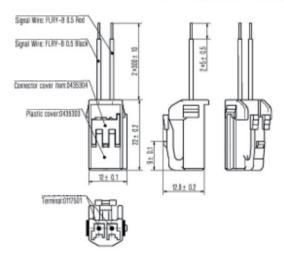
6.3 Outline and Installation Dimensions of TGCZQ Series Products

Unit: mm



Coil termination

C: connector-Tianhai:0435308



TGCZ Series High-voltage DC Contactor

7 Installation, Operation and Maintenance

7.1 Installation

7.1.1 Contactor installation: Screws of the contactor and the tightening torques are listed in Table 20;

Table 20

Frame rated current	Contactor mounting screw	Tightening torque
150	M5	3N•m ∼ 5N•m
200	M5	3N•m ∼ 5N•m
250	M5	3N•m ∼ 5N•m
300	M5	3N•m ∼ 5N•m
400	M5	3N•m ∼ 5N•m
500	M5	3N•m ∼ 5N•m
600	M5	3N•m ∼ 5N•m
800	M6	3N•m ∼ 5N•m
1000	M6	3N•m ∼ 5N•m

7.1.2 The mounting screws of main circuit of contactors and their tightening torque are listed in Table 21;

Table 21

Frame rated current	Mounting screw of main circuit of contactor	Tightening torque
150	M6	6N•m \sim 8N•m
200	M6	6N•m \sim 8N•m
250	M6	6N•m \sim 8N•m
300	M6	6N•т \sim 8N•т
400	M8	8N•m ~ 10N•m
500	M8	8N•m ∼ 10N•m
600	M8	8N•m ∼ 10N•m
800	M8	8N•m ∼ 10N•m
1000	M8	8N•m ~ 10N•m

7.2 Connections

- 7.2.1 It shall be used under the L/R ≤ 1ms conditions. When the L/R > 1ms inductive load (L load) is used, the parallel surge devices are recommended. If diodes are used, please note this may reduce the life of the contactor.
- 7.2.2 Please note to refer to the wiring diagram indicated on the product specifications for correct correction of the lead-out end of the load. Incorrect connection may cause unexpected malfunction, abnormal heating, and fire.

7.2.3 The cross-sectional area of the busbar of the main circuit is listed in Table 22.

Table 22

Rated operating current (A)	Sectional area of busbar (mm²)
150	50
200	60
250	80
300	100
400	200
500	250
600	250
800	400
1000	600

7.2.4 During the installation of the busbar, do not apply excessive load to the terminals, otherwise it may cause an on-off failure. When power-on, please cut off the power supply of the connections such as contactor, connector, and socket in advance before the installation, maintenance, and troubleshooting.

7.3 Operation

- 7.3.1 The power of the drive circuit of the product coil must be greater than the coil power of the product, otherwise the product cannot work normally.
- 7.3.2 The power supply waveform of starting the product coil is a square wave.
- 7.3.3 It is avoided to install the product in a place where there is a strong magnetic field (near magnets or transformers), or near the radiation source.
- 7.3.4 The contact of this product is located in a sealed cavity, the cavity is filled with gas, and the leakage rate of gas in the cavity is proportional to the temperature of the cavity (the ambient temperature and the temperature rise caused by the contact being energized). Please ensure that the ambient temperature is ranged -40°C ~ 85°C.