

PROTECTION AND SAFETY

Electrical installation solutions for buildings

Protection and safety

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OVR surge protective devices selection guide

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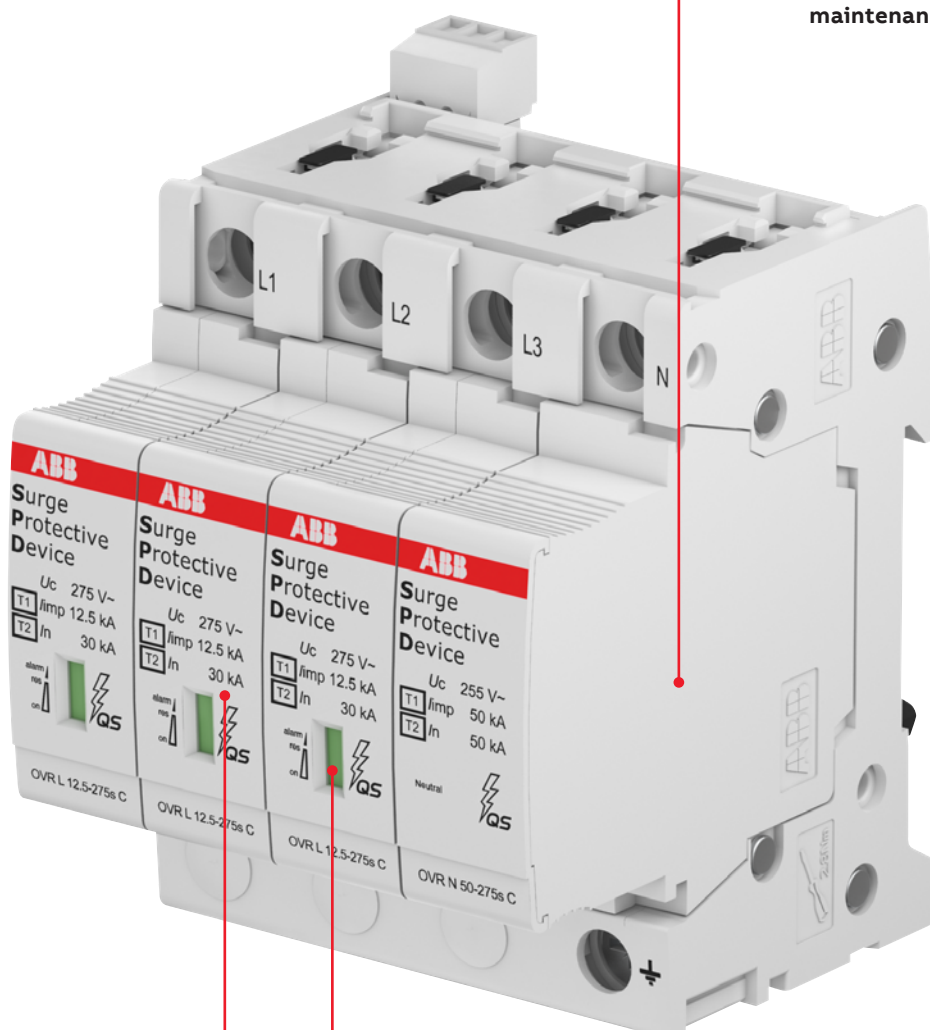
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OVR T1-T2, T2 and T2-T3 ranges.

The details make the difference

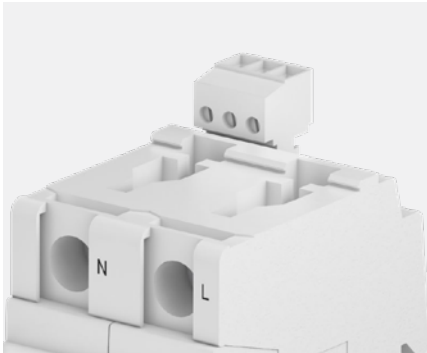
A complete range for your surge protection

Pluggable cartridge for easy replacement during maintenance operations.

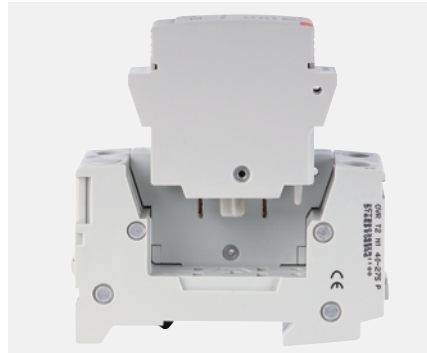


Clear information on the front of the product indicating the technical characteristics of the OVR.

Safety Reserve system with two varistors per line to extend protection lifetime.



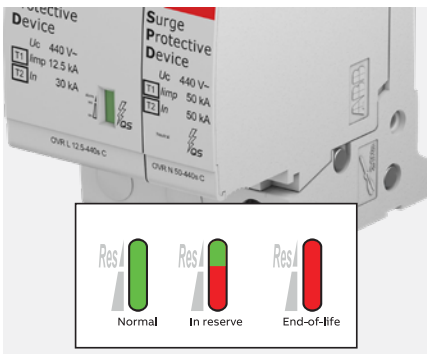
OVR T1-T2 12.5, T2 and T2-T3 ranges are using same terminal as Pro M compact devices to guarantee a complete coordination and time saving in wiring operation.



The pluggable feature of ABB **OVR T1-T2, T2 and T2-T3** surge protective devices (SPDs) facilitates maintenance. Should one or more worn cartridges need to be replaced, the wires do not have to be removed.



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



A safety reserve system for an extended protection. T1-T2s and T2s. These Surge Protective Devices are equipped with two varistors per pole. If one varistor is damaged, the SPD gives advanced warning that it is approaching the end of its life while the other varistor continues to protect the equipment, allowing to perform Preventive Maintenance.

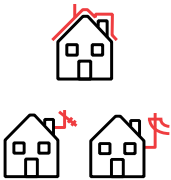


QuickSafe MOV technology, brings self-protected feature (no back-up needed) up to 125A for OVR T2 and OVR T2-T3, and 160A for OVR T1-T2 12.5 and T2s.

Protection and safety

Power line protection AC

Detailed product description

Type of building to be protected	Main Distribution Board T1 (+T2)	Product name	Product code
 Industrial areas, offices, public, big residential buildings 	TN-S and TT systems with 230/400 V		
		OVR T1-T2 3N 100-255 P TS	2CTB812111R2300
	TN-C systems with 230/400 V		
		OVR T1-T2 3L 75-255 P TS	2CTB812751R2300
– Optional Auxiliary contact (TS)			
 Residential building with lightning rod, overhead power line or antenna 	TN and TT systems with 230/400 V		
		OVR T1-T2 3N 12.5-275s P QS	2CTB825101R1300
		OVR T1-T2 3N 12.5-275s P TS QS	2CTB825101R0600
	– Extended protection with additional varistor – Optional Auxiliary contact (TS)		
 Residential building without lightning rod, overhead power lines or antenna 	TN and TT systems with 230/400 V		
		OVR T2 3N 40-275 P QS	2CTB803973R1100
		OVR T2 3N 40-275 P TS QS	2CTB803973R0500
	TT (3 phases without neutral) + TN-C systems with 230/400 V		
		OVR T2 3L 40-275 P QS	2CTB803873R2400
		OVR T2 3N 40-275 P TS QS	2CTB803873R2500
– Optional Auxiliary contact (TS)			
 Protection for photovoltaic (PV) installations 	DC voltage	Direct current (DC)	Product code
	1100 V	OVR PV T2 40-1000 P	2CTB802400R1000
		OVR PV T2 40-1000 P TS	2CTB802401R1000
		OVR PV T1-T2 5-1000 P QS	2CTB812050R1000
		OVR PV T1-T2 5-1000 P TS QS	2CTB812051R1000
		OVR PV T1-T2 12.5-1000 P QS	2CTB812120R1000
		OVR PV T1-T2 12.5-1000 P TS QS	2CTB812121R1000
	1500 V	OVR PV T2 40-1500 P	2CTB802400R1500
		OVR PV T2 40-1500 P TS	2CTB802401R1500
		OVR PV T1-T2 5-15000 P QS	2CTB812050R1500
		OVR PV T1-T2 5-1500 P TS QS	2CTB812051R1500
		OVR PV T1-T2 10-1500 P QS	2CTB812100R1500
		OVR PV T1-T2 10-1500 P TS QS	2CTB812100R1500
	– Optional Auxiliary contact (TS)		



Sub distribution board T2		Product code
	Distance to sub distribution > 10 meters	
	OVR T2 3N 40-275 P QS	2CTB803973R1100
	OVR T2 3N 40-275 P TS QS	2CTB803973R0500
	Distance to sub distribution > 10 meters	
	OVR T2 3L 40-275 P QS	2CTB803873R2400
	OVR T2 3L 40-275 P TS QS	2CTB803873R2500
	– Optional Auxiliary contact (TS)	
	Distance to sub distribution board and loads > 10 meters	
	OVR T2-T3 3N 20-275 P QS QS	2CTB803973R1200
	OVR T2-T3 3N 20-275 P TS QS	2CTB803973R1600
	– Optional Auxiliary contact (TS)	
Distance between sub distribution board and loads < 10 meters		
Not need for extra protection		
Alternating current (AC)		Product code
	3 Phases	
	OVR T2 3N 40-275 P QS	2CTB803973R1100
	OVR T2 3N 40-275 P TS QS	2CTB803973R0500
	1 Phase	
	OVR T2 1N 40-275 P QS	2CTB803972R1100
	OVR T2 1N 40-275 P TS QS	2CTB803972R0500
	– Optional Auxiliary contact (TS)	

Back-up protection MCB/Fuse

Protection and safety

OVR surge protective devices selection tables

Pro- tected lines	Impulse current	Max. dis- charge current	Nominal current	Follow current interrupt- ing rating	Voltage protec- tion level	Nominal voltage	Max. cont. op- erating voltage	Order details	
	Iimp 10/350 kA	I _{max} 8/20 kA	I _n kA	I _{fi} kA	U _p kV	U _n V	U _c V	Type code	Order code
Type T1-T2 OVR pluggable									
Uc 255 V									
1	25	60 (*)	25	50	1.5	230	264	OVR T1-T2 1L 25-255 P	2CTB813250R2300
1	25	60 (*)	25	50	1.5	230	264	OVR T1-T2 1L 25-255 P TS	2CTB813251R2300
1+1	25	60 (*)	25	50/0,1	1.5	230	255	OVR T1-T2 1N 50-255 P TS	2CTB812511R2300
3	25	60 (*)	25	50	1.5	230/400	264	OVR T1-T2 3L 75-255 P TS	2CTB812751R2300
4	25	60 (*)	25	50	1.5	230/400	264	OVR T1-T2 4L 100-255 P TS	2CTB812101R2300
3+1	25	60 (*)	25	50/0,1	1.5	230/400	255	OVR T1-T2 3N 100-255 P TS	2CTB812111R2300
Uc 275 V									
1	12.5	80	20	-	1.4	230	275	OVR T1-T2 12.5-275s P TS QS	2CTB815710R0000
1+1	12.5	80	20	-	1.4	230	275	OVR T1-T2 1N 12.5-275s P TS QS	2CTB815710R0100
3	12.5	80	20	-	1.4	230/400	275	OVR T1-T2 3L 12.5-275s P TS QS	2CTB815710R0600
3+1	12.5	80	20	-	1.4	230/400	275	OVR T1-T2 3N 12.5-275s P TS QS	2CTB815710R0700
4	12.5	80	20	-	1.4	230/400	275	OVR T1-T2 4L 12.5-275s P TS QS	2CTB815710R1100
1	12.5	80	20	-	1.4	230	275	OVR T1-T2 12.5-275s P QS	2CTB815710R1200
1+1	12.5	80	20	-	1.4	230	275	OVR T1-T2 1N 12.5-275s P QS	2CTB815710R1300
3	12.5	80	20	-	1.4	230/400	275	OVR T1-T2 3L 12.5-275s P QS	2CTB815710R1800
3+1	12.5	80	20	-	1.4	230/400	275	OVR T1-T2 3N 12.5-275s P QS	2CTB815710R1900
4	12.5	80	20	-	1.4	230/400	275	OVR T1-T2 4L 12.5-275s P QS	2CTB815710R2300
Uc 440 V									
1	25	-	40	-	2.2	400	440	OVR T1-T2 25-440s P QS	2TAM211000R4810
1	25	-	40	-	2.2	400	440	OVR T1-T2 25-440s P TS QS	2TAM211000R4811
3	25	-	40	-	2.2	400/690	440	OVR T1-T2 3L 25-440s P QS	2TAM213000R4810
3+1	25	-	40	-	2.2	400/690	440	OVR T1-T2 3N 25-440s P QS	2TAM214100R4810
3	25	-	40	-	2.2	400/690	440	OVR T1-T2 3L 25-440s P TS QS	2TAM213000R4811
3+1	25	-	40	-	2.2	400/690	440	OVR T1-T2 3N 25-440s P QS TS	2TAM214100R4811
1	12.5	80	20	-	1.9	400	440	OVR T1-T2 12.5-440s P TS QS	2CTB815710R2900
1+1	12.5	80	20	-	1.9	400	440	OVR T1-T2 1N 12.5-440s P TS QS	2CTB815710R3000
3	12.5	80	20	-	1.9	400/690	440	OVR T1-T2 3L 12.5-440s P TS QS	2CTB815710R3500
3+1	12.5	80	20	-	1.9	400/690	440	OVR T1-T2 3N 12.5-440s P TS QS	2CTB815710R3600
4	12.5	80	20	-	1.9	400/690	440	OVR T1-T2 4L 12.5-440s P TS QS	2CTB815710R4000
1	12.5	80	20	-	1.9	400	440	OVR T1-T2 12.5-440s P QS	2CTB815710R4100
1+1	12.5	80	20	-	1.9	400	440	OVR T1-T2 1N 12.5-440s P QS	2CTB815710R4200
3	12.5	80	20	-	1.9	400/690	440	OVR T1-T2 3L 12.5-440s P QS	2CTB815710R4700
3+1	12.5	80	20	-	1.9	400/690	440	OVR T1-T2 3N 12.5-440s P QS	2CTB815710R4800
4	12.5	80	20	-	1.9	400/690	440	OVR T1-T2 4L 12.5-440s P QS	2CTB815710R5200
Neutral									
1	100	100	40	-	1.9	400	440	OVR T1-T2 N 100-440s P QS	2TAM210100R7300
1	100	60 (*)	100	0.1	1.5	230	255	OVR T1-T2 N 100-255 P	2CTB813010R2300
1	100	60 (*)	100	0.1	1.5	230	255	OVR T1-T2 N 100-255 P TS	2CTB813011R2300
1	50	100	50	0.1	1.4	230	275	OVR T1-T2 N 50-275s P QS	2CTB815710R5300
1	50	100	50	0.1	1.9	400	440	OVR T1-T2 N 50-440s P QS	2CTB815710R5300
Cartridges									
1	25	60 (*)	40	-	2.2	400	440	OVR T1-T2 25-440s C QS	2TAM210200R4810
1	100	100	40	-	1.9	400	440	OVR T1-T2 N 100-440s C QS	2TAM210300R7300
1	25	60 (*)	25	50	1.5	230	264	OVR T1-T2 1L 25-255 C	2CTB813252R2300
1	50	60 (*)	50	0.1	1.5	230	255	OVR T1-T2 N 50-255 C	2CTB812522R2300
1	100	60 (*)	100	0.1	1.5	230	255	OVR T1-T2 N 100-255 TT C	2CTB812022R2300
1	100	60 (*)	100	0.1	1.5	230	255	OVR T1-T2 N 100-255 C	2CTB813012R2300
1	12.5	80	20	-	1.4	230	275	OVR T1-T2 12.5-275s C QS	2CTB815710R2600
1	12.5	80	20	-	1.9	400	440	OVR T1-T2 12.5-440s C QS	2CTB815710R5500
1	50	100	50	-	1.4	230	275	OVR T1-T2 N 50-275s C QS	2CTB815710R2700
1	50	100	50	-	1.9	400	440	OVR T1-T2 N 50-440s C QS	2CTB815710R5600
Type 2 OVR non-pluggable									
Uc 275 V									
1	-	20	5	-	1.0	230	275	OVR T2 20-275	2CTB804200R0100
1	-	40	20	-	1.4	230	275	OVR T2 40-275	2CTB804201R0100
1	-	20	5	-	1.0	230	275	OVR T2 20-275 (x20)	2CTB804200R1100
1	-	40	20	-	1.4	230	275	OVR T2 40-275 (x20)	2CTB804201R1100

(*) I_{peak}, extended feature similar to I_{max}

Protection and safety

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Pro- tected lines	Impulse current	Max. dis- charge current	Nominal current	Follow current interrupt- ing rating	Voltage protec- tion level	Nominal voltage	Max. cont. op- erating voltage	Order details	
	I _{imp} 10/350 kA	I _{max} 8/20 kA	I _n kA	I _{fi} kA	U _p kV	U _n V	U _c V	Type code	Order code
Type 2 OVR pluggable									
U_c 275 V									
1	2	40	20	-	1.25	230	275	OVR T2 40-275 P TS QS	2CTB803871R1700
1+1	2	40	20	-	1.25	230	275	OVR T2 1N 40-275 P TS QS	2CTB803972R0500
3	2	40	20	-	1.25	230/400	275	OVR T2 3L 40-275 P TS QS	2CTB803873R2500
4	2	40	20	-	1.25	230/400	275	OVR T2 4L 40-275 P TS QS	2CTB803873R5200
1	2	40	20	-	1.25	230	275	OVR T2 40-275 P QS	2CTB803871R2300
1+1	2	40	20	-	1.25	230	275	OVR T2 1N 40-275 P QS	2CTB803972R1100
3	2	40	20	-	1.25	230/400	275	OVR T2 3L 40-275 P QS	2CTB803873R2400
4	2	40	20	-	1.25	230/400	275	OVR T2 4L 40-275 P QS	2CTB803873R5600
1	2	40	20	-	1.4	230	275	OVR T2 40-275s P TS QS	2CTB815704R0000
1+1	2	40	20	-	1.4	230	275	OVR T2 1N 40-275s P TS QS	2CTB815704R0200
3	2	40	20	-	1.4	230/400	275	OVR T2 3L 40-275s P TS QS	2CTB815704R0600
4	2	40	20	-	1.4	230/400	275	OVR T2 4L 40-275s P TS QS	2CTB815704R1100
1	2	40	20	-	1.4	230	275	OVR T2 40-275s P QS	2CTB815704R1200
1+1	2	40	20	-	1.4	230	275	OVR T2 1N 40-275s P QS	2CTB815704R1400
3	2	40	20	-	1.4	230/400	275	OVR T2 3L 40-275s P QS	2CTB815704R1800
4	2	40	20	-	1.4	230/400	275	OVR T2 4L 40-275s P QS	2CTB815704R2300
1	6.25	80	20	-	1.4	230	275	OVR T2 80-275s P TS QS	2CTB815708R0000
1+1	6.25	80	20	-	1.4	230	275	OVR T2 1N 80-275s P TS QS	2CTB815708R0200
3	6.25	80	20	-	1.4	230/400	275	OVR T2 3L 80-275s P TS QS	2CTB815708R0600
4	6.25	80	20	-	1.4	230/400	275	OVR T2 4L 80-275s P TS QS	2CTB815708R1100
1	6.25	80	20	-	1.4	230	275	OVR T2 80-275s P QS	2CTB815708R1200
1+1	6.25	80	20	-	1.4	230	275	OVR T2 1N 80-275s P QS	2CTB815708R1400
3	6.25	80	20	-	1.4	230/400	275	OVR T2 3L 80-275s P QS	2CTB815708R1800
4	6.25	80	20	-	1.4	230/400	275	OVR T2 4L 80-275s P QS	2CTB815708R2300

(*) I_{peak}, extended feature similar to I_{max}

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OVR surge protective devices selection tables

Pro- tected lines	Impulse current	Max. dis- charge current	Nominal current	Follow current interrupt- ing rating	Voltage protec- tion level	Nominal voltage	Max. cont. op- erating voltage	Order details	
	I _{imp} 10/350 kA	I _{max} 8/20 kA	I _n kA	I _{fi} kA	U _p kV	U _n V	U _c V	Type code	Order code
Neutral									
1	2	80	30	0.1	1.4	230	275	OVR T2-T3 N 80-275 P QS	2CTB803973R1900
1	6.25	80	30	0.1	1.4	230	275	OVR T2 N 80-275s P QS	2CTB815708R2500
Cartridges									
1	2	80	30	-	1.4	230	275	OVR T2-T3 N 80-275 C QS	2CTB803876R0000
1	2	40	20	-	1.25	230	275	OVR T2 40-275 C QS	2CTB803876R1000
1	6.25	40	20	-	1.4	230	275	OVR T2 40-275s C QS	2CTB815704R2600
1	6.25	80	20	-	1.4	230	275	OVR T2 80-275s C QS	2CTB815708R2600
1	6.25	80	30	-	1.4	230	275	OVR T2 N 80-275s C QS	2CTB815708R2800
Uc 350V									
1	2	40	20	-	1.5	230	350	OVR T2 40-350 P QS	2CTB803881R2300
1	2	40	20	-	1.5	230	350	OVR T2 40-350 P TS QS	2CTB803881R1700
1+1	2	40	20	-	1.7	230	350	OVR T2 1N 40-350 P QS	2CTB803982R1100
1+1	2	40	20	-	1.7	230	350	OVR T2 1N 40-350 P TS QS	2CTB803982R0500
3	2	40	20	-	1.5	230/400	350	OVR T2 3L 40-350 P QS	2CTB803883R2400
3	2	40	20	-	1.5	230/400	350	OVR T2 3L 40-350 P TS QS	2CTB803883R2500
3+1	2	40	20	-	1.7	230/400	350	OVR T2 3N 40-350 P QS	2CTB803983R1100
3+1	2	40	20	-	1.7	230/400	350	OVR T2 3N 40-350 P TS QS	2CTB803983R0500
Neutral									
1	2	80	30	0.1	1.4	230	350	OVR T2 N 80-350 P QS	2CTB803983R1900
Cartridges									
1	2	80	30	-	1.4	230	350	OVR T2 N 80-350 C QS	2CTB803886R0000
1	2	40	20	-	1.5	230	350	OVR T2 40-350 C QS	2CTB803886R1000
Uc 440V									
1	2	40	20	-	1.8	400	440	OVR T2 40-440 P QS	2CTB803871R1200
1	2	40	20	-	1.8	400	440	OVR T2 40-440 P TS QS	2CTB803871R0500
3	2	40	20	-	1.8	400/690	440	OVR T2 3L 40-440 P TS QS	2CTB803873R2700
4	2	40	20	-	1.8	400/690	440	OVR T2 4L 40-440 P QS	2CTB803873R5100
4	2	40	20	-	1.8	400/690	440	OVR T2 4L 40-440 P TS QS	2CTB803873R5300
3+1	2	40	20	-	2.1	400/690	440	OVR T2 3N 40-440 P QS	2CTB803973R1400
3+1	2	40	20	-	2.1	400/690	440	OVR T2 3N 40-440 P TS QS	2CTB803973R1500
3	2	40	20	-	1.8	400/690	440	OVR T2 3L 40-440 P QS	2CTB803873R2800
1	2	40	20	-	1.8	400	440	OVR T2 40-440s P TS QS	2CTB815704R2900
3+1	2	40	20	-	1.8	400/690	440	OVR T2 3N 40-440s P TS QS	2CTB815704R3700
1	2	40	20	-	1.8	400	440	OVR T2 40-440s P QS	2CTB815704R4100
1	6.25	80	20	-	1.8	400	440	OVR T2 80-440s P TS QS	2CTB815708R2900
3	6.25	80	20	-	1.8	400/690	440	OVR T2 3L 80-440s P TS QS	2CTB815708R3500
3+1	6.25	80	20	-	1.8	400/690	440	OVR T2 3N 80-440s P TS QS	2CTB815708R3700
4	6.25	80	20	-	1.8	400/690	440	OVR T2 4L 80-440s P TS QS	2CTB815708R4000
1	6.25	80	20	-	1.8	400	440	OVR T2 80-440s P QS	2CTB815708R4100
3	6.25	80	20	-	1.8	400/690	440	OVR T2 3L 80-440s P QS	2CTB815708R4700
3+1	6.25	80	20	-	1.8	400/690	440	OVR T2 3N 80-440s P QS	2CTB815708R4900
4	6.25	80	20	-	1.8	400/690	440	OVR T2 4L 80-440s P QS	2CTB815708R5200
1+1	2	40	20	-	1.9	400	440	OVR T2 1N 40-440 P TS QS	2CTB803972R1400

Protection and safety

OVR surge protective devices selection tables

Pro- tected lines	Impulse current	Max. dis- charge current	Nominal current	Follow current interrupt- ing rating	Voltage protec- tion level	Nominal voltage	Max. cont. op- erating voltage	Order details	
	I _{imp} 10/350 kA	I _{max} 8/20 kA	I _n kA	I _{fi} kA	U _p kV	U _n V	U _c V	Type code	Order code
Neutral									
1	6.25	80	30	0.1	2	400	440	OVR T2 N 80-440s P QS	2CTB815708R5400
1	2	80	30	0.1	1.4	400	440	OVR T2-T3 N 80-440 P QS	2CTB803973R2000
Cartridges									
1	2	80	20	-	1.8	400	440	OVR T2 40-440 C QS	2CTB803876R0400
1	2	40	20	-	1.8	400	440	OVR T2-T3 40-440s C QS	2CTB815704R5500
1	6.25	80	20	-	1.8	400	440	OVR T2 80-440s C QS	2CTB815708R5500
1	6.25	80	30	-	1.4	400	440	OVR T2-T3 N 80-440 C QS	2CTB803886R0100
1	6.25	80	30	-	2	400	440	OVR T2 N 80-440s C QS	2CTB815708R5700
Type T2-T3 OVR Pluggable									
Uc 275V									
1	2	20	5	-	0.9	230	275	OVR T2-T3 20-275 P QS	2CTB803871R2400
1	2	20	5	-	0.9	230	275	OVR T2-T3 20-275 P TS QS	2CTB803871R2500
1+1	2	20	5	-	1.4	230	275	OVR T2-T3 1N 20-275 P QS	2CTB803972R1200
1+1	2	20	5	-	1.4	230	275	OVR T2-T3 1N 20-275 P TS QS	2CTB803972R1300
3	2	20	5	-	0.85	230/400	275	OVR T2-T3 3L 20-275 P QS	2CTB803873R3400
3	2	20	5	-	0.85	230/400	275	OVR T2-T3 3L 20-275 P TS QS	2CTB803873R3500
3+1	2	20	5	-	1.4	230/400	275	OVR T2-T3 3N 20-275 P QS	2CTB803973R1200
3+1	2	20	5	-	1.4	230/400	275	OVR T2-T3 3N 20-275 P TS QS	2CTB803973R1600
Neutral									
1	2	80	30	0.1	1.4	230	275	OVR T2-T3 N 80-275 P QS	2CTB803973R1900
Cartridges									
1	2	20	5	-	1.4	230	275	OVR T2 20-275 C QS	2CTB803876R1200
1	2	80	30	-	1.4	230	275	OVR T2-T3 N 80-275 C QS	2CTB803876R0000
Uc 440V									
1	2	20	5	-	1.4	400	440	OVR T2-T3 20-440 P QS	2CTB803871R1100
1	2	20	5	-	1.4	400	440	OVR T2-T3 20-440 P TS QS	2CTB803871R1300
3+1	2	20	5	-	1.4	400/690	440	OVR T2-T3 3N 20-440 P QS	2CTB803973R1300
Neutral									
1		80	30	0.1	1.4	400	440	OVR T2-T3 N 80-440 P QS	2CTB803973R2000
Cartridges									
1	2	80	5	0.1	1.4	400	440	OVR T2 20-440 C QS	2CTB803876R0600
1	2	80	30	0.1	1.4	400	440	OVR T2-T3 N 80-440 C QS	2CTB803886R0100



Protection and safety

OVR surge protective devices selection tables

Protected lines	Total Discharge Current	Impulse current	Max. discharge current	Nominal current	Short-circuit current rating	Voltage protection level	Nominal voltage	Max. cont. operating voltage	Order details	
	I _{total} 10/350	I _{imp} 10/350	I _{max} 8/20	I _n	I _{scpv}	U _p	U _n	U _c	Type code	Order code
	kA	kA	kA	kA	A	kV	V	V		
Type T1-T2 OVR pluggable PV application										
Uc 1100 V DC										
1+1 DC	5	5	40	20	11.000	3.8	1000	1100	OVR PV T1-T2 5-1000 P QS	2CTB812050R1000
1+1 DC	5	5	40	20	11.000	3.8	1000	1100	OVR PV T1-T2 5-1000 P TS QS	2CTB812051R1000
1+1 DC	6,25	12.5	40	20	11.000	3.8	1000	1100	OVR PV T1-T2 12.5-1000 P QS	2CTB812120R1000
1+1 DC	6,25	12.5	40	20	11.000	3.8	1000	1100	OVR PV T1-T2 12.5-1000 P TS QS	2CTB812121R1000
Cartridges										
1+1 DC	5	5	40	20	11.000	-	1000	1100	OVR PV T1-T2 5-1000 C QS	2CTB812052R1000
1+1 DC	6,25	6,25	40	20	11.000	-	1000	1100	OVR PV T1-T2 12.5-1000 C QS	2CTB812122R1000
1+1 DC	6,25	6,25	40	20	11.000	-	1000	1100	OVR PV T1-T2 12.5-1000 M C QS	2CTB812122R1001
Uc 1500 V DC										
1+1 DC	5	5	30	20	11.000	5	1500	1500	OVR PV T1-T2 5-1500 P QS	2CTB812050R1500
1+1 DC	5	5	30	20	11.000	5	1500	1500	OVR PV T1-T2 5-1500 P TS QS	2CTB812051R1500
1+1 DC	5	10	30	20	11.000	5	1500	1500	OVR PV T1-T2 10-1500 P QS	2CTB812100R1500
1+1 DC	5	10	30	20	11.000	5	1500	1500	OVR PV T1-T2 10-1500 P TS QS	2CTB812101R1500
Cartridges										
1+1 DC	5	5	30	20	11.000	-	1500	1500	OVR PV T1-T2 5-1500 C QS	2CTB812052R1500
1+1 DC	5	5	30	20	11.000	-	1500	1500	OVR PV T1-T2 10-1500 C QS	2CTB812102R1500
1+1 DC	5	5	30	20	11.000	-	1500	1500	OVR PV T1-T2 10-1500 M C QS	2CTB812102R1501



OVR PV T1-T2 12.5-1000 M QS

Protection and safety

OVR surge protective devices selection tables

Protected lines	Impulse current limp 10/350 kA	Max. discharge current Imax 8/20 kA	Nominal current In kA	Short-circuit current rating Iscpv A	Voltage protection level Up kV	Nominal voltage Un V	Max. cont. operating voltage Uc V	Order details	
								Type code	Order code
Type 2 OVR pluggable PV applications									
Uc 1000 V DC									
1+1 DC	-	40	20	10.000	4	1000	1000	OVR PV T2 40-1000 P	2CTB802400R1000
1+1 DC	-	40	20	10.000	4	1000	1000	OVR PV T2 40-1000 P TS	2CTB802401R1000
1+1 DC	-	40	20	10.000	4	1000	1000	OVR PV T2 40-1000 P BULK (x20)	2CTB802400Z1000
1+1 DC	-	40	20	10.000	4	1000	1000	OVR PV T2 40-1000 P TS BULK (x20)	2CTB802401Z1000
Cartridges									
1+1 DC	-	40	20	10.000	-	1000	1000	OVR PV T2 40-1000 C	2CTB802402R1000
Uc 1500 V DC									
1+1 DC	-	40	15	10.000	5	1500	1500	OVR PV T2 40-1500 P	2CTB802400R1500
1+1 DC	-	40	10	10.000	5	1500	1500	OVR PV T2 40-1500 P TS	2CTB802401R1500
1+1 DC	-	40	15	10.000	5	1500	1500	OVR PV T2 40-1500 P BULK (x20)	2CTB802400Z1500
1+1 DC	-	40	10	10.000	5	1500	1500	OVR PV T2 40-1500 P TS BULK (x20)	2CTB802401Z1500
Cartridges									
1+1 DC	2	40	10	10.000	-	1500	1500	OVR PV T2 40-1500 C	2CTB802402R1500



OVR PV T2 40-1000 P TS

Protection and safety

OVR Type 1+2 surge protective devices. Single pole



OVR T1-T2 1L
25-255 P TS

Technical features

Types		OVR T1-T2 1L 25-255 P	
with auxiliary contact (TS)		OVR T1-T2 1L 25-255 P TS	
Technology		Spark Gap	
Electrical features			
Standard		IEC 61643-11 / EN 61643-11 UL 1449, 5 th Edition	
Type/test class		T1-T2 / I - II	
Protected lines		1	
System network		TNC - TNS - TT	
Type of current		AC 47-63 Hz	
Voltage regulation of the system network		± 10 %	
Nominal system voltage Un		[V]	230
Max. cont. operating voltage Uc		[V]	264
Maximum impulse current Iimp (10/350)		[kA]	25
Nominal discharge current In (8/20)		[kA]	25
Maximum discharge current I _{max} (8/20), I _{peak} (8/20)*		[kA]	60 (*)
Follow current interrupting rating I _{fi}		[kA]	50
Voltage protection level Up at In (L-N/N-PE/L-PE)		[kV]	1.5 / - / -
Voltage protection level U _{res} at 3 kA		[kV]	-
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)		[V]	440 V: 120 min / -
Response time		[ns]	≤ 100
Short-circuit withstand capability I _{sc} cr		[kA]	50
Max Limitation/Extinction of mains follow currents (L-N)/(N-PE)		[kA]	100 / -
Maximum Prospective Short-Circuit current on the point of installation		[kA]	100
Backup protection	fuse (gG)	[A]	≤ 315
maximum rating	circuit breaker (B or C curve)	[A]	-
Pluggable cartridge		Yes	
Integrated thermal disconnecter		Yes	
State indicator		Yes	
Safety reserve		No	
Auxiliary contact		Yes (TS option)	
Installation			
Wire range (L, N, PE)	solid wire (single wiring / V wiring)	[mm²]	10...35 / 10...25
	stranded wire (single wiring / V wiring)	[mm²]	10...50 / 10...35
Stripping length (L, N, PE)		[mm]	16.5
Tightening torque (L, N, PE)		[Nm]	7
Auxiliary contact (TS)			
Contacts information		1 NO - 1 NC	
Min. load		5V DC - 10 mA	
Max. load		250 V AC - 0,5A	
Connection cross-section		[mm²]	0.5 ...1.5
Miscellaneous characteristics			
Stocking and operating temperature		[°C]	[parallel] / [series] -40 to +80 / -40 to 60
Maximal Altitude		[m]	2000
Degree of protection		IP20 - Indoor	
Fire resistance according to UL 94		V0	
Dimensions			
height x width x depth	[mm]	90 x 36 x 73	
	[inches]	3.51 x 1.40 x 2.85	
Dimensions with auxiliary contact (TS)			
height x width x depth	[mm]	99 x 36 x 73	
	[inches]	3.86 x 1.40 x 2.85	
Replacement Cartridges			
Phase Product ID		OVR T1-T2 1L 25-255 C 2CTB813252R2300	
Neutral Product ID		-	

(*) I_{peak}, extended feature similar to I_{max}

Protection and safety

OVR Type 1+2 surge protective devices. Single pole

OVR T1-T2 12.5-275s P QS	OVR T1-T2 12.5-440s P QS	OVR T1-T2 25-440s P QS
OVR T1-T2 12.5-275s P TS QS	OVR T1-T2 12.5-440s P TS QS	OVR T1-T2 25-440s P TS QS
Varistor	Varistor	Varistor
IEC 61643-11 / EN 61643-11: 2012 / A11: 2018	IEC 61643-11 / EN 61643-11: 2012 / A11: 2018	IEC 61643-11/EN 61643-11:2012/A11:2018
T1-T2 / I - II	T1-T2 / I - II	T1-T2/I - II
1	1	1
TT (L-N) - TNS - TNC	TT (L-N) - TNS - TNC	TNC - TNS - TT
AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
± 20%	± 10%	± 20 %
230	400	400
275	440	440
12.5	12.5	25
20	20	40
80	80	-
-	-	-
1.4 / - / -	1.9 / - / -	2.2 / - / -
0.5	0.5	-
337 /	581 /	581 / -
< 25	< 25	< 25
100	100	100
-	-	-
100	100	-
≤ 160	≤ 160	≤ 315
≤ 125	≤ 125	-
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Yes (TS option)	Yes (TS option)	Yes (TS option)
2.5 ... 35 / -	2.5 ... 35 / -	2.5 - 50
2.5 ... 25 / -	2.5 ... 25 / -	2.5 - 35
12.5	12.5	15
2.8	2.8	2.5
1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC
12 V DC - 10 mA	12 V DC - 10 mA	5V DC - 10 mA
250 V AC - 1A	250 V AC - 1A	250 V AC - 0,5A
0.5 ...1.5	0.5 ...1.5	0.5 ...1.5
-40 to +80	-40 to +80	-40 to +80
5000	5000	2000
IP 20 - Indoor	IP 20 - Indoor	IP20 - Indoor
V-0	V-0	V0
88 x 17.8 x 76.7	88 x 35.6 x 76.7	113 x 36 x 86.2
3.46 x 0.70 x 3.02	3.46 x 1.4 x 3.02	4,45 x 1,41 x 3,40
95.8 x 17.8 x 76.7	95.8 x 35.6 x 76.7	114 x 36 x 86.2
3.77 x 0.70 x 3.02	3.77 x 1.4 x 3.02	4,48 x 1,41 x 3,40
OVR T1-T2 12.5-275s C QS 2CTB815710R2600	OVR T1-T2 12.5-440s C QS 2CTB815710R5500	OVR T1-T2 25-440s C QS 2TAM210200R4810
-	-	OVR T1-T2 N 100-440s C QS 2TAM210300R7300

Protection and safety

OVR Type 1+2 surge protective devices Single pole



OVR T1-T2 N
100-255 P TS

Technical features

Types		OVR T1-T2 N 100-255 P	
with auxiliary contact (TS)		OVR T1-T2 N 100-255 P TS	
Technology		Spark Gap	
Electrical features			
Standard		IEC 61643-11 / EN 61643-11 UL 1449. 5 th Edition	
Type/test class		T1-T2 / I - II	
Protected lines		N	
System network		TNS / TT	
Type of current		AC 47-63 Hz	
Voltage regulation of the system network		± 10 %	
Nominal system voltage Un		[V]	230
Max. cont. operating voltage Uc		[V]	255
Maximum impulse current Iimp (10/350)		[kA]	100
Nominal discharge current In 8/20)		[kA]	100
Maximum discharge current Imax (8/20), Ipeak (8/20)*		[kA]	60 (*)
Follow current interrupting rating Ifi		[kA]	0,1
Voltage protection level Up at In (L-N/N-PE/L-PE)		[kV]	- / 1.5 / -
Voltage protection level Ures at 3 kA		[kV]	-
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)		[V]	- / 1200
Response time		[ns]	≤100
Short-circuit withstand capability Isccr		[kA]	-
Backup protection	fuse (gG)	[A]	-
	circuit breaker (B or C curve)	[A]	-
Pluggable cartridge		Yes	
Integrated thermal disconnector		Yes	
State indicator		Yes	
Safety reserve		No	
Auxiliary contact		Yes (TS option)	
Installation			
Wire range (L, N, PE)	solid wire (single wiring / V wiring)	[mm²]	10...35 / 10...25
	stranded wire (single wiring / V wiring)	[mm²]	10...50 / 10...35
Stripping length (L, N, PE)		[mm]	16.5
Tightening torque (L, N, PE)		[Nm]	7
Auxiliary contact (TS)			
Contacts information		1 NO - 1 NC	
Min. load		5V DC - 10 mA	
Max. load		250 V AC - 0,5A	
Connection cross-section		[mm²]	0.5 ...1.5
Miscellaneous characteristics			
Stocking and operating temperature		[°C]	[parallel] / [series] -40 to +80 / -40 to 60
Maximal Altitude		[m]	2000
Degree of protection		IP20 - Indoor	
Fire resistance according to UL 94		V0	
Dimensions			
height x width x depth	[mm]	90 x 36 x 73	
	[inches]	3.51 x 1.40 x 2.85	
Dimensions with auxiliary contact (TS)			
height x width x depth	[mm]	99 x 36 x 73	
	[inches]	3.86 x 1.40 x 2.85	
Replacement Cartridges			
Phase Product ID			
Neutral Product ID		OVR T1-T2 N 100-255 C 2CTB813012R2300	

(*) I_{peak}, extended feature similar to I_{max}

Protection and safety

OV R Type 1+2 surge protective devices Single pole

OV R T1-T2 N 50-275s P QS	OV R T1-T2 N 50-440s P QS	OV R T1-T2 N 100-440s P QS
GDT	GDT	GDT
IEC 61643-11 / EN 61643-11: 2012 / A11: 2018	IEC 61643-11 / EN 61643-11: 2012 / A11: 2018	IEC 61643-11/EN 61643-11:2012/A11:2018
T1-T2 / I - II	T1-T2 / I - II	T1-T2/I - II
N	N	N
TT (N-PE) - TNS (N-PE)	TT (N-PE) - TNS (N-PE)	TNS / TT
AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
± 20 %	± 10 %	± 20 %
230	400	400/690
275	440	440
50	50	100
50	50	100
100	100	100
-	-	-
- / 1.4 / -	- / 1.9 / -	- / 1.9 / -
-	-	-
- / 1200	- / 1200	1640
≤10	≤10	<25
≤100	≤100	≤100
-	-	≤315
-	-	-
Yes	Yes	Yes
No	No	Yes
No	No	Yes
No	No	Yes
No	No	No
2.5 ... 50 / -	2.5 ... 50 / -	2.5 - 50 / -
2.5 ... 35 / -	2.5 ... 35 / -	2.5 - 35 / -
12.5	12.5	15
3.5	3.5	2.5
-40 to +80	-40 to +80	-40 to +80
5000	5000	2000
IP 20 - Indoor	IP 20 - Indoor	IP20 - Indoor
V0	V0	V0
88 x 17.8 x 76.7	88 x 17.8 x 76.7	113 x 36 x 86.2
3.46 x 0.7 x 3.02	3.46 x 0.7 x 3.02	4,45 x 1.41 x 3,40
OV R T1-T2 N 50-275s C QS 2CTB815710R2700	OV R T1-T2 N 50-440s C QS 2CTB815710R5600	OV R T1-T2 N 100-440s C QS 2TAM210300R7300

Protection and safety

OVR Type 1+2 surge protective devices Single pole

Type 1+2 surge protective devices are designed to discharge high current surges without any destruction of the installation. These surge protective devices are characterized by their capacity to withstand impulse current with 10/350 μ s wave form which simulate natural lightning current. Type 1+2 ABB surge protective devices have a high impulse current withstand capacity with ensuring a low protection level (Up).

Type 1+2 SPDs can be installed at the entrance in the main switch board for a global protection of the electrical installation.

Poles	Impulse current 10/350	Max. discharge current I _{max} 8/20, I _{peak} 8/20*	Follow current interrupting rating I _{fi}	Voltage protection level Up	Nominal voltage Un	Max. continuous operating voltage Uc	Bbn 3660308	Order details		Weight 1 piece
	kA	kA	kA	kV	V	V	EAN	Type code	Order code	kg
1	25	60 (*)	50	1.5	230	264	4053546053364	OVR T1-T2 1L 25-255 P	2CTB813250R2300	0.27
1	25	60 (*)	50	1.5	230	264	4053546053371	OVR T1-T2 1L 25-255 P TS	2CTB813251R2300	0.3
1	25	60 (*)	0.1	1.5	230	255	4053546053234	OVR T1-T2 N 100-255 P	2CTB813010R2300	0.3
1	25	60 (*)	0.1	1.5	230	255	4053546054736	OVR T1-T2 N 100-255 P TS	2CTB813011R2300	0.3
1	12.5	80	-	1.4	230	275	524881	OVR T1-T2 12.5-275s P TS QS	2CTB815710R0000	0.15
1	12.5	80	-	1.4	230	275	524959	OVR T1-T2 12.5-275s P QS	2CTB815710R1200	0.15
1	12.5	80	-	1.9	400	440	525055	OVR T1-T2 12.5-440s P TS QS	2CTB815710R2900	0.30
1	12.5	80	-	1.9	400	440	525123	OVR T1-T2 12.5-440s P QS	2CTB815710R4100	0.30
1	50	100	-	1.4	230	275	525024	OVR T1-T2 N 50-275s P QS	2CTB815710R2400	0.15
1	25	-	-	2.2	400	440	6941593468416	OVR T1-T2 25-440s P QS	2TAM211000R4810	0.445
1	25	-	-	2.2	400	440	6941593468423	OVR T1-T2 25-440s P TS QS	2TAM211000R4811	0.445
1	50	100	-	1.9	400	440	6941593468560	OVR T1-T2 N 50-440s P QS	2CTB815710R5300	0.320
1	100	100	-	1.9	400	440	6941593468560	OVR T1-T2 N 100-440s P QS	2TAM210100R7300	0.320

(*) I_{peak}, extended feature similar to I_{max}

Notes



Protection and safety

OVR Type 1+2 surge protective devices TNC 230 and 400 V networks

Technical features

Types			OVR T1-T2 3L 12.5-275s P QS	OVR T1-T2 3L 12.5-440s P QS	OVR T1-T2 3L 25-440s P QS
with auxiliary contact (TS)			OVR T1-T2 3L 75-255 P TS	OVR T1-T2 3L 12.5-275s P TS QS	OVR T1-T2 3L 25-440s P TS QS
Technology		Spark Gap	Varistor	Varistor	Varistor
Electrical features					
Standard		IEC 61643-11/EN 61643-11 UL 1449, 5 th Edition	IEC 61643-11/EN 61643-11:2012/ A11:2018	IEC 61643-11/EN 61643-11:2012/ A11:2018	IEC 61643-11/EN 61643-11:2012/ A11:2018
Type/test class		T1-T2/I - II	T1-T2/I - II	T1-T2/I - II	T1-T2/I - II
Protected lines		3	3	3	3
System network		TNC	TNC	TNC	TNC - IT (230)
Type of current		AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network		± 10 %	± 20 %	± 10 %	± 20 %
Nominal system voltage Un		[V] 230/400	230/400	400/690	400/690
Max. cont. operating voltage Uc		[V] 264	275	440	440
Maximum impulse current Iimp (10/350)		[kA] 25	12.5	12.5	25
Max. Imp current Tot Iimp (10/350)		[kA] 75	37.5	37.5	75
Nominal discharge current In (8/20)		[kA] 25	20	20	40
Maximum discharge current I _{max} (8/20), I _{peak} (8/20)*		[kA] 60 (*)	80	80	-
Follow current interrupting rating I _{fi}		[kA] 50	-	-	-
Voltage protection level Up at In (L-N/N-PE/L-PE)		[kV] -/-/1.5	-/-/1.4	-/-/2	2.2 / - / -
Voltage protection level U _{res} at 3 kA		[kV] -	0.5	0.8	-
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200 ms)		[V] 440 V: 120 min	337/-	581/-	581 / -
Response time		[ns] ≤ 100	≤ 25	≤ 25	<25
Short-circuit withstand capability I _{sc}		[kA] 50	100	100	100
Max Limitation/Extinction of mains follow currents (L-N)/(N-PE)		[kA] 100/-	-	-	-
Maximum Prospective Short-Circuit current on the point of installation		[kA] 100	100	100	-
Backup fuse (gG)		[A] ≤ 315	≤ 160	≤ 160	≤ 315
circuit breaker (B or C)		[A] -	≤ 125	≤ 125	-
Pluggable cartridge		Yes	Yes	Yes	Yes
Integrated thermal disconnect		Yes	Yes	Yes	Yes
State indicator		Yes	Yes	Yes	Yes
Safety reserve		No	Yes	Yes	Yes
Auxiliary contact		Yes	Yes (TS option)	Yes (TS option)	Yes
Installation					
Wire range	solid wire, single wiring	[mm ²] 10...35	2.5 ... 35	2.5 ... 35	2.5 - 50
	stranded wire, single wiring	[mm ²] 10...50	2.5 ... 25	2.5 ... 25	2.5 - 35
Stripping length (L, N, PE)		[mm] 15.5	12.5	12.5	15
Tightening torque (L, N, PE)		[Nm] 7	2.8	2.8	2.5
Auxiliary contact (TS)					
Contacts information		1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC
Min. load		5V DC - 10 mA	12 DC - 10 mA	12 DC - 10 mA	5V DC - 10 mA
Max. load		250 V AC - 0,5A	250 V AC - 1A	250 V AC - 1A	250 V AC - 0,5A
Connection cross-section		[mm ²] 0.5 ...1.5	0.5 ...1.5	0.5 ...1.5	0.5 ...1.5
Miscellaneous characteristics					
Stocking and operating temperature		[°C] [parallel] / [series] -40 to +80 / -40 to 60	-40 to +80	-40 to +80	-40 to +80
Maximal Altitude		[m] 2000	5000	5000	2000
Degree of protection		IP20 - Indoor	IP 20 - Indoor	IP 20 - Indoor	IP20 - Indoor
Fire resistance according to UL 94		V0	V-0	V-0	V0
Dimensions					
height x width x depth		[mm]	88 x 53.4 x 76.7	88 x 106.8 x 76.7	113 x 108 x 86.2
		[inches]	3.46 x 2.1 x 3.02	3.46 x 4.2 x 3.02	4,45 x 4,23 x 3,40
Dimensions with auxiliary contact (TS)					
height x width x depth		[mm]	99 x 72 x 108	95.8 x 53.4 x 76.7	95.8 x 106.8 x 76.7
		[inches]	3.86 x 2.80 x 4.25	3.77 x 2.1 x 3.02	3.77 x 4.2 x 3.02
			4,48 x 4,23 x 3,40		
Replacement Cartridges					
Phase Product ID		OVR T1-T2 1L 25-255 C 2CTB813252R2300	OVR T1-T2 12.5-275s CQS 2CTB815710R2600	OVR T1-T2 12.5-440s CQS 2CTB815710R5500	OVR T1-T2 25-440s CQS 2TAM210200R4810

(*) I_{peak}, extended feature similar to I_{max}

Protection and safety

OVR Type 1+2 surge protective devices TNC networks



OVR T1-T2 3L
75-255 P TS

Type 1+2 surge protective devices are designed to discharge high current surges without any destruction of the installation. These surge protective devices are characterized by their capacity to withstand impulse current with 10/350 μ s wave form which simulate natural lightning current.

Type 1+2 ABB surge protective devices have a high impulse current withstand capacity with ensuring a low protection level (U_p).

Type 1+2 SPDs can be installed at the entrance in the main switch board for a global protection of the electrical installation.

Poles	Impulse current 10/350 kA	Max discharge current I_{max} 8/20 kA	Voltage protection level U_p kV	Nominal voltage U_n V	Max. cont. operating voltage U_c V	Bbn 3660308 EAN	Order details		Weight 1 piece kg
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
3	25	60 (*)	1.5	230/400	264	4053546114621	OVR T1-T2 3L 75-255 P TS	2CTB812751R2300	0.52
3	12.5	80	1.4	230/400	275	524911	OVR T1-T2 3L 12.5- 275s P TS QS	2CTB815710R0600	0.45
3	12.5	80	1.4	230/400	275	524980	OVR T1-T2 3L 12.5-275s P QS	2CTB815710R1800	0.45
3	12.5	80	2	400/690	440	525154	OVR T1-T2 3L 12.5-440s P QS	2CTB815710R4700	0.90
3	12.5	80	1.9	400/690	440	525086	OVR T1-T2 3L 12.5- 440s P TS QS	2CTB815710R3500	0.90
3	25	-	2.2	400/690	440	6941593468430	OVR T1-T2 3L 25-440s P QS	2TAM213000R4810	1.255
3	25	-	2.2	400/690	440	6941593468447	OVR T1-T2 3L 25-440s P TS QS	2TAM213000R4811	1.255

(*) I_{peak} , extended feature similar to I_{max}

Protection and safety

OV R Type 1+2 surge protective devices TNS/TT 230 1Ph+N and 3Ph+N networks

Technical features

Types			
with auxiliary contact (TS)			OV R T1-T2 1N 50-255 P TS
Technology			Spark Gap
Electrical features			
Standard			IEC 61643-11 / EN 61643-11 UL 1449. 5 th Edition
Type/test class			T1-T2 / I - II
Protected lines			1+N
System network			TN / TT
Type of current			AC 47-63Hz
Voltage regulation of the system network			± 10 %
Nominal system voltage Un	[V]		230
Max. cont. operating voltage Uc	[V]		255
Maximum impulse current Iimp (10/350)	[kA]		25
Max. Imp current Tot Iimp (10/350)	[kA]		50
Nominal discharge current In (8/20)	[kA]		25
Maximal discharge current I _{max} (8/20) kA, I _{peak} (8/20)*	[kA]		60 (*)
Follow current interrupting rating I _{fi}	[kA]		50
Voltage protection level Up at In (L-N/N-PE/L-PE)	[kV]		≤ 1.5 / ≤ 1.5 / ≤ 1.8
Voltage protection level Ures at 3 kA	[kV]		-
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)	[V]		440 V: 120 min / 1200 V
Response time	[ns]		≤ 100
Short-circuit withstand capability I _{sc}	[kA]		50 / -
Max Limitation / Extinction of mains follow currents (L-N)/(N-PE)	[kA]		100 / 0,1
Maximum Prospective Short-Circuit current on the point of installation	[kA]		100
Backup protection maximum rating	fuse (gG)	[A]	≤ 315
	circuit breaker (B or C curve)	[A]	-
Pluggable cartridge			Yes
Integrated thermal disconnecter			Yes
State indicator			Yes
Safety reserve			No
Auxiliary contact			Yes
Installation			
Wire range (L, N, PE)	solid wire, single wiring	[mm ²]	10...35
	stranded wire, single wiring	[mm ²]	10...50
Stripping length (L, N, PE)		[mm]	15.5
Tightening torque (L, N, PE)		[Nm]	7
Auxiliary contact (TS)			
Contacts information			1 NO - 1 NC
Min. load			5V DC - 10 mA
Max. load			250 V AC - 0,5A
Connection cross-section		[mm ²]	0.5 ...1.5
Miscellaneous characteristics			
Stocking and operating temperature		[°C]	[parallel] / [series] -40 to +80 / -40 to 60
Maximal Altitude		[m]	2000
Degree of protection			IP20 - Indoor
Fire resistance according to UL 94			V0
Dimensions			
height x width x depth		[mm]	
		[inches]	
Dimensions with auxiliary contact (TS)			
height x width x depth		[mm]	99 x 72 x 72
		[inches]	3.86 x 2.80 x 2.85
Replacement Cartridges			
Phase Product ID			OV R T1-T2 1L 25-255 C 2CTB813252R2300
Neutral Product ID			OV R T1-T2 N 50-255 C 2CTB812522R2300

(*) I_{peak}, extended feature similar to I_{max}

Protection and safety

OVR Type 1+2 surge protective devices TNS/TT 230 1Ph+N and 3Ph+N networks

OVR T1-T2 3N 100-255 P TS		OVR T1-T2 4L 100-255 P TS	OVR T1-T2 3N 25-440s P QS
Spark Gap		Spark Gap	MOV by Varistor
IEC 61643-11 / EN 61643-11 UL 1449. 5 th Edition		IEC 61643-11/EN 61643-11 UL 1449. 5 th Edition	IEC 61643-11/EN 61643-11:2012/A11:2018
T1-T2 / I - II		T1-T2 / I - II	T1-T2/I - II
3+N		4	3+N
TNS / TT		TNS	TNS - TT (L-N)
AC 47-63Hz		AC 47-63Hz	AC 47-63 Hz
± 10 %		± 10 %	± 20 %
230/400		230/400	400/690
255		264	440
25		25	25
100		100	100
25		25	
60 (*)		60 (*)	-
50		50	-
≤ 1.5 / ≤ 1.5 / ≤ 1.8		≤ 3 / ≤ 1.5 / ≤ 1,5	≤ 2.2 / ≤ 1.9 / -
-		-	-
440 V: 120 min / 1200 V		440 V: 120 min / -	581 / 1640
≤ 100		≤ 100	<25
50 / -		50	100
100 / 0,1		100/100	100
100		100	100
≤ 315		≤ 315	≤ 315
-		-	-
Yes		Yes	Yes
Yes		Yes	Yes
Yes		Yes	Yes
No		No	Yes
Yes		Yes	Yes
10...35		10...35	2.5 - 50
10...50		10...50	2.5 - 35
15.5		15.5	15
7		7	2.5
1 NO - 1 NC		1 NO - 1 NC	1 NO - 1 NC
5V DC - 10 mA		5V DC - 10 mA	5V DC - 10 mA
250 V AC - 0,5A		250 V AC - 0,5A	250 V AC - 0,5A
0.5 ...1.5		0.5 ...1.5	0.5 ...1.5
[parallel] / [series] -40 to +80 / -40 to 60		[parallel] / [series] -40 to +80 / -40 to 60	-40 to +80
2000		2000	2000
IP20 - Indoor		IP20 - Indoor	IP20 - Indoor
V0		V0	V0
			113 x 144 x 86.2
			4,45 x 5,64 x 3,40
99 x 144 x 72		99 x 144 x 72	114 x 144 x 86.2
3.86 x 5.60 x 2.85		3.86 x 5.60 x 2.85	4,48 x 5,64 x 3,40
OVR T1-T2 1L 25-255 C 2CTB813252R2300		OVR T1-T2 1L 25-255 C 2CTB813252R2300	OVR T1-T2 25-440s C QS 2TAM210200R4810
OVR T1-T2 N 100-255 TT C 2CTB812022R2300		OVR T1-T2 1L 25-255 C 2CTB813252R2300	OVR T1-T2 N 100-440s C QS 2TAM210300R7300

Protection and safety

OVR Type 1+2 surge protective devices TNS/TT 230 1Ph+N and 3Ph+N networks

Technical features

Types		OVR T1-T2 1N 12.5-275s P QS	
with auxiliary contact (TS)		OVR T1-T2 1N 12.5-275s P TS QS	
Technology		Varistor + GDT	
Electrical features			
Standard		IEC 61643-11/EN 61643-11:2012/A11:2018	
Type/test class		T1-T2/I - II	
Protected lines		1+1	
System network		TT - TNS	
Type of current		AC 47-63 Hz	
Voltage regulation of the system network		± 20 %	
Nominal system voltage Un	[V]	230	
Max. cont. operating voltage Uc	[V]	275	
Maximum impulse current Iimp (10/350)	[kA]	12.5	
Max.Imp current Tot Iimp (10/350)	[kA]	25	
Nominal discharge current In (8/20)	[kA]	20	
Maximal discharge current Imax (8/20) kA	[kA]	80	
Follow current interrupting rating Ifi	[kA]		
Voltage protection level Up at In (L-N/N-PE/L-PE)	[kV]	≤ 1.4/ ≤ 1.4/ ≤ 1.5	
Voltage protection level Ures at 3 kA	[kV]	0.5	
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)	[V]	337/1200	
Response time	[ns]	≤ 25	
Short-circuit withstand capability Isccr	[kA]	100	
Backup protection maximum rating	fuse (gG)	[A]	≤ 160
	circuit breaker (B or C curve)	[A]	≤ 125
Pluggable cartridge		Yes	
Integrated thermal disconnector		Yes	
State indicator		Yes	
Safety reserve		Yes	
Auxiliary contact		Yes (TS option)	
Installation			
Wire range (L, N, PE)	solid wire, single wiring	[mm²]	2.5 ... 35
	stranded wire, single wiring	[mm²]	2.5 ... 25
Stripping length (L, N, PE)		[mm]	12.5
Tightening torque (L, N, PE)		[Nm]	2.8
Auxiliary contact (TS)			
Contacts information		1 NO - 1 NC	
Min. load		12 V DC - 10 mA	
Max. load		250 V AC - 1A	
Connection cross-section		[mm²]	0.5 ...1.5
Miscellaneous characteristics			
Stocking and operating temperature		[°C]	-40 to +80
Maximal Altitude		[m]	5000
Degree of protection		IP 20 - Indoor	
Fire resistance according to UL 94		V-0	
Dimensions			
height x width x depth	[mm]	88 x 35.6 x 76.7	
	[inches]	3.46 x 1.4 x 3.02	
Dimensions with auxiliary contact (TS)			
height x width x depth	[mm]	95.8 x 35.6 x 76.7	
	[inches]	3.46 x 1.4 x 3.02	
Replacement Cartridges			
Phase Product ID		OVR T1-T2 12.5-275s C QS 2CTB815710R2600	
Neutral Product ID		OVR T1-T2 N 50-275s C QS 2CTB815710R2700	

Protection and safety

OVR Type 1+2 surge protective devices TNS/TT 230 1Ph+N and 3Ph+N networks

OVR T1-T2 3N 12.5-275s P QS	OVR T1-T2 4L 12.5-275s P QS
OVR T1-T2 3N 12.5-275s P TS QS	OVR T1-T2 4L 12.5-275s P TS QS
Varistor + GDT	Varistor
IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018
T1-T2/I - II	T1-T2/I - II
3+1	3+N
TT - TNS	TNS
AC 47-63 Hz	AC 47-63 Hz
± 20%	± 20%
230/400	230/400
275	275
12.5	12.5
50	50
20	20
80	80
	-
$\leq 1.4 / \leq 1.4 / \leq 1.5$	$\leq 2.8 / \leq 1.4 / \leq 1.4$
0.5	0.5
337/1200	337/
≤ 25	≤ 25
100	100
≤ 160	≤ 160
≤ 125	≤ 125
Yes	Yes
Yes	Yes
Yes	Yes
Yes	Yes
Yes (TS option)	Yes (TS option)
2.5 ... 35	2.5 ... 35
2.5 ... 25	2.5 ... 25
12.5	12.5
2.8	2.8
1 NO - 1 NC	1 NO - 1 NC
12 V DC - 10 mA	12 V DC - 10 mA
250 V AC - 1A	250 V AC - 1A
0.5 ...1.5	0.5 ...1.5
-40 to +80	-40 to +80
5000	5000
IP 20 - Indoor	IP 20 - Indoor
V-0	V-0
88 x 71.2 x 76.7	88 x 71.2 x 76.7
3.46 x 2.8 x 3.02	3.46 x 2.8 x 3.02
95.8 x 71.2 x 76.7	95.8 x 71.2 x 76.7
3.77 x 2.8 x 3.02	3.77 x 2.8 x 3.02
OVR T1-T2 12.5-275s C QS 2CTB815710R2600	OVR T1-T2 12.5-275s C QS 2CTB815710R2600
OVR T1-T2 N 50-275s C QS 2CTB815710R2700	

Protection and safety

OVR Type 1+2 surge protective devices TNS/TT 400 V 1Ph+N and 3Ph+N networks

Technical features

Types		OVR T1-T2 1N 12.5-440s P QS	OVR T1-T2 3N 12.5-440s P QS	OVR T1-T2 4L 12.5-440s P QS
with auxiliary contact (TS)		OVR T1-T2 1N 12.5-440s P TS QS	OVR T1-T2 3N 12.5-440s P TS QS	OVR T1-T2 4L 12.5-440s P TS QS
Technology		Varistor + GDT	Varistor + GDT	Varistor
Electrical features				
Standard		IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018
Type/test class		T1-T2/I - II	T1-T2/I - II	T1-T2/I - II
Protected lines		1+1	3+1	4
System network		TT- TNS	TT- TNS	TNS
Type of current		AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network		± 10 %	± 10 %	± 10 %
Nominal system voltage Un	[V]	400	400/690	400/690
Max. cont. operating voltage Uc	[V]	440	440	440
Maximum impulse current Iimp (10/350)	[kA]	12.5	12.5	12.5
Max. Imp current Tot Iimp (10/350)	[kA]	25	50	50
Nominal discharge current In (8/20)	[kA]	20	20	20
Maximal discharge current I _{max} (8/20) kA	[kA]	80	80	80
Follow current interrupting rating Ifi	[kA]			
Voltage protection level Up at In (L-N/N-PE/L-PE)	[kV]	1.9/1.9/2	1.9/1.9/2	3.8/1.9/1.9
Voltage protection level Ures at 3 kA	[kV]	0.8	0.8	0.8
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)	[V]	581/1200	581/1200	581/
Response time	[ns]	≤ 25	≤ 25	≤ 25
Short-circuit withstand capability Isccr	[kA]	100	100	100
Backup protection fuse (gG)	[A]	≤ 160	≤ 160	≤ 160
maximum rating circuit breaker (B or C curve)	[A]	≤ 125	≤ 125	≤ 125
Pluggable cartridge		Yes	Yes	Yes
Integrated thermal disconnecter		Yes	Yes	Yes
State indicator		Yes	Yes	Yes
Safety reserve		Yes	Yes	Yes
Auxiliary contact		Yes (TS option)	Yes (TS option)	Yes (TS option)
Installation				
Wire range (L, N, PE)	solid wire	[mm²] 2.5 ... 35	2.5 ... 35	2.5 ... 35
	stranded wire	[mm²] 2.5 ... 25	2.5 ... 25	2.5 ... 25
Stripping length (L, N, PE)		[mm] 12.5	12.5	12.5
Tightening torque (L, N, PE)		[Nm] 2.8	2.8	2.8
Auxiliary contact (TS)				
Contacts information		1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC
Min. load		12 V DC - 10 mA	12 V DC - 10 mA	12 V DC - 10 mA
Max. load		250 V AC - 1 A	250 V AC - 1 A	250 V AC - 1 A
Connection cross-section		[mm²] 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
Degree of protection		IP 20 - Indoor	IP 20 - Indoor	IP 20 - Indoor
Fire resistance according to UL 94		V-0	V-0	V-0
Dimensions				
height x width x depth	[mm]	88 x 53.4 x 76.7	88 x 124.6 x 76.7	88 x 142.4 x 76.7
	[in]	3.46 x 2.1 x 3.02	3.46 x 4.91 x 3.02	3.46 x 5.61 x 3.02
Dimensions with auxiliary contact (TS)				
height x width x depth	[mm]	95.8 x 53.4 x 76.7	95.8 x 124.6 x 76.7	95.8 x 142.4 x 76.7
	[in]	3.77 x 2.1 x 3.02	3.77 x 4.91 x 3.02	3.77 x 5.61 x 3.02
Replacement Cartridges				
Phase Product ID		OVR T1-T2 12.5-440s C QS 2CTB815710R5500	OVR T1-T2 12.5-440s C QS 2CTB815710R5500	OVR T1-T2 12.5-440s C QS 2CTB815710R5500
Neutral Product ID		OVR T1-T2 N 50-440s C QS 2CTB815710R5600	OVR T1-T2 N 50-440s C QS 2CTB815710R5600	

Protection and safety

OVR Type 1+2 surge protective devices TNS/TT 400 V 1Ph+N and 3Ph+N networks



Type 1+2 surge protective devices are designed to discharge high current surges without any destruction of the installation. These surge protective devices are characterized by their capacity to withstand impulse current with 10/350 μ s wave form which simulate natural lightning current.

Type 1+2 ABB surge protective devices have a high impulse current withstand capacity with ensuring a low protection level (U_p).

Type 1+2 SPDs can be installed at the entrance in the main switch board for a global protection of the electrical installation.

OVR T1-T2
1N 12.5-440s
P TS QS

Poles	Impulse current Iimp 10/350	Max. discharge current I _{max} 8/20, I _{peak} 8/20*	Follow current interrupting rating I _{fi}	Voltage protection level U _p	Nominal voltage U _n	Max. cont. operating voltage U _c	Bbn 3660 308	Order details		Weight 1 piece
	kA	kA	kA	kV	V	V	EAN	Type code	Order code	kg
1+1	25	60 (*)	50	1.5	230	255	4053546114614	OVR T1-T2 1N 50-255 P TS	2CTB812511R2300	0.46
3+1	25	60 (*)	50	1.5	230/400	255	4053546114645	OVR T1-T2 3N 100-255 P TS	2CTB812111R2300	0.54
4	25	60 (*)	50	1.5	230/400	264	4053546114638	OVR T1-T2 4L 100-255 P TS	2CTB812101R2300	0.54
1+1	12.5	80	-	1.4	230	275	524966	OVR T1-T2 1N 12.5-275s P QS	2CTB815710R1300	0.30
1+1	12.5	80	-	1.4	230	275	524898	OVR T1-T2 1N 12.5-275s P TS QS	2CTB815710R0100	0.30
1+1	12.5	80	-	1.9	400	440	525130	OVR T1-T2 1N 12.5-440s P QS	2CTB815710R4200	0.45
1+1	12.5	80	-	1.9	400	440	525062	OVR T1-T2 1N 12.5-440s P TS QS	2CTB815710R3000	0.45
3+1	12.5	80	-	1.4	230/400	275	524997	OVR T1-T2 3N 12.5-275s P QS	2CTB815710R1900	0.60
3+1	12.5	80	-	1.4	230/400	275	524928	OVR T1-T2 3N 12.5-275s P TS QS	2CTB815710R0700	0.60
3+1	12.5	80	-	1.9	400/690	440	525161	OVR T1-T2 3N 12.5-440s P QS	2CTB815710R4800	1.05
3+1	12.5	80	-	1.9	400/690	440	525093	OVR T1-T2 3N 12.5-440s P TS QS	2CTB815710R3600	1.05
4	12.5	80	-	1.4	230/400	275	525017	OVR T1-T2 4L 12.5-275s P QS	2CTB815710R2300	0.60
4	12.5	80	-	1.4	230/400	275	524942	OVR T1-T2 4L 12.5-275s P TS QS	2CTB815710R1100	0.60
4	12.5	80	-	1.9	400/690	440	525185	OVR T1-T2 4L 12.5-440s P QS	2CTB815710R5200	1.20
4	12.5	80	-	1.9	400/690	440	525116	OVR T1-T2 4L 12.5-440s P TS QS	2CTB815710R4000	1.20
1	25	-	-	2.2	400/690	440	6941593468454	OVR T1-T2 3N 25-440s P QS	2TAM214100R4810	1.481
1	25	-	-	2.2	400/690	440	6941593468461	OVR T1-T2 3N 25-440s P TS QS	2TAM214100R4811	1.481

(*) I_{peak}, extended feature similar to I_{max}

Protection and safety

OVR Type 2 surge protective devices non pluggable

Technical features

Types		OVR T2 20-275	OVR T2 40-275
with auxiliary contact (TS)		-	-
Technology		Varistor	Varistor
Electrical features			
Standard		IEC 61643-11/EN 61643-11	IEC 61643-11/EN 61643-11
Type/test class		T2/II	T2/II
Protected lines		1	1
Types of networks		TT(L-N)-TNS-TNC	TT(L-N)-TNS-TNC
Type of current		AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network		± 20 %	± 20 %
Nominal AC voltage Un	[V]	230	230
Max. cont. operating AC voltage Uc	[V]	275	275
Maximum discharge current I _{max} (8/20)	[kA]	20	40
Nominal discharge current I _n (8/20)	[kA]	5	20
Voltage protection level Up at I _n	[kV]	1.5	1.4
Voltage protection level Up at 3 kA	[kV]	0.9	0.9
TOV (Temporary overvoltage) withstand Ut (L-N: 5s/N-PE: 200ms)	[V]	337/-	337/-
Response time	[ns]	≤ 25	≤ 25
Residual current IPE	[μA]	≤ 110	≤ 110
Short-circuit withstand capability I _{sc}	[kA]	50	50
Backup protection fuse (gG)	[A]	≤ 50	≤ 50
maximum rating circuit breaker (B or C curve)	[A]	≤ 50	≤ 50
Pluggable cartridge		No	No
Integrated thermal disconnecter		Yes	Yes
State indicator		Yes	Yes
Safety reserve		No	No
Auxiliary contact (TS)		No	No
Installation			
Wire range (L, N, PE)	solid wire	[mm ²] 2.5...25	2.5...25
	stranded wire	[mm ²] 2.5...16	2.5...16
Stripping length (L, N, PE)		[mm] 12.2	12.2
Tightening torque (L, N, PE)		[Nm] 2.5	2.5
Auxiliary contact (TS)			
Contact complement		-	-
Min. load		-	-
Max. load		-	-
Connection cross-section		[mm ²] -	-
Miscellaneous characteristics			
Stocking and operating temperature		[°C] -40 to +80	-40 to +80
Maximal Altitude		[m] 2000	2000
Degree of protection		IP 20	IP 20
Fire resistance according to UL 94		V-0	V-0
Dimensions			
height x width x depth	[mm]	85 x 17.8 x 64.8	85 x 17.8 x 64.8
	[in]	3.35 x 0.70 x 2.55	3.35 x 0.70 x 2.55

Protection and safety

OVR Type 2 surge protective devices non pluggable

Type 2 surge protective devices are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (Up). They are characterized by their capacity to safely discharge current with 8/20 μ s wave form.

Type 2 non pluggable - Uc 275 V

Po- les	Max dis- charge current I _{max} 8/20	Nomi- nal dis- charge current I _n	Volt- age pro- tection level U _p	Nominal voltage U _n	Max. cont. oper- ating voltage U _c	Bbn 3660308	Order details		Weight 1 piece
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
1	20	5	1.5	230/400	275	514882	OVR T2 20-275	2CTB804200R0100	0.12
1	40	20	1.4	230/400	275	514103	OVR T2 40-275	2CTB804201R0100	0.12
1	20	5	1.5	230/400	275	519382	OVR T2 20-275 (x20)	2CTB804200R1100	0.12
1	40	20	1.4	230/400	275	519412	OVR T2 40-275 (x20)	2CTB804201R1100	0.12

Protection and safety

OV R Type 2 pluggable QuickSafe® surge protective devices Single pole 230 V networks

Technical features

Types		OV R T2 40-275 P QS	OV R T2 40-275s P QS
with auxiliary contact (TS)		OV R T2 40-275 P TS QS	OV R T2 40-275s P TS QS
Technology		Varistor	Varistor
Electrical features			
Standard		IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018
Type/test class		T2/II	T2/II
Protected lines		1	1
System network		TT(L-N)-TNS-TNC	TT(L-N)-TNS-TNC
Type of current		AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network		± 20 %	± 20 %
Nominal system voltage Un		[V] 230	230
Max. cont. operating voltage Uc		[V] 275	275
Nominal dc voltage Un dc L-PE		[V dc] 320	-
Max. dc. cont. operating voltage Ucdc L-PE		[V dc] 355	-
Maximum discharge current Imax (8/20)		[kA] 40	40
Maximum impulse current Iimp (10/350)		[kA] 2	2
Nominal discharge current In (8/20)		[kA] 20	20
Voltage protection level Up at In (L-N/N-PE/L-PE)		[kV] 1.25/-/1.25	1.4/-/1.4
Voltage protection level Ures at 3kA (L-N)		[kV] 0.8	0.5
Voltage protection level Ures at 5kA (L-N)		[kV] 0.85	0.7
Voltage protection level Ures at 10kA (L-N)		[kV] 1	0.9
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)		[V] 337/-	337/-
Response time		[ns] ≤ 25	≤ 25
Short-circuit withstand capability Isccr		[kA] 100	100
Backup protection maximum rating	fuse (gG)	[A] ≤ 125	≤ 160
	circuit breaker (B or C curve)	[A] ≤ 125	≤ 125
Pluggable cartridge		Yes	Yes
Integrated QuickSafe® technology		Yes	Yes
State indicator		Yes	Yes
Safety reserve		No	Yes
Auxiliary contact		Yes (TS option)	Yes (TS option)
Installation			
Wire range (L, N, PE)	solid wire	[mm²] 2.5 ... 35	2.5 ... 35
	stranded wire	[mm²] 2.5 ... 25	2.5 ... 25
Stripping length (L, N, PE)		[mm] 12.5	12.5
Tightening torque (L, N, PE)		[Nm] 2.8	2.8
Auxiliary contact (TS)			
Contacts information		1 NO - 1 NC	1 NO - 1 NC
Min. load		12 V DC - 10 mA	12 V DC - 10 mA
Max. load		250 V AC - 1 A	250 V AC - 1 A
Connection cross-section		[mm²] 1.5	1.5
Miscellaneous characteristics			
Stocking and operating temperature		[°C] -40 to +80	-40 to +80
Maximal Altitude		[m] 5000	5000
Degree of protection		IP 20	IP 20
Fire resistance according to UL 94		V0	V0
Dimensions			
height x width x depth	[mm]	88 x 17.8 x 65.3	88 x 17.8 x 76.7
	[inches]	3.46 x 0.7 x 2.57	3.46 x 0.7 x 3.02
With Auxiliary Contact (TS)			
height x width x depth	[mm]	95.8 x 17.8 x 65.3	95.8 x 17.8 x 76.7
	[inches]	3.77 x 0.7 x 2.57	3.77 x 0.7 x 3.02
Replacement Cartridges			
Phase Product ID		OV R T2 40-275 C QS 2CTB803876R1000	OV R T2 40-275s C QS 2CTB815704R2600
Neutral Product ID		-	-

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices Single pole
230 V networks

OVR T2 40-350 P QS	OVR T2 80-275s P QS	OVR T2-T3 N 80-275 P QS	OVR T2 N 80-350 P QS	OVR T2 N 80-275s P QS
OVR T2 40-350 P TS QS	OVR T2 80-275s P TS QS			
Varistor	Varistor	GDT	GDT	GDT
IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018
T2/II	T2/II	T2-T3/II-III	T2/II	T2
1	1	1	1	1
TT(L-N)-TNS-TNC	TT(L-N)-TNS-TNC	TT (N-PE)-TNS(N-PE)	TT (N-PE)-TNS(N-PE)	TT(N-PE)-TNS(N-PE)
AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
± 50%	± 20%	± 20%	± 50%	± 20%
230	230	230	230	230
350	275	275	350	275
375	-	-	-	-
415	-	-	-	-
40	80	80	80	80
2	6.25	2	2	6.25
20	20	30	30	30
1.5/-/1.5	1.4/-/1.4	-/1.4/-	-/1.4/-	-/1.4/-
1	0.5	-	-	-
1.05	0.7	-	-	-
1.2	0.9	-	-	-
455/-	337/	-/1200	-/1200	-/1200
≤ 25	≤ 25	< 25	< 25	< 25
100	100	-	-	100
≤ 125	≤ 160	≤ 125	≤ 125	≤ 160
≤ 125	≤ 125	≤ 125	≤ 125	≤ 125
Yes	Yes	Yes	Yes	Yes
Yes	Yes	-	-	-
Yes	Yes	No	No	No
No	Yes	No	No	No
Yes (TS option)	Yes (TS option)	No	No	No
2.5 ... 35	2.5 ... 35	2.5 ... 35	2.5 ... 35	2.5 ... 35
2.5 ... 25	2.5 ... 25	2.5 ... 25	2.5 ... 25	2.5 ... 25
12.5	12.5	12.5	12.5	15
2.8	2.8	2.8	2.8	3.5
1 NO- 1 NC	1 NO- 1 NC	-	-	-
12 V DC - 10 mA	12 V DC - 10 mA	-	-	-
250 V AC - 1 A	250 V AC - 1 A	-	-	-
1.5	1.5	-	-	-
-40 to +80	-40 to +80	-40 to +80	-40 to +80	-40 to +80
5000	5000	5000	5000	5000
IP 20	IP 20 - Indoor	IP 20 - Indoor	IP 20 - Indoor	IP 20 - Indoor
V0	V-0	V-0	V-0	V0
88 x 17.8 x 65.3	88 x 17.8 x 76.7	88 x 17.8 x 65.3	88 x 17.8 x 65.3	88 x 17.8 x 76.7
3.46 x 0.7 x 2.57	3.46 x 0.7 x 3.02	3.46 x 0.7 x 3.02	3.46 x 0.7 x 3.02	3.45 x 0.7 x 3.02
95.8 x 17.8 x 65.3	95.8 x 17.8 x 76.7	-	-	-
3.77 x 0.7 x 2.57	3.77 x 0.7 x 3.02	-	-	-
OVR T2 40-350 C QS 2CTB803886R1000	OVR T2 80-275s C QS 2CTB815708R2600	-	-	-
-	-	OVR T2-T3 N 80-275 C QS 2CTB803876R0000	OVR T2 N 80-350 C QS 2CTB803886R0000	OVR T2 N 80-275s C QS 2CTB815708R2800

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices Single pole 230 V networks



OVR T2 40-275 P QS

Type 2 surge protective devices are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (Up). They are characterized by their capacity to safely discharge current with 8/20 μ s wave form.

Type 2 pluggable

Poles	Max dis-charge current I _{max} 8/20	Nomi-nal dis-charge current I _n	Voltage protec-tion level U _p	Nomi-nal voltage U _n	Max. cont. op-erating voltage U _c	Bbn 3660308	Order details		Weight 1 piece
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
1	40	20	1.25	230	275	519580	OVR T2 40-275 P QS	2CTB803871R2300	0.12
1	40	20	1.25	230	275	519597	OVR T2 40-275 P TS QS	2CTB803871R1700	0.12
1	40	20	1.4	230	275	525291	OVR T2 40-275s P QS	2CTB815704R1200	0.15
1	40	20	1.4	230	275	525222	OVR T2 40-275s P TS QS	2CTB815704R0000	0.15
1	40	20	1.5	230	350	520609	OVR T2 40-350 P QS	2CTB803881R2300	0.12
1	40	20	1.5	230	350	520562	OVR T2 40-350 P TS QS	2CTB803881R1700	0.12
1	80	20	1.4	230	275	525475	OVR T2 80-275s P QS	2CTB815708R1200	0.15
1	80	20	1.4	230	275	525406	OVR T2 80-275s P TS QS	2CTB815708R0000	0.15
1	80	30	1.4	230	275	519658	OVR T2 N 80-350 P QS	2CTB803983R1900	0.12
1	80	30	1.4	230	275	519641	OVR T2-T3 N 80-275 P QS	2CTB803973R1900	0.12
1	80	30	1.4	230	275	525536	OVR T2 N 80-275s P QS	2CTB815708R2500	0.12

Notes



Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices Single pole 400 V networks

Technical features

Types		OVR T2 40-440 P QS	OVR T2 40-440s P QS
with auxiliary contact (TS)		OVR T2 40-440 P TS QS	OVR T2 40-440s P TS QS
Technology		Varistor	Varistor
Electrical features			
Standard		IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018
Type/test class		T2/II	T2/II
Protected lines		1	1
System network		TNC - TT(L-N) - TNS - IT (230 V)	TNC - TT(L-N) - TNS - IT (230 V)
Type of current		AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network		± 10%	± 10%
Nominal system voltage Un	[V]	400	400
Max. cont. operating voltage Uc	[V]	440	440
Nominal dc voltage Un dc L-PE	[V dc]	495	-
Max. dc. cont. operating voltage Ucdc L-PE	[V dc]	545	-
Maximum discharge current I _{max} (8/20)	[kA]	40	40
Maximum impulse current I _{imp} (10/350)	[kA]	2	2
Nominal discharge current I _n (8/20)	[kA]	20	20
Voltage protection level Up at I _n (L-N/N-PE/L-PE)	[kV]	1.8/-/1.8	1.8/-/1.8
Voltage protection level U _{res} at 3kA (L-N)	[kV]	1.25	0.8
Voltage protection level U _{res} at 5kA (L-N)	[kV]	1.35	1.2
Voltage protection level U _{res} at 10kA (L-N)	[kV]	1.55	1.55
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)	[V]	581/-	581/-
U _{oc}	[kV]	-	-
Response time	[ns]	≤ 25	≤ 25
Short-circuit withstand capability I _{scrr}	[kA]	100	100
Backup protection maximum rating	fuse (gG)	[A]	≤ 125
	circuit breaker (B or C curve)	[A]	≤ 125
Pluggable cartridge		Yes	Yes
Integrated QuickSafe® technology		Yes	Yes
State indicator		Yes	Yes
Safety reserve		No	Yes
Auxiliary contact		Yes (TS option)	Yes (TS option)
Installation			
Wire range (L, N, PE)	solid wire	[mm²]	2.5 ... 35
	stranded wire	[mm²]	2.5 ... 25
Stripping length (L, N, PE)		[mm]	12.5
Tightening torque (L, N, PE)		[Nm]	2.8
Auxiliary contact (TS)			
Contacts information		1 NO - 1 NC	1 NO - 1 NC
Min. load		12 V DC - 10 mA	12 V DC - 10 mA
Max. load		250 V AC - 1 A	250 V AC - 1 A

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices Single pole
400 V networks

OVR T2 80-440s P QS	OVR T2-T3 N 80-440 P QS	OVR T2 N 80-440s P QS
OVR T2 80-440s P TS QS		
Varistor	GDT	GDT
IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018
T2/II	T2-T3/II-III	T2
1	1	1
TNC-TT(L-N) - TNS - IT (230 V)	TT (N-PE)-TNS(N-PE)	TT(N-PE)-TNS(N-PE)
AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
± 10 %	± 10 %	± 10 %
400	400	400
440	440	440
-	-	-
-	-	-
80	80	80
6.25	2	6.25
20	30	30
1.8/-/1.8	-/1.4/-	-/2/-
0.8	-	-
1.2	-	-
-	-	-
581/-	-/1200	-/1200
-	-	-
≤ 25	< 25	< 25
100	-	100
≤ 160	≤ 125	≤ 160 A
≤ 125	≤ 125	≤ 160 A
Yes	Yes	No
Yes	Yes	-
Yes	Yes	No
Yes	No	No
Yes (TS option)	No	No
2.5 ... 35	2.5 ... 35	2.5 ... 35
2.5 ... 25	2.5 ... 25	2.5 ... 25
12.5	12.5	15
2.8	2.8	3.5
1 NO - 1 NC	-	-
12 V DC - 10 mA	-	-
250 V AC - 1A	-	-

Protection and safety

OV R Type 2 pluggable QuickSafe® surge protective devices Single pole
400 V networks

Technical features

Types		OV R T2 40-440 P QS	OV R T2 40-440s P QS
with auxiliary contact (TS)		OV R T2 40-440 P TS QS	OV R T2 40-440s P TS QS
Connection cross-section	[mm ²]	1.5	1.5
Miscellaneous characteristics			
Stocking and operating temperature	[°C]	-40 to +80	-40 to +80
Maximal Altitude	[m]	5000	5000
Degree of protection		IP 20	IP 20
Fire resistance according to UL 94		V0	V-0
Dimensions of packing			
height x width x depth	[mm]	88 x 17.8 x 65.3	88 x 17.8 x 76.7
	[inches]	3.46 x 0.7 x 2.57	3.46 x 0.7 x 3.02
With Auxiliary Contact (TS)			
height x width x depth	[mm]	95.8 x 17.8 x 65.3	95.8 x 17.8 x 76.7
	[inches]	3.77 x 0.7 x 2.57	3.77 x 0.7 x 3.02
Replacement Cartridges			
Phase Product ID		OV R T2 40-440 C 2CTB803876R0400	OV R T2 40-440s C QS 2CTB815704R5500
Neutral Product ID		-	-

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices Single pole
400 V networks

OVR T2 80-440s P QS	OVR T2-T3 N 80-440 P QS	OVR T2 N 80-440s P QS
OVR T2 80-440s P TS QS		
1.5		1.5
-40 to +80	-40 to +80	-40 to +80
5000	5000	5000
IP 20	IP 20	IP 20
V-0	V-0	V0
88 x 17.8 x 76.7	88 x 17.8 x 65.3	88 x 17.8 x 76
3.46 x 0.7 x 3.02	3.46 x 0.7 x 2.57	3.46 x 0.7 x 2.99
95.8 x 17.8 x 76.7		
3.77 x 0.7 x 3.02		
OVR T2 80-440s C QS 2CTB815708R5500	-	
-	OVR T2-T3 N 80-440 C QS 2CTB803886R0100	OVR T2 N 80-440s C QS 2CTB815708R2800

Type 2 surge protective devices are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (Up). They are characterized by their capacity to safely discharge current with 8/20 µs wave form.

Type 2 pluggable

Poles	Max dis-charge current I _{max} 8/20	Nomi-nal dis-charge current I _n	Volt-age pro-tection level Up	Nominal voltage Un	Max. cont. oper-ating volt-age Uc	Bbn 3660308	Order details		Weight 1 piece
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
1	40	20	1.8	400	440	519627	OVR T2 40-440 P QS	2CTB803871R1200	0.12
1	40	20	2	400	440	519634	OVR T2 40-440 P TS QS	2CTB803871R0500	0.12
1	40	20	1.8	400	440	525338	OVR T2 40-440s P QS	2CTB815704R4100	0.30
1	40	20	1.8	400	440	525369	OVR T2 40-440s P TS QS	2CTB815704R2900	0.30
1	80	20	1.8	400	440	525567	OVR T2 80-440s P QS	2CTB815708R4100	0.30
1	80	20	1.8	400	440	525567	OVR T2 80-440s P TS QS	2CTB815708R2900	0.30
1	80	30	1.4	400	440	519665	OVR T2-T3 N 80-440 P QS	2CTB803973R2000	0.12
1	80	30	2	400	440	525642	OVR T2 N 80-440s P QS	2CTB815708R5400	0.12

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices TNC 230 V networks

Technical features

Types		OVR T2 3L 40-275 P QS	OVR T2 3L 40-275s P QS	OVR T2 3L 80-275s P QS	OVR T2 3L 40-350 P QS
with auxiliary contact (TS)		OVR T2 3L 40-275 P TS QS	OVR T2 3L 40-275s P TS QS	OVR T2 3L 80-275s P TS QS	OVR T2 3L 40-350 P TS QS
Technology		Varistor	Varistor	Varistor	Varistor
Electrical features					
Standard		IEC 61643-11/ EN 61643-11:2012/ A11:2018	IEC 61643-11/ EN 61643-11:2012/ A11:2018	IEC 61643-11/ EN 61643-11:2012/ A11:2018	IEC 61643-11/ EN 61643-11:2012/ A11:2018
Type/test class		T2/II	T2/II	T2/II	T2/II
Protected lines		3	3	3	3
System network		TNC	TNC	TNC	TNC
Type of current		AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network		± 20 %	± 20 %	± 20 %	± 50 %
Nominal system voltage Un (L-PEN/L-L)	[V]	230/400	230/400	230/400	230/400
Max. cont. operating voltage Uc	[V]	275	275	275	350
Nominal dc voltage Un dc L-PE/Un dc L-L	[V dc]	320/640	-	-	375/750
Max. dc. cont. operating voltage Ucdc L-PE/Ucdc L-L	[V dc]	355/710	-	-	415/830
Maximum discharge current I _{max} (8/20)	[kA]	40	40	80	40
Maximum impulse current I _{imp} (10/350)	[kA]	2	2	6.25	2
Nominal discharge current I _n (8/20)	[kA]	20	20	20	20
Voltage protection level Up at I _n (L-PE)	[kV]	1.25	1.4	1.4	1.5
Voltage protection level U _{res} at 3kA	[kV]	0.8	0.5	0.5	1.0
Voltage protection level U _{res} at 5kA	[kV]	0.85	0.7	0.7	1.05
Voltage protection level U _{res} at 10kA	[kV]	1.0	0.9	0.9	1.2
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)	[V]	337/-	337/-	337/-	455/-
U _{oc}	[kV]	-	-	-	-
Response time	[ns]	≤ 25	≤ 25	≤ 25	≤ 25
Short-circuit withstand capability I _{sc} cr	[kA]	100	100	100	100
Backup fuse (gG)	[A]	≤ 125	≤ 160	≤ 160	≤ 125
protection circuit breaker (B or C curve)	[A]	≤ 125	≤ 125	≤ 125	≤ 125
maximum rating					
Pluggable cartridge		Yes	Yes	Yes	Yes
Integrated QuickSafe® technology		Yes	Yes	Yes	Yes
State indicator		Yes	Yes	Yes	Yes
Safety reserve		No	Yes	Yes	No
Auxiliary contact		Yes (TS option)	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)		[mm]	12.5	12.5	12.5
Tightening torque (L, N, PE)		[Nm]	2.8	2.8	2.8
Auxiliary contact (TS)					
Contacts information		1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC
Min. load		12 DC - 10 mA	12 DC - 10 mA	12 DC - 10 mA	12 DC - 10 mA
Max. load		250 V AC - 1A	250 V AC - 1A	250 V AC - 1A	250 V AC - 1A
Connection cross-section		[mm ²]	1.5	1.5	1.5
Miscellaneous characteristics					
Stocking and operating temperature	[°C]	-40 to +80	-40 to +80	-40 to +80	-40 to +80
Maximal Altitude	[m]	5000	5000	5000	5000
Degree of protection		IP 20	IP 20	IP 20	IP 20
Fire resistance according to UL 94		V0	V-0	V-0	V0

Protection and safety

OVR Type 2 surge protective devices TNC 230 V networks,
pluggable and non-pluggable versions

Technical features

Types		OVR T2 3L 80-275s P QS	OVR T2 3L 40-350 P QS
with auxiliary contact (TS)		OVR T2 3L 80-275s P TS QS	OVR T2 3L 40-350 P TS QS
Dimensions			
height x width x depth	[mm]	88 x 53.4 x 76.7	85 x 53.4 x 64.8
	[inches]	3.46 x 2.1 x 3.02	3.35 x 2.10 x 2.55
With Auxiliary Contact (TS)			
height x width x depth	[mm]	95.8 x 53.4 x 76.7	96 x 53.4 x 64.8
	[inches]	3.77 x 2.1 x 3.02	3.78 x 2.10 x 2.55
Replacement Cartridges			
Phase Product ID		OVR T2 80-275s C QS 2CTB8157084R2600	OVR T2 40-350 C QS 2CTB803886R1000
Neutral Product ID		-	-



OVR T2 3L 40-275 P QS

Type 2 surge protective devices are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (Up). They are characterized by their capacity to safely discharge current with 8/20 μ s wave form.

Type 2 pluggable

Po- les	Max dis- charge current I _{max} 8/20	Nomi- nal dis- charge current I _n	Volt- age pro- tec- tion level U _p	Nominal voltage U _n	Max. cont. oper- ating voltage U _c	Bbn 3660308	Order details		Weight 1 piece
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
3	40	20	1.25	230/400	275	519825	OVR T2 3L 40-275 P QS	2CTB803873R2400	0.36
3	40	20	1.25	230/400	275	519832	OVR T2 3L 40-275 P TS QS	2CTB803873R2500	0.36
3	40	20	1.4	230/400	275	525253	OVR T2 3L 40-275s P TS QS	2CTB815704R0600	0.45
3	40	20	1.4	230/400	275	525314	OVR T2 3L 40-275s P QS	2CTB815704R1800	0.45
3	80	20	1.4	230/400	275	525437	OVR T2 3L 80-275s P TS QS	2CTB815708R0600	0.45
3	80	20	1.4	230/400	275	525499	OVR T2 3L 80-275s P QS	2CTB815708R1800	0.45
3	40	20	1.5	230/400	350	519849	OVR T2 3L 40-350 P QS	2CTB803883R2400	0.36
3	40	20	1.5	230/400	350	519856	OVR T2 3L 40-350 P TS QS	2CTB803883R2500	0.36

Protection and safety

OV R Type 2 pluggable QuickSafe® surge protective devices TNC 400 V networks

Technical features

Types			OV R T2 3L 40-440 P QS	OV R T2 3L 80-440s P QS
with auxiliary contact (TS)			OV R T2 3L 40-440 P TS QS	OV R T2 3L 80-440s P TS QS
Technology			Varistor	Varistor
Electrical features				
Standard			IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018
Type/test class			T2/II	T2/II
Protected lines			3	3
System network			TNC - IT (230)	TNC - IT (230)
Type of current			AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network			± 10%	± 10%
Nominal system voltage Un (L-PEN/L-L)		[V]	400/690	400/690
Max. cont. operating voltage Uc		[V]	440	440
Nominal dc voltage Un dc L-PE/Un dc L-L		[V dc]	495/990	-
Max. dc. cont. operating voltage Ucdc L-PE/Ucdc L-L		[V dc]	545/1090	-
Maximum discharge current I _{max} (8/20)		[kA]	40	80
Maximum impulse current I _{imp} (10/350)		[kA]	2	6.25
Nominal discharge current I _n (8/20)		[kA]	20	20
Voltage protection level Up at I _n (L-PE)		[kV]	1.8	2.1
Voltage protection level U _{res} at 3kA		[kV]	1.25	1.25
Voltage protection level U _{res} at 5kA		[kV]	1.35	1.35
Voltage protection level U _{res} at 10kA		[kV]	1.55	1.55
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)		[V]	581/-	581/-
Response time		[ns]	< 25	< 25
Short-circuit withstand capability I _{scrr}		[kA]	100	100
Backup protection maximum rating	fuse (gG)	[A]	≤ 125	≤ 160
	circuit breaker (B or C curve)	[A]	≤ 125	≤ 126
Pluggable cartridge			Yes	Yes
Integrated QuickSafe® technology			Yes	Yes
State indicator			Yes	Yes
Safety reserve			No	Yes
Auxiliary contact			Yes (TS option)	Yes (TS option)
Installation				
Wire range (L, N, PE)	solid wire	[mm²]	2.5 ... 35	2.5 ... 35
	stranded wire	[mm²]	2.5 ... 25	2.5 ... 25
Stripping length (L, N, PE)		[mm]	2.8	2.8
Tightening torque (L, N, PE)		[Nm]		
Auxiliary contact (TS)			1 NO - 1 NC	1 NO - 1 NC
Contacts information			12 DC - 10 mA	12 DC - 10 mA
Min. load			250 V AC - 1A	250 V AC - 1A
Max. load			1.5	1.5
Connection cross-section		[mm²]		
Miscellaneous characteristics				
Stocking and operating temperature		°C	-40 to +80	-40 to +80
Maximal Altitude		[m]	5000	5000
Degree of protection			IP 20	IP 20
Fire resistance according to UL 94			V-0	V-0
Dimensions				

Protection and safety

OV R Type 2 pluggable QuickSafe® surge protective devices
TNC 400 V networks

Technical features

Types		OVR T2 3L 40-440 P QS	OVR T2 3L 80-440s P QS
with auxiliary contact (TS)		OVR T2 3L 40-440 P TS QS	OVR T2 3L 80-440s P TS QS
height x width x depth	mm	88 x 53.4 x 65.3	88 x 53.4 x 76.7
	inches	3.46 x 2.1 x 2.57	3.46 x 2.1 x 3.02
With Auxiliary Contact (TS)			
height x width x depth	mm	95.8 x 53.4 x 65.3	95.8 x 53.4 x 76.7
	inches	3.77 x 2.1 x 2.57	3.77 x 2.1 x 3.02
Replacement Cartridges			
Phase Product ID		OVR T2 40-440 C QS 2CTB803876R0400	OVR T2 80-440s C QS 2CTB815708R5500
Neutral Product ID		-	-



OVR T2 3L 40-440 P QS

Type 2 surge protective devices are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (Up). They are characterized by their capacity to safely discharge current with 8/20 µs wave form.

Po- les	Max dis- charge current I _{max} 8/20	Nomi- nal dis- charge current I _n	Volt- age pro- tection level U _p	Nominal voltage U _n	Max. cont. oper- ating voltage U _c	Bbn 3660308	Order details		Weight 1 piece
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
3	40	20	1.8	400	440	519894	OVR T2 3L 40-440 P QS	2CTB803873R2800	0.45
3	40	20	1.8	400	440	519900	OVR T2 3L 40-440 P TS QS	2CTB803873R2700	0.45
3	80	20	2.1	400	440	525598	OVR T2 3L 80-440s P TS QS	2CTB815708R3500	0.45
3	80	20	2.1	400	440	525635	OVR T2 3L 80-440s P QS	2CTB815708R4700	0.45

Protection and safety

OV R Type 2 pluggable QuickSafe® surge protective devices TNS 230 V networks

Technical features

Types			OVR T2 4L 40-275 P QS	OVR T2 4L 40-275s P QS	OVR T2 4L 80-275s P QS
with auxiliary contact (TS)			OVR T2 4L 40-275 P TS QS	OVR T2 4L 40-275s P TS QS	OVR T2 4L 80-275s P TS QS
Technology			Varistor	Varistor	Varistor
Electrical features					
Standard			IEC 61643-11/ EN 61643-11:2012/A11:2018	IEC 61643-11/ EN 61643-11:2012/A11:2018	IEC 61643-11/ EN 61643-11:2012/A11:2018
Type/test class			T2/II	T2/II	T2/II
Protected lines			4	4	4
Types of networks			TNS	TNS	TNS
Type of current			AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network			± 20 %	± 20 %	± 20 %
Nominal voltage Un (L-N/L-L)	[V]	230/400	230/400	230/400	
Max. cont. operating AC voltage Uc	[V]	275	275	275	
Nominal dc voltage Un dc L-PE/Un dc L-L	V dc	320/640	-	-	
Max. dc. cont. operating voltage Ucdc L-PE/ Ucdc L-L	V dc	355/710	-	-	
Maximum discharge current Imax (8/20)	[kA]	40	40	80	
Nominal discharge current In (8/20)	[kA]	20	20	20	
Voltage protection level Up at In (L-N/N-PE/L-PE)	[kA]	2.5/1.25/1.25	2.8/1.4/1.4	2.8/1.4/1.4	
Voltage protection level Up at 3 kA	[kA]	0.8	0.5	0.8	
TOV (Temporary over- voltage) withstand Ut (L-N: 5 s /N-PE: 200 ms)	[V]	334/-	337	334/-	
Response time	[ns]	≤ 25	≤ 25	≤ 25	
Short-circuit withstand capability Isccr	[kA]	100	100	100	
Backup protection	Fuse (gG)	[A]	≤ 125	≤160	≤ 160
	Circuit breaker (B or C curve)	[A]	≤ 125	≤125	≤ 125
Pluggable cartridge			Yes	Yes	Yes
Integrated thermal disconnecter			Yes	Yes	Yes
State indicator			Yes	Yes	Yes
Safety reserve			No	Yes	Yes
Auxiliary contact			Yes (TS option)	Yes (TS option)	Yes (TS option)
Installation					
Wire range (L, N, PE)	Solid wire	[mm²]	2.5 ... 35	2.5 ... 35	2.5 ... 35
	Stranded wire	[mm²]	2.5 ... 25	2.5 ... 25	2.5 ... 25
Stripping length (L, N, PE)		[mm]	12.5	12.5	12.5
Tightening torque (L, N, PE)		[Nm]	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		[mm²]	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
Degree of protection			IP20	IP 20	IP20
Fire resistance according to UL 94			V0	V0	V0
Dimensions	height x width x depth	[mm]	88 x 71.2 x 65.3	88 x 71.2 x 76.7	88 x 71.2 x 76.7
		[inches]	3.46 x 2.8 x 2.57	3.46 x 2.8 x 3.02	3.46 x 2.8 x 3.02
with auxiliary contact (TS)	height x width x depth	[mm]	95.8 x 71.2 x 65.3	95.8 x 71.2 x 76.7	95.8 x 71.2 x 76.7
		[inches]	3.77 x 2.8 x 2.57	3.77 x 2.8 x 3.02	3.77 x 2.8 x 3.02
Replacement Cartridges					
Phase Product ID			OVR T2 40-275 C QS 2CTB803876R1000	OVR T2 40-275s C QS 2CTB8157084R2600	OVR T2 80-275s C QS 2CTB815708R2600
Neutral Product ID			-	-	-

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices TNS 230 V networks



OVR T2 4L 40-275 P QS

Type 2 surge protective devices are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (Up). They are characterized by their capacity to safely discharge current with 8/20 μ s wave form.

Type 2 pluggable - Uc 275 V

Po- les	Max dis- charge current I _{max} 8/20	Nomi- nal dis- charge current I _n	Volt- age pro- tec- tion level U _p	Nominal voltage U _n	Max. cont. oper- ating voltage U _c	Bbn 3660308	Order details			Weight 1 piece
							EAN	Type code	Order code	
4	40	20	1.25	230/400	275	520548	OVR T2 4L 40-275 P QS	2CTB803873R5600	0.45	
4	40	20	1.25	230/400	275	520555	OVR T2 4L 40-275 P TS QS	2CTB803873R5200	0.45	
4	40	20	1.4	230/400	275	525345	OVR T2 4L 40-275s P QS	2CTB815704R2300	0.45	
4	40	20	1.4	230/400	275	525284	OVR T2 4L 40-275s P TS QS	2CTB815704R1100	0.45	
4	80	20	1.4	230/400	275	525529	OVR T2 4L 80-275s P QS	2CTB815708R2300	0.45	
4	80	20	1.4	230/400	275	525468	OVR T2 4L 80-275s P TS QS	2CTB815708R1100	0.45	

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices TNS 400 V networks

Technical features

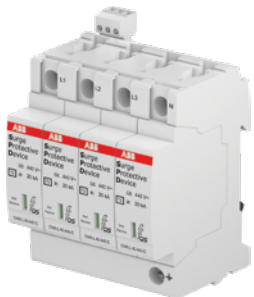
Types		OVR T2 4L 40-440 P QS	OVR T2 4L 80-440s P QS
with auxiliary contact (TS)		OVR T2 4L 40-440 P TS QS	OVR T2 4L 80-440s P TS QS
Technology		Varistor	Varistor
Electrical features			
Standard		IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11/EN 61643-11:2012/A11:2018
Type/test class		T2/II	T2/II
Protected lines		4	4
System network		TNS	TNS
Type of current		AC 47-63 Hz	AC 47-63 Hz
Voltage regulaion of the system network		± 10%	± 10%
Nominal system voltage Un (L-N/L-L)	V	400/690	400/690
Max. cont. operating AC voltage Uc	V	440	440
Nominal dc voltage Un dc L-PE/Un dc L-L		495/990	-
Max. dc cont. Operating voltage Ucdc L-PE/Ucdc L-L		545/1090	-
Maximal discharge current I _{max} (8/20)	kA	40	80
Maximum impulse current I _{imp} (10/350)	kA	2	6.25
Nominal discharge current I _n (8/20)	kA	20	20
Follow current interrupting rating I _{fi}	kA	-	-
Voltage protection level Up at I _n (L-N/N-PE/L-PE)	kV	3.6/1.8/1.8	3.6/1.8/1.8
Voltage protection level U _{res} at 3 kA	kV	1.25	-
Voltage protection level U _{res} at 5 kA		1.35	-
Voltage protection level U _{res} at 10 kA		1.55	-
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)	V	581/	581/
Response time	ns	≤25	≤25
Short-circuit withstand capability I _{sc}	kA	100	100
Backup protection maximum rating			
fuse (gG)	A	≤125	≤160
circuit breaker (B or C curve)	A	≤125	≤125
Pluggable cartridge		Yes	Yes
Integrated thermal disconnect		Yes	Yes
State indicator		Yes	Yes
Safety reserve		No	Yes
Auxiliary contact		Yes (TS option)	Yes (TS option)
Installation			
Wire range (L, N, PE) solid wire	mm ²	2.5 ... 35	2.5 ... 35
stranded wire	mm ²	2.5 ... 25	2.5 ... 25
Stripping length (L, N, PE)	mm	12.5	12.5
Tightening torque (L, N, PE)	Nm	2.5	2.5
Auxiliary contact (TS)		-	-
Contacts information		1 NO - 1 NC	1 NO - 1 NC
Min. load		12 V DC - 10 mA	12 V DC - 10 mA
Max. load		250 V AC - 1 A	250 V AC - 1 A
Connection cross-section	mm ²	1.5	1.5
Miscellaneous characteristics			
Stocking and operating temperature	°C	-40 to +80	-40 to +80
Maximal Altitude	[m]	5000	5000
Degree of protection		IP 20	IP 20

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices TNS 400 V networks

Technical features

Types		OVR T2 4L 40-440 P QS	OVR T2 4L 80-440s P QS
with auxiliary contact (TS)		OVR T2 4L 40-440 P TS QS	OVR T2 4L 80-440s P TS QS
Fire resistance according to UL 94		V0	V0
Dimensions			
height x width x depth	mm	88 x 71.2 x 65.3	88 x 71.2 x 69.4
	inches	3.46 x 2.8 x 2.57	3.46 x 2.8 x 2.57
Dimensions with auxiliary contact (TS)			
height x width x depth	mm	95.8 x 142.4 x 69	95 x 71.2 x 69.4
	inches	3.77 x 2.8 x 2.57	3.77 x 2.8 x 2.57
Replacement Cartridges			
Phase Product ID		OVR T2 40-440 C QS	OVR T2 80-440s C QS
		2CTB803876R0400	2CTB815708R5500



OVR T2 4L 40-440 P TS QS

Type 2 surge protective devices are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (Up). They are characterized by their capacity to safely discharge current with 8/20 μ s wave form.

OVR T2 Pluggable

Pro- tected lines	Max dis- charge current I _{max} 8/20	Nomi- nal current I _n 8/20	Volt- age pro- tec- tion level	Nomi- nal volt- age	Max. cont. oper- ating volt- age	Bbn 3660308	Order details		Weight 1 piece
	kA		Up kV	Un V	Uc V	EAN	Type code	Order code	kg
4	40	20	1,8	440	440	519894	OVR T2 4L 40-440 P QS	2CTB803873R5100	0.45
4	40	20	1,8	440	440	519900	OVR T2 4L 40-440 P TS QS	2CTB803873R5300	0.45
4	80	20	1,8	440	440	525635	OVR T2 4L 80-440s P QS	2CTB815708R5200	0.6
4	80	20	1,8	440	440	525598	OVR T2 4L 80-440s P TS QS	2CTB815708R4000	0.6

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices TNS/TT
230 and 400 V 1Ph+N networks

Technical features

Types		OVR T2 1N 40-275 P QS	OVR T2 1N 40-275s P QS	OVR T2 1N 80-275s P QS	OVR T2 1N 40-350 P QS	
with auxiliary contact (TS)		OVR T2 1N 40- 275 P TS QS	OVR T2 1N 40- 275s P TS QS	OVR T2 1N 80- 275s P TS QS	OVR T2 1N 40- 350 P TS QS	OVR T2 1N 40- 440 P TS QS
Technology		Varistor + GDT	Varistor + GDT	Varistor + GDT	Varistor + GDT	Varistor + GDT
Electrical features						
Standard		IEC 61643-11/ EN 61643-11:2012/ A11:2018	IEC 61643-11/ EN 61643-11:2012/ A11:2018	IEC 61643-11/ EN 61643-11:2012/ A11:2018	IEC 61643-11/EN 61643-11:2012/ A11:2018	IEC 61643-11/ EN 61643-11:2012/ A11:2018
Type/test class		T2/II	T2/II	T2/II	T2/II	T2/II
Protected lines		1+1	1+1	1+1	1+1	1+1
System network		TT - TNS	TT - TNS	TT - TNS	TT - TNS	TT-TNS
Type of current		AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network		± 20 %	± 20 %	± 20 %	± 50 %	±10 %
Nominal system voltage Un	[V]	230	230	230	230	400
Max. cont. operating voltage Uc	[V]	275	275	275	350	440
Maximum discharge current I _{max} (8/20)	[kA]	40	40	80	40	40
Maximum impulse current I _{imp} (10/350)	[kA]	2	2	6.25	2	2
Nominal discharge current I _n (8/20)	[kA]	20	20	20	20	20
Total Current	[kA]	80	80	80	80	80
Voltage protection level Up at I _n (L-N/N-PE/L-PE)	[kV]	1.25/1.4/1.5	1.4/1.4/1.5	1.4/1.4/1.5	1.5/1.4/1.6	1,8/1,4/1,9
Voltage protection level U _{res} at 3 kA	[kV]	0.8/1.4/0.85	0.8/1.4/0.85	0.8/1.4/0.85	1.0/1.4/1.05	1,25/1,4/1,45
Voltage protection level U _{res} at 5 kA	[kV]	0.85/1.4/0.95	0.85/1.4/0.95	0.85/1.4/0.95	1.05/1.4/1.1	1,35/1,4/1,55
Voltage protection level U _{res} at 10 kA	[kV]	1/1.4/1.15	1/1.4/1.15	1/1.4/1.15	1.2/1.4/1.3	1,55/1,4/1,65
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)	[V]	337/1200	337/1200	337/1200	455/1200	581/1200
U _{oc}	[kV]	-	-	-	-	-
Response time	[ns]	< 25	< 25	< 25	< 25	<25
Short-circuit withstand capability I _{sc}	[kA]	100	100	100	100	100
Backup protection maximum rating	fuse (gG)	[A]	≤ 125	≤ 160	≤ 125	≤ 125
	circuit breaker (B or C curve)	[A]	≤ 125	≤ 125	≤ 125	≤ 125
Pluggable cartridge		Yes	Yes	Yes	Yes	Yes
Integrated QuickSafe® technology		Yes	Yes	Yes	Yes	Yes
State indicator		Yes	Yes	Yes	Yes	Yes
Safety reserve		No	Yes	Yes	No	No
Auxiliary contact		Yes (TS option)	Yes (TS option)	Yes (TS option)	Yes (TS option)	Yes
Installation						
Wire range (L, N, PE)	solid wire	[mm ²]	2.5 ... 35	2.5 ... 35	2.5 ... 35	2.5 ... 35
	stranded wire	[mm ²]	2.5 ... 25	2.5 ... 25	2.5 ... 25	2.5 ... 25
Stripping length (L, N, PE)	[mm]	12.5	12.5	12.5	12.5	12.5
Tightening torque (L, N, PE)	[Nm]	2.8	2.8	2.8	2.8	2.8
Auxiliary contact (TS)						
Contacts information		1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC
Min. load		12 DC - 10 mA	12 DC - 10 mA	12 DC - 10 mA	12 DC - 10 mA	12 DC - 10 mA
Max. load		250 V AC - 1A	250 V AC - 1A	250 V AC - 1A	250 V AC - 1A	250 V AC - 1A
Connection cross-section	[mm ²]	1.5	1.5	1.5	1.5	1.5
Miscellaneous characteristics						
Stocking and operating temperature	°C	-40 to +80	-40 to +80	-40 to +80	-40 to +80	-40 to +80
Maximal Altitude	[m]	5000	5000	5000	5000	5000
Degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices TNS/TT
230 and 400 V 1Ph+N networks

Technical features

Types		OVR T2 1N 40-275 P QS	OVR T2 1N 40-275s P QS	OVR T2 1N 80-275s P QS	OVR T2 1N 40-350 P QS	
with auxiliary contact (TS)		OVR T2 1N 40- 275 P TS QS	OVR T2 1N 40- 275s P TS QS	OVR T2 1N 80- 275s P TS QS	OVR T2 1N 40- 350 P TS QS	OVR T2 1N 40- 440 P TS QS
Fire resistance according to UL 94		V0	V-0	V-0	V0	V0
Dimensions						
height x width x depth	mm	88 x 35.6 x 65.3	88 x 35.6 x 76.7	88 x 35.6 x 76.7	88 x 35.6 x 65.3	
	inches	3.46 x 1.4 x 2.57	3.46 x 1.4 x 3.02	3.46 x 1.4 x 3.02	3.46 x 1.4 x 2.57	
With Auxiliary Contact (TS)						
height x width x depth	mm	95.8 x 35.6 x 65.3	95.8 x 35.6 x 76.7	95.8 x 35.6 x 76.7	95.8 x 35.6 x 65.3	95.8 x 35.6 x 65.3
	inches	3.77 x 1.4 x 2.57	3.77 x 1.4 x 3.02	3.77 x 1.4 x 3.02	3.77 x 1.4 x 2.57	3.77 x 1.4 x 2.57
Replacement Cartridges						
Phase Product ID		OVR T2 40-275 C QS 2CTB803876R1000	OVR T2 40-275s C QS 2CTB815704R2600	OVR T2 80-275s C QS 2CTB815708R2600	OVR T2 40-350 C QS 2CTB803886R1000	OVR T2 40-440 C QS 2CTB803876R0400
Neutral Product ID		OVR T2-T3 N 80- 275 C QS 2CTB803876R0000	OVR T2 N 80-275s C QS 2CTB815708R2800	OVR T2 N 80-275s C QS 2CTB815708R2800	OVR T2 N 80-350 C QS 2CTB803886R0000	OVR T2 N 80-440 C QS 2CTB803886R0100



OVR T2 1N 40-
275 P QS

Type 2 surge protective devices are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (Up).

They are characterized by their capacity to safely discharge current with 8/20 µs wave form.

Type 2 pluggable

Po- les	Im pulse Current 10/350	Max dis- charge current Imax 8/20	Nomi- nal current In	Voltage protec- tion level Up	Nomi- nal voltage Un	Max. cont. oper- ating voltage Uc	Bbn 3660308	Order details		Weight 1 piece
	kA	kA	kA	kV	V	V	EAN	Type code	Order code	kg
1+1	2	40	20	1.25	230	275	519696	OVR T2 1N 40-275 P QS	2CTB803972R1100	0.24
1+1	2	40	20	1.25	230	275	519702	OVR T2 1N 40-275 P TS QS	2CTB803972R0500	0.24
1+1	2	40	20	1.4	230	275	525239	OVR T2 1N 40-275s P TS QS	2CTB815704R0200	0.30
1+1	2	40	20	1.4	230	275	525307	OVR T2 1N 40-275s P QS	2CTB815704R1400	0.30
1+1	2	80	20	1.4	230	275	525413	OVR T2 1N 80-275s P TS QS	2CTB815708R0200	0.30
1+1	2	80	20	1.4	230	275	525482	OVR T2 1N 80-275s P QS	2CTB815708R1400	0.30
1+1	2	40	20	1.5	230	350	519719	OVR T2 1N 40-350 P QS	2CTB803982R1100	0.24
1+1	2	40	20	1.5	230	350	519726	OVR T2 1N 40-350 P TS QS	2CTB803982R0500	0.24
1+1	2	40	20	1.9	400	440	524577	OVR T2 1N 40-440 P TS QS	2CTB803972R1400	0.24

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices TNS/TT 230 and 400 V 3Ph+N networks



OVR T2 3N 40-275 P QS

Technical features

Types		OVR T2 3N 40-275 P QS	OVR T2 3N 40-275s P QS
with auxiliary contact (TS)		OVR T2 3N 40-275 P TS QS	OVR T2 3N 40-275s P TS QS
Technology		Varistor + GDT	Varistor + GDT
Electrical features			
Standard		IEC 61643-11/ EN 61643-11:2012/A11:2018	IEC 61643-11/ EN 61643-11:2012/A11:2018
Type/test class		T2/II	T2/II
Protected lines		3+1	3+1
System network		TT - TNS	TT - TNS
Type of current		AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network		± 20 %	± 20 %
Nominal system voltage Un (L-N/L-L)		[V] 230/400	230/400
Max. cont. operating voltage Uc (L-N/L-L)		[V] 275/440	275/440
Maximum discharge current I _{max} (8/20)		[kA] 40	40
Maximum impulse current I _{imp} (10/350)		[kA] 2	2
Nominal discharge current I _n (8/20)		[kA] 20	20
Total Current		[kA] 80	80
Voltage protection level Up at I _n (L-N/N-PE/L-PE)		[kV] 1.25/1.4/1.5	1.4/1.4/1.5
Voltage protection level U _{res} at 3kA (L-N/N-PE /L-PE)		[kV] 0.8/1.4/0.85	0.8/1.4/0.85
Voltage protection level U _{res} at 5kA (L-N/N-PE /L-PE)		[kV] 0.85/1.4/0.95	0.85/1.4/0.95
Voltage protection level U _{res} at 10kA (L-N/N-PE /L-PE)		[kV] 1/1.4/1.15	1/1.4/1.15
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)		[V] 337/1200	337/1200
Response time		[ns] < 25	< 25
Short-circuit withstand capability I _{sc} cr		[kA] 100	100
Backup protection maximum rating	fuse (gG)	[A] ≤ 125	≤ 160
	circuit breaker (B or C curve)	[A] ≤ 125	≤ 125
Pluggable cartridge		Yes	Yes
Integrated QuickSafe® technology		Yes	Yes
State indicator		Yes	Yes
Safety reserve		No	Yes
Auxiliary contact		Yes (TS option)	Yes (TS option)
Installation			
Wire range (L, N, PE)	solid wire	[mm ²] 2.5 ... 35	2.5 ... 35
	stranded wire	[mm ²] 2.5 ... 25	2.5 ... 25
Stripping length (L, N, PE)		[mm] 12.5	12.5
Tightening torque (L, N, PE)		[Nm] 2.8	2.8
Auxiliary contact (TS)			
Contacts information		1 NO - 1 NC	1 NO - 1 NC
Min. load		12 DC - 10 mA	12 DC - 10 mA
Max. load		250 V AC - 1A	250 V AC - 1A
Connection cross-section		[mm ²] 1.5	1.5
Miscellaneous characteristics			
Stocking and operating temperature		[°C] -40 to +80	-40 to +80
Maximal Altitude		[m] 5000	5000
Degree of protection		IP 20	IP 20
Fire resistance according to UL 94		V0	V-0
Dimensions			
height x width x depth	[mm]	88 x 71.2 x 65.3	88 x 71.2 x 76.7
	[inches]	3.46 x 2.8 x 2.57	3.46 x 2.8 x 3.02
With Auxiliary Contact (TS)			
height x width x depth	[mm]	95.8 x 71.2 x 65.3	95.8 x 71.2 x 76.7
	[inches]	3.77 x 2.8 x 2.57	3.77 x 2.8 x 3.02
Replacement Cartridges			
Phase Product ID		OVR T2 40-275 C QS 2CTB803876R1000	OVR T2 40-275s C QS 2CTB815704R2600
Neutral Product ID		OVR T2-T3 N 80-275 C QS 2CTB803876R0000	OVR T2 N 80-275s C QS 2CTB815708R2800

Protection and safety

OVR Type 2 pluggable QuickSafe® surge protective devices TNS/TT 230 and 400 V 3Ph+N networks

OVR T2 3N 80-275s P QS	OVR T2 3N 40-350 P QS	OVR T2 3N 40-440 P QS	OVR T2 3N 40-440s P TS QS	OVR T2 3N 80-440s P QS
OVR T2 3N 80-275s P TS QS	OVR T2 3N 40-350 P TS QS	OVR T2 3N 40-440 P TS QS	OVR T2 3N 40-440s P TS QS	OVR T2 3N 80-440s P TS QS
Varistor + GDT	Varistor + GDT	Varistor + GDT	Varistor + GDT	Varistor + GDT
IEC 61643-11/ EN 61643-11:2012/A11:2018	IEC 61643-11/ EN 61643-11:2012/A11:2018	IEC 61643-11/ EN 61643-11:2012/A11:2018	IEC 61643-11/ EN 61643-11:2012/A11:2018	IEC 61643-11/ EN 61643-11:2012/A11:2018
T2/II	T2/II	T2/II	T2/II	T2/II
3+1	3+1	3+1	3+1	3+1
TT - TNS	TT - TNS	TT - TNS	TT - TNS	TT - TNS
AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
± 20%	± 50%	± 10%	± 10%	± 10%
230/440	230/400	400/690	400/690	400/690
275/440	350/600	440/760	440/760	440/760
80	40	40	40	80
6.25	2	2	2	6.25
20	20	20	20	20
80	80	80	80	80
1.4/1.4/1.5	1.5/1.4/1.7	1.8/1.4/2.1	1.8/2/2.1	1.8/2/2.1
0.8/1.4/0.85	1.0/1.4/1.05	1.25/1.4/1.45	1.25/1.4/1.45	1.25/1.4/1.45
0.85/1.4/0.95	1.05/1.4/1.1	1.35/1.4/1.45	1.35/1.4/1.45	1.35/1.4/1.45
1/1.4/1.15	1.2/1.4/1.3	1.55/1.4/1.65	1.55/1.4/1.65	1.55/1.4/1.65
337/1200	455/1200	581/1200	581/1200	581/1200
< 25	< 25	< 25	< 26	< 25
100	100	100	100	100
≤ 160	≤ 125	≤ 125	≤ 160	≤ 160
≤ 125	≤ 125	≤ 125	≤ 125	≤ 125
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes
Yes	No	No	Yes	Yes
Yes (TS option)	Yes (TS option)	Yes (TS option)	Yes	Yes (TS option)
2.5 ... 35	2.5 ... 35	2.5 ... 35	2.5 ... 35	2.5 ... 35
2.5 ... 25	2.5 ... 25	2.5 ... 25	2.5 ... 25	2.5 ... 25
12.5	12.5	12.5	12.5	12.5
2.8	2.8	2.8	2.8	2.8
1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC
12 DC - 10 mA	12 DC - 10 mA	12 DC - 10 mA	12 DC - 10 mA	12 DC - 10 mA
250 V AC - 1A	250 V AC - 1A	250 V AC - 1A	250 V AC - 1A	250 V AC - 1A
1.5	1.5	1.5	1.5	1.5
-40 to +80	-40 to +80	-40 to +80	-40 to +80	-40 to +80
5000	5000	5000	5000	5000
IP 20	IP 20	IP 20	IP 20	IP 20
V-0	V0	V0	V-0	V-0
88 x 71.2 x 76.7	88 x 71.2 x 65.3	88 x 71.2 x 65.3		88 x 71.2 x 76.7
3.46 x 2.8 x 3.02	3.46 x 2.8 x 2.57	3.46 x 2.8 x 2.57		3.46 x 2.8 x 3.02
95.8 x 71.2 x 76.7	95.8 x 71.2 x 65.3	95.8 x 71.2 x 65.3	95.8 x 71.2 x 76.7	95.8 x 71.2 x 76.7
3.77 x 2.8 x 3.02	3.77 x 2.8 x 2.57	3.77 x 2.8 x 2.57	3.77 x 2.8 x 3.02	3.77 x 2.8 x 3.02
OVR T2 80-275s C QS 2CTB815708R2600	OVR T2 40-350 C QS 2CTB803886R1000	OVR T2 40-440 C QS 2CTB803876R0400	OVR T2 40-440s C QS 2CTB815704R5500	OVR T2 80-440s C QS 2CTB815708R5500
OVR T2 N 80-275s C QS 2CTB815708R2800	OVR T2 N 80-350 C QS 2CTB803886R0000	OVR T2-T3 N 80-440 C QS 2CTB803886R0100	OVR T2 N 80-440s C QS 2CTB815708R5700	OVR T2 N 80-440s C QS 2CTB815708R5700

Protection and safety

OV R Type 2 pluggable QuickSafe® surge protective devices TNS/TT
230 and 400 V 3Ph+N networks



OVR T2 3N 40-
275 P QS

Type 2 surge protective devices are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (Up). They are characterized by their capacity to safely discharge current with 8/20 μ s wave form.

Type 2 pluggable

Pro- tected lines	Max dis- charge current I_{max} 8/20	Nomi- nal dis- charge current I_n	Volt- age pro- tec- tion level U_p	Nominal voltage U_n	Max. cont. oper- ating volt- age U_c	Bbn 3660308	Order details			Weight 1 piece
	kA	kA	kV	V	V	EAN	Type code	Order code	kg	
3+1	40	20	1.5	230/400	275	519.931	OVR T2 3N 40-275 P QS	2CTB803973R1100	0.48	
3+1	40	20	1.5	230/400	275	519.948	OVR T2 3N 40-275 P TS QS	2CTB803973R0500	0.48	
3+1	40	20	1.4	230/400	275	52526 0	OVR T2 3N 40-275s P TS QS	2CTB815704R0800	0.60	
3+1	40	20	1.4	230/400	275	52532 1	OVR T2 3N 40-275s P QS	2CTB815704R2000	0.60	
3+1	80	20	1.4	230/400	275	52544 4	OVR T2 3N 80-275s P TS QS	2CTB815708R0800	0.60	
3+1	80	20	1.4	230/400	275	52550 5	OVR T2 3N 80-275s P QS	2CTB815708R2000	0.60	
3+1	40	20	1.5	230/400	350	519.962	OVR T2 3N 40-350 P QS	2CTB803983R1100	0.48	
3+1	40	20	1.5	230/400	350	519.979	OVR T2 3N 40-350 P TS QS	2CTB803983R0500	0.48	
3+1	40	20	1.8	400/690	440	519.993	OVR T2 3N 40-440 P QS	2CTB803973R1400	0.48	
3+1	40	20	1.8	400/690	440	520.005	OVR T2 3N 40-440 P TS QS	2CTB803973R1500	0.48	
3+1	40	20	1.8	400/690	440	52537 6	OVR T2 3N 40-440s P TS QS	2CTB815704R3700	1.05	
3+1	80	20	1.8	400/690	440	52558 1	OVR T2 3N 80-440s P TS QS	2CTB815708R3700	1.05	
3+1	80	20	1.8	400/690	440	52562 8	OVR T2 3N 80-440s P QS	2CTB815708R4900	1.05	

Notes



Protection and safety

OVR Type T2-T3 pluggable QuickSafe® surge protective devices

Single pole - 230 V and 440 V networks

Technical features

Types			OVR T2-T3 20-275 P QS	OVR T2-T3 20-440 P QS	OVR T2-T3 N 80-275 P QS	OVR T2-T3 N 80-440 P QS
with auxiliary contact (TS)			OVR T2-T3 20-275 P TS QS	OVR T2-T3 20-440 P TS QS	-	-
Technology			Varistor	Varistor	GDT	GDT
Electrical features						
Standard			IEC 61643-11/ EN 61643-11:2012/ A11:2018	IEC 61643-11/ EN 61643-11:2012/ A11:2018	IEC 61643-11/ EN 61643-11:2012/ A11:2018	IEC 61643-11/ EN 61643-11:2012/ A11:2018
Type/test class			T2-T3/II-III	T2-T3/II-III	T2-T3/II-III	T2-T3/II-III
Protected lines			1	1	1	1
System network			TNC - TT(L-N) - TNS	TNC - TT(L-N) - TNS	TT (N-PE)-TNS(N-PE)	TT (N-PE)-TNS(N-PE)
Type of current			AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network			± 20%	± 10%	± 20%	± 10%
Nominal system voltage Un		[V]	230	400	230	400
Max. cont. operating voltage Uc		[V]	275	440	275	440
Nominal dc voltage Un dc L-PE		[V dc]	320	320	-	-
Max. dc. cont. operating voltage Ucdc L-PE		[V dc]	355	355	-	-
Maximum discharge current I _{max} (8/20)			[kA]	20	80	80
Nominal discharge current I _n (8/20)			[kA]	5	30	30
Voltage protection level Up at I _n (L-N)			[kV]	0.9/-/-	2	2
Voltage protection level U _{res} at 3kA (L-N)			[kV]	0.8	-/-/1.4	-/-/1.4
Voltage protection level U _{res} at 5kA (L-N)			[kV]	0.85	-	-
Voltage protection level U _{res} at 10kA (L-N)			[kV]	1	-	-
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)			[V]	337/-	-	-
U _{oc}			[kV]	6	-	-
Response time			[ns]	≤ 25	-/1200	-/1200
Short-circuit withstand capability I _{sc} cr			[kA]	100	<25	<25
Backup protection maximum rating	fuse (gG)	[A]	≤ 125	≤ 125	<125	<125
	circuit breaker (B or C curve)	[A]	≤ 125	≤ 125	<125	<125
Pluggable cartridge			Yes	Yes	Yes	Yes
Integrated QuickSafe® technology			Yes	Yes	-	-
State indicator			Yes	Yes	No	No
Safety reserve			No	No	No	No
Auxiliary contact			Yes (TS option)	Yes (TS option)	No	No
Installation						
Wire range (L, N, PE)	solid wire	[mm²]	2.5 ... 35	2.5 ... 35	2.5 ... 35	2.5 ... 35
	stranded wire	[mm²]	2.5 ... 25	2.5 ... 25	2.5 ... 25	2.5 ... 25
Stripping length (L, N, PE)		[mm]	12.5	12.5	12.5	12.5
Tightening torque (L, N, PE)		[Nm]	2.8	2.8	2.8	2.8
Auxiliary contact (TS)						
Contacts information			1 NO - 1 NC	1 NO - 1 NC	-	-
Min. load			12 DC - 10 mA	12 DC - 10 mA	-	-
Max. load			250 V AC - 1A	250 V AC - 1A	-	-
Connection cross-section		[mm²]	1.5	1.5	-	-
Miscellaneous characteristics						
Stocking and operating temperature		[°C]	-40 to +80	-40 to +80	-40 to + 80	-40 to + 80
Maximal Altitude		[m]	5000	5000	5000	5000
Degree of protection			IP 20	IP 20	IP 20 - Indoor	IP 20 - Indoor
Fire resistance according to UL 94			V0	V0	V-0	V-0
Dimensions of packing						

Protection and safety

OVR Type T2-T3 pluggable QuickSafe® surge protective devices

Single pole - 230 V and 440 V networks

Technical features

Types		OVR T2-T3 20-275 P QS	OVR T2-T3 20-440 P QS	OVR T2-T3 N 80-275 P QS	OVR T2-T3 N 80-440 P QS
with auxiliary contact (TS)		OVR T2-T3 20-275 P TS QS	OVR T2-T3 20-440 P TS QS	-	-
height x width x depth	[mm]	88 x 17.8 x 65.3	88 x 17.8 x 65.3	85 x 17.8 x 64.8	85 x 17.8 x 64.8
	[inches]	3.46 x 0.7 x 2.57	3.46 x 0.7 x 2.57	3.35 x 0.70 x 2.55	3.35 x 0.70 x 2.55
With Auxiliary Contact (TS)					
height x width x depth	[mm]	95.8 x 17.8 x 65.3	95.8 x 17.8 x 65.3	-	-
	[inches]	3.77 x 0.7 x 2.57	3.77 x 0.7 x 2.57	-	-
Replacement Cartridges					
Phase Product ID		OVR T2-T3 20-275 C QS 2CTB803876R1200	OVR T2-T3 20-440 C QS 2CTB803876R0600	OVR T2-T3 N 80-275 C QS 2CTB803876R0000	OVR T2-T3 N 80-275 C QS 2CTB803876R0000
Neutral Product ID		-	-	-	-



OVR T2 T3 20- 275 P QS

Type 2 and 3 surge protective devices shall be installed as close as possible to the sensitive equipment to protect. As Type 2 they have been characterized by their capacity to safely discharge current with a 8/20 μ s wave form and they guarantee the coordination with Type 1 SPDs or other Type 2 respecting coordination distances. As Type 3 they are characterized by their capacity to safely discharge current with 1.2/50 μ s wave form, with a very low level of Voltage Protection level.

Poles	Max discharge current I _{max} 8/20	Nominal discharge current I _n	Voltage protection level U _p	Nominal voltage U _n	Max. cont. operating voltage U _c	Bbn 3660308	Order details		Weight 1 piece
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
1	20	5	0.9	230	275	519.566	OVR T2-T3 20-275 P QS	2CTB803871R2400	0.12
1	20	5	0.9	230	275	519.573	OVR T2-T3 20-275 P TS QS	2CTB803871R2500	0.12
1	20	5	1.4	400	440	519.603	OVR T2-T3 20-440 P QS	2CTB803871R1100	0.12
1	20	5	1.4	400	440	519.610	OVR T2-T3 20-440 P TS QS	2CTB803871R1300	0.12
1	80	30	1.4	230	275	519641	OVR T2-T3 N 80-275 P QS	2CTB803973R1900	0.12
1	80	30	1.4	400	440	519641	OVR T2-T3 N 80-440 P QS	2CTB803973R2000	0.12

Protection and safety

OVR Type T2-T3 pluggable QuickSafe® surge protective devices
TNC - 230 V 3Ph + N networks

Technical features

Types		OVR T2-T3 3L 20-275 P QS	
with auxiliary contact (TS)		OVR T2-T3 3L 20-275 P TS QS	
Technology		Varistor	
Electrical features			
Standard		IEC 61643-11/EN 61643-11:2012/A11:2018	
Type/test class		T2-T3/II-III	
Protected lines		3	
System network		TNC	
Type of current		AC 47-63 Hz	
Voltage regulation of the system network		± 20 %	
Nominal system voltage Un (L-PE/L-L)	[V]	230/400	
Max. cont. operating voltage Uc (L-PE/L-L)	[V]	275/440	
Nominal dc voltage Un dc L-PE	[V dc]	320	
Max. dc. cont. operating voltage Ucdc L-PE	[V dc]	355	
Maximum discharge current I _{max} (8/20)	[kA]	20	
Nominal discharge current I _n (8/20)	[kA]	5	
Total Current	[kA]	60	
Voltage protection level Up at I _n (L-N/N-PE /L-PE)	[kV]	0,85/-/-	
Voltage protection level U _{res} at 3kA	[kV]	0.8	
Voltage protection level U _{res} at 5kA	[kV]	0.85	
Voltage protection level U _{res} at 10kA	[kV]	1.0	
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)	[V]	337/-	
U _{oc}	[kV]	6	
Response time	[ns]	≤ 25	
Short-circuit withstand capability I _{sc} cr	[kA]	100	
Backup protection maximum rating	fuse (gG)	[A]	≤ 125
	circuit breaker (B or C curve)	[A]	≤ 125
Pluggable cartridge		Yes	
Integrated QuickSafe® technology		Yes	
State indicator		Yes	
Safety reserve		No	
Auxiliary contact		Yes (TS option)	
Installation			
Wire range (L, N, PE)	solid wire	[mm²]	2.5 ... 35
	stranded wire	[mm²]	2.5 ... 25
Stripping length (L, N, PE)		[mm]	12.5
Tightening torque (L, N, PE)		[Nm]	2.8
Auxiliary contact (TS)			
Contacts information		1 NO - 1 NC	
Min. load		12 DC - 10 mA	
Max. load		250 V AC - 1A	
Connection cross-section		[mm²]	1.5
Miscellaneous characteristics			
Stocking and operating temperature		[°C]	-40 to +80
Maximal Altitude		[m]	5000
Degree of protection		IP 20	
Fire resistance according to UL 94		V0	
Dimensions			
height x width x depth	mm	88 x 53.4 x 65.3	
	inches	3.46 x 2.1 x 2.57	

Protection and safety

OVR Type T2-T3 pluggable QuickSafe® surge protective devices
TNC - 230 V 3Ph + N networks

Technical features

Types	OVR T2-T3 3L 20-275 P QS	
with auxiliary contact (TS)	OVR T2-T3 3L 20-275 P TS QS	
With Auxiliary Contact (TS)		
height x width x depth	mm	95.8 x 53.4 x 65.3
	inches	3.77 x 2.1 x 2.57
Replacement Cartridges		
Phase Product ID		OVR T2-T3 20-275 C QS 2CTB803876R1200
Neutral Product ID		-



OVR T2 T3 3L 20-275 P TS QS

Type 2 and 3 surge protective devices shall be installed as close as possible to the sensitive equipment to protect. As Type 2 they have been characterized by their capacity to safely discharge current with a 8/20 μ s wave form and they guarantee the coordination with Type 1 SPDs or other Type 2 respecting coordination distances. As Type 3 they are characterized by their capacity to safely discharge current with 1.2/50 μ s wave form, with a very low level of Voltage Protection level.

Poles	Max discharge current I_{max} 8/20	Nominal discharge current I_n	Voltage protection level U_p	Nominal voltage U_n	Max. operating voltage U_c	Bbn 3660308	Order details		Weight 1 piece
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
3	20	5	0.85	230/400	275	519818	OVR T2-T3 3L 20-275 P QS	2CTB803873R3400	0.36
3	20	5	0.85	230	275	520661	OVR T2-T3 3L 20-275 P TS QS	2CTB803873R3500	0.36

Protection and safety

OVR Type T2-T3 QuickSafe® surge protective devices TNS/TT - 230 V 1Ph+N networks

Technical features

Types		OVR T2-T3 1N 20-275 P QS	
with auxiliary contact (TS)		OVR T2-T3 1N 20-275 P TS QS	
Technology		Varistor + GDT	
Electrical features			
Standard		IEC 61643-11/EN 61643-11:2012/A11:2018	
Type/test class		T2-T3/II-III	
Protected lines		1+1	
System network		TT - TNS	
Type of current		AC 47-63 Hz	
Voltage regulation of the system network		± 20 %	
Nominal system voltage Un	[V]	230	
Max. cont. operating voltage Uc	[V]	275	
Maximum discharge current I _{max} (8/20)	[kA]	20	
Nominal discharge current I _n (8/20)	[kA]	5	
Total Current	[kA]	40	
Voltage protection level Up at I _n (L-N/N-PE/L-PE)	[kV]	0.9/1.4/1.4	
Voltage protection level U _{res} at 3kA (L-N/N-PE /L-PE)	[kV]	0.8/1.4/0.85	
Voltage protection level U _{res} at 5kA(L-N/N-PE /L-PE)	[kV]	0.85/1.4/0.95	
Voltage protection level U _{res} at 10kA (L-N/N-PE /L-PE)	[kV]	1/1.4/1.15	
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)	[V]	337/1200	
U _{oc}	[kV]	6	
Response time	[ns]	≤ 25	
Residual current IPE	[μA]	≤ 10	
Short-circuit withstand capability I _{sc} r	[kA]	100	
Backup protection maximum rating	fuse (gG)	[A]	≤ 125
	circuit breaker (B or C curve)	[A]	≤ 125
Pluggable cartridge		Yes	
Integrated QuickSafe® technology		Yes	
State indicator		Yes	
Safety reserve		No	
Auxiliary contact		Yes (TS option)	
Installation			
Wire range (L, N, PE)	solid wire	[mm²]	2.5 ... 35
	stranded wire	[mm²]	2.5 ... 25
Stripping length (L, N, PE)		[mm]	12.5
Tightening torque (L, N, PE)		[Nm]	2.8
Auxiliary contact (TS)			
Contacts information		1 NO - 1 NC	
Min. load		12 DC - 10 mA	
Max. load		250 V AC - 1A	
Connection cross-section	[mm²]	1.5	
Miscellaneous characteristics			
Stocking and operating temperature	[°C]	-40 to +80	
Maximal Altitude	[m]	5000	
Degree of protection		IP 20	
Fire resistance according to UL 94		V0	

Protection and safety

OVR Type T2-T3 QuickSafe® surge protective devices
TNS/TT - 230 V 1Ph+N networks

Technical features

Types		OVR T2-T3 1N 20-275 P QS	
with auxiliary contact (TS)		OVR T2-T3 1N 20-275 P TS QS	
Dimensions			
height x width x depth	[mm]	88 x 35.6 x 65.3	
	[inches]	3.46 x 1.4 x 2.57	
With Auxiliary Contact (TS)			
height x width x depth	mm	95.8 x 35.6 x 65.3	
	inches	3.77 x 1.4 x 2.57	
Replacement Cartridges			
Phase Product ID		OVR T2-T3 20-275 C QS 2CTB803876R1200	
Neutral Product ID		OVR T2-T3 N 80-275 C QS 2CTB803876R0000	



OVR T2 T3 1N 20-275 P QS

Type 2 and 3 surge protective devices shall be installed as close as possible to the sensitive equipment to protect. As Type 2 they have been characterized by their capacity to safely discharge current with a 8/20 μ s wave form and they guarantee the coordination with Type 1 SPDs or other Type 2 respecting coordination distances. As Type 3 they are characterized by their capacity to safely discharge current with 1.2/50 μ s wave form, with a very low level of Voltage Protection level.

Po- les	Max dis- charge current I _{max} 8/20	Nomi- nal dis- charge current I _n	Volt- age pro- tec- tion level U _p	Nomi- nal voltage U _n	Max. cont. oper- ating volt- age U _c	Bbn 3660308	Order details		Weight 1 piece
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
1+1	20	5	1.4	230	275	519689	OVR T2-T3 1N 20-275 P QS	2CTB803972R1200	0.24
1+1	20	5	1.4	230	275	520654	OVR T2-T3 1N 20-275 P TS QS	2CTB803972R1300	0.24

Protection and safety

OVR Type T2-T3 QuickSafe® surge protective devices
TT - 230 V and 400 V 3Ph+N networks

Technical features

Types		OVR T2-T3 3N 20-275 P QS	OVR T2-T3 3N 20-440 P QS
with auxiliary contact (TS)		OVR T2-T3 3N 20-275 P TS QS	
Technology		Varistor + GDT	Varistor + GDT
Electrical features			
Standard		IEC 61643-11/EN 61643-11:2012/A11:2018	IEC 61643-11 /EN 61643-11:2012/A11:2018
Type/test class		T2-T3/II-III	T2-T3 /II-III
Protected lines		3+1	3+1
System network		TT - TNS	TT - TNS
Type of current		AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network		± 20%	± 10%
Nominal system voltage Un (L-N/L-L)	[V]	230/400	400/690
Max. cont. operating voltage Uc (L-N/L-L)	[V]	275/440	440/750
Maximum discharge current I _{max} (8/20)	[kA]	20	20
Nominal discharge current I _n (8/20)	[kA]	5	5
Total Current	[kA]	80	80
Voltage protection level Up at I _n (L-N/N-PE/L-PE)	[kV]	0.9/1.4/1.4	1.4/1.4/1.4
Voltage protection level U _{res} at 3kA (L-N/N-PE /L-PE)	[kV]	0.8/1.4/0.85	1.25/1.4/1.4
Voltage protection level U _{res} at 5kA (L-N/N-PE /L-PE)	[kV]	0.85/1.4/0.95	1.35/1.4/1.45
Voltage protection level U _{res} at 10kA (L-N/N-PE /L-PE)	[kV]	1/1.4/1.15	1.35/1.4/1.65
TOV (Temporary overvoltage) withstand Ut (L-N: 5s./N-PE: 200ms)	[V]	337/1200	581/1200
U _{oc}	[kV]	6	6
Response time	[ns]	≤ 25	≤ 25
Residual current I _{PE}	[μA]	≤ 10	≤ 10
Short-circuit withstand capability I _{sc} cr	[kA]	100	100
Backup protection maximum rating	fuse (gG)	[A]	≤ 125
	circuit breaker (B or C curve)	[A]	≤ 125
Pluggable cartridge		Yes	Yes
Integrated QuickSafe® technology		Yes	Yes
State indicator		Yes	Yes
Safety reserve		No	No
Auxiliary contact		Yes (TS option)	Yes (TS option)
Installation			
Wire range (L, N, PE)	solid wire	[mm ²]	2.5 ... 35
	stranded wire	[mm ²]	2.5 ... 25
Stripping length (L, N, PE)	[mm]	12.5	12,5
Tightening torque (L, N, PE)	[Nm]	2.8	2,8
Auxiliary contact (TS)			
Contacts information		1 NO- 1 NC	1 NO- 1 NC
Min. load		12 DC - 10 mA	12 DC - 10 mA
Max. load		250 V AC - 1A	250 V AC - 1A
Connection cross-section	[mm ²]	1.5	1.5
Miscellaneous characteristics			
Stocking and operating temperature	[°C]	-40 to +80	-40 to +80
Maximal Altitude	[m]	5000	5000
Degree of protection		IP 20	IP 20

Protection and safety

OVR Type T2-T3 QuickSafe® surge protective devices
TT - 230 V and 400 V 3Ph+N networks

Technical features

Types		OVR T2-T3 3N 20-275 P QS	OVR T2-T3 3N 20-440 P QS
with auxiliary contact (TS)		OVR T2-T3 3N 20-275 P TS QS	
Fire resistance according to UL 94		V0	V0
Dimensions			
height x width x depth	mm	88 x 71.2 x 65.3	88 x 71.2 x 65.3
	inches	3.46 x 2.8 x 2.57	3.46 x 2.8 x 2.57
With Auxiliary Contact (TS)			
height x width x depth	mm	95.8 x 71.2 x 65.3	96 x 71.2 x 64.8
	inches	3.77 x 2.8 x 2.57	3.35 x 2.81 x 2.55
Replacement Cartridges			
Phase Product ID		OVR T2-T3 20-275 C QS 2CTB803876R1200	OVR T2-T3 20-440 C QS 2CTB803876R0600
Neutral Product ID		OVR T2-T3 N 80-275 C QS 2CTB803876R0000	OVR T2-T3 N 80-440 C QS 2CTB803886R0100



OVR T2 T3 3N 20-275 P TS QS

Type 2 and 3 surge protective devices shall be installed as close as possible to the sensitive equipment to protect. As Type 2 they have been characterized by their capacity to safely discharge current with a 8/20 μ s wave form and they guarantee the coordination with Type 1 SPDs or other Type 2 respecting coordination distances. As Type 3 they are characterized by their capacity to safely discharge current with 1.2/50 μ s wave form, with a very low level of Voltage Protection level.

Po- les	Max dis- charge current I _{max} 8/20	Nomi- nal dis- charge current I _n	Volt- age pro- tec- tion level U _p	Nomi- nal voltage U _n	Max. cont. oper- ating volt- age U _c	Bbn 3660308	Order details		Weight 1 piece
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
3+1	20	5	1.4	230/400	275	519924	OVR T2-T3 3N 20-275 P QS	2CTB803973R1200	0.48
3+1	20	5	1.4	230/400	275	520692	OVR T2-T3 3N 20-275 P TS QS	2CTB803973R1600	0.48
3+1	20	5	1.5	400/690	440	519986	OVR T2-T3 3N 20-440 P QS	2CTB803973R1300	0.48

Protection and safety

OVR PV surge protective devices Photovoltaic networks

Technical features

Types		OVR PV T2 40-1000 P	OVR PV T2 40-1500 P
with auxiliary contact (TS)		OVR PV T2 40-1000 P TS	OVR PV T2 40-1500 P TS
Technology		Varistor	Varistor
Electrical features			
Standard		IEC 61643-31 UL 1449 5 th Ed	IEC 61643-31 UL 1449 5 th Ed
Type/test class		T2/II (EN) & Type 1 CA (UL)	T2/II (EN) & Type 1 CA (UL)
Protected lines		2	2
Types of networks		Photovoltaic	Photovoltaic
Type of current		DC	DC
Nominal voltage Un (L-N/L-L)	[V]	1000	1500
Max. cont. operating voltage Ucpv	[V]	1000	1500
Max.cont.operating voltage according ® (MCOV)	[V]	1000	1500
Maximum discharge current I _{max} (8/20)	[kA]	40	40
Nominal discharge current I _n (8/20)	[kA]	20	15
Voltage protection level Up at I _n (L-L/L-PE)	[kV]	4	5
Voltage protection rating according ® (VPR (L+/G, L-/G, L+/L-))	[kV]	3	4
Response time	[ns]	≤ 25	≤ 25
Residual current IPE	[µA]	≤1000	≤1000
Short-circuit DC current I _{scpv}	[A]	10,000	10,000
Short circuit withstand according ® (S _{CCR})	[kA]	10	10
Disconnecter	Fuse	no need up to 10 kA	no need up to 10 kA
	Circuit breaker	no need up to 10 kA	no need up to 10 kA
Pluggable cartridge		Yes	Yes
Integrated specific thermal disconnecter		Yes	Yes
State indicator		Yes	Yes
Safety reserve		No	No
Auxiliary contact		Yes (TS option)	Yes (TS option)
Installation			
Wire range (L, N, PE)	Solid wire	[mm²] 2.5...35	2.5...35
	Stranded wire	[mm²] 2.5...25	2.5...25
Stripping length (L, N, PE)		12	12
Tightening torque (L, N, PE)		NM 4	4
Auxiliary contact (TS)			
Contact complement		1 NO - 1 NC	1 NO - 1 NC
Minimum load		12 V DC - 10 mA	12 DC - 10 mA
Maximum load		250 V AC - 1 A	250 V AC - 1A
Connection cross-section		1.5	1.5
Miscellaneous characteristics			
Stocking and operating temperature		[°C] -40 to +80	-40 to +80
Maximal Altitude		[m] 2000	2000
Humidity Rate HR		95% (non condensing)	95% (non condensing)
Degree of protection		IP20	IP 20
Fire resistance according to UL 94		V0	V0
Dimensions	height x width x depth	[mm] 90 x 54 x 73 [inches] 3.5 x 2.12 x 2.87	90 x 54 x 73 3.5 x 2.12 x 2.87
	with auxiliary contact (TS)	[mm] 99 x 54 x 73 [inches] 3.89 x 2.12 x 2.87	99 x 54 x 73 3.89 x 2.12 x 2.87
Replacement Cartridges			
Phase Product ID		OVR PV T2 40-1000 C 2CTB802402R1000	OVR PV T2 40-1500 C 2CTB802402R1500

Technical features

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 5 th Ed.	IEC61643-11/ IEC 61643-31/	IEC61643-11/ IEC 61643-31/ UL 1449 5 th 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 ® (MCOV)		-	1100	-	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]	-	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 ® (S _{CCR})	[kA]	-	50	-	65
Disconnector	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 disconnector		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	[mm²] 2.5....35	2.5....35	2.5....35	2.5....35
	Stranded wire	[mm²] 2.5....25	2.5....25	2.5....25	2.5....25
Stripping length (L,N,PE)		[mm²] 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

Protection and safety

OVR PV surge protective devices Photovoltaic networks

Combined Type 1 and Type 2 SPD can guarantee an over voltage reduction to protect end equipment, whether the surge comes from a lightning strike or power grid perturbation. This is due to both its functions as Type 1 able to withstand 10/350 μ s waveform, the strong and powerful one, as well as Type 2 for 8/20 μ s waveform, to limit the voltage rise.

ABB is set to cover the main needs of large-scale PV power plants: keeping the Solar production running, whatever the atmospheric discharge. This being from 600 V DC up to 1500 V DC.

Type T1-T2 and T2 PV

Pro- tected lines	Impulse current Iimp 10/350	Total disch. current Itotal 10/350	Max. dischar. current Imax 8/20	Nominal current In	Voltage protec- tion level Up	Max. cont. operat- ing volt- age Ucpv	Bbn 4053546	Order details		Weight 1 piece
	kA	kA	kA	kA	kV	V	EAN	Type code	Order code	kg
1+1 DC	5	5	40	20	3.8/3.8	1100	034615	OVR PV T1-T2 5-1000 P QS	2CTB812050R1000	0.397
1+1 DC	5	5	40	20	3.8/3.8	1100	034639	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	034660	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	034677	OVR PV T1-T2 12.5-1000 P TS QS	2CTB812121R1000	0.462
1+1 DC	5	5	30	20	5/5	1500	034646	OVR PV T1-T2 5-1500 P QS	2CTB812050R1500	0.488
1+1 DC	5	5	30	20	5/5	1500	034653	OVR PV T1-T2 5-1500 P TS QS	2CTB812051R1500	0.497
1+1 DC	5	10	30	20	5/5	1500	034684	OVR PV T1-T2 10-1500 P QS	2CTB812100R1500	0.488
1+1 DC	5	10	30	20	5/5	1500	034691	OVR PV T1-T2 10-1500 P TS QS	2CTB812101R1500	0.497
1+1 DC	-	-	40	15	5/5	1500	050240	OVR PV T2 40-1500 P	2CTB802400R1500	0.3
1+1 DC	-	-	40	15	5/5	1500	050288	OVR PV T2 40-1500 P TS	2CTB802401R1500	0.395
1+1 DC	-	-	40	20	4/4	1000	050110	OVR PV T2 40-1000 P	2CTB802400R1000	0.3
1+1 DC	-	-	40	20	4/4	1000	050165	OVR PV T2 40-1000 P TS	2CTB802401R1000	0.395
1+1 DC	-	-	40	15	5/5	1500	098259	OVR PV T2 40-1500 P BULK (20)	2CTB802400Z1500	0.3
1+1 DC	-	-	40	15	5/5	1500	098273	OVR PV T2 40-1500 P TS BULK (20)	2CTB802401Z1500	0.395
1+1 DC	-	-	40	20	4/4	1000	098211	OVR PV T2 40-1000 P BULK (20)	2CTB802400Z1000	0.3
1+1 DC	-	-	40	20	4/4	1000	098235	OVR PV T2 40-1000 P BULK (20) TS	2CTB802401Z1000	0.395



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



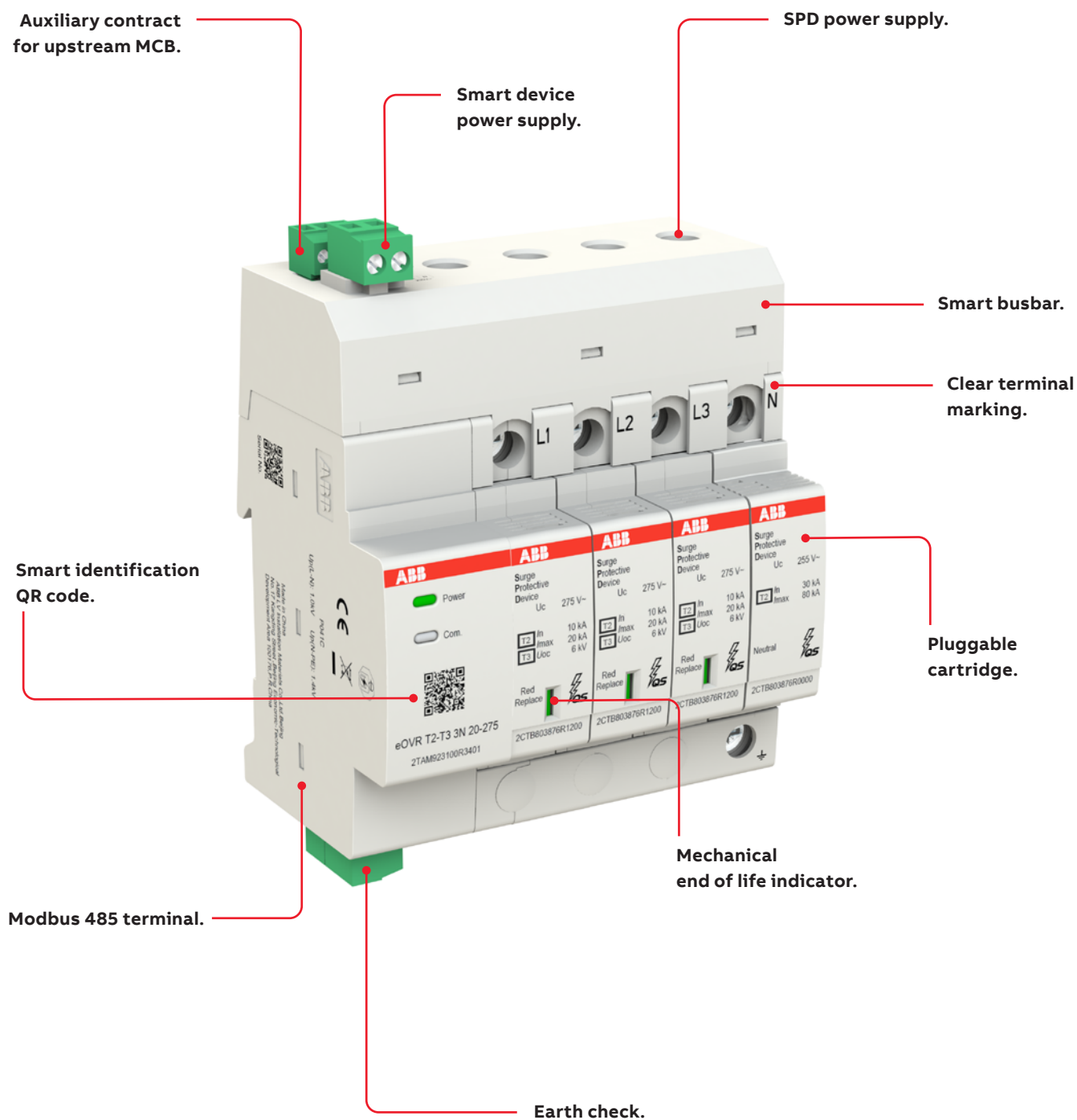
OVR PV T1-T2-10-1500 P TS QS



OVR PV T2 40-1500 P TS

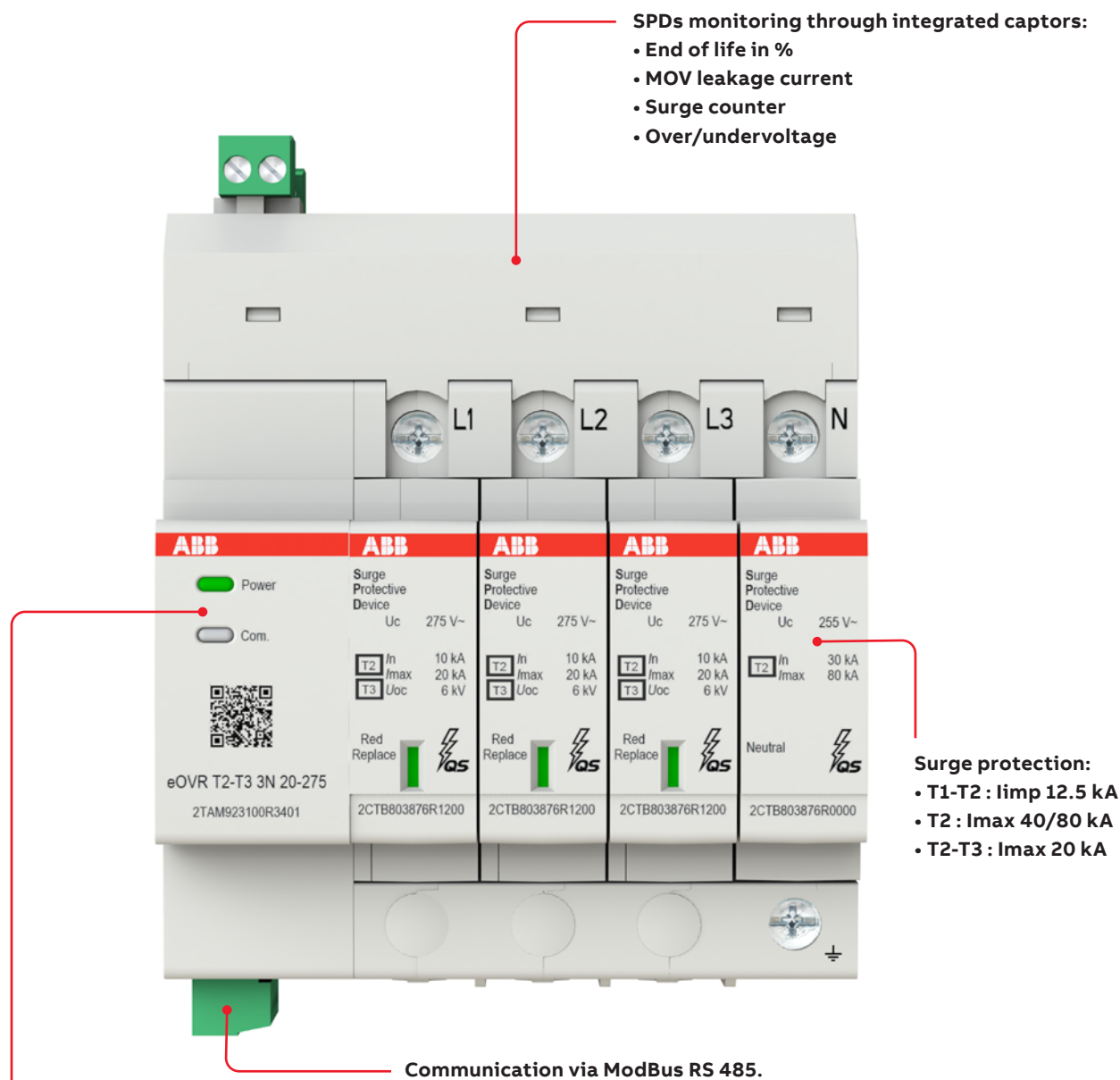
Digital SPDs—eOVR

Hardware's features

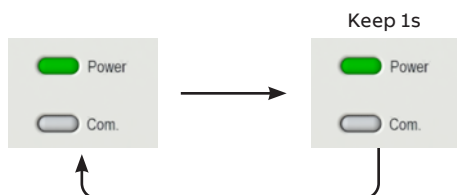


Digital SPDs—eOVR

Hardware's features



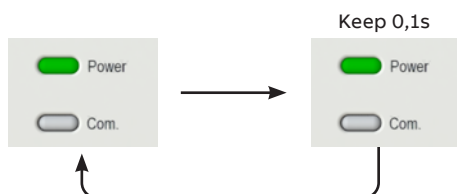
Earthing connection fault



Keep 1s

When there is problem of the ground connection, the light of power will be off 1s, then be on. This cycle will be repeated to this fault is removed, then the light of power will be back to green.

MOV's end of life / SPD triggered / Black up protection failure

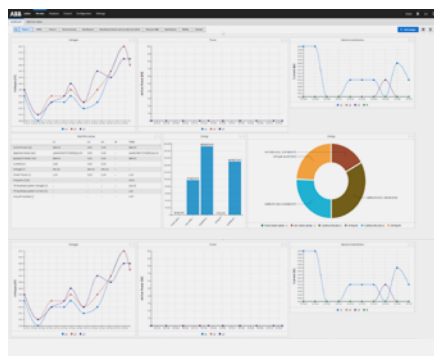


Keep 0,1s

When such malfunction occur, the light of power will be off 0.1s, then be on. This cycle will be repeated to this fault is removed, then the light of power will be back to green.

Digital SPDs—eOVR

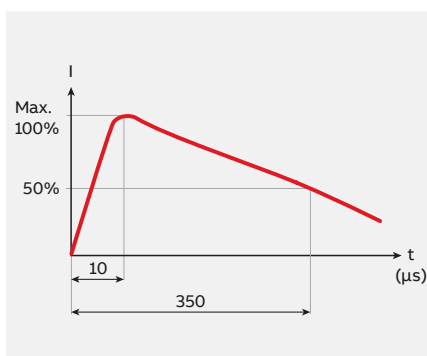
SPDs go to Digital with ABB System Pro InSite



System Pro M InSite compatible

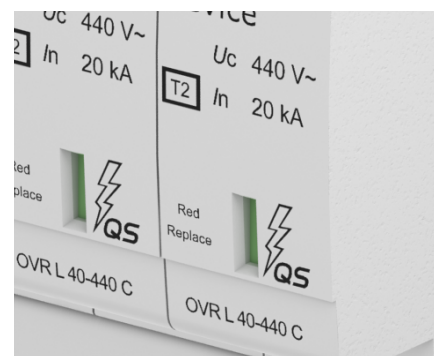
eOVR is compatible to ABB InSite UI and third party UI to monitor all eOVR features.

Digital benefits bring to eOVR new ways to extend SPDs end of life, alarms, notifications, cross data.



Surge protection level

Tested as Type 1, Type 2 or Type 3 the eOVR series is designed to face surge events either from atmospheric origin or network disturbances.



End of life state

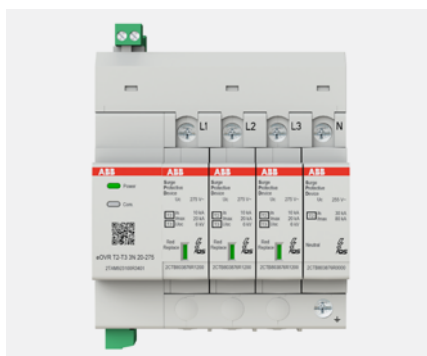
Front end of life display, mechanically connected to the MOV to state its status, also when power off.

- Green: working
- Green/red : should be replace
- Red: must be replaced



Product identification

To easier the access to all eOVR product information (performance, certificates, troubleshooting...) a printed QR code is on the front face to reach the product webpage also when the product is already installed on the Din rail.



Pre-mounted

eOVR is the standard ABB OVR series SPDs factory fitted and tested to the Digital module. Saving time in mounting operations.



Replacement cartridge

The pluggable feature facilitates maintenance. Should one or more worn cartridges need to be replaced, the wires do not have to be removed.

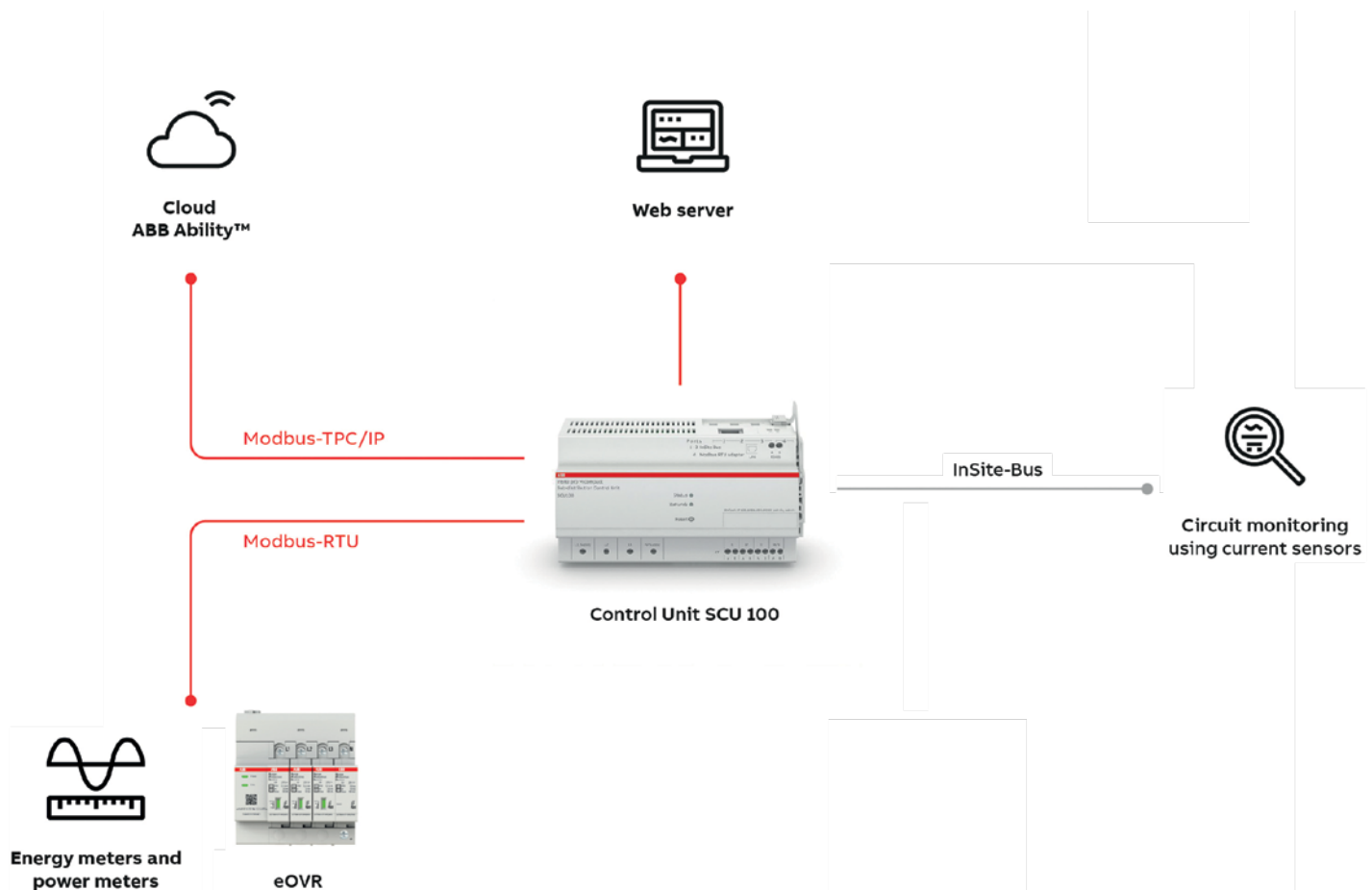
Digital SPDs—eOVR

Software's features

SPDs protect your equipment from transient overvoltages and surges, but after they have coped with a certain amount of surges, their cartridges need to be replaced.

To ensure continuous operation and protection, the device status needs to be monitored remotely.

By connecting to System pro M compact® InSite, it is possible to retrieve the data from the SPD and feed it into the integrated widgets and alarm settings on the InSite web server. Based on the current data status, predictive maintenance can be achieved through end-of-life monitoring, surge event counting, surge amplitude, and leakage current. In addition, real-time data such as past surge event data, ambient temperature, over/under voltage, upstream MCB monitoring, and ground connection status can also be viewed via the web server.



Digital SPDs—eOVR

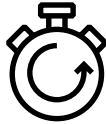
Software's features

Surge monitoring.



End of life status in %

Based on the current leakage, an algorithm display individual end of life in % to easier the SPD status.



Surge event counter

eOVR is recording all surge events passing through him to let you know the number of events faced and when it happened.



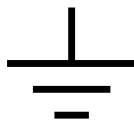
Surge amplitude

Surge event recorded will indicate their surge level, this in the aim to check if the SPD need to be upgraded or explain its premature failing.



Current leakage

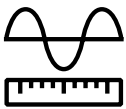
Measure the leakage current from each MOV that result from a degradation among event or time.



Earthing connection status

States if the eOVR is correctly connected to the ground.

Network monitoring.



Over/under voltage

Permanent overvoltage can damage the SPD. By recording this feature, it is possible to mitigate the impact by initiating appropriate actions.



Ambient temperature

Measuring the ambient temperature in the enclosure can prevent too high heating, leading to malfunction.

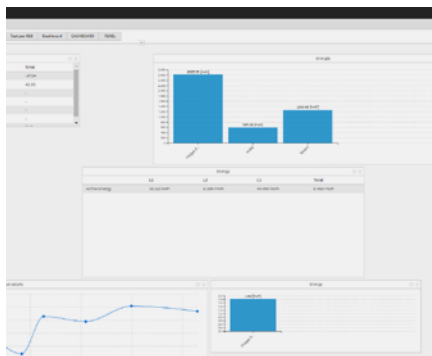


Upstream MCB monitoring

Monitor the upstream protection is switched ON or OFF. When Off, the eOVR will be not operating and will not be able to protect from surge anymore.

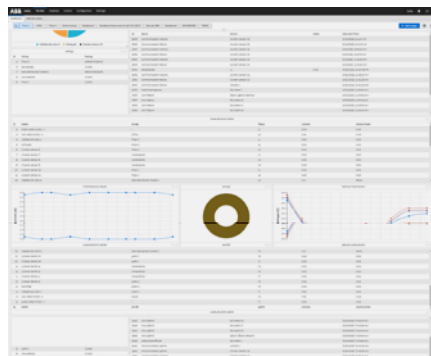
Digital SPDs—eOVR

Software's features



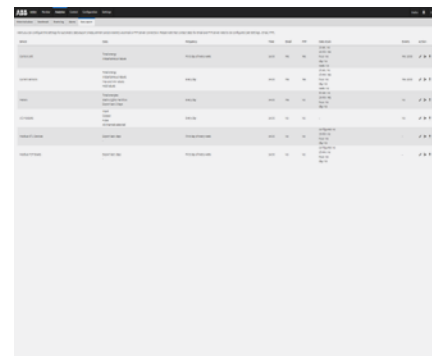
End-of-life prediction

eOVR measures the leakage current flowing through the Metal Oxide Varistor (MOV) in real time. With an algorithm based on laboratory tests, it evaluates the end of life status of each MOVs in %.



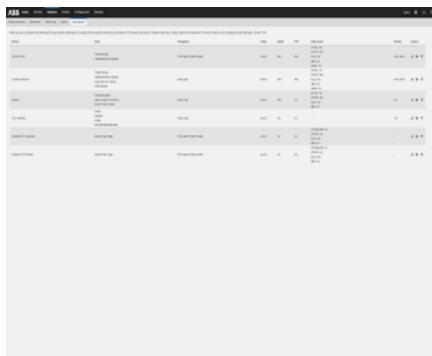
Suggested maintenance operation

Based on the status of the eOVR (end-of-life, temperature, network nominal voltages), preventive maintenance operations will be suggested with the aim to optimize the continuity of service by keeping the surge protection level at its maximum.



Maintenance report

It is possible to extract a maintenance report about the eOVR. Such a report supports planning the upcoming maintenance operations and allows to keep track of the status in a specific period of time.



Alarms/notifications

In the InSite web server it's possible to set alarms for a number of eOVR attributes to inform each time there is a change. This serves the purpose of anticipating and organizing predictive maintenance operations as much in advance as possible, in order to prolong the system's continuity of service.

Digital SPDs—eOVR

eOVR Type 1 - type 2

Function:

Surge protective devices SPD type 1- type 2, type 2 and type 2– type 3 protect low-voltage consumer systems against lightning currents and surge voltages as they are tested as SPD type 1, type 2 and Type 2+3, according to IEC 61643-11. They are offering digital features through ABB Pro M InSite UI to monitor several features to enhance its protection level.

Application: Commercial, Building, Industrial.

Standard: IEC 61643-11; EN 61000-6-2/EN 61000-6-3



eOVR T1-T2 3N 12.5-275s

Protected lines	Impulse current Iimp 10/350 kA	Max discharge current Imax 8/20 kA	Nominal current In kA	Follow current interrupting ingrating I _{fi} kV	Voltage protection level Up kV	Nominal voltage Un V	Max. cont. operating voltage Uc V	Order details	
								Type code	Order code
3+1	12.5	80	20	-	1.4	230/400	275	eOVR T1-T2 3N 12.5-275s	2TAM913100R5411
3+1	12.5	80	20	-	1.4	400/690	440	eOVR T1-T2 3N 12.5-440s	2TAM913100R5811
3	12.5	80	20	-	1.4	400/690	440	eOVR T1-T2 3L 12.5-440s	2TAM913000R5811
4	12.5	80	20	-	1.4	400/690	440	eOVR T1-T2 4L 12.5-440s	2TAM914000R5811



eOVR T2 3N 40-350

Protected lines	Impulse current Iimp 10/350 kA	Max discharge current Imax 8/20 kA	Nominal current In kA	Follow current interrupting ingrating I _{fi} kV	Voltage protection level Up kV	Nominal voltage Un V	Max. cont. operating voltage Uc V	Order details	
								Type code	Order code
1+1	-	40	20	-	1.5	230	350	eOVR T2 1N 40-350	2TAM901100R4501
3+1	-	40	20	-	1.5	230/400	350	eOVR T2 3N 40-350	2TAM903100R4501
3+1	-	80	20	-	2.1	400/690	440	eOVR T2 3N 80-440s	2TAM903100R5811
3	-	40	20	-	1.8	230/400	275	eOVR T2 3L 40-275s	2TAM903000R4411



eOVR T2-T3 1N 20-275

Protected lines	Impulse current Iimp 10/350 kA	Max discharge current Imax 8/20 kA	Nominal current In kA	Follow current interrupting ingrating I _{fi} kV	Voltage protection level Up kV	Nominal voltage Un V	Max. cont. operating voltage Uc V	Order details	
								Type code	Order code
1+1	-	20	5	-	1.4	230	275	eOVR T2-T3 1N 20-275	2TAM921100R3401
3+1	-	20	5	-	1.4	230/400	275	eOVR T2-T3 3N 20-275	2TAM923100R3401



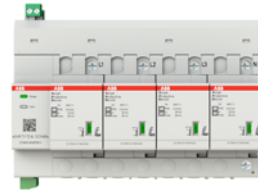
Protection and safety

eOVR T1-T2



		eOVR T1-T2 3N 12.5-275s	
Monitoring	Surge event counter		●
	SPD end of life prediction		●
	SSD/back up status		●
	SPD status		●
	Ambient temperature		●
	Nominal voltage		●
	Surge amplitude		●
	Surge current polarity		-
	Surge energy		-
	Surge time		●
Detection	Surge detectable value		1kA~80kA
	Surge level to trigger event counter		>1kA
	Leakage current resolution		1μA
	Leakage current measurement range		1μA~500μA
	Maximum measuring period	s	-
	Sampling rate	Hz	-
Alarm	Front face blinking LED		●
	Audible alarm		-
	Leakage current		●
	Over voltage		●
	Undervoltage		●
	Back up protection status		●
	MOV end of life		●
	SPD status		●
Record	Local memory capacity		20 surge events and 10 spd remote signal status change record
Communication	Intranet		Modbus RS-485
	Cloud		ABB InSite Pro M
	Third party		ABB Ability
ABB Insite Pro M interface	Customized dashboard		●
	Product location		●
	Alarm setting		●
	Historical events extraction		●
	Multiple SPD monitoring		●
	Customized email notification		●
	Automatic maintenance suggestion		●
Standard	Electromagnetic Compatibility (EMC)		EN 61000-6-2/EN 61000-6-3





eOVR T1-T2 3N 12.5-440s	eOVR T1-T2 3L 12.5-440s	eOVR T1-T2 4L 12.5-440s
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
-	-	-
-	-	-
●	●	●
1kA~80kA	1kA~80kA	1kA~80kA
>1kA	>1kA	>1kA
1μA	1μA	1μA
1μA~500μA	1μA~500μA	1μA~500μA
-	-	-
-	-	-
●	●	●
-	-	-
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
20 surge events and 10 spd remote signal status change record	20 surge events and 10 spd remote signal status change record	20 surge events and 10 spd remote signal status change record
Modbus RS-485	Modbus RS-485	Modbus RS-485
ABB InSite Pro M	ABB InSite Pro M	ABB InSite Pro M
ABB Ability	ABB Ability	ABB Ability
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
EN 61000-6-2/EN 61000-6-3	EN 61000-6-2/EN 61000-6-3	EN 61000-6-2/EN 61000-6-3

Protection and safety

eOVR T1-T2



			eOVR T1-T2 3N 12.5-275s		
Key characteristics	Protection mode		L-N/N-PE/L-PE/L-L		
	Number of protected lines		3P+N		
	Test class		I-II / T1-T2		
	Pluggable cartridge		●		
	Integrated thermal disconnecter		●		
	End of life indicator		●		
	Safety reserve		●		
	Electrical characteristics	System network		TT, TNS	
Nominal discharge current		In (8/20)	kA	20	
Maximal discharge current		Imax (8/20)	kA	80	
Impulse current		Iimp (10/350)		12,5	
Maximal continuous operating voltage		Uc	kA	275	
Voltage protection level at In		Up (L-PE)	kV	1,35	
Voltage protection level at In		Up (L-N)	kV	1,2	
Voltage protection level at In		Up (N-PE)	kV	1,1	
Short circuit withstand		Iscrr	kA	100	
Total current		Itotal	kA	50	
Follow current interrupted		Ifi	kA	-/0,1	
Ground residual current		Ipe	μA	< 10	
TOV withstand (L-N : 5s / N-PE : 200 ms)		Ut	V	337 / 1200	
Voltage Combination wave			kV	20	
Required thermal/back up protection maximum rating		MCB S200 or POD		-	
	Curve B or C Circuit breaker		A	-	
	gG - gL fuse		A	< 125	
Standard	Surge Protective Devices		IEC 61643-11 / GB/T 18802.1		
Miscellaneous characteristics	Response time		ns	25	
	Fire resistance according to UL 94			V-0	
Replacement cartridges	Phase / Product ID		2CTB815710R2600		
	Neutral / Product ID		2CTB815710R2700		
Global	Electrical characteristics	Nominal voltage		V	230
		Type of current / frequency		Hz	a.c 47-63
	Mechanical characteristics	Wire range : Solid/Stranded		mm²	2,5...16
		Stripping lenght		mm	12,5
		Tightening torque		N.m	2,8
		Dimensions	W x D x H	mm	98.5 x 69.4 x 111
		Weight		kg	0,865
		Packing quantities		pce	1
		Protection level			IP 20
		Maximal altitude		m	2000
		Miscellaneous characteristics	Temperature		°C
	Relative humidity		% R.H	5-95	
	Standard	Intelligent Surge Protective Devices		NB/T 10284	

Global



eOVR T1-T2 3N 12.5-440s	eOVR T1-T2 3L 12.5-440s	eOVR T1-T2 4L 12.5-440s
L-N/N-PE/L-PE/L-L	L-L/L-PE	L-N/N-PE/L-PE/L-L
3P+N	3L	4L
I-II / T1-T2	I-II / T1-T2	I-II / T1-T2
●	●	●
●	●	●
●	●	●
●	●	●
TT, TNS	TNC	TNS
20	20	20
80	80	80
12,5	12,5	12,5
440	440	440
2	2	1,9
1,9	-	3,8
1,9	-	1,9
100	100	100
50	37,5	50
-/0,1	-/0,1	-/0,1
< 10	< 10	< 10
337 / 1200	337 / 1200	337 / 1200
20	20	20
-	-	-
-	-	-
< 125	< 125	< 125
IEC 61643-11 / GB/T 18802.1	IEC 61643-11 / GB/T 18802.1	IEC 61643-11 / GB/T 18802.1
25	25	25
V-0	V-0	V-0
2CTB815710R5500	2CTB815710R5500	2CTB815710R5500
2CTB815710R5600	-	2CTB815710R5500
400	400	400
a.c 47-63	a.c 47-63	a.c 47-63
2,5...16	2,5...16	2,5...16
12,5	12,5	12,5
2,8	2,8	2,8
151.9 x 69.4 x 111	137.2 x 69.4 x 111	169.7 x 69.4 x 111
1,16	1,052	1,321
1	1	1
IP 20	IP 20	IP 20
2000	2000	2000
-40 to +80°C	-40 to +80°C	-40 to +80°C
5-95	5-95	5-95
NB/T 10284	NB/T 10284	NB/T 10284



Protection and safety

eOVR T2



		eOVR T2 1N 40-350
Monitoring	Surge event counter	●
	SPD end of life prediction	●
	SSD/back up status	●
	SPD status	●
	Ambient temperature	●
	Nominal voltage	●
	Surge amplitude	●
	Surge current polarity	-
	Surge energy	-
	Surge time	●
Detection	Surge detectable value	1kA~80kA
	Surge level to trigger event counter	>1kA
	Leakage current resolution	1μA
	Leakage current measurement range	1μA~500μA
	Maximum measuring period	s -
	Sampling rate	Hz -
Alarm	Front face blinking LED	●
	Audible alarm	-
	Leakage current	●
	Over voltage	●
	Undervoltage	●
	Back up protection status	●
	MOV end of life	●
	SPD status	●
Record	Local memory capacity	20 surge events and 10 spd remote signal status change record
Communication	Intranet	Modbus RS-485
	Cloud	ABB InSite Pro M
	Third party	ABB Ability
ABB Insite Pro M interface	Customized dashboard	●
	Product location	●
	Alarm setting	●
	Historical events extraction	●
	Multiple SPD monitoring	●
	Customized email notification	●
	Automatic maintenance suggestion	●
Standard	Electromagnetic Compatibility (EMC)	EN 61000-6-2/EN 61000-6-3





eOVR T2 3N 40-350	eOVR T2 3N 80-440s	eOVR T2 3L 40-275s
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
-	-	-
-	-	-
●	●	●
1kA~80kA	1kA~80kA	1kA~80kA
>1kA	>1kA	>1kA
1μA	1μA	1μA
1μA~500μA	1μA~500μA	1μA~500μA
-	-	-
-	-	-
●	●	●
-	-	-
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
20 surge events and 10 spd remote signal status change record	20 surge events and 10 spd remote signal status change record	20 surge events and 10 spd remote signal status change record
Modbus RS-485	Modbus RS-485	Modbus RS-485
ABB InSite Pro M	ABB InSite Pro M	ABB InSite Pro M
ABB Ability	ABB Ability	ABB Ability
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
EN 61000-6-2/EN 61000-6-3	EN 61000-6-2/EN 61000-6-3	EN 61000-6-2/EN 61000-6-3



Protection and safety

eOVR T2



				eOVR T2 1N 40-350
Key characteristics	Protection mode			L-N/N-PE/L-PE/L-L
	Number of protected lines			1P+N
	Test class			II / T2
	Pluggable cartridge			●
	Integrated thermal disconnecter			●
	End of life indicator			●
	Safety reserve			-
Electrical characteristics	System network			TT, TNS
	Nominal discharge current	In (8/20)	kA	20
	Maximal discharge current	Imax (8/20)	kA	40
	Impulse current	Iimp (10/350)		-
	Maximal continuous operating voltage	Uc	kA	350
	Voltage protection level at In	Up (L-PE)	kV	1,5
	Voltage protection level at In	Up (L-N)	kV	1,4
	Voltage protection level at In	Up (N-PE)	kV	1,25
	Short circuit withstand	Iscrr	kA	100
	Total current	Itotal	kA	80
	Follow current interrupted	Ifi	kA	-/0,1
	Ground residual current	Ipe	μA	< 10
	TOV withstand (L-N : 5s / N-PE : 200 ms)	Ut	V	337 / 1200
	Voltage Combination wave		kV	20
Required thermal/back up protection maximum rating	MCB S200 or POD			●
	Curve B or C Circuit breaker	A		< 125
	gG - gL fuse	A		< 125
Standard	Surge Protective Devices			IEC 61643-11 / GB/T 18802.1
Miscellaneous characteristics	Response time	ns		25
	Fire resistance according to UL 94			V-0
Replacement cartridges	Phase / Product ID			2CTB803886R1000
	Neutral / Product ID			2CTB803886R0000
Electrical characteristics	Nominal voltage	V		230
	Type of current / frequency	Hz		a.c 47-63
Mechanical characteristics	Wire range : Solid/Stranded	mm ²		2,5...16
	Stripping lenght	mm		12,5
	Tightening torque	N.m		2,8
	Dimensions	W x D x H	mm	62.9 x 58 x 111
	Weight	kg		0,46
	Packing quantities	pce		1
	Protection level			IP 20
	Maximal altitude	m		2000
Miscellaneous characteristics	Temperature	°C		-40 to +80°C
	Relative humidity	% R.H		5-95
Standard	Intelligent Surge Protective Devices			NB/T 10284

Global



eOVR T2 3N 40-350	eOVR T2 3N 80-440s	eOVR T2 3L 40-275s
L-N/N-PE/L-PE/L-L	L-N/N-PE/L-PE/L-L	L-L/L-PE
3P+N	3P+N	3L
II / T2	II / T2	II / T2
●	●	●
●	●	●
●	●	●
-	●	●
TT, TNS	TT, TNS	TNC
20	20	20
40	80	40
-	-	-
350	440	275
1,5	2,1	1,4
1,4	1,8	-
1,25	2	-
100	100	100
80	80	80
-/0,1	-/0,1	-/0,1
< 10	< 10	< 10
337 / 1200	337 / 1200	337 / 1200
20	20	20
●	●	●
< 125	< 125	< 125
< 125	< 125	< 125
IEC 61643-11 / GB/T 18802.1	IEC 61643-11 / GB/T 18802.1	IEC 61643-11 / GB/T 18802.1
25	25	25
V-0	V-0	V-0
2CTB803886R1000	2CTB815708R5500	2CTB815704R2600
2CTB803886R0000	2CTB815708R5700	-
230	400	230
a.c 47-63	a.c 47-63	a.c 47-63
2,5...16	2,5...16	2,5...16
12,5	12,5	12,5
2,8	2,8	2,8
98.5 x 58 x 111	98.5 x 69.4 x 111	83.6 x 69.4 x 111
0,715	0,835	0,692
1	1	1
IP 20	IP 20	IP 20
2000	2000	2000
-40 to +80°C	-40 to +80°C	-40 to +80°C
5-95	5-95	5-95
NB/T 10284	NB/T 10284	NB/T 10284



Protection and safety

eOVR T2-T3



		eOVR T2-T3 1N 20-275	
Monitoring	Surge event counter		●
	SPD end of life prediction		●
	SSD/back up status		●
	SPD status		●
	Ambient temperature		●
	Nominal voltage		●
	Surge amplitude		●
	Surge current polarity		-
	Surge energy		-
	Surge time		●
Detection	Surge detectable value		1kA~80kA
	Surge level to trigger event counter		>1kA
	Leakage current resolution		1μA
	Leakage current measurement range		1μA~500μA
	Maximum measuring period	s	-
	Sampling rate	Hz	-
Alarm	Front face blinking LED		●
	Audible alarm		-
	Leakage current		●
	Over voltage		●
	Undervoltage		●
	Back up protection status		●
	MOV end of life		●
	SPD status		●
Record	Local memory capacity		20 surge events and 10 spd remote signal status change record
Communication	Intranet		Modbus RS-485
	Cloud		ABB InSite Pro M
	Third party		ABB Ability
ABB Insite Pro M interface	Customized dashboard		●
	Product location		●
	Alarm setting		●
	Historical events extraction		●
	Multiple SPD monitoring		●
	Customized email notification		●
	Automatic maintenance suggestion		●
Standard	Electromagnetic Compatibility (EMC)		EN 61000-6-2/EN 61000-6-3





	eOVR T2-T3 3N 20-275
	●
	●
	●
	●
	●
	●
	●
	-
	-
	●
	1kA~80kA
	>1kA
	1μA
	1μA~500μA
	-
	-
	●
	-
	●
	●
	●
	●
	●
	●
	20 surge events and 10 spd remote signal status change record
	Modbus RS-485
	ABB InSite Pro M
	ABB Ability
	●
	●
	●
	●
	●
	●
	●
	●
	EN 61000-6-2/EN 61000-6-3



Protection and safety

eOVR T2-T3



				eOVR T2-T3 1N 20-275
Key characteristics	Protection mode			L-N/N-PE/L-PE/L-L
	Number of protected lines			1P+N
	Test class			II-III / T2-T3
	Pluggable cartridge			●
	Integrated thermal disconnecter			●
	End of life indicator			●
	Safety reserve			-
Electrical characteristics	System network			TT,TNS
	Nominal discharge current	In (8/20)	kA	5
	Maximal discharge current	Imax (8/20)	kA	20
	Impulse current	Iimp (10/350)		-
	Maximal continuous operating voltage	Uc	kA	275
	Voltage protection level at In	Up (L-PE)	kV	1,4
	Voltage protection level at In	Up (L-N)	kV	0,9
	Voltage protection level at In	Up (N-PE)	kV	1,4
	Short circuit withstand	Iscrr	kA	100
	Total current	Itotal	kA	80
	Follow current interrupted	Ifi	kA	-/0,1
	Ground residual current	Ipe	μA	< 10
	TOV withstand (L-N : 5s / N-PE : 200 ms)	Ut	V	337 / 1200
	Voltage Combination wave		kV	20
Required thermal/back up protection maximum rating	MCB S200 or POD			●
	Curve B or C Circuit breaker	A		< 125
	gG - gL fuse	A		< 125
Standard	Surge Protective Devices			IEC 61643-11 / GB/T 18802.1
Miscellaneous characteristics	Response time	ns		25
	Fire resistance according to UL 94			V-0
Replacement cartridges	Phase / Product ID			2CTB803876R1200
	Neutral / Product ID			2CTB803876R0000
Electrical characteristics	Nominal voltage	V		230
	Type of current / frequency	Hz		a.c 47-63
Mechanical characteristics	Wire range : Solid/Stranded	mm ²		2,5...16
	Stripping lenght	mm		12,5
	Tightening torque	N.m		2,8
	Dimensions	W x D x H	mm	62.9 x 58 x 111
	Weight	kg		0,453
	Packing quantities	pce		1
	Protection level			IP 20
	Maximal altitude	m		2000
Miscellaneous characteristics	Temperature	°C		-40 to +80°C
	Relative humidity	% R.H		5-95
Standard	Intelligent Surge Protective Devices			NB/T 10284

Global

**eOVR T2-T3 3N 20-275**

L-N/N-PE/L-PE/L-L

3P+N

II-III / T2-T3

●

●

●

-

TT,TNS

5

20

-

275

1,4

0,9

1,4

100

80

-/0,1

< 10

337 / 1200

20

●

< 125

< 125

IEC 61643-11 / GB/T 18802.1

25

V-0

2CTB803876R1200

2CTB803876R0000

230

a.c 47-63

2,5...16

12,5

2,8

98.5 x 58 x 111

0,694

1

IP 20

2000

-40 to +80°C

5-95

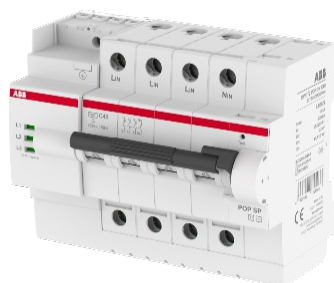
NB/T 10284

OVR T2

Power frequency overvoltage protection POP



OVR T2 POP 1N



OVR T2 POP 3N

OVR T2 POP are surge protective devices SPDs which ensure protection against transient overvoltage's combined with a power frequency overvoltage protection POP. Additionally, the product combination is equipped with a build-in circuit breaker MCB. The device fulfills the product standards IEC/EN 63052 and IEC/EN 61643-11.

IEC FEATURES - General technical data

Types		OVR T2 POP 1N Cxx	OVR T2 POP 3N Cxx
General electrical features			
Standards		IEC/EN 61643-11 IEC/EN 63052 IEC/EN 60898-1	IEC/EN 61643-11 IEC/EN 63052 IEC/EN 60898-1
Type / test class		T2/Class II	T2/Class II
Protected lines		1+N	3+N
Types of networks		TNS / TNC-S / TT	TNS / TNC-S / TT
Nominal voltage U_n	[V]	230/400	230/400
Voltage regulation of the system network		$\pm 10\%$	$\pm 10\%$
Type of current AC		AC 50Hz	AC 50Hz
SPD - surge protection device			
Maximum continuous operating voltage U_c	[V]	255	255
Maximum discharge current I_{max} (8/20)	[kA]	15	15
Nominal discharge current I_n (8/20)	(L-N / N-PE) [kA]	5 / 10	5 / 20
Voltage protection level U_p at I_n	(L-N / N-PE) [kV]	≤ 1.5	≤ 1.5
Response time	(L-N / N-PE) [ns]	$\leq 25 / \leq 100$	$\leq 25 / \leq 100$
Backup protection	Circuit Breaker (C curve)	integrated	integrated
Pluggable cartridge		No	No
Integrated Thermal Disconnecter		Yes	Yes
State Indicator		Yes	Yes
Auxiliary contact		No	No
MCB - miniature circuit breaker			
Poles		1P+N	3P+N
Tripping characteristic		C	C
Rated current I_n	[A]	10...63	10...63
Rated short-circuit capacity I_{cn}	[kA]	6	6
POP - power frequency overvoltage protection			
Actuation method		Integrated MCB	Integrated MCB
Test button		Yes	Yes
POP tripping curve (acc. IEC/EN 63052)	Standard values of break	$U_a=255V$: no tripping	$U_a=255V$: no tripping
	time and non-actuating time	$U_a=275V$: $T_{min}=3s$; $T_{max}=15s$	$U_a=275V$: $T_{min}=3s$; $T_{max}=15s$
	at a voltage U_a	$U_a=300V$: $T_{min}=1s$; $T_{max}=5s$	$U_a=300V$: $T_{min}=1s$; $T_{max}=5s$
		$U_a=350V$: $T_{min}=0.25s$; $T_{max}=0.75s$	$U_a=350V$: $T_{min}=0.25s$; $T_{max}=0.75s$
		$U_a=400V$: $T_{min}=0.07s$; $T_{max}=0.2s$	$U_a=400V$: $T_{min}=0.07s$; $T_{max}=0.2s$

OVR T2

Power frequency overvoltage protection POP

IEC FEATURES - General technical data

Installation				
Wire range (L, N)	solid and flexible wire	[mm ²]	In=10A: 1.5...25	In=10A: 1.5...25
		[mm ²]	In=16A / In=20A: 2.5...25	In=16A / In=20A: 2.5...25
		[mm ²]	In=25A: 4...25	In=25A: 4...25
		[mm ²]	In=32A: 6...25	In=32A: 6...25
		[mm ²]	In=40A / In=50A: 10...25	In=40A / In=50A: 10...25
		[mm ²]	In=63A: 16...25	In=63A: 16...25
Wire range (PE)	solid and flexible wire	[mm ²]	6...10	6...10
Stripping length (L, N)		[mm ²]	12	12
Stripping length (PE)		[mm ²]	8	8
Tightening torque (L, N)		[Nm]	2	2
Tightening torque (PE)		[Nm]	1,2	1,2
Screwdriver (L, N)			No. 2 Pozidrive	No. 2 Pozidrive
Screwdriver (PE)			No. 1 Pozidrive	No. 1 Pozidrive
Miscellaneous characteristics				
Stocking and operating temperature		[°C]	-5 to +40	-5 to +40
Humidity			5 ...95%	5 ...95%
Degree of protection			IP20 - Indoor	IP20 - Indoor
Dimensions				
Product	Height x Width x Depth	[mm]	96 x 52 x 76	96 x 123 x 76
Weight			Approx. 396 g	Approx. 811 g
No of DIN-modules			3	7

Ordering details

Protected lines	Nominal voltage	Max. cont. operating voltage	Max. discharge current	Nominal current SPD (L-N)/ (N-PE)	Voltage protect. level (L-N)/ (N-PE)	Nominal current MCB	Breaking capacity	Bbn 4053546	Order details		Weight Pkg (1 pce)
	U _n V	U _c V	I _{max} 8/20	I _n kA	U _p kV	I _n A	I _{cn} kA	EAN	Type code	Order code	kg
Type T2 POP Permanent Overvoltage Protection											
1P+N	230	255	15	5 / 10	≤1.5	10	6	169867	OVR T2 POP 1N C10	2CTB802153R0102	0,396
1P+N	230	255	15	5 / 10	≤1.5	16	6	169904	OVR T2 POP 1N C16	2CTB802153R0162	0,396
1P+N	230	255	15	5 / 10	≤1.5	20	6	169942	OVR T2 POP 1N C20	2CTB802153R0202	0,396
1P+N	230	255	15	5 / 10	≤1.5	25	6	169980	OVR T2 POP 1N C25	2CTB802153R0252	0,396
1P+N	230	255	15	5 / 10	≤1.5	32	6	170023	OVR T2 POP 1N C32	2CTB802153R0322	0,396
1P+N	230	255	15	5 / 10	≤1.5	40	6	170061	OVR T2 POP 1N C40	2CTB802153R0402	0,396
1P+N	230	255	15	5 / 10	≤1.5	50	6	170108	OVR T2 POP 1N C50	2CTB802153R0502	0,396
1P+N	230	255	15	5 / 10	≤1.5	63	6	170146	OVR T2 POP 1N C63	2CTB802153R0632	0,396
3P+N	230	255	15	5 / 20	≤1.5	10	6	169881	OVR T2 POP 3N C10	2CTB802153R0104	0,811
3P+N	230	255	15	5 / 20	≤1.5	16	6	169928	OVR T2 POP 3N C16	2CTB802153R0164	0,811
3P+N	230	255	15	5 / 20	≤1.5	20	6	169966	OVR T2 POP 3N C20	2CTB802153R0204	0,811
3P+N	230	255	15	5 / 20	≤1.5	25	6	170009	OVR T2 POP 3N C25	2CTB802153R0254	0,811
3P+N	230	255	15	5 / 20	≤1.5	32	6	170047	OVR T2 POP 3N C32	2CTB802153R0324	0,811
3P+N	230	255	15	5 / 20	≤1.5	40	6	170085	OVR T2 POP 3N C40	2CTB802153R0404	0,811
3P+N	230	255	15	5 / 20	≤1.5	50	6	170122	OVR T2 POP 3N C50	2CTB802153R0504	0,811
3P+N	230	255	15	5 / 20	≤1.5	63	6	170160	OVR T2 POP 3N C63	2CTB802153R0634	0,811

Protection and safety

OVR surge protective devices – UL Version Selection tables

Choosing the correct model

1) Determine the service voltage

Consult qualified personnel if the facility or operation service voltage is unknown.

2) Select the SPD maximum continuous operating voltage (MCOV, Uc)

The MCOV should correspond to the service voltage.

Example: If the service voltage is 480 V Delta, an SPD with 550 V or 660 V MCOV will be required.

Surge protection devices must also provide a level of protection compatible with the withstand voltage of the equipment. This withstand voltage depends on the type of equipment and its sensitivity. The incoming surge protector may not provide adequate protection by itself, as certain electrical phenomena may greatly increase its residual voltage if cable lengths exceed 10 m. A second SPD may be necessary.

3) Select the SPD surge capacity (Imax)

Surge capacity is the amount of energy the SPD can withstand from a single surge event. The higher the surge capacity, the longer the device will protect the system. A second surge protector may be required if the surge capacity of the first is not capable of diverting all surge current to ground. See coordination below.

4) Remote monitoring (Optional)

Integrated auxiliary contact for remote monitoring available on models with "TS" designation. Consult "Selection tables" on next page for help in the selection of SPDs.

Complete facility protection

Installing surge protection at the main distribution panel is only the beginning of protecting the entire operation. As most transient surges are created internally, it is necessary to install surge protection at sub-distribution panels (equipment protection) to be fully protected. Stepping down the I_{max} level from the service entrance panel toward equipment to be protected is recommended.

For example, if a 40 kA I_{max} SPD is installed in the main distribution panel, then 15 kA I_{max} SPDs should be installed in sub-distribution panels for equipment protection.

Coordination

It may be necessary to add a second surge protector, wired to the incoming unit, to achieve the required voltage protection and/or surge capacity. For Type 2 or 4 SPDs, installing this second unit a minimum of 1 m from the first unit will allow the two to work together, achieving the required protection.

Wiring rules

The impedance of the cables increases the voltage across the connected equipment. Therefore, the length of the cable between the surge protector and the equipment should be minimized.

The surge protective device should be installed as close to the equipment to be protected as possible. If this is not possible (the equipment is over 30 m from the panel), then a second surge protector must be installed.

Protected lines	Impulse current I _{imp} 10/350 kA	Max. discharge current I _{max} 8/20 kA	Nominal discharge current I _n kA	Follow current interrupting rating I _{fi} kA	Voltage protection Rating VPR kV	Nominal voltage U _n V	Max. cont. operating voltage MCOV V	Order details	
								Type code	Order code
Type 2 - Pluggable - Single Pole networks									
1	–	15	5	–	0.6	120	150	OVR T2 15-150 P U	2CTB802341R0000
1	–	15	5	–	1	277 ±15%	320	OVR T2 15-320 P U	2CTB802341R0400
1	–	40	20	–	0.6	120	150	OVR T2 40-150 P U	2CTB802341R2000
1	–	40	20	–	0.6	120	150	OVR T2 40-150 P TS U	2CTB802341R2100
1	–	40	20	–	1	277 ±15%	320	OVR T2 40-320 P U	2CTB802341R2400
1	–	40	20	–	1	277 ±15%	320	OVR T2 40-320 P TS U	2CTB802341R2500
1	–	40	10	–	1.3	347 ±15%	440	OVR T2 40-440 P TS U	2CTB802341R2900
1	–	40	10	–	1.7	480 ±15%	550	OVR T2 40-550 P TS U	2CTB802341R3300
1	–	40	10	–	1.9	600 ±15%	660	OVR T2 40-660 P TS U	2CTB802341R3700
Neutral									
1	–	70	20	0.1	1.2	230	275	OVR T2 70 N P U	2CTB802341R8000
Cartridges									
1	–	–	–	–	–	120 ±15%	175	OVR T2 15-150 C U	2CTB802348R2500
1	–	–	–	–	–	277 ±15%	320	OVR T2 15-320 C U	2CTB802348R2700
1	–	–	–	–	–	120 ±15%	175	OVR T2 40-150 C U	2CTB802348R3500
1	–	–	–	–	–	277 ±15%	320	OVR T2 40-320 C U	2CTB802348R3700
1	–	–	–	–	–	347 ±15%	440	OVR T2 40-440 C U	2CTB802348R3900
1	–	–	–	–	–	480 ±15%	550	OVR T2 40-550 C U	2CTB802348R4100
1	–	–	–	–	–	600 ±15%	660	OVR T2 40-660 C U	2CTB802348R4300
1	–	–	–	–	–	230	275	OVR T2 70 N C U	2CTB802348R6500

Protection and safety

OVR surge protective devices – UL Version

Selection tables

Pro- tected lines	Impulse current Iimp 10/350 kA	Max. discharge current Imax 8/20 kA	Nominal discharge current In kA	Follow current interrupting rating Ifi kA	Voltage protection Rating VPR kV	Nominal voltage Un V	Max. cont. operating voltage MCOV V	Order details	
								Type code	Order code
Type 2 - Pluggable - Delta networks									
3	–	15	5	–	1	277 ±15%	320	OVR T2 3L 15-320 P U	2CTB802345R0400
								OVR T2 3L 40-320 P U	2CTB802345R2400
3	–	40	20	–	1	277 ±15%	320	OVR T2 3L 40-320 P TS U	2CTB802345R2500
3	–	40	10	–	1.7	480 ±15%	550	OVR T2 3L 40-550 P U	2CTB802345R3400
3	–	40	10	–	1.7	480 ±15%	550	OVR T2 3L 40-550 P TS U	2CTB802345R3300
Cartridges									
1	–	–	–	–	–	277 ±15%	320	OVR T2 15-320 C U	2CTB802348R2700
1	–	–	–	–	–	277 ±15%	320	OVR T2 40-320 C U	2CTB802348R3700
1	–	–	–	–	–	480 ±15%	550	OVR T2 40-550 C U	2CTB802348R4100
Type 2 - Pluggable - Single Phase networks									
2	–	15	5	–	1.2	120	150	OVR T2 1N 15-150 P U	2CTB802342R0000
2	–	15	5	–	1.2	277	320	OVR T2 1N 15-320 P U	2CTB802342R0400
2	–	40	20	–	1.2	120	150	OVR T2 1N 40-150 P U	2CTB802342R2000
2	–	40	20	–	1.2	120	150	OVR T2 1N 40-150 P U (x10)	2CTB802342R8000
2	–	40	20	–	1.2	120	150	OVR T2 1N 40-150 P TS U	2CTB802342R2100
2	–	40	20	–	1.2	277	320	OVR T2 1N 40-320 P TS U	2CTB802342R2500
2	–	40	10	–	1.2	347	440	OVR T2 1N 40-440 P TS U	2CTB802342R2900
2	–	40	10	–	1.2	480	550	OVR T2 1N 40-550 P TS U	2CTB802342R3300
2	–	40	10	–	1.2	600	660	OVR T2 1N 40-660 P TS U	2CTB802342R3700
Cartridges									
1	–	–	–	–	–	120 ±15%	175	OVR T2 15-150 C U	2CTB802348R2500
1	–	–	–	–	–	277 ±15%	320	OVR T2 15-320 C U	2CTB802348R2700
1	–	–	–	–	–	120 ±15%	175	OVR T2 40-150 C U	2CTB802348R3500
1	–	–	–	–	–	277 ±15%	320	OVR T2 40-320 C U	2CTB802348R3700
1	–	–	–	–	–	347 ±15%	440	OVR T2 40-440 C U	2CTB802348R3900
1	–	–	–	–	–	480 ±15%	550	OVR T2 40-550 C U	2CTB802348R4100
1	–	–	–	–	–	600 ±15%	660	OVR T2 40-660 C U	2CTB802348R4300
Type 2 - Pluggable - Split Phase networks									
2	–	15	5	–	0.6	120 ±15%	175	OVR T2 2L 15-150 P U	2CTB802343R0000
2	–	15	5	–	1	277 ±15%	320	OVR T2 2L 15-320 P U	2CTB802343R0400
3	–	15	5	–	0.7	120 ±15%	175	OVR T2 2N 15-150 P U	2CTB802343R0000
3	–	15	5	–	1.1	277 ±15%	320	OVR T2 2N 15-320 P U	2CTB802343R0400
2	–	40	20	–	0.6	120 ±15%	175	OVR T2 2L 40-150 P TS U	2CTB802343R2100
2	–	40	20	–	1	277 ±15%	320	OVR T2 2L 40-320 P TS U	2CTB802343R2500
3	–	40	20	–	0.7	120 ±15%	175	OVR T2 2N 40-150 P TS U	2CTB802343R2100
3	–	40	20	–	1.1	277 ±15%	320	OVR T2 2N 40-320 P TS U	2CTB802343R2500
3	–	40	10	–	1.4	347 ±15%	440	OVR T2 2N 40-440 P TS U	2CTB802343R2900
3	–	40	10	–	1.8	480 ±15%	550	OVR T2 2N 40-550 P TS U	2CTB802343R3300
3	–	40	10	–	2	600 ±15%	660	OVR T2 2N 40-660 P TS U	2CTB802343R3700
Cartridges									
1	–	–	–	–	–	120 ±15%	175	OVR T2 15-150 C U	2CTB802348R2500
1	–	–	–	–	–	277 ±15%	320	OVR T2 15-320 C U	2CTB802348R2700
1	–	–	–	–	–	120 ±15%	175	OVR T2 40-150 C U	2CTB802348R3500
1	–	–	–	–	–	277 ±15%	320	OVR T2 40-320 C U	2CTB802348R3700
1	–	–	–	–	–	347 ±15%	440	OVR T2 40-440 C U	2CTB802348R3900
1	–	–	–	–	–	480 ±15%	550	OVR T2 40-550 C U	2CTB802348R4100
Type 2 - Pluggable - Grounded Wye networks									
3	–	15	5	–	0.6	120 ±15%	175	OVR T2 3L 15-150 P U	2CTB802345R0000
4	–	15	5	–	0.6	120 ±15%	175	OVR T2 3N 15-150 P U	2CTB802346R0000
4	–	15	5	–	1.2	277 ±15%	320	OVR T2 3N 15-320 P U	2CTB802346R0400
3	–	40	20	–	0.6	120 ±15%	175	OVR T2 3L 40-150 P TS U	2CTB802345R2100
3	–	40	10	–	1.3	347 ±15%	440	OVR T2 3L 40-440 P TS U	2CTB802345R2900
4	–	40	10	–	1.2	600 ±15%	660	OVR T2 3L 40-550 P U	2CTB802345R3400
4	–	40	20	–	1.2	120 ±15%	175	OVR T2 3N 40-150 P TS U	2CTB802346R2100
4	–	40	20	–	1.2	277 ±15%	320	OVR T2 3N 40-320 P TS U	2CTB802346R2500
4	–	40	10	–	1.2	347 ±15%	440	OVR T2 3N 40-440 P TS U	2CTB802346R2900
4	–	40	10	–	1.2	480 ±15%	550	OVR T2 3N 40-550 P TS U	2CTB802346R3300
4	–	40	10	–	1.2	600 ±15%	660	OVR T2 3N 40-660 P TS U	2CTB802346R3700
Cartridges									
1	–	–	–	–	–	120 ±15%	175	OVR T2 15-150 C U	2CTB802348R2500
1	–	–	–	–	–	120 ±15%	175	OVR T2 40-150 C U	2CTB802348R3500
1	–	–	–	–	–	347 ±15%	440	OVR T2 40-440 C U	2CTB802348R3900
1	–	–	–	–	–	277 ±15%	320	OVR T2 15-320 C U	2CTB802348R2700
1	–	–	–	–	–	277 ±15%	320	OVR T2 40-320 C U	2CTB802348R3700
1	–	–	–	–	–	480 ±15%	550	OVR T2 40-550 C U	2CTB802348R4100
1	–	–	–	–	–	600 ±15%	660	OVR T2 40-660 C U	2CTB802348R4300

Protection and safety

OVR UL surge protective devices - Single pole



OVR T2 40-150 P U



OVR T2 40-440 P TS U



OVR T2 70 N P U

Descripton

Single pole devices provide great flexibility for any kind of network configuration.

OVR T2 devices provide the best protection as they are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (VPR). They are characterized by their capacity to safely discharge current with 8/20 μ s wave form.

Ordering details

Pro- tected lines	Max dis- charge current I _{max} 8/20	Nomi- nal dis- charge current I _n	Voltage protec- tion rating VPR	Nominal voltage U _n	Max. cont. operat- ing voltage MCOV	Bbn 3660308	Order details		Weight Pkg (1 pce)
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
Pluggable									
1	15	5	0.6	120	150	518514	OVR T2 15-150 P U	2CTB802341R0000	0.12
1	15	5	1	277 ±15%	320	518521	OVR T2 15-320 P U	2CTB802341R0400	0.12
1	40	20	0.6	120	150	518958	OVR T2 40-150 P U	2CTB802341R2000	0.12
1	40	20	0.6	120	150	518958	OVR T2 40-150 P TS U	2CTB802341R2100	0.12
1	40	20	1	277 ±15%	320	518965	OVR T2 40-320 P U	2CTB802341R2400	0.12
1	40	20	1	277 ±15%	320	518545	OVR T2 40-320 P TS U	2CTB802341R2500	0.12
1	40	10	1.3	347 ±15%	440	518552	OVR T2 40-440 P TS U	2CTB802341R2900	0.12
1	40	10	1.7	480 ±15%	550	518569	OVR T2 40-550 P TS U	2CTB802341R3300	0.12
1	40	10	1.9	600 ±15%	660	518576	OVR T2 40-660 P TS U	2CTB802341R3700	0.12
Neutral - Pluggable									
1	70	20	1.2	230	275	518583	OVR T2 70 N P U	2CTB802341R8000	0.12

Protection and safety

OVR UL surge protective devices - Single phase networks



OVR T2 1N 40-150 P U



OVR T2 1N 40-660 P TS U

Description

Single phase devices are composed by a MOV pole plus a spark gap one. The spark gap pole guarantees the lowest voltage protection rating and has to be connected to the Neutral.

OVR T2 devices provide the best protection as they are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (VPR). They are characterized by their capacity to safely discharge current with 8/20 μ s wave form.

Ordering details

Pro- tected lines	Max dis- charge current I _{max} 8/20	Nominal dis- charge current I _n	Voltage protec- tion rating VPR	Nominal voltage Un	Max. cont. operat- ing voltage MCOV, U _c	Bbn 3660308	Order details		Weight
	kA	kA	kV	V	V	EAN	Type code	Order code	Pkg (1 pce) kg
Pluggable									
2	15	5	1.2	120	150	519238	OVR T2 1N 15-150 P U	2CTB802342R0000	0.24
2	15	5	1.2	277	320	519245	OVR T2 1N 15-320 P U	2CTB802342R0400	0.24
2	40	20	1.2	120	150	520869	OVR T2 1N 40-150 P U	2CTB802342R2000	0.24
2	40	20	1.2	120	150	520876	OVR T2 1N 40-150 P U (x10)	2CTB802342R8000	0.24
2	40	20	1.2	120	150	819252	OVR T2 1N 40-150 P TS U	2CTB802342R2100	0.24
2	40	20	1.2	277	320	519269	OVR T2 1N 40-320 P TS U	2CTB802342R2500	0.24
2	40	10	1.2	347	440	519276	OVR T2 1N 40-440 P TS U	2CTB802342R2900	0.24
2	40	10	1.2	480	550	519283	OVR T2 1N 40-550 P TS U	2CTB802342R3300	0.24
2	40	10	1.2	600	660	519290	OVR T2 1N 40-660 P TS U	2CTB802342R3700	0.24

(x10) packaging of 10 pieces.

Protection and safety

OVR UL surge protective devices - Single pole



Type	OVR T2 15-150 P U		OVR T2 15-320 P U	OVR T2 40-150 P U
with auxiliary contact (TS)	–		–	OVR T2 40-150 P TS U
Technology	Varistor		Varistor	Varistor
Electrical features				
Standard	UL 1449		UL 1449	UL 1449
Type / test class (UL 1449)	1		1	1
Protected lines	1		1	1
System network	–		–	–
Type of current / frequency	AC 47-63 Hz		AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network	±15%		±15%	±15%
Nominal system voltage Un	120 V		277 V	120 V
Maximum continuous operating voltage MCOV	150 V		320 V	150 V
Maximal discharge current (8/20) Imax	15 kA		15 kA	40 kA
Nominal discharge current (8/20) In	5 kA		5 kA	20 kA
Voltage protection rating (L-N / N-G / L-G) VPR	0.6 kV		1 kV	0.6 kV
Response time	< 25 ns		< 25 ns	< 25 ns
Short circuit withstand SCCR	200 kA		200 kA	200 kA
Back up protection fuse (gG - gL)	≤ 100 A		≤ 100 A	≤ 100 A
maximum rating circuit breaker (B or C Curve)	≤ 125 A		≤ 125 A	≤ 125 A
Pluggable cartridges	Yes		Yes	Yes
Integrated QuickSafe® technology	Yes		Yes	Yes
State indicator	Yes		Yes	Yes
Safety reserve	–		–	–
Auxiliary contact (TS)	No		No	Yes (TS option)
Installation				
Wire range (L,N,PE)	solid wire	2.5...25 / 4...14 mm²	2.5...25 / 4...14 mm²	2.5...25 / 4...14 mm²
	stranded wire	2.5...16 / 6...14 mm²	2.5...16 / 6...14 mm²	2.5...16 / 6...14 mm²
Stripping length (L,N,PE)		12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm
Tightening torque (L,N,PE)		2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm
Auxiliary contact (TS)				
Contact information		–	–	1 NO – 1 NC
Min. load		–	–	12 V DC – 10 mA
Max. load		–	–	250 V AC – 1 A
Connection cross section		–	–	1.5 / 16 mm²
Miscellaneous characteristics				
Stocking temperature		-40...+80 °C	-40...+80 °C	-40...+80 °C
Maximal Altitude		5 000 m	5 000 m	5 000 m
Operating temperature		-40...+176 °F	-40...+176 °F	-40...+176 °F
Degree of protection		NEMA 1	NEMA 1	NEMA 1
Fire resistance according to UL 94		V0	V0	V0
Dimensions	mm	h x w x d 88 x 17.8 x 64.8 mm	88 x 17.8 x 64.8 mm	88 x 17.8 x 64.8 mm
	inches	h x w x d 3.46 x 0.7 x 2.55 in	3.46 x 0.7 x 2.55 in	3.46 x 0.7 x 2.55 in
Dimensions with auxiliary contact (TS)	mm	h x w x d –	–	96 x 17.8 x 64.8 mm
	inches	h x w x d –	–	3.78 x 0.7 x 2.55 in
Replacement cartridges				
Phase product ID	Type	OVR T2 15-150 C U	OVR T2 15-320 C U	OVR T2 40-150 C U
	Order code	2CTB802348R2500	2CTB802348R2700	2CTB802348R3500
Neutral product ID	Type	–	–	–
	Order code	–	–	–

Protection and safety

OVR UL surge protective devices - Single pole



OVR T2 40-320 P U	–	–	–	OVR T2 70 N P U
OVR T2 40-320 P TS U	OVR T2 40-440 P TS U	OVR T2 40-550 P TS U	OVR T2 40-660 P TS U	–
Varistor	Varistor	Varistor	Varistor	Spark gap
UL 1449	UL 1449	UL 1449	UL 1449	UL 1449
1	1	1	4	4
1	1	1	1	1
–	–	–	–	–
AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
±15%	±15%	±15%	±15%	+15%
277 V	347 V	480 V	600 V	230 V
320 V	440 V	550 V	660 V	275 V
40 kA	40 kA	40 kA	40 kA	70 kA
20 kA	10 kA	10 kA	10 kA	20 kA
1 kV	1.3 kV	1.7 kV	1.9 kV	1.2 kV
< 25 ns	< 25 ns	< 25 ns	< 25 ns	< 25 ns
200 kA	200 kA	200 kA	200 kA	200 kA
≤ 100 A	≤ 100 A	≤ 100 A	≤ 100 A	≤ 100 A
≤ 125 A	≤ 125 A	≤ 125 A	≤ 125 A	≤ 125 A
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	No
Yes	Yes	Yes	Yes	Yes
–	–	–	–	–
Yes (TS option)	Yes	Yes	Yes	No
2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²
2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²
12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm
2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm
1 NO – 1 NC	1 NO – 1 NC	1 NO – 1 NC	1 NO – 1 NC	–
12 V DC – 10 mA	12 V DC – 10 mA	12 V DC – 10 mA	12 V DC – 10 mA	–
250 V AC – 1 A	250 V AC – 1 A	250 V AC – 1 A	250 V AC – 1 A	–
1.5 / 16 mm ²	1.5 / 16 mm ²	1.5 / 16 mm ²	1.5 / 16 mm ²	–
–40...+80 °C	–40...+80 °C	–40...+80 °C	–40...+80 °C	–40...+80 °C
5 000 m	5 000 m	5 000 m	5 000 m	5 000 m
–40...+176 °F	–40...+176 °F	–40...+176 °F	–40...+176 °F	–40...+176 °F
NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 1
V0	V0	V0	V0	V0
88 x 17.8 x 64.8 mm	–	–	–	88 x 17.8 x 64.8 mm
3.46 x 0.7 x 2.55 in	–	–	–	3.46 x 0.7 x 2.55 in
96 x 17.8 x 64.8 mm	96 x 17.8 x 64.8 mm	96 x 17.8 x 64.8 mm	96 x 17.8 x 64.8 mm	–
3.78 x 0.7 x 2.55 in	3.78 x 0.7 x 2.55 in	3.78 x 0.7 x 2.55 in	3.78 x 0.7 x 2.55 in	–
OVR T2 40-320 C U	OVR T2 40-440 C U	OVR T2 40-550 C U	OVR T2 40-660 C U	–
2CTB802348R3700	2CTB802348R3900	2CTB802348R4100	2CTB802348R4300	–
–	–	–	–	OVR T2 70 N C U
–	–	–	–	2CTB802348R6500

Protection and safety

OVR UL surge protective devices - Single phase networks



General technical data

Type			OVR T2 1N 15-150 P U	OVR T2 1N 15-320 P U	OVR T2 1N 40-150 P U
with auxiliary contact (TS)			–	–	OVR T2 1N 40-150 P TS U
Electrical features					
Standards			UL 1449	UL 1449	UL 1449
Type / test class (UL 1449)			4	4	4
Protected lines			2	2	2
Type of current / frequency			AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network			±15%	±15%	±15%
Nominal system voltage Un			120 V	277 V	120 V
Maximum continuous operating voltage MCOV			150 V	320 V	150 V
Maximal discharge current (8/20) Imax			15 kA	15 kA	40 kA
Nominal discharge current (8/20) In			5 kA	5 kA	20 kA
Voltage protection rating (L-N / N-G / L-G) VPR			1.2 kV	1.2 kV	1.2 kV
Response time			< 25 ns	< 25 ns	< 25 ns
Short circuit withstand	SCCR		200 kA	200 kA	200 kA
Back up protection maximum rating	fuse (gG - gL)		≤ 100 A	≤ 100 A	≤ 100 A
	circuit breaker (B or C curve)		≤ 125 A	≤ 125 A	≤ 125 A
Pluggable cartridges			Yes	Yes	Yes
Integrated QuickSafe® technology			Yes	Yes	Yes
State indicator			Yes	Yes	Yes
Safety reserve			–	–	–
Auxiliary contact (TS)			No	No	Yes (TS option)
Installation					
Wire range (L,N,PE)	solid wire		2.5...25 / 4...14 mm²	2.5...25 / 4...14 mm²	2.5...25 / 4...14 mm²
	stranded wire		2.5...16 / 6...14 mm²	2.5...16 / 6...14 mm²	2.5...16 / 6...14 mm²
Stripping length (L,N,PE)			12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm
Tightening torque (L,N,PE)			2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm
Auxiliary contact (TS)					
Contact information					2 NO – 2 NC
Min. load					12 V DC – 10 mA
Max. load					250 V AC – 1 A
Connection cross section					1.5 / 16 mm²
Miscellaneous characteristics					
Stocking temperature			-40...+80 °C	-40...+80 °C	-40...+80 °C
Maximal Altitude			5 000 m	5 000 m	5 000 m
Operating temperature			-40...+176 °F	-40...+176 °F	-40...+176 °F
Degree of protection			NEMA 1	NEMA 1	NEMA 1
Fire resistance according to UL 94			V0	V0	V0
Dimensions	mm	h x w x d	90.5 x 35.6 x 64.8 mm	90.5 x 35.6 x 64.8 mm	90.5 x 35.6 x 64.8 mm
	inches	h x w x d	3.56 x 1.4 x 2.55 in	3.56 x 1.4 x 2.55 in	3.56 x 1.4 x 2.55 in
Dimensions with auxiliary contact (TS)	mm	h x w x d	–	–	98.5 x 35.6 x 64.8 mm
	inches	h x w x d	–	–	3.88 x 1.4 x 2.55 in
Replacement cartridges					
Phase product ID	Type		OVR T2 15-150 C U	OVR T2 15-320 C U	OVR T2 40-150 C U
	Order code		2CTB802348R2500	2CTB802348R2700	2CTB802348R3500
Neutral product ID	Type		OVR T2 70 N C U	OVR T2 70 N C U	OVR T2 70 N C U
	Order code		2CTB802348R6500	2CTB802348R6500	2CTB802348R6500

Protection and safety

OVR UL surge protective devices - Single phase networks



-	-	-	-
OVR T2 1N 40-320 P TS U	OVR T2 1N 40-440 P TS U	OVR T2 1N 40-550 P TS U	OVR T2 1N 40-660 P TS U
UL 1449	UL 1449	UL 1449	UL 1449
4	4	4	4
2	2	2	2
AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
±15%	±15%	±15%	±15%
277 V	347 V	480 V	600 V
320 V	440 V	550 V	660 V
40 kA	40 kA	40 kA	40 kA
20 kA	10 kA	10 kA	10 kA
1.2 kV	1.2 kV	1.2 kV	1.2 kV
< 25 ns	< 25 ns	< 25 ns	< 25 ns
200 kA	200 kA	200 kA	200 kA
≤ 100 A	≤ 100 A	≤ 100 A	≤ 100 A
≤ 125 A	≤ 125 A	≤ 125 A	≤ 125 A
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
-	-	-	-
Yes	Yes	Yes	Yes
2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²
2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²
12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm
2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm
2 NO – 2 NC	2 NO – 2 NC	2 NO – 2 NC	2 NO – 2 NC
12 V DC – 10 mA	12 V DC – 10 mA	12 V DC – 10 mA	12 V DC – 10 mA
250 V AC – 1 A	250 V AC – 1 A	250 V AC – 1 A	250 V AC – 1 A
1.5 / 16 mm ²	1.5 / 16 mm ²	1.5 / 16 mm ²	1.5 / 16 mm ²
-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C
5 000 m	5 000 m	5 000 m	5 000 m
-40...+176 °F	-40...+176 °F	-40...+176 °F	-40...+176 °F
NEMA 1	NEMA 1	NEMA 1	NEMA 1
V0	V0	V0	V0
-	-	-	-
-	-	-	-
98.5 x 35.6 x 64.8 mm	98.5 x 35.6 x 64.8 mm	98.5 x 35.6 x 64.8 mm	98.5 x 35.6 x 64.8 mm
3.88 x 1.4 x 2.55 in	3.88 x 1.4 x 2.55 in	3.88 x 1.4 x 2.55 in	3.88 x 1.4 x 2.55 in
OVR T2 40-320 C U	OVR T2 40-440 C U	OVR T2 40-550 C U	OVR T2 40-660 C U
2CTB802348R3700	2CTB802348R3900	2CTB802348R4100	2CTB802348R4300
OVR T2 70 N C U	OVR T2 70 N C U	OVR T2 70 N C U	OVR T2 70 N C U
2CTB802348R6500	2CTB802348R6500	2CTB802348R6500	2CTB802348R6500

Protection and safety

OVR UL surge protective devices - Delta networks



OVR T2 3L 15-320 P U



OVR T2 3L 40-320 P TS U

Description

Delta devices provide the protection required by the three phases of a Delta network system. OVR T2 devices provide the best protection as they are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (VPR). They are characterized by their capacity to safely discharge current with 8/20 μ s wave form.

Ordering details									
Pro- tected lines	Max dis- charge current Imax 8/20	Nominal dis- charge current In	Voltage protec- tion rating VPR	Nominal voltage Un	Max. cont. operat- ing voltage MCOV, Uc	Bbn 3660308	Order details		Weight Pkg (1 pce)
	kA	kA	kV	V	V	EAN	Type code	Order code	kg
Pluggable									
							OVR T2 3L 40-320 P U	2CTB802345R2400	
3	15	5	1	277 $\pm$ 15%	320	518644	OVR T2 3L 15-320 P U	2CTB802345R0400	0.36
3	40	20	1	277 $\pm$ 15%	320	518668	OVR T2 3L 40-320 P TS U	2CTB802345R2500	0.36
							OVR T2 3L 40-550 P U		
3	40	10	1.7	480 $\pm$ 15%	550	518682	OVR T2 3L 40-550 P TS U	2CTB802345R3300	0.36

Protection and safety

OVR UL surge protective devices - Delta networks



General technical data

Type			OVR T2 3L 15-320 P U	OVR T2 3L 40-320 P U	OVR T2 3L 40-550 P U
with auxiliary contact (TS)			–	OVR T2 3L 40-320 P TS U	OVR T2 3L 40-550 P TS U
Electrical features					
Standards			UL 1449	UL 1449	UL 1449
Type / test class (UL 1449)			1	1	1
Protected lines			3	3	3
Type of current / frequency			AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network			±15%	±15%	±15%
Nominal system voltage Un			277 V	277 V	480 V
Maximum continuous operating voltage MCOV			320 V	320 V	550 V
Maximal discharge current (8/20) I _{max}			15 kA	40 kA	40 kA
Nominal discharge current (8/20) I _n			5 kA	20 kA	10 kA
Voltage protection rating (L-N / N-G / L-G) VPR			1 kV	1 kV	1.7 kV
Response time			< 25 ns	< 25 ns	< 25 ns
Short circuit withstand	SCCR		200 kA	200 kA	200 kA
Back up protection maximum rating	fuse (gG - gL)		≤ 100 A	≤ 100 A	≤ 100 A
	circuit breaker (B or C curve)		≤ 125 A	≤ 125 A	≤ 125 A
Pluggable cartridges			Yes	Yes	Yes
Integrated QuickSafe® technology			Yes	Yes	Yes
State indicator			Yes	Yes	Yes
Safety reserve			–	–	–
Auxiliary contact (TS)			No	Yes	Yes
Installation					
Wire range (L,N,PE)	solid wire		2.5...25 / 4...14 mm²	2.5...25 / 4...14 mm²	2.5...25 / 4...14 mm²
	stranded wire		2.5...16 / 6...14 mm²	2.5...16 / 6...14 mm²	2.5...16 / 6...14 mm²
Stripping length (L,N,PE)			12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm
Tightening torque (L,N,PE)			2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm
Auxiliary contact (TS)					
Contact information			–	3 NO – 3 NC	3 NO – 3 NC
Min. load			–	12 V DC – 10 mA	12 V DC – 10 mA
Max. load			–	250 V AC – 1 A	250 V AC – 1 A
Connection cross section			–	1.5 / 16 mm²	1.5 / 16 mm²
Miscellaneous characteristics					
Stocking temperature			-40...+80 °C	-40...+80 °C	-40...+80 °C
Maximal Altitude			5 000 m	5 000 m	5 000 m
Operating temperature			-40...+176 °F	-40...+176 °F	-40...+176 °F
Degree of protection			NEMA 1	NEMA 1	NEMA 1
Fire resistance according to UL 94			V0	V0	V0
Dimensions	mm	h x w x d	90.5 x 53.4 x 64.8 mm	–	–
	inches	h x w x d	3.56 x 2.1 x 2.55 in	–	–
Dimensions with auxiliary contact (TS)	mm	h x w x d	–	98.5 x 53.4 x 64.8 mm	98.5 x 53.4 x 64.8 mm
	inches	h x w x d	–	3.88 x 2.1 x 2.55 in	3.88 x 2.1 x 2.55 in
Replacement cartridges					
Phase product ID	Type		OVR T2 15-320 C U	OVR T2 40-320 C U	OVR T2 40-550 C U
	Order code		2CTB802348R2700	2CTB802348R3700	2CTB802348R4100
Neutral product ID	Type		–	–	–
	Order code		–	–	–

Protection and safety

OVR UL surge protective devices - Split phase networks



OVR T2 2L 15-320 P U

Description

Split phase devices are composed by two MOV poles or two MOV poles plus a spark gap one, depending on the number of lines the customer wants to protect. The spark gap pole guarantees the lowest voltage protection rating and has to be connected to the neutral.

OVR T2 devices provide the best protection as they are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (VPR). They are characterized by their capacity to safely discharge current with 8/20 μ s wave form.

Ordering details

Pro- tected lines	Max dis- charge current I _{max} 8/20	Nominal dis- charge current I _n	Voltage protec- tion rating VPR	Nominal voltage U _n	Max. cont. operat- ing voltage MCOV, U _c	Bbn 3660308	Order details		Weight
	kA	kA	kV	V	V	EAN	Type code	Order code	Pkg (1 pce) kg
Pluggable									
2	15	5	0.6	120 ±15%	175	518590	OVR T2 2L 15-150 P U	2CTB802343R0000	0.24
2	15	5	1	277 ±15%	320	518606	OVR T2 2L 15-320 P U	2CTB802343R0400	0.24
2	40	20	0.6	120 ±15%	175	518613	OVR T2 2L 40-150 P TS U	2CTB802343R2100	0.24
2	40	20	1	277 ±15%	320	518620	OVR T2 2L 40-320 P TS U	2CTB802343R2500	0.24
3	15	5	0.7	120 ±15%	175	519306	OVR T2 2N 15-150 P U	2CTB802344R0000	0.36
3	15	5	1.1	277 ±15%	320	519313	OVR T2 2N 15-320 P U	2CTB802344R0400	0.36
3	40	20	0.7	120 ±15%	175	519320	OVR T2 2N 40-150 P TS U	2CTB802344R2100	0.36
3	40	20	1.1	277 ±15%	320	519337	OVR T2 2N 40-320 P TS U	2CTB802344R2500	0.36
3	40	10	1.4	347 ±15%	440	519344	OVR T2 2N 40-440 P TS U	2CTB802344R2900	0.36
3	40	10	1.8	480 ±15%	550	519351	OVR T2 2N 40-550 P TS U	2CTB802344R3300	0.36
3	40	10	2	600 ±15%	660	519368	OVR T2 2N 40-660 P TS U	2CTB802344R3700	0.36



OVR T2 2L 40-320 P TS U



OVR T2 2N 15-320 P U



OVR T2 2N 40-440 P TS U

Protection and safety

OVR UL surge protective devices - Grounded Wye networks



OVR T2 3L 40-440
P TS U

Description

Wye devices are composed by three MOV poles or three MOV poles plus a spark gap one, depending on the number of lines the customer wants to protect. The spark gap pole guarantees the lowest voltage protection rating and has to be connected to the Neutral.

OVR T2 devices provide the best protection as they are designed to protect electric installations and sensitive equipment against indirect surges with ensuring a low protection level (VPR). They are characterized by their capacity to safely discharge current with 8/20 μ s wave form.

Ordering details

Pro- tected lines	Max dis- charge current I _{max} 8/20	Nominal dis- charge current I _n	Voltage protec- tion rating VPR	Nominal voltage U _n	Max. cont. operat- ing voltage MCOV, U _c	Bbn 3660308	Order details		Weight
	kA	kA	kV	V	V	EAN	Type code	Order code	Pkg (1 pce) kg
Pluggable									
3	15	5	0.6	120 ±15%	175	518637	OVR T2 3L 15-150 P U	2CTB802345R0000	0.36
3	40	20	0.6	120 ±15%	175	518651	OVR T2 3L 40-150 P TS U	2CTB802345R2100	0.36
4	15	5	1.2	120 ±15%	175	518699	OVR T2 3N 15-150 P U	2CTB802346R0000	0.48
4	15	5	1.2	277 ±15%	320	518705	OVR T2 3N 15-320 P U	2CTB802346R0400	0.48
4	40	20	1.2	120 ±15%	175	518712	OVR T2 3N 40-150 P TS U	2CTB802346R2100	0.48
4	40	20	1.2	277 ±15%	320	518729	OVR T2 3N 40-320 P TS U	2CTB802346R2500	0.48
4	40	10	1.2	347 ±15%	440	518736	OVR T2 3N 40-440 P TS U	2CTB802346R2900	0.48
4	40	10	1.2	480 ±15%	550	518743	OVR T2 3N 40-550 P TS U	2CTB802346R3300	0.48
4	40	10	1.2	600 ±15%	660	518750	OVR T2 3N 40-660 P TS U	2CTB802346R3700	0.48

Protection and safety

OVR UL surge protective devices - Split phase networks



General technical data

Type	OVR T2 2L 15-150 P U	OVR T2 2L 15-320 P U	–	–	OVR T2 2N 15-150 P U
with auxiliary contact (TS)	–	–	OVR T2 2L 40-150 P TS U	OVR T2 2L 40-320 P TS U	–
Electrical features					
Standards	UL 1449	UL 1449	UL 1449	UL 1449	UL 1449
Type / test class (UL 1449)	1	1	1	1	4
Protected lines	2	2	2	2	3
Type of current / frequency	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network	±15%	±15%	±15%	±15%	±15%
Nominal system voltage Un	120 V	277 V	120 V	277 V	120 V
Maximum continuous operating voltage MCOV	175 V	320 V	175 V	320 V	175 V
Maximal discharge current (8/20) Imax	15 kA	15 kA	40 kA	40 kA	15 kA
Nominal discharge current (8/20) In	5 kA	5 kA	20 kA	20 kA	5 kA
Voltage protection rating (L-N / N-G / L-G) VPR	0.6 kV	1 kV	0.6 kV	1 kV	0.7 kV
Response time	< 25 ns	< 25 ns	< 25 ns	< 25 ns	< 25 ns
Short circuit withstand SCCR	200 kA	200 kA	200 kA	200 kA	200 kA
Back up protection maximum rating	fuse (gG - gL)	≤ 100 A	≤ 100 A	≤ 100 A	≤ 100 A
	circuit breaker (B or C curve)	≤ 125 A	≤ 125 A	≤ 125 A	≤ 125 A
Pluggable cartridges	Yes	Yes	Yes	Yes	Yes
Integrated QuickSafe® technology	Yes	Yes	Yes	Yes	Yes
State indicator	Yes	Yes	Yes	Yes	Yes
Safety reserve	–	–	–	–	–
Auxiliary contact (TS)	No	No	Yes	Yes	No
Installation					
Wire range (L,N,PE)	solid wire	2.5...25 / 4...14 mm²	2.5...25 / 4...14 mm²	2.5...25 / 4...14 mm²	2.5...25 / 4...14 mm²
	stranded wire	2.5...16 / 6...14 mm²	2.5...16 / 6...14 mm²	2.5...16 / 6...14 mm²	2.5...16 / 6...14 mm²
Stripping length (L,N,PE)		12.5 / 0.5	12.5 / 0.5	12.5 / 0.5	12.5 / 0.5
Tightening torque (L,N,PE)		2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm
Auxiliary contact (TS)					
Contact information	–	–	2 NO – 2 NC	2 NO – 2 NC	–
Min. load	–	–	12 V DC – 10 mA	12 V DC – 10 mA	–
Max. load	–	–	250 V AC – 1 A	250 V AC – 1 A	–
Connection cross section	–	–	1.5 / 16 mm²	1.5 / 16 mm²	–
Miscellaneous characteristics					
Stocking temperature	–40...+80 °C	–40...+80 °C	–40...+80 °C	–40...+80 °C	–40...+80 °C
Maximal Altitude	5 000 m	5 000 m	5 000 m	5 000 m	5 000 m
Operating temperature	–40...+176 °F	–40...+176 °F	–40...+176 °F	–40...+176 °F	–40...+176 °F
Degree of protection	NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 1
Fire resistance according to UL 94	V0	V0	V0	V0	V0
Dimensions	mm	h x w x d 90.5 x 35.6 x 64.8 mm	90.5 x 35.6 x 64.8 mm	–	90.5 x 53.4 x 64.8 mm
	inches	h x w x d 3.56 x 1.4 x 2.55 in	3.56 x 1.4 x 2.55 in	–	3.56 x 2.1 x 2.55 in
Dimensions with auxiliary contact (TS)	mm	h x w x d –	–	98.5 x 35.6 x 64.8 mm	–
	inches	h x w x d –	–	3.88 x 1.4 x 2.55 in	–
Replacement cartridges					
Phase product ID	Type	OVR T2 15-150 C U	OVR T2 15-320 C U	OVR T2 40-150 C U	OVR T2 40-320 C U
	Order code	2CTB802348R2500	2CTB802348R2700	2CTB802348R3500	2CTB802348R3700
Neutral product ID	Type	–	–	–	OVR T2 70 N C U
	Order code	–	–	–	2CTB802348R6500

Protection and safety

OVR UL surge protective devices - Split phase networks



OVR T2 2N 15-320 P U	-	-	-	-	-
-	OVR T2 2N 40-150 P TS U	OVR T2 2N 40-320 P TS U	OVR T2 2N 40-440 P TS U	OVR T2 2N 40-550 P TS U	OVR T2 2N 40-660 P TS U
UL 1449	UL 1449	UL 1449	UL 1449	UL 1449	UL 1449
4	4	4	4	4	4
3	3	3	3	3	3
AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
±15%	±15%	±15%	±15%	±15%	±15%
277 V	120 V	277 V	347 V	480 V	600 V
320 V	175 V	320 V	440 V	550 V	660 V
15 kA	40 kA	40 kA	40 kA	40 kA	40 kA
5 kA	20 kA	20 kA	10 kA	10 kA	10 kA
1.1 kV	0.7 kV	1.1 kV	1.4 kV	1.8 kV	2 kV
< 25 ns	< 25 ns	< 25 ns	< 25 ns	< 25 ns	< 25 ns
200 kA	200 kA	200 kA	200 kA	200 kA	200 kA
≤ 100 A	≤ 100 A	≤ 100 A	≤ 100 A	≤ 100 A	≤ 100 A
≤ 125 A	≤ 125 A	≤ 125 A	≤ 125 A	≤ 125 A	≤ 125 A
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
-	-	-	-	-	-
No	Yes	Yes	Yes	Yes	Yes
2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²
2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²
12.5 / 0.5	12.5 / 0.5	12.5 / 0.5	12.5 / 0.5	12.5 / 0.5	12.5 / 0.5
2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm
-	3 NO - 3 NC	3 NO - 3 NC	3 NO - 3 NC	3 NO - 3 NC	3 NO - 3 NC
-	12 V DC - 10 mA	12 V DC - 10 mA	12 V DC - 10 mA	12 V DC - 10 mA	12 V DC - 10 mA
-	250 V AC - 1 A	250 V AC - 1 A	250 V AC - 1 A	250 V AC - 1 A	250 V AC - 1 A
-	1.5 / 16 mm ²	1.5 / 16 mm ²	1.5 / 16 mm ²	1.5 / 16 mm ²	1.5 / 16 mm ²
-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C
5 000 m	5 000 m	5 000 m	5 000 m	5 000 m	5 000 m
-40...+176 °F	-40...+176 °F	-40...+176 °F	-40...+176 °F	-40...+176 °F	-40...+176 °F
NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 1
V0	V0	V0	V0	V0	V0
90.5 x 53.4 x 64.8 mm	-	-	-	-	-
3.56 x 2.1 x 2.55 in	-	-	-	-	-
-	98.5 x 53.4 x 64.8 mm	98.5 x 53.4 x 64.8 mm	98.5 x 53.4 x 64.8 mm	98.5 x 53.4 x 64.8 mm	98.5 x 53.4 x 64.8 mm
-	3.88 x 2.1 x 2.55 in	3.88 x 2.1 x 2.55 in	3.88 x 2.1 x 2.55 in	3.88 x 2.1 x 2.55 in	3.88 x 2.1 x 2.55 in
-	1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC	1 NO - 1 NC
OVR T2 15-320 C U	OVR T2 40-150 C U	OVR T2 40-320 C U	OVR T2 40-440 C U	OVR T2 40-550 C U	OVR T2 40-660 C U
2CTB802348R2700	2CTB802348R3500	2CTB802348R3700	2CTB802348R3900	2CTB802348R4100	2CTB802348R4300
OVR T2 70 N C U	OVR T2 70 N C U	OVR T2 70 N C U	OVR T2 70 N C U	OVR T2 70 N C U	OVR T2 70 N C U
2CTB802348R6500	2CTB802348R6500	2CTB802348R6500	2CTB802348R6500	2CTB802348R6500	2CTB802348R6500

Protection and safety

OVR UL surge protective devices - Grounded Wye networks



General technical data

Type	OVR T2 3L 15-150 P U	–	OVR T2 3N 15-150 P U	OVR T2 3N 15-320 P U
with auxiliary contact (TS)	–	OVR T2 3L 40-150 P TS U	–	–
Electrical features				
Standards	UL 1449	UL 1449	UL 1449	UL 1449
Type / test class (UL 1449)	1	1	4	4
Protected lines	3	3	4	4
Type of current / frequency	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
Voltage regulation of the system network	±15%	±15%	±15%	±15%
Nominal system voltage Un	120 V	120 V	120 V	277 V
Maximum continuous operating voltage MCOV	175 V	175 V	175 V	320 V
Maximal discharge current (8/20) I _{max}	15 kA	40 kA	15 kA	15 kA
Nominal discharge current (8/20) I _n	5 kA	10 kA	5 kA	5 kA
Voltage protection rating (L-N / N-G / L-G VPR)	0.6 kV	0.6 kV	0.6 kV	1 kV
Response time	< 25 ns	< 25 ns	< 25 ns	< 25 ns
Short circuit withstand	SCCR	200 kA	200 kA	200 kA
Back up protection fuse (gG - gL)	≤ 100 A	≤ 100 A	≤ 100 A	≤ 100 A
maximum rating circuit breaker (B or C curve)	≤ 125 A	≤ 125 A	≤ 125 A	≤ 125 A
Pluggable cartridges	Yes	Yes	Yes	Yes
Integrated QuickSafe® technology	Yes	Yes	Yes	Yes
State indicator	Yes	Yes	Yes	Yes
Safety reserve	–	–	–	–
Auxiliary contact (TS)	No	Yes	No	No
Installation				
Wire range (L,N,PE) solid wire	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²
stranded wire	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²
Stripping length (L,N,PE)	12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm
Tightening torque (L,N,PE)	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm
Auxiliary contact (TS)				
Contact information	–	4 NO – 4 NC	–	–
Min. load	–	12 V DC – 10 mA	–	–
Max. load	–	250 V AC – 1 A	–	–
Connection cross section	–	1.5 / 16 mm ²	–	–
Miscellaneous characteristics				
Stocking temperature	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C
Maximal Altitude	5 000 m	5 000 m	5 000 m	5 000 m
Operating temperature	-40...+176 °F	-40...+176 °F	-40...+176 °F	-40...+176 °F
Degree of protection	NEMA 1	NEMA 1	NEMA 1	NEMA 1
Fire resistance according to UL 94	V0	V0	V0	V0
Dimensions	mm	h x w x d	90.5 x 53.4 x 64.8 mm	–
	inches	h x w x d	3.56 x 2.1 x 2.55 in	–
Dimensions with auxiliary contact (TS)	mm	h x w x d	–	98.5 x 53.4 x 64.8 mm
	inches	h x w x d	–	3.88 x 2.1 x 2.55 in
Replacement cartridges				
Phase product ID	Type	OVR T2 15-150 C U	OVR T2 40-150 C U	OVR T2 15-150 C U
	Order code	2CTB802348R2500	2CTB802348R3500	2CTB802348R2500
Neutral product ID	Type	–	–	OVR T2 70 N C U
	Order code	–	–	2CTB802348R6500

Protection and safety

OVR UL surge protective devices - Grounded Wye networks



OVR T2 3N 40-150 P TS U	OVR T2 3N 40-320 P TS U	OVR T2 3N 40-320 P TS U	OVR T2 3N 40-440 P TS U	OVR T2 3N 40-550 P TS U	OVR T2 3N 40-660 P TS U
UL 1449	UL 1449	UL 1449	UL 1449	UL 1449	UL 1449
4	4	4	4	4	4
4	4	4	4	4	4
AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz	AC 47-63 Hz
±15%	±15%	±15%	±15%	±15%	±15%
120 V	277 V	277 V	347 V	480 V	600 V
175 V	320 V	320 V	440 V	550 V	660 V
40 kA	40 kA	40 kA	40 kA	40 kA	40 kA
20 kA	20 kA	20 kA	10 kA	10 kA	10 kA
1.2 kV	1.2 kV	1.2 kV	1.2 kV	1.2 kV	1.2 kV
< 25 ns	< 25 ns	< 25 ns	< 25 ns	< 25 ns	< 25 ns
200 kA	200 kA	200 kA	200 kA	200 kA	200 kA
≤ 100 A	≤ 100 A	≤ 100 A	≤ 100 A	≤ 100 A	≤ 100 A
≤ 125 A	≤ 125 A	≤ 125 A	≤ 125 A	≤ 125 A	≤ 125 A
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
-	-	-	-	-	-
Yes	Yes	Yes	Yes	Yes	Yes
2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²	2.5...25 / 4...14 mm ²
2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²	2.5...16 / 6...14 mm ²
12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm	12.5 / 0.5 mm
2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm	2.8 / 24.5 Nm
4 NO - 4 NC	4 NO - 4 NC	4 NO - 4 NC	4 NO - 4 NC	4 NO - 4 NC	4 NO - 4 NC
12 V DC - 10 mA	12 V DC - 10 mA	12 V DC - 10 mA	12 V DC - 10 mA	12 V DC - 10 mA	12 V DC - 10 mA
250 V AC - 1 A	250 V AC - 1 A	250 V AC - 1 A	250 V AC - 1 A	250 V AC - 1 A	250 V AC - 1 A
1.5 / 16 mm ²	1.5 / 16 mm ²	1.5 / 16 mm ²	1.5 / 16 mm ²	1.5 / 16 mm ²	1.5 / 16 mm ²
-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C
5 000 m	5 000 m	5 000 m	5 000 m	5 000 m	5 000 m
-40...+176 °F	-40...+176 °F	-40...+176 °F	-40...+176 °F	-40...+176 °F	-40...+176 °F
NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 1
V0	V0	V0	V0	V0	V0
-	-	-	-	-	-
-	-	-	-	-	-
98.5 x 71.2 x 64.8 mm	98.5 x 71.2 x 64.8 mm	98.5 x 71.2 x 64.8 mm	98.5 x 71.2 x 64.8 mm	98.5 x 71.2 x 64.8 mm	98.5 x 71.2 x 64.8 mm
3.88 x 2.8 x 2.55 in	3.88 x 2.8 x 2.55 in	3.88 x 2.8 x 2.55 in	3.88 x 2.8 x 2.55 in	3.88 x 2.8 x 2.55 in	3.88 x 2.8 x 2.55 in
OVR T2 40-150 C U	OVR T2 40-320 C U	OVR T2 40-320 C U	OVR T2 40-440 C U	OVR T2 40-550 C U	OVR T2 40-660 C U
2CTB802348R3500	2CTB802348R3700	2CTB802348R3700	2CTB802348R3900	2CTB802348R4100	2CTB802348R4300
OVR T2 70 N C U	OVR T2 70 N C U	OVR T2 70 N C U	OVR T2 70 N C U	OVR T2 70 N C U	OVR T2 70 N C U
2CTB802348R6500	2CTB802348R6500	2CTB802348R6500	2CTB802348R6500	2CTB802348R6500	2CTB802348R6500

ReliaGear Surge Protective Device UL version

Product range overview



General technical data		
Type	RGMESP	RGWMSP
Dry Relay Contacts	Standard	Standard
Electrical features		
Standards	UL 1449	UL 1449
Type / test class (UL 1449)	Type 2	Type 1, Type 2
Enclosure	NEMA 4 polycarbonate	NEMA 1, NEMA 1 w Disconnect, NEMA 4 w Disconnect (Painted Steel), NEMA 4X Stainless Steel with Disconnect
LEDS	Yes	Yes
Surge Current Rating	80 and 100 kA per mode	80, 150, 225, 300 kA per mode
Surge Counter	Not Available	Standard
Warranty	5 years	5 years

ReliaGear Surge Protective Device

RGWMSP



The ReliaGear® RGWMSP Series offers robust surge protection with an emphasis on performance, safe operation, and user-friendly diagnostics.

ReliaGear® RGWMSP Series SPDs are engineered with smart thermal disconnecting technology that safely removes overstressed components before harmful external effects arise. This preventive approach enhances safety and avoids nuisance from OCPD tripping or thermal events.

*For a full list of orderable products please visit this [resource](#)

	Voltage	Configuration	Part number
120S	240 / 120	1-phase, 3-wire + ground	RGWMSP120SXX**&&
120Y	208Y / 120	3-phase, 4-wire + ground	RGWMSP120YXX**&&
240D	240 Delta	3-phase, 3-wire + ground	RGWMSP240DXX**&&
240H	240 / 120 Hi-Leg Delta	3-phase, 4-wire + ground	RGWMSP240HXX**&&
220Y	380Y / 220	3-phase, 4-wire + ground	RGWMSP220YXX**&&
240Y	415Y / 240	3-phase, 4-wire + ground	RGWMSP240YXX**&&
277Y	480Y / 277	3-phase, 4-wire + ground	RGWMSP277YXX**&&
347Y	600Y/346	3-phase, 4-wire + ground	RGWMSP347YXX**&&
480D	480 Delta	3-phase, 3-wire + ground	RGWMSP480DXX**&&
600D	600 Delta	3-phase, 3-wire + ground	RGWMSP600DXX**&&
Desired kA			XX Code
80 kA/mode			08
150kA/mode			15
225 kA/mode			22 - Only available on RGWMSP models with type 4 enclosure
300 kA/mode			30 - Only available on RGWMSP models with type 4 enclosure
Type			** Code
Type 2 SPD			T2
Type 1 SPD			T1
Enclosure			&& Code
NEMA 1			1
NEMA 1 with Disconnect			1D
NEMA 4 (Painted Steel)			4
NEMA 4 with Disconnect (Painted Steel)			4D
NEMA 4X stainless steel with Disconnect			XD

The core suppression system includes proprietary Metal Oxide Varistors (MOVs) for surge energy diversion and metal film capacitors for filtering low-level transient voltages and electrical noise. The design is UL Listed, suitable for all NEC compliant installations.

Standards:

- UL 1449 5th Ed. – Listed, —Mil-Std-220C
- UL 1283 Listed EMI/RFI Filter—ANSI/NFPA 70 (Art. 242)
- UL 96A – Meets SPD criteria—ANSI/IEEE C62.41 & .45
- cUL Listed to UL 1449 & CSA C22.2—ANSI/IEEE C62.62 & .7

Electrical characteristics	
Maximum surge current rating	80 kA per mode / 160 kA per phase 150 kA per mode / 300 kA per phase 225 kA per mode / 450 kA per phase 300 kA per mode / 600 kA per phase
Nominal discharge current rating (In)	20 kA
Operating frequency	50–60 Hz
Surge life (IEEE C62.41 - C3 10 kA)	≥5,000 impulses
Modes of protection	All modes (L-N, L-G, N-G, L-L)
Fault rating (SCCR)	200 kAIC
Standard monitoring	Tri-Color LED indicators per phase: Green LED normal operation, SPD componentry is compromised, Orange Service indicator alarm. Rotatable Color View LCD display. Phase loss indication. N-G Voltage Detection > 20V detected. Audible alarm w/ silence option. Dry Contacts: Remote dry (volt-free) relay contacts rated at (<2 A, 250Vac / 220Vdc)
EMI / RFI filter attenuation	
Maximum attenuation frequency	-61 dB at 100.2 kHz
Mechanical characteristics	
Weight	Varies and depends on enclosure type
Enclosure type	Varies on option chosen
Installation location	Service entrance equipment, primary distribution equipment
Mounting method	Surface mount, 4-point mounting brackets
Operating temperature	-40 °F to 149 °F (-40 °C to 65 °C)
Altitude	< 13,000 ft (datasheet value based on C&C calculations)
Product design	Individually fused thermally protected MOV technology
Regulations and certifications	
UL 1449 5th edition	Type 1 / Type 2
cUL, CSA C22.2	Type 1 / Type 2
UL 1283	Type 1 / Type 2
UL 96A	Type 2
cUL Listed to UL 1449 & CSA C22.2—ANSI/IEEE C62.62 & .72	Yes
IEC 61643-11	Yes
Listed by	UL

ReliaGear Surge Protective Device

RGMESP



ReliaGear® RGMESP Series SPDs are engineered with smart thermal disconnecting technology that safely removes overstressed components before harmful external effects arise. This preventive approach enhances safety and avoids nuisance from OCPD tripping or thermal events.

The core suppression system includes proprietary Metal Oxide Varistors (MOVs) for surge energy diversion and metal film capacitors for filtering low-level transient voltages and electrical noise. The design is UL Listed, suitable for all NEC compliant installations.

Standards:

- UL 1449 5th Ed. – Listed, —Mil-Std-220C
- UL 1283 Listed EMI/RFI Filter—ANSI/NFPA 70 (Art. 242)
- UL 96A – Meets SPD criteria—ANSI/IEEE C62.41 & .45
- cUL Listed to UL 1449 & CSA C22.2—ANSI/IEEE C62.62 & .7
- IEC 61643-11

*For a full list of orderable products please visit this [resource](#)

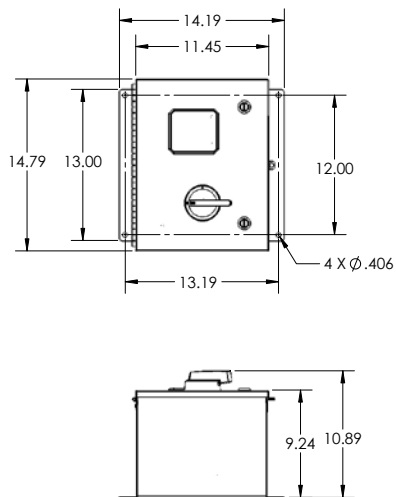
	Voltage	Configuration	Part number
120S	240 / 120	1-phase, 3-wire + ground	RGMESP120SXXT2
120Y	208Y / 120	3-phase, 4-wire + ground	RGMESP120YXXT2
240D	240 Delta	3-phase, 3-wire + ground	RGMESP240DXXT2
240H	240 / 120 Hi-Leg Delta	3-phase, 4-wire + ground	RGMESP240HXXT2
220Y	380Y / 220	3-phase, 4-wire + ground	RGMESP220YXXT2
240Y	415Y / 240	3-phase, 4-wire + ground	RGMESP240YXXT2
277Y	480Y / 277	3-phase, 4-wire + ground	RGMESP277YXXT2
480D	480 Delta	3-phase, 3-wire + ground	RGMESP480DXXT2
Desired kA			XX Code
80 kA/mode			08
100kA/mode			10

Electrical characteristics	
Maximum surge current rating	80 kA per mode / 160 kA per phase 100 kA per mode / 200 kA per phase
Nominal discharge current rating (In)	20 kA
Operating frequency	50–60 Hz
Surge life (IEEE C62.41 - C3 10 kA)	≥5,000 impulses
Modes of protection	All modes (L-N, L-G, N-G, L-L)
Fault rating (SCCR)	200 kA for all models
Standard monitoring	Status indicator lights (one per phase) Standard dry (form C) relay contacts Audible alarm
EMI / RFI filter attenuation	
Maximum attenuation frequency	-61 dB at 100.2 kHz
Mechanical characteristics	
Weight	5.1lb (2.3 kg)
Enclosure type	Polymer, UL 94 5VA polycarbonate, black. NEMA 4/ Type 4
Installation location	Service entrance equipment, primary distribution equipment – Rated for UL and NEC Type 2 installation locations
Mounting method	Dual mounting flanges / ¾" NPT offset nipple
Operating temperature	-40 °F to 149 °F (-40 °C to 65 °C)
Altitude	< 13,000 ft (3.96 km)
Product design	Thermal fuse technology
Regulations and certifications	
UL 1449 5th edition	Type 2
cUL, CSA C22.2	Type 2
UL 1283	Type 2
UL 96A	Yes
IEEE C62.62, C62.72	Yes
Listed by	UL

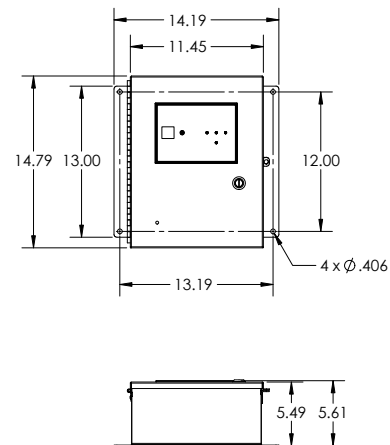
ReliaGear Surge Protective Device

Dimensions

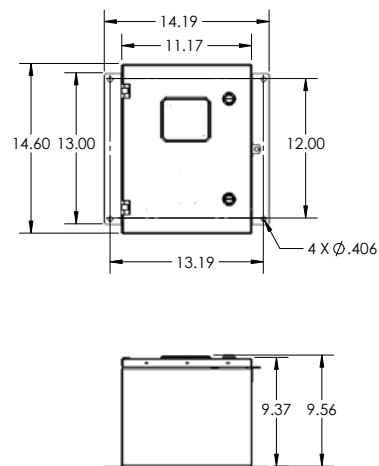
RGWMSP and RGMESP wall-mount SPDs with enhanced thermal protection



RGWMSP- NEMA 4 with disconnect SW dimensions



RGWMSP - NEMA 1 W/O disconnect SW dimensions



RGWM - NEMA 4X dimensions



OVRH UL version

Product range overview



Name	OVRHTP	OVRHMSU	OVRHT3D
Connection ampacity	4000 and below	24 A	400 A and below
SPDtype	Type 1 and Type 2	Type 4 for Type 2	Type 1
Certifications	UL 1449	UL 1449	UL 1449
Surge ratings	60, 80, 100, 120, 160, 200, 240, 300, 400 kA per phase	50kA per phase	50kA per phase
LEDs	Yes	Yes	Yes
Dry relay contacts	Standard	Not available	Not available
EM Ifilter	Optional	Yes	Not available
Surge counter	Optional	Not available	Not available
Warranty	10 years	5 years	3 years

Notes



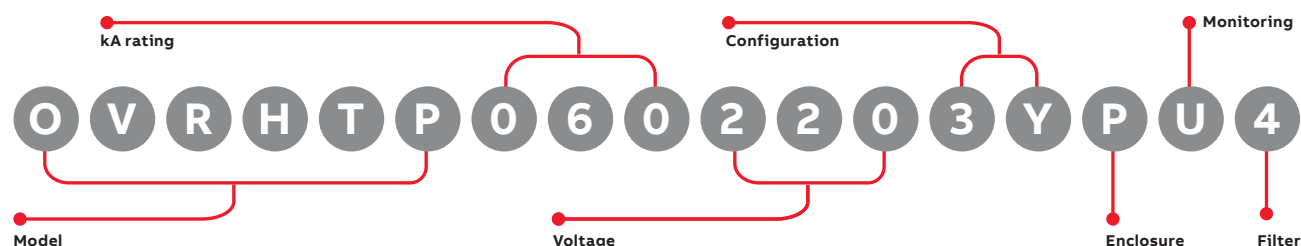
OVRHTP series

OVRHTP (60 to 200 kA)



Product features

- UL Listed 1449 5th Edition for Type 1 and Type 2
- SPD applications
- Thermally protected MOVs provide superior protection and continuous operation
- 200 kAIC short circuit current rating allows direct bus connection without the need for an upstream over-current protection device
- UL 1283 EMI/RF filter available as an option
- Compact and lightweight design
- 10-year standard warranty



kA rating	Suffix
60 kA per phase, 30 kA per mode	060
80 kA per phase, 40 kA per mode	080
100 kA per phase, 50 kA per mode	100
120 kA per phase, 60 kA per mode	120
160 kA per phase, 80 kA per mode	160
200 kA per phase, 100 kA per mode	200

Voltage and configuration (must choose one)	Suffix
120 V, 1-phase, 2-wire + ground	1201P
127 V, 1-phase, 2-wire + ground	1271P
220 V, 1-phase, 2-wire + ground	2201P
230 V, 1-phase, 2-wire + ground	2301P
240 V, 1-phase, 2-wire + ground	2401P
277 V, 1-phase, 2-wire + ground	2771P
240/120 V, 2-phase, 3-wire + ground	1202S
480/240 V, 2-phase, 3-wire + ground	2402S
240Δ /120 V, 3-phase high-leg, 4-wire + ground	1203H
208Y/120 V, 3-phase Wye, 4-wire + ground	1203Y
380Y/220 V, 3-phase Wye, 4-wire + ground	2203Y
400Y/230 V, 3-phase Wye, 4-wire + ground	2303Y
415Y/240 V, 3-phase Wye, 4-wire + ground	2403Y
480Y/277 V, 3-phase Wye, 4-wire + ground	2773Y
600Y/347 V, 3-phase Wye, 4-wire + ground	3473Y
208 V, 3-phase Delta, 3-wire + ground	2083D
240 V, 3-phase Delta, 3-wire + ground	2403D
415 V, 3-phase Delta, 3-wire + ground	4153D
480 V, 3-phase Delta, 3-wire + ground	4803D
600 V, 3-phase Delta, 3-wire + ground	6003D
1-phase, 2-wire + ground (for TNC grounding systems)	2301PI
1-phase, 2-wire + ground (for TNS grounding systems)	2301PJ
1-phase, 2-wire + ground (for IT grounding systems)	2301PK
1-phase, 2-wire + ground (for TT grounding systems)	2301P

Enclosure option	Suffix
Fiberglass-reinforced polyester, NEMA 4X	P
Powder-coated metal NEMA 4	4
Stainless steel NEMA 4X	S

Monitoring option (must choose one)	Suffix
Status indicator LED lights (one per phase)	B
Status indicator LED lights (one per phase), dry relay contacts, audible alarm with silence button, fault light	U
Status indicator LED lights (one per phase), surge counter, dry relay contacts, audible alarm with silence button, fault light	UE

(only available in 120, 160, 200 kA per phase)

Filter option	Suffix
4 UF filter	4
UL 1283 filter (making device Type 2)	4T2
No filter	0

For UL 1283 approved filter - T2 must be at the end of the part number. For example OVRHTP0602203YPU4T2

Product specifications

Electrical

60 kA per phase, 30 kA per mode	
80 kA per phase, 40 kA per mode	
100 kA per phase, 50 kA per mode	
120 kA per phase, 60 kA per mode	
160 kA per phase, 80 kA per mode	
200 kA per phase, 100 kA per mode	
Maximum surge current rating	XX kA per phase, XX kA per mode
Nominal discharge current rating (L-N)	20 kA Earthing and Delta systems 10 kA
Operating frequency	47–63 Hz
Connection method	Pre-wired with 36 inches of #10 AWG conductor
Modes of protection	All modes (L-N, L-G, N-G, L-L)
Fault rating (SCCR)	200 kAIC — no upstream over-current protection device (breaker or fuse) required
Application	ANSI/IEEE C62.41.1 locations A, B and C ideal for distribution panels, branch panels and critical loads

Mechanical

Installation location	Indoor or outdoor
Mounting method	Dual mounting flanges
Operating environment	-40 °F to 149 °F (-40 °C to +65 °C) 5%–95% non-condensing humidity
Altitude	0–12,000 ft (3.66 km)
Product design	Individual thermally fused MOV technology

EMI/RFI filter attenuation

Mil Standard 220B	Up to 40 dB from 10 kHz to 100 MHz
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Regulatory

cULus 1449 5 th Edition	VZCA: E316636 Type 1
UL 1283 with filter option	Yes
UL96A compliant	Yes
IEEE C62.41.2, C62.45	Yes
NFPA 70 (NEC), Article 285	Yes
RoHs compliant	Yes
Listed by	UL

Warranty

10 years

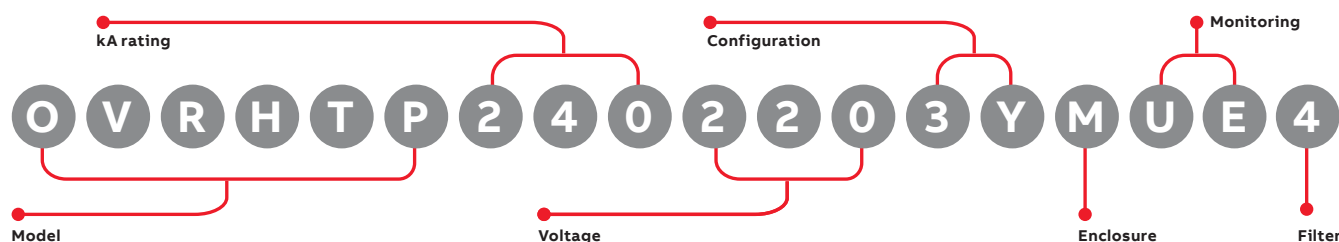
OVRHTP series

OVRHTP (240 to 400 kA)



Product features

- UL Listed 1449 5th Edition for Type 1 and Type 2
- SPD applications
- Thermally protected MOVs provide superior protection and continuous operation
- 200 kAIC short circuit current rating allows direct bus connection without the need for an upstream over-current protection device
- UL 1283 EMI/RF filter available as an option
- Compact and lightweight design
- 10-year standard warranty



kA rating	Suffix
240 kA per phase, 120 kA per mode	240
300 kA per phase, 150 kA per mode	300
400 kA per phase, 200 kA per mode	400

Enclosure option	Suffix
Fiberglass-reinforced polyester with termination lugs	PL
Powder-coated metal NEMA 4 with termination lugs	4L
Stainless steel NEMA 4X with termination lug	SL

Voltage and configuration (must choose one)	Suffix
120 V, 1-phase, 2-wire + ground	1201P
127 V, 1-phase, 2-wire + ground	1271P
220 V, 1-phase, 2-wire + ground	2201P
230 V, 1-phase, 2-wire + ground	2301P
240 V, 1-phase, 2-wire + ground	2401P
277 V, 1-phase, 2-wire + ground	2771P
240/120 V, 2-phase, 3-wire + ground	1202S
480/240 V, 2-phase, 3-wire + ground	2402S
240Δ /120 V, 3-phase high-leg, 4-wire + ground	1203H
208Y/120 V, 3-phase Wye, 4-wire + ground	1203Y
380Y/220 V, 3-phase Wye, 4-wire + ground	2203Y
400Y/230 V, 3-phase Wye, 4-wire + ground	2303Y
415Y/240 V, 3-phase Wye, 4-wire + ground	2403Y
480Y/277 V, 3-phase Wye, 4-wire + ground	2773Y
600Y/347 V, 3-phase Wye, 4-wire + ground	3473Y
208 V, 3-phase Delta, 3-wire + ground	2083D
240 V, 3-phase Delta, 3-wire + ground	2403D
415 V, 3-phase Delta, 3-wire + ground	4153D
480 V, 3-phase Delta, 3-wire + ground	4803D
600 V, 3-phase Delta, 3-wire + ground	6003D

Monitoring option (must choose one)	Suffix
Status indicator LED lights (one per phase)	B
Status indicator LED lights (one per phase), dry relay contacts, audible alarm with silence button, fault light	U
Status indicator LED lights (one per phase), surge counter, dry relay contacts, audible alarm with silence button, fault light	UE

Filter option	Suffix
4 UF filter	4
UL 1283 filter (making device Type 2)	4T2
No filter	0

For UL 1283 approved filter - T2 must be at the end of the part number. For example OVRHTP0602203YPU4T2

Product specifications

Electrical

240 kA per phase, 120 kA per mode	
300 kA per phase, 150 kA per mode	
400 kA per phase, 200 kA per mode	
Maximum surge current rating	XX kA per phase, XX kA per mode
Nominal discharge current rating (L-N)	20 kA
	Earthing and Delta systems 10 kA
Operating frequency	47–63 Hz
Connection method	Termination lugs for #10–#4 AWG conductor (PL, ML or SL enclosure suffix)
Modes of protection	All modes (L-N, L-G, N-G, L-L)
Fault rating (SCCR)	200 kAIC — no upstream over-current protection device (breaker or fuse) required
Application	ANSI/IEEE C62.41.1 locations A, B and C ideal for distribution panels, branch panels and critical loads

Mechanical

Installation location	Indoor or outdoor
Mounting method	Dual mounting flanges
Operating environment	-40 °F to 149 °F (-40 °C to +65 °C)
Altitude	5%–95% non-condensing humidity
	0–12,000 ft (3.66 km)
Product design	Individual thermally fused MOV technology

EMI/RFI filter attenuation

Mil Standard 220B	Up to 40 dB from 10 kHz to 100 MHz
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Regulatory

cULus 1449 5 th Edition	VZCA: E316636 Type 1
UL 1283 with filter option	Yes
UL96A compliant	Yes
IEEE C62.41.2, C62.45	Yes
NFPA 70 (NEC), Article 285	Yes
RoHS compliant	Yes
Listed by	UL

Warranty

10 years

Protection and safety

OVRHT3D



- UL listed 1449 5th Edition for Type 1 SPD applications
- 50 kA per phase protection
- Individual thermally fused and protected MOVs
- Includes pre-wired pigtail conductors
- Multiple MOVs per phase eliminate single-point failure

Technical features

Electrical

Maximum surge current	50 kA per phase
UL type designation	Type 1
UL 1449 nominal discharge current rating (I-n)	20 kA
UL 1449 fault rating/short circuit current rating (SCCR)	200 kAIC

Design specifications

Product design	Individual thermally fused and protected MOVs
Connection methods	External parallel connected for mounting next to electrical gear
Typical connection	18" #12 AWG (pre-wired pig tails)

Technical data

Humidity range	0–95% non-condensing
Operating environment	-35 °C to +85 °C (-31 °F to +185 °F)
Operating frequency	50–60 Hz
Modes of protection	See performance data

Enclosure

Enclosure type	Polycarbonate, NEMA 4X
Installation location	Indoor/outdoor
Mounting method	12.7 mm (½") NPT side-mount nipple

Size specifications

Dimensions	4.25" × 2.41" × 2.75"
Weight	0.23 kg (0.5 lb.)

Diagnostic and status monitoring specifications

LED protection status monitoring standard	Status indicator light, 1 per phase
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Standards compliance and certifications

UL 1449 5th Edition: 2021, cULus, (UL File: VZCA E316636), ANSI/IEEE C62.41.1-2002, C62.41.2-2002, C62.45-2002, NEC Article 285

ISO 9001: 2014 quality management system, ISO 17025:2007 laboratory certification (UL DAP program) compliance with RoHS, REACH and California Prop 65

100% quality tested prior to shipping

Protection and safety

OVRHT3D

Ordering information

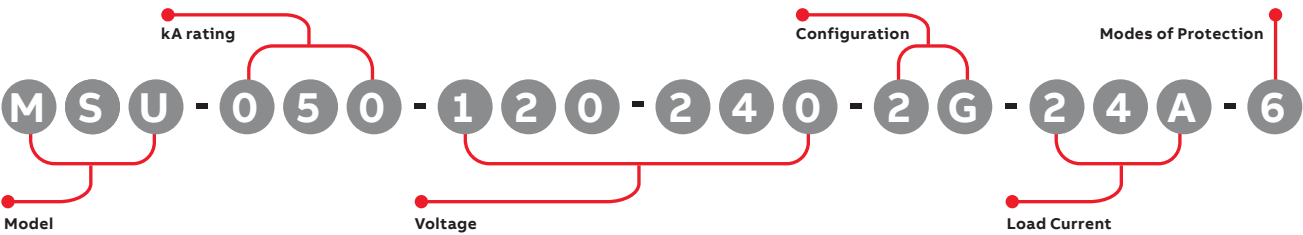
Model number	Global product ID	Voltage	Configuration	MOQ
OVRHT3D501202S	2CJC705120S0000	240/120 V	2-phase, 3-wire + ground	1
OVRHT3D501203Y	2CJC705120Y0000	208/120 V	3-phase Wye, 4-wire + ground	1
OVRHT3D502773Y	2CJC705277Y0000	480/240 V	3-phase Wye, 4-wire + ground	1
OVRHT3D504803D	2CJC705480D0000	480 V	3-phase Delta, 3-wire + ground	1
Special order				
OVRHT3D502203Y	2CJC705220Y0000	380/220 V	3-phase Wye, 4-wire + ground	12
OVRHT3D502201P	2CJC705220P0000	220 V	1-phase, 2-wire + ground	12
OVRHT3D502301P	2CJC705230P0000	230 V	1-phase, 2-wire + ground	12
OVRHT3D503471P	2CJC705347P0000	347 V	1-phase, 2-wire + ground	12
OVRHT3D502402S	2CJC705240S0000	480/240 V	2-phase, 3-wire + ground	12
OVRHT3D502303Y	2CJC705230Y0000	400/230 V	3-phase Wye, 4-wire + ground	12
OVRHT3D502403Y	2CJC705240Y0000	415/240 V	3-phase Wye, 4-wire + ground	12
OVRHT3D503473Y	2CJC705347Y0000	600/347 V	3-phase Wye, 4-wire + ground	12
OVRHT3D502403H	2CJC705240H0000	240/120 V	3-phase Delta high-leg, 4-wire + ground	12
OVRHT3D502401P	2CJC705240P0000	240 V	1-phase, 2-wire + ground	12
OVRHT3D502771P	2CJC705277P0000	277 V	1-phase, 2-wire + ground	12
OVRHT3D502403D	2CJC705240D0000	240 V	3-phase Delta, 3-wire + ground	12
OVRHT3D503803D	2CJC705380D0000	380 V	3-phase Delta, 3-wire + ground	12
OVRHT3D501201P	2CJC705120P0000	120 V	1-phase, 2-wire + ground	12
OVRHT3D504003D	2CJC705400D0000	400 V	3-phase Delta, 3-wire + ground	12
OVRHT3D506003D	2CJC705600D0000	600 V	3-phase Delta, 3-wire + ground	12

OVRHMSU

Series-Connected Suppression Filter System



The OVRHMSU is engineered for hard-wired installation within or adjacent to electrical loads such as outdoor lighting, robotics, process automation systems, motors, HVAC systems, pumps, heaters, programmable logic controllers and other point-of-use applications. Compact and powerful, the OVRHMSU protects these and other individual components from damaging electrical transients, high-frequency noise and high-energy disturbances. OVRHMSU provides 50kA of surge protection for loads up to 24 amps.



Product Specifications

General Specifications	
Maximum Surge Current Rating	50kA Per Mode
Voltage (Single-Phase Applications)	120, 220 or 277
Voltage (3-Wire + Ground Applications)	220/380 or 277/480
Voltage (Split-Phase Applications)	120/240
Safety Listings	Listed by ETL to UL 1449 5 th Edition, Type 4 for Type 2 SPD applications, cUL, and UL 1283 / Compliant to IEEE C62.41.1-2002, C62.41.2-2002 and C62.45-2002 / NFPA 70 [NEC], Article 285 / RoHS Compliant / CE, IEC 61643-11-2011 / EMC Directive 2004/108/EC
Product Design	Individually fused MOVs UL 1283 EMI/RFI filter
Ampacity Rating	24A
Dimensions	5.8"W x 4"H x 1.875"D
Weight	2.25 lbs.
Enclosure Type	Nonmetallic
Operating Environment	-40°F to 140°F (-40°C to 60°C) 5% – 95% Non-Condensing Humidity
Connection Method	Series/in-line; Terminal Block Termination
Connection Means	#8 Screws
Protection Modes	3 or 6
Warranty	5 Years

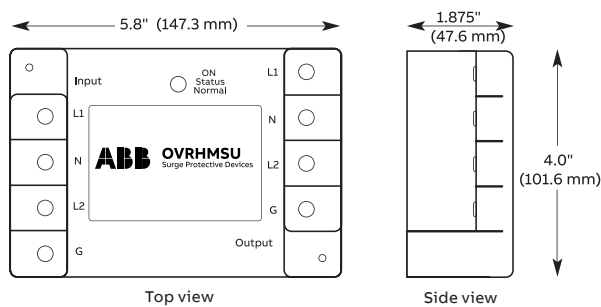
Protection and safety

OVRHMSU

kA/mode	Voltage*	
50 kA = 050	208	120/240
	240	208Y/120
	380	380Y/220
	480	480Y/277

Configuration*	Load Current	Modes of Protection
1G 1 Phase, Grounded	24 Amp	3 or 6
2G 2 Phase, Grounded, Split Phase		

*Consult factory for additional voltage configurations



Input Voltages	Phase	Load Current Ratings (A)	Line Frequency Range (Hz)
120V	1	24	50-60
120/240V	Split-Phase	24	50-60
220V	1	24	50-60
220/380V	2	24	50-60
277V	1	24	50-60
277/480V	2	24	50-60

High-frequency noise filtration

Model No.	Voltage	Mode	1KHz	10KHz	100KHz	1MHz	10MHz	100MHz
MSU50-120-1G-24A-3	120	L-N	6 dB	16 dB	42 dB	25 dB	21 dB	36 dB
MSU50-120/240-2G-24A-6	120/240	L-G	6 dB	6 dB	16 dB	55 dB	81 dB	80 dB
MSU50-220-1G-24A-3	220	L-N	6 dB	16 dB	42 dB	25 dB	21 dB	36 dB
MSU50-220/380-2G-24A-6	220/380	L-G	6 dB	6 dB	16 dB	55 dB	81 dB	80 dB
MSU50-277-1G-24A-3	277	L-N	6 dB	16 dB	42 dB	25 dB	21 dB	36 dB
MSU50-277/480-2G-24A-6	277/480	L-G	6 dB	6 dB	8 dB	36 dB	82 dB	81 dB

This table represents select OVRHMSU configurations. Inquire about additional voltages.

OVRHMSU performance data

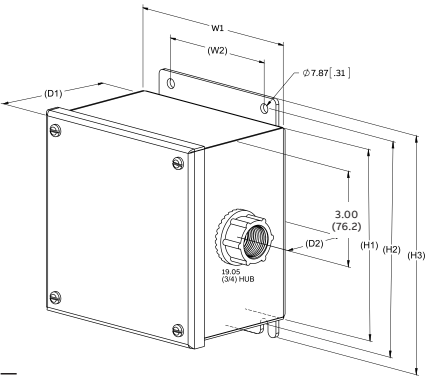
Model No.	System Voltage (VAC)	Current (A)	Phase 1 or 2	MCOV / UC (V)				VPR / VPL (Up)				I-n (kA)
				L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	
MSU50-120-1G-24A-3	120	24A	1	150	300	150	N/A	800	800	800	N/A	20
MSU50-120/240-2G-24A-6	120/240	24A	2	150	300	150	300	800	N/A	800	1200	20
MSU50-220-1G-24A-3	220	24A	1	320	552	320	N/A	1200	1200	1000	N/A	20
MSU50-220/380-2G-24A-6	220/380	24A	2	320	552	320	552	1200	N/A	1000	2000	20
MSU50-277-1G-24A-3	277	24A	1	320	552	320	N/A	1200	1200	1000	N/A	20
MSU50-277/480-2G-24A-6	277/480	24A	2	320	552	320	552	1200	N/A	1000	2000	20



OVRHTP series

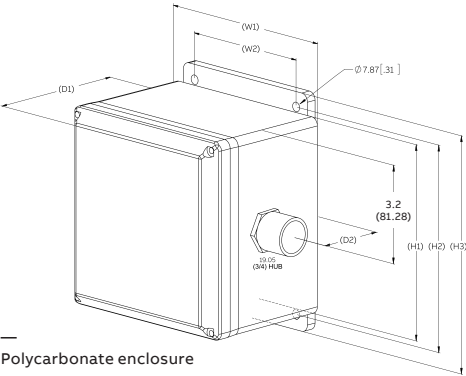
Dimensions

Dimensions OVRHTP (60 to 100 kA)



Metal and Stainless Steel Enclosure

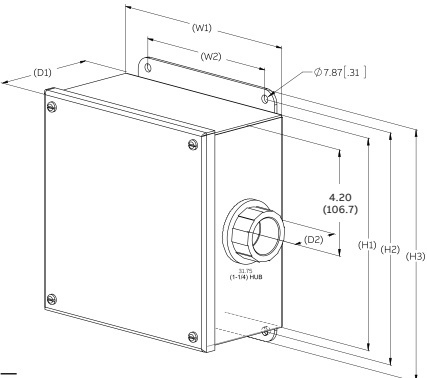
Value	Inches / millimeters
H1	6.00 / 152.4
H2	6.75 / 171.5
H3	7.5 / 190.5
W1	6.00 / 152.4
W2	4.00 / 101.6
D1	4.26 / 108.3
D2	2.25 / 57.2



Polycarbonate enclosure

H1	6.42 / 163
H2	6.75 / 171.5
H3	7.75 / 196.9
W1	6.42 / 163
W2	4.50 / 114.3
D1	4.79 / 121.7
D2	2.25 / 57.15

Dimensions OVRHTP (120 to 200 kA)

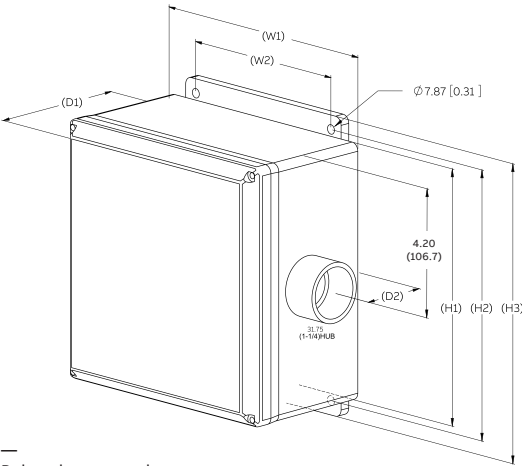


Metal and Stainless Steel Enclosure

Value	Inches / millimeters
H1	8.00 / 203.2
H2	8.75 / 222.3
H3	9.5 / 241.3
W1	8.00 / 203.2
W2	6.00 / 152.4
D1	4.26 / 108.3
D2	2.00 / 50.8

OVRHTP series

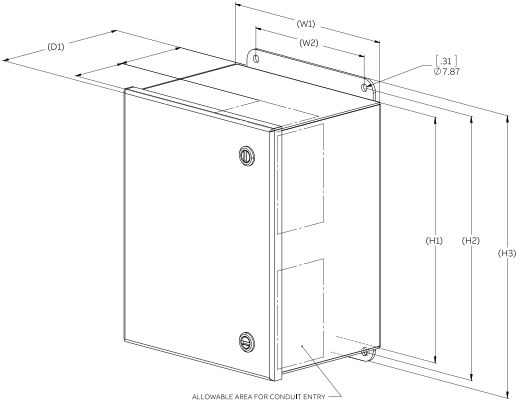
Dimensions

Dimensions OVRHTP (120 to 200 kA)																	
 Polycarbonate enclosure	<table><tr><th>Value</th><th>Inches / millimeters</th></tr><tr><td>H1</td><td>8.42 / 213.9</td></tr><tr><td>H2</td><td>8.84 / 224.4</td></tr><tr><td>H3</td><td>9.78 / 248.3</td></tr><tr><td>W1</td><td>8.42 / 213.9</td></tr><tr><td>W2</td><td>6.00 / 152.4</td></tr><tr><td>D1</td><td>4.79 / 121.7</td></tr><tr><td>D2</td><td>2.25 / 57.2</td></tr></table>	Value	Inches / millimeters	H1	8.42 / 213.9	H2	8.84 / 224.4	H3	9.78 / 248.3	W1	8.42 / 213.9	W2	6.00 / 152.4	D1	4.79 / 121.7	D2	2.25 / 57.2
Value	Inches / millimeters																
H1	8.42 / 213.9																
H2	8.84 / 224.4																
H3	9.78 / 248.3																
W1	8.42 / 213.9																
W2	6.00 / 152.4																
D1	4.79 / 121.7																
D2	2.25 / 57.2																

OVRHTP series

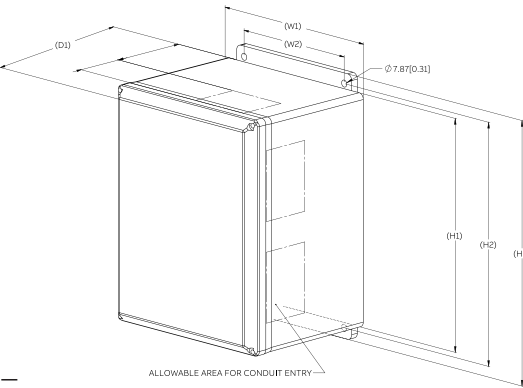
Dimensions

Dimensions OVRHTP (240 to 400 kA)



Metal and Stainless Steel Enclosure

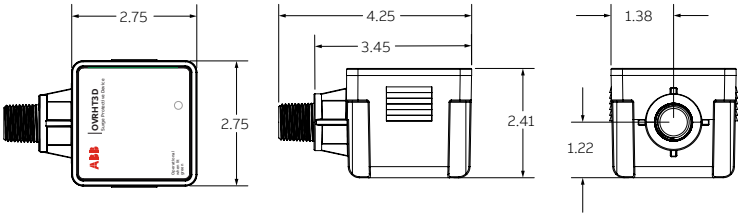
H1	10.00 / 254
H2	10.75 / 273.1
H3	11.5 / 292.1
W1	8.00 / 203.2
W2	6.00 / 152.4
D	6.26 / 159.1



Polycarbonate enclosure

H1	10.35 / 291.9
H2	10.75 / 273.1
H3	11.69 / 296.9
W1	8.35 / 212.1
W2	6.00 / 152.4
D	6.79 / 172.5

Dimensions OVRHT3D



Size and mechanical specifications

Dimensions	4.25" x 2.41" x 2.75"
Weight	0.23 kg (0.5 lb.)
Enclosure type	Polycarbonate NEMA 4X
Installation type	Indoor/outdoor
Mounting method	Flush/flange/through-hole

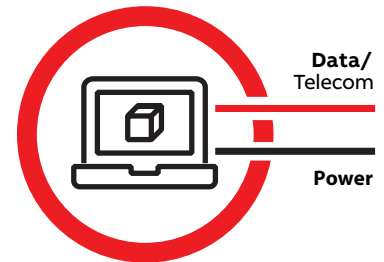
Notes



The ABB OVR data and telecom SPD range overview

Protecting critical electronic systems

The ABB OVR data/telecom range of SPDs are designed to protect equipment connected to data and telephone lines to complement the OVR power SPD products and offer a complete system protection solution (power & data) against surges. The comprehensive range includes protection for twisted pair data lines (including hazardous environments), computer networks, telecom systems including PBX and ISDN, CCTV, TV and RF systems.



WARNING Equipment is **ONLY** protected if all incoming lines have protection fitted

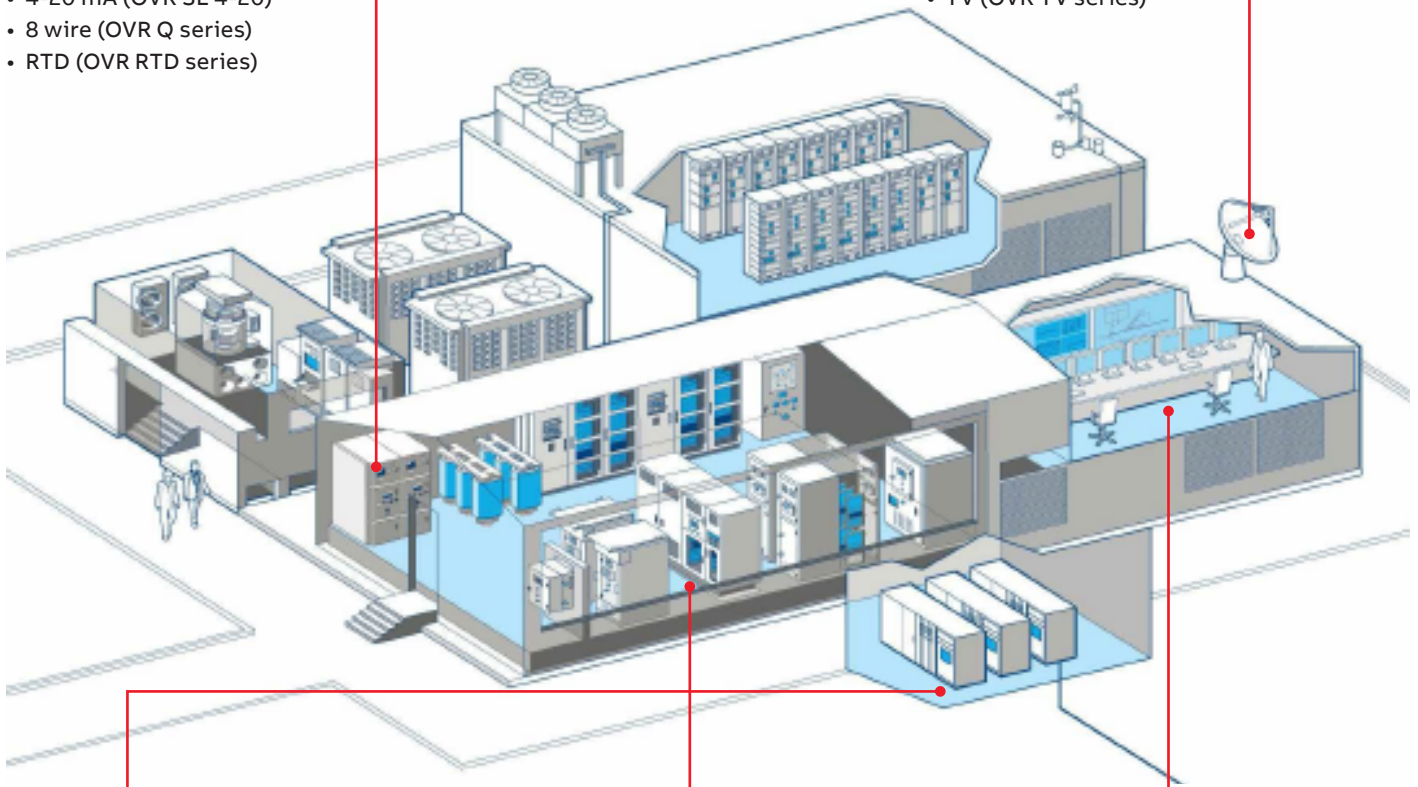
To protect the electronic equipment inside a building, all cables that enter or leave the building must be protected. Cables leaving the building can also provide a route back into the building for transients.

Data & measurement systems

- 2 wire (OVR SL series)
- 2 wire (OVR D/E/H series)
- 3 wire (OVR SL-3W series)
- 4-20 mA (OVR SL 4-20)
- 8 wire (OVR Q series)
- RTD (OVR RTD series)

Transceiver/CCTV systems

- RF (OVR RF series)
- CCTV (OVR CCTV series with OVR 240-16A)
- TV (OVR TV series)



Mains power supply

- See OVR power SPD series

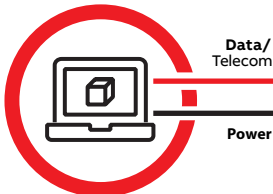
Telecom systems

- PBX (OVR KT series)
- RJ11 (OVR TN series)
- RJ45 (OVR ISDN series)
- 2 wire (OVR TN, OVR SLTN)
- 8 wire (OVR TNQ)

Information technology systems

- Cat 6 + PoE (OVR Cat-6 series)
- RS485/HART/Profibus (OVR RS485 series)

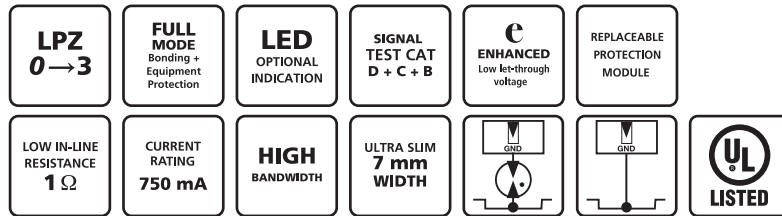
Short Selection Guide – Surge Protection Devices OVR

PROFIBUS Systems						
HART Systems	OVR RS485 Flat/DIN Mount 7TCA085400R0310	OVR SL RS485 Slim DIN Mount 7TCA085400R0310	OVR RS485Q Multiple Lines (DIN Mount) 7TCA085400R0312			
Ethernet	 withPoE:	Cat-6 (1000 Mbps) OVR Cat-6e 7TCA085400R0291 7TCA085400R0292				
Video						
Surveillance CCTV	 5V CCTV with BNC connector, power, and telemetry line	 OVR CCTV/B Video signal 7TCA085400R0296	 OVR RS485 Telemetry signal 7TCA085400R0310	 OVR 240-16A Power line 7TCA085460R0361	 OVR CME4 Earth Bar 7TCA085400R0414	 OVR WBX4/GS Enclosure 7TCA085410R0049 CCTV Protection is also available for different voltages and twisted pair connections.
4 - 20 mA current loops	 Screw terminals 30 V	OVR SL30L/4-20 7TCA085400R0371				
Telephone ISDN DSL	 2 wire Telecom	Screw terminals:	 OVR TN Flat Mount 7TCA085400R0345	 OVR SL TN Slim Mount 7TCA085400R0323	 OVR SL TNL Slim Mount with LED 7TCA085400R0418	 OVR TNQ Multiple Lines 7TCA085400R0344
	 RJ11, RJ45		RJ11 telephone units	OVR TN/RJ11-6/6 6P6C Connector 7TCA085400R0359		OVR ISDN/RJ45-4/8 8P4C Connector 7TCA085400R0359
	 PBX Telecom		LSA-PLUS connection	OVR KT1 Single module 7TCA085400R0305	OVR K10T1 10 modules 7TCA085400R0307	OVR KE10 Earth Bar 7TCA085400R0304
TV: Satellite, Cable	 OVR CATV/F Cable 7TCA085400R0293		OVR SMATV/F Satellite 7TCA085400R0336	OVR TV/EURO Antenna 7TCA085400R0334		
2 wire systems (30V)	 OVR 30E Flat Mount 7TCA085400R0353	 OVR SL30 Slim Mount 7TCA085400R0363	 OVR 30Q Multiple Lines 7TCA085400R0341	Protection for different voltages are available		
3 wire systems (30V)	 OVR SL30/3W Slim Mount 7TCA085400R0331	Protection for different voltages are available				
Resistance Temperature Detectors (RTD)	 OVR RTD Flat/DIN Mount 7TCA085400R0313	 OVR SL RTD Slim (DIN Mount) 7TCA085400R0315	 OVR RTDQ Multiple Lines (DIN Mount) 7TCA085400R0314	 Data/ Telecom Power WARNING Equipment is ONLY protected if all incoming lines have protection fitted		

Protection and safety

Data & signal protection

OVR SL Series



Combined Category D, C, B tested (to IEC/EN 61643) Surge Protection Device (SPD) suitable for twisted pair signalling applications which require either a lower in-line resistance, an increased current and/or higher bandwidth. Also suitable for DC power applications less than 0.75 Amps. Available for working voltages of up to 6, 15, 30, 50, 110 and 180 Volts, and also for global telephone applications up to 296 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- Optional LED status indication versions available for low current DC power applications - add L suffix to part number - e.g. OVR SL30L
- Two stage removable protection module with simple quick release mechanism allowing partial removal for easy line commissioning and maintenance as well as full removal for protection replacement
- Strong, flame retardant, polymer housing
- High maximum running current
- High bandwidth enables higher frequency (high traffic or bit rate) data communications
- Screen terminal enables easy connection of cable screen to earth
- Suitable for earthed or isolated screen systems - add /I suffix to part number for versions that require isolated screens - e.g. OVR SL30/I
- Built-in innovative DIN rail foot with locking feature for simple positioning and clip-on mounting to top hat DIN rails
- 4 mm² terminals allow for larger cross section wiring, stranded wires terminated with ferrules or fitting two wires into a single terminal
- Convenient earthing through DIN foot and/or earth terminal
- Very low (1 Ω) in-line resistance allows resistance critical applications (e.g. alarm loops) to be protected
- OVR SL06-SL180 (UL) have UL497B approval under file E506434 (OVR SLTN not included)

Application

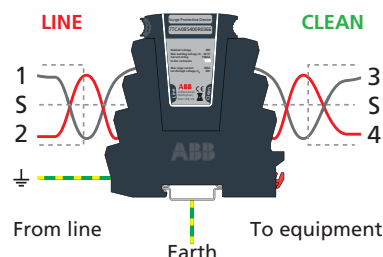
Use these SPDs where installation space is at a premium and large numbers of lines require protection (e.g. process control, high speed digital communication equipment or systems with long signal lines).

Accessories

For replacement SPD modules (/M), spare base units (/B) and weatherproof enclosures (WBX) see ABB order code table overleaf.

Installation

Connect in series with the data communication or signal line either near where it enters or leaves the building or close to the equipment being protected (e.g. within its control panel). Either way, it must be very close to the system's earth star point. Install SPDs either within an existing cabinet/cubicle or in a separate enclosure.



NOTE: The OVR SL 'Slim Line' Series is also available for protection of 3-wire, RS 485 and RTD applications (OVR SL/3W, OVR SL RS485 & OVR SL RTD). The OVR SL X Series has approvals for use in hazardous areas. For telecommunication applications use OVR SLTN Series.

Protection and safety

Data & signal protection

OVR SL Series

OVR SL Series - Technical specification

Electrical specification	OVR SL06	OVR SL15	OVR SL30	OVR SL50	OVR SL110
ABB order code	7TCA085400R0360	7TCA085400R0361	7TCA085400R0363	7TCA085400R0364	7TCA085400R0362
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V
Maximum working voltage U _c (RMS/DC) ⁽²⁾	5 V/7.79 V	11 V/16.7 V	25 V/36.7 V	40 V/56.7 V	93 V/132 V
Current rating (signal)	750 mA				
In-line resistance (per line ±10%)	1.0 Ω				
Bandwidth (-3 dB 50 Ω system)	45 MHz	45 MHz	45 MHz	45 MHz	45 MHz
Transient specification	OVR SL06	OVR SL15	OVR SL30	OVR SL50	OVR SL110
Let-through voltage (all conductors) ⁽³⁾ Up					
C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21	36.0 V	38.4 V	63.0 V	90.3 V	185 V
C1 test 1 kV, 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21	26.2 V	29.4 V	51.3 V	77.2 V	175 V
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21	16.0 V	26.8 V	45.4 V	68.3 V	165 V
5 kV, 10/700 μs ⁽⁴⁾	17.0 V	27.5 V	46.3 V	69.1 V	170 V
Maximum surge current					
D1 test 10/350 μs to BS EN/EN/IEC 61643-21	– Per signal wire – Per pair	1.25 kA 2.5 kA			
8/20 μs to ITU-T K.45:2003, IEEE C62.41.2:2002	– Per signal wire – Per pair	10 kA 20 kA			
Mechanical specification	OVR SL06	OVR SL15	OVR SL30	OVR SL50	OVR SL110
Temperature range	-40 to +80 °C				
Connection type	Screw terminal - maximum torque 0.8 Nm				
Conductor size (stranded)	4 mm ²				
Earth connection	Via DIN rail or 4 mm ² earth terminal - maximum torque 0.8 Nm				
Case material	FR Polymer UL-94 V-0				
Weight	– Unit – Packaged (per 10)	0.08 kg 0.85 kg			
Dimensions	See diagram below				

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10

μA (OVR SL15, OVR SL30, OVR SL50, OVR SL110 and LED variants) and < 200 μA (OVR SL06 and OVR SL06L)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 1 mA leakage

⁽³⁾ The maximum transient voltage let-through of the protector throughout the test (±10%), line to line & line to earth, both polarities. Response time < 10 ns

⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

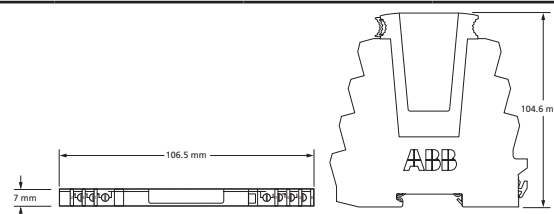


ABB order codes

Part	ABB order code	Part	ABB order code	Part	ABB order code	Part	ABB order code
OVR SL06	7TCA085400R0360	OVR SL15/M	7TCA085400R0376	OVR SL50(UL)	7TCA085400R0539	OVR SL180L	7TCA085400R0425
OVR SL06/I	7TCA085400R0365	OVR SL15L/M	7TCA085400R0411	OVR SL50/I(UL)	7TCA085400R0540	OVR SL180	7TCA085400R0424
OVR SL06L	7TCA085400R0366	OVR SL15/M(UL)	7TCA085400R0597	OVR SL50L(UL)	7TCA085400R0541	OVR SL180L/I	7TCA085400R0423
OVR SL06L/I	7TCA085400R0390	OVR SL15L/M(UL)	7TCA085400R0598	OVR SL50L/I(UL)	7TCA085400R0542	OVR SL180/I	7TCA085400R0426
OVR SL06(UL)	7TCA085400R0527	OVR SL30	7TCA085400R0363	OVR SL50/M	7TCA085400R0378	OVR SL180(UL)	7TCA085400R0547
OVR SL06/I(UL)	7TCA085400R0528	OVR SL30/I	7TCA085400R0383	OVR SL50L/M	7TCA085400R0401	OVR SL180/I(UL)	7TCA085400R0548
OVR SL06L(UL)	7TCA085400R0529	OVR SL30L	7TCA085400R0368	OVR SL50/M(UL)	7TCA085400R0603	OVR SL180L(UL)	7TCA085400R0549
OVR SL06L/I(UL)	7TCA085400R0530	OVR SL30L/I	7TCA085400R0393	OVR SL50L/M(UL)	7TCA085400R0604	OVR SL180L/I(UL)	7TCA085400R0550
OVR SL06/M	7TCA085400R0375	OVR SL30(UL)	7TCA085400R0535	OVR SL110	7TCA085400R0362	OVR SL180/M	7TCA085400R0429
OVR SL06L/M	7TCA085400R0399	OVR SL30/I(UL)	7TCA085400R0536	OVR SL110/I	7TCA085400R0385	OVR SL180L/M	7TCA085400R0430
OVR SL06/M(UL)	7TCA085400R0595	OVR SL30L(UL)	7TCA085400R0537	OVR SL110L	7TCA085400R0370	OVR SL180/M(UL)	7TCA085400R0607
OVR SL06L/M(UL)	7TCA085400R0596	OVR SL30L/I(UL)	7TCA085400R0538	OVR SL110L/I	7TCA085400R0395	OVR SL180L/M(UL)	7TCA085400R0608
OVR SL15	7TCA085400R0361	OVR SL30/M	7TCA085400R0377	OVR SL110(UL)	7TCA085400R0543	OVR SL/B	7TCA085400R0320
OVR SL15/I	7TCA085400R0382	OVR SL30L/M	7TCA085400R0400	OVR SL110/I(UL)	7TCA085400R0544	OVR SL/I/B	7TCA085400R0321
OVR SL15L	7TCA085400R0367	OVR SL30/M(UL)	7TCA085400R0601	OVR SL110L(UL)	7TCA085400R0545	OVR SLTN	7TCA085400R0323
OVR SL15L/I	7TCA085400R0391	OVR SL30L/M(UL)	7TCA085400R0602	OVR SL110L/I(UL)	7TCA085400R0546	OVR SLTNL	7TCA085400R0418
OVR SL15(UL)	7TCA085400R0531	OVR SL50	7TCA085400R0364	OVR SL110/M	7TCA085400R0379	OVR WBX SLQ	7TCA085400R0326
OVR SL15/I(UL)	7TCA085400R0532	OVR SL50/I	7TCA085400R0384	OVR SL110L/M	7TCA085400R0402	OVR WBX SLQ/G	7TCA085400R0327
OVR SL15L(UL)	7TCA085400R0533	OVR SL50L	7TCA085400R0369	OVR SL110/M(UL)	7TCA085400R0605		
OVR SL15L/I(UL)	7TCA085400R0534	OVR SL50L/I	7TCA085400R0394	OVR SL110L/M(UL)	7TCA085400R0606		

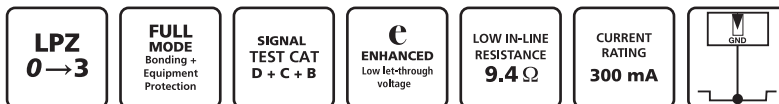
ABB Limited
Wilford Road - Nottingham
NG2 1EB UK
Tel: +44 (0) 115 964 3700

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Protection and safety

Data & signal protection

OVR D Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable for most twisted pair signalling applications. Available for working voltages of up to 6, 15, 30, 50 and 110 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Low in-line resistance minimizes unnecessary reductions in signal strength
- Strong, flame retardant, ABS housing
- Supplied ready for flat mounting on base or side

- Built-in DIN rail foot for simple clip-on mounting to top hat DIN rails
- Colour coded terminals give a quick and easy installation check - grey for the dirty (line) end and green for the clean end
- Screen terminal enables easy connection of cable screen to earth
- Substantial earth stud to enable effective earthing
- Integral earthing plate for enhanced connection to earth via a OVR CME kit

Application

Use on twisted pair lines, e.g. those found in process control equipment, modems and computer communications interfaces.

Installation

Connect in series with the data communication or signal line either near where it enters or leaves the building or close to the equipment being protected (e.g. within its control panel). Either way, it must be very close to the system's earth star point. Install protectors either within an existing cabinet/cubicle or in a separate enclosure.

Accessories

Combined Mounting/Earthing kits:

OVR CME 4 Mount & earth up to 4 protectors

OVR CME 8 Mount & earth up to 8 protectors

OVR CME 16 Mount & earth up to 16 protectors

OVR CME 32 Mount & earth up to 32 protectors

Weatherproof enclosures:

OVR WBX 4, OVR WBX 4/GS For use with a OVR CME 4 and up to 4 protectors

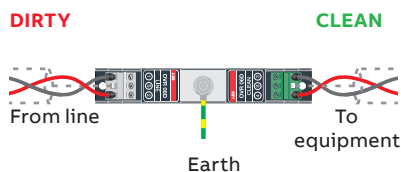
OVR WBX 8, OVR WBX 8/GS

For use with a OVR CME 8 and up to 8 protectors

OVR WBX 16/2/G

For use with one or two OVR CME 16 and up to 32 protectors

Install in series (in-line)



Protection and safety

Data & signal protection

OVR D Series

OVR D Series - Technical specification

Electrical specification	OVR 06D	OVR 15D	OVR 30D	OVR 50D	OVR 110D
ABB order code	7TCA085400R0288	7TCA085400R0349	7TCA085400R0351	7TCA085400R0352	7TCA085400R0347
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	5 V / 7.79 V	13 V / 19 V	26 V / 37.1 V	41 V / 58 V	93 V / 132 V
Current rating (signal)	300 mA				
In-line resistance (per line $\pm 10\%$)	9.4 Ω	9.4 Ω	9.4 Ω	9.4 Ω	9.4 Ω
Bandwidth (-3 dB 50 Ω system)	800 kHz	2.5 MHz	4 MHz	6 MHz	9 MHz
Transient specification	OVR 06D	OVR 15D	OVR 30D	OVR 50D	OVR 110D
Let-through voltage (all conductors)⁽³⁾ U_p					
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	12.0 V	25.0 V	44.0 V	78.0 V	155 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	11.5 V	24.5 V	43.5 V	76.0 V	150 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	10.0 V	23.0 V	42.5 V	73.0 V	145 V
5 kV, 10/700 μ s ⁽⁴⁾	10.5 V	23.8 V	43.4 V	74.9 V	150 V
Maximum surge current					
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21:					
– Per signal wire	2.5 kA				
– Per pair	5 kA				
8/20 μ s to ITU-T K.45:2003, – Per signal wire IEEE C62.41.2:2002:	10 kA				
– Per pair	20 kA				
Mechanical specification	OVR 06D	OVR 15D	OVR 30D	OVR 50D	OVR 110D
Temperature range	-40 to +80 °C				
Connection type	Screw terminal - maximum torque 0.5 Nm				
Conductor size (stranded)	2.5 mm ²				
Earth connection	M6 stud				
Case material	FR Polymer UL-94 V-0				
Weight	0.08 kg				
Dimensions	See diagram below				

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at $< 5 \mu$ A (OVR 15D, OVR 30D, OVR 50D, OVR 110D) and $< 200 \mu$ A (OVR 06D)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 1 mA leakage (OVR 15D, OVR 30D, OVR 50D, OVR 110D), < 10 mA (OVR 06D)

⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns

⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

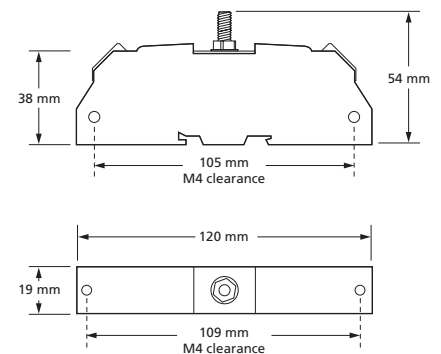


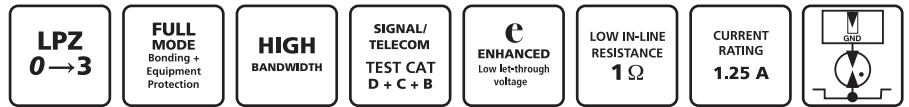
ABB order codes

Part	ABB order code	Part	ABB order code	Part	ABB order code
OVR CME4	7TCA085400R0414	OVR WBX4	7TCA085410R0048	OVR WBX4/GS	7TCA085410R0049
OVR CME8	7TCA085400R0415	OVR WBX8	7TCA085410R0050	OVR WBX8/GS	7TCA085410R0051
OVR CME16	7TCA085410R0415	OVR CME32	7TCA085410R0046	OVR WBX16/2/G	7TCA085410R0047

Protection and safety

Data & signal protection

OVR E Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable for twisted pair signalling applications which require either a lower in-line resistance, an increased current or a higher bandwidth than the OVR D Series. Also suitable for DC power applications less than 1.25 Amps. Available for working voltages of up to 6, 15, 30, 50 and 110 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Very low (1 Ω) in-line resistance allows resistance critical applications (e.g. alarm loops) to be protected
- High (1.25 A) maximum running current
- High bandwidth enables higher frequency (high traffic or bit rate) data communications
- Screen terminal enables easy connection of cable screen to earth
- Strong, flame retardant, ABS housing
- Built-in DIN rail foot for simple clip-on mounting to top hat DIN rails
- Colour coded terminals give a quick and easy installation check - grey for the dirty (line) end and green for clean
- Substantial earth stud to enable effective earthing
- Supplied ready for flat mounting on base or side
- Integral earthing plate for enhanced connection to earth via OVR CME kit

Application

Use these units to protect resistance sensitive, higher frequency or running current systems, e.g. high speed digital communications equipment or systems with long signal lines.

Installation

Connect in series with the data communication or signal line either near where it enters or leaves the building or close to the equipment being protected (e.g. within its control panel). Either way, it must be very close to the system's earth star point. Install protectors either within an existing cabinet/cubicle or in a separate enclosure.

Accessories

Combined Mounting/Earthing kits:

OVR CME 4 Mount & earth up to 4 protectors

OVR CME 8 Mount & earth up to 8 protectors

OVR CME 16 Mount & earth up to 16 protectors

OVR CME 32 Mount & earth up to 32 protectors

Weatherproof enclosures:

OVR WBX 4, OVR WBX 4/GS

For use with a OVR CME 4 and up to 4 protectors

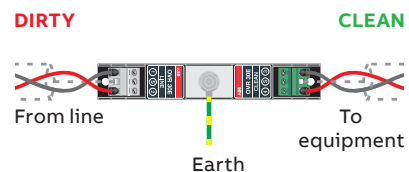
OVR WBX 8, OVR WBX 8/GS

For use with a OVR CME 8 and up to 8 protectors

OVR WBX 16/2/G

For use with one or two OVR CME 16 and up to 32 protectors

Install in series (in-line)



Protection and safety

Data & signal protection

OVR E Series

OVR E Series - Technical specification

Electrical specification	OVR 06E	OVR 15E	OVR 30E	OVR 50E	OVR 110E
ABB order code	7TCA085400R0346	7TCA085400R0350	7TCA085400R0353	7TCA085400R0354	7TCA085400R0348
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	5 V / 7.79 V	11 V / 16.7 V	25 V / 36.7 V	40 V / 56.7 V	93 V / 132 V
Current rating (signal)	1.25 A				
In-line resistance (per line $\pm 10\%$)	1.0 Ω				
Bandwidth (-3 dB 50 Ω system)	45 MHz				
Transient specification	OVR 06E	OVR 15E	OVR 30E	OVR 50E	OVR 110E
Let-through voltage (all conductors)⁽³⁾ Up					
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	36.0 V	39.0 V	60.0 V	86.0 V	180 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	26.2 V	28.0 V	49.0 V	73.5 V	170 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	16.0 V	25.5 V	43.5 V	65.0 V	160 V
5 kV, 10/700 μ s ⁽⁴⁾	17.0 V	26.2 V	44.3 V	65.8 V	165 V
Maximum surge current					
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21:					
– Per signal wire	2.5 kA				
– Per pair	5 kA				
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002:					
– Per signal wire	10 kA				
– Per pair	20 kA				
Mechanical specification	OVR 06E	OVR 15E	OVR 30E	OVR 50E	OVR 110E
Temperature range	-40 to +80 °C				
Connection type	Screw terminal - maximum torque 0.5 Nm				
Conductor size (stranded)	2.5 mm ²				
Earth connection	M6 stud				
Case material	FR Polymer UL-94 V-0				
Weight	0.08 kg				
Dimensions	See diagram below				

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μ A (OVR 15E, OVR 30E, OVR 50E, OVR 110E) and < 200 μ A (OVR 06E)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA leakage (OVR 15E, OVR 30E, OVR 50E, OVR 110E) and < 10 mA (OVR 06E)

⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns

⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

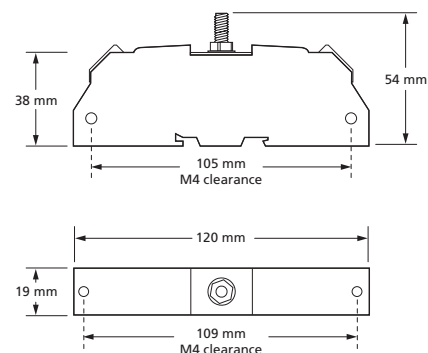


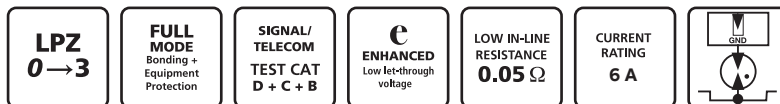
ABB order codes

Part	ABB order code	Part	ABB order code	Part	ABB order code
OVR CME4	7TCA085400R0414	OVR WBX4	7TCA085410R0048	OVR WBX4/GS	7TCA085410R0049
OVR CME8	7TCA085400R0415	OVR WBX8	7TCA085410R0050	OVR WBX8/GS	7TCA085410R0051
OVR CME16	7TCA085410R0415	OVR CME32	7TCA085410R0046	OVR WBX16/2/G	7TCA085410R0047

Protection and safety

Data & signal protection

OVR H Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable for twisted pair signalling applications which require either a lower in-line resistance or an increased current than the OVR D or E Series. Also suitable for DC power applications less than 16 Amps. Available for working voltages of up to 6, 15, 30, 50, 110 and 180 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Ultra-low ($< 0.05 \Omega$) in-line resistance allows resistance critical applications (e.g. alarm loops) to be protected
- Very high (16 A) maximum running current
- Strong, flame retardant ABS housing
- Supplied ready for flat mounting on base or side
- Built-in DIN rail foot for simple clip-on mounting to top hat DIN rails
- Colour coded terminals give a quick and easy installation check - grey for the dirty (line) end and green for clean
- Screen terminal enables easy connection of cable screen to earth
- Substantial earth stud to enable effective earthing
- Integral earth plate enables enhanced connection to earth via OVR CME kit

Application

Use these applications to protect resistance sensitive or higher running current systems, e.g. systems with long signal lines, or DC power applications.

Installation

Connect in series with the data communication or signal line either near where it enters or leaves the building or close to the equipment being protected (e.g. within its control panel). Either way, it must be very close to the system's earth star point. Install protectors either within an existing cabinet/cubicle or in a separate enclosure.

Accessories

Combined Mounting/Earthing kits:

OVR CME 4 Mount & earth up to 4 protectors

OVR CME 8 Mount & earth up to 8 protectors

OVR CME 16 Mount & earth up to 16 protectors

OVR CME 32 Mount & earth up to 32 protectors

Weatherproof enclosures:

OVR WBX 4, OVR WBX 4/GS

For use with a OVR CME 4 and up to 4 protectors

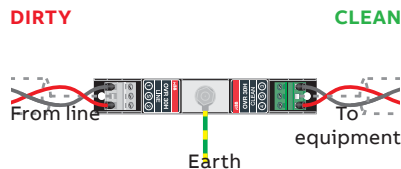
OVR WBX 8, OVR WBX 8/GS

For use with a OVR CME 8 and up to 8 protectors

OVR WBX 16/2/G

For use with one or two OVR CME 16 and up to 32 protectors

Install in series (in-line)



NOTE: For some data and signal applications with lower current, higher in-line resistance or higher bandwidth requirements, the OVR D or E Series protectors or the Slim Line OVR SL Series may be more suitable.

Protection and safety

Data & signal protection

OVR H Series

OVR E Series - Technical specification

	OVR 06H	OVR 15H	OVR 30H	OVR 50H	OVR 110H	OVR 180H
ABB order code	7TCA085400R0355	7TCA085400R0357	7TCA085400R0358	7TCA085400R0359	7TCA085400R0356	7TCA085400R0495
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V	180 V
Maximum working voltage U_c (DC) ⁽²⁾	7.79 V	16.7 V	36.7 V	56.7 V	132 V	190 V
Maximum working voltage U_c (AC RMS)	5 V	11 V	25 V	40 V	93 V	130 V
Current rating (signal)	16A (25 °C)					
In-line resistance (per line ±10%)	0.05 Ω					
Bandwidth (-3 dB 50 Ω system)	160 KHz	140 KHz	130 KHz	120 KHz	120 KHz	100 KHz
Transient specification	OVR 06H	OVR 15H	OVR 30H	OVR 50H	OVR 110H	OVR 180H
Let-through voltage (all conductors)⁽³⁾ Up						
C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21	12.0 V	27.5 V	46.0 V	67.0 V	150 V	215 V
C1 test 1 kV, 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21	11.0 V	26.5 V	45.0 V	66.5 V	145 V	205 V
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21	10.5 V	25.5 V	43.5 V	65.0 V	140 V	203 V
5 kV, 10/700 μs(4)	10.8 V	26.2 V	44.3 V	65.8 V	145 V	200 V
Maximum surge current						
D1 test 10/350 μs to signal wire	– Per	2.5 kA				
BS EN/EN/IEC 61643-21:	– Per pair	5 kA				
8/20 μs to ITU-T K.45:2003, signal wire	– Per	10 kA				
IEEE C62.41.2:2002:	– Per pair	20 kA				
Mechanical specification	ESP 06H	ESP 15H	ESP 30H	ESP 50H	ESP 11H	ESP 180H
Temperature range	-40 to +80 °C					
Connection type	Screw terminal - maximum torque 0.5 Nm					
Conductor size (stranded)	2.5 mm ²					
Earth connection	M6 stud - maximum torque 0.5 Nm					
Case material	FR Polymer UL-94 V-0					
Weight: – Unit	0.08 kg					
Dimensions	See diagram below					

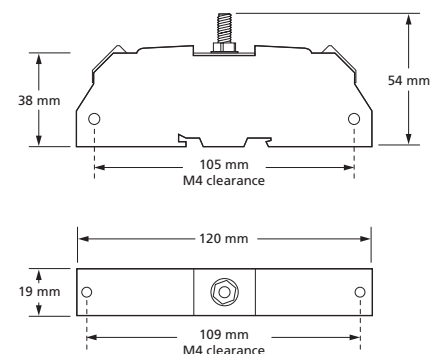
⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μA (OVR 15H, OVR 30H, OVR 50H, OVR 110H) and < 200 μA (OVR 06H)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA leakage (OVR 15H, OVR 30H, OVR 50H, OVR 110H) and < 10 mA (OVR 06H)

⁽³⁾ The maximum transient voltage let-through of the protector throughout the test (±10%), line to line & line to earth, both polarities. Response time < 10 ns

⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

Part	ABB order code
CME4	7TCA085400R0001
CME32	7TCA085410R0003
WBX 3/G	7TCA085410R0024
WBX 8	7TCA085410R0030
CME8	7TCA085400R0002
WBX 2/G	7TCA085410R0022
WBX 4	7TCA085410R0027
WBX 8/GS	7TCA085410R0031
CME16	7TCA085410R0002
WBX 3	7TCA085410R0023
WBX 4/GS	7TCA085410R0028
WBX 16/2/G	7TCA085410R0020



Protection and safety

Data & signal protection

OVR SL 3-Wire Series



LPZ 0 → 3	FULL MODE Bonding + Equipment Protection	REPLACEABLE PROTECTION MODULE	SIGNAL/ TELECOM TEST CAT D + C + B	e ENHANCED Low let-through voltage
LOW IN-LINE RESISTANCE 1 Ω	CURRENT RATING 500 mA	HIGH BANDWIDTH	ULTRA SLIM 7 mm WIDTH	

Combined Category D, C, B tested protector (to BS EN 61643) suitable for 3-wire signalling applications which require either a lower in-line resistance, an increased current and/or higher bandwidth. Also suitable for DC power applications less than 0.5 Amps. Available for working voltages of up to 6, 15, 30, 50 and 110 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- Two stage removable protection module with simple quick release mechanism allowing partial removal for easy line commissioning and maintenance as well as full removal for protection replacement
- Very low (1 Ω) in-line resistance allows resistance critical applications (e.g. alarm loops) to be protected
- High (500 mA) maximum running current
- High bandwidth enables higher frequency (high traffic or bit rate) data communications
- Strong, flame retardant, polycarbonate housing
- Built-in innovative DIN rail foot with locking feature for simple positioning and clip-on mounting to top hat DIN rails
- 4 mm² terminals allow for larger cross section wiring, stranded wires terminated with ferrules or fitting two wires into a single terminal
- Convenient earthing through DIN foot and/or earth terminal

Application

Use these protectors for 3-wire systems where installation space is at a premium and large numbers of lines require protection (e.g. process control, high speed digital communication equipment or systems with long signal lines).

Installation

Connect in series with the data communication or signal line either near where it enters or leaves the building or close to the equipment being protected (e.g. within its control panel). Either way, it must be very close to the system's earth star point. Install protectors either within an existing cabinet/cubicle or in a separate enclosure.

Accessories

Replacement modules:

OVR SLXX/3W/M

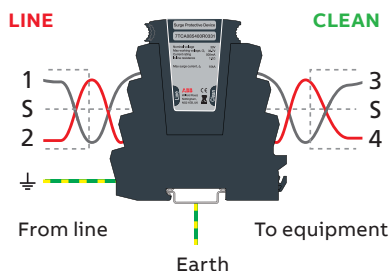
Standard module replacement where XX is voltage rating (06, 15, 30, 50 or 110)

OVR SL/3W/B

Base replacement

Weatherproof enclosure:

OVR WBX SLQ



NOTE: The OVR SL 'Slim Line' Series is also available for protection of 2-wire systems up to 110 V, RS 485, RTD and telecommunication applications (OVR SL Series, OVR SL RS485, OVR SL RTD and OVR SL TN). The OVR SL X Series has approvals for use in hazardous areas.

Protection and safety

Data & signal protection

OVR SL 3-Wire Series

OVR SL 3-Wire Series - Technical specification

Electrical specification	OVR SL06/3W	OVR SL15/3W	OVR SL30/3W	OVR SL50/3W	OVR SL110/3W
ABB order code	7TCA085400R0328	7TCA085400R0330	7TCA085400R0331	7TCA085400R0332	7TCA085400R0329
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	5 V / 7.79 V	11 V / 16.7 V	25 V / 36.7 V	40 V / 56.7 V	93 V / 132 V
Current rating (signal)	500 mA				
In-line resistance (per line $\pm 10\%$)	1.0 Ω				3.3 Ω
Bandwidth (-3 dB 50 Ω system)	45 MHz				
Transient specification	OVR SL06/3W	OVR SL15/3W	OVR SL30/3W	OVR SL50/3W	OVR SL110/3W
Let-through voltage (all conductors)⁽³⁾ U_p					
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	36.0 V	38.4 V	63.0 V	90.3 V	185 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	26.2 V	29.4 V	51.3 V	77.2 V	175 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	16.0 V	26.8 V	45.4 V	68.3 V	165 V
5 kV, 10/700 μ s ⁽⁴⁾	17.0 V	27.5 V	46.3 V	69.1 V	170 V
Maximum surge current					
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21:	– Per signal wire – Per pair	1.25 kA 2.5 kA			
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002:	– Per signal wire – Per pair	5 kA 10 kA			
Mechanical specification	OVR SL06/3W	OVR SL15/3W	OVR SL30/3W	OVR SL50/3W	OVR SL110/3W
Temperature range	-40 to +80 °C				
Connection type	Screw terminal - maximum torque 0.8 Nm				
Conductor size (stranded)	4 mm ²				
Earth connection	Via DIN rail or 4 mm ² earth terminal - maximum torque 0.8 Nm				
Case material	FR Polymer UL-94 V-0				
Weight: – Unit	0.08 kg				
Dimensions	See diagram below				

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μ A (OVR SL15/3W, OVR SL30/3W, OVR SL50/3W, OVR SL110/3W) and < 200 μ A (OVR SL06/3W)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 1 mA leakage

⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns

⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

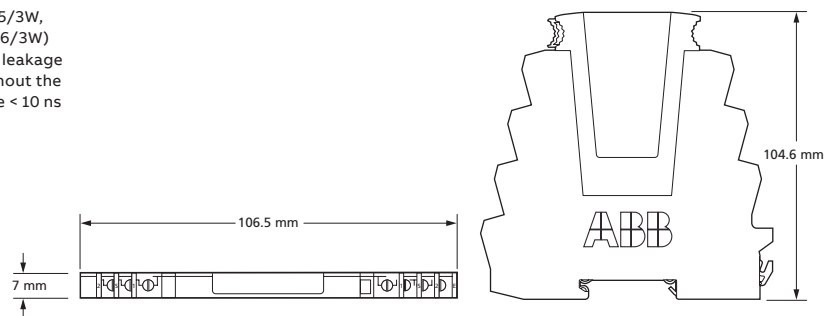


ABB order codes

Part	ABB order code	Part	ABB order code
OVR SL06/3W	7TCA085400R0328	OVR SL50/3W	7TCA085400R0332
OVR SL06/3W/M	7TCA085400R0405	OVR SL50/3W/M	7TCA085400R0409
OVR SL15/3W	7TCA085400R0330	OVR WBX SLQ/G	7TCA085400R0327
OVR SL15/3W/M	7TCA085400R0406	OVR SL110/3W	7TCA085400R0329
OVR WBX SLQ	7TCA085400R0326	OVR SL110/3W/M	7TCA085400R0408
OVR SL30/3W	7TCA085400R0331	OVR SL/B	7TCA085400R0320
OVR SL30/3W/M	7TCA085400R0407	OVR SL/I/B	7TCA085400R0321

Protection and safety

Data & signal protection

OVR SL LED 4-20 mA Series



LPZ 0 → 3	FULL MODE Bonding + Equipment Protection	REPLACEABLE PROTECTION MODULE	SIGNAL/ TELECOM TEST CAT D + C + B	ENHANCED Low let-through voltage
LOW IN-LINE RESISTANCE 1 Ω	CURRENT RATING 75 mA	ULTRA SLIM 7 mm WIDTH	LED INDICATION	

Combined Category D, C, B tested protector (to BS EN 61643) suitable for twisted pair 4-20 mA loop systems with innovative LED protector status indication. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment (e.g. transmitters, monitors, controllers).

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Innovative LED indication of protection status provides easy visual checking and quick maintenance
- Ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- Two stage removable protection module with simple quick release mechanism allowing partial removal for easy line commissioning and maintenance as well as full removal for protection replacement
- Very low (1 Ω) in-line resistance for minimal system interference
- High (75 mA) maximum running current - can also be used on 10-50 mA systems (e.g. process control)
- Screen terminal enables easy connection of cable screen to earth
- Strong, flame retardant, polycarbonate housing
- Built-in innovative DIN rail foot with locking feature for simple positioning and clip-on mounting to top hat DIN rails
- 4 mm² terminals allow for larger cross section wiring, stranded wires terminated with ferrules or fitting two wires into a single terminal
- Convenient earthing through DIN foot and/or earth terminal

Application

Use these protectors on 4-20 mA loop systems - ideal where installation space is at a premium and large numbers of lines require protection, or for systems with long signal lines.

Installation

Connect in series with the 4-20 mA current loop either near where it enters or leaves the building or close to the equipment being protected (e.g. within its control panel). Either way, it must be very close to the system's earth star point. Install protectors either within an existing cabinet/cubicle or in a separate enclosure.

Accessories

OVR SL30L/4-20/M

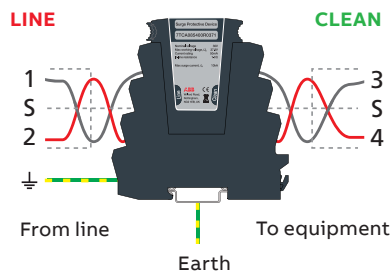
Module replacement

OVR SL/B

Base replacement

Weatherproof enclosure:

OVR WBX SLQ



TECHNICAL NOTE: 4-20 mA current loops can serve multiple devices over a long distance. The devices and wiring produce a voltage drop (also known as "loop drops") but these do not reduce the 4-20 mA current as long as the power supply voltage is greater than the sum of the voltage drops around the loop at the maximum signalling current of 20 mA. For design considerations, each OVR SL30L/4-20 device installed within the loop introduces a 1.7 V loop drop.

NOTE: The OVR SL 'Slim Line' Series is also available for protection of systems up to 110 V as well as 3-wire, RS 485, RTD & telecommunication applications (OVR SL/3W, OVR SL RS485, OVR SL RTD & OVR SL TN). The OVR SL X Series has approvals for use in hazardous areas.

Protection and safety

Data & signal protection

OVR SL LED 4-20 mA Series

OVR SL LED 4-20 mA Series - Technical specification

Electrical specification	OVR SL30L/4-20
ABB order code	7TCA085400R0371
Nominal voltage ⁽¹⁾	30 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	25 V / 36.7 V
Current rating (signal) ⁽³⁾	75 mA
In-line resistance (per line $\pm 10\%$)	1.0 Ω
Series voltage drop ⁽⁴⁾	1.7 V
Bandwidth (-3 dB 50 Ω systems)	45 MHz
Transient specification	OVR SL30L/4-20
Let-through voltage (all conductors)⁽⁵⁾ Up	
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	63.0 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	51.3 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	45.4 V
5 kV, 10/700 μ s ⁽⁶⁾	46.3 V
Maximum surge current	
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21:	– Per signal wire 1.25 kA – Per pair 2.5 kA
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002:	– Per signal wire 5 kA – Per pair 10 kA
Mechanical specification	OVR SL30L/4-20
Temperature range	-40 to +80 °C
Connection type	Screw terminal - maximum torque 0.8 Nm
Conductor size (stranded)	4 mm ²
Earth connection	Via DIN rail or 4 mm ² earth terminal - maximum torque 0.8 Nm
Case material	FR Polymer UL-94 V-0
Weight: – Unit	0.08 kg
Dimensions	See diagram below

(1) Nominal voltage (RMS/DC or AC peak) measured at < 10 μ A

(2) Maximum working voltage (RMS/DC or AC peak) measured at < 1 mA leakage

(3) The minimum current for LED indicator operation is 2 mA

(4) At 20 mA

(5) The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns

(6) Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

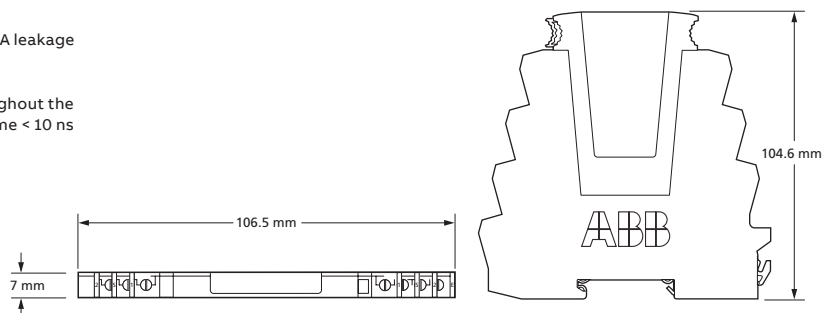


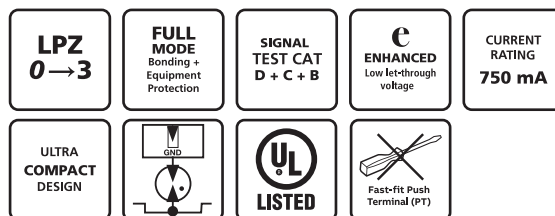
ABB order codes

Part	ABB order code	Part	ABB order code
OVR SL30L/4-20	7TCA085400R0371	OVR SL/B	7TCA085400R0320
OVR SL30L/4-20/I	7TCA085400R0372	OVR SL/I/B	7TCA085400R0321
OVR SL30L/4-20/M	7TCA085400R0373	OVR WBX SLQ	7TCA085400R0326

Protection and safety

Data & signal protection

OVQ Series



Combined Category D, C, B (to IEC/EN 61643) Surge Protective Device (SPD) suitable for 4 twisted pair lines. Available for working voltages of up to 6, 15, 30, 50, 110 and 180 Volts. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Almost twice as space efficient as smallest competitor
- Standard DIN module (18 mm) depth
- Removable (plug-in) terminals allow pre-wiring of cable looms, for easier installation
- Suitable for earthed or isolated screen systems
- Built-in DIN rail foot for clip-on mounting to top hat or G DIN rails
- Optional flat mounting on side
- 2.5 mm² terminals allow for larger cross section wiring, stranded wires terminated with ferrules or fitting two wires into a single terminal
- Fast fit screwless Push Terminal versions (OVR X/PT) allow quick tool-less cable connection saving installation time
- Very low resistance to minimizes unwanted signal strength reductions
- Strong, flame retardant, ABS housing
- Colour coded terminals (grey for line, green for clean) give a quick and easy installation check
- Screen terminal enables easy connection of cable screen, maintaining continuity through the SPD between the input and output connectors.
- Simple, yet substantial, connection to earth via DIN rail
- OVR 06Q-180Q (and /PT variants) have UL497b approval under E240341

Application

Use these SPDs where installation space is at a premium and large numbers of lines require protection.

Accessories

Weather proof enclosures:

OVR WBX SLQ (with transparent lid)

ABB order code

7TCA085400R0326

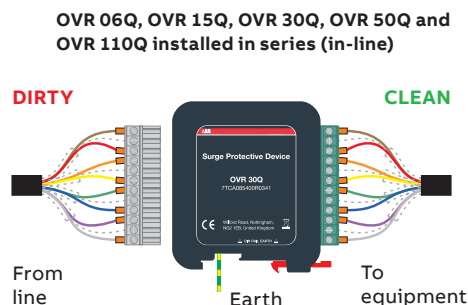
OVR WBX SLQ/G (with opaque grey lid)

ABB order code

7TCA085400R0327

Installation

Connect in series with the signal or data line either near where it enters or leaves the building or close to the equipment being protected. Install in a cabinet/cubicle close to the system's earth star point.



NOTE: The OVR Q Series is also available for protection of RS 485 and RTD applications (OVR RS485Q, OVR RTDQ). Protectors for individual data and signal lines are available (OVR D Series and Slim Line OVR SL Series). Alternatively, for individual protectors with higher current or bandwidth use the OVR E and OVR H Series. For telecommunication applications use OVR TNQ Series.

Protection and safety

Data & signal protection

OVR Q Series

OVR Q Series - Technical specification

Electrical specification	OVR 06Q Series	OVR 15Q Series	OVR 30Q Series	OVR 50Q Series	OVR 110Q Series	OVR 180Q Series
Nominal voltage ⁽¹⁾	6 V	15 V	30 V	50 V	110 V	180 V
Maximum working voltage U_c (RMS/DC) ⁽²⁾	5 V / 7.79 V	13 V / 18.8 V	26 V / 37.8 V	41 V / 57.8 V	93 V / 132 V	130 V/190 V
Current rating (signal)	750 mA				500 mA	250 mA
In-line resistance (per line $\pm 10\%$)	1.0 Ω				3.3 Ω	6.8 Ω
Bandwidth (-3 dB 50 Ω system)	45 MHz					
Transient specification						
Let-through voltage (all conductors)⁽³⁾ Up						
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	15.0 V	28.0 V	53.0 V	84.0 V	188 V	215 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	12.5 V	26.5 V	48.0 V	76.0 V	175 V	205 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	10.0 V	23.0 V	43.5 V	64.5 V	145 V	203 V
5 kV, 10/700 μ s ⁽⁴⁾	10.8 V	26.2 V	44.3 V	65.8 V	150 V	200 V
Maximum surge current						
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21:	– Per signal wire – Per pair	2.5 kA 5 kA				
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002:	– Per signal wire – Per pair	10 kA 20 kA				
Mechanical specification						
Temperature range	-40 to +80 °C					
Connection type	Pluggable 12 way screw terminal - maximum torque 0.6 Nm /PT version: Pluggable 12 way screwless Push Terminal					
Conductor size (stranded)	2.5 mm ²					
Earth connection	Via DIN rail or M5 threaded hole in base of unit					
Case material	FR Polymer UL-94 V-0					
Weight: – Unit	0.1 kg					
– Packaged (each)	0.12 kg					
Dimensions	See diagram below					

⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at $< 5 \mu$ A (OVR 15Q, OVR 30Q, OVR 50Q, OVR 110Q) and $< 200 \mu$ A (OVR 06Q)

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA leakage (OVR 15Q, OVR 30Q, OVR 50Q, OVR 110Q)

⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns

⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

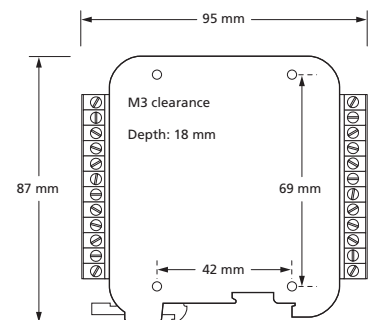


ABB order codes

Part	ABB order code	Part	ABB order code	Part	ABB order code
OVR RS485	7TCA085400R0311	OVR RS485Q(UL)	7TCA085400R0572	OVR CME8	7TCA085400R0415
OVR SLRS485/B	7TCA085400R0316	OVR RS485Q/PT(UL)	7TCA085400R0579	OVR CME32	7TCA085410R0046
OVR SLRS485	7TCA085400R0310	OVR SLRS485/M	7TCA085400R0317	OVR WBXSLQ	7TCA085400R0326
OVR SLRS485L	7TCA085400R0417	OVR SLRS485L/M	7TCA085400R0470	OVR WBXSLQ/G	7TCA085400R0327
OVR SLRS485(UL)	7TCA085400R0551	OVR SLRS485L/M(UL)	7TCA085400R0600	WBX 4	7TCA085410R0027
OVR SLRS485L(UL)	7TCA085400R0552	OVR CME4	7TCA085400R0414	WBX 8	7TCA085410R0030
OVR RS485Q	7TCA085400R0312	OVR CME16	7TCA085410R0045	WBX 16/2/G	7TCA085410R0020

Protection and safety

Data & signal protection

OVR RTD, RTDQ & SL RTD Series



LPZ 0 → 3	FULL MODE Bonding + Equipment Protection	OVR SL RTD ULTRA SLIM 7 mm WIDTH	SIGNAL/ TELECOM TEST CAT D + C + B	ENHANCED Low let-through voltage	OVR RTDQ ULTRA COMPACT 18 mm WIDTH	LOW IN-LINE RESISTANCE	OVR SL RTD HIGH BANDWIDTH
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Combined Category D, C, B tested protector (to BS EN 61643) suitable for 3-wire RTD systems to protect monitoring equipment. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3. Available as standard OVR RTD format, or compact OVR RTDQ and Slim Line OVR SL RTD versions for installations where a high number of lines require protection.

Features & benefits

- Protects all three wires on a 3-wire RTD system with a single protector
- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Low in-line resistance minimizes reductions in signal strength
- Built-in DIN rail foot for simple mounting to top hat DIN rails
- Convenient earthing through DIN foot and/or earth terminal
- OVR RTD can be flat mounted on base or side
- OVR RTD and OVR RTDQ have colour coded terminals for quick and easy installation check
- OVR SL RTD has ultra slim 7mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- OVR SL RTD includes two stage removable protection module with simple quick release mechanism allowing partial removal for easy line commissioning and maintenance as well as full removal for protection replacement

For further information on RTD applications, see separate Application Note OVR AN001 (contact us for a copy).

Installation

Connect in series with the signal line either near where it enters or leaves the building or close to the equipment being protected ensuring it is very close to the system's earth star

point. Install protectors either within an existing cabinet/cubicle or in a separate enclosure.

Accessories

Replacement module for OVR SL RTD:

OVR SLRTD/M

Standard module replacement

OVR SLRTD/B

Base replacement

Combined Mounting/Earthing kits for OVR RTD:

OVR CME 4 For up to 4 x OVR RTD

OVR CME 8 For up to 8 x OVR RTD

OVR CME 16 For up to 16 x OVR RTD

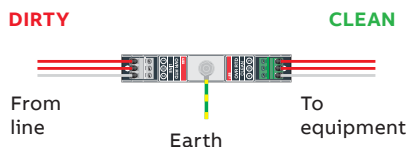
OVR CME 32 For up to 32 x OVR RTD

If protectors cannot be incorporated within an existing panel or enclosure, OVR WBX enclosures are available for up to 4, 8, 16 or 32 protectors and their associated OVR CME kit.

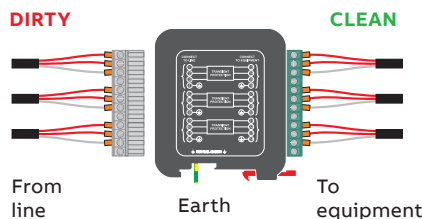
Weatherproof enclosure:

OVR WBX SLQ (OVR SLRTD and OVR RTD Q)

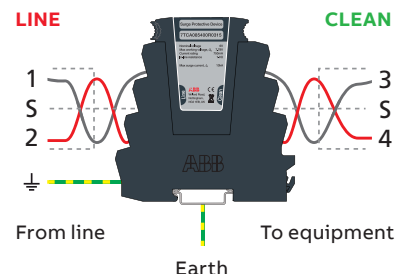
OVR RTD installed in series



OVR RTDQ installed in series (in-line)



OVR SL RTD installed in series



NOTE: For 2-wire or 4-wire RTD applications, use one or two OVR 06D or OVR SL06 protectors respectively.

Protection and safety

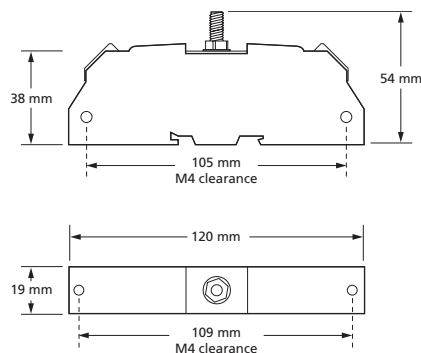
Data & signal protection

OVR RTD Series

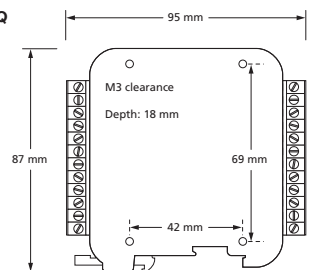
OVR RTD, RTDQ & SL RTD Series - Technical specification

Electrical specification	OVR RTD	OVR SL RTD	OVR RTDQ
ABB order code	7TCA085400R0313	7TCA085400R0315	7TCA085400R0314
Nominal voltage ⁽¹⁾	6 V		
Maximum working voltage U _c (RMS/DC) ⁽²⁾	5 V/7.79 V		
Current rating (signal)	200 mA	500 mA	700 mA
In-line resistance (per line ±10%)	10 Ω	1.0 Ω	1.0 Ω
Bandwidth (-3 dB 50 Ω system)	800 kHz	1.5 MHz	800 kHz
Transient specification	OVR RTD	OVR SL RTD	OVR RTDQ
Let-through voltage (all conductors) ⁽³⁾ Up			
C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21	12.0 V	17.9 V	15.0 V
C1 test 1 kV, 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21	11.5 V	12.1 V	12.5 V
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21	10.0 V	11.0 V	10.0 V
5 kV, 10/700 μs ⁽⁴⁾	10.5 V	11.3 V	10.5 V
Maximum surge current			
D1 test 10/350 μs to BS EN/EN/IEC 61643-21	– Per signal wire – Per pair	2.5 kA 5 kA	2.5 kA 5 kA
8/20 μs to ITU-T K.45:2003, IEEE C62.41.2:2002	– Per signal wire – Per pair	10 kA 20 kA	
Mechanical specification	OVR RTD	OVR SL RTD	OVR RTDQ
Temperature range	-40 to +80 °C		
Connection type	Screw terminal - max. torque 0.5 Nm	Screw terminal - max. torque 0.8 Nm	Pluggable 12 way screw terminal
Conductor size (stranded)	2.5 mm ²	4 mm ²	2.5 mm ²
Earth connection	M6 stud - max. torque 0.5 Nm	Via DIN rail or 4 mm ² earth terminal - max. torque 0.8 Nm	Via DIN rail or M5 threaded hole in base of unit - max. torque 0.6 Nm
Case Material	FR Polymer UL-94 V-0		
Weight	– Unit	0.08 kg	0.08 kg
	– Packaged (per 10)	0.85 kg	0.85 kg
Dimensions	See diagram below		

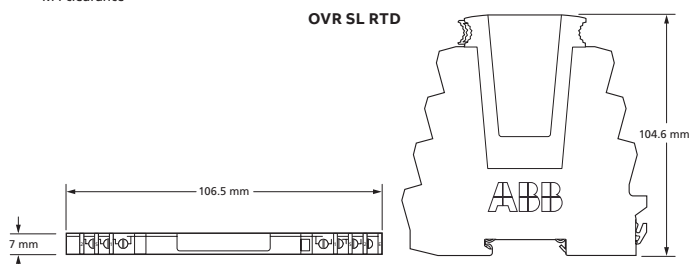
OVR RTD



OVR RTDQ



OVR SL RTD



⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 200 μA

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 10 mA

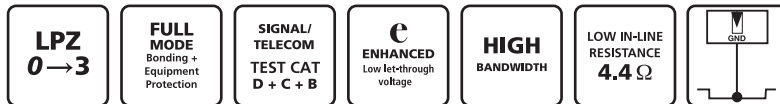
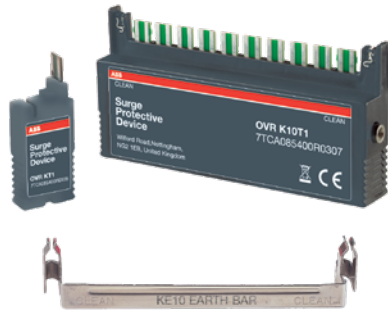
⁽³⁾ The maximum transient voltage let-through of the protector throughout the test (±10%), line to line & line to earth, both polarities. Response time < 10 ns

⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

Protection and safety

Telecoms & computer line protection

OVR KT & KE Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable for use on ten line LSA-PLUS disconnection modules to PBX telephone exchanges, ISDN and other telecoms equipment with LSA-PLUS disconnection modules. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Low cost protection for large numbers of data and signal lines
- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Colour of housing distinguishes electrically different protectors - avoids confusion when installed together on the same distribution frame
- Quick and easy plug-in installation, with 'bump' location feedback
- Under power line cross conditions/PTC versions offer safe disconnection during fault duration. Unit auto-resets once fault corrected
- At larger installations OVR K10T1 and OVR K10T1/PTC provide all in one protection for all ten lines on LSA-PLUS disconnection modules
- Use the OVR KE10 to provide trouble free earthing for up to ten OVR KT1 and OVR KT1/PTC (per disconnection module)
- OVR K10T1 and OVR K10T1/PTC have an integral earth connection, and an external M4 earth bush for use with non-metallic LSA-Plus frames
- OVR KT1/PTC and OVR K10T1/PTC have resettable overcurrent protection and are rated for power cross faults
- OVR KT1, OVR KT1/PTC, OVR K10T1 and OVR K10T1/PTC are suitable for telecoms applications in accordance with Telcordia and ANSI Standards

Application

- For PSTN (e.g POTS, dial-up, lease line, T1/E1, *DSL and Broadband) and U interface ISDN lines, use OVR KT1 (or OVR KT1/PTC) and OVR K10T1 (or OVR K10T1/PTC)
- Protect single lines with OVR KT1 or OVR KT1/PTC
- Protect all ten lines on a disconnection module with OVR K10T1 or OVR K10T1/PTC

Installation

Install protectors on all lines that enter or leave each building (including extensions to other buildings). Identify the lines requiring protection and plug-in the protector (ensuring the correct orientation) for a series connection. Plug OVR K10T1 or OVR K10T1/PTC directly into each disconnection module requiring protection.

OVR KT1 and OVR KT1/PTC must be installed via the OVR KE10 earth bar. Clip an OVR KE10 on to the disconnection module and plug an OVR KT1 or OVR KT1/PTC in to each line on the module that needs protecting. In the unlikely situation that the protector is damaged, it will sacrifice itself and fail short circuit, taking the line out of commission, indicating it needs replacing and preventing subsequent transients from damaging equipment.

For further information on global telephony applications, see separate Application Note OVR AN005 (contact us for a copy).

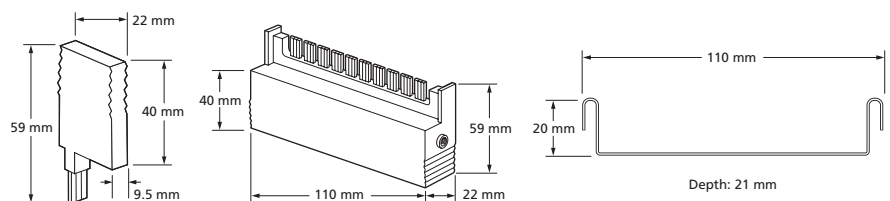
Protection and safety

Telecoms & computer line protection

OVR KT & KE Series

OVR KT & KE Series - Technical specification

Electrical specification		OVR KT1	OVR KT1/PTC	OVR K10T1	OVR K10T1/PTC	
ABB order code		7TCA085400R0305	7TCA085400R0306	7TCA085400R0307	7TCA085400R0410	
Maximum working voltage U_c ⁽¹⁾	– line to line	296 V	296 V	296 V	296 V	
	– line to earth	296 V	296 V	296 V	296 V	
Current rating (signal)		300 mA	145 mA	300 mA	145 mA	
In-line resistance (per line $\pm 10\%$)		4.4 Ω				
Bandwidth (-3 dB 50 Ω system)		20 MHz	20 MHz	20 MHz	20 MHz	
Transient specification		OVR KT1	OVR KT1/PTC	OVR K10T1	OVR K10T1/PTC	
Let-through voltage (all conductors) ⁽²⁾ Up						
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	– line to line	395 V	395 V	395 V	395 V	
	– line to earth	395 V	395 V	395 V	395 V	
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	– line to line	390 V	390 V	390 V	390 V	
	– line to earth	390 V	390 V	390 V	390 V	
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	– line to line	298 V	298 V	298 V	298 V	
	– line to earth	298 V	298 V	298 V	298 V	
5 kV, 10/700 μ s ⁽³⁾	– line to line	300 V	300 V	300 V	27 V	
	– line to earth	300 V	300 V	300 V	80 V	
Maximum surge current ⁽⁴⁾						
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21	– line to line	1 kA				
	– line to earth	2 kA				
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002	– line to line	5 kA				
	– line to earth	10 kA				
Power Faults specification		OVR KT1	OVR KT1/PTC	OVR K10T1	OVR K10T1/PTC	
Power/Line Cross and Power Induction - tests to: ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, UL 60950/IEC 950						
Power/line cross		–	110/230 Vac (15 min)	–	110/230 Vac (15 min)	
Power induction		–	600 V, 1 A (0.2 sec)	–	600 V, 1 A	
Mechanical specification		OVR KT1, OVR KT1/PTC		OVR K10T1, OVR K10T1/PTC		OVR KE10
Temperature range		-40 to +80 °C				–
Connection type		To LSA-PLUS disconnection modules (BT part number 237A)				–
Earth connection		Via OVR KE10 earth bar		Via integral earth clip/external M4 bush		–
Material		FR Polymer UL-94 V-0				Stainless Steel
Weight	– Unit	0.01 kg		0.10 kg		0.01 kg
	– Packaged	0.12 kg (per 10)		0.12 kg		0.10 kg (per 10)
Dimensions		See diagram below				



⁽¹⁾ Maximum working voltage (DC or AC peak) at 10 μ A for OVR KT1, OVR KT1/PTC, OVR K10T1, OVR K10T1/PTC

⁽²⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns

⁽³⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

⁽⁴⁾ The installation and connections external to the protector may limit the capability of the protector

Protection and safety

Telecoms & computer line protection

OVR TN/RJ11 & ISDN/RJ45 Series



LPZ 0→3	FULL MODE Bonding + Equipment Protection	SIGNAL/ TELECOM TEST CAT D + C + B	ENHANCED Low let-through voltage	LOW IN-LINE RESISTANCE 4.4 Ω	CURRENT RATING 300 mA
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Combined Category D, C, B tested protector (to BS EN 61643) suitable to protect telephony equipment plugged into a Modem (RJ11) or ISDN (RJ45) socket. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Substantial earth connection to enable effective earthing
- Supplied in a sturdy ABS housing ready for flat mounting, or vertically via TS35 'Top Hat' DIN rail
- OVR TN/RJ11-2/6, OVR TN/RJ11-4/6 and OVR TN/RJ11-6/6 are suitable for telecommunication applications in accordance with Telcordia and ANSI Standards (see Application Note OVR AN005)

Application

- For PSTN (e.g. POTS, dial-up, lease line, T1/E1, *DSL and Broadband) use TN/RJ11
 - OVR TN/RJ11... are suitable for use on telephone lines with a maximum (or ringing) voltage of up to 296 Volts
 - For telephone lines with RJ11 connections protect the middle 2 (of 6) conductors with OVR TN/RJ11-2/6, the middle 4 (of 6) with OVR TN/RJ11-4/6 or all 6 with OVR TN/RJ11-6/6
 - For S/T interface ISDN lines, use OVR ISDN/RJ45-4/8 and OVR ISDN/RJ45-8/8
 - For S/T interface ISDN lines with RJ45 connections protect the middle 4 (of 8) conductors (paired 3&6, 4&5) with OVR ISDN/RJ45-4/8, or all 8 (outside pairs 1&2, 7&8) with OVR ISDN/RJ45-8/8
- For further information on RJ45 ISDN applications, see separate Application Note OVR AN002 and for global telephony applications, see separate Application Note OVR AN005 (contact us for a copy).

Installation

Connect in series with the telephone or ISDN line. These units are usually installed close to the equipment being protected and within a short distance of a good electrical earth.

Accessories

OVR CAT5e/UTP-1
1 metre cable with RJ45 connections

Plug-in series connection for OVR TN/RJ11-2/6, 4/6 & 6/6



Plug-in series connection for OVR ISDN/RJ45-4/8 & 8/8



NOTE: For non-ISDN wire-in applications the high performance OVR TN, OVR SLTN or OVR TNQ can be used. Protect PBX telephone exchanges and other equipment with LSA-PLUS connections using OVR KT series.

Protection and safety

Telecoms & computer line protection

OVR TN/RJ11 & ISDN/RJ45 Series

OVR TN/RJ11 & ISDN/RJ45 Series - Technical specification

Electrical specification	OVR TN/ RJ11-2/6	OVR TN/ RJ11-4/6	OVR TN/ RJ11-6/6	OVR ISDN/ RJ45-4/8	OVR ISDN/ RJ45-8/8
ABB order code	7TCA085400R0337	7TCA085400R0338	7TCA085400R0339	7TCA085460R0359	7TCA085460R0360
Nominal voltage	296 V	296 V	296 V	5 V	5 V/58 V ⁽²⁾
Maximum working voltage U_c ⁽¹⁾	296 V	296 V	296 V	58 V	58 V
Current rating (signal)	300 mA				
In-line resistance (per line $\pm 10\%$)	4.4 Ω				
Bandwidth (-3 dB 50 Ω system)	20 MHz	20 MHz	20 MHz	19 MHz	19 MHz
Transient specification	OVR TN/ RJ11-2/6	OVR TN/ RJ11-4/6	OVR TN/ RJ11-6/6	OVR ISDN/ RJ45-4/8	OVR ISDN/ RJ45-8/8
Let-through voltage (all conductors) ⁽³⁾ Up					
C2 test 4 kV 1.2/50 μ s, – line to line	395 V	395 V	395 V	28 V	28 V/88 V ⁽⁵⁾
2 kA 8/20 μ s to – line to earth	395 V	395 V	395 V	88 V	88 V
BS EN/EN/IEC 61643-21					
C1 test 1 kV, 1.2/50 μ s, – line to line	390 V	390 V	390 V	23 V	23 V/63 V ⁽⁵⁾
0.5 kA 8/20 μ s to – line to earth	390 V	390 V	390 V	63 V	63 V
BS EN/EN/IEC 61643-21					
B2 test 4 kV 10/700 μ s – line to line	298 V	298 V	298 V	26 V	26 V/65 V ⁽⁵⁾
to BS EN/EN/IEC 61643-21 – line to earth	298 V	298 V	298 V	65 V	65 V
5 kV, 10/700 μ s ⁽⁴⁾ – line to line	300 V	300 V	300 V	27 V	27 V/80 V ⁽⁵⁾
– line to earth	300 V	300 V	300 V	80 V	80 V
Maximum surge current ⁽⁶⁾					
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21	1 kA				
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002:	10 kA				
Mechanical specification	OVR TN/ RJ11-2/6	OVR TN/ RJ11-4/6	OVR TN/ RJ11-6/6	OVR ISDN/ RJ45-4/8	OVR ISDN/ RJ45-8/8
Temperature range	-40 to +80 °C				
Connection type	RJ11 plug and socket	RJ11 plug and socket	RJ11 plug and socket	RJ45 plug and socket	RJ45 plug and socket
Earth connection	M4/DIN rail				
Case Material	FR Polymer UL-94 V-0				
Weight	– Unit	0.15 kg			
	– Packaged	0.2 kg			
Dimensions	See diagram below				

⁽¹⁾ Maximum working voltage (DC or AC peak) measured at < 10 μ A leakage for OVR TN/RJ11 products and < 5 μ A for OVR ISDN/RJ45 products

⁽²⁾ Maximum working voltage is 5 V for pairs 3/6 & 4/5, and 58 V for pairs 1/2 & 7/8

⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns

⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

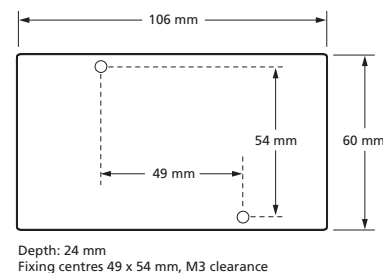
⁽⁵⁾ The first let-through voltage value is for pairs 3/4 & 5/6, and the second value is for pairs 1/2 & 7/8

⁽⁶⁾ The installation and connectors external to the protector may limit the capability of the protector

OVR ISDN/RJ45-4/8, 8/8
cable length: 0.5 m



OVR TN/RJ11-2/6, 4/6, 6/6
cable length: 1 m



Protection and safety

Data & signal protection

OVR TN, TNQ & SL TN Series



FULL MODE Bonding + Equipment Protection	OVR SLTN ULTRA SLIM 7 mm WIDTH	LPZ 0 → 3	ENHANCED Low let-through voltage	OVR TNQ ULTRA COMPACT 18 mm WIDTH
SIGNAL/ TELECOM TEST CAT D + C + B	LOW IN-LINE RESISTANCE	HIGH BANDWIDTH		

Combined Category D, C, B tested protector (to BS EN 61643) specifically designed for telecommunications applications in accordance with Telcordia and ANSI standards (see Application Note OVR AN005). For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3. Available as standard OVR TN format, or compact OVR TNQ and Slim Line OVR SL TN versions for installations where a high number of lines require protection.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- 20 MHz bandwidth greatly exceeds VDSL2+ (50Mbps ~ 7MHz) maximum speeds
- Low in-line resistance minimizes reductions in signal strength
- Built-in DIN rail foot for simple mounting to top hat DIN rails
- Convenient earthing through DIN foot and/or earth terminal
- OVR TN can be flat mounted on base or side
- OVR TN and OVR TNQ have colour coded terminals for quick and easy installation check
- OVR SL TN has ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- OVR SL TN includes two stage removable protection module with simple quick release mechanism allowing partial removal for easy line commissioning and maintenance as well as full removal for protection replacement
- OVR SL TN includes optional LED status indication (add L suffix to part number - i.e. OVR SL TNL)

Application

Connect in series with the signal line either near where it enters or leaves the building or close to the equipment being protected ensuring it is very close to the system's earth star point. Install protectors either within an existing cabinet/cubicle or in a separate enclosure.

Accessories

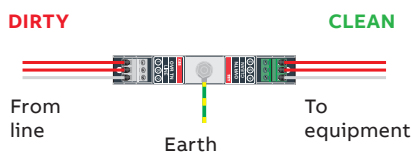
Replacement module for OVR SL TN:
OVR SLTN/M
Standard module replacement

Combined Mounting/Earthing kits for OVR RS485:
OVR CME 4 For up to 4 x OVR TN
OVR CME 8 For up to 8 x OVR TN
OVR CME 16 For up to 16 x OVR TN
OVR CME 32 For up to 32 x OVR TN

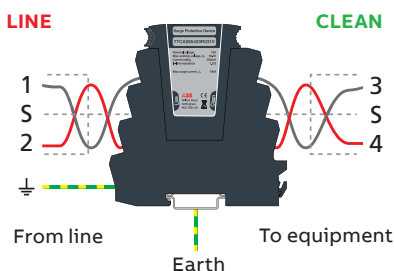
If protectors cannot be incorporated within an existing panel or enclosure, OVR WBX enclosures are available for up to 4, 8, 16 or 32 protectors and their associated OVR CME kit.

Weatherproof enclosure:
OVR WBX SLQ (OVR SLTN and OVR TNQ)

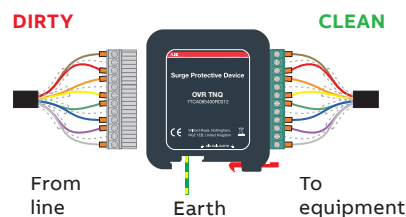
OVR TN installed in series



OVR SL TN installed in series



OVR TNQ installed in series (in-line)



NOTE: The OVR KT Series is also available for telecommunications application using LSA-PLUS disconnection modules. Plug-in solutions are also available for RJ11 connections (see OVR TN RJ11 Series).

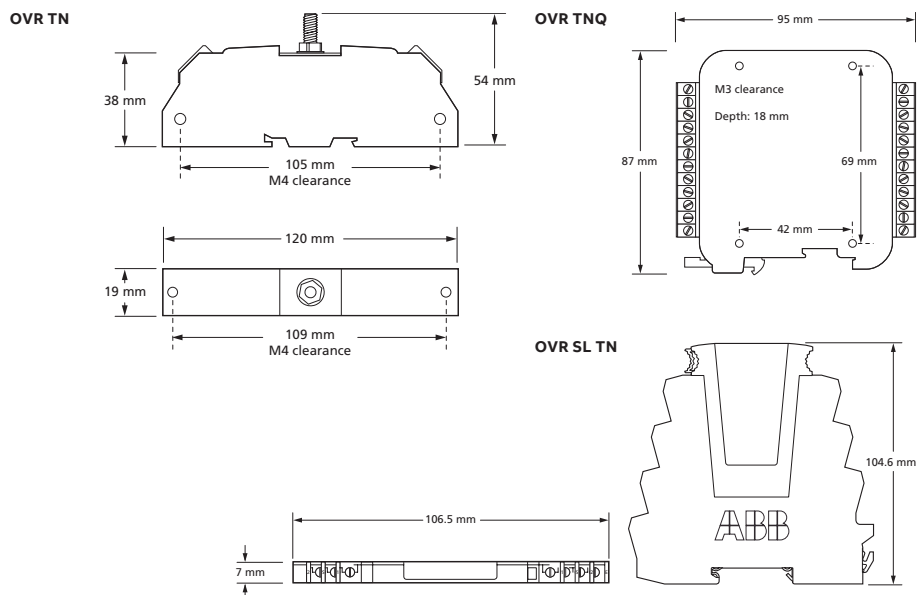
Protection and safety

Data & signal protection

OVR TN, TNQ & SL TN Series

OVR TN, TNQ & SL TN Series - Technical specification

Electrical specification		OVR TN	OVR SL TN, OVR SL TNL	OVR TNQ
ABB order code		7TCA085400R0345	7TCA085400R0323, 7TCA085400R0418	7TCA085400R0344
Nominal voltage ⁽¹⁾		–		
Maximum working voltage U _c (RMS/DC) ⁽²⁾		–/296 V		
Current rating (signal)		300 mA		
In-line resistance (per line ±10%)		4.4 Ω		
Bandwidth (-3 dB 50 Ω system)		20 MHz		
Transient specification		OVR TN	OVR SL TN, OVR SL TNL	OVR TNQ
Let-through voltage (all conductors) ⁽³⁾ Up				
C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21		395 V		
C1 test 1 kV, 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21		390 V		
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21		298 V		
5 kV, 10/700 μs ⁽⁴⁾		300 V		
Maximum surge current				
D1 test 10/350 μs to BS EN/EN/IEC 61643-21	– Per signal wire	2.5 kA	1.25 kA	2.5 kA
	– Per pair	5 kA	2.5 kA	5 kA
8/20 μs to ITU-T K.45:2003, IEEE C62.41.2:2002	– Per signal wire	10 kA		
	– Per pair	20 kA		
Mechanical specification		OVR TN	OVR SL TN, OVR SL TNL	OVR TNQ
Temperature range		-40 to +80 °C		
Connection type		Screw terminal - max. torque 0.5 Nm	Screw terminal - max. torque 0.8 N	Pluggable 12 way screw terminal
Conductor size (stranded)		2.5 mm ²	4 mm ²	2.5 mm ²
Earth connection		M6 stud	Via DIN rail or 4 mm ² earth terminal - max. torque 0.8 Nm	Via DIN rail or M5 threaded hole in base of unit
Case Material		FR Polymer UL-94 V-0		
Weight	– Unit	0.08 kg		0.1 kg
	– Packaged (per 10)	0.85 kg		1.3 kg
Dimensions		See diagram below		



⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μA

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA

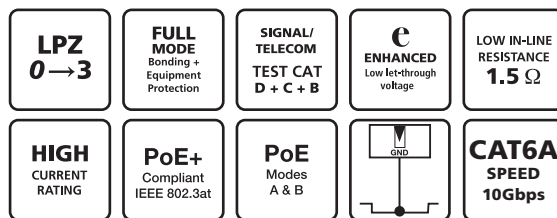
⁽³⁾ The maximum transient voltage let-through of the protector throughout the test (±10%), line to line & line to earth, both polarities. Response time < 10 ns

⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

Protection and safety

Telecom & computer line protection

OVR Cat-6 Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable to protect twisted pair Ethernet networks, including Power over Ethernet (PoE), with RJ45 connections. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Suitable for systems signalling on up to eight wires of either shielded or unshielded twisted pair cable
- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- Unlike some competing devices, the ethernet SPDs provide effective protection without impairing the system's normal operation
- Low capacitance circuitry prevents the start-up signal degradation associated with other types of network protector
- Low in-line resistance minimizes unnecessary reductions in signal strength to maximize signalling distance
- Sturdy ABS housing with convenient holes for flat mounting, or vertically via TS35 'Top Hat' DIN rail
- Substantial earth connection to enable effective earthing
- Will protect all PoE powering modes A and B.

Application

Use these protectors on network cables that travel between buildings to prevent damage to equipment, e.g. computers, servers, repeaters and hubs. Suitable for computer networks up to Cat-6A cabling.

- To protect up to 1000baseT/10GbaseT networks with Cat-6/Cat-6A cabling use OVR Cat-6

- To protect up to 1000baseT/10GbaseT Power over Ethernet (PoE) networks with Cat-6/Cat-6A cabling use OVR Cat-6/PoE

For further application information, see separate Application Note OVR AN004 (contact us for a copy).

Installation

Connect in series with the network cable, either:

- Near to where it enters or leaves the building, or
- As it enters the network hub, or
- Close to the equipment being protected

This should be close to the system's earth star point (to enable a good connection to earth).

Plug-in series connection

Accessories

OVR CAT5e/UTP-1

1 metre cable with unshielded RJ45 connections

OVR CAT6/STP-2

2 metre screened cable with shielded RJ45 connections



TECHNICAL NOTE: The interfaces used in Ethernet networks incorporate an isolation transformer which gives these systems an in-built immunity to transients between line and earth of 1,500 Volts or more.

Protection and safety

Telecom & computer line protection

OVR Cat-6 Series

OVR Cat-6 Series - Technical specification

Electrical Specification		OVR Cat-6	OVR Cat-6/PoE
ABB order code		7TCA085400R0291	7TCA085400R0292
Maximum working voltage U_c ⁽¹⁾	- data ⁽²⁾		
	- power ⁽³⁾	-	58 V
Current rating		300 mA	600 mA ⁽⁴⁾
In-line resistance (per line $\pm 25\%$)	- data ⁽²⁾		
	- power	-	-
Maximum data rate		1000 Mbps	1000 Mbps
Networking standards		10/100/1000/ 10GbaseT	10/100/1000/ 10GbaseT
		TIA Cat-6	TIA Cat-6
		IEEE 802.3i	IEEE 802.3i
		IEEE 802.3u	IEEE 802.3u
		IEEE 802.3ab	IEEE 802.3ab
		IEEE 802.3an	IEEE 802.3an
		-	IEEE 802.3af
		-	IEEE 802.3at
Transient specification		OVR Cat-6	OVR Cat-6/PoE
Let-through voltage (all conductors) ⁽⁵⁾ Up			
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	- line to line	120 V	120 V/116 V ⁽⁸⁾
	- line to earth ⁽⁶⁾	900 V	900 V
C3 test 1kV/ μ s, 100A 10/1000 μ s to BS EN/EN/IEC 61643-21	- line to line	15 V	15 V
	- pair to pair (PoE)	-	90 V
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	- line to line	74 V	74 V/95 V ⁽⁸⁾
	- line to earth ⁽⁶⁾		
B2 test 1kV 10/700 μ s, 25A 5/320 μ s to BS EN/EN/IEC 61643-21	- line to line	9 V	9 V
	- pair to pair (PoE)	-	85 V
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	- line to line	21 V	21 V/87 V ⁽⁸⁾
	- line to earth ⁽⁶⁾	700 V	700 V
5 kV, 10/700 μ s ⁽⁷⁾	- line to line	25 V	25 V/90 V ⁽⁸⁾
	- line to earth ⁽⁶⁾		
Maximum surge current ⁽⁹⁾			
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21	- line to line	-	-
	- line to earth ⁽⁶⁾	1 kA	1 kA
8/20 μ s to ITU-T K.45:2018, IEEE C62.41.2:2002	- line to line	150 A	150 A
	- line to earth ⁽⁶⁾	10 kA	10 kA
Mechanical specification		OVR Cat-6, OVR Cat-6/PoE	
Temperature range		-40 to +80 °C	
Connection type		RJ45 sockets	
Cable (supplied)		0.5 m Cat-6 shielded patch lead ⁽⁸⁾	
Earth connection		M4/DIN rail	
Case Material		FR Polymer UL-94 V-0	
Weight	- Unit	0.15 kg	
	- Packaged		
Dimensions		See diagram below	

⁽¹⁾ Maximum working voltage (DC or AC peak) measured at 1 mA leakage

⁽²⁾ Data pairs 1/2 and 3/6 are protected as standard. Pairs 4/5 and 7/8 are also protected on Cat-6 barriers

⁽³⁾ PoE protectors transmit power Mode A and Mode B power

⁽⁴⁾ Based on 30W of transmitted PSE power, to IEEE 802.3at.

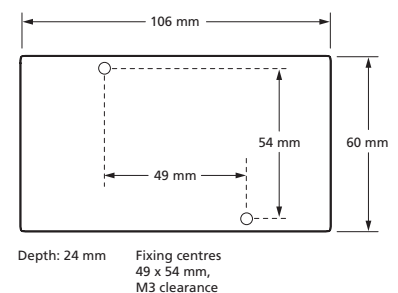
⁽⁵⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth. Response time <10 ns (on all protected pairs)

⁽⁶⁾ The interfaces used in network systems incorporate an isolation transformer that inherently provides an inbuilt immunity to transients between line and earth of 1,500 Volts or more

⁽⁷⁾ Test to IEC 61000-4-5:2014, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 6:2011, ANSI TIA/EIA/IS-968-A:2005 (formerly FCC Part 68).

⁽⁸⁾ The first number is for the data pair, with the second number for the power pair

⁽⁹⁾ The installation and connectors may limit the capability of the protector



Protection and safety

Data & signal protection

OVR RS485, RS485Q & SL RS485 Series



FULL MODE Bonding + Equipment Protection	OVR SL RS485 ULTRA SLIM 7 mm WIDTH	LPZ 0 → 3	ENHANCED Low let-through voltage	OVR RS485Q ULTRA COMPACT 18 mm WIDTH	UL LISTED
SIGNAL/ TELECOM TEST CAT D + C + B	LOW IN-LINE RESISTANCE	HIGH BANDWIDTH			

Combined Category D, C, B tested (to IEC/EN 61643) Surge Protection Device (SPD) specifically designed for RS 485 and Fieldbus applications, such as Profibus DP. For use at boundaries up to LPZ 0 protect against flashover (typically the service entrance location) through to LPZ 3. Available as standard OVR RS485 format, or compact OVR RS485Q and Slim Line OVR SL RS485 versions for installations where a high number of lines require protection.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection • Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- 45 MHz bandwidth greatly exceeds 12 Mbps maximum speeds
- Low in-line resistance minimizes reductions in signal strength
- Suitable for earthed or isolated screen systems
- Built-in DIN rail foot for simple mounting to top hat DIN rails
- Convenient earthing through DIN foot and/or earth terminal
- Connect screen connection 'S' as the 0V ground on RS485 systems
- OVR RS485 can be flat mounted on base or side
- OVR RS485 and OVR RS485Q have colour coded terminals for quick and easy installation check
- OVR SL RS485 has ultra slim 7 mm width ideal for compact protection of large numbers of lines (e.g. process control installations)
- OVR SL RS485 includes two stage removable protection module with simple quick release mechanism allowing partial removal for easy line commissioning and maintenance as well as full removal for protection replacement
- OVR SL RS485 includes optional LED status indication. Add L suffix to part number - i.e. OVR SL RS485L
- OVR RS485Q and OVR RS485Q/PT have UL497B approval under file E240341

Application

Connect in series with the signal line either near where it enters or leaves the building or close to the equipment being protected ensuring it is very close to the system's earth star point. Install SPDs either within an existing cabinet/cubicle or in a separate enclosure.

Accessories

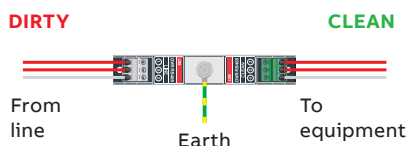
Replacement module for OVR SL RS485:
OVR SLRS485/M
 Standard module replacement
OVR SLRS485/B
 Base replacement

Combined Mounting/Earthing kits for OVR RS485:
OVR CME 4 For up to 4 x OVR RS485
OVR CME 8 For up to 8 x OVR RS485
OVR CME 16 For up to 16 x OVR RS485
OVR CME 32 For up to 32 x OVR RS485

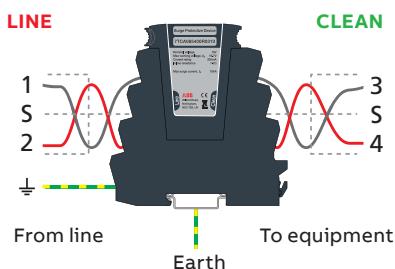
If protectors cannot be incorporated within an existing panel or enclosure, OVR WBX enclosures are available for up to 4, 8, 16 or 32 protectors and their associated OVR CME kit.

Weatherproof enclosure:
OVR WBX SLQ (OVR SL RS485 and OVR RS485Q)

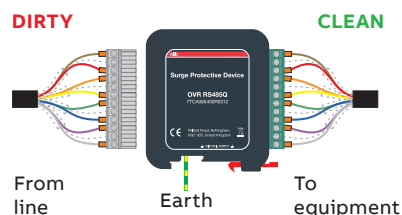
OVR RS485 installed in series



OVR SL RS485 installed in series



OVR RS485Q installed in series (in-line)



NOTE: The OVR SL 'Slim Line' Series is also available for protection of 3-wire and RTD applications (OVR SL/3W & OVR SL RTD). The OVR SL X Series has approvals for use in hazardous areas.

Protection and safety

Data & signal protection

OVR RS485, RS485Q & SL RS485 Series

OVR Q Series - Technical specification

Electrical specification	OVR RS485 Series	OVR SL RS485 Series	OVR RS485Q Series
Nominal voltage ⁽¹⁾	15 V		
Maximum working voltage U_c (RMS/DC) ⁽²⁾	11 V / 16.7 V		
Current rating (signal)	300 mA		
In-line resistance (per line $\pm 10\%$)	1 Ω		
Bandwidth (-3 dB 50 Ω system)	45 MHz		
Transient specification			
Let-through voltage (all conductors)⁽³⁾ Up			
C2 test 4 kV 1.2/50 μ s, 2 kA 8/20 μ s to BS EN/EN/IEC 61643-21	55.0 V		
C1 test 1 kV, 1.2/50 μ s, 0.5 kA 8/20 μ s to BS EN/EN/IEC 61643-21	42.0 V		
B2 test 4 kV 10/700 μ s to BS EN/EN/IEC 61643-21	27.2 V		
5 kV, 10/700 μ s ⁽⁴⁾	28.2 V		
Maximum surge current			
D1 test 10/350 μ s to BS EN/EN/IEC 61643-21:	– Per signal wire 2.5 kA – Per pair 5 kA	2.5 kA 2.5 kA	2.5 kA 5 kA
8/20 μ s to ITU-T K.45:2003, IEEE C62.41.2:2002:	– Per signal wire 10 kA – Per pair 20 kA		
Mechanical specification			
Temperature range	-40 to +80 °C		
Connection type	Screw terminal - max. torque 0.5 Nm	Screw terminal - max. torque 0.8 Nm	Pluggable 12 way screw terminal /PT version: Pluggable 12 way screwless Push Terminal
Conductor size (stranded)	2.5 mm ²	4 mm ²	2.5 mm ²
Earth connection	M6 stud	Via DIN rail or 4 mm ² earth terminal - max. torque 0.8 Nm	Via DIN rail or M5 threaded hole in base of unit
Case Material	FR Polymer UL-94 V-0		
Weight: – Unit	0.08 kg	0.08 kg	0.1 kg
Dimensions	See diagrams below		

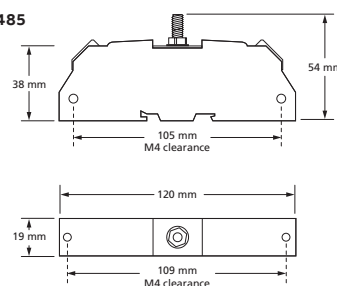
⁽¹⁾ Nominal voltage (RMS/DC or AC peak) measured at < 10 μ A

⁽²⁾ Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA

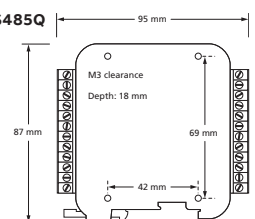
⁽³⁾ The maximum transient voltage let-through of the protector throughout the test ($\pm 10\%$), line to line & line to earth, both polarities. Response time < 10 ns

⁽⁴⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

OVR RS485



OVR RS485Q



OVR SL RS485

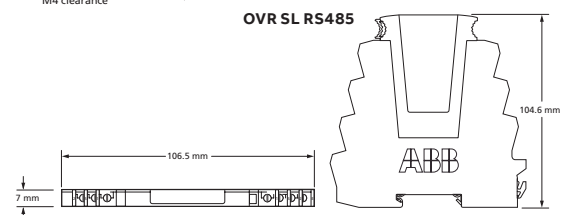
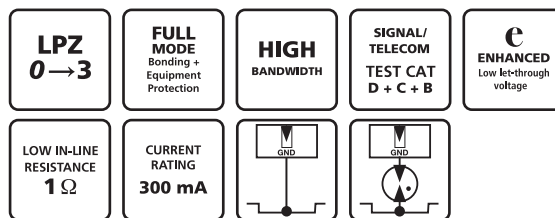


ABB order codes

Part	ABB order code	Part	ABB order code	Part	ABB order code
OVR RS485	7TCA085400R0311	OVR RS485Q(UL)	7TCA085400R0572	OVR CME8	7TCA085400R0415
OVR SLRS485/B	7TCA085400R0316	OVR RS485Q/PT(UL)	7TCA085400R0579	OVR CME32	7TCA085410R0046
OVR SLRS485	7TCA085400R0310	OVR SLRS485/M	7TCA085400R0317	OVR WBXSLQ	7TCA085400R0326
OVR SLRS485L	7TCA085400R0417	OVR SLRS485L/M	7TCA085400R0470	OVR WBXSLQ/G	7TCA085400R0327
OVR SLRS485(UL)	7TCA085400R0551	OVR SLRS485L/M(UL)	7TCA085400R0600	WBX 4	7TCA085410R0027
OVR SLRS485L(UL)	7TCA085400R0552	OVR CME4	7TCA085400R0414	WBX 8	7TCA085410R0030
OVR RS485Q	7TCA085400R0312	OVR CME16	7TCA085410R0045	WBX 16/2/G	7TCA085410R0020

Protection and safety

Specific systems protection OVR CCTV Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable for coaxial CCTV cables with BNC connectors (OVR CCTV/B) or twisted pair CCTV lines (OVR CCTV/T) on systems with either an earthed or an isolated screen. Not suitable for use on broadcast, satellite or cable TV systems. For use at boundaries up to LPZ 0 to protect against flashover (typically the service entrance location) through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Full Mode design capable of handling partial lightning currents as well as allowing continual operation of protected equipment
- Repeated protection in lightning intense environments
- 100 MHz bandwidth prevents the degradation of high frequency signals
- Low in-line resistance to minimize unnecessary reductions in signal strength and maximizes signalling distance
- Very low reflection coefficient/VSWR ensure that the protector doesn't disrupt system operations
- Suitable for either earthed or isolated screen systems
- Sturdy, conductive ABS housing for 2 way shielding - preventing emissions & providing signals with immunity from external interference
- Convenient holes for flat mounting on base or side
- Built-in DIN rail foot for easy installation on a top hat DIN rail
- OVR CCTV/T has colour coded terminals for a quick and easy installation check - grey for the dirty (line) end and green for the clean end
- Substantial earth stud to enable effective earthing
- Integral earthing plate for enhanced connection to earth via OVR CME kit

Application

Use these protectors on the video cable to outdoor CCTV cameras and central control and monitoring equipment.

Installation

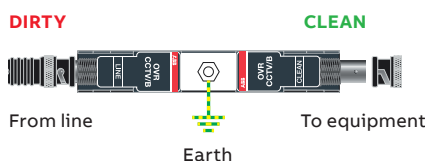
Connect in series with the CCTV cable in a convenient place close to the equipment being protected. For outdoor CCTV cameras, protectors should be mounted in the junction box, or in a separate enclosure, close to the camera. Protect central control and monitoring equipment inside the building by installing protectors on all incoming or outgoing lines, either:

- a) near where they enter or leave the building, or
- b) close to the equipment being protected (or actually within its control panel).

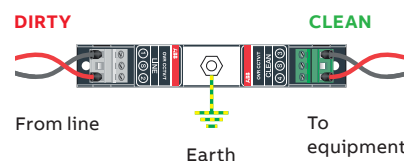
Accessories

When CCTV protectors are installed in groups, or alongside protectors for signal and mains power lines, these can be mounted and earthed simultaneously on a OVR CME kit. An OVR CME 4 will accommodate the video, telemetry and power protectors to a camera. If protectors cannot be incorporated within an existing panel or enclosure, OVR WBX enclosures are available for up to 4, 8, 16 or 32 protectors and their associated OVR CME kit. The OVR WBX 4/GS is a secure IP66 enclosure suitable for a OVR CME 4 and associated protectors.

Series connection for OVR CCTV/B



Series connection for OVR CCTV/T



NOTE: Camera telemetry or control lines should be protected with a suitable Lightning Barrier from the OVR D or E Series. Protectors for the power supply to individual cameras (e.g. OVR 240-16A) and the mains supply to the control room are available. For coaxial RF (OVR RF Series) cable protectors and CATV systems (OVR CATV/F) are also available.

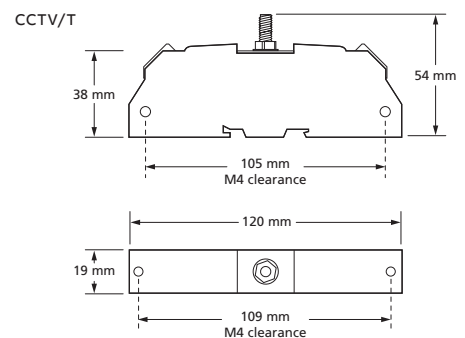
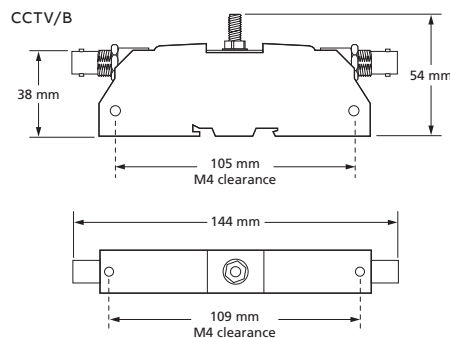
Protection and safety

Specific systems protection

OVR CCTV Series

OVR CCTV Series - Technical specification

Electrical specification	OVR CCTV/B	OVR CCTV/ B-15V	OVR CCTV/ B-30V	OVR CCTV/ B-50V	OVR CCTV/T	OVR CCTV/T-15V	OVR CCTV/ T-30V	OVR CCTV/ T-50V
ABB order code	7TCA085400R0296	7TCA085400R0297	7TCA085400R0299	7TCA085400R0300	7TCA085400R0301	7TCA085400R0302	7TCA085400R0298	7TCA085400R0303
Nominal voltage ⁽¹⁾ (peak-peak)	1 V				2 V			
Maximum working voltage U _c ⁽²⁾ (peak)	7.79 V	16.7 V	36.7 V	56.7 V	7.79 V	16.7 V	36.7 V	56.7 V
Current rating (signal)	300 mA							
In-line resistance (±10%)	1 Ω inserted in coax inner				1 Ω per line			
Bandwidth (-3 dB 75 Ω system) ⁽³⁾	> 100 MHz							
Voltage standing wave ratio	< 1.2:1							
Transient specification	OVR CCTV/B	OVR CCTV/ B-15V	OVR CCTV/ B-30V	OVR CCTV/ B-50V	OVR CCTV/T	OVR CCTV/T-15V	OVR CCTV/ T-30V	OVR CCTV/ T-50V
Let-through voltage (all conductors)(4) Up								
C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21	39.5 V	55.0 V	78.0 V	105.0 V	39.5 V	55.0 V	78.0 V	105.0 V
C1 test 1 kV 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21	26.0 V	42.0 V	66.5 V	93.5 V	26.0 V	42.0 V	66.5 V	93.5 V
B2 test 4 kV 10/700 μs to BS EN/ EN/IEC 61643-21	16.0 V	27.2 V	47.5 V	73.6 V	16.0 V	27.2 V	47.5 V	73.6 V
5 kV, 10/700 μs ⁽⁵⁾	17.0 V	28.2 V	49.5 V	76.2 V	17.0 V	28.2 V	49.5 V	76.2 V
Maximum surge current ⁽⁶⁾								
D1 test 10/350 μs to BS EN/EN/ IEC 61643-21	– Per signal wire – Per pair	2.5 kA –			2.5 kA 5 kA			
8/20 μs to ITU (formerly CCITT)	– Per signal wire – Per pair	10 kA –			10 kA 20 kA			
Mechanical specification	OVR CCTV/B variants				OVR CCTV/T variants			
Temperature range	-40 to +80 °C							
Connection type	Coaxial BNC female				Screw terminal			
Conductor size (stranded)	Not applicable				2.5 mm ²			
Earth connection	M6 stud							
Case Material	ABS UL94 V-0				ABS UL94 V-0			
Weight	– Unit	0.08 kg						
	– Packaged	0.9 kg						
Dimensions	See diagram below							



⁽¹⁾ Nominal voltage (DC or AC peak)
measured at < 10 μA leakage

⁽²⁾ Maximum working voltage (DC or
AC peak) measured at 5 mA leakage

⁽³⁾ Capacitance < 30 pF

⁽⁴⁾ The maximum transient voltage let-through of the
protector throughout the test (±10%), line to line
& line to earth. Screen to earth let-through voltage
will be up to 600 V (with 5 kV 10/700 test), when
protector is configured for use with non-earthed
or isolated screen systems. Response time < 10 ns

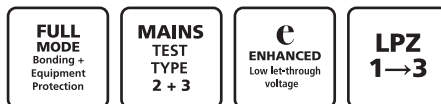
⁽⁵⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly
CCITT) K.20, K.21 and K.45, Telcordia
GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/
IS-968-A:2002 (formerly FCC Part 68)

⁽⁶⁾ The installation and connectors external to the
protector may limit the capability of the protector

Protection and safety

Mains power protection

OVR 240-16A



Combined Type 2 and 3 tested protector (to BS EN 61643) for use on low current (up to 16 A) single phase systems to protect connected electronic equipment from transient overvoltages on the mains supply, e.g. CCTV systems, fire/intruder alarm panels.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all sets of conductors (phase to neutral, phase to earth, neutral to earth - Full Mode protection) allowing continuous operation of equipment
- Repeated protection in lightning intense environments
- Compact size for easy incorporation in the protected system
- Removable DIN rail foot for simple clip-on mounting to top hat DIN rails
- Colour coded terminals give a quick and easy installation check - grey for the dirty (line) end and green for the clean end
- Robust housing and substantial earth stud fixing holes ready for flat mounting
- Maintenance free

Application

Use these protectors on low current mains power supplies, e.g. CCTV cameras, alarm panels and telemetry equipment.

Installation

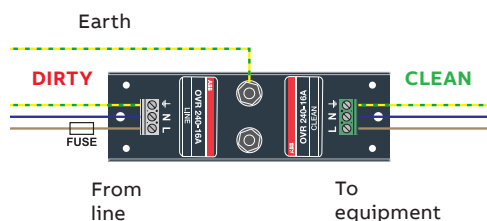
Connect in-line with the power supply usually either within the equipment panel (or for CCTV cameras, in an enclosure close by), or on the fused connection that supplies equipment. To protect equipment inside a building from transients entering on an outgoing feed (e.g. to CCTV cameras or to site lighting) the protector should be installed as close to where the cable leaves the building as possible. Protectors should be installed either within an existing cabinet/cubicle or in a separate enclosure.

Accessories

If several OVR 240-16A protectors are to be installed together, or if one is in use alongside OVR SPDs for video or signal lines, these can be simultaneously mounted and earthed on a OVR CME kit and housed in a suitable OVR WBX enclosure.

Connect in-line on supplies fused up to 16 A.

Note how the protector can also be earthed from its earth stud.



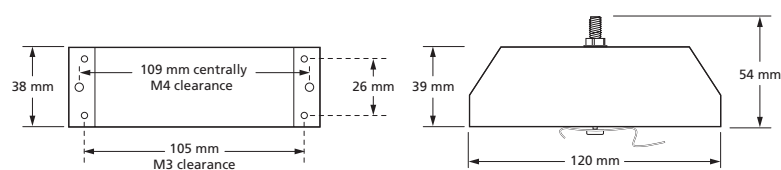
Protection and safety

Mains power protection

OVR 240-16A

OVR 240-16A - Technical specification

Electrical specification		OVR 240-16A
ABB order code		7TCA085460R0361
Nominal voltage - Phase-Neutral U _o (RMS)		240 V
Maximum voltage - Phase-Neutral U _c (RMS)		280 V
Working voltage (RMS)		200-280 V
Frequency range		47-63 Hz
Current rating (supply)		16 A or less
Max. back-up fuse (see installation instructions)		≤ 16 A
Leakage current (to earth)		< 0.5 mA
Transient specification		OVR 240-16A
Type 2 (BS EN/EN), Class II (IEC)		
Nominal discharge current 8/20 μs (per mode) I _n		5 kA
Let-through voltage U _p at I _n ⁽¹⁾		750 V
Maximum discharge current I _{max} (per mode) ⁽²⁾		10 kA
Type 3 (BS EN/EN), Class III (IEC)		
Let-through voltage at U _{oc} of 6 kV 1.2/50 μs and I _{sc} of 3 kA 8/20 μs (per mode) ^(1, 3)		600 V
Electrical specification		OVR 240-16A
Temperature range		-40 to +80 °C
Connection type		Screw terminal - maximum torque 0.5 Nm
Conductor size (stranded)		4 mm ²
Earth connection		Via M6 stud or earth terminal - maximum torque 0.5 Nm
Degree of protection (IEC 60529)		IP20
Case material		Steel
Weight	- Unit	0.23 kg
	- Packaged	0.25 kg
Dimensions		See diagrams below



⁽¹⁾ The maximum transient voltage let-through of the protector throughout the test (±10%), phase to neutral, phase to earth and neutral to earth

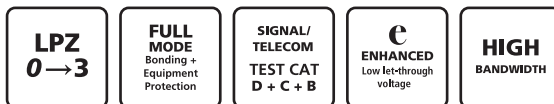
⁽²⁾ The electrical system, external to the unit, may constrain the actual current rating achieved in a particular installation

⁽³⁾ Combination wave test within IEC/BS EN 61643, IEEE C62.41-2002 Location Cats C1 & B3, SS 555:2010, AS/NZS 1768-2007, UL 1449 mains wire-in

Protection and safety

Specific systems protection

OVR TV Series



Combined Category D, C, B tested protector (to BS EN 61643) suitable to protect Cable, Terrestrial and Satellite TV systems. For use on lines running within buildings at boundaries up to LPZ 0 to through to LPZ 3 to protect sensitive electronic equipment.

Features & benefits

- Very low let-through voltage (enhanced protection to IEC/BS EN 62305) between all lines - Full Mode protection
- Low attenuation and high return loss over a wide range of frequencies ensures the protectors do not impair system performance
- Substantial earth termination
- Supplied ready for flat mounting
- Strong metal housing

Application

Use to protect analogue and digital Cable, Terrestrial and Satellite TV installations. OVR CATV/F, OVR MATV/F, OVR SMATV/F and OVR TV/F are suitable for systems using F connectors. OVR TV/EURO is suitable for systems using EURO-TV connectors.

- For protecting terrestrial antenna feeds use OVR TV/F or OVR TV/EURO
- For protecting satellite feeds use OVR SMATV/F

- For protecting distributed combined TV feeds use OVR MATV/F
- For protecting cable TV feeds use OVR CATV/F

For further information on TV applications, see separate Application Note OVR AN006 (contact us for a copy).

Installation

Connect in series with the coaxial cable either near where it enters or leaves each building or close to equipment being protected.



NOTE: Protectors for coaxial (or twisted pair) CCTV Lines are available. For coaxial RF lines, use the OVR RF Series. Transients can also be conducted into TV systems via the mains power supplies - use suitable OVR mains protection.

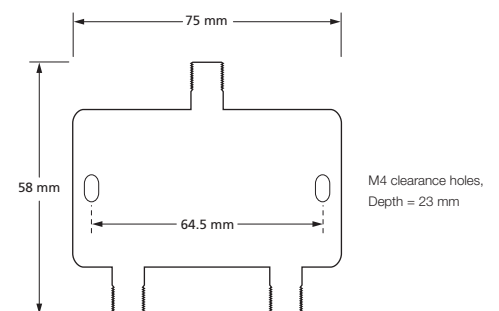
Protection and safety

Specific systems protection

OVR TV Series

OVR TV Series - Technical specification

Electrical specification		OVR CATV/F	OVR MATV/F	OVR SMATV/F	OVR TV/F	OVR TV/EURO
ABB order code		7TCA085400R0293	7TCA085400R0308	7TCA085400R0336	7TCA085400R0335	7TCA085400R0334
Maximum working voltage ⁽¹⁾		140 V	18.9 V	18.9 V	6.4 V	6.4
Maximum operating current		4 A	800 mA	800 mA	300 mA	300 mA
Characteristic impedance		75 Ω				
Bandwidth		5-860 MHz	5-3224 MHz	860-3224 MHz	5-860 MHz	5-860 MHz
Insertion loss	- 5-860 MHz	< 0.5 dB	< 0.3 dB	-	< 0.3 dB	< 0.3 dB
	- 860-2150 MHz	-	< 1.5 dB	< 1.5 dB	-	-
	- 2150-3224 MHz	-	< 2.2 dB	< 2.2 dB	-	-
Return loss (VSWR)	- 5-860 MHz	> 20 dB (< 1.2:1)	> 32 dB (< 1.05:1)	-	> 32 dB (< 1.05:1)	> 32 dB (< 1.05:1)
	- 860-2150 MHz	-	> 20 dB (< 1.2:1)	> 20 dB (< 1.2:1)	-	-
	- 2150-3224 MHz	-	< 2.2 dB	< 2.2 dB	-	-
Transient specification		OVR CATV/F	OVR MATV/F	OVR SMATV/F	OVR TV/F	OVR TV/EURO
Let-through voltage (all conductors)⁽²⁾ Up						
C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to BS EN/EN/IEC 61643-21		270 V	70 V	70 V	65 V	65 V
C1 test 1 kV 1.2/50 μs, 0.5 kA 8/20 μs to BS EN/EN/IEC 61643-21		265 V	60 V	60 V	50 V	50 V
B2 test 4 kV 10/700 μs to BS EN/EN/IEC 61643-21		245 V	45 V	45 V	30 V	30 V
5 kV, 10/700 μs ⁽³⁾		250 V	50 V	50 V	35 V	35 V
Maximum surge current						
8/20 μs to ITU-T K.45:2003, IEEE C62.41.2:2002		3 kA				
D1 test 10/350 μs to BS EN/EN/IEC 61643-21		500 A	750 A	750 A	750 A	750 A
Mechanical specification		OVR CATV/F	OVR MATV/F	OVR SMATV/F	OVR TV/F	OVR TV/EURO
Temperature range		-40 to +80 °C				
Connection type		F female				
Earth connection		~ 9.5 mm (3/8") diameter earth stud				
Case Material		Diecast				
Weight	- Unit	0.14 kg				
	- Packaged	0.15 kg				
Dimensions		See diagram below				



⁽¹⁾ Maximum working voltage (DC or AC peak) measured at < 5 μA (OVR CATV/F) and < 50 mA (OVR MATV/F, OVR SMATV/F, OVR TV/EURO, OVR TV/F)

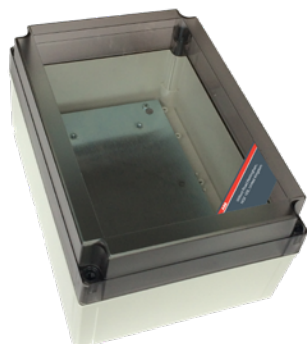
⁽²⁾ The maximum transient voltage let-through of the protector throughout the test (±10%) line to earth. Response time < 10 ns

⁽³⁾ Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

Protection and safety

Protector accessories

OVR WBX Series



OVR WBX Series

OVR WBX Series

A range of moisture and dirt resistant enclosures for the convenient installation of any OVR protector. For signalling applications they can be used with their associated OVR CME with grey base and either a see-through or grey (part number/G or/GS) lid.

Features & benefits

- Tough polycarbonate enclosures
- Weatherproof with IP resistance to dirt and water of IP56 or more
- Clear lid enables easy visual inspection of the protector's visual status indication (OVR WBX 4, OVR WBX 8)
- Grey lid for applications not needing regular protector inspection (OVR WBX 4/GS, OVR WBX 8/GS and OVR WBX 16/2/G)
- For external CCTV and other installations requiring added security the OVR WBX 4/GS and OVR WBX 8/GS are supplied with an opaque lid and special secure head screws (plus tool)
- Supplied complete with metal base (mounting) plate with pre-prepared mounting positions and fixing hardware for easy installation

Application

Use OVR WBX enclosures when your OVR protector(s) can't be installed within the existing equipment panel or enclosure and for added protection in damp and dirty environments.

Installation

The protector(s), or OVR CME kit, are mounted on the metal base plate, which in turn mounts in the enclosure.

OVR WBX Series - Technical specification

Enclosure part no.

OVR WBX 4 or the secure OVR WBX 4/GS
OVR WBX 8 or the secure OVR WBX 8/GS
OVR WBX 16/2/G
OVR WBX SLQ or OVR WBX SLQ/G

For use with following protectors

1 OVR CME 4 and associated protectors
1 OVR CME 8 and associated protectors
1 or 2 OVR CME 16 and associated protectors
Up to 6 x OVR**Q, or up to 15 x OVR SL**

		OVR WBX 4 OVR WBX 4/GS	OVR WBX 8 OVR WBX 8/GS	OVR WBX 16/2/G	OVR WBX SLQ OVR WBX SLQ/G
ABB Order Code		7TCA085410R0048 7TCA085410R0049	7TCA085410R0050 7TCA085410R0051	7TCA085410R0047	7TCA085400R0326 7TCA085400R0327
Weight	– Unit	0.9kg	1.3kg	6.4kg	0.7kg
	– Packaged	0.95kg	1.35kg	7.6kg	1.0kg
Dimensions					
Length	– Internal	246mm	225mm	460mm	230mm
	– External	255mm	235mm	474mm	250mm
Width	– Internal	171mm	225mm	380mm	105mm
	– External	180mm	235mm	396mm	125mm
Depth	– Internal	119mm	100mm	120mm	110mm
	– External	125mm	117mm	128mm	125mm
Fixing centres (mm)		240 x 165	215 x 215	380 x 310	235 x 110
IP rating		IP66	IP66	IP56	IP67
Temperature range		-15 to +75 °C	-15 to +75 °C	-25 to +60 °C	-40 to +80 °C
Flammability		UL 94 V2	UL 94 V2	UL 94 V0	UL 746C 5V

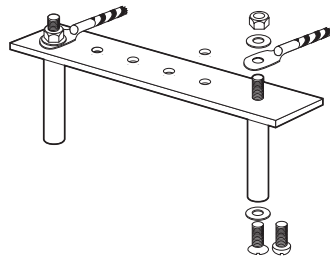
Protection and safety

Protector accessories

OVR CME Series



OVR CME Series



Assembly of OVR CME kit
Earth connection (not supplied)

OVR CME Series

Enables groups of protectors to be simultaneously mounted and earthed via their earth stud. Suitable for installing protectors with one or two earth studs on their top face. Available with 4, 8, 16 and 32 mounting holes.

Features & benefits

- Enables quick and easy installation of protectors for added convenience
- Speedy installation of groups of protectors saves time and money
- Individual protectors can be changed without needing to remove others
- Sturdy construction
- Supplied with a choice of flat and round ended fixing screws to suit your application

Application

Use OVR CME kits to simultaneously mount and earth groups of single and double earth stud protectors. Each single earth stud protector requires one OVR CME mounting position and each double earth stud protector requires two OVR CME mounting positions, this includes:

- High conductivity copper with electro-tin plating and nylon insulating pillars, for low impedance to earth

Single earth stud protectors which are:

- | | | | |
|------------|------------|------------|--------------|
| – OVR 06D | – OVR 06E | – OVR 06H | – OVR TN |
| – OVR 15D | – OVR 15E | – OVR 15H | – OVR RTD |
| – OVR 30D | – OVR 30E | – OVR 30H | – OVR CCTV/B |
| – OVR 50D | – OVR 50E | – OVR 50H | – OVR CCTV/T |
| – OVR 110D | – OVR 110E | – OVR 110H | – OVR RS485 |

Double earth stud protectors which are:

- OVR 240-16A

Once you know how many OVR CME mounting positions you require choose a OVR CME kit to suit:

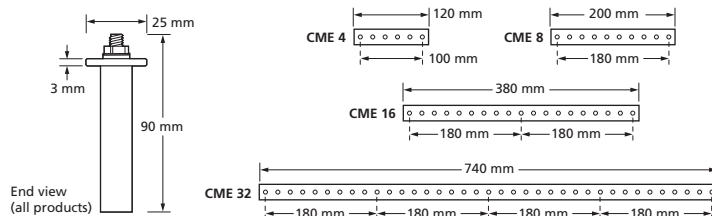
- OVR CME 4 has 4 mounting positions
- OVR CME 8 has 8 mounting positions
- OVR CME 16 has 16 mounting positions
- OVR CME 32 has 32 mounting positions

Accessories

Enclosures suitable for a OVR CME 4 and its associated protectors: (OVR WBX 4/GS), OVR CME 8 and protectors (OVR WBX 8/GS) or one or two OVR CME 16 and protectors (OVR WBX 16/2/G)

Installation

The earth bar is supported by a series of mounting pillars (which are fixed to the cubicle or box base). Protectors are attached to the OVR CME's earth bar via their earth stud(s) and earthed with shared connections to earth. We suggest one earth connection per mounting pillar.



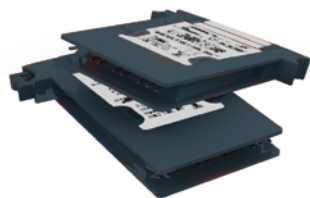
OVR CME Series - Technical specification

	OVR CME 4	OVR CME 8	OVR CME 16	OVR CME 32
ABB order code	7TCA085400R0414	7TCA085400R0415	7TCA085410R0045	7TCA085410R0046
Hole size	6.5 mm with 20 mm spacings			
Weight	0.1 kg	0.15 kg	0.3 kg	0.6 kg
Dimensions	See diagram opposite			

Protection and safety

Protector accessories

Accessories



Slim Line replacement base/module



Slim Line replacement base/module

Replacement: Base & module for the Slim Line Series of protectors

Part no. ABB Order Code	Description
Slim Line protector replacement base	
OVR SL/B 7TCA085400R0320	For use with standard and 4-20 mA Slim Line Series
OVR SL/I/B 7TCA085400R0321	Isolated screen version for use with standard and 4-20 mA Slim Line Series
OVR SL/3W/B 7TCA085400R0319	For use with Slim Line 3-wire Series
OVR SLRTD/B 7TCA085400R0318	For use with Slim Line RTD Series
OVR SL RS485/B 7TCA085400R0316	For use with Slim Line RS485 Series
Slim Line protector replacement module	
OVR SL06/M (7TCA085400R0375), OVR SL15/M (7TCA085400R0376), OVR SL30/M (7TCA085400R0377), OVR SL50/M (7TCA085400R0378), OVR SL110/M (7TCA085400R0379)	
OVR SLTN/M 7TCA085400R0324	For use with Slim Line TN Series
OVR SLRTD/M 7TCA085400R0322	For use with Slim Line RTD Series
OVR SLRS485/M 7TCA085400R0317	For use with Slim Line RS485 Series
Slim Line LED protector replacement module	
OVR SL06L/M (7TCA085400R0399), OVR SL15L/M (7TCA085400R0411), OVR SL30L/M (7TCA085400R0400), OVR SL50L/M (7TCA085400R0401), OVR SL110L/M (7TCA085400R0402)	
OVR SL30L/4-20/M 7TCA085400R0373	For use with Slim Line LED Series, 4-20 mA
OVR SLXX/3W/M	For use with Slim Line 3-wire LED Series – replace 'XX' with relevant voltage, i.e. 06, 15, 30, 50, 110
OVR SL06/3W/M (7TCA085400R0405), OVR SL15/3W/M (7TCA085400R0406), OVR SL30/3W/M (7TCA085400R0407), OVR SL50/3W/M (7TCA085400R0409), OVR SL110/3W/M (7TCA085400R0408)	
OVR SLTNL/M 7TCA085400R0468	For use with Slim Line TN LED Series

Cable assembly

Use with: OVR ISDN/RJ45-*/8 or OVR Cat-6 protector range

Part no. ABB Order Code	Description	Length
OVR CAT6/STP-2 7TCA085400R0295	Cable assembly for OVR Cat-6 with shielded RJ45 connections	2 m
Cable assembly with RJ45 connections for the OVR ISDN/RJ45-4/8 or OVR ISDN/RJ45-8/8 plug-in ISDN protectors for use if the standard 0.5 m cable is insufficient		

Notes



E 90. Uncompromising performance

A safe and smart range designed for quick, flexible and error-proof installation

Compactness

The compact dimensions enable to close the switchboard door even when the fuse holder is open, thus ensuring total safety during maintenance.

Reliability

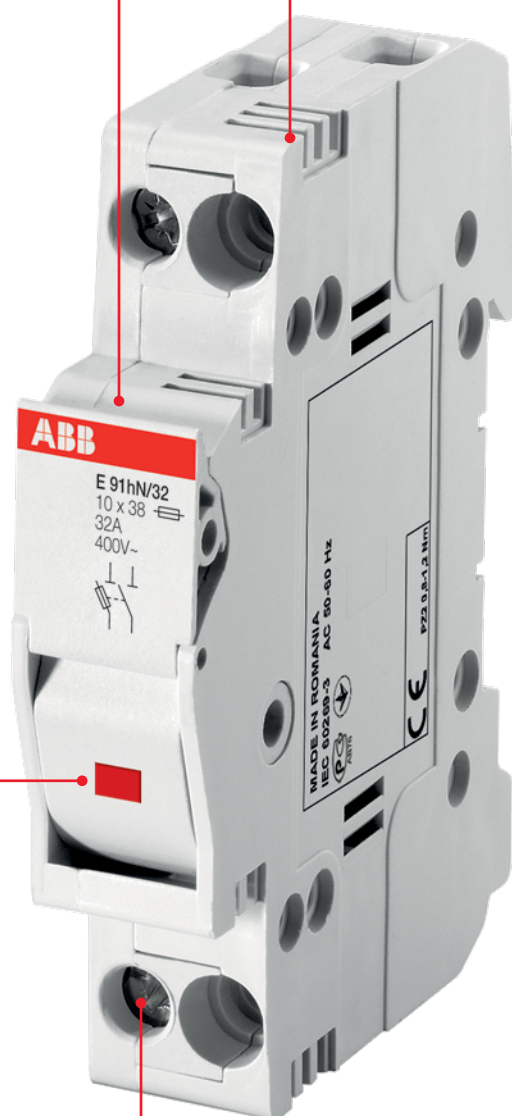
Venting grooves and cooling chambers improve heat dissipation even in multiple-pole configurations.

Completeness

The fuse tripping can be easily displayed, thanks to the special blown fuse indicator light.

Universal use

Screw holes have increased diameter to accommodate insulated screwdrivers and electric screwdrivers.



E 90. Uncompromising performance

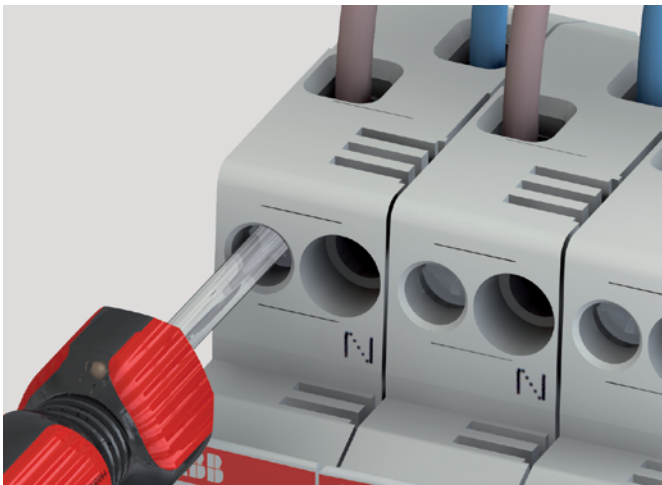
A safe and smart range designed for quick, flexible and error-proof installation



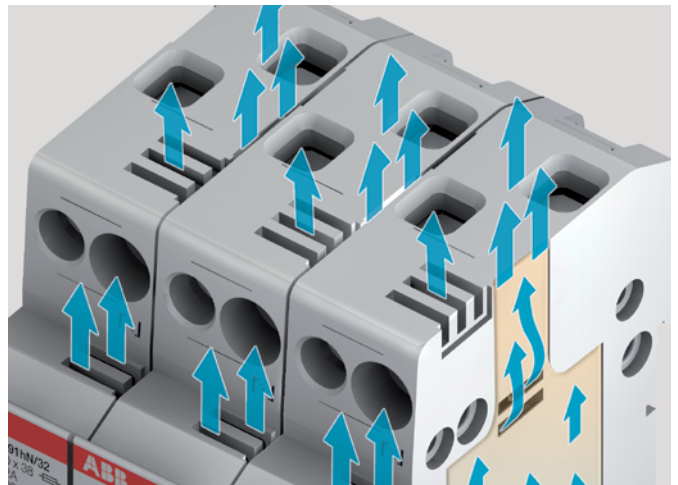
Fuseholder profile has been designed for maximum ease of use: the 90° flip hinge with ergonomic knob, makes the replacement of fuses easier even in small spaces or when wearing protective gloves.



The compact dimensions enable to close the switchboard door even when the fuseholder is open, thus ensuring total safety during maintenance.



With the Prozidriv PZ2 screws tightening can be performed by exerting less torque than conventional screws, and the same electric screwdriver can be used for all terminals. Moreover, the PS connection busbars facilitate the connecting operations, making the wiring both simple and safe and providing complete integration with S 200 and SN 201 System pro M compact® circuit-breakers.



Venting grooves and cooling chambers improve heat dissipation even in multiple-pole configurations. The reduced operating temperature inside fuseholders ensures durability and reliability of the devices over time.

Protection and safety

E 90 fuse switch disconnectors



E 90

Technical features

Type		E 90/20	E 90/32
Reference Standard		IEC 60947-3	IEC 60947-3 ; UL 4248-1
Type of current (acc. to IEC)		AC	AC
Type of current (acc. to UL)		-	AC/DC
Rated current	A	20	32
Fuse	[mm]	8.5 x 31.5	10.3 x 38
Max power dissipation accepted	[W]	2.5	
Rated frequency	[Hz]	50-60	
Tightening torque	[Nm]	PZ2 2-2.5*	
Wire strip length	[mm]	12	
Protection degree		IP20	
Rated insulation voltage	[kV]	1	
Short circuit current rating (SCCR)	[kA]	20	
Terminals cross-section	[mm²]	25	
Cross-section rigid copper conductors	1 wire	1.5-25 mm² (16-3 AWG)	
	2 wires	-	5 mm² (10 AWG)
Cross-section stranded copper conductors	1 wire	1.5-25 mm² (16-3 AWG)	
	2 wires	-	2-5 mm² (14-10 AWG)
Operating temperature	[°C]	-5/+40 ⁽¹⁾	
Storage temperature	[°C]	-25/+70 ⁽²⁾	
Altitude	[m]	2000	
Degree of relative humidity at temperature °C		max. 90% with temp. +20 °C 50% with max. temp. +40 °C	
Voltage range for LED indicator light		24-1000 AC/DC (only s version)	
Padlockable (when open)			
Sealable (when closed)		■	■
IEC 60947-3			
Utilization category		AC-22B	AC-22B
Markings	[V]	400	400

⁽¹⁾ for lower temperature verify fuse technical characteristics, for higher temperature refer to derating table in Chapter 5 of Electrical installation solutions for buildings - Technical details

⁽²⁾ for more than 24h max temperature is +55 °C

** PZ2 2.8 Nm in case of rigid copper conductors, 2 wires

Shock and vibration

Vibration withstand on the 3 main axis:

- Sinusoidal vibration testing according to IEC 60068-2-6: 2 to 13 Hz x = 1mm peak;
13 to 100 Hz y = 0.7g peak
- Random vibration testing according to IEC 61373: Category 1 Class B

Shock withstand

- Shock testing according to IEC 60068-2-27 : 15g/11 ms/18 shocks
- Shock testing according to IEC 61373: Category 1 Class B

Materials

Plastic parts	Case:	Material PA 6 +30% glass fibre
		Self extinguishing class: V2 (UL94)
		Temperature resistance: 130 °C
	Opening handle	Material PA 66 +25% glass fibre
		Self-extinguishing class V0 (UL94)
		Temperature resistance: 140 °C
Metal parts	Clips	Silver plated copper
	Clip spring	Stainless steel
	Terminals	Galvanized steel

The E 90 series is environmental friendly and protects the health of people: all used materials are conform to the RoHS and REACH directives and they completely exclude hazardous substances and halogen.

Protection and safety

E 90 fuse switch disconnectors



E 92



E 94

E 90 fuse switch disconnectors

E 90 series fuse switch disconnectors are designed for switching circuits under load, providing protection against short circuits and overloads. The case is made of self-extinguishing thermoplastic material resistant to high temperatures (all materials are UL listed) while the contact clips are in silver plated copper.

E 90 fuse switch disconnectors can be sealed or padlocked to ensure operator safety during maintenance. Versions with blown fuse indicator allow to check whether the fuse is still working correctly or not. For easy and quick installation E 90 range is totally compatible with connecting bars, terminals and caps of S 200 MCBs.

Thanks to cURus approval, they can be installed in UL certified machines.

E 90 fuse switch disconnectors for 10.3 x 38 mm fuses (AC-22B)

Poles	Rated current	Modules	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
				Type code	Order code			
	In		EAN					
1	32	1	009238	E 91/32	2CSM200923R1801		0.061	6
1	32	1	024835	E 91/32s	2CSM202483R1801		0.062	6
1+N	32	2	008934	E 91N/32	2CSM200893R1801		0.130	3
1+N	32	2	515036	E 91N/32s	2CSM251503R1801		0.132	3
2	32	2	008835	E 92/32	2CSM200883R1801		0.122	3
2	32	2	514930	E 92/32s	2CSM251493R1801		0.132	3
3	32	3	047537	E 93/32	2CSM204753R1801		0.183	2
3	32	3	020639	E 93/32s	2CSM202063R1801		0.184	2
3+N	32	4	047339	E 93N/32	2CSM204733R1801		0.252	1
3+N	32	4	514831	E 93N/32s	2CSM251483R1801		0.255	1
4	32	4	047230	E 94/32	2CSM204723R1801		0.244	1
4	32	4	020530	E 94/32s	2CSM202053R1801		0.248	1

s: version with blown fuse indicator light

E 90 fuse switch disconnectors for 8.5 x 31.5 mm fuses (AC-22B)

Poles	Rated current	Modules	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
				Type code	Order code			
	In		EAN					
1	20	1	009832	E 91/20	2CSM200983R1801		0.061	6
1	20	1	024231	E 91/20s	2CSM202423R1801		0.062	6
2	20	2	009535	E 92/20	2CSM200953R1801		0.122	3
2	20	2	896234	E 92/20s	2CSM289623R1801		0.062	3
3	20	3	009436	E 93/20	2CSM200943R1801		0.183	2
3	20	3	896135	E 93/20s	2CSM289613R1801		0.184	2

s: version with blown fuse indicator light

Protection and safety

E 90h fuseholders



E 91hN



E 93hN

Technical features

Type		E 90hN/20	E 90hN/32
Reference Standard		IEC 60947-3	IEC 60947-3
Rated current	[A]	20	32
Type of current		AC	
Fuse	[mm]	8.5 x 31.5	10.3 x 38
Max power dissipation accepted	[W]	3	
Rated frequency	[Hz]	50-60	
Tightening torque	[Nm]	PZ2 0.8-1.2	
Wire strip length	[mm]	12	
Protection degree		IP20	
Rated insulation voltage	[kV]	1	
Short circuit current rating (SCCR)	[kA]	20	
Terminals cross-section	[mm ²]	16	
Cross-section rigid copper conductors	[mm ²]	1.5-16	
Cross-section stranded copper conductors	[mm ²]	1.5-10	
Operating temperature	[°C]	-5/+40 ⁽¹⁾	
Storage temperature	[°C]	-25/+70 ⁽²⁾	
Altitude	[m]	2000	
Degree of relative humidity at temperature °C		max. 90% with temp. +20 °C 50% with max. temp. +40 °C	
Voltage range for LED indicator light		24-1000 AC/DC (only s version)	
Padlockable (when open)			
Sealable (when closed)		■	
IEC 60269-3			
Rated voltage	[V]	400	

⁽¹⁾ for lower temperature verify fuse technical characteristics, for higher temperature refer to derating table in Chapter 5 of Electrical installation solutions for buildings - Technical details

⁽²⁾ for more than 24h max temperature is +55 °C

Shock and vibration

Vibration withstand on the 3 main axis:

- Sinusoidal vibration testing according to IEC 60068-2-6: 2 to 13 Hz x = 1 mm peak;
13 to 100 Hz y = 0.7 g peak
- Random vibration testing according to IEC 61373: Category 1 Class B

Shock withstand

- Shock testing according to IEC 60068-2-27 : 15 g/11 ms/18 shocks
- Shock testing according to IEC 61373: Category 1 Class B

Materials

Plastic parts	Case:	Material PA 6 +30 % glass fibre Self extinguishing class: V2 (UL94) Temperature resistance: 130 °C
	Opening handle	Material PA 66 +25 % glass fibre Self-extinguishing class V0 (UL94) Temperature resistance: 140 °C

Protection and safety

E 90h fuseholders



Fuse indicator LED

E 90h fuseholders

E 90h fuseholders are suitable for protection against overloads and short circuits. Available in a single module 1P+N version and in a three-module 3P+N version, they are designed for use with gG and aM cylindrical fuse links. The body is made from self-extinguishing material resistant to high temperatures, while the contact clips are in silver-plated copper. E 90h fuseholders can be sealed or padlocked to assure operator safety during maintenance. Versions with blown fuse indicator allow to check whether the fuse is still working correctly or not.

E 90h fuseholders for 10.3 x 38 mm fuses

Poles	Rated current	Modules	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In			EAN	Type code	Order code		kg	pc.
1+N	32	1	009139	E 91hN/32	2CSM200913R1801		0.070	6
1+N	32	1	065739	E 91hN/32s	2CSM206573R1801		0.071	6
3+N	32	3	047438	E 93hN/32	2CSM204743R1801		0.192	2
3+N	32	3	743439	E 93hN/32s	2CSM274343R1801		0.200	2

s: version with blown fuse indicator light

E 90h fuseholders for 8.5 x 31.5 mm fuses

Poles	Rated current	Modules	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In			EAN	Type code	Order code		kg	pc.
1+N	20	1	009634	E 91hN/20	2CSM200963R1801		0.070	6
1+N	20	1	007036	E 91hN/20s	2CSM200703R1801		0.071	6
3+N	20	3	009337	E 93hN/20	2CSM200933R1801		0.192	2
3+N	20	3	896036	E 93hN/20s	2CSM289603R1801		0.200	2

s: version with blown fuse indicator light

Protection and safety

E 90 PV fuse disconnectors



E 90 PV

Technical features

Type		E 90/32 PV	E 90/32 PV according to UL
Rated current	[A]	32	30
Type of current		DC	
Fuse	[mm]	10 x 38	
Max power dissipation accepted	[W]	3	
Rated frequency	[Hz]	-	
Tightening torque		PZ2 2-2.5 Nm	PZ2 18-22 lb-in
Protection degree		IP20	
Rated insulation voltage	[kV]	1	
Terminals cross-section	[mm ²]	25	
Cross-section rigid copper conductors		1.5 - 25 mm ²	n..a.
Cross-section stranded copper conductors		1.5 - 16 mm ²	8÷3 AWG
Operating temperature	[°C]	-5/+40 ⁽¹⁾	
Storage temperature	[°C]	-25/+70 ⁽²⁾	
Altitude	[m]	2000	
Degree of relative humidity at temperature °C		max. 90% with temp. +20 °C 50% with max. temp. +40 °C	
Voltage range for LED indicator light		24-1000 AC/DC (only s version)	
Can be padlocked (open)		■	
Can be sealed (closed)		■	
IEC 60947-3			
Utilization category		DC-20B	
Rated voltage	[V]	1000	

⁽¹⁾ for lower temperature verify fuse technical characteristics, for higher temperature refer to derating table in Chapter 5 of Electrical installation solutions for buildings - Technical details

⁽²⁾ for more than 24h max temperature is +55 °C

E 90 PV fuse disconnectors

E 90 PV series fuse disconnectors, designed for operating voltages of 1000 V DC with utilization category DC-20B, are particularly suited for protection against overcurrents of photovoltaic systems. The single-pole or two-pole E 90 PV disconnectors for 10.3 x 38 mm cylindrical fuse links offer a reliable, compact and affordable solution for photovoltaic installations. Versions with blown fuse indicator allow to check whether the fuse is still working correctly or not.

E 90 PV fuse disconnectors for 10.3 x 38 mm fuses (DC-20B)

Poles	Rated current	Modules	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
	In		EAN	Type code	Order code		kg	pc.
1	32	1	047131	E 91/32 PV	2CSM204713R1801		0.061	6
1	32	1	046936	E 91/32s PV	2CSM204693R1801		0.062	6
2	32	2	047032	E 92/32 PV	2CSM204703R1801		0.122	3
2	32	2	569138	E 92/32s PV	2CSM256913R1801		0.233	3

s: version with blown fuse indicator light

Protection and safety

E 90 PV 1500 fuse holder



E 90 PV 1500

Technical features

Type	E90/32 PV1500	
Reference standards	-	IEC 60269-1,-2,-6 UL 4248-19
Rated current	[A]	32 (acc. IEC) / 30 (acc. UL)
Rated operational voltage	[V]	1500 V DC
Fuse size	[mm]	10×85 and 10/14×85
Max. power dissipation accepted	[W]	6
Tightening torque	[Nm]	PZ2 2-2.5 Nm (PZ2 18-22 lb-in)
Protection degree	-	IP20
Rated insulation voltage	[kV]	1
Cross section rigid copper conductors (1 wire)	[mm ²]	16-10 AWG
Cross section stranded copper conductors (1 wire)	[mm ²]	0.75 – 25 (18-4 AWG)
Cable temperature	[°C]	max 90 (acc. UL)
Operating temperature	[°C]	> -5
Storage temperature	[°C]	> -25
Degree of relative humidity at temperature °C		max. 90% with temp. +20 °C 50% with max. temp. +40 °C
Approvals	-	UL , CCC

E 90 PV fuse holder

The E 90 PV 1500 series of fuse holders has been designed for applications up to 1500 V DC. Thanks to their rated voltage up to 1500 V DC they are the ideal solution for protecting cells and inverters. In case of maintenance, they ensure isolation of circuits and strings up to 1500 V in direct current, in total safety. The main features of E 90 PV 1500 fuse holders include venting grooves and cooling chambers which improved heat dissipation.

E 90 PV fuse holder for 10 × 85 mm and 10/14 × 85 mm fuses

Poles	Rated current	Width	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
				Type code	Order code			
1	32	22.5	020417	E91/32 PV1500e	2CSM202041R1801		0.080	5
1	32	22.5	743613	E91/32 PV1500e	2CSM274361U1801		0.080	60

Protection and safety

E 90 50/125 fuse disconnectors



E 90 50/125

Technical features

Type	E 90/50	E 90/125
Reference Standard	IEC 60947-3;UL 4248-1	IEC 60947-3;UL 4248-1
Type of current (acc. to IEC)	AC	AC
Type of current (acc. to UL)	AC/DC	AC/DC
Rated current	[A] 50	100*
Fuse	[mm] 14 x 51	22 x 58
Max power dissipation accepted	[W] 5	9.5
Rated frequency	[Hz] 50-60	
Tightening torque	[Nm] PZ2 3-3.5	PZ2 3.5-4
Wire strip length	[mm] 12	
Protection degree	IP20**	
Rated insulation voltage	[V] 800	
Short circuit current rating (SCCR)	[kA] 120	
Terminals cross-section	[mm ²] 35	50
Cross-section rigid copper conductors	[mm ²] 2.5 - 35	4 - 50
Cross-section stranded copper conductors	[mm ²] 2.5 - 25	4 - 35
Operating temperature	[°C] -5/+40 ⁽¹⁾	
Storage temperature	[°C] -25/+70 ⁽²⁾	
Degree of relative humidity at temperature °C	max. 90% with temp. +20 °C 50% with max. temp. +40 °C	
Can be sealed closed	■	■
Can be padlocked open		■
IEC 60947-3		
Utilization category	AC-20B	
Rated voltage	[V] 690	

* For a rated current of 125A only fuse link type aM can be used in combination with a device which guarantees protection against overload.

** The protection degree IP20 is obtained also as standalone unit with respect to wire size $\geq 10 \text{ mm}^2$

⁽¹⁾ for lower temperature verify fuse technical characteristics, for higher temperature refer to derating table in Chapter 5 of Electrical installation solutions for buildings - Technical details

⁽²⁾ for more than 24h max temperature is +55 °C

Shock and vibration

Vibration withstand on the 3 main axis:

- Sinusoidal vibration testing according to IEC 60068-2-6: 2 to 13 Hz $x = 1 \text{ mm}$ peak;
13 to 100 Hz $y = 0.7 \text{ g}$ peak
- Random vibration testing according to IEC 61373: Category 1 Class B

Shock withstand

- Shock testing according to IEC 60068-2-27 : 15 g/11 ms/18 shocks
- Shock testing according to IEC 61373: Category 1 Class B

Materials

Plastic parts	Case:	Material PA 66 +25 % glass fibre Self-extinguishing class V0 (UL94) Temperature resistance: 140 °C
	Opening handle	Material PA 66 +25 % glass fibre Self-extinguishing class V0 (UL94) Temperature resistance: 140 °C

Protection and safety

E 90 50/125 fuse disconnectors

E90 50/125 fuse disconnectors

The E 90 50/125 fuse disconnector range is specifically intended for industrial circuit protection when currents are from 50 A to 125 A. They can, respectively, carry any type of cylindrical fuses 14x51 and 22x58 mm. The E 90 50/125 fuseholders can be sealed or padlocked in open position to ensure operator safety during maintenance operations. Versions with blown fuse indicator (LED) allow checking whether the fuse is still working correctly or not.

E 90/50 fuse disconnectors for 14 x 51mm fuses (AC-20B)

Poles	Rated current In	Modules	Bbn 8012542 EAN	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
				Type code	Order code			
1	50	1.5	790228	E 91/50	2CSM279022R1801		0.095	4
1	50	1.5	372028	E 91/50s	2CSM237202R1801		0.095	4
1+N	50	3	779827	E 91N/50	2CSM277982R1801		0.19	2
1+N	50	3	023920	E 91N/50s	2CSM202392R1801		0.19	2
2	50	3	779728	E 92/50	2CSM277972R1801		0.19	2
2	50	3	070320	E 92/50s	2CSM207032R1801		0.19	2
3	50	4.5	779629	E 93/50	2CSM277962R1801		0.285	1
3	50	4.5	574828	E 93/50s	2CSM257482R1801		0.285	1
3+N	50	6	779520	E 93N/50	2CSM277952R1801		0.38	1
3+N	50	6	563020	E 93N/50s	2CSM256302R1801		0.38	1

E 90/125 fuse disconnectors for 22 x 58 mm fuses (AC-20B)

Poles	Rated current In	Modules	Bbn 8012542 EAN	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
				Type code	Order code			
1	100	2	775720	E 91/125	2CSM277572R1801		0.135	4
1	100	2	896326	E 91/125s	2CSM289632R1801		0.135	4
1+N	100	4	773528	E 91N/125	2CSM277352R1801		0.27	2
1+N	100	4	049425	E 91N/125s	2CSM204942R1801		0.27	2
2	100	4	771326	E 92/125	2CSM277132R1801		0.27	2
2	100	4	049326	E 92/125s	2CSM204932R1801		0.27	2
3	100	6	775027	E 93/125	2CSM277502R1801		0.405	1
3	100	6	049227	E 93/125s	2CSM204922R1801		0.405	1
3+N	100	8	965329	E 93N/125	2CSM296532R1801		0.54	1
3+N	100	8	049128	E 93N/125s	2CSM204912R1801		0.54	1

s: version with blown fuse indicator light

Protection and safety

E 90 CC fuseholders



E91/30 CC



E93/30 CC

Technical features

Type		E 90/30 CC
Rated voltage	[V]	600
Rated current	[A]	30
Type of current		AC/DC
Rated frequency	[Hz]	60
Fuse		class CC
Rated insulation voltage	[kV]	1 + 2*U _n
Tightening torque	[Nm]	PZ2 2-2.5*
	[lb-in]	PZ2 18-22**
Terminals cross-section	[mm ²]	25
Cross-section rigid copper conductors	1 wire	1.5-25 mm ² (16-10 AWG)
	2 wires	5 mm ² (10 AWG)
Cross-section stranded copper conductors	1 wire	1.5-16 mm ² (16-3 AWG)
	2 wires	2-5 mm ² (14-10 AWG)
Operating temperature	[°C]	-5/+40 ⁽¹⁾
Storage temperature	[°C]	-25/+70 ⁽²⁾
Voltage range for LED indicator light (only s version)	[V]	24 - 1000 AC/DC
Degree of relative humidity at temperature °C		< 60%
Can be sealed closed		■
Can be padlocked open		■

* PZ2 2.8 Nm in case of rigid copper conductors, 2 wires

** PZ2 24,5 lb-in in case of rigid copper conductors, 2 wires

⁽¹⁾ for lower temperature verify fuse technical characteristics, for higher temperature refer to derating table in Chapter 5 of Electrical installation solutions for buildings - Technical details

⁽²⁾ for more than 24h max temperature is +55 °C

The E 90 fuse carriers for Class CC cylindrical fuse links are specifically designed for the North American market in compliance with the UL standards. In accordance with the reference standards UL 4248-1 and UL 4248-4, they come in voltage and current ratings up to 600V and 30A. They are available in 1P, 1P+N, 2P, 3P, 3P+N and 4P versions. They can be padlocked open and sealed closed. The E 90 fuse carriers are the ideal solution for process control and industrial systems, automation systems, industrial installations and control circuits. The versions with blown fuse indicator light provide a visual signal of the fuse break condition.

E 90 for class CC cartridge fuses

Poles	Rated current	Modules	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
				Type code	Order code			
In			EAN				kg	pc.
1	30	1	998723	E 91/30 CC	2CSM299872R1801		0.061	6
1	30	1	998822	E 91/30s CC	2CSM299882R1801		0.062	6
1+N	30	2	998921	E 91N/30 CC	2CSM299892R1801		0.13	3
1+N	30	2	999027	E 91N/30s CC	2CSM299902R1801		0.13	3
2	30	2	999126	E 92/30 CC	2CSM299912R1801		0.122	3
2	30	2	999225	E 92/30s CC	2CSM299922R1801		0.122	3
3	30	3	999324	E 93/30 CC	2CSM299932R1801		0.183	2
3	30	3	999423	E 93/30s CC	2CSM299942R1801		0.183	2
3+N	30	4	999522	E 93N/30 CC	2CSM299952R1801		0.252	1
3+N	30	4	999621	E 93N/30s CC	2CSM299962R1801		0.252	1
4	30	4	999720	E 94/30 CC	2CSM299972R1801		0.244	1
4	30	4	999829	E 94/30s CC	2CSM299982R1801		0.244	1

s: version with blown fuse indicator light

Protection and safety

E 90 J fuse fuseholders



E 90 Class J

Technical features

Type		E 90/30 J	E 90/60 J
Rated current	[A]	30	60
Rated voltage	[V]	600	
Type of current		AC/DC	
Fuse		Class J 1-30A	Class J 31-60A
Rated frequency	[Hz]	60	
Rated insulation voltage	[kV]	1 + 2*U _n	
Tightening torque	[Nm]	PZ2 3.5-4	
Terminals cross-section	[mm ²]	50	
Cross-section rigid copper conductors	[AWG]	14-10	
Cross-section stranded copper conductors	[AWG]	14-8	
Operating temperature	[°C]	-5/+40 ⁽¹⁾	
Storage temperature	[°C]	-25/+70 ⁽²⁾	
Degree of relative humidity at temperature °C		< 60%	
Can be sealed closed		■	
Can be padlocked open		■	

⁽¹⁾ for lower temperature verify fuse technical characteristics, for higher temperature refer to derating table in Chapter 5 of Electrical installation solutions for buildings - Technical details

⁽²⁾ for more than 24h max temperature is +55 °C

E 90 Class J

The E 90 Class J fuse carriers are the ideal solution for industrial systems, industrial installations and control circuits. They are specifically designed for the North American market in compliance with the UL standards. In accordance with the reference standard UL 4248-8, they come in voltage and current ratings up to 600V and 30/60A. They are available in 1P, 2P and 3P versions. The versions with blown fuse indicator light provide a visual signal of the fuse break condition. They can be padlocked open and sealed closed to ensure operator safety during maintenance operations.

E 90/30 fuse disconnectors for Class J fuses

Poles	Rated current	Modules	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
	In		EAN	Type code	Order code		kg	pc.
1	30	2	048220	E 91/30 J	2CSM204822R1801		0.135	4
2	30	4	048121	E 92/30 J	2CSM204812R1801		0.27	2
3	30	6	048022	E 93/30 J	2CSM204802R1801		0.405	1
1	30	2	047926	E 91/30s J	2CSM204792R1801		0.135	4
2	30	4	047827	E 92/30s J	2CSM204782R1801		0.27	2
3	30	6	047728	E 93/30s J	2CSM204772R1801		0.405	1

E 90/60 fuse disconnectors for Class J fuses

Poles	Rated current	Modules	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
	In		EAN	Type code	Order code		kg	pc.
1	60	2.5	047629	E 91/60 J	2CSM204762R1801		0.175	3
2	60	5	049821	E 92/60 J	2CSM204982R1801		0.35	1
3	60	7.5	049722	E 93/60 J	2CSM204972R1801		0.525	1
1	60	2.5	049623	E 91/60s J	2CSM204962R1801		0.175	3
2	60	5	049524	E 92/60s J	2CSM204952R1801		0.35	1
3	60	7.5	738824	E 93/60s J	2CSM273882R1801		0.525	1

s: version with blown fuse indicator light



Protection and safety

Cylindrical fuses E 9F gG



E 9F8

Technical features

Rated voltage	[V]	400, 500, 690 AC
Rated current	[A]	0.5...125
Breaking capacity	[kA]	20, 80, 120
Overall dimensions	[mm]	8.5x31.5 , 10.3x38 , 14x51 , 22x58
Weight	[g]	4, 7, 18, 48
Reference standards		IEC 60269-2; ROHS 2002/98/CE
Marks		LLOYD, BV

E 9F 8 gG cylindrical fuses 8.5 x 31.5 mm

Type	Rated current [A]	Rated voltage [V AC]	Breaking capacity [kA]	Power dissipation at I _n [W]
E 9F8 GG1	1	400	20	0.35
E 9F8 GG2	2	400	20	0.45
E 9F8 GG4	4	400	20	0.6
E 9F8 GG6	6	400	20	0.83
E 9F8 GG8	8	400	20	1
E 9F8 GG10	10	400	20	1.2
E 9F8 GG12	12	400	20	1.3
E 9F8 GG16	16	400	20	1.7
E 9F8 GG20	20	400	20	2



E 9F10

E 9F 10 gG cylindrical fuses 10.3 x 38 mm

Type	Rated current [A]	Rated voltage [V AC]	Breaking capacity [kA]	Power dissipation at I _n [W]
E 9F10 GG05	0.5	500	120	0.07
E 9F10 GG1	1	500	120	0.45
E 9F10 GG2	2	500	120	0.5
E 9F10 GG4	4	500	120	0.85
E 9F10 GG6	6	500	120	0.95
E 9F10 GG8	8	500	120	1.15
E 9F10 GG10	10	500	120	1.3
E 9F10 GG12	12	500	120	1.4
E 9F10 GG16	16	500	120	1.9
E 9F10 GG20	20	500	120	2.4
E 9F10 GG25	25	500	120	2.7
E 9F10 GG32	32	400	120	2.8

Protection and safety

Cylindrical fuses E 9F gG



E 9F14

E 9F 14 gG cylindrical fuses 14 x 51 mm

Type	Rated current [A]	Rated voltage [V AC]	Breaking capacity [kA]	Power dissipation at I _n [W]
E 9F14 GG2	2	690	120	0.75
E 9F14 GG4	4	690	120	1.1
E 9F14 GG6	6	690	120	1.25
E 9F14 GG8	8	690	120	1.45
E 9F14 GG10	10	690	120	1.65
E 9F14 GG12	12	690	120	1.8
E 9F14 GG16	16	690	120	2.35
E 9F14 GG20	20	690	120	2.75
E 9F14 GG25	25	690	120	3.1
E 9F14 GG32	32	500	120	3.6
E 9F14 GG40	40	500	120	4
E 9F14 GG50	50	500	120	4.8



E 9F22

E 9F 22 gG cylindrical fuses 22 x 58 mm

Type	Rated current [A]	Rated voltage [V AC]	Breaking capacity [kA]	Power dissipation at I _n [W]
E 9F22 GG4	4	690	120	1.25
E 9F22 GG6	6	690	120	1.4
E 9F22 GG8	8	690	120	1.6
E 9F22 GG10	10	690	120	1.9
E 9F22 GG12	12	690	120	2
E 9F22 GG16	16	690	120	2.5
E 9F22 GG20	20	690	120	3.4
E 9F22 GG25	25	690	120	3.5
E 9F22 GG32	32	690	120	3.7
E 9F22 GG40	40	690	120	4.3
E 9F22 GG50	50	690	120	5.3
E 9F22 GG63	63	690	120	6.3
E 9F22 GG80	80	690	120	7.4
E 9F22 GG100	100	500	120	8.3

Protection and safety

Cylindrical fuses E 9F gG

E 9F gG cylindrical fuses

The E 9F gG cylindrical fuses, coupled with E 90 and E 90 50/125 fuse disconnectors, are the ideal solution for protection against overload and short-circuit. They feature a fast tripping curve that is ideal for protecting electronic devices, transformers and electric cables. The E 9F gG series is available for all the main sizes (8.5 x 31.5 mm, 10.3 x 38 mm, 14 x 51 mm e 22 x 58 mm) and with a wide range of rated current values (from 1 A to 125 A and up to 690 V AC). All the E 9F series fuses conform to the RoHS directive and are type-approved in accordance with the most important international naval marks.



E 9F8

E 9F 8 gG cylindrical fuses 8.5 x 31.5 mm

Rated current	Size	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In	mm	EAN	Type code	Order code		kg	pc.
1	8.5x31.5	575733	E 9F8 GG1	2CSM257573R1801		0.004	10
2	8.5x31.5	563938	E 9F8 GG2	2CSM256393R1801		0.004	10
4	8.5x31.5	586630	E 9F8 GG4	2CSM258663R1801		0.004	10
6	8.5x31.5	574835	E 9F8 GG6	2CSM257483R1801		0.004	10
8	8.5x31.5	563037	E 9F8 GG8	2CSM256303R1801		0.004	10
10	8.5x31.5	775737	E 9F8 GG10	2CSM277573R1801		0.004	10
12	8.5x31.5	773535	E 9F8 GG12	2CSM277353R1801		0.004	10
16	8.5x31.5	771333	E 9F8 GG16	2CSM277133R1801		0.004	10
20	8.5x31.5	775034	E 9F8 GG20	2CSM277503R1801		0.004	10



E 9F10

E 9F 10 gG cylindrical fuses 10.3 x 38 mm

Rated current	Size	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In	mm	EAN	Type code	Order code		kg	pc.
0.5	10.3x38	773337	E 9F10 GG05	2CSM277333R1801		0.007	10
1	10.3x38	771135	E 9F10 GG1	2CSM277113R1801		0.007	10
2	10.3x38	587231	E 9F10 GG2	2CSM258723R1801		0.007	10
4	10.3x38	575436	E 9F10 GG4	2CSM257543R1801		0.007	10
6	10.3x38	563631	E 9F10 GG6	2CSM256363R1801		0.007	10
8	10.3x38	586333	E 9F10 GG8	2CSM258633R1801		0.007	10
10	10.3x38	574538	E 9F10 GG10	2CSM257453R1801		0.007	10
12	10.3x38	562733	E 9F10 GG12	2CSM256273R1801		0.007	10
16	10.3x38	775430	E 9F10 GG16	2CSM277543R1801		0.007	10
20	10.3x38	773238	E 9F10 GG20	2CSM277323R1801		0.007	10
25	10.3x38	771036	E 9F10 GG25	2CSM277103R1801		0.007	10
32	10.3x38	587132	E 9F10 GG32	2CSM258713R1801		0.007	10

Protection and safety

Cylindrical fuses E 9F gG



E 9F14

E 9F 14 gG cylindrical fuses 14 x 51 mm

Rated current	Size	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In	mm	EAN	Type code	Order code		kg	pc.
2	14x51	775232	E 9F14 GG2	2CSM277523R1801		0.018	10
4	14x51	773030	E 9F14 GG4	2CSM277303R1801		0.018	10
6	14x51	770831	E 9F14 GG6	2CSM277083R1801		0.018	10
8	14x51	910039	E 9F14 GG8	2CSM291003R1801		0.018	10
10	14x51	909835	E 9F14 GG10	2CSM290983R1801		0.018	10
12	14x51	909637	E 9F14 GG12	2CSM290963R1801		0.018	10
16	14x51	587835	E 9F14 GG16	2CSM258783R1801		0.018	10
20	14x51	576037	E 9F14 GG20	2CSM257603R1801		0.018	10
25	14x51	564232	E 9F14 GG25	2CSM256423R1801		0.018	10
32	14x51	586937	E 9F14 GG32	2CSM258693R1801		0.018	10
40	14x51	575139	E 9F14 GG40	2CSM257513R1801		0.018	10
50	14x51	563334	E 9F14 GG50	2CSM256333R1801		0.018	10



E 9F22

E 9F 22 gG cylindrical fuses 22 x 58 mm

Rated current	Size	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In	mm	EAN	Type code	Order code		kg	pc.
4	22x58	571834	E 9F22 GG4	2CSM257183R1801		0.048	10
6	22x58	592839	E 9F22 GG6	2CSM259283R1801		0.048	10
8	22x58	581031	E 9F22 GG8	2CSM258103R1801		0.048	10
10	22x58	569237	E 9F22 GG10	2CSM256923R1801		0.048	10
12	22x58	594031	E 9F22 GG12	2CSM259403R1801		0.048	10
16	22x58	582236	E 9F22 GG16	2CSM258223R1801		0.048	10
20	22x58	570431	E 9F22 GG20	2CSM257043R1801		0.048	10
25	22x58	595335	E 9F22 GG25	2CSM259533R1801		0.048	10
32	22x58	583530	E 9F22 GG32	2CSM258353R1801		0.048	10
40	22x58	571735	E 9F22 GG40	2CSM257173R1801		0.048	10
50	22x58	593935	E 9F22 GG50	2CSM259393R1801		0.048	10
63	22x58	582137	E 9F22 GG63	2CSM258213R1801		0.048	10
80	22x58	570332	E 9F22 GG80	2CSM257033R1801		0.048	10
100	22x58	595236	E 9F22 GG100	2CSM259523R1801		0.048	10

Protection and safety

Cylindrical fuses E 9F aM



E 9F8 aM

Technical features

Rated voltage	[V]	400, 500, 690 AC
Rated current	[A]	0.5...125
Breaking capacity	[kA]	20, 80, 120
Overall dimensions	[mm]	8.5x31.5, 10.3x38, 14x51, 22x58
Weight	[g]	4, 7, 18, 48
Reference standards		IEC 60269-2; ROHS 2002/98/CE
Marks		LLOYD, BV

E 9F8 aM cylindrical fuses 8.5 x 31.5 mm

Type	Rated current [A]	Rated voltage [V AC]	Breaking capacity [kA]	Power dissipation at I _n [W]
E 9F1 AM1	1	400	20	0.9
E 9F8 AM2	2	400	20	0.15
E 9F8 AM4	4	400	20	0.26
E 9F8 AM6	6	400	20	0.35
E 9F8 AM8	8	400	20	0.47
E 9F8 AM10	10	400	20	0.55



E 9F10 aM

E 9F10 aM cylindrical fuses 10.3 x 38 mm

Type	Rated current [A]	Rated voltage [V AC]	Breaking capacity [kA]	Power dissipation at I _n [W]
E 9F10 AM05	0.5	500	120	0.07
E 9F10 AM1	1	500	120	0.1
E 9F10 AM2	2	500	120	0.14
E 9F10 AM4	4	500	120	0.28
E 9F10 AM6	6	500	120	0.38
E 9F10 AM8	8	500	120	0.55
E 9F10 AM10	10	500	120	0.62
E 9F10 AM12	12	500	120	0.82
E 9F10 AM16	16	500	120	0.87
E 9F10 AM20	20	500	120	1.05
E 9F10 AM25	25	400	120	1.2
E 9F10 AM32	32	400	120	1.8

Protection and safety

Cylindrical fuses E 9F aM



E 9F14 aM

E 9F14 aM cylindrical fuses 14 x 51 mm

Type	Rated current [A]	Rated voltage [V AC]	Breaking capacity [kA]	Power dissipation at I _n [W]
E 9F14 AM1	1	690	120	0.13
E 9F14 AM2	2	690	120	0.18
E 9F14 AM4	4	690	120	0.28
E 9F14 AM6	6	690	120	0.42
E 9F14 AM8	8	690	120	0.55
E 9F14 AM10	10	690	120	0.65
E 9F14 AM12	12	690	120	0.75
E 9F14 AM16	16	690	120	1.05
E 9F14 AM20	20	690	120	1.3
E 9F14 AM25	25	690	120	1.55
E 9F14 AM32	32	500	120	2.05
E 9F14 AM40	40	500	120	2.65
E 9F14 AM45	45	500	120	2.85
E 9F14 AM50	50	500	120	2.95



E 9F22 aM

E 9F22 aM cylindrical fuses 22 x 58 mm

Type	Rated current [A]	Rated voltage [V AC]	Breaking capacity [kA]	Power dissipation at I _n [W]
E 9F22 AM6	6	690	120	0.45
E 9F22 AM8	8	690	120	0.6
E 9F22 AM10	10	690	120	0.75
E 9F22 AM12	12	690	120	0.85
E 9F22 AM16	16	690	120	1.15
E 9F22 AM20	20	690	120	1.35
E 9F22 AM25	25	690	120	1.7
E 9F22 AM32	32	690	120	2.2
E 9F22 AM40	40	690	120	2.7
E 9F22 AM50	50	690	120	3.6
E 9F22 AM63	63	690	120	4.8
E 9F22 AM80	80	690	120	6.2
E 9F22 AM100	100	500	120	6.65
E 9F22 AM125	125	500	120	9.9

Protection and safety

Cylindrical fuses E 9F aM



E 9F8

E 9F aM cylindrical fuses

The E 9F aM cylindrical fuses, coupled with E 90 and E 90 50/125 fuse disconnectors, are the ideal solution for protection against overload and short-circuit. They feature a delayed tripping curve and are therefore ideal for protecting industrial motors that require high inrush current during the starting phase. The E 9F aM series is available for all the main sizes (8.5 x 31.5 mm, 10.3 x 38 mm, 14 x 51 mm e 22 x 58 mm) and with a wide range of rated current values (from 1 A to 125 A and up to 690 V AC). All the E 9F series fuses conform to the RoHS directive and are type-approved in accordance with the most important international naval marks.

E 9F 8 aM cylindrical fuses 8.5 x 31.5 mm

Rated current	Size	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In	mm	EAN	Type code	Order code		kg	pc.
1	8.5x31.5	772835	E 9F8 AM1	2CSM277283R1801		0.004	10
2	8.5x31.5	770633	E 9F8 AM2	2CSM277063R1801		0.004	10
4	8.5x31.5	587439	E 9F8 AM4	2CSM258743R1801		0.004	10
6	8.5x31.5	575634	E 9F8 AM6	2CSM257563R1801		0.004	10
8	8.5x31.5	563839	E 9F8 AM8	2CSM256383R1801		0.004	10
10	8.5x31.5	586531	E 9F8 AM10	2CSM258653R1801		0.004	10

E 9F 10 aM cylindrical fuses 10.3 x 38 mm

Rated current	Size	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In	mm	EAN	Type code	Order code		kg	pc.
0.5	10.3x38	574736	E 9F10 AM05	2CSM257473R1801		0.007	10
1	10.3x38	562931	E 9F10 AM1	2CSM256293R1801		0.007	10
2	10.3x38	775638	E 9F10 AM2	2CSM277563R1801		0.007	10
4	10.3x38	773436	E 9F10 AM4	2CSM277343R1801		0.007	10
6	10.3x38	771234	E 9F10 AM6	2CSM277123R1801		0.007	10
8	10.3x38	587330	E 9F10 AM8	2CSM258733R1801		0.007	10
10	10.3x38	575535	E 9F10 AM10	2CSM257553R1801		0.007	10
12	10.3x38	563730	E 9F10 AM12	2CSM256373R1801		0.007	10
16	10.3x38	586432	E 9F10 AM16	2CSM258643R1801		0.007	10
20	10.3x38	574637	E 9F10 AM20	2CSM257463R1801		0.007	10
25	10.3x38	562832	E 9F10 AM25	2CSM256283R1801		0.007	10
32	10.3x38	775539	E 9F10 AM32	2CSM277553R1801		0.007	10



E 9F10 aM

Protection and safety

Cylindrical fuses E 9F aM



E 9F14 aM

E 9F 14 aM cylindrical fuses 14 x 51 mm

Rated current	Size	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In	mm	EAN	Type code	Order code		kg	pc.
1	14x51	575337	E 9F14 AM1	2CSM257533R1801		0.018	10
2	14x51	563532	E 9F14 AM2	2CSM256353R1801		0.018	10
4	14x51	586234	E 9F14 AM4	2CSM258623R1801		0.018	10
6	14x51	574439	E 9F14 AM6	2CSM257443R1801		0.018	10
8	14x51	562634	E 9F14 AM8	2CSM256263R1801		0.018	10
10	14x51	775331	E 9F14 AM10	2CSM277533R1801		0.018	10
12	14x51	773139	E 9F14 AM12	2CSM277313R1801		0.018	10
16	14x51	770930	E 9F14 AM16	2CSM277093R1801		0.018	10
20	14x51	587033	E 9F14 AM20	2CSM258703R1801		0.018	10
25	14x51	575238	E 9F14 AM25	2CSM257523R1801		0.018	10
32	14x51	563433	E 9F14 AM32	2CSM256343R1801		0.018	10
40	14x51	586135	E 9F14 AM40	2CSM258613R1801		0.018	10
45	14x51	574330	E 9F14 AM45	2CSM257433R1801		0.018	10
50	14x51	562535	E 9F14 AM50	2CSM256253R1801		0.018	10



E 9F22

E 9F 22 aM cylindrical fuses 22 x 58 mm

Rated current	Size	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In	mm	EAN	Type code	Order code		kg	pc.
6	22x58	586036	E 9F22 AM6	2CSM258603R1801		0.048	10
8	22x58	574231	E 9F22 AM8	2CSM257423R1801		0.048	10
10	22x58	562436	E 9F22 AM10	2CSM256243R1801		0.048	10
12	22x58	775133	E 9F22 AM12	2CSM277513R1801		0.048	10
16	22x58	772934	E 9F22 AM16	2CSM277293R1801		0.048	10
20	22x58	770732	E 9F22 AM20	2CSM277073R1801		0.048	10
25	22x58	774938	E 9F22 AM25	2CSM277493R1801		0.048	10
32	22x58	772736	E 9F22 AM32	2CSM277273R1801		0.048	10
40	22x58	770534	E 9F22 AM40	2CSM277053R1801		0.048	10
50	22x58	594130	E 9F22 AM50	2CSM259413R1801		0.048	10
63	22x58	582335	E 9F22 AM63	2CSM258233R1801		0.048	10
80	22x58	570530	E 9F22 AM80	2CSM257053R1801		0.048	10
100	22x58	595434	E 9F22 AM100	2CSM259543R1801		0.048	10
125	22x58	583639	E 9F22 AM125	2CSM258363R1801		0.048	10

Protection and safety

Cylindrical fuses E 9F gPV



E 9F PV

Type		E9F PV	E9F PV 1500
Reference standards	-	IEC 60269-6; ROHS 2002/98/CE, UL	IEC 60269-6; ROHS 2002/98/CE, UL
Rated current	[A]	1...30	4...32
Rated operational voltage	[V]	1000 DC	1500 DC
Breaking capacity	[kA]	10	50
Overall dimensions	[mm]	10.3 x 38	10 x 85

E 9F PV cylindrical fuses for photovoltaic applications

The E9F PV series of cylindrical fuses has been specifically designed for protecting direct current circuits up to 1500 V DC. Those fuses are the best way to protect the strings, inverters and surge arresters in photovoltaic installations.

The range of E9F PV fuses is available in the 10.3 x 38 mm size for up to 30 A rated current values at a nominal voltage of 1000 V DC or in the 10x85 mm size up to 32 A rated current at a nominal voltage of 1500 V DC.

E 9F PV cylindrical fuses 10.3 x 38 mm

Rated current	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In	EAN	Type code	Order code		kg	pc.
1 A	134565	E 9F1 PV	2CSM213456R1801		0.007	10
2 A	134664	E 9F2 PV	2CSM213466R1801		0.007	10
3 A	134763	E 9F3 PV	2CSM213476R1801		0.007	10
4 A	134862	E 9F4 PV	2CSM213486R1801		0.007	10
5 A	134961	E 9F5 PV	2CSM213496R1801		0.007	10
6 A	135067	E 9F6 PV	2CSM213506R1801		0.007	10
8 A	135265	E 9F8 PV	2CSM213526R1801		0.007	10
10 A	135364	E 9F10 PV	2CSM213536R1801		0.007	10
12 A	135463	E 9F12 PV	2CSM213546R1801		0.007	10
15 A	135562	E 9F15 PV	2CSM213556R1801		0.007	10
20 A	135661	E 9F20 PV	2CSM213566R1801		0.007	10
25 A	135760	E 9F25 PV	2CSM213576R1801		0.007	10
30 A	135869	E 9F30 PV	2CSM213586R1801		0.007	10

E9F PV cylindrical fuses 10 x 85 mm

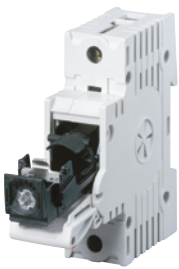
Rated current	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece	Pack unit
In	EAN	Type code	Order code		kg	pc.
4 A	339410	E9F4 PV1500	2CSM233941R1801		0.010	5
5 A	052852	E9F5 PV1500	2CSM205285R1801		0.010	5
6 A	052951	E9F6 PV1500	2CSM205295R1801		0.010	5
7 A	053057	E9F7 PV1500	2CSM205305R1801		0.010	5
8 A	053156	E9F8 PV1500	2CSM205315R1801		0.010	5
10 A	053255	E9F10 PV1500	2CSM205325R1801		0.010	5
12 A	053354	E9F12 PV1500	2CSM205335R1801		0.010	5
15 A	053453	E9F15 PV1500	2CSM205345R1801		0.010	5
20 A	068754	E9F20 PV1500	2CSM206875R1801		0.010	5
25 A	068952	E9F25 PV1500	2CSM206895R1801		0.010	5
30 A	069058	E9F30 PV1500	2CSM206905R1801		0.010	5
32 A	069256	E9F32 PV1500	2CSM206925R1801		0.010	5

Protection and safety

ILTS-E D0 Fuse-switch-disconnectors



ILTS-E1



ILTS-E1



ILTS-E3



ILTS-E/H11



ILTS-E/RE

Technical data

Reference standards	EN 60947-1, EN 60947-3
Approval	VDE
No. of poles	1, 2, 3 pole and 3 pole+N
Rated voltage	400 V AC, per pole 65 V DC (2 pole 130 V DC)
Operating current I _n	acc. to fuse link D0 2-63 A
Rated frequency	50/60 Hz
Rated short circuit capacity	50 kA for AC (8 kA for DC)
Power loss	5.5 W/pole
Utilization category	AC 22 B: 400 V AC 63 A according to IEC/EN 60947-3 (all versions) DC 22 B: 65 V DC 63 A according to IEC/EN 60947-3 (1 pole) DC 22 B: 130 V DC 63 A according to IEC/EN 60947-3 (2 pole)
Leakage current resistance	CTI 200
Overvoltage category in accordance with IEC / EN 61439-1	III
Ambient temperature	- 5 °C up to + 40 °C
Casing material	thermoplast; halogen-, phosphor-, silicone- and CFC-free
Fire classification	UL 94 (self-extinguishing)
Shock protection	according to DIN EN 50 274 (DIN VDE 0660 Part 514) BGV A3
Connection capacity	1.5 – 35 mm ² finely stranded, directly clamped or with connector sleeve Twin-function terminal for simultaneous connection of two conductors (35 mm ² and 16 mm ²) or conductor and busbar
Pick-up torque	2.5 – 3 Nm
Auxiliary switch indicating contact position	
Contacts	1 NO contact + 1 NC contact
Contact rating	AC 13: 2 A/400 V, 6 A/230 V DC 13: 1 A/220 V, 6 A/24 V

Switch-disconnector ILTS-E for D0 2-63 A fuse links “Drawer technology”

User-friendly fuse-switch-disconnector in “drawer technology”:

- Snap action
- Fuse can be replaced only if the system is de-energized.
- Captive fuse carrier
- For D02 fuse links, D01 fuse link with reducing piece
- Twin box terminal on both sides
- User-friendly installation of cross-wiring in lower terminal
- Auxiliary switch to indicate switching position

Fuse-switch-disconnector

Poles	Bbn 4016779	Order details		Price 1 piece	Weight 1 piece	Pack unit
		EAN	Type code			
1		65347 3	ILTS-E1	2CDE101001R1901	0.210	3
2		65348 0	ILTS-E2	2CDE102001R1901	0.420	2
3		65349 7	ILTS-E3	2CDE103001R1901	0.630	1
3+N*		65350 3	ILTS-E3+N	2CDE103101R1901	0.790	1
Reducing piece		65407 4	ILTS-E/RE	2CDE000011R1901	0.001	20
Auxiliary switch 1NO/1NC		65671 9	ILTS-E/H11	2CDE000012R1901	0.050	1

* N conductor leading make contact, late closing

Protection and safety

ISS D0 Fuse carriers



ISS 16/1



ISS 63/1



ISS 16/3



ISS 63/3

Technical features

Size	D01	D02
Current type	AC (50 Hz)/DC	AC (50 Hz)/DC
Rated voltage	400 V AC/250 V DC	400 V AC/250 V DC
Rated current	16 A	63 A
Rated short-circuit current	50 kA (AC) 8 kA (DC)	50 kA (AC) 8 kA (DC)
For fuse links with losses per phase up to	2.5 W	5.5 W

D0 fuse carrier ISS with integrated red cover

D0 fuse base for NEOZED fuse links D01/D02. Touch-protection according to DGUV regulation 3. Twin box terminal on both sides for connection of two different conductor cross-sections or conductors and busbars.

Conductor cross-sections incoming and outgoing 1.5 – 35 mm², stranded. With integrated terminal cover. A separate cover for distribution board installation is not required.

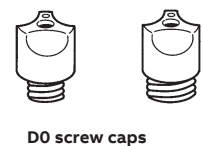
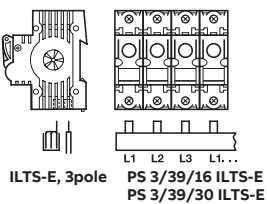
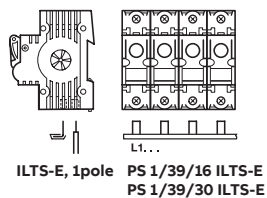
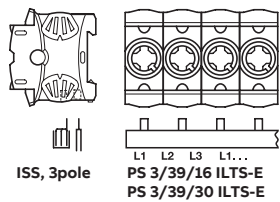
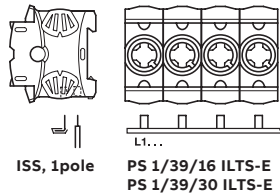
- IEC 60269-3/VDE 0636-3
- 1/3-pole
- Fuse links, connector sleeves VDE 0636-3
- Snap clip device for rail mounting to EN 60715
- Twin function terminal
- Connection cross-section 1.5 – 35 mm²
- Tightening torque 2.5 – 3 Nm

D0 fuse carrier

Poles	Screw cover/fuse	Bbn 4016779	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
			EAN	Type code			
1	E14 D01	65579 8	ISS 16/1	2CDE111001R1902		0.08	9
1	E18 D02	65581 1	ISS 63/1	2CDE161001R1902		0.08	9
3	E14 D01	65580 4	ISS 16/3	2CDE113001R1902		0.24	9
3	E18 D02	65582 8	ISS 63/3	2CDE163001R1902		0.24	9

Protection and safety

Busbars and accessories for ILTS-E and ISS



Busbars for fuse-switch-disconnector ILTS-E and fuse carrier ISS: 1pole or 3pole

End caps:

PS 1/39/16 ILTS-E: END 1.1

PS 1/39/30 ILTS-E: PS-END 3.2

PS 3/39/16 ILTS-E: PS-END

PS 3/39/30 ILTS-E: PS-END 3

Busbars

Cross-section	Length	No. of poles	Cu factor	Bbn 4012233	Order details		Price 1 piece	Weight 1 piece	Pack unit
mm ²	mm			EAN	Type code	Order code		kg	pc.
16	1040	39 x 1	0.43	66956 6 ⁽¹⁾	PS 1/39/16 ILTS-E	2CDL010101R1639	15	0.23	10
30	1040	39 x 1	0.74	66957 3 ⁽¹⁾	PS 1/39/30 ILTS-E*	2CDL010101R3039	15	0.487	5
16	1040	39 x 3	1.3	66958 0 ⁽¹⁾	PS 3/39/16 ILTS-E	2CDL030101R1639	15	0.59	10
30	1040	39 x 3	1.95	66959 7 ⁽¹⁾	PS 3/39/30 ILTS-E*	2CDL030101R3039	15	1.222	5

⁽¹⁾ bbn-Nr. 40 16779 * Not compatible with ISS

End caps

Cross-section	Length	No. of poles	Cu factor	Bbn 4016779	Order details		Price 1 piece	Weight 1 piece	Pack unit
mm ²	mm			EAN	Type code	Order code		kg	pc.
		1		63891 3	END 1.1	2CDL2000011R0011	15	0.001	50
		2/3		51472 9	PS-END	2CDL2000001R0001	15	0.001	50
		2/3		65430 2	PS-END 3	2CDL2000001R3001	15	0.001	50
		1		66960 3	PS-END 3.2	2CDL2000001R3003	15	0.001	50

D0 fuses and accessories

D0 fuse links to DIN VDE 0636-3, IEC/EN 60269-3 suitable for D01/E14

Rated current	Colour code	Power loss	Bbn 4012233	Order details		Price 1 piece	Weight 1 piece	Pack unit
A		W	EAN	Type code	Order code		kg	pc.
2	pink	1.5	60480 7	D01 x 2 gG	GMN 977120P0011	13	0.006	10
4	brown	1.5	60490 6	D01 x 4 gG	GMN 977120P0012	13	0.006	10
6	green	1.5	60500 2	D01 x 6 gG	GMN 977120P0013	13	0.006	10
10	red	1.8	60510 1	D01 x 10 gG	GMN 977120P0014	13	0.006	10
16	grey	2.1	60520 0	D01 x 16 gG	GMN 977120P0015	13	0.006	10

Suitable for D02/E18

Rated current	Colour code	Power loss	Bbn 4012233	Order details		Price 1 piece	Weight 1 piece	Pack unit
A		W	EAN	Type code	Order code		kg	pc.
20	blue	2.3	60530 9	D02 x 20 gG	GMN 977120P0017	13	0.011	10
25	yellow	2.6	60540 8	D02 x 25 gG	GMN 977120P0018	13	0.012	10
35	black	2.9	60550 7	D02 x 35 gG	GMN 977120P0019	13	0.013	10
50	white	3.5	60560 6	D02 x 50 gG	GMN 977120P0020	13	0.014	10
63	copper	4.2	60570 5	D02 x 63 gG	GMN 977120P0021	13	0.015	10

Protection and safety

Busbars and accessories for ILTS-E and ISS



Connector sleeves
D 01
2-10 A



D 02
2-50 A



FD 1713

D0 screw caps acc. to DIN EN 60269-1 and DIN VDE 0636-3, 400 VAC Plastic version, RAL 7035

Rated current	Fuse type	Power loss	Bbn 4053546	Order details		Price 1 piece	Weight 1 piece	Pack unit
A		W	EAN	Type code	Order code		kg	pc.
16	D01 (E14)	–	11782 0	D01-DIN-E14-16A	2CDE977130P0011		0.006	20
63	D02 (E18)	–	11784 4	D02-DIN-E18-63A	2CDE977130P0012		0.010	20

D0 connector sleeves to DIN VDE 0636-3, IEC/EN 60269-3 Suitable for D01/E14

Rated current	Colour code	Power loss	Bbn 4012233	Order details		Price 1 piece	Weight 1 piece	Pack unit
A		W	EAN	Type code	Order code		kg	pc.
2	pink	–	60600 9	D01 x 2	GMN 977125P0001	13	0.001	50
4	brown		60610 8	D01 x 4	GMN 977125P0002	13	0.001	50
6	green		60620 7	D01 x 6	GMN 977125P0003	13	0.001	50
10	red		60630 6	D01 x 10	GMN 977125P0004	13	0.001	50

Suitable for D02/E18

Rated current	Colour code	Power loss	Bbn 4012233	Order details		Price 1 piece	Weight 1 piece	Pack unit
A		W	EAN	Type code	Order code		kg	pc.
2	pink	–	60640 5	D02 x 2	GMN 977125P0011	13	0.001	50
4	brown		60650 4	D02 x 4	GMN 977125P0012	13	0.001	50
6	green		60660 3	D02 x 6	GMN 977125P0013	13	0.001	50
10	red		60670 2	D02 x 10	GMN 977125P0014	13	0.001	50
16	grey		60680 1	D02 x 16	GMN 977125P0015	13	0.001	50
20	blue		60690 0	D02 x 20	GMN 977125P0016	13	0.001	50
25	yellow		60700 6	D02 x 25	GMN 977125P0017	13	0.001	50
35	black		60710 5	D02 x 35	GMN 977125P0018	13	0.001	50
50	white		60720 4	D02 x 50	GMN 977125P0019	13	0.001	50

Spring clip for use of D01 fuses in D02 screw caps

Rated current	Colour code	Power loss	Bbn 4012233	Order details		Price 1 piece	Weight 1 piece	Pack unit
A		W	EAN	Type code	Order code		kg	pc.
			15120 7	FD 1713	GMN 977130P0004	13	0.001	50

Protection and safety

Electronic protection devices | 4 channel



EPD24-A4 0.5-12,
Power jumper for 24 V
DC and signal jumper
for 0 V, signal and reset



Selective protection of 24 V DC load circuits

Electronic protection devices are used for the reliable protection of standard components in industrial automation applications with 24 V DC. The EPD24 offer selective overcurrent protection for the loads connected and react to short circuit or overload more rapidly than the supplying switch mode power supply; they then selectively switch off the electrical circuit affected. In this way straightforward, quick troubleshooting is made possible.

The 4-channel devices feature very high efficiency and significantly reduced power loss. With a rated current setting from 0.5 to 12 A, a width of 25 mm, seamless expandability by means of jumpers, front-top wiring and straightforward combination with ABB switch mode power supplies, they ensure a uniform portfolio.

Characteristics

- 4-channel electronic protection device
- 24 V DC supply terminal
- Variable rated currents can be set on **Advanced** from 0.5 A to 12 A or on **Entry** from 1 A to 10 A
- Selective load protection using electronic trip characteristic curve
- **Advanced** with active linear current limiting, total current max. 48 A
- **Entry** with time-controlled tripping, total current max. 40 A
- Integrated fail-safe element matched to the maximum rated current
- Very high efficiency
- No derating up to 60 °C ambient temperature
- Switching on of capacitive loads up to 40,000 µF at 12 A rated current
- ON/OFF/Reset button with multicolor LED status indicator
- Signal output (13, 14) with 1 NO contact for group signaling
- Reset input (RST) for remote resetting of tripped channels
- All connection terminals equipped with push-in terminals
- Several devices can be combined using power jumpers for supply and signal jumpers for 0 V, signal and reset
- **Entry** and **Advanced** devices can be combined using jumpers

Electronic protection devices

Characteristics	Function	Input	Channels	Rated current	Bbn 4053546	Order details		Price 1 piece	Weight 1 piece	Pack unit
					EAN	Type code	Order code		kg	pc.
Time-controlled tripping	Entry	24 V DC	4	1–10 A	053135	EPD24-E4 1-10	2CDE601102R0110		0.175	1
Active current limiting	Advanced	24 V DC	4	0.5–12 A	053159	EPD24-A4 0.5-12	2CDE601102R0512		0.182	1

Accessories

Characteristics	Bbn 4053546	Order details		Price 1 piece	Weight 1 piece	Pack unit
	EAN	Type code	Order code		kg	pc.
1 power jumper for 24 V DC and 3 signal jumpers for 0 V, signal and reset	098129	EPD24 jumpers (1 sets)	2CDE605300R0010			1/4
5 power jumpers for 24 V DC and 15 signal jumpers for 0 V, signal and reset	098143	EPD24 jumpers (5 sets)	2CDE605300R0050			5/20
25 power jumpers for 24 V DC and 75 signal jumpers for 0 V, signal and reset	098167	EPD24 jumpers (25 sets)	2CDE605300R0250			25/100

Protection and safety

Electronic protection devices | 4 channel

Data for rated values $T_a = 23\text{ °C}$, $U_{in} = 24\text{ V DC}$, unless otherwise specified.

		Entry EPD24-E4 1-10	Advanced EPD24-A4 0.5-12
Input data			
Rated voltage U_{in}		24 V DC	
Operating voltage		18 .. 30 V DC	18 .. 32 V DC
Total rated current I_n		Max. 40 A	Max. 48 A
Suitable for battery-buffered applications		No	On request
Rated insulation voltage U_i		30 V DC (load circuit)	32 V DC (load circuit)
Standby current I_o		Typ. 33 mA	Typ. 17 mA
Reverse power supply		Max. 30 V DC	Max. 32 V DC
Reverse polarity protection		Yes, not including load	
Output data			
Output		Power MOSFET switching output (positive switching) without galvanic isolation	
Trip characteristic		Time-controlled tripping	Active current limiting
Fuse type		Electronic	
Overload tripping I_{OL} with trip time t_{OL}		See page <?>, trip characteristic curve, Entry EPD24-E4 1-10 for time-controlled tripping Typ. I_{OL} at $>1.05 \times I_n$, typ. $t_{OL} = 3\text{ s}$ Typ. I_{OL} at $>1.35 \times I_n$, typ. $t_{OL} = 0.5\text{ s}$ Typ. I_{OL} at $>2.00 \times I_n$, typ. $t_{OL} = 0.1\text{ s}$ Typ. I_{OL} at $>2.5 \times I_n$, typ. $t_{OL} = 0.012\text{ s}$ Typ. I_{OL} at $>3.0 \times I_n$, typ. $t_{OL} = 0.002\text{ s}$	See page <?>, trip characteristic curve, Advanced EPD24-A4 0.5-12 with active current limiting Typ. I_{OL} at $1.2 \times I_n$, typ. $t_{OL} = 3\text{ s}$
Short circuit tripping I_{SC} with trip time t_{SC}		See page <?>, trip characteristic curve, Entry EPD24-E4 1-10 for time-controlled tripping Typ. I_{SC} at $>3.0 \times I_n$, typ. $t_{SC} = 0.002\text{ s}$	See page <?>, trip characteristic curve, Advanced EPD24-A4 0.5-12 with active current limiting Typ. $t_{SC} = 0.01...1\text{ s}$ applies to: $I_n = 0.5\text{ A}$: typ. I_{SC} at $8 \times I_n$ $I_n = 1\text{ A}$: typ. I_{SC} at $4 \times I_n$ $I_n = 2\text{ A}$: typ. I_{SC} at $2 \times I_n$ $I_n = 3...5\text{ A}$: typ. I_{SC} at $1.6 \times I_n$ $I_n = 6...12\text{ A}$: typ. I_{SC} at $1.4 \times I_n$
Output voltage U_{out}		$U_{out} = U_{in} - (I_a \times 12\text{ mV/A})$ (typ. approx. 12 mV per 1 A)	$U_{out} = U_{in} - (I_a \times 14\text{ mV/A})$ (typ. approx. 14 mV per 1 A)
Number of outputs		4 channels	
Rated current setting per channel output I_a		1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 A	0.5 / 1 / 2 / 3 / 4 / 5 / 6 / 8 / 10 / 12 A
Rated current factory setting per channel output		10 A	12 A
Load current warning limit		Typ. 80 % I_n Warning limit hysteresis typ. 5 % (referred to I_n)	
If mounted individually: output current up to 60 °C per output (rated value)		10 A	12 A
	Derating 60 °C ... 70 °C	2 %/K per channel output	2.5 %/K per channel output
Parallel connection of outputs		Not permissible	
Freewheeling circuit		External freewheeling circuit for inductive load (design to suit load)	
Undervoltage tripping		OFF at typ. $U_{in} < 16\text{ V DC}$ ON at typ. $U_{in} > 19\text{ V DC}$ Hysteresis typ. 2 V	
Delay for switching on	Cascaded switching on of all outputs after power on with 24 V DC	Channel 1: typ. 100 ms Channel 2: typ. 200 ms Channel 3: typ. 300 ms Channel 4: typ. 400 ms	
	Cascaded switching on of all outputs after switching on the outputs remotely or after undervoltage	Channel 1: typ. 5 ms Channel 2: typ. 100 ms Channel 3: typ. 200 ms Channel 4: typ. 300 ms	
Fuse protection required		Not necessary, integrated fail-safe element	
Rated current, fail-safe element (per output channel)		16 A	25 A
Status indicator		LED (green, orange, red)	
Efficiency		99.4 %	99.3 %
Power loss		5.6 W at max. 40 A	8.5 W at max. 48 A
Capacitive load		Up to 20,000 μF (depending on the power supply unit and the current setting)	Up to 40,000 μF (depending on the power supply unit and the current setting)

Protection and safety

Electronic protection devices | 4 channel

	Entry EPD24-E4 1-10	Advanced EPD24-A4 0.5-12
Signal inputs and outputs		
SIGNAL OUTPUT 13-14		
Description	Group signal output 13-14	
Contact arrangement	Potential-free signal output, NO contact (optocoupler)	
Operating voltage	10 ... 30 V DC	
Operational current	1 ... 200 mA	
RESET RST		
Input voltage	8 ... 32 V DC (reset with rising edge)	
Current consumption	Typ. 2.8 mA (at 24 V DC)	
Pulse length	≥ 100 ms (high signal) ≥ 100 ms (low signal)	
Voltage	> 8 V DC (high signal) ≤ 3 V DC (low signal)	
Connection data		
INPUT Input 24 V DC		
Connection type	Push-in terminal	
Stripping length	18 mm	
Tool	Slotted screwdriver with a blade width of 3.5 mm	
Conductor cross-section, rigid	0.5 mm² ... 16 mm² AWG 20...10	
Conductor cross-section, flexible	0.5 mm² ... 16 mm² AWG 20...8	
Conductor cross-section, flexible with ferrule with plastic sleeve	0.5 mm² ... 10 mm²	
INPUT 0 V		
Connection type	Push-in terminal	
Stripping length	8 mm	
Tool	Slotted screwdriver with a blade width of 2.5 mm	
Conductor cross-section, rigid	0.2 mm² ... 1.5 mm² AWG 24...16	
Conductor cross-section, flexible	0.2 mm² ... 1.5 mm² AWG 24...16	
Conductor cross-section, flexible with ferrule with plastic sleeve	0.2 mm² ... 0.75 mm²	
OUTPUT 1-4		
Connection type	Push-in terminal	
Stripping length	10...12 mm	
Tool	Slotted screwdriver with a blade width of 3.5 mm	
Conductor cross-section, rigid	0.2 mm² ... 6 mm² AWG 24...10	
Conductor cross-section, flexible	0.2 mm² ... 6 mm² AWG 24...10	
Conductor cross-section, flexible with ferrule with plastic sleeve	0.25 mm² ... 2.5 mm²	
SIGNAL OUTPUT 13-14		
Connection type	Push-in terminal	
Stripping length	8 mm	
Tool	Slotted screwdriver with a blade width of 2.5 mm	
Conductor cross-section, rigid	0.2 mm² ... 1.5 mm² AWG 24...16	
Conductor cross-section, flexible	0.2 mm² ... 1.5 mm² AWG 24...16	
Conductor cross-section, flexible with ferrule with plastic sleeve	0.2 mm² ... 0.75 mm²	
RESET RST		
Connection type	Push-in terminal	
Stripping length	8 mm	
Conductor cross-section, rigid	0.2 mm² ... 1.5 mm² AWG 24...16	
Tool	Slotted screwdriver with a blade width of 2.5 mm	
Conductor cross-section, flexible	0.2 mm² ... 1.5 mm² AWG 24...16	
Conductor cross-section, flexible with ferrule with plastic sleeve	0.2 mm² ... 0.75 mm²	

Protection and safety

Electronic protection devices | 4 channel

	Entry EPD24-E4 1-10	Advanced EPD24-A4 0.5-12
General data		
Ambient temperature (operation)	-25 °C ... +70 °C ; -25 °C ... +65 °C according to UL 2367	
Storage temperature	-40 °C ... +70 °C	
Mounting temperature	+5°C ... +60°C	
Mounting type	Mounting rail according to EN 60715-35x7.5	
Mounting position	Vertical	
Minimum distance to neighboring devices	Horizontal Vertical	30 mm 50 mm
Humidity	96 h, 95 % RH, 40 °C	
Altitude	At 4,000 m up to 60 °C ambient temperature (operation)	
Degree of protection	IP20	
Flammability according to UL94	V-2	
Color	Dark grey: RAL7012	
Protection class	III	
Pollution degree	2	
Vibration resistance according to IEC/EN 60068-2-6	Test Fc: 2 g, 20 frequency cycles at 10 ... 500 ... 10 Hz	
Shock resistance according to IEC/EN 60068-2-27	15 G, 11 ms, 3 axes, 6 sides, 3x each side	
MTTF	25 °C: 2 068 776 h 40 °C: 1 244 772 h	25 °C: 999 324 h 40 °C: 604 854 h
Standards / electromagnetic compatibility		
Conformity	CE, RoHS, REACH, UKCA	
UL approval	UL 2367 recognized; E339236 UL 508 listed; E321314	
CSA approval	CSA C22.2 No. 14; E321314	
Maritime approval	Pending	
EMC requirements	Interference emissions: Interference immunity:	EN 61000-6-3 EN 61000-6-2
Dimensions		
Height	130 mm (133 mm incl. latching lever)	
Width	25 mm	
Depth	108 mm	
Weight	Approx. 175 g	Approx. 182 g
Power jumper for 24 V DC		
Number of contacts	2	
Pitch	15 mm	
Disassembly tools	Slotted screwdriver with a blade width of 5.5 mm, and flat-nose pliers	
Signal jumpers for 0 V, signal and reset		
Number of contacts	2	
Pitch	14 mm	
Disassembly tools	Slotted screwdriver with a blade width of 2.5 mm	

Protection and safety

Electronic protection devices | 1 channel



EPD24-TB-101

The protection devices EPD24 extend the ABB product range of modular DIN rail components by electronic overcurrent protection modules for selective protection of 24V DC load circuits.

This protection is achieved by a combination of active electronic current limitation in the case of a short circuit and an overload deactivation from $1.1 \times I_n$ upwards.

If a fault occurs in a load circuit, the protection device EPD24 will detect this rapidly and reliably, disable the power output transistor and hence interrupt the current flow in the defective circuit. The maximum possible overcurrent is always limited to $1.5 \dots 1.8$ times the selected rated current. An activation of capacitive loads up to $20.000 \mu F$ is possible, deactivation only occurring in the case of overloads or short circuits. Selective deactivation of the defective current circuit means undefined error states and a complete system stop are prevented.

Characteristics

- Selective load protection, one electronic trip characteristics.
- Active current limitation for safe connection of capacitive loads up to $20.000 \mu F$ and on overload/short circuit.
- Current ratings $0.5 A \dots 12 A$.
- Reliable overload disconnection with $1.1 \times I_n$
- Manual ON/OFF button
- Clear status and failure indication through LED and auxiliary contact.
- Integral fail-safe element adjusted to current rating.
- Width per unit only 12.5 mm.
- Rail mounting
- Ease of wiring through busbar LINE+ and 0 V as well as signal bars.
- UL- and CSA-approvals allow international use of the devices.

Rated current I_n	Bbn 4016779	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
		Type code	Order code			
A	EAN					
0.5	829960	EPD24-TB-101-0.5A	2CDE601101R2905		0.065	4
1	829984	EPD24-TB-101-1A	2CDE601101R2001		0.065	4
2	830003	EPD24-TB-101-2A	2CDE601101R2002		0.065	4
3	830027	EPD24-TB-101-3A	2CDE601101R2003		0.065	4
4	830041	EPD24-TB-101-4A	2CDE601101R2004		0.065	4
6	830065	EPD24-TB-101-6A	2CDE601101R2006		0.065	4
8	830089	EPD24-TB-101-8A	2CDE601101R2008		0.065	4
10	830102	EPD24-TB-101-10A	2CDE601101R2010		0.065	4
12	830126	EPD24-TB-101-12A	2CDE601101R2012		0.065	4

Accessories

	Bbn 4016779	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
		Type code	Order code			
Busbars for LINE+ and 0 V, grey insulation, length 500 mm ¹⁾	830140	EPD-BB500	2CDE605100R0500		0.20	10
Signal Bars for aux. contacts, grey insulation, length 21 mm	830164	EPD-SB21	2CDE605200R0021		0.04	10

¹⁾ Max. load with one line entry $I_{max} = 50 A$ (recommended: center-feeding)
Max. load with two line entries $I_{max} = 63 A$

Protection and safety

Electronic protection devices | 1 channel



EPD24-TB-101

Operating data

Operating voltage UB	24 V DC (18...32 V)		
Current rating IN	fixed current ratings: 0.5, 1, 2, 3, 4, 6, 8, 10, 12 A		
Closed current IO	ON condition: typically 20...30 mA depending on signal output		
Staus indication by means of	multico- lour LED	Green	- unit is ON (S1 = ON) - load circuit/Power-is switched on MOSFET
		Orange	- in the event of overload or short circuit until electronic disconnection
		Red	- unit electronically disconnected
			- load circuit/Power-MOSFET OFF
	- undervoltage (UB < 8 V)		
	- after switch-on till the end of the delay period		
	OFF	- manually switched off (S1 = OFF) or device is dead	
potential-free auxiliary contact F			
ON/OFF/condition of switch S1			

Load circuit

Load output	Power-MOSFET switching output (high slide switch)
Overload disconnection	typically $1.1 \times I_N$ ($1.05...1.35 \times I_N$)
Short-circuit current IK	active current limitation (see table 1)
Trip time	see time/current characteristics
For electronic disconnection	typically 3 s at $I_{Load} > 1.1 \times I_N$ typically 100 ms...3 s at $I_{Load} > 1.8 \times I_N$ (or $1.5 \times I_N/1.3 \times I_N$)
Temperature disconnection	internal temperature monitoring with electronic disconnection
Low voltage monitoring load output	with hysteresis, no reset required: load »OFF« at $UB < 8 V$
Starting delay tStart	typically 0.5 sec after every switch-on and after applying US
Disconnection of load circuit	electronic disconnection
Free-wheeling circuit	suitable external free-wheeling circuit to be used with inductive load
Several load outputs must not be connected in parallel	

Signal output F

Electrical data	potential-free auxiliary contact max. 30 V DC/0.5 A, min. 10 V DC/10 mA
ON condition LED green	voltage UB applied, switch S1 is in ON position no overload, no short circuit
OFF condition LED off	device switched off (switch S1 is in OFF position) no voltage UB applied
Fault condition LED orange	overload condition $> 1.1 \times I_N$ up to electronic disconnection
Aux. contact	single signal, make contact contact open, terminal 13-14
Fault	signal output fault conditions - no operating voltage UB - ON/OFF switch S1 is in OFF position - red LED lighted (electronic disconnection)

Protection and safety

Electronic protection devices | 1 channel



EPD24-TB-101

General data

Fail-Safe element	backup fuse for EPD24 not required because of the integral redundant fail-safe element
Housing material	moulded
Mounting	symmetrical rail to EN 50022-35x7.5
Ambient temperature	-25...+60 °C (without condensation, see EN 60204-1; ambient temperature range may differ for approvals)
Storage temperature	-40...+70 °C
Humidity	96 hrs/95% RH/40 °C to IEC 60068-2-78, test Cab. climate class 3K3 to EN 60721
Vibration	3 g, test to IEC 60068-2-6 test Fc
Protection degree	housing: IP20 DIN 40050 terminals: IP20 DIN 40050
EMC (EMC directive, CE logo)	emission: EN 61000-6-3 susceptibility: EN 61000-6-2
Isolations coordination (IEC 60934)	0.5 kV/pollution degree 2 reinforced insulation in operating area
Dielectric strength	max. 32 V DC (load circuit)
Isolation resistance (OFF condition)	n/a, only electronic disconnection
Approvals/Declarations of conformity	UL 2367 Solid State Overcurrent Protectors UL 1604, (class I, division 2, groups A, B, C, D) UL 508 CSA C22.2 No. 213 (class I, division 2) CSA C22.2 No. 142 CSA C22.2 No. 14 CE logo
Dimensions (B x H x T)	12.5 x 80 x 83 mm
Weight	approx. 65 g

Terminals Line+/LOAD+/OV

Screw terminals	M4
Max. cable cross section flexible with wire end ferrule w/wo plastic sleeve	0.5 – 10 mm ²
Multi-lead connection (2 identical cables) rigid/flexible	0.5 – 4 mm ²
Flexible with wire end ferrule without plastic sleeve	0.5 – 2.5 mm ²
Flexible with TWIN wire end ferrule with plastic sleeve	0.5 – 6 mm ²
Wire stripping length	10 mm
Tightening torque (EN 60934)	1.5 – 1.8 Nm

Terminals aux. contacts

Screw terminals	M3
Max. cable cross section flexible with wire end ferrule w/wo plastic sleeve	0.25 - 2.5 mm ²
Wire stripping length	8 mm
Tightening torque (EN 60934)	0.5 Nm

Protection and safety

SQZ3 phase and sequence relay



SQZ3

Technical features

Supply voltage	[Vn]	400 V AC
Frequency	[Hz]	50/60
Contact type	[A]	1 CO, 250 V, 10 A (cosφ=1) safety switching
Minimum voltage adjustment trimmer	[%]	100 to 70 % of Vn
Intervention delay adjustment trimmer	[s]	2 to 20 (only for min. voltage)
Protection degree	[IP]	20
Operating temperature	[°C]	-10...+55
Power consumption	[W]	1.5
Modules	[n°]	3

SQZ3 phase and sequence relay

SQZ3 relay performs the following continue monitoring functions on three-phase networks at 400 V AC:

- phase sequence
- phase failure
- minimum voltage (adjustable up to 70 % of Vn).

If one of the three failures is detected, the output relay (safety switching contact) intervenes with a delay adjustable from 2 to 20 seconds for minimum voltage only and controls the following:

- acoustic alarms
- motor controlling contactors
- circuit-breakers with coils.

	Bbn	Order details		Price	Weight	Pack
	8012542	Type code	Order code	1 piece	1 piece	unit
	EAN				kg	pc.
	372004	SQZ3	2CSM111310R1331		0.300	1

Protection and safety

E 236 undervoltage monitoring relays



E 236-US 1



E 236-US 2

Technical features

	US 1	US 2
Rated voltage	250 V AC	
Rated frequency	48-63 Hz	
Measuring range:	supply voltage	3N 400/230 V AC (terminals N-L1-L2-L3)
	overload capacity	3N 459/265 V AC
Switching capacity	device in series (distance < 5 mm): 750 VA (3 A/250 V AC); device not in series (distance > 5 mm): 1250 VA (5 A/250 V AC)	
Rated insulation voltage	250 V AC (corresponds with IEC 60664-1)	
Rated impulse withstand voltage	4 kV	
Tripping delay	ca. 100 ms	
Clearance and creepage distance	> 6 mm (between contact and electronics)	
Mechanical service life	20 x 10 ⁶ operations	
Electrical service life at 10000 VA	2 x 10 ⁵ operations	
Max. switching rate	max. 6/min (1000 VA Ohmic load); max. 60/min (100 VA Ohmic load)	
Ambient temperature	-25 °C/-13 °F to +55 °C/131 °F	
Overvoltage category	III	
Accuracy in non-changing environment:	setting tolerance (US 2)	≤ 5 %
	repeat accuracy	±1 %
	temperature effect	≤ 0.1 %/°C
Max terminals cross-section	4 mm ²	
Specifications	VDE 0110 and VDE 0435	
EMC tests	EN 50081-1 and EN 50082-2	
Displays	LED green= supply voltage applied; LED yellow= relay status	
Power loss	1.7 W	

E 236 undervoltage monitoring relays

Function

The green LED is lit when the supply voltage is applied. If each phase voltage exceeds 195 V (US1) or exceeds the preset threshold value (US2) with respect to the neutral including the hysteresis when switching the device on, the relay switches immediately into the working position. The yellow LED is lit. If at least one phase voltage falls below the threshold value, the relay goes back into its normal position and the yellow LED goes out.

If also phase 2 fails, the green LED goes out, too.

It is indispensable to connect the neutral conductor!

Application - devices with 2CO contacts

For the control of three-phase undervoltage (each phase to neutral) of switchgear, also for installations according to DIN VDE 0100-718 (power installations in hospitals and rooms used for medical purposes outside of hospitals) and DIN VDE 0108-100 (power installations and safety supply in buildings where many people gather).

US 1: 3 phases to neutral with fixed threshold at 195 V; hysteresis fixed 5 %

US 2: 3 phases to neutral with fixed threshold at 160 – 240 V; hysteresis fixed 5 %

Contact	Bbn 4016779	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
		EAN	Type code	Order code		
2CO	511087	E 236-US 1	2CDE165000R2001		0.095	5
2CO	511094	E 236-US 2	2CDE165010R2001		0.095	5

Protection and safety

E 236 undervoltage monitoring relays



E 236

Technical features

		US 1.1	US 2.1	US 1.1D
Supply circuit				
Supply voltage (= measured voltage)		3N~ 400/230 V AC (terminals N-C1-C2-C3)		
Overvoltage permanent		3N~ 459/265 V AC		
Rated frequency		48 – 63 Hz (AC sinus)		
Rated surge voltage:		4 kV		
Overvoltage category		III		
Output circuit (isolated two-way-switch)				
Rated voltage		250 V AC		
Switching capacity		1250 VA (5 A/250 V AC)		
Continuous current		1250 VA (5 A/250 V AC)		
Fuse protection		5 A flink		
Serviceable life, mechanical		15x106 switchover cycles		
Serviceable life, electric		2x105 switchover cycles at 1.000 VA resistive load		
Max. switching rate		max. 6/min at 1.000 VA resistive load		
		max. 60/min at 100 VA resistive load		
Trip delay		ca. 200 ms		
Pick-up delay (US 1.1D)		0.1 – 10 min		
Accuracy under constant conditions – setting accuracy (US 2.1/1.1D) – repeat accuracy – temperature effect		≤ 5 % of full scale value		
		≤ 2 %		
		≤ 1 %		
		≤ 1 %		
Ambient temperature		– 25° to + 55 °C		
Terminals		1 x 0.5 to 2.5 mm² with/without connector sleeve		
		1 x 4 mm² without connector sleeve		
		2 x 0.5 to 1.5 mm² with/without connector sleeve		
		2 x 2.5 mm² without connector sleeve		
Pick-up torque		max. 1 Nm		
Mounting position		optional		
Vibration resistance		10 to 55 Hz 0.35 mm (IEC 68-2-6)		
Shock resistance		15 g 11 ms (IEC 68-2-27)		
Reference standards		VDE 0110 und VDE 0435		
EMC tests		EN 61000-6-2 and EN 61000-6-4		
Back-up fuse		≤ 16 A		
Displays	green LED U/t ON	all 3 voltages ok		
	green LED U/t flashes	time-out indication		
	yellow LED ON/OFF	position of output relay		

All measured inputs have to be connected to one phase each. If no three-phase measurement should be carried out, measured inputs have to be connected to one phase to apply the required voltage to all measured inputs. If a load causes inverse voltage exceeding the threshold value U_s , phase failures cannot be identified.

A neutral conductor must be connected in any case!

Protection and safety

E 236 undervoltage monitoring relays



E236-US1.1



E236-US2.1



E236-US1.1D

Devices for panel installation onto mounting rails (35 mm) according to DIN EN 60715

mounting depth: 68 mm

mounting width: 17.5 mm = 1 module

color: gray, RAL 7035

Application - devices with 1CO contact

For three-phase undervoltage monitoring (each phase connected to a neutral conductor) of switchgear. Devices with fixed threshold value (US 1.x and US 1.1 D) also for installations according to

DIN VDE 0100-718 (for medical purposes) and DIN VDE 0108-100 (power installations and safety supply in installations for gathering of people).

US 1.1: 3 phases to neutral conductor with fixed threshold value at 195 V; hysteresis fixed at 5%

US 2.1: 3 phases to neutral conductor with threshold value range of 160 – 240 V; hysteresis fixed at 5%

US 1.1D: 3 phases to neutral conductor with fixed threshold value at 195 V; hysteresis fixed at 5%, but with switch-on delay of 0.1 (6 sec.) to 10 min

Undervoltage monitoring device with pick-up delay E236-US 1.1D

If the measurement of the voltage of all phases connected exceeds the switching threshold U_s , including the hysteresis, the time delay (t) starts to run and the (green LED U/t) flashes. Upon expiry of the time delay (t), the output relay R picks up (yellow LED on, green LED U/t flashes). If the measured voltage of one of the connected phases falls below the switching threshold U_s , the output relay de-energizes (yellow LED is off, green LED U/t is off).

Contact	Bbn 4016779	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
		EAN	Type code	Order code		
1 two-way switch	651776	E 236-US 1.1	2CDE165001R2001		0.05	10
1 two-way switch	651783	E 236-US 2.1	2CDE165011R2001		0.05	10
1 two-way switch	651790	E 236-US 1.1D	2CDE165001R2011		0.05	10

Protection and safety

ISL industrial insulation monitoring devices



ISL

Technical features ISL-A

		ISL-A		
		A 24-48	A 115 and A 230	A 600
Power consumption	[VA]	3	4	6
ALARM threshold	[kΩ]		30 - 30 (5 levels, selectable)	
TRIP threshold	[kΩ]	10 - 60 (5 levels by switches)	10 - 100 (5 levels selectable)	30 - 300 (adjustable by potentiometer)
LED indications	ON	■	■	■
	TRIP	■	■	■
	ALARM		■	
	+/-	■	■	■
Max trip delay	[s]	0.2	2	2.5
Max measuring current	[mA]	0.5	1.8	1.5
Internal impedance	[kΩ]	50	ISL-A 115: 200 kΩ L+/L- 100 kΩ L/PE ISL-A 230: 400 kΩ L+/L- 200 kΩ L/PE	880 kΩ L+/L - 450 kΩ L/PE
TRIP relay output		1 NO-C-NC	2 NO-C-NC	1 NO-C-NC
Alarm relay output			2 NO-C-NC	
Relay contact capacity		max 250 V, 5 A		
Programmed functions	Alarm output		■	
	Fail safe		■	■
	Reset	■		
Insulation		2.5 kV60 sec./ 6 kV imp 1.2/50 μs	2.5 kV 60 sec./ 4 kV imp 1.2/50 μs	2.5 kV 60 sec./ 6 kV imp 1.2/50 μs
Operating temperature	[°C]	-10 ÷ 60		
Storage temperature	[°C]	-20 ÷ 70		
Relative humidity		≤ 90%		
Max terminal cross-section	[mm ²]	4	2.5	2.5
Protection degree		IP40 front, IP20 enclosure		
Modules	[n°]	3	6	6
Weight	[g]	200	400	400
Reference standards		EN 61010-1, EN 61557-8, EN 61326-1		

Protection and safety

ISL industrial insulation monitoring devices



ISL-A

Technical features ISL-C and ISL-MOT

		ISL-C			ISL-MOT
		C 230	C 440	C 600	MOT 1000
Auxiliary power supply	[V]	220-240 V AC	220-240 V AC	100÷130 V AC/ 220÷240 V AC	220- 240 V AC
Power consumption	[VA]	3	3	5	3
TRIP threshold	[kΩ]	100	10 -150 (5 levels)	10-100 (5 levels)	0.1-10 (8 levels)
Alarm Threshold	[kΩ]	-	-	30-300 (5 levels)	-
LED indications	ON	■	■	■	■
	TRIP	■	■	■	■
	ALARM			■	
Max trip delay	[s]	1	4	5	0.2
Max measuring current	[mA]	0.1	0.1	0.25	0.0015
Max measuring voltage	[V]	12 V DC	12 V DC	48	20
Internal impedance	[kΩ]	250	250	200	AC: 1000 DC: 1500
TRIP relay output		1 NO-C-NC	1 NO-C-NC	2 NO-C-NC	1 NO-C-NC
Relay contact capacity		max 250 V, 5 A			
Insulation		2.5 kV60 sec./4 kV imp 1.2/50 μs			
Operating temperature	[°C]	-10 ÷ 60			
Storage temperature	[°C]	-20 ÷ 70			
Relative humidity		≤ 95%			
Max terminal cross-section	[mm²]	4	4	2.5	4
Protection degree		IP40 front, IP20 enclosure			
Modules	[n°]	3	3	6	3
Weight	[g]	200	200	500	200
Reference standards		EN 61010-1, EN 61557-8, EN 61326-1			

Insulation monitoring devices for voltageless network

Monitored line voltage	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
		EAN	Type code	Order code		
20-700 V AC/DC	943204	ISL-MOT 1000	2CSM808000R1500		0.300	1

Protection and safety

ISL industrial insulation monitoring devices



ISL-A



ISL-C

Insulation monitoring devices

In IT electrical distribution networks with isolated neutral, the high insulation impedance prevents earth faults from generating currents that would dangerously elevate the potential of exposed conductive parts. Therefore, in case of earth leakage in an IT network it is not necessary to interrupt the supply, but it is still essential to continually monitor the insulation level in order to detect faults and restore optimal functioning of the system.

In industrial installations, IT networks are used when operational continuity is an intrinsic requirement of the production process, due to both technical and economic considerations. Such applications include: metalworking and chemical industries, explosion risk locations, railway lines and vehicles, uninterruptible power supplies, cinema sets, emergency lines, fire water pumps and emergency lighting.

Insulation monitoring devices for AC networks

Max. monitored line voltage	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
		Type code	Order code			
220-240 V AC	942801	ISL-C 230	2CSM444000R1500		0.300	1
380-415 V AC	942900	ISL-C 440	2CSM545000R1500		0.300	1
60-760 V AC	943006	ISL-C 600	2CSM656000R1500		0.500	1

Insulation monitoring devices for DC networks

Max. monitored line voltage	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
		Type code	Order code			
100-144 V DC	942603	ISL-A 115	2CSM222000R1500		0.500	1
220 V DC	942702	ISL-A 230	2CSM333000R1500		0.500	1
400-600 V DC	498537	ISL-A 600	2CSM249853R1500		0.500	1

Insulation monitoring devices for AC/DC networks

Monitored line voltage	Bbn 8012542	Order details		Price 1 piece	Weight 1 piece kg	Pack unit pc.
		Type code	Order code			
24-28 V AC/DC	942504	ISL-A 24-48	2CSM111000R1500		0.300	1

Notes

