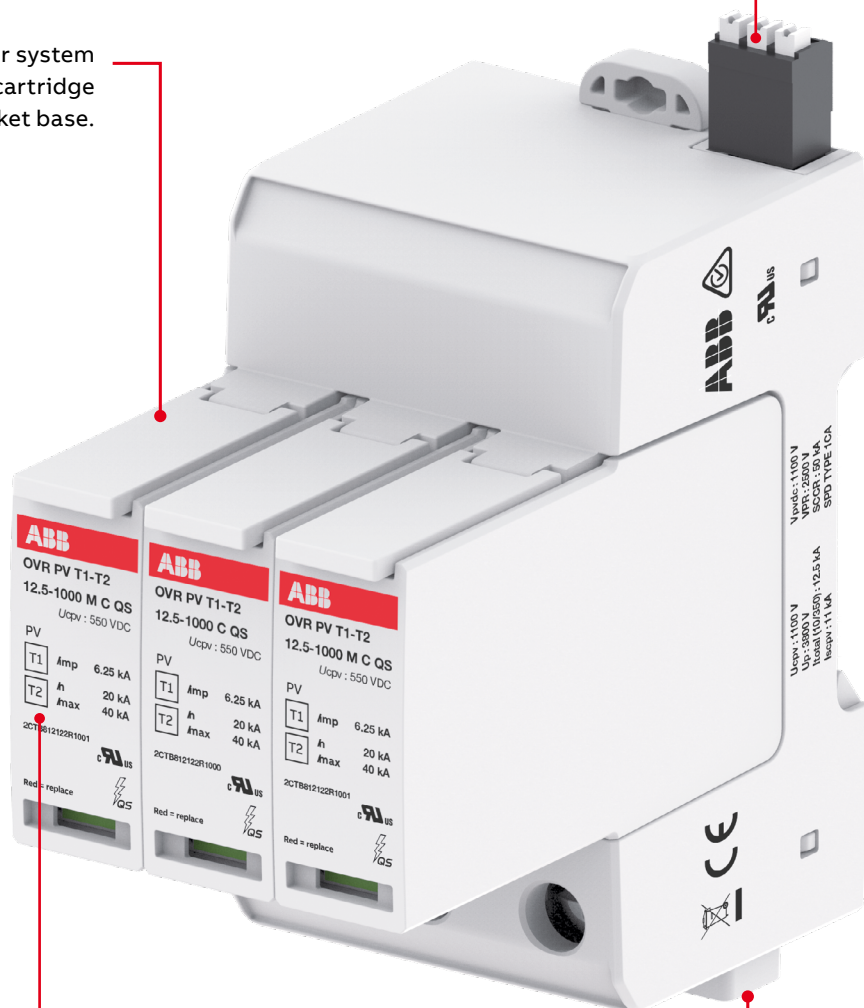


OVR PV T1-T2 QS and OVR PV T2 QS

Ranges for PV application

Cartridge locker system to enhance the cartridge fixation on socket base.

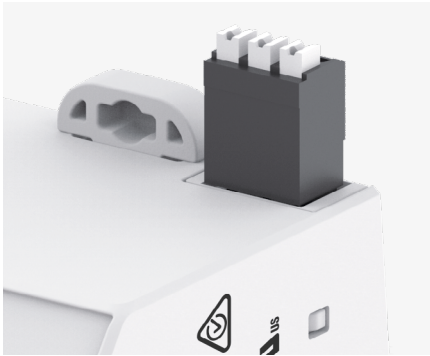
Removable auxiliary contact to monitor SPD end of life and plan maintenance operation



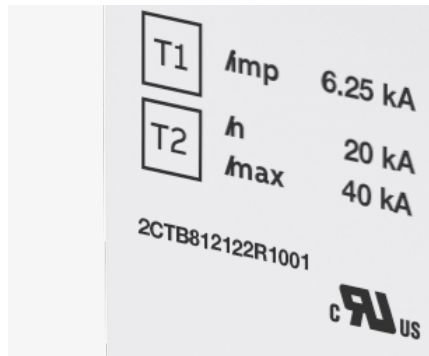
Classified as Type 1 and Type 2 SPD to cover all situation related to transient surges.

Bottom wiring with Chimney to reduce risks of arc ignition between terminals.

Main features



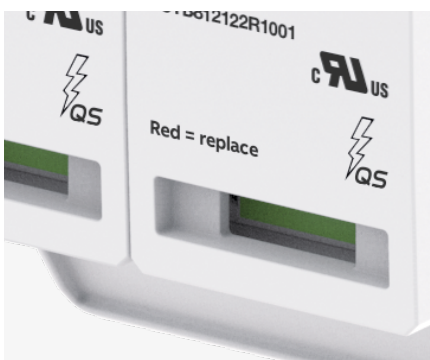
Pluggable cartridge allows to monitor the end of life status of the SPD by integration 1 Normally Open (NO) and 1 Normally Closed contact to be wired to monitoring system.



SPD Tested and classifies as Type 1 to deals with Surge 10/350µs wave form from direct lightning impact (Associated to external lightning protection) and also as Type 2 to limit the transient overvoltage at good enough values to protect end equipment.



The pluggable feature of ABB OVR PV T1-T2 and T2 surge protective devices (SPDs) facilitates maintenance. Should one or more worn cartridges need to be replaced, the electrical circuit does not have to be isolated nor do the wires have to be removed.



The end-of-life indicator of the SPD signals the status of the devices. A mechanical indicator turns from green to red when the SPD reaches the end of its life.



Terminal are located to the bottom of the SPD to avoid any condensation issue in the enclosure that could bring water stagnation and initiate arc ignition. Chimney enhance the dielectric distance for safer protection.



MOV varistors Y system specially designed to fit D.C photovoltaic application, bringing self-protected feature (no back-up needed) up to 11 kA PV short circuit current.

Technical features

Types		OVR PV T2 40-600 P QS	OVR PV T2 40-1000 P QS	OVR PV T2 40-1500 P QS
with auxiliary contact (TS)		OVR PV T2 40-600 P TS QS	OVR PV T2 40-1000 P TS QS	OVR PV T2 40-1500 P TS QS
Technology		Varistor	Varistor	Varistor
Electrical features				
Standard		IEC 61643-11/ EN 61643-11/ UL 1449 4th Ed	IEC 61643-11/ EN 61643-11/ UL 1449 4th Ed	IEC 61643-11/ EN 61643-11/ UL 1449 4th Ed
Type/test class		T2/II	T2/II	T2/II
Protected lines		2	2	4
Types of networks		Photovoltaic	Photovoltaic	Photovoltaic
Type of current		DC	DC	DC
Nominal voltage Un (L-N/L-L)		[V] 600	1000	1000
Max. cont. operating voltage Ucpv		[V] 600	1100	1100
Max.cont.operating voltage according UL (MCOV)		[V] 600	1100	1100
Impulse current Iimp (10/350)		2	-	2
Maximum discharge current I _{max} (8/20)		[kA] 40	40	40
Nominal discharge current I _n (8/20)		[kA] 20	20	10
Voltage protection level Up at In (L-L/L-PE)		[kV] 2.8/1.4	3.8/3.8	3.8/3.8
Voltage protection rating according UL (VPR (L+/G, L-/G, L+/L-))		[kV] 1.2/1.2/1.8	2.5/2.5/2.5	2.5/2.5/2.5
Response time		[ns] ≤ 25	≤ 25	≤ 25
Residual current IPE		[mA] ≤ 10	≤ 1000	≤ 1000
Short-circuit DC current I _{scpv}		[A] 300	10,000	10,000
Short circuit withstand according UL (S _{CCR})		[kA] 10	10	10
Disconnectors				
Fuse		no need up to 0.3 kA	no need up to 10 kA	no need up to 10 kA
Circuit breaker		no need up to 0.3 kA	no need up to 10 kA	no need up to 10 kA
Pluggable cartridge		Yes	Yes	Yes
Integrated specific thermal disconnectors		Yes	Yes	Yes
State indicator		Yes	Yes	Yes
Safety reserve		No	No	No
Auxiliary contact		Yes (TS option)	Yes (TS option)	Yes (TS option)
Installation				
Wire range (L, N, PE)				
Solid wire		[mm ²] 2.5...35	2.5...35	2.5...35
Stranded wire		[mm ²] 2.5...25	2.5...25	2.5...25
Stripping length (L, N, PE)		12.2	12.2	12.2
Tightening torque (L, N, PE)		2.5	2.5	2.5
Auxiliary contact (TS)				
Contact complement		1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC
Minimum load		12 V DC - 10 mA	12 V DC - 10 mA	12 V DC - 10 mA
Maximum load		250 V AC - 1 A	250 V AC - 1 A	250 V AC - 1 A
Connection cross-section		1.5	1.5	1.5
Miscellaneous characteristics				
Stocking and operating temperature		[°C] -40 to +80	-40 to +80	-40 to +80
Maximal Altitude		[m] 5000	5000	5000
Humidity Rate HR		95%	95%	95%
Degree of protection		IP20	IP20	IP20
Fire resistance according to UL 94		V0	V0	V0
Dimensions				
height x width x depth		[mm] 88 x 53.4 x 65	88 x 53.4 x 65	88 x 88,33 x 65
		[inches] 3.46 x 2.10 x 2.56	3.46 x 2.10 x 2.56	3.46 x 3,5 x 2.56
with auxiliary contact (TS)				
height x width x depth		[mm] 95 x 53.4 x 65	95 x 53.4 x 65	95 x 88,33 x 65
		[inches] 3.46 x 2.10 x 2.56	3.77 x 2.1 x 2.55	3.46 x 3,5 x 2.56
3.46 x 2.10 x 2.56				
Replacement Cartridges				
Phase Product ID		OVR PV T2 40-600 C QS 2CTB804153R3100	OVR PV T2 40-1000 C QS 2CTB804153R3200	OVR PV T2 40-1000 C QS 2CTB804153R3200
		OVR PV T2 40-1500 C QS 2CTB804153R3300		
		OVR PV MC C QS 2CTB804153R3500		

Types		OVR PV T1-T2 5-1000 P QS	OVR PV T1-T2 12.5-1000 P QS	OVR PV T1-T2 5-1500 P QS	OVR PV T1-T2 10-1500 P QS
With auxiliary contact (TS)		OVR PV T1-T2 5-1000 P TS QS	OVR PV T1-T2 12.5-1000 P TS QS	OVR PV T1-T2 5-1500 P TS QS	OVR PV T1-T2 10-1500 P TS QS
Technology		Varistor	Varistor	Varistor	Varistor
Electrical features					
Standard		IEC61643-11/ IEC 61643-31/	IEC61643-11/ IEC 61643-31/ UL 1449 4th Ed.	IEC61643-11/ IEC 61643-31/	IEC61643-11/ IEC 61643-31/ UL 1449 4th Ed.
Type/test class		T1-T2/I-II	T1-T2/I-II	T1-T2/I-II	T1-T2/I-II
Protected lines		2	2	2	2
Types of networks		Photovoltaic	Photovoltaic	Photovoltaic	Photovoltaic
Type of current		DC	DC	DC	DC
Nominal Voltage Un (L-N)/L-L	[V]	1000	1000	1500	1500
Max. cont. Operating voltage Ucpv	[V]	1100	1100	1500	1500
Max.cont.operating voltage accroding UL (MCOV)		1100	1100	1500	1500
Impulse current Iimp (10/350)	[kA]	5	6.26	5	5
Total discharge current Itotal (10/350)	[kA]	5	12.5	5	10
Maximum discharge current Imax (8/20)	[kA]	40	40	30	30
Nominal discharge current In (8/20)	[kA]	20	20	20	20
Voltage protection level Up at In (L-L/L-N)	[kV]	3,8	3.8	5	5
Voltage protection rating according UL (VPR (L+/G, L-/G, L+/L-))	[kV]	3,8	2.5/2.5/2.5	-	4/4/4
Response time	[ns]	<25	<25	<25	<25
Short circuit DC current Iscpv	[A]	11	11	11	11
Short circuit withstand according (Logo UL) (Sccr)	[kA]	-	50	-	65
Disconnecter	Fuse	no need up to 11 kA	no need up to 11 kA	no need up to 11 kA	no need up to 11 kA
	Circuit breaker	no need up to 11 kA	no need up to 11 kA	no need up to 11 kA	no need up to 11 kA
Pluggable cartridge		Yes	Yes	Yes	Yes
Integrated specific thermal disconnecter		Yes	Yes	Yes	Yes
State indicator		Yes	Yes	Yes	Yes
Safety Reserve		No	No	No	No
Auxiliary contact		Yes (TS option)	Yes (TS option)	Yes (TS option)	Yes (TS option)
Installation					
Wire range	Solid wire	[mm ²] 2.5....35	2.5....35	2.5....35	2.5....35
(L, N, PE)	Stranded wire	[mm ²] 2.5...25	2.5...25	2.5...25	2.5...25
Stripping length (L,N,PE)		[mm ²] 12.5	12.5	12.5	12.5
Tightening torque (L, N, PE)		[N.m] 4.5	4.5	4.5	4.5
Auxiliary contact (TS)					
Contact complement		1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC
Minimum load		12 V DC - 0,5 mA	12 V DC - 0,5 mA	12 V DC - 0,5 mA	12 V DC - 0,5 mA
Maximum load		250 V AC - 1 A	250 V AC - 1 A	250 V AC - 1 A	250 V AC - 1 A
Connection cross-section		1.5	1.5	1.5	1.5
Miscellaneous characteristics					
Stocking and operating temperature	[°C]	-40 to +85	-40 to +85	-40 to +85	-40 to +85
Maximal Altitude	[m]	4000	4000	4000	4000
Humidity Rate HR		95%	95%	95%	95%
Degree of protection		IP 20	IP 20	IP 20	IP 20
Fire resistance according to UL 94		V0	V0	V0	V0
Dimensions	height x width	[mm] 95 x 54 x 86	95 x 54 x 86	95 x 54 x 86	95 x 54 x 86
	depth	[inches] 3.74 x 2.12 x 3.38	3.74 x 2.12 x 3.38	3.74 x 2.12 x 3.38	3.74 x 2.12 x 3.38
With auxiliary contact (TS)	height x width	[mm] 110 x 54 x 86	110 x 54 x 86	110 x 54 x 86	110 x 54 x 86
	depth	[inches] 4.33 x 2.12 x 3.38	4.33 x 2.12 x 3.38	4.33 x 2.12 x 3.38	4.33 x 2.12 x 3.38
Replacement cartridges					
Phase Product ID		OVR PV T1-T2 5-1000 C QS 2CTB812052R1000	OVR PV T1-T2 12.5- 1000 C QS 2CTB812122R1000	OVR PV T1-T2 5-1500 C QS 2CTB812052R1500	OVR PV T1-T2 10- 1500 C QS 2CTB812102R1500
		-	"OVR PV T1-T2 12.5- 1000 M C QS 2CTB812122R1001"	-	OVR PV T1-T2 10- 1500 M C QS 2CTB812102R1501

Selection tables

Specifically designed for photovoltaic DC installations, the OVR PV family provide a safe and reliable surge and lightning protection of solar panels and converters.

The OVR PV QS surge protective devices comply with EN 50539-11 and UL 1449 4th Edition.

Type T1+T2 PV

Protected lines	Impulse current Iimp 10/350	Total disch. current Itotal 10/350	Max. disch. current Imax 8/20	Nominal current In	Voltage protec. level Up	Max. cont. operat. voltage Ucpv	Bbn 3660308	Order details			Weight 1 piece
								Type code	Order code	kg	
	kA	kA	kA	kA	kV	V	EAN				
1+1 DC	2	-	40	20	2.8/1.4	600	526502	OVR PV T2 40-600 P QS	2CTB804153R2800	0.38	
1+1 DC	2	-	40	20	2.8/1.4	600	526519	OVR PV T2 40-600 P TS QS	2CTB804153R2900	0.39	
1+1 DC	2	-	40	20	2.8/1.4	600	527318	OVR PV T2 40-600 P QS BULK (30)	2CTB804153Z2800	0.38	
1+1 DC	2	-	40	20	2.8/1.4	600	527325	OVR PV T2 40-600 P TS QS BULK (30)	2CTB804153Z2900	0.39	
1+1 DC	-	-	40	20	3.8	1100	526243	OVR PV T2 40-1000 P QS	2CTB804153R2400	0.38	
1+1 DC	2	-	40	20	3.8	1100	526434	OVR PV T2 40-1000 P TS QS	2CTB804153R2500	0.39	
1+1 DC	2	-	40	20	3.8	1100	526748	OVR PV T2 40-1000 P QS BULK (30)	2CTB804153Z2400	0.36	
1+1 DC	2	-	40	20	3.8	1100	526755	OVR PV T2 40-1000 P TS QS BULK (30)	2CTB804153Z2500	0.39	
2+2 DC	2	-	40	20	3.8	1100	526199	OVR PV T2 40-1000 P TS TWIN QS	2CTB804153R2300	0.65	
2+2 DC	2	-	40	20	3.8	1100	527295	OVR PV T2 40-1000 P TS TWIN QS BULK (4)	2CTB804153Z2300	0.65	
1+1 DC	5	5	40	20	3.8/3.8	1100	4,05355E+12	OVR PV T1-T2 5-1000 P QS	2CTB812050R1000	0.397	
1+1 DC	5	5	40	20	3.8/3.8	1100	4,05355E+12	OVR PV T1-T2 5-1000 P TS QS	2CTB812051R1000	0.406	
1+1 DC	6,25	12.5	40	20	3.8/3.8	1100	4,05355E+12	OVR PV T1-T2 12.5-1000 P QS	2CTB812120R1000	0.453	
1+1 DC	6,25	12.5	40	20	3.8/3.8	1100	4,05355E+12	OVR PV T1-T2 12.5-1000 P TS QS	2CTB812121R1000	0.462	
1+1 DC	5	5	30	20	5/5	1500	4,05355E+12	OVR PV T1-T2 5-1500 P QS	2CTB812050R1500	0.488	
1+1 DC	5	5	30	20	5/5	1500	4,05355E+12	OVR PV T1-T2 5-1500 P TS QS	2CTB812051R1500	0.497	
1+1 DC	5	10	30	20	5/5	1500	4,05355E+12	OVR PV T1-T2 10-1500 P QS	2CTB812100R1500	0.488	
1+1 DC	5	10	30	20	5/5	1500	4,05355E+12	OVR PV T1-T2 10-1500 P TS QS	2CTB812101R1500	0.497	
1+1 DC	2	-	40	10	4.5	1500	526465	OVR PV T2 40-1500 P QS	2CTB804153R2600	0.47	
1+1 DC	2	-	40	10	4.5	1100	526472	OVR PV T2 40-1500 P TS QS	2CTB804153R2700	0.48	
1+1 DC	2	-	40	10	4.5	1500	527332	OVR PV T2 40-1500 P QS BULK (30)	2CTB804153Z2600	0.47	
1+1 DC	2	-	40	10	4.5	1500	527301	OVR PV T2 40-1500 P TS QS BULK (30)	2CTB804153Z2700	0.48	



OVR PV T1-T2-5-1000 P TS QS



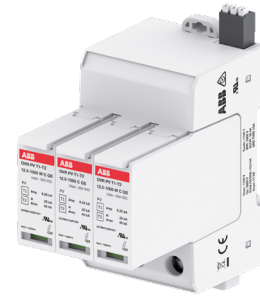
OVR PV T1-T2-10-1500 P TS QS

OVR PV T1-T2 QS and OVR PV T2 QS

Comparing the two versions

OVR PV T1-T2 QS , OVR PV T2 QS

- 3 TE
- Pluggable cartridge
- Bottom wiring
- Self protected up to ISCPV 11 kA
- L+, L-protection
- Auxiliary contact (option)
- EN50539
- UL 1449 4th
- MOV technology



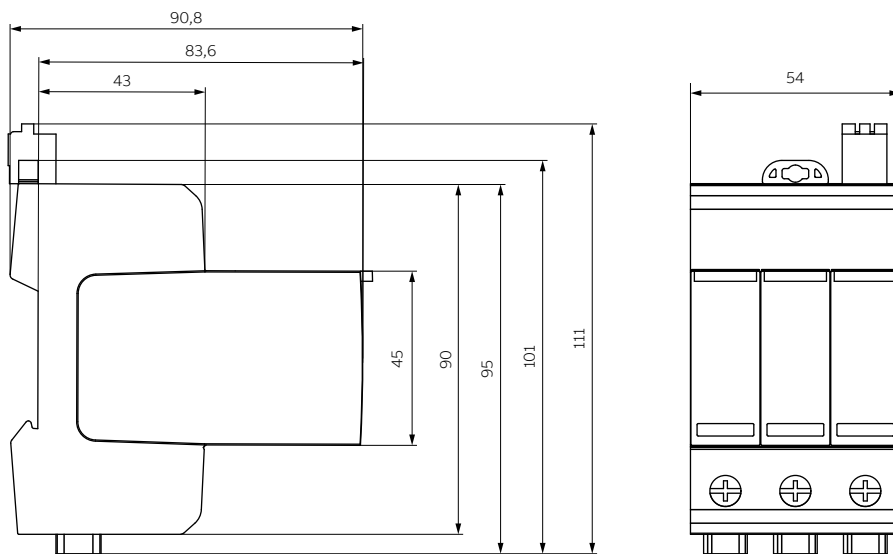
	OVR PV T2 40-1000 P TS QS	OVR PV T1-T2 5-1000 P TS QS
Class I (Type 1) SPD	No	Yes
Class II (Type 2) SPD	Yes	Yes
EN 50539 conformity	Yes	Yes
UL 1449 4ed approval (Type 1CA)	Yes	No
Dimensions (H x W x D)	95x53.4x58 mm	110x54x86 mm
Wires coming from	Bottom	Bottom
Auxiliary location	Top	Top
I _{max}	40kA	40kA
I _{imp}	2kA	5kA
I _{total} (10/350ms)	-	5kA
U _p	3.8kV	3.8kV
VPR	4kV	-
ISCPV	10kA	11kA



Overall dimensions

All measurements in mm

OVR PV T1-T2 QS Series



OVR PV T2 QS Series

