

Lightning and Surge Protection for Photovoltaic Systems



With the wide application of solar power system in the energy field will come a steady flow of clean new energy. At the same time, the hidden security risk of lightning on photovoltaic systems is growing more and more serious. And by means of the connection of electrical facilities throughout buildings, the damage will eventually spread to the whole building, resulting in huge loss.

Watchful eye is dedicated to research on lightning protection and surge protection for photovoltaic systems, and applying various lightning and surge protection solutions for photovoltaic system for customers, while providing a guarantee for the security of photovoltaic systems and the high efficiency of operating these systems.

Hotline: +1646 831-8507

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www.watchfuleyesolutions.com

WTH-40/C/3P-PV Series



- ☆ Application for voltages up to 1000V of generators in photovoltaic systems
- ☆ Ultra wide electric clearance and creepage distance, high withstand stress levels, to meet application requirements at a high altitude
- ☆ Unnecessary to consider load current; Plug & Play design, live wire replacement, easy maintenance
- ☆ Build-in temperature control and circuit breaking technology, high security performance, no follow current
- ☆ Green light on screen indicates normal; any red indicates fault and replacement notice
- ☆ Optional remote monitoring interface, can utilize remote monitoring
- ☆ High working voltage, high electric current support, high safety and high stability

Without Remote Function :

Type :	WTH-40/C/3P-PV800	WTH-40/C/3P-PV1200
Ordering Code :	502150	502149

With Remote Function :

Type :	WTH-40/C/R/3P-PV800	WTH-40/C/R/3P-PV1200
Ordering Code :	502150	502149

WTH-40/C/2P-PV Series



- ☆ Application for the voltages up to 600V of generators in photovoltaic system
- ☆ Unnecessary to consider load current, Plug & Play design, live wire replacement and easy maintenance
- ☆ Built-in temperature control and circuit breaking technology, high security performance, no follow current
- ☆ Green light on screen indicates normal, any red indicates fault and replacement notice
- ☆ Optional remote monitoring interface, can utilize remote monitoring
- ☆ High electric current support, high safety and high stability

Without Remote Function :

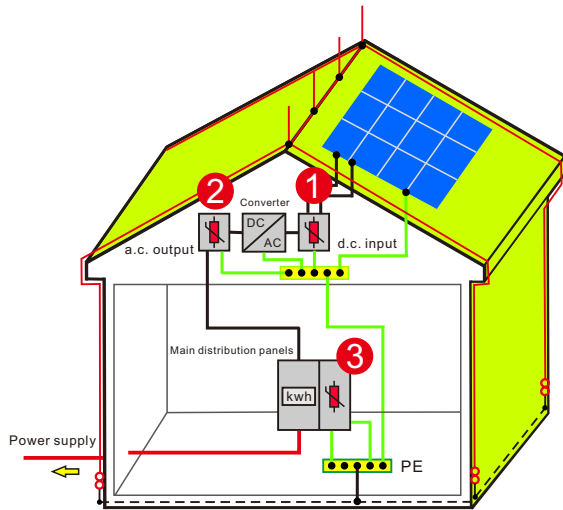
Type :	WTH-40/C/2P-PV100	WTH-40/C/2P-PV500...PV600
Ordering Code :	502153	502152...502151

With Remote Function :

Type :	WTH-40/C/R/2P-PV100	WTH-40/C/R/2P-PV500...PV600
Ordering Code :	502153	502152...502151

The Application of Lightning Protective Module in Photovoltaic Power Generation System

Photovoltaic System Installed in a Building with External Lightning Protection Equipment



1 Photovoltaic DC Surge Protective Module



WTH-40/C/3P-PV series



WTH-40/C/2P-PV series

2 Class 2 Signal Phase Power Surge Protective Module



WTH-40/C/2P-385



WTH-40/C/1P+NPE-385

3 Class 1 Three-Phase Power Surge Protective Module

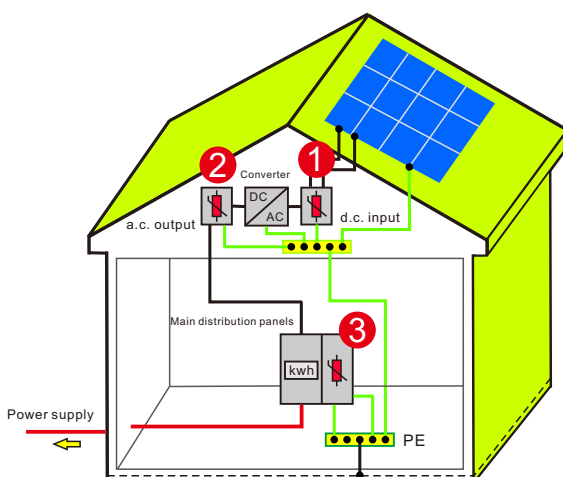


WTH-80/B+C/4P-385



WTH-80/B+C/3P+NPE-385

Photovoltaic System Installed in a Building without External Lightning Protection Equipment



1 Photovoltaic DC Surge Protective Module



WTH-20/C/3P-PV series



WTH-40/C/2P-PV series

2 Class 2 Signal Phase Power Surge Protective Module



WTH-20/C/2P-385



WTH-40/C/1P+NPE-385

3 Class 1 Three-Phase Power Surge Protective Module



WTH-20/C/4P-385



WTH-20/C/3P+NPE-385

The buildings should not be in an open space, on a mountain or in other places with high frequency of lightning strikes; otherwise, choosing lightning protective devices should be based on the requirements for buildings with external lightning protection equipment.

When Photovoltaic system being installed in the industrial factory buildings, choosing lightning protective devices should be based on the requirements for the buildings with external lightning protection equipments

WTH Surge Protection Technical Data



Main Technical Data

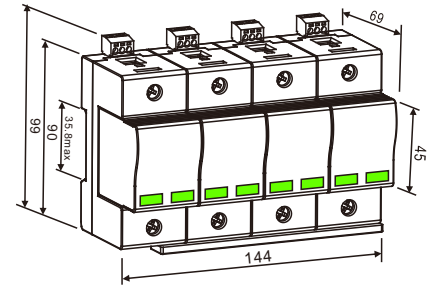
Appearance and Installation Dimensions

Main Surge Protection Technical Data for Class 1 Power System

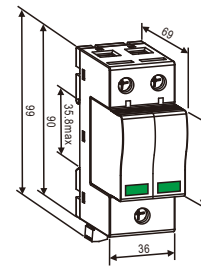
Type	WTH-80/B+C		WTH-100/G (N-PE)
Maximum Continuous Operating Voltage $U_c \sim V$	385		255
Voltage Protection Level Up kV	< 2.4		< 1.2
Voltage Limiting Ures(at 5kA) kV	< 1.2		< 0.3
Nominal Discharge Current (8/20 μ s)kA	40		40
Maximum Discharge Current(8/20 μ s)kA	80		100
Housing Material	Flame-retardant Reinforced Nylon(UL 94V-0)		
Recommended Grounding Conductor Cross-Sectional Area	16mm ² Multi-Strand Flexible Wire		
Combination Mode	3P	4P	3P+NPE
Ordering Code	603 045	603 046	603 049
Ordering Code (With Remote Function)	603 052	603 053	603 056
Maximum Strength of Back-up Protection Fuse	125 A gL		

Main Surge Protection Technical Data for Class 2 Power System

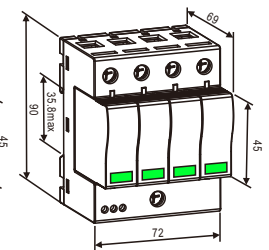
Type	WTH-40/C			WTH-65/G (N-PE)	
Maximum Continuous Operating Voltage $U_c \sim V$	385			255	
Voltage Protection Level Up kV	< 1.8			< 1.2	
Voltage Limiting U_{res} (at 5kA) kV	< 1.3			< 0.3	
Nominal Discharge Current (8/20 μ s)kA	20			25	
Maximum Discharge Current(8/20 μ s)kA	40			65	
Housing Material	Flame-retardant Reinforced Nylon(UL 94V-0)				
Recommended Grounding Conductor Cross-Sectional Area	$\geq 10\text{mm}^2$ Multi-Strand Flexible Wire				
Combination Mode	2P	3P	4P	1P+NPE	3P+NPE
Ordering Code	602 058	602 059	602 060	602 061	602 063
Ordering Code (With Remote Function)	602 065	602 066	602 067	602 068	602 070
Maximum Strength of Back-up Protection Fuse	80 A gL				



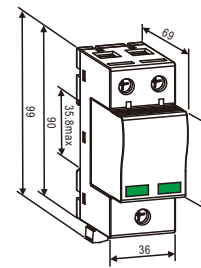
WTH-80/B+C/4P
(or WTH-80/B+C/3P+NPE)



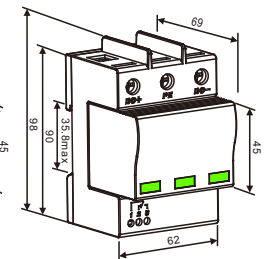
WTH-40/C/2P
(or WTH-40/C/1P+NPE)



WTH-40/C/4P
(or WTH-40/C/3P+NPE)



WTH-40/C/2P-PV series



WTH-40/C/3P-PV series

Photovoltaic DC Surge Protective Module Main Technical Data

Type	WTH-40/C/2P-PV100	WTH-40/C/2P-PV500	WTH-40/C/2P-PV600	WTH-40/C/3P-PV800	WTH-40/C/3P-PV1200
Maximum Continuous Operating Voltage $U_c \sim V$	100	500	600	800	1200
Voltage Protection Level Up kV	< 0.8	< 1.8	< 2.2	< 3.6	< 3.6
Voltage Limiting Ures(at 5kA) kV	< 0.4	< 1.3	< 1.5	< 2.8	< 2.8
Ordering Code	502153	502152	502151	502150	502149
Ordering Code (With Remote Function)	606 010	502152	502151	502150	502149
Nominal Discharge Current (8/20 μ s)kA	20				
Maximum Discharge Current(8/20 μ s)kA	40				
Housing Material	Flame-retardant Reinforced Nylon(UL 94V-0)				
Recommended Grounding Conductor Cross-Sectional Area	$\geq 10\text{mm}^2$ Multi-Strand Flexible Wire				
Maximum Strength of Back-up Protection Fuse	80 A gL				