

PV ADVANCE combined lightning and surge arrester for photovoltaic systems up to 1000 Vdc



Specifications:

System volts

Up to 1000 Vdc

Agency information

- CE
- · RoHS compliant

Mounting

• 35 mm DIN-Rail

Warranty

· Five years

Catalog symbol:

• BSPS31000PV

Description:

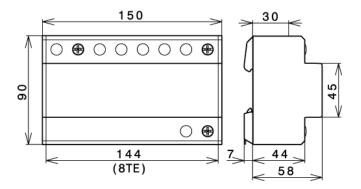
Eaton's Bussmann™ series combined lightning current and surge arrester (SPD Class I according to IEC 61643-11) is for use in photovoltaic power supply systems.

The pre-wired unit combines lightning current and surge arrester for use in photovoltaic generator circuits up to 1000 V UCPV.

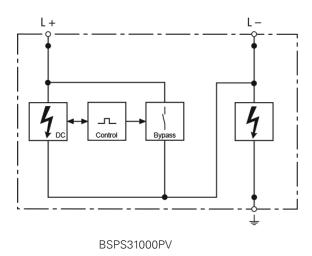
The high lightning current discharge capacity, using spark gap technology, maximizes system availability with DC current extinction.



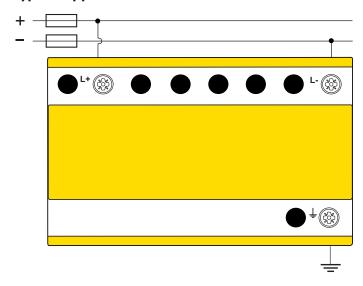
Dimensions - mm:



Arrester circuit diagrams:



Typical application schematic:



Ordering information:

SPD Classification according to EN 61643-11 Type 1 Max. PV voltage [UC _{PV}] of the PV generator 1000 V Continuous operating DC voltage Max. [U _{max} DC] 1000 V Follow current extinguishing capability DC [I _{I_I} DC] 100 A Nominal discharge current (8/20µs) [I _{I_I}] 100 kA Lightning impulse current (10/350 µs) [L+/L> PE] [I _{Imp}] 50 kA Specific energy [L+/L> PE] [W/R] 625.00 kJ/ohms Lightning impulse current (10/350 µs) [L+-> L-] [I _{Imp}] 25 kA Specific energy [L+-> L-] [W/R] 156.25 kJ/ohms Voltage protection level [L+-> L-] [U _m] ≤3.3 kV Operating current [I _{I_I} DC] ≤5 mA Response time [L+-> L-] [I _A] ≤5 mA Response time [L+-> L-] [I _A] ≤20 ns Protective conductor current [I _{I_I}] ≤1 µA Operating temperature range [T _u] 40°C to +60°C Number of ports 1 Min 10 mm²/2 AWG stranded/ 35 mm²/1 AWG flexible <th>Max. PV system voltage</th> <th></th> <th>1000 Vdc</th>	Max. PV system voltage		1000 Vdc
SPD Classification according to EN 61643-11 IEC 61643-11 Class I Type 1 Max. PV voltage [UC _{PV}] of the PV generator 1000 V Continuous operating DC voltage Max. [U _{max} DC] 1000 V Follow current extinguishing capability DC [I _{II} DC] 100 A Nominal discharge current (8/20µs) [I _{II}] 100 kA Lightning impulse current (10/350 µs) [L+/L> PE] [I _{Imp}] 50 kA Specific energy [L+/L> PE] [W/R] 25 kA Specific energy [L+-> L-] [W/R] 156.25 kJ/ohms Voltage protection level [L+-> L-] [U _{II}]	Catalog number:		BSPS31000PV
SPD Classification according to IEC 61643-11 Class I Max. PV voltage [UC _{ry}] of the PV generator 1000 V Continuous operating DC voltage Max. U _{max} DC 1000 V Follow current extinguishing capability DC [I _n DC] 100 A Nominal discharge current (8/20μs) [I _n] 100 kA Lightning impulse current (10/350 μs) [L+/L> PE] [I _{lmp}] 50 kA Specific energy [L+/L> PE] [W/R] 625.00 kJ/ohms Lightning impulse current (10/350 μs) [L+ -> L-] [I _{lmp}] 25 kA Specific energy [L+ -> L-] [W/R] 156.25 kJ/ohms Voltage protection level [L+ -> L-] [U _p] ≤3 kV Operating current [I _{I_I} DC] ≤5 mA Response time [L+ -> L-] [t _A] ≤20 ns Protective conductor current [I _{Ipc}] ≤1 μA Operating temperature range [T _{I_I}] ≤1 μA Operating temperature range [T _{I_I}] ≤1 μA Operating temperature range [T _I] 40°C to +60°C Number of ports 1 Cross-sectional area Min 10 mm²/6 AWG solid/flexible Mounting 35 mm DiN rail per EN 60715 Enclosure mate	Specifications		
Max. PV voltage [UC _{PV}] of the PV generator 1000 V Continuous operating DC voltage Max. [U _{max} DC] 1000 V Follow current extinguishing capability DC [I _{I_I} DC] 100 A Nominal discharge current (8/20μs) [I _{I_I}] 100 kA Lightning impulse current (10/350 μs) [L+/L> PE] [I _{Impl}] 50 kA Specific energy [L+/L> PE] [W/R] 25 kA Lightning impulse current (10/350 μs) [L+ -> L-] [I _{Impl}] 25 kA Specific energy [L+ -> L-] [W/R] 156.25 kJ/ohms Voltage protection level [L+ -> L-] [U _D] ≤3.3 kV Operating current [I _{IN} DC] ≤5 mA Response time [L+ -> L-] [t _A] ≤20 ns Protective conductor current [I _{IPE}] ≤1 μA Operating temperature range [T _D] <1 μA	SPD Classification according to	EN 61643-11	Type 1
Continuous operating DC voltage Max. [U _{max} DC] 1000 V Follow current extinguishing capability DC [I _{In} DC] 100 A Nominal discharge current (8/20μs) [I _{In}] 100 kA Lightning impulse current (10/350 μs) [L+/L> PE] [I _{Imp}] 50 kA Specific energy [L+/L-> PE] [W/R] 625.00 kJ/ohms Lightning impulse current (10/350 μs) [L+-> L-] [I _{Imp}] 25 kA Specific energy [L+-> L-] [W/R] 156.25 kJ/ohms Voltage protection level [L+-> L-] [U _{In}] ≤3.3 kV Operating current [I _{In} DC] ≤5 mA Response time [L+-> L-] [t _{In}] ≤20 ns Protective conductor current [I _{IR}] ≤1 μA Operating temperature range [T _{II}] ≤5 mm Pil range [T _{II}]		IEC 61643-11	Class I
Min. Umin DC 100 V	Max. PV voltage $[UC_{PV}]$ of the PV generator		1000 V
Min. Umin. DC 100 V	Continuous operating DC voltage	Max. [U _{max} DC]	1000 V
Nominal discharge current (8/20μs) [I _m] 100 kA Lightning impulse current (10/350 μs) [L+/L> PE] [I _{mp}] 50 kA Specific energy [L+/L> PE] [W/R] 625.00 kJ/ohms Lightning impulse current (10/350 μs) [L+-> L-] [I _{mp}] 25 kA Specific energy [L+-> L-] [W/R] 156.25 kJ/ohms (L+-> L-] [W/R] ≤3.3 kV (L+-> L-] [W/R] ≤3.3 kV (L+-> L-] [I _m] ≤5 mA Response time [L+-> L-] [I _m] ≤5 mA Response time [L+-> L-] [I _m] ≤20 ns Protective conductor current [I _{PE}] ≤1 μA Operating temperature range [T _m] 40°C to +60°C Number of ports 1 (Toss-sectional area Min 10 mm²/6 AWG solid/flexible Mounting 35 mm DIN rail per EN 60715 Enclosure material Thermoplastic, UL 94V0 Place of installation Indoor		Min. [U _{min} DC]	100 V
Lightning impulse current (10/350 μs) [L+/L-→ PE] [I _{Imp}] 50 kA Specific energy [L+/L-→ PE] [W/R] 625.00 kJ/ohms Lightning impulse current (10/350 μs) [L+→ L-] [I _{Imp}] 25 kA Specific energy [L+→ L-] [W/R] 156.25 kJ/ohms Voltage protection level [L+→ L-] [U _p] ≤3.3 kV (L+/L-)→ PE] [U _p] ≤4 kV Operating current [I _{IN} DC] ≤5 mA Response time [L+→ L-] [t _A] ≤20 ns Protective conductor current [I _{Pc}] ≤1 μA Operating temperature range [T _u] -40°C to +60°C Number of ports 1 Cross-sectional area Min	9 9 1 7 1		100 A
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Nominal discharge current (8/20µs) [In]		100 kA
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	· · · · · · · · · · · · · · · · ·		50 kA
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Specific energy [L+/L> PE] [W/R]		625.00 kJ/ohms
$\begin{tabular}{ l l l l l l l l l l l l l l l l l l l$	Lightning impulse current (10/350 µs) [L+ -> L-] [I _{imp}]		25 kA
Voltage protection level $\frac{ (L+/L-) - PE }{ (L+/L-) - PE } = \frac{4 \text{ kV}}{ (L+/L-) - PE }$ Operating current $[I]_N$ DC] $≤5 \text{ mA}$ Response time $[L+->L-]$ $[t_A]$ $≤20 \text{ ns}$ Protective conductor current $[I]_{PE}$ $≤1 \text{ μA}$ Operating temperature range $[T_u]$ -40°C to $+60^{\circ}\text{C}$ Number of ports 1 Cross-sectional area $\frac{\text{Min}}{\text{Max}} = \frac{10 \text{ mm}^2/6 \text{ AWG solid/flexible}}{\text{Max}}$ Mounting $35 \text{ mm DIN rail per EN 60715}$ Enclosure material 1 modor Place of installation 1 Indoor	Specific energy [L+ -> L-] [W/R]		156.25 kJ/ohms
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Voltage protection level	$[L+ -> L-] [U_p]$	≤3.3 kV
Response time $[L+ \rightarrow L-]$ $[t_A]$ ≤ 20 ns Protective conductor current $[t_{PE}]$ ≤ 1 μA Operating temperature range $[T_{\mu}]$ $\leq 40^{\circ}C$ to $+60^{\circ}C$ Number of ports 1 Cross-sectional area $\frac{Min}{Max}$ 10 mm²/6 AWG solid/flexible $\frac{Month Max}{Max}$ 50 mm²/2 AWG stranded/ 35 mm²/1 AWG flexible $\frac{Month Mounting}{Mounting}$ 35 mm DIN rail per EN 60715 Enclosure material $\frac{Month Month Month Max}{Mounting}$ 10 modor		[(L+/L-) -> PE] [U _p]	≤4 kV
Protective conductor current [I] _{PE}] ≤1 μA Operating temperature range [T] -40°C to +60°C Number of ports 1 Cross-sectional area Min 10 mm²/6 AWG solid/flexible Max. 50 mm²/2 AWG stranded/ 35 mm²/1 AWG flexible Mounting 35 mm DIN rail per EN 60715 Enclosure material Thermoplastic, UL 94V0 Place of installation Indoor	Operating current [I _{IN} DC]		≤5 mA
Operating temperature range [T _u] -40°C to +60°C Number of ports 1 Cross-sectional area Min 10 mm²/6 AWG solid/flexible Max. 50 mm²/2 AWG stranded/ 35 mm²/1 AWG flexible Mounting 35 mm DIN rail per EN 60715 Enclosure material Thermoplastic, UL 94V0 Place of installation Indoor	Response time [L+ -> L-] [t _A]		≤20 ns
Number of ports 1 Cross-sectional area Min 10 mm²/6 AWG solid/flexible Mounting 50 mm²/2 AWG stranded/ 35 mm²/1 AWG flexible Mounting 35 mm DIN rail per EN 60715 Enclosure material Thermoplastic, UL 94V0 Place of installation Indoor	Protective conductor current [I _{PE}]		≤1 µA
Min 10 mm²/6 AWG solid/flexible Cross-sectional area Min 10 mm²/6 AWG solid/flexible Max. 50 mm²/2 AWG stranded/ 35 mm²/1 AWG flexible 35 mm DIN rail per EN 60715 Thermoplastic, UL 94V0 Place of installation Indoor	Operating temperature range [T _u]		-40°C to +60°C
Cross-sectional area Max. 50 mm²/2 AWG stranded/ 35 mm²/1 AWG flexible Mounting 35 mm DIN rail per EN 60715 Enclosure material Thermoplastic, UL 94V0 Place of installation Indoor	Number of ports		1
Max. 50 mm²/2 AWG stranded/ 35 mm²/1 AWG flexible Mounting 35 mm DIN rail per EN 60715 Enclosure material Thermoplastic, UL 94V0 Place of installation Indoor	Cross-sectional area	Min	10 mm²/6 AWG solid/flexible
Enclosure material Thermoplastic, UL 94V0 Place of installation Indoor		Max.	50 mm ² /2 AWG stranded/ 35 mm ² /1 AWG flexible
Place of installation Indoor	Mounting		35 mm DIN rail per EN 60715
	Enclosure material		Thermoplastic, UL 94V0
Degree of protection IP20	Place of installation		Indoor
	Degree of protection		IP20
Capacity 8 Mods., DIN 4	Capacity		8 Mods., DIN 4
Product warranty Five years*	Product warranty		Five years*

^{*} See Eaton's Bussmann Division SPD limited warranty statement (3A1502) for details at www.cooperbussmann.com/surge.

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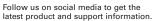
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