



> PROTECTION OF POWER SUPPLY LINES

> ATSHIELD SERIES

> ATSHIELD TT

Combined technology against direct lightning strikes



- > **AT-8616 ATSHIELD TT 400T:** protection of both phase and neutral to ground for 400 V_{AC} three-phase lines
- > **AT-8617 ATSHIELD TT 230T:** protection of both phase and neutral to ground for 230 V_{AC} three-phase lines

Effective and compact protection against transient overvoltages for TT and TNS power supply systems, using an internal combination of gas discharge tubes and varistors.

This element is internally connected in such a way that no element in series with the line is needed for correct coordination of the protection. This protector combines the best qualities of the latest overvoltage protection technologies: the passing residual voltage of the varistors along with the gas discharge tube capacity to absorb lightning current. Tested and certified as a **type 1 and 2** protector according to the standard EN 61643-11 and GUÍA-BT-23 from the REBT. Suitable for **categories I, II, III and IV** equipment according to the REBT.

- > Can be coordinated with other ATSUB and ATCOVER series protectors.
- > Double connection in order to facilitate wiring (limited to 63 A).
- > Short response time.
- > Does not produce deflagration.
- > Multi-pole protection.
- > Their activation causes no interruption in power supply.
- > Compact protection.
- > Thermodynamic control device and visual alarm for each phase.

ATSHIELD series protectors have been tested in **official and independent laboratories**, obtaining their characteristics according to relevant standards (shown in the table).



Connection to earth is a must. Earthing in the whole installation must be bonded either directly or by a spark gap and resistance should be lower than 10 Ω . If the indications on this datasheet are not fulfilled during use or installation of the protectors, the protection provided by this device could be compromised.

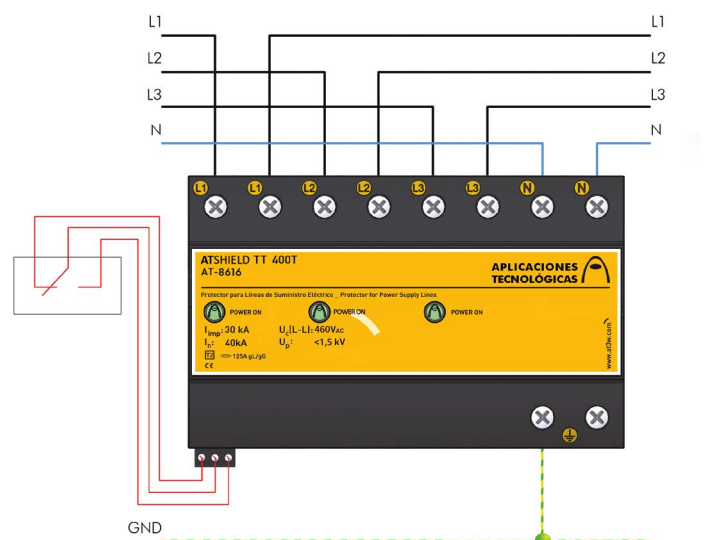
> INSTALLATION

ATSHIELD TT surge protection devices must be installed **in parallel** with the low voltage three-phase power supply line provided with a neutral. Installation should be carried out **without power running through the line**.

They can be installed as single protection or in combination with other protectors that leave less residual voltage, in which case they need to be separated by at least 10 metres of cable or, if this is not possible, by an ATLINK decoupling inductor, in order to achieve **correct coordination between them**.

Installation is recommended in distribution boards where the line enters the building or where large overvoltages can occur.

They are particularly recommended for places where direct lightning strikes can occur and when lines are connected to very sensitive equipment that cannot withstand large overvoltages.





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> TECHNICAL DATASHEET

Reference:		ATSHIELD TT 400T AT-8616	ATSHIELD TT 230T AT-8617
Protection categories according to the REBT:		I, II, III, IV	
Type of tests according to EN 61643-11:		Type 1 + 2	
Nominal voltage:	U_n	400 V _{AC} (L-L) 230 V _{AC} (L-N, L-GND)	230 V _{AC} (L-L) 130 V _{AC} (L-N, L-GND)
Maximum continuous operating voltage:	U_c	460 V _{AC} (L-L) 275 V _{AC} (L-N, L-GND)	275 V _{AC} (L-L) 150 V _{AC} (L-N, L-GND)
Nominal frequency:		50 - 60 Hz	
Impulse current per pole (10/350 µs wave):	I_{imp}	30 kA	
Specific energy:	W/R	224 kJ/Ω	
Nominal discharge current per pole (8/20 µs wave):	I_n	40 kA	
Maximum discharge current per pole (8/20 µs wave):	I_{max}	65 kA	
Protection level:	U_p	< 1500 V	
Follow current extinguishing capability:	I_f	50 kA _{eff}	
Response time:	t_r	< 100 ns	
Backup fuse ⁽¹⁾ :		125 A gL/gG	
Maximum short-circuit current:		25 kA (for maximum fuse)	
Working temperature:	θ	-40 °C to +70 °C	
Protector location:		Indoor	
Type of connection:		Parallel (one port)	
No. of poles:		4	
Dimensions:		144 x 90 x 80 mm (8 modules DIN 43880)	
Fixing:		DIN Rail	
Enclosure material:		Polyamide	
Enclosure protection:		IP20	
Insulation resistance:		> 10 ¹⁴ Ω	
Self-extinguishing enclosure:		V-0 Type according to UNE-EN 60707 (UL94)	
Connections L/N/G:		Min/Max multi-stranded section: 4 / 35 mm ² Min/Max single-stranded section: 1 / 35 mm ²	

Certificated tests according to: UNE-EN 61643-11

Complies with requirements of: UL 1449

Relevant standards: UNE 21186, NF C 17-102, IEC 62305

(1) Required in cases where there is higher nominal current installed upstream from the protector

> DIMENSIONS (MM)

