

THINK ELECTRICAL

SURGE PROTECTION

SHORTFORM CATALOGUE '19

ACDC
DYNAMICS
www.acdc.co.za



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Safety first!
Protection against
lightning and electrical damage.

SURGE PROTECTION DEVICES

EXPANDED RANGE



Integrated Lightning Arrester with Backup Fuse: Class 1

Fixed format with flag indication.

Code	Description	Iimp (10/35µs)	Aux	Poles Protected	Up	Un	Uc
961200	DEHNvenCI 1	25kA	-	1PH	≤1500V	230V	255V
961205	DEHNvenCI 1 FM	25kA	1C/O	1PH	≤1500V	230V	255V
961180	DEHNgap (Spark Gap)	100kA	-	N-E	≤1500V	-	255V
961185	DEHNgap FM (Spark Gap)	100kA	1C/O	N-E	≤1500V	-	255V

Busbar for connection of multiple arrestors to earth: 900411 (3P), 900417 (4P)



Combined Lightning & Surge Protection: Class 1+2 - Over Current Protection Required

Plug-in with flag indication. Maximum backup fuse: 315A.

Code	Description	In (8/20µs)	Iimp (10/35µs)	Aux	Poles Protected	Up	Un
951310	DEHNventil M TT	25/100kA*	25/100kA*	-	3PH + N	≤1500V	230/400V
951315	DEHNventil M TT FM	25/100kA*	25/100kA*	1C/O	3PH + N	≤1500V	230/400V
951110	DEHNventil M TT 2P	25/50kA*	25/50kA*	-	1PH + N	≤1500V	230V
951115	DEHNventil M TT 2P FM	25/50kA*	25/50kA*	1C/O	1PH + N	≤1500V	230V

Spare plug-in modules: 1PH: 951001, N-E: 951100 *L-N / N-E



Combined Lightning & Surge Protection: Class 1+2 - Over Current Protection Required

Plug-in with flag indication. Maximum backup fuse: 160A.

Code	Description	In (8/20µs)	Iimp (10/35µs)	Aux	Poles Protected	Up	Un
941110	DEHNshield d TT 2P	12.5/25kA*	12.5/25kA*	-	1PH + N	1.5kV	230V
941310	DEHNshield d TT	12.5/50kA*	12.5/50kA*	-	3PH + N	1.5kV	230/400V

* L-N / N-E



Surge Arrester: Class 2 - Over Current Protection Required

Plug-in with flag indication. Maximum backup fuse: 125A.

Code	Description	In (8/20µs)	I _{max} (8/20µs)	Aux	Poles Protected	Up	Un
952310	DEHNguard M TT	20kA	40kA	-	3PH + N	≤1500V	230/400V
952315	DEHNguard M TT FM	20kA	40kA	1C/O	3PH + N	≤1500V	230/400V
952110	DEHNguard M TT 2P	20kA	40kA	-	1PH + N	≤1500V	230V
952115	DEHNguard M TT 2P FM	20kA	40kA	1C/O	1PH + N	≤1500V	230V

Spare plug-in modules: 1PH: 952010, N-E: 952050



Integrated Surge Arrester with Backup Fuse: Class 2

Plug-in with flag indication.

Code	Description	In (8/20µs)	I _{max} (8/20µs)	Aux	Poles Protected	Up	Un
952322	DEHNguard M TT CI	12.5/20kA*	25/40kA*	-	3PH + N	≤1500V	230/400V
952327	DEHNguard M TT CI FM	12.5/20kA*	25/40kA*	1C/O	3PH + N	≤1500V	230/400V
952171	DEHNguard M TT CI 2P	12.5/20kA*	25/40kA*	-	1PH + N	≤1500V	230V
952176	DEHNguard M TT CI 2P FM	12.5/20kA*	25/40kA*	1C/O	1PH + N	≤1500V	230V

Spare plug-in modules: 1PH: 952020, N-E: 952050 * L-N / N-E



Surge Arrester: Class 2 - Over Current Protection Required

Plug-in with flag indication. Maximum backup fuse: 125A.

Code	Description	In (8/20µs)	I _{max} (8/20µs)	Aux	Poles Protected	Up	Uc
952070	DEHNguard S 275	20kA	40kA	-	1PH (L-N/E)	≤1500V	275V
952090	DEHNguard S 275 FM	20kA	40kA	1C/O	1PH (L-N/E)	≤1500V	275V
952030	DEHNgap C S (Spark Gap)	20kA	40kA	-	N-E	≤1500V	255V
952035	DEHNgap C S FM (Spark Gap)	20kA	40kA	1C/O	N-E	≤1500V	255V
952094	DEHNguard S 385 FM	20kA	40kA	1C/O	1PH (L-E)	≤1750V	385V
952075	DEHNguard S 440	20kA	40kA	-	1PH (L-E)	≤1700V	585V
952095	DEHNguard S 440 FM	20kA	40kA	1C/O	1PH (L-E)	≤1700V	585V

Spare plug-in Modules: 275V - 952010, 585V - 952015, Spark Gap: 952060

SURGE & NOISE PROTECTION

SURGE PROTECTION DEVICES

EXPANDED RANGE

NEW



Surge Arrester: Class 2 - Over Current Protection Required

Fixed format with flag indication. Maximum backup fuse: 125A.

Code	Description	Mounting Rail	In (8/20µs)	I _{max} (8/20µs)	Poles Protected	Up	Un
900453	DEHNgard Basic TT 2P	DIN/Samite	5kA	10kA	2	≤1.2kV	230V



Surge Arrester: Class 2 - Ideal for Gate Motor, Alarm Protection or Protection of LED Lighting

Fixed format with flag indication. Maximum backup fuse: 25A.

Code	Description	In (8/20µs)	I _{max} (8/20µs)	Poles Protected	Up	U _c
900430	DEHncord L 2P	5kA	10kA	1PH +N	≤1500V	230V

NEW



Photovoltaic Arrester with integrated DC Fuse: Class 1+2

Combined disconnection and short-circuiting device with safe electrical isolation prevents fire damage caused by switching DC arcs (patented SCI Principle)

Code	Description	In (8/20µs)	I _{tot} (8/20µs)	I _{imp} (10/350µs)	I _{tot} (10/350µs)	Aux	Up	U _{cpv}
900065	DEHNcombo YPV SCI 600 FM	15kA	30kA	6.25kA	12.5kA	1C/O	≤3kV	600V
900066	DEHNcombo YPV SCI 1000 FM	15kA	30kA	6.25kA	12.5kA	1C/O	≤4.75kV	1000V
900067	DEHNcombo YPV SCI 1500 FM	15kA	30kA	6.25kA	12.5kA	1C/O	≤7.25kV	1500V



Photovoltaic Arrester with Integrated DC Fuse: Class 2

Combined disconnection and short circuiting device with safe isolation in the plug-in module prevents fire damage caused by DC arcing (patented SCI principal).

Code	Description	In (8/20µs)	I _{max} (8/20µs)	Aux	Up	U _{cpv}	Replacement Modules	
							+/-	⊕
952518	DEHNgard M YPV SCI 150 FM	10kA	20kA	Yes	≤ 0.8kV	150V	952055	952045
952516	DEHNgard M YPV SCI 600 FM	12.5kA	25kA	Yes	≤ 2.5kV	600V	952053	952043
952515	DEHNgard M YPV SCI 1000 FM	12.5kA	25kA	Yes	≤ 4kV	1000V	952051	952041
952517	DEHNgard M YPV SCI 1200 FM	12.5kA	25kA	Yes	≤ 4.5kV	1200V	952054	952044

NEW



Photovoltaic Arrester: Class 2

Plug-in with flag indication. High reliability due to "Thermo-dynamic Control" SPD monitoring device.

Code	Description	In (8/20µs)	I _{max} (8/20µs)	Aux	Up	U _{cpv}	Replacement Modules
952565	DEHNgard M YPV 1200 FM	20kA	40kA	Yes	≤ 4kV	1170V	952048
952567	DEHNgard M YPV 1500 FM	15kA	40kA	Yes	≤ 5kV	1500V	952049

NEW

CLASS 2 FIELD DEVICE PROTECTION - HAZARDOUS AREAS

	Ex(d) 24V Type		Intrinsically Safe 24V Type		Ex(d) 230V & 24V Type	
Code	929962	929964	929961	929963	929969	929970
Type	DEHnpipe CD EXD 24		DEHnpipe CD EXI 24		DEHnpipe CD EXD 230 24	
Un	24V	24V	24V	24V	24V / 120/230V	24V / 120/230V
U _c (AC/DC)	22.6/32V	22.6/32V	22.6/32V	22.6/32V	22.6/32V / 255VAC	22.6/32V / 255VAC
Nominal Current	0.55A	0.55A	0.55A	0.55A	0.55A	0.55A
I _{imp} (10/350µs)	1kA	1kA	1kA	1kA	1kA	1kA
In (8/20µs)	10kA	10kA	10kA	10kA	10kA/3kA	10kA/3kA
Cut-off Freq Line-Line	67MHz	67MHz	67MHz	67MHz	67MHz	67MHz
Mounting Thread	M20 x 1.5 Male	½-14NPT Male	M20 x 1.5 Male	½-14NPT Male	M20 x 1.5 Male	½-14NPT Male
Application	Flameproof surge arrester with a low-capacitance protective circuit for protecting measuring circuits and bus systems in potentially explosive atmospheres.		Surge arrester with a low-capacitance protective circuit for protecting intrinsically safe measuring circuits and bus systems.		Flameproof surge arrester for the data & power side for protecting one 120/230V power supply system & one 24V data interface of field devices in potentially explosive areas (zone 1 & 2). Additional safety due to fault-proof Y circuit for 120/230V power supply systems.	
ATEX Approval	KEMA 04ATEX2190 X: II 2 G Ex d IIC T5 or T6 Gb		KEMA 04ATEX1189 X: II 2 (1) G Ex ia [ia Ga] IIC T5 ... T6 Gb		KEMA 10ATEX0114 X: II 2 G Ex d IIC T5/T6 Gb	

SURGE PROTECTION DEVICES

EXPANDED RANGE



920244

926304
920300



920244

926344



920344

Application

Note:
Base & Modules
sold separately

DIN Mount Base - for Protection Modules

Code	Description
920300	Base Blitzductor 4P - Without Signal Interruption
926304	Base Blitzductor 4P - Signal Interrupted if Module Removed

Blitzductor Protection Modules

Code	Description	I imp Tot. (10/350µs)	In (8/20µs)	Cut-off Freq.	Poles Protected	Un	Uc
Class 1 BD - 1 Pair of unearthed balanced interfaces with direct or indirect shield earthing							
920240	Blitzductor XT ML2 BD S5	9kA	20kA	1.0MHz	4	5V	6V
920242	Blitzductor XT ML2 BD S12	9kA	20kA	2.8MHz	4	12V	15V
920244	Blitzductor XT ML2 BD S24	9kA	20kA	7.8MHz	4	24V	33V

Class 1 BD - 2 Pairs of unearthed balanced Interfaces

920340	Blitzductor XT ML4 BD 5	10kA	20kA	1.0MHz	4	5V	6V
920342	Blitzductor XT ML4 BD 12	10kA	20kA	2.8MHz	4	12V	15V
920344	Blitzductor XT ML4 BD 24	10kA	20kA	7.8MHz	4	24V	33V

Class 2 BE - Unbalanced Interfaces or 4 lines with common reference potential

926324	Blitzductor SP M4 BE 24	1kA	20kA	6.8MHz	4	24V	33V
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Class 2 BD - 1 Pair of balanced interfaces with galvanic isolation

926240	Blitzductor SP M2 BD 5	1kA	20kA	1.0MHz	2	5V	6V
926242	Blitzductor SP M2 BD 12	1kA	20kA	2.8MHz	2	12V	15V
926244	Blitzductor SP M2 BD 24	1kA	20kA	7.8MHz	2	24V	33V

Class 2 BD - 2 Pairs of unearthed balanced Interfaces

926340	Blitzductor SP M4 BD 5	1kA	20kA	1.0MHz	4	5V	6V
926342	Blitzductor SP M4 BD 12	1kA	20kA	2.8MHz	4	12V	15V
926344	Blitzductor SP M4 BD 24	1kA	20kA	7.8MHz	4	24V	33V

Protection for Telecommunication and Data Networks (PoE IEEE 802.3at)

Code	Description	I imp (10/350µs)	In (8/20µs)	Cut-off Freq.	Uc	Input/Output
929121	DEHNpatch M CLE RJ45B 48	0.5kA	10kA	250MHz	48V	RJ45 (Sockets)
929126	DEHNpatch M CLD RJ45B 48	0.5kA	10kA	100MHz	48V	RJ45 (Sockets)

NEW

Protection for Coaxial Equipment - BNC

Code	Description	In (8/20µs)	Freq.	Impedance	Mounting	Uc	Un
929010	UGKF BNC	2.5kA	0-300MHz	50/75Ω	In-Line	8V	5V
909711	DEHNgate BNC VC	2.5kA	0-300MHz	50Ω	DIN Rail Mount	8V	5V

DGA TV

DGA ... TV arresters with F connection for remote supply protect 75 ohm satellite and broadband cable systems and fulfill the high shielding requirements of class A according to EN 50083-2. They allow space-saving installation in all common TV and satellite applications and are available as lightning current arresters as well as combined lightning current and surge arresters with integrated measuring output, allowing the system to be easily tested.

Code	Description	I imp (10/350µs)	In (8/20µs)	Cut-off Freq.	Uc	Input/Output
909703	DEHNgate FF TV Class 3	0.2kA	1.5kA	5-3000MHz	24V	F Socket
909705	DEHNgate GFF TV Class 1+3	2.5kA	10kA	5-2400MHz	24V	F Socket

NEW

NEW



929121
929126



909711

929010



909703

EXPANDED RANGE

SURGE PROTECTION DEVICES

Lightning Current Arrestors: Class 1 - c/w Flag Indication & Replaceable Module

SPD Type1 encapsulated high-performance spark gap arrestors. Installation at Boundary Zones LPZ 0 and LPZ 1. 1 Phase systems require 1 x FLP-SG50 VS/1 + 1 x FLP-A50N VS for Neutral/Earth Protection. 3 Phase systems require 3 x FLP-SG50 VS/1. 1 x FLP-A100N VS for Neutral/Earth Protection.



Code	No. of Poles	I imp (10/350µs)	I max (8/20µs)	I n (8/20µs)	Up	Uc	Un	DIN Width	Aux
FLP-SG50 VS/1	1P (L/N)	50kA	-	50kA	<2.5kV	255V	230V	2	Y
FLP-A50N VS	1P (N/PE)	50kA	100kA	50kA	<1.5kV	255V	-	2	Y
FLP-A100N VS	1P (N/PE)	100kA	100kA	100kA	<1.5kV	255V	-	2	Y

Replaceable Surge Protection Module: FLP-SG50 V/0

Lightning Current Arrestor and Surge Arrestor: Class 1 + 2 - c/w Flag Indication & Replaceable Module

A combination of a highly efficient varistor lightning current arrestor and an encapsulated high-performance spark gap. Maximum overcurrent protection 250A (back-up MCB). For protection against impact of direct or indirect lightning strikes in a wide range of applications.



Code	No. of Poles	I imp (10/350µs)	I max (8/20µs)	I n (8/20µs)	Up	Uc	Un	DIN Width	Aux
FLP-B+C MAXI VS/1	1P	25kA	60kA	30kA	<1.5kV	260V	230V	2	Y
FLP-B+C MAXI VS/2	2P	25kA	60kA	30kA	<1.5kV	260V	230V	4	Y
FLP-B+C MAXI VS/1+1	1P + N	25/50kA*	60/100kA*	30/50kA*	<1.5kV	260V	230V	4	Y
FLP-B+C MAXI VS/4	4P	25kA	60kA	30kA	<1.5kV	260V	230V	8	Y
FLP-B+C MAXI VS/3+1	3P + N	25/100kA*	60/100kA*	30/100kA*	<1.5kV	260V	230V	8	Y

* L-N/N-E

Replaceable Surge Protection Module: FLP-B+C MAXI VS/0

Lightning Current Arrestor and Surge Arrestor: Class 1 + 2 - c/w Flag Indication & Replaceable Module

Varistor lightning current for protection against impact of partial lightning currents, induced overvoltages during a lightning strike or switching over voltages. Maximum overcurrent protection 160A (back-up MCB).



Code	No. of Poles	I imp (10/350µs)	I max (8/20µs)	I n (8/20µs)	Up	Uc	Un	DIN Width	Aux
FLP-8.5 V/1	1P	8.5kA	60kA	30kA	<1.5kV	275V	230V	1	N
FLP-8.5 V/1S	1P	8.5kA	60kA	30kA	<1.5kV	275V	230V	1	Y
FLP-8.5 V/1+1	1P+N	8.5/25kA*	60kA	30kA	<1.5kV	275V	230V	2	N
FLP-8.5 V/1S+1	1P+N	8.5/25kA*	60kA	30kA	<1.5kV	275V	230V	2	Y
FLP-8.5 V/3+1	3P+N	8.5/25kA*	60kA	30kA	<1.5kV	275V	230V	4	N
FLP-8.5 V/3S+1	3P+N	8.5/25kA*	60kA	30kA	<1.5kV	275V	230V	4	Y

* L-N/N-E

Replaceable Surge Protection Module: FLP-8.5 V/0

Surge Arrestors: Class 2 - c/w Flag Indication & Replaceable Modules

Varistor surge arrestors for protection of installations and equipment against the impact of induced overvoltages during a lightning strike or switching overvoltages. Maximum overcurrent protection: 160A (Backup MCB).



Code	No. of Poles	I max (8/20µs)	I n (8/20µs)	Up	Uc	Un	DIN Width	Aux
SLP-275V/1	1P	40kA	20kA	<1.35kV	275V	230V	1	N
SLP-275V/1S	1P	40kA	20kA	<1.35kV	275V	230V	1	Y
SLP-275V/1+1	1P + N	40kA	20kA	<1.35kV	275V	230V	2	N
SLP-275V/1S+1	2P	40kA	20kA	<1.35kV	275V	230V	2	Y
SLP-275V/3+1	3P + N	40kA	20kA	<1.35kV	275V	230V	4	N
SLP-275V/3S+1	3P + N	40kA	20kA	<1.35kV	275V	230V	4	Y
SLP-075V/1	1P	40kA	15kA	<0.4kV	75V	60V	1	N
SLP-075V/2S	1P	40kA	15kA	<0.4kV	75V	60V	2	Y
SLP-150V/1	1P	40kA	15kA	<0.7kV	150V	120V	1	N
SLP-440V/1	1P	40kA	20kA	<1.9kV	440V	400V	1	N
SLP-601V/1	1P	40kA	15kA	<2.4kV	600V	480V	1	N

Replacement Varistor Modules

Code	SLP-075V/0	SLP-150V/0	SLP-275V/0	SLP-440V/0	SLP-601V/0
Uc	75V	150V	275V	440V	600V

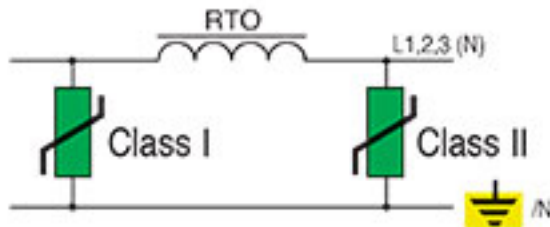
SURGE PROTECTION DEVICES



Surge Separating Inductors

Surge separating conductors are designed to co-ordinate the function of surge arrestors class 1 and 2 or class 2 and 3 when the cable distance between them is less than 10m, such as when they are in the same or adjacent boards.

Code	Un	Load Current	Frequency	Resistance	Inductance	Mounting	Size
RTO16	500VAC	16A	50Hz	5mΩ	10μH	DIN	1M
RTO35	500VAC	35A	50Hz	2.5mΩ	10μH	DIN	2M
RTO63	500VAC	63A	50Hz	2mΩ	10μH	DIN	4M
RTO125	500VAC	125A	50Hz	1.1mΩ	15μH	Chassis	100x105x80mm



Special Surge Protection for Inverters: Class 2 (e.g. Wind Turbines)

Varistor surge arrestors for protection of installations and equipment against the impact of induced overvoltages during a lightning strike or switching overvoltages. Maximum overcurrent protection: 100A (Backup MCB).

Code	No. of Poles	I _{max} (8/20μS)	I _n (8/20μS)	U _p	U _c	DIN Width	Aux
SLP-880V/3	3	40kA	15kA	<3.2kV	880V	3	N



DA-275S
Remote Fault Signalling



DA-275A
Acoustic Signalling

Surge Arrester: Class 3

Surge protection for additional installation in devices, equipment, etc. Designed to protect all types of low-voltage electric and electronic equipment against pulse over-voltage. I.e. Gate Motors, House Alarms.

Code	No. of Poles	I _n (8/20μS)	U _p	U _c	U _n	Fault Indication
DA-275A	2P	2kA	1.5kV	275V	230V	Acoustic Signalling
DA-275S	2P	2kA	1.5kV	275V	230V	LED indication & Aux Contact

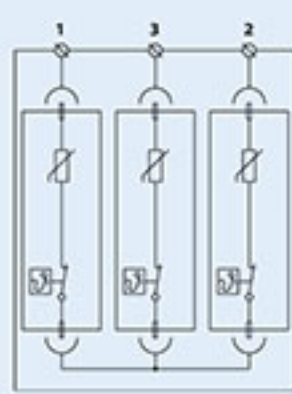
PHOTOVOLTAIC SYSTEM PROTECTION



SLP-PV V/U



SLP-PV V/Y



Surge Arrester for PV Systems: Class 2 - c/w Flag Indication & Replaceable Modules

Varistor surge arrestors for protection of PV systems where the separating spark-over distance is kept or without LPS. Maximum continuous operating voltage for PV application: U_{cpv} ≥ 1.2 x U_{oc} stc

Code	No. of Poles	I _{max} (8/20μS)	I _n (8/20μS)	U _p	U _{cpv}	DIN Width	Aux
SLP-PV170 V/U	2	40kA	15kA	0.6/12kV*	170 / 340VDC*	2	N
SLP-PV500 V/U	2	30kA	15kA	2/4kV*	510 / 1020VDC*	2	N
SLP-PV700 V/Y	3	40kA	20kA	3.6kV	750VDC	3	N
SLP-PV1000 V/Y	3	30kA	15kA	4.0kV	1020VDC	3	N
SLP-PV1500 V/Y	3	40kA	15kA	6.4kV	1500VDC	3	N

* Connection: 1-3, 2-3 / 1-2

Replacement Varistor Modules

Code	SLP-PV170U V/U	SLP-PV500U V/U	SLP-PV350Y V/U	SLP-PV500Y V/U	SLP-PV750Y V/U
U _{cpv}	170V	500V	700V	1000V	1500V

Surge Arrester for PV Systems: Class 1 + 2 - c/w Flag Indication and Replaceable Modules

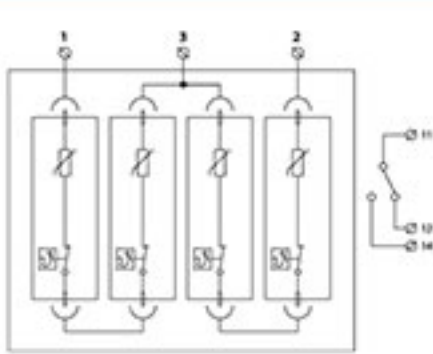
Varistor lightning current arrester for the protection of PV systems on roofs, where the separating spark-over distance is not kept (connection to LPS). Maximum continuous operating voltage for PV application: U_{cpv} ≥ 1.2 x U_{oc} stc

Code	No of Poles	I _{tot} /I _{imp} (10/350μs)	I _{max} (8/20μS)	I _n (8/20μS)	U _p	U _{cpv}	DIN Width	Aux
FLP-PV550 V/US	4	25kA (total)	60kA	30kA	2.4/4.8kV*	560/1120VDC*	4	Y
FLP-PV1000 VS/Y	3	12.5kA (imp.)	60kA	30kA	3.6kV	1000VDC	6	Y

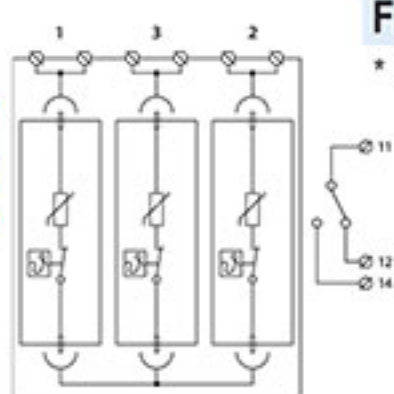
* Connection: 1-3, 2-3 / 1-2 Replacement Varistor modules: **FLP-PV275U V/U** (550V), **FLP-PV500Y V/U** (1000V)



FLP-PV550 V/US



FLP-PV1000 VS/Y



DATA LINE & FIELD DEVICE PROTECTION



DM-1RDJ



DM-230-V/1-R

Surge Protection for Telecommunication and Signalling Networks

Combination of coarse and fine surge protection for 2-core signalling lines, for installation close to protected equipment. For protection of communication interfaces of I&C, electronic security and fire detection systems, etc. (mainly for RS-485 interfaces) against impact of surge voltage. Coarse and fine surge protection in differential mode (core - core) and common mode (core - PE).

Code	In (8/20µs)	Up	Uc	Un	Bandwidth	DIN Width	Aux
DM-006-1RDJ	10kA	25V	8.1VDC	6VDC	1MHz	1	N
DM-012-1RDJ	10kA	35V	14.5VDC	12VDC	1.7MHz	1	N
DM-024-1RDJ	10kA	50V	29.1VDC	24VDC	3.4MHz	1	N
DM-048-1RDJ	10kA	80V	50.2VDC	48VDC	7MHz	1	N
DM-230-V/1-R	10kA	350V	250VDC	230VDC	11MHz	1	N

Surge Protection for Ethernet in 19" Rack



Mains Voltage Surge Protection for use in 19" Racks



Code	DL-CAT5E-*	DL-CAT6-*	Code	X12
Type	Patch Panel 19"	Patch Panel 19"	Nominal Voltage Un	230V
Connections	RJ45/RJ45 (Shielded)	LSA/ RJ45 (Shielded)	Maximum Operating Voltage Uc	275V
Maximum operating Voltage Uc	8.1VDC/ 5.7VAC	8,5VDC / 60VAC	Nominal Load Current	10A/Outlet
Voltage Protection Level Core-Core Up	40V	40V	Nominal Discharge Current (8/20µs) In	3kA
Nominal Discharge Current (8/20µs) In	0,2kA	0,2kA	Voltage protection Level Up	1.6kV
Total Discharge Current (8/20µs)/Itot	1.6kA	1.6kA		
Insertion Attenuation	1.5dB @ 100MHz	2,0dB @ 250MHz		

*Add number of ports: 8,16,24

Data Line Protection

Combination of coarse and fine protection for communication equipment.

Size: 90 x 54 x 25mm
Suitable for DIN Rail Mounting



Suitable for both Mode A and Mode B POE Lines



Code	DL-CAT5E-RJ45	DL-CAT6-RJ45	DL-CAT5E-POE	DL-1G-RJ45-POE
Protection For	Data Line	Data Line	Data Line	Power
Nominal Voltage Un	-	-	-	48VDC
Max Operating Voltage Uc	6VAC / 8.5VDC	6VAC / 8.5VDC	6VAC / 8.5VDC	40VAC/76VDC
Discharge Current (8/20µs) In	0.2kA	0.2kA	1.5kA	10kA
Discharge Current (10/350µs)Itot	-	-	-	0,15kA
Protection Voltage Core-Core Up	40V	40V	180V	280V
Attenuation	1.2dB @ 100MHz	2dB @ 250MHz	1.5dB @ 100MHz	-
Connections IP / OP	RJ45 / RJ45	RJ45 / RJ45	RJ45 / Terminal	RJ45 / RJ45
Application	Ethernet 100Mbit/s	CAT6 Ethernet 1Gbit/s	Ethernet 100Mbit/s + POE	CAT6 Ethernet 1Gbit/s + POE

Data Line Protection

Combination of coarse and fine protection for communication equipment.

Suitable for DIN Rail Mounting.



Code	DM-PROFIBUS-5	DM-PROFIBUS-24	FX-90F75T	DL-TLF
Max Operating Voltage Uc (AC/DC)	5.7VAC / 8.1VDC	20.6VAC / 29VDC	70VDC	114VAC/162VDC
Discharge Current (8/20µs) In	10kA	10kA	10kA	2,5kA
Discharge Current (10/350µs)limp	-	-	2.5kA	-
Protection Voltage Core-Core Up	150V	300V	600V	260V
Threshold Frequency	100MHz	100MHz	2,15GHz	14MHz
Attenuation	-	-	<0,2dB	-
Connections IP / OP	Terminal/Terminal	Terminal/Terminal	F75/F75	RJ11/RJ11
Size(L x H x W)mm	36 x 90 x 53	37 x 90 x 53	45 x 54 x 25	45 x 54 x 25
Protection For	RS485 + PROFIBUS	RS485 + PROFIBUS	Coaxial Lines	Telephone / ADSL

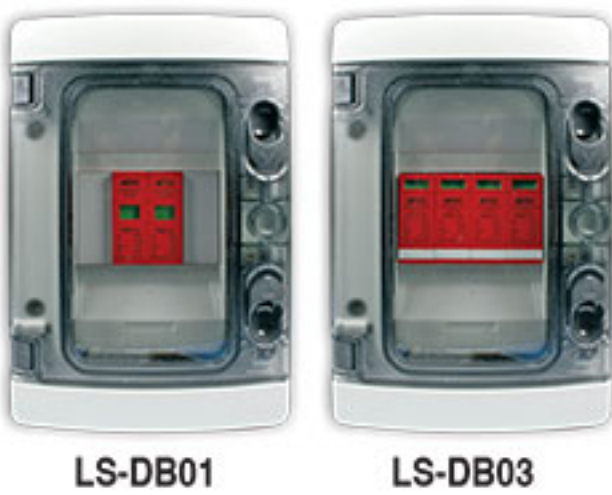
SURGE PROTECTION DEVICES



Surge Arrestors: Class 2 - DIN Rail Mounting

Code	No. of Poles	I _{max} (8/20μS)	I _n (8/20μS)	U _p	U _c	U _n	DIN Width	Aux	Flag Indication
NU-230	1P+N	5kA	-	≤ 1kV	275V	230V	1	N	N
KM20/1-275	1P	60kA	40kA	≤ 1.5kV	275V	230V	1	N	Y
KM20/2-275	1P+N	60kA	40kA	≤ 1.5kV	275V	230V	2	N	Y
KM20C/2-275	1P+N	60kA	40kA	≤ 1.5kV	275V	230V	2	Y	Y
KM20/4-275	3P+N	60kA	40kA	≤ 1.5kV	275V	230/400V	4	N	Y
KM20C/4-275	3P+N	60kA	40kA	≤ 1.5kV	275V	230/400V	4	Y	Y
BU1-1P 230V	1P	100kA	65kA	≤ 1.5kV	275V	230V	1.5	N	Y
BU1-2P 230V	1P+N	100kA	65kA	≤ 1.5kV	275V	230V	3	N	Y
BU1-4P 230V	3P+N	100kA	65kA	≤ 1.5kV	275V	230/400V	6	N	Y

DB Board System: Class 2 - IP65 Surface mount



Code	Description	Size H x W x D
Single Phase		
LS-DB01	1 Pole + N 230V 40kA Lightning Protection in surface mounting DB Board	210 x 143 x 100
Three Phase + N		
LS-DB03	3 Pole + N 230V(L-N) 40kA Lightning Protection in surface mounting DB Board	210 x 143 x 100

Surge Arrestor: Class 2 - Mini Rail Mounting



CB1

Code	No. of poles	I _{max} (8/20μS)	I _n (8/20μS)	U _p	U _c	U _n	DIN Width	Aux	Flag Indication
SASP-5KA	1	10kA	5kA	1200V	275V	230V	1	N	Y
SASP-15KA	1	30kA	15kA	1200V	275V	230V	1	N	Y

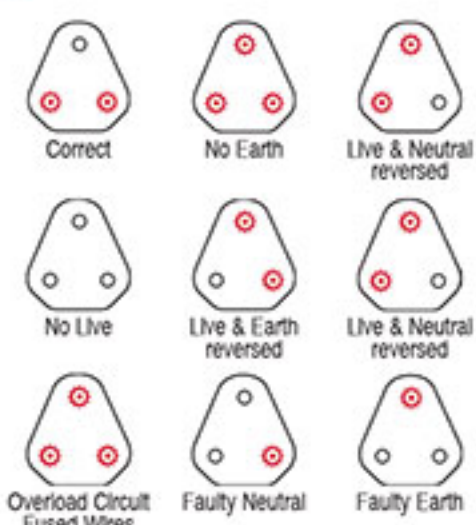
Surge Arrestor for PV systems: Class 2 - c/w Flag Indication



For protection against lightning surge voltages in solar systems. It's recommended that protection is installed at both ends of the DC power supply line (solar panel side and inverter/converter side), especially if the line routing is external & long. High energy MOVs equipped with specific thermal disconnectors and related failure indicators.

Code	No. of Poles	I _{max} (8/20μS)	I _n (8/20μS)	U _p	U _{cpv}	U _{oc Max}	DIN Width	Aux
SUP2-PV-500V	2	40kA	20kA	≤ 2.0kV	500VDC	500VDC	2	Y
SUP2-PV-1000V	3	40kA	20kA	≤ 3.8kV	1000VDC	900VDC	3	Y
SUP2-PV-1500V	3	40kA	20kA	≤ 5.0kV	1560VDC	1500VDC	3	Y

15A RSA PLUG TOPS WITH SURGE PROTECTION



LP-600*

15A Mains Plug.
6500A Surge Protector.
Protection between L-N, L-E
and N-E. Plus wiring check.



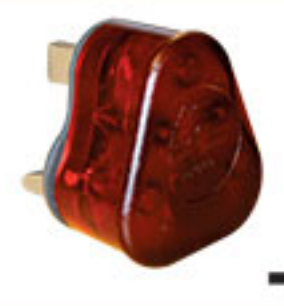
LP-601*

15A main surge protection
without wiring check



LP-603*

15A dedicated plug
Features same as LP-600



LP-604

13A British Standard with
6500 Amp Surge
Protection.

PLUG-IN MAINS SURGE PROTECTION

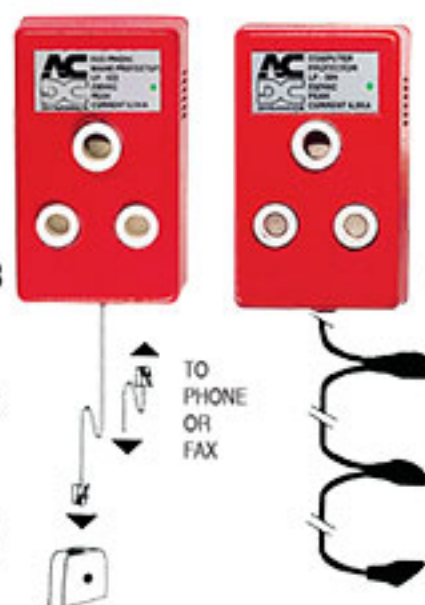
Now with green LED to confirm that you are protected!

LP-502G



LP-501G
MAF1G

DLP-503



DLP-504

Telefax

TO TELKOM WALL PLUG

TO PHONE OR FAX

COMPUTER

MONITOR

Plug-in types for home & small business

Description	Code (White) Standard	Code (Red) Dedicated
Mains Plug Accepts any 15A plug top. Withstands surge currents up to 6500A	LP-501G	DLP-501
TV Lightning Protector Protects against surges on mains and lightning on the TV antenna. Withstands surge currents up to 6500A.	LP-502G	DLP-502
Fax Lightning Protector Protects both the mains power supply and telecoms. Suitable for fax, answering machines and modems. 6500A surge current protection.	LP-503G	DLP-503
Computer Lightning Protector In addition to surge protection, this unit provides more efficient cable management and power distribution for small business and home computer use. 6500A surge current protection.	LP-504G	DLP-504

ECONOMY MAINS PROTECTION



LP1 & LP2 DIN Mounting



LP1-8
LP2-8

Economy Mains Protection - Indoors/Outdoors - Ideal for gate motors & LED Lights

Code	No. of Poles	I _{max} (8/20μS)	Clamping Voltage (Up)	U _c	U _n	Response Time
LP1-8	1 Pole (2 wire)	5kA	710V	275V	230V	<20nS
LP2-8	2 Pole (3 wire)	5kA	710V	275V	230V	<20nS
LP1-65	1 Pole (2 wire)	40kA	710V	275V	230V	<25nS
LP2-65	2 Pole (3 wire)	40kA	710V	275V	230V	<25nS
LP1-40-4	1 Pole (2 wire)	40kA	1240V	680V	400V	<25nS
LP2-40-4	2 Pole (3 wire)	40kA	1240V	690V	400V	<25nS
LP1-40-5	1 Pole (2 wire)	40kA	1650V	950V	550V	<25nS
LP2-40-5	2 Pole (3 wire)	40kA	1650V	950V	550V	<25nS

NEW

LIGHTING SURGE PROTECTION IP65



GDPD1/S



M995

SPD's for use in Lighting Applications (eg. Flood Lights, High Bays, Street Lights)

Code	No. of Poles	I _{max} (8/20μS)	I _n (8/20μS)	U _p	U _c	Connection
GDPD1	2 Pole (3 wire)	20kA	10kA	850V	120-277V	Paralell
GSPD1S	2 Pole (3 wire)	10kA	5kA	850V	120-277V	Paralell
M995*	2 Pole (3 wire)	10kA	5kA	1000V	120-277V	Series

* Max Load Current = 3A - **NOTE:** Load will be disconnected when SPD reaches end of life

SURGE PROTECTION FOR AV/TELECOMS

Antenna Surge Protection Device - 75Ω



Code	Working Frequency	Nominal Discharge 8/20μS
KA-F-450	400-500MHz	10kA
KA-F-900	800-1000MHz	10kA
KA-F-1800	1700-1900MHz	10kA

- Connector: F-connector
- Insertion loss: ≤0.3dB
- Transmission Power: 200W
- Size: 58L x Ø25.5mm

Co-axial Surge Protection Device - 75Ω



Code	Operating Voltage	Nominal Discharge 8/20μS
KS-BNC-10/3-5	5V	3kA
KS-BNC-10/3-12	12V	3kA

- Connector: BNC 75Ω
- Insertion loss: ≤0.5dB
- Transmission Rate: 10 Mbit/s
- Size: 42 x 25 x 25mm



Telecommunication Surge Protection Devices - Insertion loss: ≤0.5dB

Code	Operating Voltage	Nominal Discharge 8/20μS	Transmission Rate	Interface Type	Size (mm)
KS-RJ11-2/3-48	48V	3kA	2 Mbit/s	RJ11	70 x 25 x 25
KS-G3.81-2/3-48	48V	3kA	2 Mbit/s	Screw Term	59 x 25 x 25
KS-RJ45-100/3-12	12V	3kA	100 Mbit/s	RJ45	99 x 25 x 25

SURGE PROTECTION



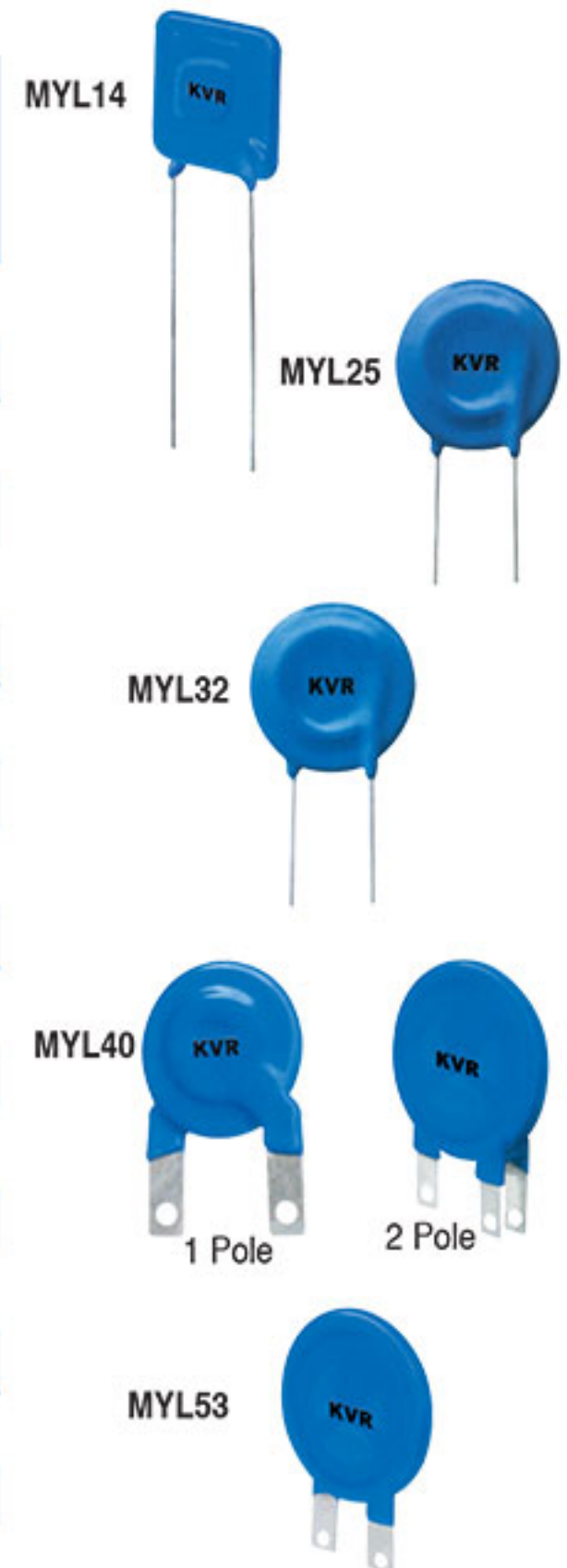
Metal Oxide Varistors – General Protection

For safeguarding sensitive equipment against voltage surges and stabilising higher DC voltages.

AC Voltage V_{RMS}	DC Voltage V_{DC}	Peak Current (8/20 μs) I_{max}	Clamping Voltage V_c	Dimensions \varnothing	Code	AC Voltage V_{RMS}	DC Voltage V_{DC}	Peak Current (8/20 μs) I_{max}	Clamping Voltage V_c	Dimensions \varnothing	Code
11V	14V	1kA	36V	13.5mm	V11K10	275V	350V	3.5kA	710V	13.5mm	V275K10
11V	14V	2kA	36V	17mm	V11K14	275V	350V	6kA	710V	17mm	V275K14
11V	14V	3kA	36V	24mm	V11K20	275V	350V	10kA	710V	24mm	V275K20
20V	26V	1kA	65V	13.5mm	V20K10	460V	615V	3.5kA	1 240V	13.5mm	V460K10
20V	26V	2kA	65V	17mm	V20K14	460V	615V	6kA	1 240V	17mm	V460K14
20V	26V	3kA	65V	24mm	V20K20	460V	615V	10kA	1 240V	24mm	V460K20
30V	38V	1kA	93V	13.5mm	V30K10	550V	745V	3.5kA	1 500V	13.5mm	V550K10
30V	38V	2kA	93V	17mm	V30K14	550V	745V	6kA	1 500V	17mm	V550K14
30V	38V	3kA	93V	24mm	V30K20	550V	745V	10kA	1 500V	24mm	V550K20
130V	170V	10kA	340V	24mm	V130K20	625V	825V	3.5kA	1 650V	13.5mm	V625K10
140V	180V	3.5kA	360V	13.5mm	V140K10	625V	825V	6kA	1 650V	17mm	V625K14
140V	180V	6kA	360V	17mm	V140K14	625V	825V	10kA	1 650V	24mm	V625K20
140V	180V	10kA	360V	24mm	V140K20						

Metal Oxide Varistors – Lightning Protection

Poles	AC Voltage V_{RMS}	DC Voltage V_{DC}	Peak Current (8/20 μs) I_{max}	Clamping Voltage V_c	Dimensions	Code
1	140V	180V	8kA	360V	17.5W x 20.5H	MYL14-221A
1	275V	360V	8kA	710V	17.5W x 20.5H	MYL14-431A
1	140V	180V	15kA	360V	28 \varnothing x 8.2	MYL25-221A
1	275V	360V	15kA	710V	28 \varnothing x 9.3	MYL25-431A
1	460V	615V	15kA	1240V	28 \varnothing x 11.2	MYL25-751A
1	620V	800V	15kA	1650V	28 \varnothing x 12.4	MYL25-102A
1	140V	180V	25kA	360V	34 \varnothing x 6.8	MYL32-221A
1	275V	360V	25kA	710V	34 \varnothing x 7.9	MYL32-431A
1	460V	615V	25kA	1240V	34 \varnothing x 9.8	MYL32-751A
1	620V	800V	25kA	1650V	34 \varnothing x 11.2	MYL32-102A
1	275V	360V	40kA	710V	43 \varnothing x 8	MYL40-431B
1	460V	615V	40kA	1240V	43 \varnothing x 10	MYL40-751B
1	620V	800V	40kA	1650V	43 \varnothing x 11	MYL40-102B
2	275V	360V	40kA	710V	43 \varnothing x 11.4	MYL40-431F
2	460V	615V	40kA	1240V	43 \varnothing x 16.3	MYL40-751F
2	620V	800V	40kA	1650V	43 \varnothing x 19.9	MYL40-102F
1	275V	360V	70kA	360V	60 \varnothing x 7.9	MYL53-431B
1	460V	615V	70kA	710V	60 \varnothing x 9.8	MYL53-751B
1	620V	800V	70kA	1650V	60 \varnothing x 11.2	MYL53-102B



EXTERNAL LIGHTNING PROTECTION



Earth Rods

250 Micron* Code	150 Micron Code	Description	Material
ER1216	ER1216/1	1.2m x M16 Earth Rod	Copper Plated Steel
ER1516	ER1516/1	1.5m x M16 Earth Rod	Copper Plated Steel
ER1816	ER1816/1	1.8m x M16 Earth Rod	Copper Plated Steel
ER2416	ER2416/1	2.4m x M16 Earth Rod	Copper Plated Steel
ER3016	-	3.0m x M16 Earth Rod	Copper Plated Steel

*SABS 1063/85 with copper electroplated to 250 Microns

Accessories

ERA01	Driving Cap	Case Hardened Steel
ERA02	Driving Tip	Case Hardened Steel
ERA03	Coupling	Brass
ERA04	70mm Clamp	Brass
ERA05	Driving Stud	High Tensile Steel

Earthing Mats see page 494



Lightning Conductors - works with TELE-TESTER-S3

Code	Description
SAT-3C*	SAT-3C was designed combining the lightning conductor and its tester. The SAT-3C is equipped with an on-board transmitter using a standard frequency which transmits a signal every 90 seconds to confirm the correct operation of the lightning conductor's electronics, incl. the polarisation of the tips.

*Add triggering advance value to code 25, 45, 60
See table for selection.

TELE-TESTER-S3 SAT-3C can be tested remotely, via radio signals. The TeleTester-S3 receives the information transmitted by SAT-3C and emits an audible signal confirming the installation is fully functional.

Order Information

$\Delta T(\mu s)$	Description	TIP Height
25	25 μs triggering advance	2.0m
45	45 μs triggering advance	2.03m
60	60 μs triggering advance	2.06m

Lightning Conductors - works without TELE-TESTER-S3

Code	Description
SAT-G2*	The SAT-G2* is an Early Streamer Emission lightning conductor, known as a Zonal protector. In the event of descending lightning, a built-in triggering-device generates high-tension pulses at the conductor tip, protecting your structure from a lightning strike.

*Add triggering advance value to code 25, 45, 60 See table for selection

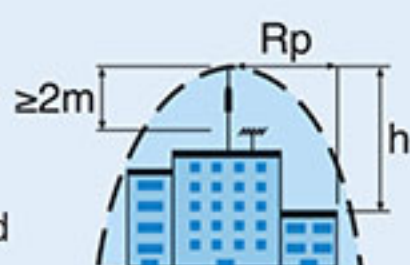


Lightning Strike Counter IP65

Code	Description
CCF4045	The CCF4045 lightning strike counter mounting is made in parallel on the down conductor with the help of two tightening clamps and 4 screws. Its protection level of IP65 makes it particularly suited to aggressive environments and extreme weather conditions. Records each strike between 0.4kA - 150kA

Calculation of Protected Areas

The radius of protection (R_p) of a Duval depends on the initiation advance (ΔT) of the Duval on the levels of protection I, II, III, calculated according to the lightning risk assessment and the height (h) of the lightning conductor over the area to be protected (minimum height = 2m).



- R_p : radius of protection in a horizontal plane located at a vertical distance h from the Duval tip
- h : height of the Duval tip above the surface(s) to be protected
- D : standardised striking distance
- $\Delta L = 10^\circ \cdot \Delta T$ (initiation advance)
- $R_p = \sqrt{h(2D-h) + \Delta L(2D + \Delta L)}$ (for $h \geq 5m$)
- For $h < 5m$, see the radius of protection table opposite
- ΔT = initiation advance measured during efficiency tests

Duval Radius of Protection

Level of protection	Duval Radius of Protection								
	I (D = 20m)			II (D = 45m)			III (D = 60m)		
ΔT	25	45	60	25	45	60	25	45	60
h(m)	Radius of protection RP(m)								
2	19	25	32	25	32	40	28	36	44
3	28	38	48	38	48	59	42	57	65
4	38	51	64	50	65	78	57	72	87
5	48	63	79	63	81	97	71	89	107
6	48	63	79	64	81	97	72	90	107
8	49	64	79	65	82	98	73	91	108
10	49	64	79	66	83	99	75	92	109
15	50	65	80	69	85	101	78	95	111
20	50	65	80	71	86	102	81	97	113
45	50	65	80	75	90	105	89	104	119
60	50	65	80	75	90	105	90	105	120

THERMEXWELD EXOTHERMIC WELDING

Thermexweld Exothermic Connections

- Will carry more current than the parent conductor
- Are permanent
- Will not loosen
- Will not corrode
- No external power source required



	Mould	Cable	Mould Code	Weld Metal Code	Tool Kit Code	Handle Clamp Code
	Straight	50m ²	SS1-M-C9	CU65 (Suitable for 10 Joints)	T-436	T110
		70m ²	SS1-M-C11	CU65 (Suitable for 10 Joints)	T-436	T110
	Tee	50m ²	SS2-M-C9	CU65 (Suitable for 10 Joints)	T-436	T110
		70m ²	SS2-M-C11	CU90 (Suitable for 10 Joints)	T-436	T110
	Cross	50m ²	SS3-M-C9	CU90 (Suitable for 10 Joints)	T-436	T110
		70m ²	SS2-M-C11	CU115 (Suitable for 10 Joints)	T-436	T110
	Tee On Earth Rod M16	50m ²	SE2-M-C9:D	CU90 (Suitable for 10 Joints)	T-436	T110
		70m ²	SE2-M-C11:D	CU115 (Suitable for 10 Joints)	T-436	T110

Tool Kit common to all joint types
 (Tool Kit includes: tool box, handle clamp, crucible scraper, conductor brush, mould cavity brush & flint igniter)
Many more configurations are available on request

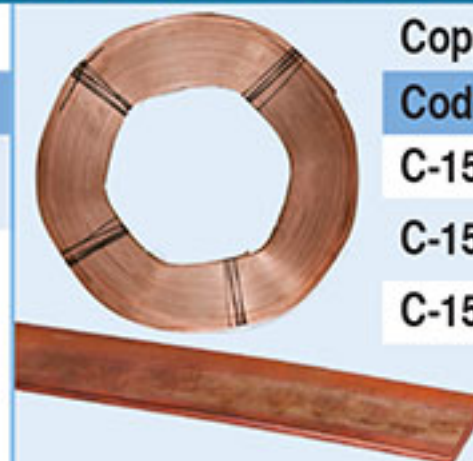
CONDUCTIVE EARTHING EQUIPMENT



Conductive Earthing Compound - Concrete

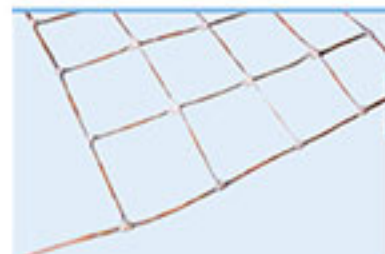
Code	Description
E170	25kg Conductive earthing compound (concrete)

- Reduces soil resistivity
 - Improves earth electrode contact with soil
 - Improves grounding earth resistance
 - Traps moisture. Will not leach out over time
- For Earth Rods & Lighting Conductors see pg 219 - 220



Copper Tape Conductor - per meter

Code	Description
C-150	25 x 3mm HC Annealed Copper Tape
C-151	40 x 3mm HC Annealed Copper Tape
C-152	50 x 3mm HC Annealed Copper Tape



Earth Mats

Code	Description
E-100	Standard earth mat (1m x 1m x 2m tail) 250mm grid in 70mm ² BCEW

For custom made earth mats. Please provide our sales team with the following information:
 • Conductor size • Tail length • Grid spacing



Earth Clamp - M16 Earth Rod to Cable/Tape

Code	Description
Q-101	Light duty for 25 - 70mm ² / 25 x 3mm
Q-102	Heavy duty for 25 - 90mm ² / 30 x 3mm



Earth Bar

Code	Description
EB25568	Manufactured from HC red copper bar, mounted on dumpy insulators with earth connection holes drilled. (6 holes). (W) 25mm x (t) 5mm x (D) 8mm x (L) 250mm



Waterproofing

Code	Description
Q-180	Lectro-Paste - Moisture Displacing & Corrosion Inhibiting Paste - 500g Bucket
Q-190	Lectro-Tape - Cloth/Petrolatum Tape 50mm x 10m Roll



EXTERNAL LIGHTNING PROTECTION

- Fast and easy to apply
- No scaffolding required for installation



A-3016R

A-3000R

A-3003A

A-3003R

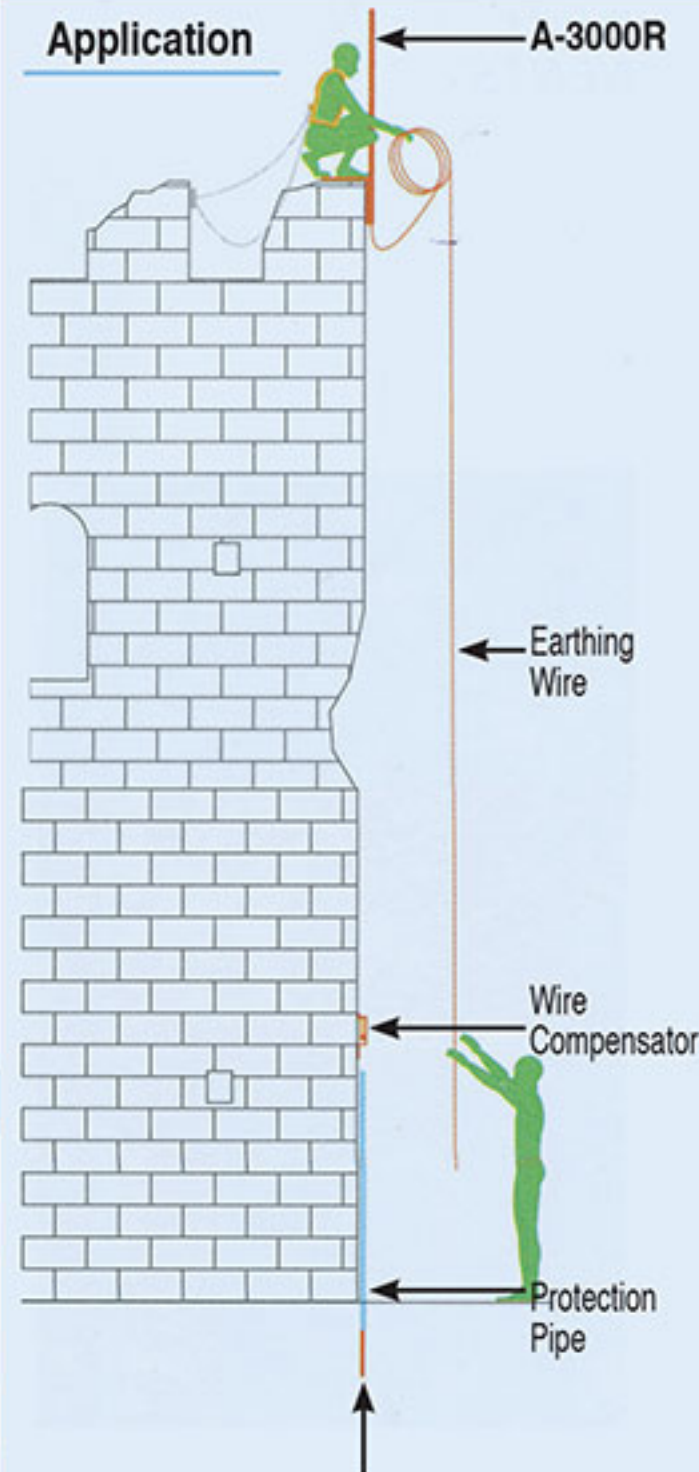
A-2007U

A-3318.8

Note connectable wire size: 1 x Ø 8-10mm

Code	Description	Material
A-3016R	Junction Bar with lightning rod Ø 14mm	Copper and stainless steel screws
A-3000R	L Junction Bar with lightning rod Ø 14mm	Copper and stainless steel screws
A-3003A	Wire Compensator for download with spring	Stainless Steel
A-3003R	Wire Compensator for download with spring	Copper and stainless steel screws
A-2007U	Tool for wire compensator adjustment	Steel
A-2006P	Protection Pipe for download	Ø 20mm for length of 2m polycarbonate
A-3318.8/M	Earthing wire Ø8mm, 50mm ² /m	Soft Copper

Application



Earthing Rods & Mats (see page 10+11)

INNOVOLT POWER PROTECTOR (MANAGER)



This essential electronics protection appliance continuously monitors AC power using advanced microprocessor-based technologies and remediates against the ill effects of power disturbances. With LCD screens alerting to issues immediately, the Power Manager provides deluxe protection and monitoring. In conjunction with the Power Doctor or Power Doctor SmartPhone Adaptor and the Innovolt Management Cloud, you can graphically view and analyze the number and type of disturbances your Innovolt appliance has protected against.

	Power Managers		Accessories	
Code	PM16	PM30	PD2	PDSA100
Nominal Operating Voltage	230VAC 50Hz	220 - 240VAC 50Hz	<ul style="list-style-type: none"> • Optical communication from all Innovolt power products • USB communication to any PC • LCD shows disturbance history • Data available for analysis from any web-enabled device via the Innovolt Management Cloud 	<ul style="list-style-type: none"> • Plugs into smartphone and using the Innovolt App, optically reads data from LEDs on the Innovolt power appliances • Apple iOS compatible • Data available for analysis from any web-enabled device via the Innovolt Management Cloud
Max Continuous Current	16A	30A		
Interrupt Rating per UL Standard 1077	3500A	3500A		
Catastrophic Overvoltage Disconnect Time	<8ms	<8ms		
Over Voltage Limit	>260VAC ± 4V	>260VAC ± 4V		
Under Voltage Limit	<180VAC ± 4V	<180VAC ± 4V		
Overvoltage Clamping Voltage	L-N 800V, L-G 800V, N-G 800V	L-N 900V, L-G 800V, N-G 800V		
Size (mm)	57.2H x 152.4W x 228.6L	88.9H x 210.1W x 290.1L		

- Features**
- Microprocessor-based protection algorithms
 - LCD display shows disturbance history
 - Compatible with the Power Doctor and Power Doctor SmartPhone Adaptor

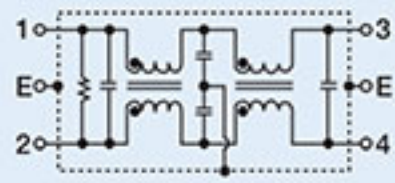
- Post-blackout reclose sequence protection
- Ultra-fast reaction to dangerous over voltage
- UL listed

- Industry leading defense against current inrush resulting from voltage sags & brownouts
- 3-Stage MOV protection against voltage surges
- 4th order, two stage EMI/RFI filtering
- Data & telephone protection circuits

LINE FILTERS

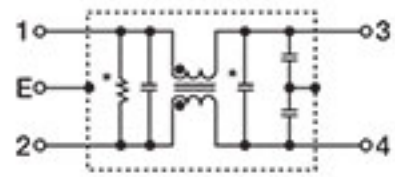
Circuit Diagrams

High performance filter

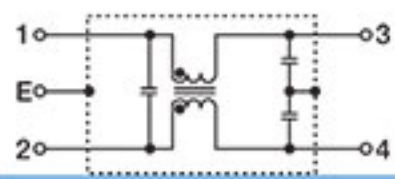


DL-3T1

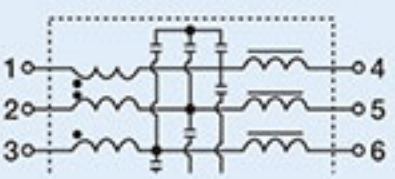
General Purpose



DL-30D1



DL-1DZ210



DL-5EBK5

Line Filters for EM/EMC (Noise)

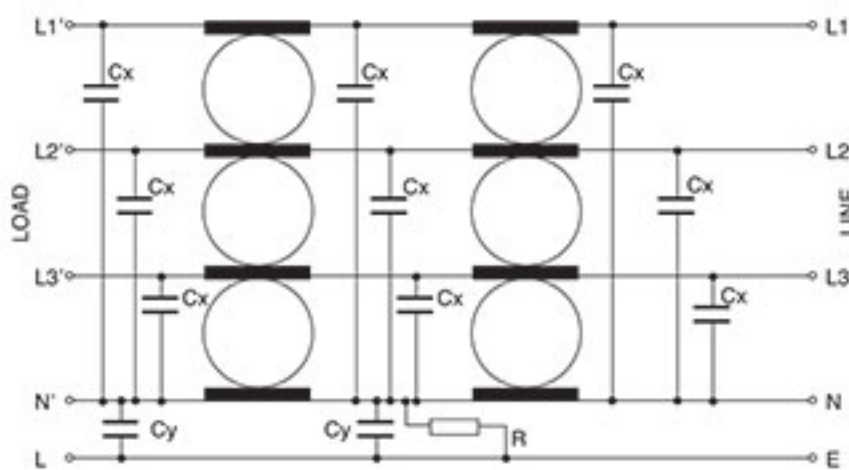
Code	Rated Current	Test Voltage AC (V) One Minute, Line to Earth	Insulation Resistance (M Ω) 500V DC One Minute, Line to Earth	Leakage Current 250V-60Hz	Loss (V)
1 Phase 250V L + N + E					
DL-3T1	3A	1 500	≥300	≤0.5mA	3W
DL-10D1	10A	1 500	≥300	≤0.5mA	≤1.0
DL-20D1	20A	1 500	≥300	≤0.5mA	≤1.0
DL-30D1	30A	1 500	≥300	≤0.5mA	≤1.0
DL-50D3	50A	2 000	≥300	0.8mA	≤1.0
DL-100D3	100A	2 000	≥300	1.0mA	≤1.0
DL-150D3	150A	2 000	≥300	1.0mA	≤1.0
DL-6DX36	6A	1 500	≥300	≤0.5mA	≤1.5
DL-1DZ210	1.0A	1 500	≥300	≤0.5mA	≤1.0
DL-3DZ210	3A	1 500	≥300	≤0.5mA	≤1.0
DL-6DZ210	6A	1 500	≥300	≤0.5mA	≤1.0

3 Phase 400V 3P+E

DL-5EBK5	5A	2 000	≥300	≤1.0mA	≤1.5
DL-10EBK5	10A	2 000	≥300	≤1.0mA	≤1.5
DL-25EBK5	25A	2 000	≥300	≤1.0mA	≤1.5
DL-35EBK5	35A	2 000	≥300	≤1.0mA	≤1.5
DL-50EBK5	50A	2 000	≥300	≤1.0mA	≤1.5

Temperature Rise ≤30°C
Operating Temperature: -25 ~ +85°C

ETRF400



Line Filters for EM/EMC (Noise)

Code	Rated Current	Earth Leakage		Power Loss	Dimensions L x W x H
		Min	Max		
3 Phase with Neutral 480V 3P+N+E					
ETRF4016-MHU	16A	0.05mA	14mA	12W	308 x 60 x 142mm
ETRF4030-MHU	30A	0.05mA	28mA	26W	308 x 70 x 172mm
ETRF4042-MHU	42A	0.05mA	28mA	35W	308 x 70 x 172mm
ETRF4055-MHU	55A	0.05mA	28mA	46W	384 x 80 x 172mm
ETRF4075-MHU	75A	0.05mA	40mA	34W	427 x 80 x 185mm
ETRF4100-MHU	100A	0.05mA	40mA	38W	436 x 90 x 220mm
ETRF4130-MHU	130A	0.05mA	130mA	39W	542 x 200 x 160mm
ETRF4180-MHU	180A	0.05mA	130mA	42W	542 x 200 x 160mm

16A Mains Filter

Code	Description
DMAF1	Mains Filter Plug (RFI/EMI Filter) Red Box
MAF1G	Mains Filter Plug (RFI/EMI Filter) Grey Box

Features

High quality low pass line filter, provides protection against lightning transients, radio frequency and electrical noise.
Max Load Current: 10A.
Surge Current Protection: 6500A.
RFI Attenuation: -50dB to -65dB over the range 100KHz-50MHz.

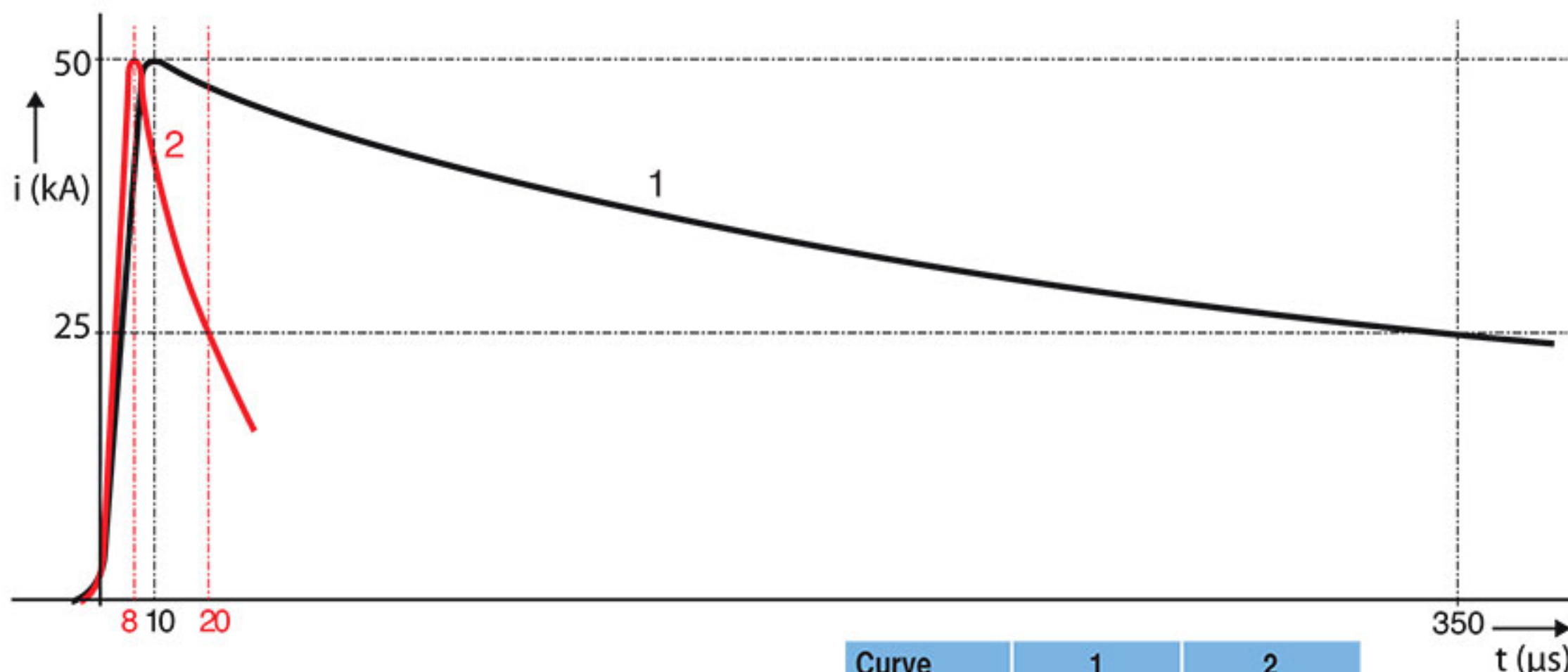


DMAF1



MAF1G

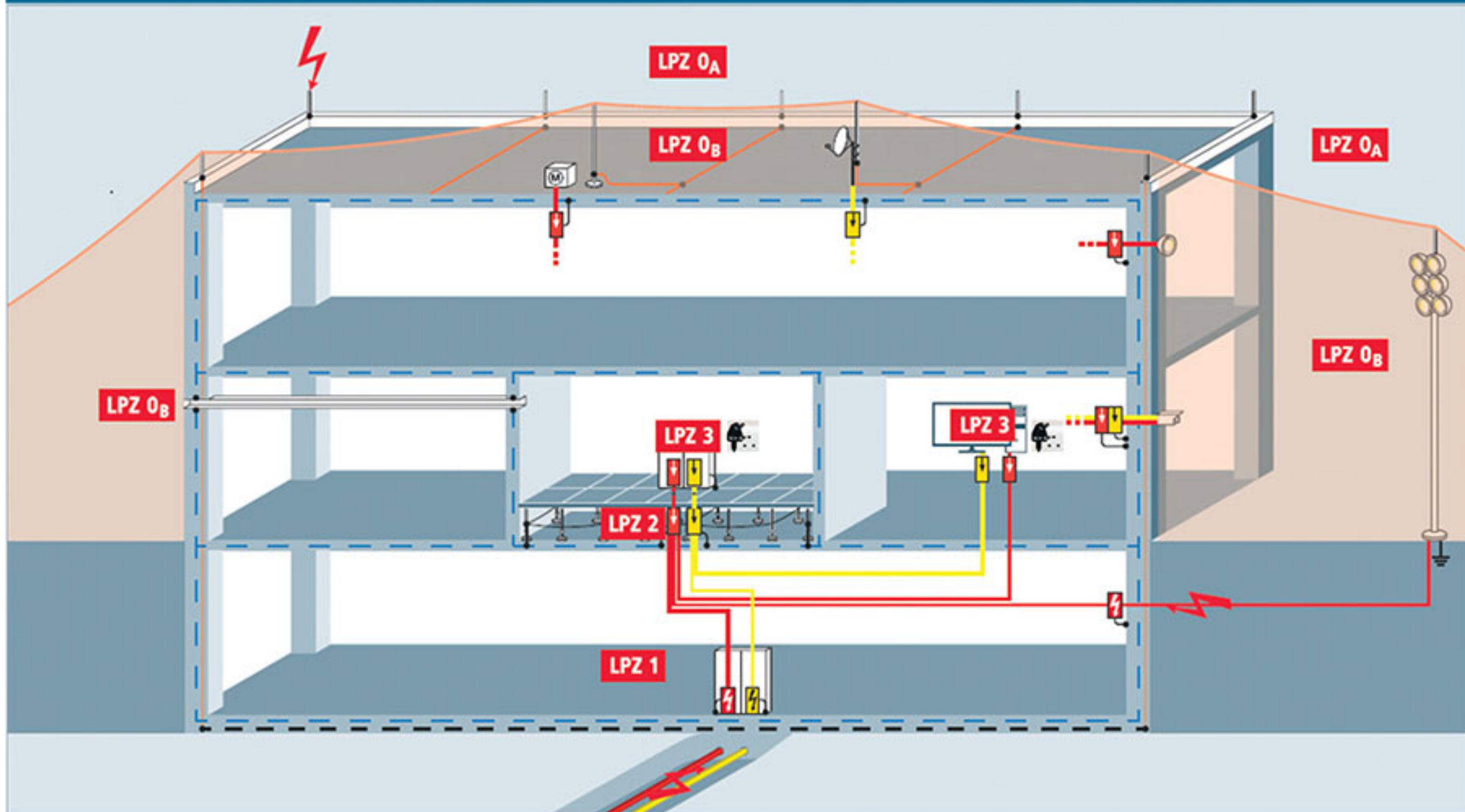
COMPARISON OF TEST CURRENTS



Curve 1 is representative of a 10/350 μ s Lightning Strike/Test Pulse
 Curve 2 is representative of a 8/20 μ s Switching Surge/Transient

Curve	1	2
Waveform	10/350 μ s	8/20 μ s
I_{max}	40kA	40kA
Standard	EN 61643-11	EN 61643-11

UNDERSTANDING LIGHTNING PROTECTION ZONES



In order to assist with the selection of the correct class of Surge Arrester and its installation point, a little background may help.

- LPZ 0a - Outside of the protected area (outside the installed external protection zone)
- LPZ 0b - Inside of the protected area (inside the installed external protection zone)

LPZ 1 - Where the normal low/medium voltage enters the building and can contain the lightning currents that are potentially destructive to electrical equipment. Class 1 equipment is normally installed here, or a combination of Class 1 and Class 2.

LPZ 2 - This is generally spike/surge related. They consist of voltages with a relatively low energy (in comparison to Class 1 areas) but are of short duration, and can be reduced to safer levels with a Class 2 device. These devices are generally installed in sub-distribution boards, which are either single or 3 phase.

LPZ 3 - These are generally installed at a socket, or terminal device such as a pool pump, house alarm, fence alarm, etc.

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