

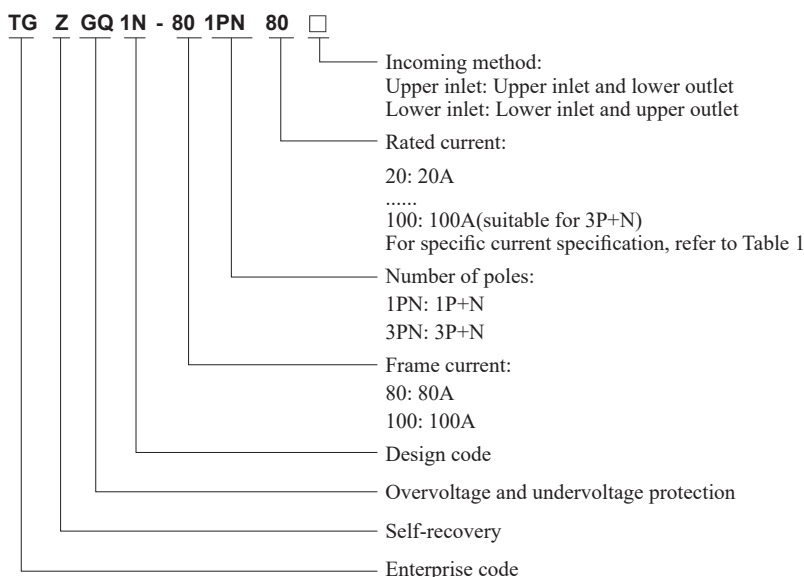
# TGZGQ1N Series Overvoltage and Undervoltage Protector

## 1 Overview

TGZGQ1N self-recovery over-voltage and under-voltage protector (hereinafter referred to as the protector) is suitable for load line with AC voltage single-phase 230V/three-phase 400V, frequency 50Hz, rated operating current 100A and below.

When the circuit voltage is abnormal due to single-phase (three-phase) over-voltage caused by the neutral line fault in the circuit, serious unbalanced three-phase load, too large line resistance, phase loss, the protector can automatically disconnect the load-side power supply, thereby preventing damage to the electrical equipment and realizing the protection of the electrical equipment. Also, the protector can automatically detect the line voltage, and can automatically close when the line has a normal voltage, thereby restoring the power supply to the electrical equipment. The product shall be used in series with a circuit breaker, mainly used in the incoming branch box or other power distribution lines to be protected in the civil and commercial buildings.

## 2 Type Designation



## 3 Technical Parameters

### 3.1 Main technical parameters (see Table 1)

Table 1

Product specification	TGZGQ1N-80	TGZGQ1N-100
Electrical characteristics		
Rated current (A)	20/25/32/40/50/63/80A	20/25/32/40/50/63/80/100A
Rated voltage (V)	230V	400V
Number of poles	1P+N	3P+N
Rated impulse withstand voltage Uimp (kV)	4	
Overvoltage action cut-off value (V)	AC 275V>>	
Overvoltage recovery value (V)	AC 240-265V	
Undervoltage action cut-off value (V)	AC 50-160V	
Undervoltage recovery value (V)	AC 185-205V	
Power transmission delay after power failure (s)	30±5s	
Protection action delay time (s)	Overvoltage action characteristics: inverse time ≤ 5s	
	Undervoltage action characteristics: definite time 0.75s	
Power (W)	≤1W	

# TGZGQ1N Series Overvoltage and Undervoltage Protector

Mechanical properties		
Electrical life	≥10,000 times	
Mechanical life	≥100,000 times	
Indicator window	Green light is always on -normal Red light flashes quickly-overvoltage Red light flashes slowly-under voltage	Green light is always on -normal Red light flashes quickly-overvoltage Red light flashes slowly-under voltage Red light is always on- phase loss
Normal working conditions and installation characteristics		
Ambient temperature	-5°C	
Installation altitude	< 2,000 meters	
Installation category	Class II , III	
Installation method	TH35-7.5 steel mounting rail	
Wiring capacity	See "Reference table for wire cross-sectional area and current"	
Max. limit torque	2.5N.m	3.5N.m
Incoming method	Top in and bottom out, bottom in and top out	
Protection grade	IP20	

3.2 Reference table for wire cross-sectional area and current

Table 2

Rated operating current A	Cross-sectional area of connecting wire, mm <sup>2</sup>
20	2.5
25	4
32	6
40	10
50	10
63	16
80	25
100	35

3.3 Overvoltage action time curve

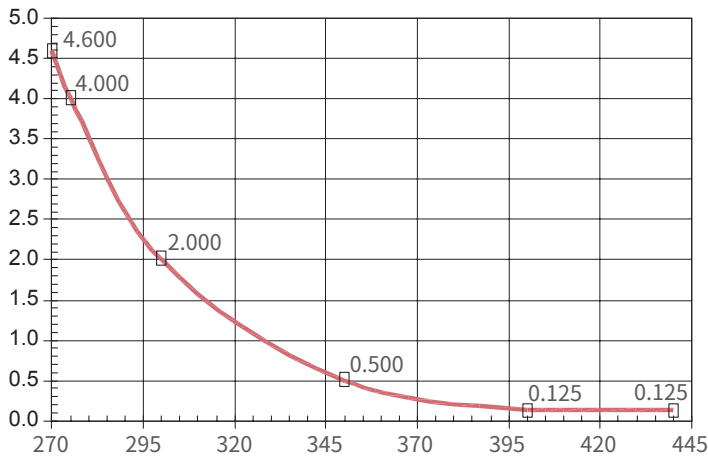


Fig.1 Overvoltage action time curve

# TGZGQ1N Series Overvoltage and Undervoltage Protector

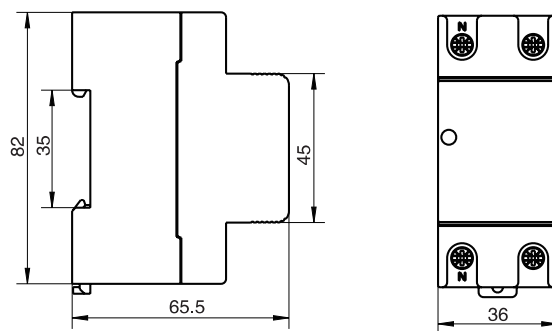
## 4 Installation and Wiring

- 4.1 Before installation, check that the product identification is consistent with the installation and operation environment.
- 4.2 Connect the wires according to the specified product incoming and outgoing terminals.
- 4.3 The line N of the protector is a zero/neutral line, and cannot be connected wrongly; the wire must be connected reliably, otherwise the protector will not work normally.
- 4.4 When the protector is powered on for the first time, a 1-5s delay is required before supplying normal power to the load. At this time, the protector indicator turns from red to green.

## 5 Other Precautions

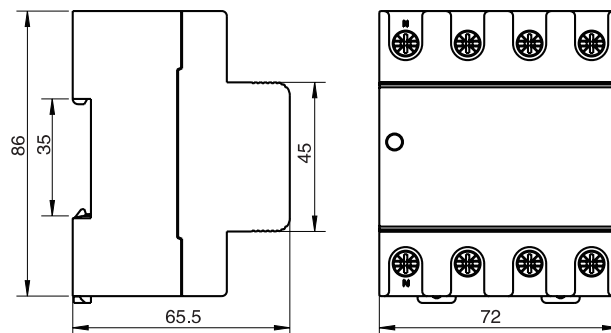
- 5.1 The single-phase (three-phase) line will be disconnected in case of overvoltage or undervoltage. When recovering to the normal state, the single-phase (three-phase) line will automatically reset after the circuit is powered on without manual operation.
- 5.2 In case of instantaneous or transient overvoltage of the line, the protector will not act wrongly.
- 5.3 When the line fault voltage reaches AC440V, the protector itself will not be damaged.
- 5.4 Protectors (including packaged products) shall not be affected by rain or snow during transportation and storage, and shall be stored in a well-ventilated warehouse with a relative humidity of not more than 90%, with a temperature of not higher than +60°C and not lower than -25°C. The product shall be installed in places free of rain and snow intrusion, with good air circulation, with mean monthly relative humidity of no more than 90% (at +20°C), and with an air temperature of not higher than +40°C and not lower than -5°C.
- 5.5 This protector is only used in an environment with pollution degree 2; the protection grade of the product housing is IP20, and cannot be used in places failed to follow the above requirements.

## 6 Outline and Installation Dimensions



Unit: mm

TGZGQ1N-80 Outline and installation dimensions drawing



TGZGQ1N-100 Outline and installation dimensions drawing

## 7 Ordering Notice

Specify the product model and name such as TGZGQ1N-80 self-recovery over-voltage protector, bottom incoming and top outgoing, rated current 63A, 100 units, number of poles 1P+N when ordering  
For example, TGZGQ1N-80 63A 1P+N bottom-in and top-out, 100 units.