Watchful EyE

Surge Protective Device

Paperless Datasheet

Going green and protecting environment is manufacturers' responsibility. Each WatchfulEyE product has a link of downloading data sheet on its enclosure:
http://datasheet.watchfuleyesolutions.com/US121181.html

Model & Ordering Code

Model	Ordering Code	Surge Protection	UPC/EAN Code
WTH-SG/RJ45-KH-C/24	US121181	24 Port	(0) 811914031901
WTH-SG/RJ45-KH-C/16	US121182	16 Port	(0) 811914031918
WTH-SG/RJ45-KH-C/12	US121187	12 Port	(0) 811914031925
WTH-SG/RJ45-KH-C/8	US121183	8 Port	(0) 811914031932
WTH-SG/RJ45-KH-C/4	US121186	4 Port	(0) 811914031949
WTH-SG/RJ45-KH-C/2	US121189	2 Port	(0) 811914031956
WTH-SG/RJ45-KH-C/1	US121188	1 Port	(0) 811914031963

WTH-SG/RJ45-KH-C/24

WTH-SG/RJ45-KH-C/16

WTH-SG/RJ45-KH-C/12

WTH-SG/RJ45-KH-C/8

WTH-SG/RJ45-KH-C/4

WTH-SG/RJ45-KH-C/2

WTH-SG/RJ45-KH-C/1
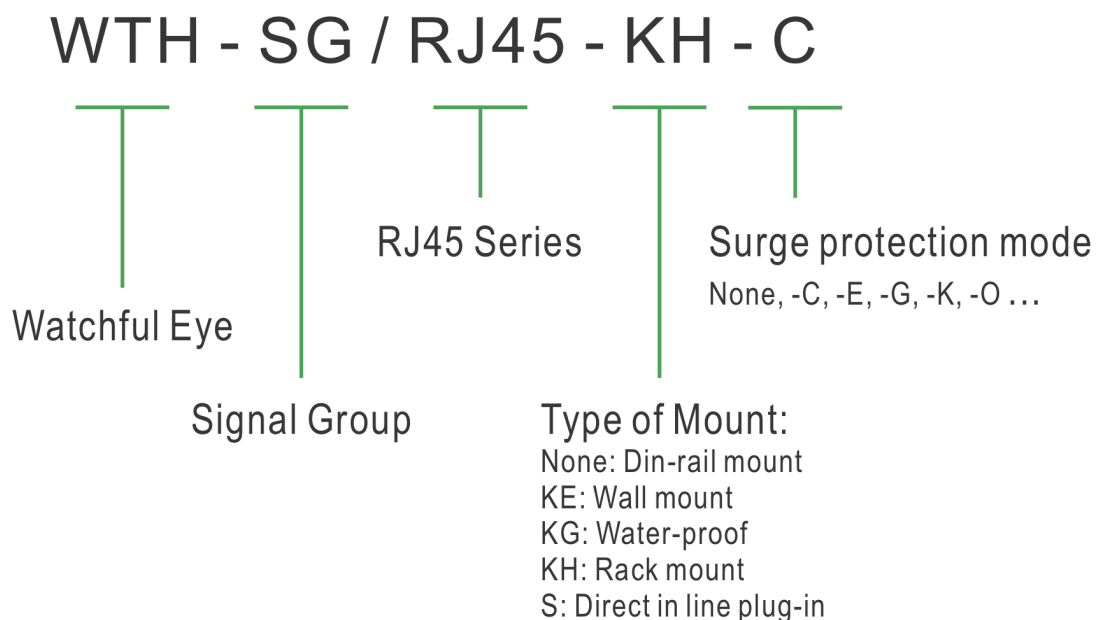
Certificates of Products

UL LISTED E346881   CE   RoHS   IEC61643-11

Watchful Eye

Surge Protective Device

How to Name Ethernet PoE Series

WTH - SG / RJ45 - KH - C

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Signal Group

RJ45 Series

Type of Mount:
None: Din-rail mount
KE: Wall mount
KG: Water-proof
KH: Rack mount
S: Direct in line plug-in

Surge protection mode
None, -C, -E, -G, -K, -O …

UL file number: E346881
Data protectors, for indoor use, Model(s) WTH-SG/RJ45+
Data protectors, for outdoor use, Model(s) WTH-SG/RJ45-KE+, WTH-SG/RJ45-KG+
Data protectors, for rack mount use, Model(s) WTH-SG/RJ45-KH+/n (n=number of ports)

Notes:
+ - May be followed by -A, -B, -C, -D, -E, -F, -G, -H, -I, -J, -K, -L, -M, -N or -O.

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Surge Protective Device

Description

WTH-SG/RJ45 Series surge protective devices are applied to surge protection for data communication systems. WTH-SG/RJ45-KH-C Series is connected in series in CAT6 network cables, compatible with 10/100/1000/10000 (10G) Base-T Ethernet systems, protecting the equipment which are connected to the network (e.g. computers, routers, PoE devices, etc.) against damages by over-voltage surge.
(Standards compliance: IEC61643-11, UL497B, IEEE 802.3af PoE/802.3 at PoE Plus)

| WTH-SG/RJ45-KH-C Series Technical Data	
Nominal operating voltage (Un)	2.8V(Ethernet)/48V(PoE)
Max. continuous operating voltage (UC)	3V(Ethernet)/60V(PoE)
Nominal Discharge Current (In @8/20μs)	3kA (line to line)
Max. Discharge Current (Imax @8/20μs)	20kA (line to GND/PE)
Voltage protection level (Up @line-line)	50V @ 3kV (1.2/50)
Voltage protection level (Up @line-GND/PE)	700/800V @ 3kV (1.2/50)
Max Watt	90W (PoE)
Data Rate	100/1000Mbps
Bandwidth (3db) per pair	>250MHz
Insertion Loss	<0.5dB @100MHz
Pairs Protected	1-2,3-6,4-5,7-8
Protective Element	GDT, TVS
Voltage Breakdown Range, Vdc @ 100 V/s	2.4-188 (L-L) / 72-108(L-G)
Impulse Voltage Range,Vdc @ 100 V/μs	<1000
Response Time (tA)	<100ns (line-GND/PE), <1ns (line-line)
Connection mode	RJ45 (1 to n Port)
Temperature Range	- 40° to 176°F (-40° to 80°C)
Relative Humidity	0% to 95% noncondensing
Maximum Operating Altitude	10,000 feet (3000m)
Surge Life at 0.5kA (8/20μs)	>2000 events
Material of Construction	Black oxidized aluminum alloy
Dimension (W×D×H)	**"×3.55"×1.75" (**mm×89mm×44.5mm)

Watchful Eye

Surge Protective Device

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Main Features

1. Perfect structural design, height: 1U (44.5mm), depth: 89mm
2. Exquisite craftsmanship, Reversible ears faces front or rear in rack
3. Black aluminum alloy oxidation, artistic color, sleek edge
4. Independent grounding terminal, superior surge protection features
5. Modular-structure and Multi-function customized combination, standard 19-inch length, more options of customized lengths are available
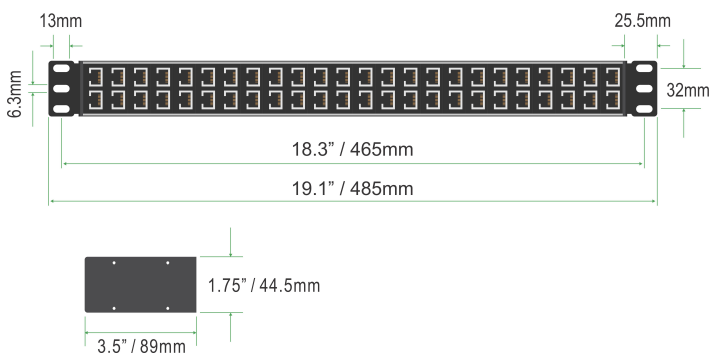
19-inch Rack Mounted (24 Port, 16 Port, 12 Port)
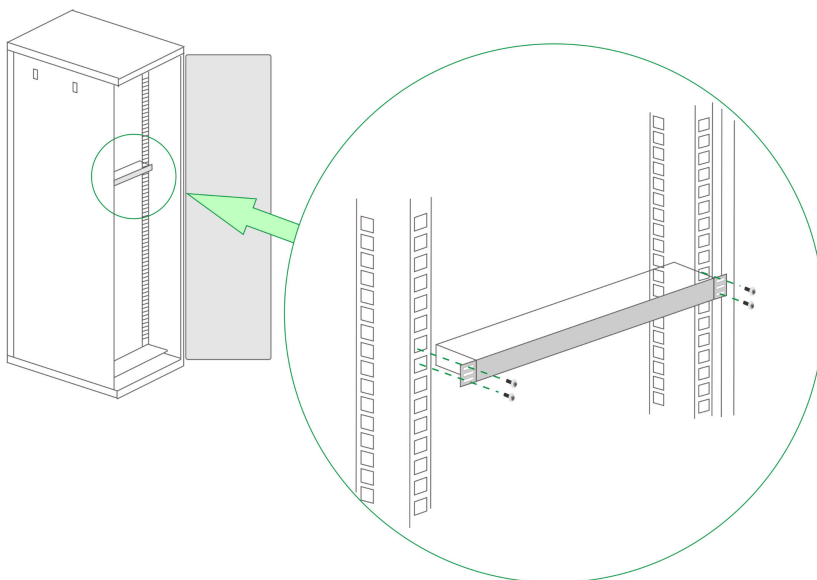
Installation Instruction

The surge protective devices shall be employed in a Listed enclosure or closet that is only accessible to technicians or service personnels.
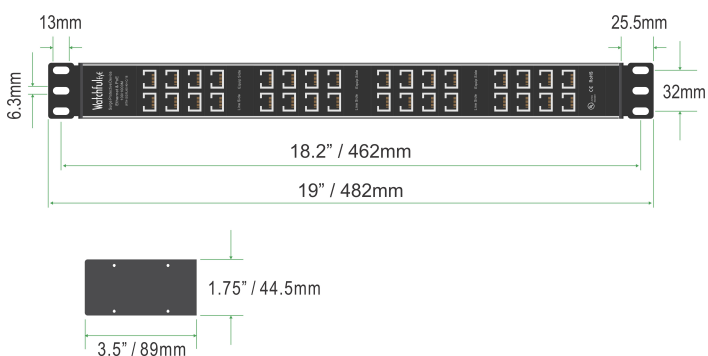
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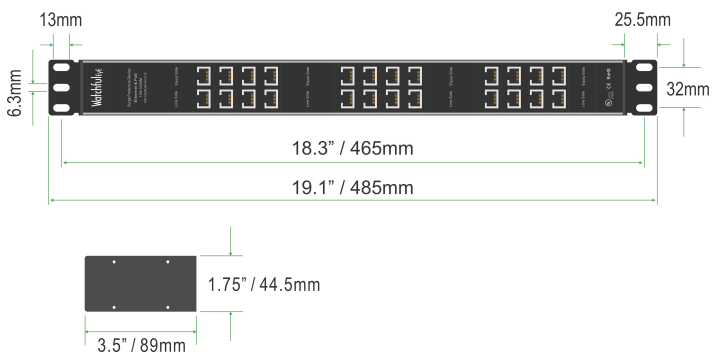## Surge Protective Device

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WTH-SG/RJ45-KH-C/24 Dimension

13mm
25.5mm
6.3mm
32mm
18.3" / 465mm
19.1" / 485mm

1.75" / 44.5mm
3.5" / 89mm

WTH-SG/RJ45-KH-C/16 Dimension

13mm
25.5mm
6.3mm
32mm
18.2" / 462mm
19" / 482mm

1.75" / 44.5mm
3.5" / 89mm

WTH-SG/RJ45-KH-C/12 Dimension

13mm
25.5mm
6.3mm
32mm
18.3" / 465mm
19.1" / 485mm

1.75" / 44.5mm
3.5" / 89mm

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Surge Protective Device

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WTH-SG/RJ45-KH-C/8 Dimension

1.75" / 44.5mm

7.5" / 190mm

6.3mm

32mm

1.75" / 44.5mm

13mm   25.5mm

3.5" / 89mm
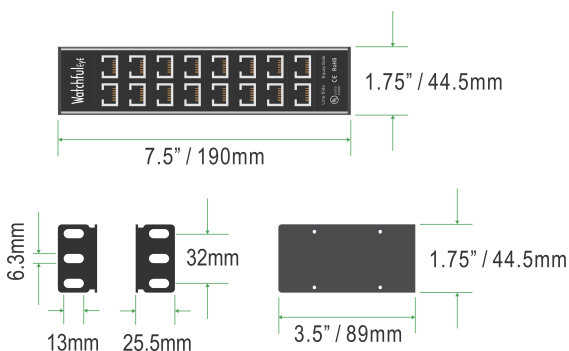
WTH-SG/RJ45-KH-C/4 Dimension

1.75" / 44.5mm

4.7" / 119mm

6.3mm

32mm

1.75" / 44.5mm

13mm   25.5mm

3.5" / 89mm
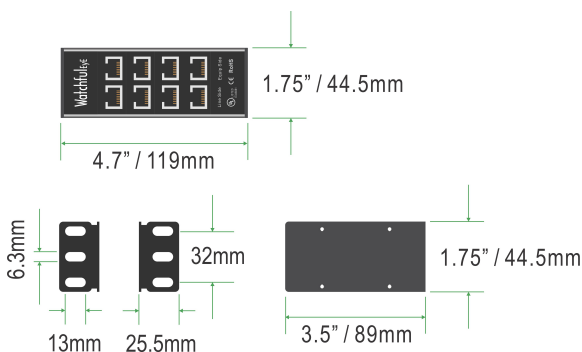
WTH-SG/RJ45-KH-C/2 Dimension

1.75" / 44.5mm

3.3" / 83mm

6.3mm

32mm

1.75" / 44.5mm

13mm   25.5mm

3.5" / 89mm

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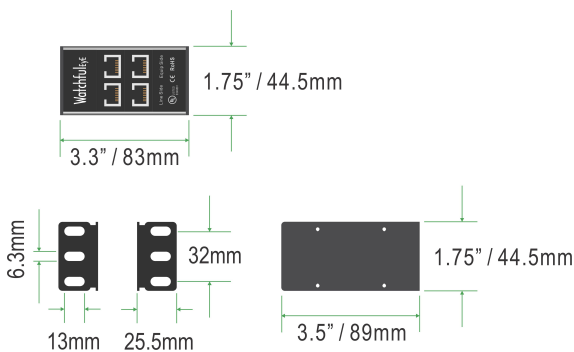
Surge Protective Device

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WTH-SG/RJ45-KH-C/1 Dimension

1.75" / 44.5mm

2.6" / 65mm

6.3mm

32mm

1.75" / 44.5mm

13mm   25.5mm

3.5" / 89mm
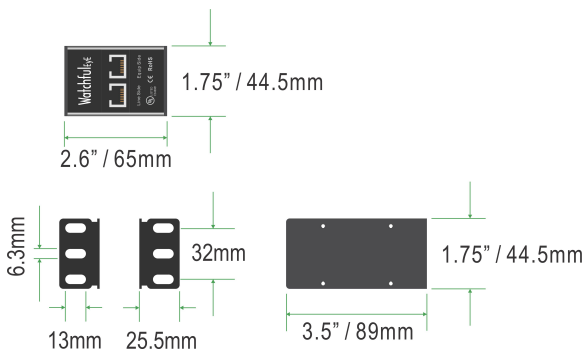
Surge Protection Connection Diagram

Equip Side

RJ45
1-2 3-6 4-5 7-8

C

Line-Line TVS Surge Protection

Line-GND/PE GDT Surge Protection

Line Side

RJ45
1-2 3-6 4-5 7-8

PE/GND

Equip Side

Line Side
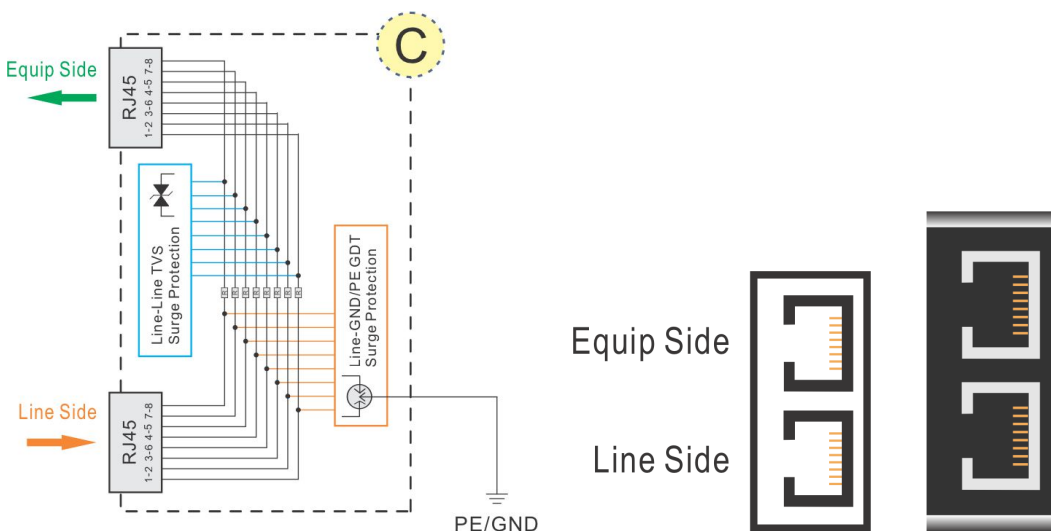
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Surge Protective Device

Application

Ethernet System

Ethernet Equip

STP Cable
Ethernet Only

Ethernet switch

AC/DC Power

Surge protection

B Ethernet Equip

Surge

Surge protector
(WTH-SG/RJ45 Series)

Surge protector

A Ethernet switch

(WTH-SG/RJ45 Series)

AC/DC Power

PoE System

PoE Equip

Ethernet Only   **PoE Injector**   STP Cable
Ethernet + DC

Ethernet switch

AC/DC Power

Surge protection

B PoE Equip

A PoE Injector   Surge protector   Surge   Surge protector

(WTH-SG/RJ45 Series)   (WTH-SG/RJ45 Series)

AC/DC Power

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Surge Protective Device

FAQ & Help (1/2)

1. What should I do if I can't find the paper manual in the product packaging?
Watchful Eye products is committed to going green with paperless data sheets. On the rear side of each product enclosure is an engraved link with URL for downloading paperless data sheet and QR code of the website. If you need the paper data sheet, you can open the link and print the data sheet by yourself.

2. Model WTH-SG/RJ45 has no LED status indicator. What instruments can be used to test whether its surge protection function is normal or not?
Test with a Watchful Eye surge protector tester.
If a system failure occurs, first remove the surge protector and restore the system to the wiring status without the surge protector. If the system failure is resolved, it shows the surge protector is faulty. Using Watchful Eye Surge Protective Tester can more easily test whether the WTH-SG/RJ45 series is normal or not.

3. Can you list more applications of WTH-SG/RJ45 series?
Ethernet & PoE equipment such as network switches, routers, computers, servers, video cameras, etc.

4. What are the advantages of the GDT+TVS type surge protection?
It provides a two-step surge protection mode: the first-stage GDT protection, releasing strong surge intrusion and reduce the strength of the surge; it is followed up the second-stage TVS fine protection, achieving a lower residual voltage value.

5. If the wires on the line side and the equipment side are connected reversely, will it affect surge protection?
When the wire is connected reversely, TVS becomes pre-stage protection, and GDT is post-stage protection. The nominal discharge current of TVS protection will be much lower than GDT. If it encounters a surge intrusion, it may cause damage to the TVS. The second-stage GDT protection will also play a role in surge protection, but the residual voltage value will increase, which is a risk to the protected equipment.

6. What are the advantages of 1-2, 3-6, 4-5, 7-8 line full protection mode of GDT+TVS type surge protection?
If you don't know whether the system is 100M or 1000M, which PoE structure or wiring mode the system is, the full line surge protection mode of GDT+TVS avoids the confusion of your selection.

7. In addition to the 24 Port, 16 Port, and 12 Port models that are 19" rack-mounted, do the other port products have ears for installation?
Yes, any WTH-SG/RJ45-KH series products come with mounting ears

8. How do I determine the quantity of surge protector that I need for protecting the equipment?
Surge on the STP cable will be transmitted in two directions to the ends of the cable. The surge protector A protects the equipment on the A side, such as an ethernet switch, etc. And Surge protector B protects the equipment on the B side. such as an ethernet equipment. If only the device on one end of cable needs to be protected, then only one surge protector is needed.
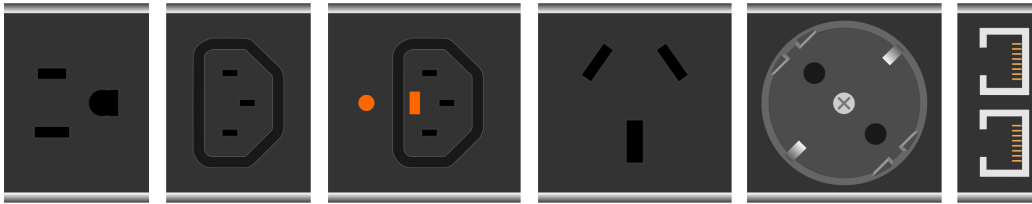
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Surge Protective Device

FAQ & Help (2/2)

9. How can I customize other products of 19" rack?
In addition to Ethernet Surge Protector, there is 19-inch Rack Power Distribution Unit (PDU).
Modular design allows you to customize the plug-in modules to fit your needs, 19-inch standard dimension or other custom-sized dimensions maximize the ease of use and maintenance.

Click the blue button "Customize your PDU" to start

Customize your PDU

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Surge Protective Device

Download WatchfulEyE Official App

To learn about more products and updates from company, please scan QR code to download the official App:

After-sale Services

Watchful Eye provides a 5-year quality warranty globally.

I have a question