



# TGHX3

## Series Switch Disconnecter

### TGHX3 Series Switch Disconnecter

#### 1 Overview

TGHX3 is a DC rotary switch disconnecter suitable for rated operating voltage up to DC1500V and rated operating current up to 63A; it is primarily used in the DC side of photovoltaic inverters provide connection and isolation functions for the system, and can be also used isolation and disconnection of AC distribution circuits.

The product complies with GB/T 14048.1, GB/T 14048.3, IEC 60947-1, IEC 60947-3, and UL508I standard, and has obtained CCC certificate, CE certificate, TUV certificate, and UL certificate.

#### 2 Normal Working Conditions and Installation Conditions

##### 2.1 Normal working conditions

2.1.1 Ambient air temperature: The upper limit of the temperature shall not exceed +85°C, and the lower limit shall not be lower than -40°C; (when out of the standard working temperature, please contact the manufacturer for selection)

2.1.2 Altitude: The altitude of the installation site shall not exceed 3000m. When more than 3000m, the derating factors see the Table below.

Table 1

Altitude derating factor				
Altitude	3000	3500	4000	4500
Operating current correction factor	1	0.95	0.93	0.9
Operating voltage correction factor	1	0.9	0.83	0.8

2.1.3 Atmospheric conditions: The atmosphere air is clean (there is no explosive medium, and there is no gas and dust in the medium that is sufficient to cause metal corrosion and damage to the insulation); the relative humidity of the atmosphere shall not exceed 50% when the ambient air temperature is +40°C, and a higher relative humidity is allowed at lower temperatures (for example: when the temperature is +20°C, the relative humidity shall not exceed 90%); appropriate measures should be taken for condensation occurred on the surface of the product due to temperature changes.

## TGHX3 Series Switch Disconnect

2.1.4 Installed in a place where there is medium without explosion hazard, and there is no gas or conductive dust sufficient in the medium to cause metal corrosion and damage to the insulation;

2.1.5 Installed in a place where there is no significant impact vibration and no rain and snow attacks.

## 2.2 Normal installation conditions

2.2.1 Installation category: Class III, Class IV:

### 2.2.2 Installation environment pollution degree: Level 3:

2.2.3 Changed to protection grade: IP20 (except for terminals);

Protection grade at handle: IP66;

2.2.4 Installation method: Panel – mounted, rail – mounted (installed on the TH35-7.5 standard rail).

### 3 Type Designation

TG	H	X	3	-	<input type="checkbox"/>	P	/	<input type="checkbox"/>	/	<input type="checkbox"/>	/	<input type="checkbox"/>	/	<input type="checkbox"/>	/	<input type="checkbox"/>	/	<input type="checkbox"/>
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬						
①	Enterprise code		TG: Zhejiang Tengen Electric Co., Ltd.															
②	Class group code		H: Switch disconnector															
③	Group code		X: Rotary switch															
④	Design code		3															
⑤	Conventional thermal current (A)		32: 32A    63: 63A															
⑥	Application field		P: Photovoltaic application field															
⑦	Rated current (A)		See Parameter Table 2 and Table 3															
⑧	Number of product layers		2: 2 layers 3: 3 layers 4: 4 layers 6: 6 layers 8: 8 layers 9: 9 layers															
⑨	Wiring method		1: Two layers in series 4: AC connection 5: Two positive poles connected to one negative pole															
⑩	Installation method		Omitted or M: Panel – mounted    D: Rail mounted or base plate mounted															
⑪	Rated voltage (V)		See Parameter Table 2 and Table 3															
⑫	Wiring method		Omitted or R: Screw wiring J: Wiring frame wiring															
⑬	Handle type		Omitted or F: F handle L: L handle G: G Handle (with a lock)															

TGHX3 Series Switch Disconnecter

4 Technical Parameters

Table 2

Model	Use category	Wiring method	Rated voltage	600	800/850	1000	1100	1200/1250	1500
TGHX3-63P	DC-21B DC-PV1 DC-PV2	Two layers are connected in series Two positive poles are connected to one negative pole	Rated current			12.5	7.5		
				16	16	16	16	16	16
				20	20	20	20	20	20
				25	25	25	25	25	25
				30	30	30	30	30	30
				32	32	32	32	32	32
				40	40	40	40	40	
				50	50	50	50		
				63	63	63	55		

Table 3

Model	Use category	Wiring method	Rated voltage	220/230/240	380/400/415	690	1000	
TGHX3-63P	AC-22B	AC connection 2 layers	Rated current	16				
				20				
				32				
				40				
				50				
		AC connection 3/4 layers		63	16	16	13	
					20	20	16	
					32	32	20	
					40	40		
					50	50		
					63	63		

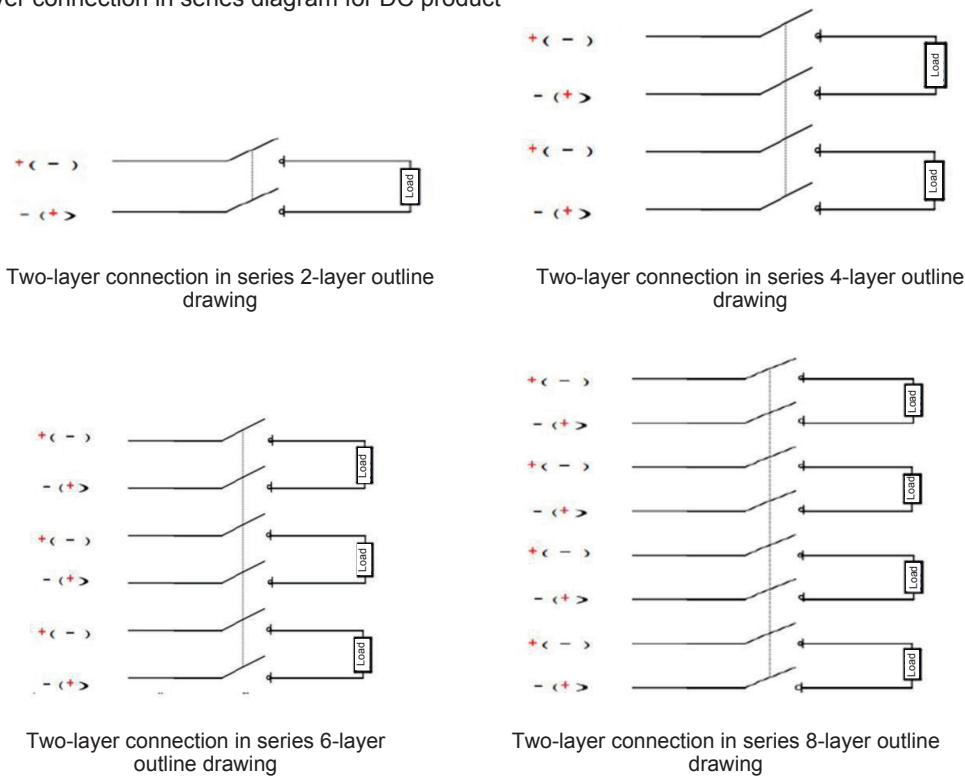
# TGHX3 Series Switch Disconnect

Table 4

Parameter name	Type / Unit	Specific parameter
Frame current	A	63
Insulation voltage	V	DC 1500/AC 690
Rated impulse withstand voltage	kV	8
Rated short time withstand current I <sub>cw</sub>	kA/1s	0.76
Rated short circuit making capacity I <sub>cm</sub>	kA	1.4
Mechanical life	Times	13000
Electrical life	Times	300
Operating torque	N.m	1.6~2.2
Machine fixed torque	N.m	2.0~2.5
Wiring torque	N.m	1.5~1.7
Handle fixed torque	N.m	0.6~0.75
Wiring area (recommended)	mm <sup>2</sup>	See Table 9 of GB/T 14048.1
Installation method	Handle cabinet door mounted, rail mounted (installed on the TH35-7.5 standard rail)	
Protection grade	Machine: IP20 (except for terminals); Handle outside the cabinet: IP66	

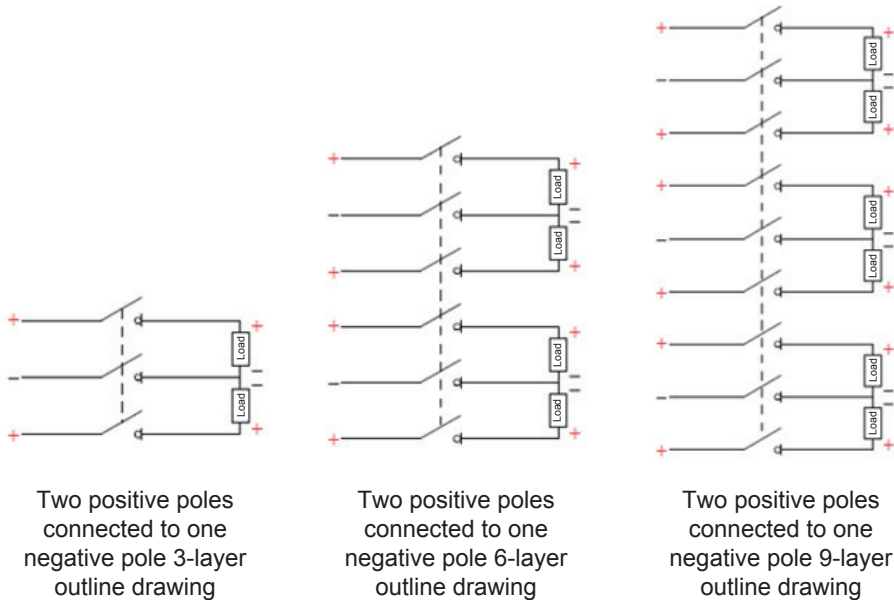
## 5 Wiring Method

### 5.1 Two-layer connection in series diagram for DC product

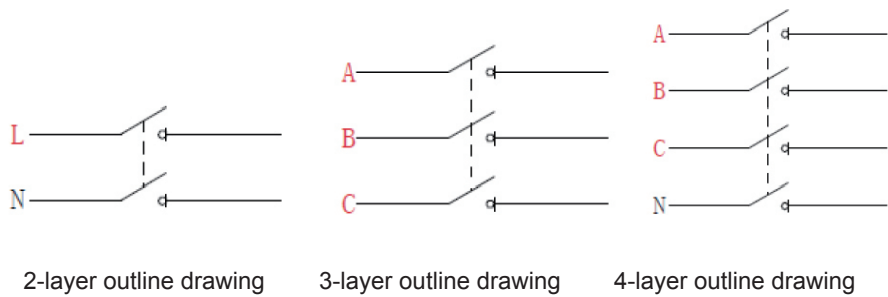


TGHX3 Series Switch Disconnect

5.2 Two positive poles connected to one negative pole wiring diagram for DC product

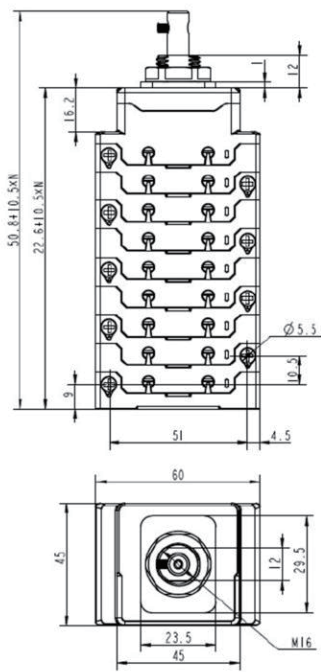


5.3 AC product wiring diagram

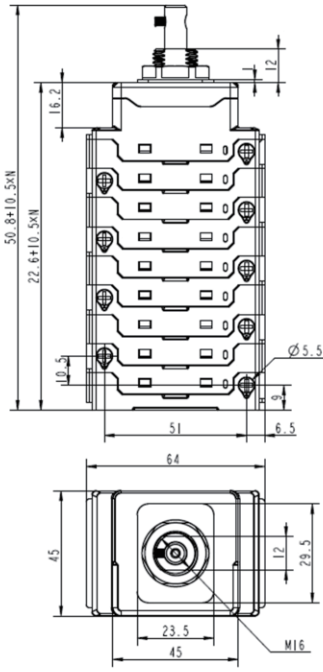


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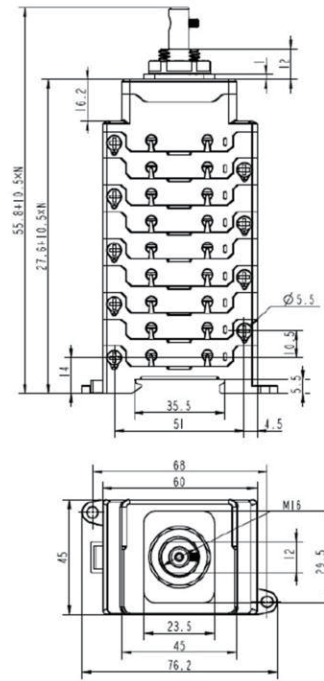
## 6 Outline Dimensions and Installation Dimensions



Panel mounted (screw connection)

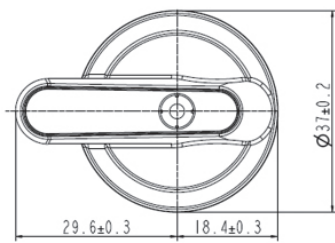


Panel mounted (terminal block connection)

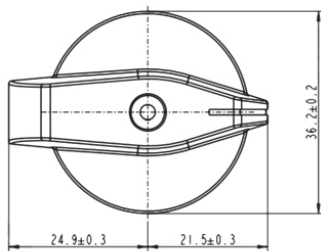
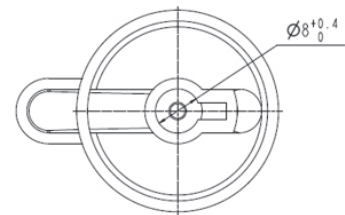
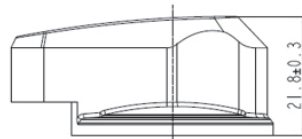


Rail mounted (screw connection)

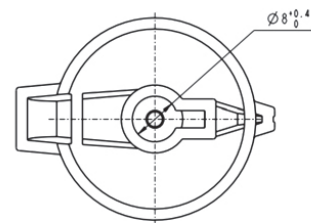
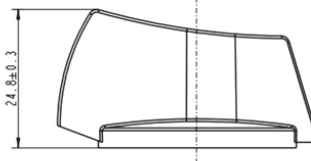
Note: N means the number of poles of the product.



Handle outline dimensions (F handle)



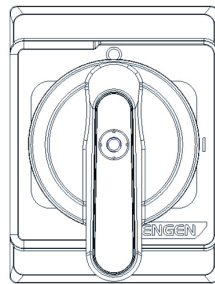
Handle outline dimensions (L handle)



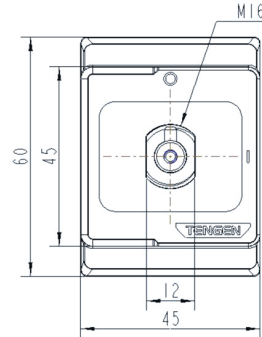
## TGHX3 Series Switch Disconnecter

### 7 Installation Method

#### 7.1 Panel mounted

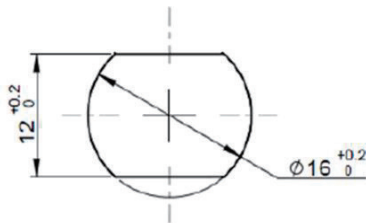


Panel indicator

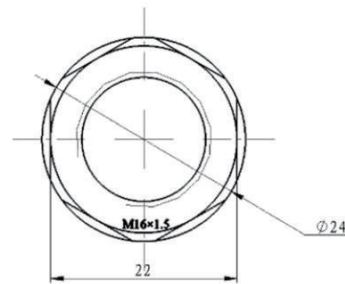


Installation dimensions

Status position: This product has two status positions, namely the closing position "I/ON" and the opening position "O/OFF", as illustrated in the figure above.

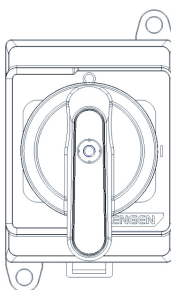


Hole size

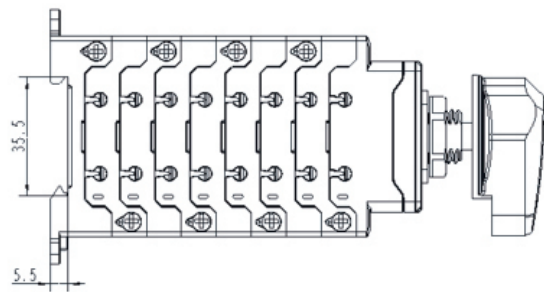
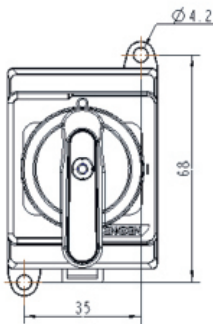


Product fixing nut

#### 7.2 Rail mounted



Panel indicator



Installation dimensions

Status position: This product has two positions, namely the closing position "I/ON" and the opening position "O/OFF", as illustrated in the figure on the left.

# TGHX3 Series Switch Disconnecter

## 8 Installation, Operation and Maintenance

If the product is damaged or cannot work normally due to poor manufacturing quality under normal installation, operation and inspection conditions, the manufacturer will provide after-sales service.

## 9 Precautions

9.1 The user shall be responsible for any quality problems caused by unauthorized disassembly of the product;

9.2 Do not touch the exposed part of the non-insulating component of the disconnecter in the energized state.

9.3 The wiring must be connected reliably to prevent abnormal heat of the wiring terminals resulting in burns to the terminals of the switch disconnecter.

## 10 Ordering Notice

Please specify the following items when ordering:

- Product name, such as TGHX3-63P/63/4/1/M/800 switch disconnecter;
- Frame current, such as 63: 63A;
- Number of layers, such as 4: 4 layers;
- Wiring method: 1: two layers connected in series;
- Installation method, such as M: Panel mounted;
- Rated voltage: 800: 800V;
- Product quantity, such as 100 sets

Ordering example: TGHX3-63P/63/4/1/M/800/R/L, 100 sets.