

1 Product Description

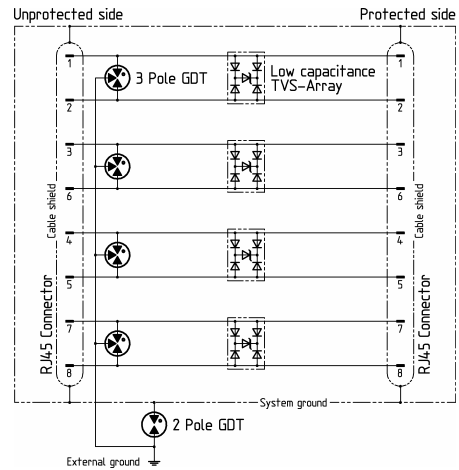
This HUBER+SUHNER data line protector has been designed to protect sensitive system components against damaging transients caused by natural events such as lightning or man made surges. The protector has been optimized to provide high speed data transmission, with bandwidth up to Class D acc. to ISO/IEC 11801:2002. Interconnection is via the industrial standard RJ45 connector, and the device is suitable for screened (STP) or unshielded (UTP) twisted pair cables. The protector is suitable for use with Power over Ethernet (PoE acc. IEEE 802.3af).

The protector's IP 68 rating and robust construction makes it ideally suited for use within outdoor applications or other hostile environments.

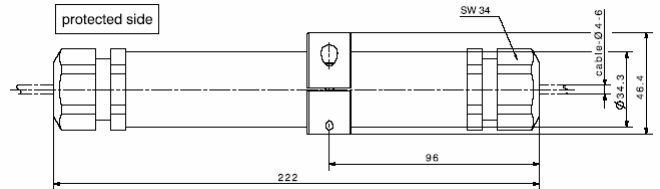
2 Technical Data

Main path connectors	RJ45 jack (female) - RJ45 jack (female) (unprotected side – protected side)	
Mounting	via mounting bracket	
Grounding	via mounting bracket or grounding screw M6 (cable shoe eye > 6.5mm)	
Data transmission rate	1000 Mbps	
Frequency range	DC - 100 MHz	
Impedance	100 Ω	
Voltage rating	line - line (pair)	± 6 V
	line - ground	± 60 V
Current rating	per line	1.5 A
Response time	2 ns	
Surge current handling capability acc. to IEC 61000-4-5 (8/20 μs test pulse)	line - line (pair)	0.1 kA
	line - ground	2.5 kA
	screen - ground	6 kA
Cable category	acc. to ISO/IEC 11801:2002 class D specified (up to CAT-5e system)	
Operating temperature	-40 °C to +85 °C	
Waterproof degree	IP 68 (according to IEC 60529, data refer to the coupled state)	
Weight	330 g	

Circuit diagram



Outline drawing



data line protector (item 1), dimensions in mm

The HUBER+SUHNER data line protector is designed to meet the above technical specifications when correctly installed. Any additional or different requirements arising from specific customer applications, or environmental conditions not covered by the above are subject to request.

3 Safety Instructions

The protector must be installed by a qualified installer in accordance with the relevant national installation and safety rules. Its usage is only permitted under the conditions stated and shown in this instruction.

The data line protector and the equipment connected to it can be destroyed by EM surges exceeding the given specification, e.g. due to a direct lightning strike.

The operational voltage of the system/equipment to be protected must not exceed the maximum permissible operating voltage (rated voltage) of the data line protector.

Warning: Never install the protector during a lightning storm!

Disconnect or switch off inline equipment when installing or removing the protector. Never open the protector! Opening the data line protector will void the warranty and may result in the accidental destruction of electronic components.

4 Grounding

The protector has to be grounded properly to ensure that the specified protection performance is met. This can be achieved by screw mounting the bracket to a grounded metal plate or by connecting a grounding cable from the grounding facility directly to the grounding screw of the protector.

Recommendation: use a sufficiently sized grounding cable (min. 16 mm² / AWG 6) as short distant as possible (max. 0.5 m).

5 Maintenance

The data line protector is maintenance-free provided that it is properly installed, grounded and operated in compliance with its specifications.

6 General Information

The effective surge protection of a system can only be achieved if all relevant elements and pass through metal lines are properly bonded to ground with active lines using surge arresters.

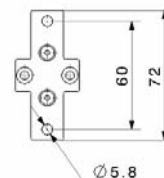
7 Bill of Material and Recommended Installation Tools



Item	Quantity	Description
1	1	Data line protector
2	1	Mounting bracket, dimensions see drawing below
3	2	Screw for bracket mounting
4	2	Screw with anchor, diameter: 6 mm, length: 29 mm
5	1	Worm gear clamp, diameter range: 29 to 72 in mm

Tool	Size	To use with item
Allen key	2.5 mm	3, bracket mounting
Screw driver, recessed	1	4, wall mounting
Drill	6 mm	4, anchor wall mounting
Screw driver	5 mm	5, worm gear clamp tightening
Screw wrench	8 mm	5, worm gear clamp tightening
Screw wrench	34 mm	1, gland nut

Outline drawing



mounting bracket (item 2), dimensions in mm



8 Mounting Instruction

8.1 Mounting proposition

There are two mounting and grounding options available, wall and mast/pole, see below for details:



a) wall mounting

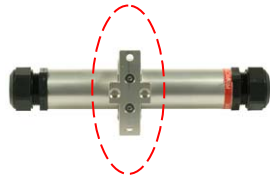


b) mast mounting

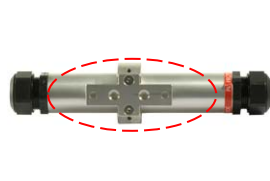
Action: Make your choice for the most convenient use.

8.2 Preparation of the mounting support

The bracket has to be fixed according to the mounting propositions. It can be attached in two ways:



a) for wall mounting (lateral alignment)



b) for mast mounting (longitudinal alignment)

Action: Fix the bracket (item 2) to the protector (item 1) with the two screws (item 3).



The cable has to be put inside the sealing.



Action: Assemble data cable, gland nut and sealing.

Note: Max. cable diameter is 6.0 mm and the min. diameter is 4.0 mm.
Note: The sealing has a longitudinal cut to push it around the cable.

Insert both connectors as details below, ensuring the cable from the equipment to be protected is plugged into the port marked protected side (See protector alignment: protected/unprotected side).



Action: Plug-in the data line connector and insert the sealing.



Action: Tighten the gland nut so far down in order to build a swelling of the rubber.

Note: Tighten the gland nut so far down to the sealing insert in order to build a swelling of the rubber between the nut and the cable.



8.3 Protector alignment, mounting and grounding

The protector is configured with a protected and an unprotected side. It has to be aligned according to the protection concept for the proper functionality.

Note: The protector is marked with a manufacturer's label showing the protected side, a red adhesive label **PROTECTED SIDE** at the appropriate end.

Action: Align the protector to the correct orientation.

The protector has to be mounted in the correct position and properly grounded.

Action: Mount the protector in the correct position:

- a) for wall mounting:
fix the protector with two screws (item 4) with plastic anchors
- b) for mast mounting:
fix the protector with a worm gear clamps (item 5)

and ground the protector with a grounding cable. Clamp a eyed cable shoe (eye diam. > 6.5 mm to the screw on the ring bracket.

Note: Clamping range diameter: 29 mm to 72 mm.

Important note: A proper grounding is essential to ensure the specified protection performance!
Use a sufficiently sized grounding cable (min. 16 mm² / AWG 6) as short distant as possible (max. 0.5 m) to the grounding facility.

8.4 Protector and data line cables preparation and connecting

The protector has to be opened to plug the data line cables. Both cable entries are of a similar design, repeat the assembly process for both connections.



Action: Disassemble both cable glands, keep the piece parts ready, and dispose the sealing bungs which are used to seal the unit prior to connection of the cables.

Important note: The sealing bungs should not be removed until the cables are ready for connection!



Important note: For a proper sealing it is essential that the nut is correctly tightened. There are two critical cases of incorrect mounting: too little tightened and too much tightened!

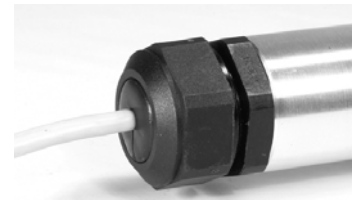
Incorrect!

Too loosely tightened!
No swelling of the rubber.



Correct!

A slight swelling of the rubber.



Incorrect!

Too tightly tightened!
Swelling of the rubber is too big!



HUBER+SUHNER is certified according to ISO 9001 and ISO 14001

WAIVER!
It is exclusively in written agreements that we provide our customers with warrants and representations as to the technical contained specifications and/or the fitness for any particular purpose. The facts and figures herein are carefully compiled to the best of our knowledge, but they are intended for general informational purposes only.

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