

AT82 Series

COMPACT PROTECTION FOR TT SINGLE PHASE POWER SUPPLY LINES



ATSUB-2P TT

- AT-8232 ATSUB-2P 15 TT: max discharge current of 15kA. 230V
- AT-8235 ATSUB-2P 40 TT: max discharge current of 40kA. 230V
- AT-8238 ATSUB-2P 65 TT: max discharge current of 65kA. 230V
- AT-8234 ATSUB-2P 15-120 TT: max discharge current of 15kA. 120V
- AT-8237 ATSUB-2P 40-120 TT: max discharge current of 40kA. 120V
- AT-8280 ATSUB-2P 65-120 TT: max discharge current of 65kA. 120V
- AT-8233 ATSUB-2P 15-400 TT: max discharge current of 15kA. 400V
- AT-8236 ATSUB-2P 40-400 TT: max discharge current of 40kA. 400V

ATSUB 2P - 40 - 400 TT

Max discharge current in kA Line-ground voltage

Efficient protection against transient overvoltages for electrical supply lines with neutral **type TT**, using a metal oxide varistors and gas discharge tubes. **Medium** protection according to coordinated stages protection recommended in Regulation of Low Voltages (RBT ITC23).

It's provided with removable cartridges that allows its replacement in case of fault thus without changing the base.

Tested and certified as **Type 1, 2 and 3** according to regulations EN 61643-11 and GUIDE-BT-23 from REBT. Suitable for **Categories I, II, III and IV** equipment according to ITC-BT-23.

- Coordinable with other SPDs such as ATSHOCK, ATSHIELD and ATCOVER series.
- Made up of zinc oxide varistors and gas discharge tubes able to withstand very high currents.
- Short response time.
- Don't produce deflagration.
- Compact protection with removable cartridges that allows its replacement in case of breakage.
- Their activation causes no interruption in power supply.
- Thermodynamic control device, mechanical warning and remote alarm.

When the warning is yellow the enclosure is in good shape. If not, replace.

AT82P Series SPDs have been tested in **official and independent laboratories**, obtaining their characteristics according to relevant standards (shown in the table).

There exists the possibility of selecting a protector for the working voltage in each particular case. In the technical datasheet, we have included as common examples the optimal SPDs for **wind generators** (Line-to-Line voltage of 690V and Line-to-Ground voltage of 400V) and **equipments using voltages common in the American continent** (230V L-L and 120V L-G).

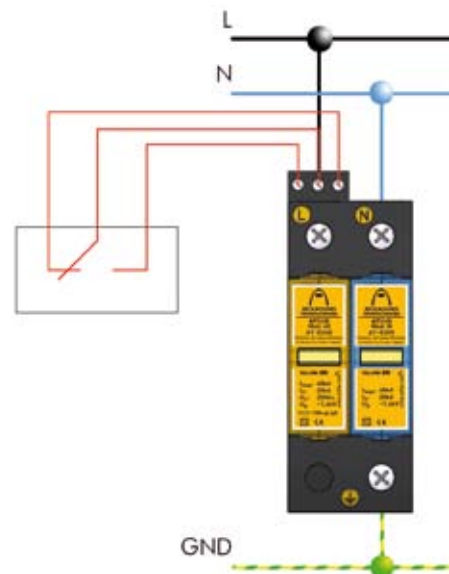
Installation

They are installed **in parallel** with the low voltage line, with connections to the phase that is to be protected to neutral and/or ground.

The **power should be disconnected** during the installation of the SPD.

When ATSUB are installed as middle protection, they must be separated by at least 10 meter cable or, if this is not possible, by a decoupling inductor ATLINK, in order to achieve **a correct coordination** between them.

Their installation is recommended in places where important overvoltages can occur and when lines are connected to very sensitive equipment that can not withstand big overvoltages.



⚠ Earth connection is a must. Earthing in all the installation must be bonded either directly or by a spark gap and resistance should be lower than 10Ω. If the indications of this datasheet are not fulfilled during the use or installation of the SPDs, the protection assured by this device could be endangered.

AT82 Series

Technical Datasheet

| Reference | | ATSUB-2P 15 TT AT-8232 | ATSUB-2P 40 TT AT-8235 | ATSUB-2P 65 TT AT-8238 |
|---|-------------|--|---|---------------------------|
| Protection categories according to REBT: | | I, II, III, IV | | II, III, IV |
| Type of tests according to EN 61643-11: | | Type 2 + 3 | Type 2 | Type 1 + 2 |
| Nominal voltage: | U_n | | 230V _{AC} | |
| Maximum working voltage: | U_c | | 255V _{AC} | |
| Nominal frequency: | | | 50 - 60Hz | |
| Nominal discharge current (wave 8/20μs): | I_n | 5kA | 20kA | 30kA |
| Maximum discharge current (8/20μs wave): | I_{max} | 15kA | 40kA | 65kA |
| Protection level at I_n (8/20μs wave): | $U_p(I_n)$ | 1200V | 1400V | 1600V |
| Protection level (1,2/50μs): | U_p | 700V | 700V | 900V |
| Protection level for 5kA 8/20μs: | | 900V | 1000V | 1100V |
| Impulse current (10/350μs wave): | I_{imp} | | - | 15kA |
| Combined wave tension: | $U_{o.c.}$ | 6kV | | - |
| Response time: | t_r | | < 25ns | |
| Backup fuse ⁽¹⁾ : | | | 125A gL/gG | |
| Maximum short-circuit current: | | | 25kA (for maximum fuse) | |
| Working temperature: | ϑ | | -40°C to +70°C | |
| SPD location: | | | Indoor | |
| Type of connection: | | | Parallel (one port) | |
| Number of poles: | | | 2 | |
| Dimensions: | | | 36 x 90 x 80mm (2 mod. DIN43880) | |
| Fixing: | | | DIN rail | |
| Enclosure material: | | | Polyamide | |
| Enclosure protection: | | | IP20 | |
| Insulation resistance: | | | > 10 ¹⁴ Ω | |
| Autoextinguish enclosure: | | | V-0 Type according to UNE-EN 60707 (UL94) | |
| Connections L/N/GND: | | | Min/Max section multi-stranded: 4 / 35 mm ² (11/2 AWG) Min/Max section single-stranded: 1 / 35 mm ² (17/2 AWG) | |
| Voltage-free contact for the remote control | | | | |
| Connection: | | Maximum section single-stranded / multi-stranded: 1,5mm ² | | |
| Contact output: | | Commutated | | |
| Working voltage: | | 250V _{AC} (Maximum working voltage of the alarm supply) | | |
| Maximum current: | | 2A (Maximum current of the alarm supply) | | |
| Certificated tests according to: IEC 61643-1, EN 61643-11 | | | | |
| Complies with requirements of: UL 1449 | | | | |
| Relevant standards: UNE 21186, NFC 17102, IEC 62305 | | | | |

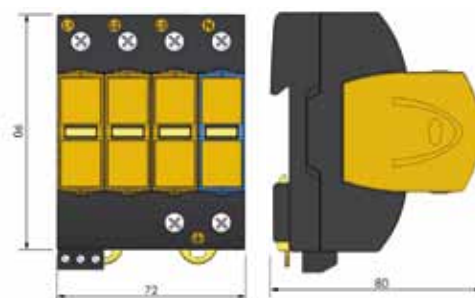
(1) Needed in cases where there is higher nominal current installed "upstream" from the protector.

Accessories



- AT-8248 ATSUB Mod. 40: I_{max} 40kA
- AT-8228 ATSUB Mod. 15: I_{max} 15kA
- AT-8268 ATSUB Mod. 65: I_{max} 65kA
- AT-8205 ATSUB Mod. N: neutral-earth

Dimensions



AT82 Series

Technical Datasheet

| Reference | | ATSUB-2P 15-400 TT AT-8233 | ATSUB-2P 40-400 TT AT-8236 |
|---|------------|--|---|
| Protection categories according to REBT: | | | I, II, III, IV |
| Type of tests according to EN 61643-11: | | Type 2 + 3 | Type 2 |
| Nominal voltage: | U_n | | 400V _{AC} |
| Maximum working voltage: | U_c | | 460V _{AC} |
| Nominal frequency: | | | 50 - 60Hz |
| Nominal discharge current (wave 8/20μs): | I_n | 5kA | 20kA |
| Maximum discharge current (8/20μs wave): | I_{max} | 15kA | 40kA |
| Protection level at I_n (8/20μs wave): | $U_p(I_n)$ | 2100V | 2300V |
| Protection level (1,2/50μs): | U_p | 1800V | 1800V |
| Protection level for 5kA 8/20μs: | | 1900V | 2000V |
| Combined wave tension: | $U_{o.c.}$ | 6kV | - |
| Response time: | t_r | | < 25ns |
| Backup fuse ⁽¹⁾ : | | | 125A gL/gG |
| Maximum short-circuit current: | | | 25kA (for maximum fuse) |
| Working temperature: | θ | | -40°C to +70°C |
| SPD location: | | | Indoor |
| Type of connection: | | | Parallel (one port) |
| Number of poles: | | | 2 |
| Dimensions: | | | 36 x 90 x 80mm (2 mod. DIN43880) |
| Fixing: | | | DIN rail |
| Enclosure material: | | | Polyamide |
| Enclosure protection: | | | IP20 |
| Insulation resistance: | | | > 10 ¹⁴ Ω |
| Autoextinguish enclosure: | | | V-0 Type according to UNE-EN 60707 (UL94) |
| Connections L/N/GND: | | | Min/Max section multi-stranded: 4 / 35 mm ² (11/2 AWG) Min/Max section single-stranded: 1 / 35 mm ² (17/2 AWG) |
| Voltage-free contact for the remote control | | | |
| Connection: | | Maximum section single-stranded / multi-stranded: 1,5mm ² | |
| Contact output: | | Commutated | |
| Working voltage: | | 250V _{AC} (Maximum working voltage of the alarm supply) | |
| Maximum current: | | 2A (Maximum current of the alarm supply) | |
| Certificated tests according to: IEC 61643-1, EN 61643-11 | | | |
| Complies with requirements of: UL 1449 | | | |
| Relevant standards: UNE 21186, NFC 17102, IEC 62305 | | | |

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

Accessories

For other voltages,
ask Aplicaciones
Tecnologicas, S.A.
technical department.



- AT-8249 ATSUB Mod. 40-400: I_{max} 40kA / U_n 400V
- AT-8229 ATSUB Mod. 15-400: I_{max} 15kA / U_n 400V
- AT-8205 ATSUB Mod. N: neutral-earth