

MV Air Insulated Switchgear

**TAP17**

**Technical Data**

TGOOD  
2017.1

**TGOOD**



## TAP17 Technical Data

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### Operating environmental conditions

- Place of installation: Indoor or outdoor
- Ambient temperature: -25℃ ~ +40℃ (higher or lower temperature optional)
- Altitude: 1000m (no limitation for specially ordered products)
- Air humidity: Daily average ≥95%; monthly average ≥90%(25℃)
- Wind speed: ≥35m/s(wind pressure ≤700Pa)
- Irradiance: ≤0.1W/cm<sup>2</sup> (wind speed: 0.5m/s)
- Earthquake intensity: Horizontal acceleration ≤0.5g; vertical acceleration ≤0.5g;
- Ice thickness: ≤10mm
- Creepage distance: 25mm/kV(pollution level III), 31mm/kV(pollution level IV)

This product shall be placed in a site without risk of fire hazard, explosion, chemical corrosion and sharp vibration.

### TAP17 technical data

Description	Unit	Value				
		630A	1250A	2000A	2500A	3150A
<b>General Details</b>						
Manufacturer's Name	-	Qingdao TGOOD Electric Co. Ltd				
Manufacturer's Address	-	336 Songling Road, Laoshan district, Qingdao, China 266104				
Country of Manufacture	-	China				
Manufacturer's Ref. code / Make / Type	-	TAP17				
Applicable Standard		IEC62271-200				
<b>Service Condition</b>						
Indoor / Outdoor	-	Indoor				
Minimum Ambient Temperature	°C	- 5				
Maximum Ambient Temperature	°C	40				
Maximum Altitude	m	1000 (higher altitude is optional)				
Relative Humidity Range	%	95				
Pollution Level	I, II, III, IV	II				
<b>Design and Construction</b>						
Loss of Service Continuity Category	LSC1/2A/2	LSC2B				

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	B					
Partition Class	PM / PI	PM				
Material for Partition and Shutters	-	Metal sheet				
Type of Accessibility - Busbar (Tools or Interlock?)	-	Tools				
Type of Accessibility - Main Device (Tools or Interlock?)	-	Interlock				
Type of Accessibility - Cable (Tools or Interlock?)	-	Interlock or tool				
Type of Accessibility - CT (Tools or Interlock?)	-	Interlock or tool				
Type of Accessibility - VT (Tools or Interlock?)	-	Interlock or tool				
Internal Arc Classification	Yes / No	Yes				
Accessibility Type	A (F, L, R)	A, F, L, R				
Arc Test Current	kA	31.5				
Arc Test Current Duration	s	1				
Insulation Medium (Air / Gas)	-	Air				
Rated Filling Level for Insulation	Pa	N. A				
Alarm Level for Insulation	Pa	N. A				
Minimum Functional Level for Insulation	Pa	N. A				
Insulating Fluid and Mass	kg	N. A				
Degree of Protection - Compartment	IP	2X				
Degree of Protection - Enclosure	IP	4X				
Busbar Material and Cross Section	-	60*10	80*10	80*10* 2	100*10* 2	120*10* 2
Busbar Insulated? If yes, please specify material	-	Heat shrink sleeves according to design				
Support Insulator Material	-	Epoxy				
Support Insulator Creepage Distance	mm	≥240				
Earth Bar Material and Cross Section	-	40*6				
Limit of Temperature Rise - Main Circuits	°C / K	75(Fixed)/65(Removable)				
Limit of Temperature Rise - Contacts	°C / K	75(Fixed)/65(Removable)				
Limit of Temperature Rise - Connections	°C / K	75(Fixed)/65(Removable)				

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Limit of Temperature Rise - Terminals	°C / K	75(Fixed)/65(Removable)				
Limit of Temperature Rise - Insulating Material	°C / K	75(Fixed)/65(Removable)				
Limit of Temperature Rise - Accessible Parts	°C / K	75(Fixed)/65(Removable)				
Switchgear Overall Surface Finish and Color	-	Plastic-coated RAL7035				
Typical Panel Dimensions (W x D x H)	mm	800x1560x2300		1000x1560x2300		
Typical Panel Weight	kg	700	775	900	950	1000
<b>General Electrical Characteristics</b>						
No. of Phases	-	3				
Rated Voltage	kV	17.5				
Rated Frequency	Hz	50, 60				
Type of Neutral Earthing (Effectively Earthed?)	-	Indirect				
Rated Lightning Impulse Withstand Voltage to Earth	kVp	95				
Rated Lightning Impulse Withstand Voltage Across Isolation	kVp	95				
Rated Power Frequency Withstand Voltage to Earth	kV	38				
Rated Power Frequency Withstand Voltage Across Isolation	kV	48				
Rated Busbar Normal Current	A	630~3150				
Rated Short-Time Withstand Current	kA	31.5				
Rated Peak Withstand Current	kAp	80				
Rated Duration of Short Circuit	s	3				
Rated Auxiliary Voltage for Operation	V	110/220				
Rated Auxiliary Voltage Frequency for Operation	AC / DC	AC or DC				
Rated Auxiliary Voltage for Heating Circuit	V	220				
Rated Auxiliary Voltage Frequency for Heating	AC / DC	AC				

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Partial Discharge Guarantee @ 1.1 Ur	pC	<3	
<b>Circuit Breaker</b>			
Manufacturer's Name	-	Qingdao TGOOD Electric Co Ltd	
Country of Manufacture	-	China	
Manufacturer's Ref. code / Make / Type	-	TCB-17.5-31-12	TCB-17.5-31-31
Applicable Standard		IEC 62271-100	
Circuit Breaker Interrupting Medium	SF6 / Vacuum	Vacuum	
Type of Circuit Breaker (Fix / Withdrawable)	-	Withdrawable	
If Withdrawable, is it Motorised or Manual Rack-in	-	Manual rack-in, motorized optional	
Is Breaker Trip Free?	-	Yes	
Rated Normal Current	A	3150	
Rated Short Circuit Breaking Current	kA	31.5	
Rated Duration of Short Circuit	s	3	
DC Component of Rated Short Circuit Breaking Current	%	53%	
Rated X/R Ratio	-	N. A	
Rated Out of Phase Breaking Current	kA	8	
Rated Out of Phase Recovery Voltage	kV	44.7	
Rated Line Charging Breaking Current	A	10	
Rated Cable Charging Breaking Current	A	31.5	
Rated Single Capacitor Bank Breaking Current	A	630	-
Rated Back-to-Back Capacitor Bank Breaking Current	A	400	-
Rated Capacitor Bank Inrush Making Current	kA	<13	-
Rated Back-to-Back Capacitor Bank Inrush Making Current	kA	<20	-
Rated Filling Pressure for Operation	MPa	N. A	
Rated Filling Pressure for Interruption	MPa	N. A	
Rated Operating Sequence	-	O-0.3 s-CO-3 min-CO	

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Maximum Opening Time	ms	43
Maximum Break Time	ms	60
Maximum Closing Time	ms	70
Maximum Make Time	ms	50
Electrical Endurance Class	E1 / E2	E2
Capacitive Restrike Probability Class	C1 / C2	C2
Mechanical Endurance Class	M1 / M2	M2
Switching Class	S1 / S2	S1
First Pole-To-Clear Factor - Terminal Fault	p.u.	1.5
First Pole-To-Clear Factor - Out of Phase	p.u.	2.5
Amplitude Factor - Terminal Fault	p.u.	1.4
Amplitude Factor - Out of Phase	p.u.	1.25
TRV Peak Value, kpp - Terminal Fault	kV	30
TRV Peak Value, kpp - Out of Phase	kV	44.7
Time, t3 - Terminal Fault	us	71
Time, t3 - Out of Phase	us	142
Time Delay, td - Terminal Fault	us	11
Time Delay, td - Out of Phase	us	21
Voltage, u' - Terminal Fault	kV	10
Voltage, u' - Out of Phase	kV	14.9
Time, t' - Terminal Fault	us	34
Time, t' - Out of Phase	us	69
RRRV, uc/t3 - Terminal Fault	kV/us	0.42
RRRV, uc/t3 - Out of Phase	kV/us	0.31
Circuit Breaker Operating Mechanism (Spring / Hydraulic)	-	Spring
Drive Motor Minimum and Maximum Operating Voltage	V	110
Drive Motor Power Consumption	W	120
Spring Motor Charging Time	s	≤15
Method of Tripping (Magnetic Actuator / Shunt Trip)	-	Shunt trip
Number of Trip Coil	-	1, 2(optional)

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Trip Coil Minimum and Maximum Operating Voltage	V	70-140
Trip Coil Current at Rated Voltage	A	2.42
Trip Coil Power Consumption	W	303
Method of Closing (Magnetic Actuator / Shunt Trip)	-	Shunt trip
Number of Close Coil	-	1
Close Coil Minimum and Maximum Operating Voltage	V	100-140
Close Coil Current at Rated Voltage	A	2.42
Close Coil Power Consumption	W	303
No. of NO/NC Auxiliary Contact	-	10NC 10NO
<b>Earthing Switch Characteristics</b>		
Manufacturer's Name	-	Wenzhou Xinji Electric Equipment CO., LTD
Country of Manufacture	-	China
Manufacturer's Ref. code / Make / Type	-	JN15-12
Applicable Standard		IEC 62271-102
Rated Short-Time Withstand Current	kA	31.5
Rated Duration of Short Circuit	s	4
Short Circuit Making Capability	E1 / E2	E2
Mechanical Endurance Class	M1 / M2	M2
Minimum Isolating Distance (Live Parts to Earth)	mm	≥125
Motorised Operation Available?	-	Available
No. of NO/NC Auxiliary Contact	-	4NC4NO
<b>Disconnecter Switch</b>		
Not applicable		
Manufacturer's Name	-	
Country of Manufacture	-	
Manufacturer's Ref. code / Make / Type	-	
Applicable Standard	IEC	
Rated Normal Current	A	
Rated Short-Time Withstand Current	kA	
Rated Duration of Short Circuit	s	
Mechanical Endurance Class	M1 / M2	

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Minimum Isolating Distance (Live Parts to Earth)	mm	
Minimum Isolating Distance (Clearance Bet. Open Contacts)	mm	
Motorised Operation Available?	-	
No. of NO/NC Auxiliary Contact	-	
<b>Current Transformer</b>		
Manufacturer's Name	-	Ritz Shanghai
Country of Manufacture	-	China
Manufacturer's Ref. code / Make / Type	-	GIS
Applicable Standard		IEC 61869-2
Current Transformer Type (Block / Toroid)	-	Block
Current Transformer Primary and Secondary Ratios	-	40~3000A/5
Current Transformer Secondary Winding Classes	-	0.2S, 5P10
<b>Voltage Transformer</b>		
Manufacturer's Name	-	Ritz Shanghai, or specified by TGOOD
Country of Manufacture	-	China, or specified by TGOOD
Manufacturer's Ref. code / Make / Type	-	GE, GSE, GZT, or specified by TGOOD
Applicable Standard		IEC 61869-3
Voltage Transformer Type	-	GE, GSE, GZT
Voltage Transformer Primary and Secondary Ratios	-	$20/\sqrt{3}/0.1/\sqrt{3}/0.1/3$
Voltage Transformer Secondary Winding Classes	-	0.2/0.5/3P
Withdrawable VT Available for Incomer Panel?	-	Yes
Withdrawable VT Available for Busbar?		No
<b>MV Cable Compartment</b>		
Cable Compartment Accessible Side	Front / Rear	Front and rear
Cable Box Insulation (Air / Gas)	-	Air



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Cable Termination Type	-	Cooper with silver coated				
Maximum Cable Size per Phase	-	Single core: 500mm; 3 core: 630mm				
Maximum Cable Quantity per Phase	-	2	2	4	4	5

## Contact us

### Global Head Office

TGOOD Global Ltd.  
Unit B,8/F,  
Shun Ho Tower,  
24-30 Ice House Street,  
Central, Hong Kong  
T +852 2393 8005  
F +852 2393 8808  
info@tgood.com

### Regional Offices

#### North America (Canada, USA)

TGOOD North America Inc.  
#3-1101 Main Street  
Penticton V2A 5E6 BC  
Canada  
T +1 778 476 5833  
north.america@tgood.com

#### Africa

TGOOD Africa (Pty) Ltd.  
21 Roan Crescent, Unit 2, Sultana Park  
Corporate Park North, Midrand, 1683  
South Africa  
T +27 010 010 5706  
africa@tgood.com

#### Australia & Asia Pacific

TGOOD Australia Pty Ltd  
Unit 1, 4 Henry Street  
Loganholme QLD 4129 Australia  
T +61 437 536 727  
T 1300 061299 (within Australia)  
australia@tgood.com

#### Europe

TGOOD Germany GmbH  
Daimler street, 2, D-41836 Hueckelhoven  
T +49 2433 525662  
europe@tgood.com

#### Latin America

TGOOD Latin America SAS  
Calle 116 15b-26 of 407, Bogotá, Colombia  
T +5717444663  
latin.america@tgood.com

#### Middle East and North Africa

TGOOD Middle East General Trading LLC  
Emirates Concorde – Office Tower, Suite #1205  
Al Maktoum Street,  
Riget Al Buteen, Deira  
UAE Dubai  
P.O. BOX: 413884  
T +971 43454596  
F +971 43454504  
mena@tgood.com

#### Central Asia

TGOOD Central Asia LLP  
7th floor, BC "Pioneer-2"  
Dostyk Avenue, No 134, Almaty, Kazakhstan  
P.O. BOX: 050051  
T +7 727 313 0168  
central.asia@tgood.com

#### Southeast Asia

TGOOD Southeast Asia Sdn Bhd [1167407-T]  
32A Jalan 15/22,  
Taman Perindustrian Tiong Nam  
Seksyen 15, 40200 Shah Alam, Selangor, Malaysia  
T +603 5870 1050-1053  
seasia@tgood.com

#### Mexico

TGOOD Mexico S. de. R.L. de C.V.  
Presidente Masaryk 111 Piso 1  
Col. Polanco V Sección  
11560 México, D.F.  
T +525541705597  
mexico@tgood.com

#### Russia

TGOOD Russia LLC  
Technique Museum, Building B, Office 411,  
p.a. Arkhangelskoe, 143420 Moskovskaya oblast,  
Krasnogorsk district, Russian Federation  
T +7 499 110 43 28  
+7 919 182 91 03  
russia@tgood.com

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