Installation Instruction

TSJ DIN-Rail Series

Surge Protective Devices

These UL497B certified SPDs are compact, high performance surge protection solutions for DC power, RS-422/RS-485 serial data, 4-20mA sense loops, SCADA systems, security & alarm panels and other critical equipment in industrial environments. Damaging overvoltage transients can result from:

– Direct and indirect lightning strikes
– Power company load switching
– Motor/Generator switching

FEATURES

- Certified to UL497B
- Hybrid SASD, GDT protection technology
- Replaceable surge modules, signal transmission not interrupted when exchanging modules
- Standard DIN-Rail mounting and earthing
- Earthing through metallic DIN Rail
- Nominal surge rating 10kA 8/20μs
- Compact 12mm width

PRODUCT SPECIFICATIONS

Model No.	TSJ
Connection Type	Connected in series
Ports	2 Port SPDs
Protection Line	1 or 2 pairs
Nominal Discharge Current (In)	10 kA (8/20 μs)
Max Discharge Current (Imax)	20 kA (8/20 μs)
Lightning Impulse Current (Iimp)	2.5 kA (10/350 μs)
Protection Modes	L-G, L-L S-G (P1 models)
Nominal Current (IL)	1A
Location	Indoor
Enclosure Ratings	IP20, UL94 V0
Wiring Connections	#15-21AWG (1.5 to 0.4 mm^2) Screw Terminals
Torque	4.425 in-lbs (0.5Nm)
Environmental Ratings	Temperature –40℃ to +85℃, Humidity relative 5~95% (25℃), Altitude ≤ 2km
Storage	Temperature 0℃～+45℃, Humidity relative ≤ 75% (25℃)
Dimensions, W x D x H	3.54” [90] x .47” [12] x 2.64” [67]
Applicable Standards	UL497B IEC/EN 61643-21
Approvals, Certifications	UL/CE

WARNING !

Select the proper TRANSTECTOR SPD unit according to the location, signal type, signal level and the anticipated surge environment.

Prior to installing the SPD ensure that your facility’s electric power and data transmission system is properly installed and connected in accordance with all applicable national and local codes and safety procedure.

AVERTISSEMENT !

Sélectionnez l'unité TRANSTECTOR SPD appropriée en fonction de l'emplacement, du type de signal, du niveau du signal et de l'environnement de surtension prévu.

Avant d'installer le SPD, assurez-vous que le système d'alimentation électrique et de transmission de données de votre installation est correctement installé et connecté conformément à tous les codes nationaux et locaux applicables et à la sécurité.

Installation Instruction

INSTALLATION

Before making connections to the unit, verify that the unit model number and nameplate voltage/current rating are appropriate for connection to the intended data or MSR system.

MOUNTING

- These TSJ series SPDs are mounted on DIN rail (35mm, To DIN EN 60715) in a cabinet or enclosure to protect the measuring and control equipment that is usually located in a control or equipment room.

WIRING

- This unit is connected in series to the protected circuit/equipment.
- It is critical that the line and equipment sides are not interchangeable, and severe damage could occur to the data line device if incorrectly wired. The out (equipment) terminal should be connected to the protected circuit/equipment (please see Fig.1)

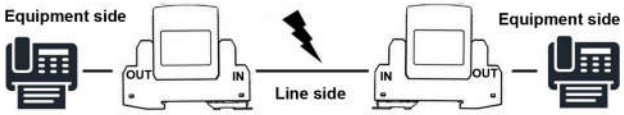

Fig 1: Connection of TSJ series

- Place the unit as close as possible to the piece of equipment that is being protected. For best performance, the length of the wiring to the surge protective device (SPD) unit should be less than 10m or 30ft.

A) Line type: 1 pair or two-wire

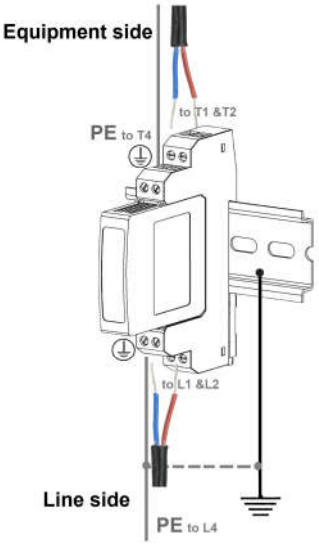

Fig 2: Diagram of 2 wires wiring

B) Line type: 1 pair or two-wire with shield

1. The method of grounding for shield should be in accordance with the guidance provided by the system manufacturer.
2. Direct earthing the shield at one end and indirect earthing the shield at another end is recommended in most cases when trying to avoid the disadvantages of forming an earth loop in the case of shields earthed at both ends.
3. Direct shield earthing (L4/T4 of SPD is connected to shield) or indirect shield earthing (L3/T3 of SPD is connected to shield).

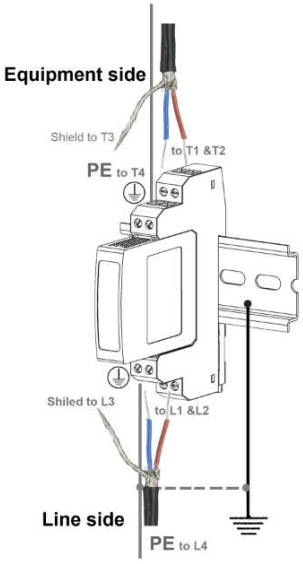

Fig 3: Diagram of 2 wires with indirect shield earthing wiring

Installation Instruction

C) Line type: 2 pair or four-wire

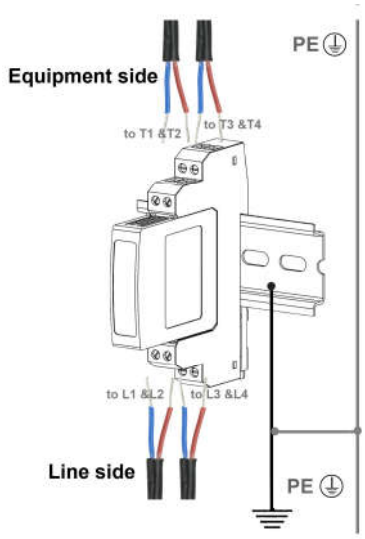

Fig 4: Diagram of 4 wires wiring

- Each SPD terminal is designed to accept wire sizes from 0.4 mm^2 to 1.5 mm^2 (#21-#15AWG). Insulation should be stripped back 0.5 mm (0.2 in) before terminating into tunnel terminal （Fig. 5）.
- Do not use excessive force when tightening the terminal. (0.5 N-m or 4.425 in-lbs is recommended.)
- Protected and unprotected cables must be kept well apart to limit coupling.

Correct	Incorrect
	 Insulation not cut back enough
	 Insulation cut back too far

Fig 5: Tightening the terminal

EARTHING

- For proper operation, all surge devices rely upon a good earth connection. Earthing of this unit can be through metallic DIN Rail.
- Earth connections from the DIN Rail to earth link MUST be as short as possible (should be less than 500mm) and have a cross-sectional area of at least 2.5 mm^2(or follow local codes).
- Extra cable must not be looped.

TROUBLESHOOTING

If the communication is off after SPD installation, check all connections and voltages/current to the unit. If all connections are made and reliable, and proper signal voltages/current are supplied to the unit, please contact www.transtector.com.

SURGE MODULE REPLACEMENT

This unit does not adversely affect the performance or operation of the loop or combined equipment during operation. The device allows signals to pass with very little attenuation while diverting surge currents safely to the ground and clamping output voltages to safe levels.

- Once the communication is off, please check /replace the DM modules.
- Signal transmission is not interrupted when exchanging module
- Do not Megger/Hi-Pot test cabling with unit connected – UNIT MAY BE DAMAGED.

REGULATORY NOTE

This instruction is not comprehensive. User must follow established safety precautions for working in an electrical environment. For more information on safety precautions and procedures, please find from related organizations as below.

- *Underwriters Laboratories(UL)*
- *American National Standards Association(ANSI)*
- *Institute of Electrical and Electronics Engineers (IEEE).*
- *International Electrotechnical Commission(IEC)*
- *National Fire Protection Association (NFPA)*
- *National Electrical Mfgrs. Association(NEMA)*