



PRODUCT INDEX

POWER SURGE PROTECTION	101
DATA SURGE PROTECTION	102
TELEPHONE SURGE PROTECTION	103
GENERAL SURGE PROTECTION DEVICES	104



SURGE/TRANSIENT AND LIGHTNING PROTECTION

Surge and Lightning Protection is an important function of any power protection system. Surges are capable of causing severe damage to electrical and electronic equipment, including computer hardware. Although surges, represent a small percentage of the types of power disturbances that affect computer operations, in areas where severe lightning strikes occur, this percentage increases dramatically. Data line and Telecommunication line surge protection are often as critical as power line protection.

Statistics or even on-site measurements of surges are useless without some knowledge of the susceptibility of computers to surges. All computer manufacturers are aware of power surges and have designed their equipment to be as reliable as possible in the face of typical surge activity, however due to economic constraints this is not enough to offer adequate protection and it is the user who has to provide additional protection.

The simplest and most common technique used for surge protection is the “shunt” or “parallel” system, where a clamping device is placed across the AC power lines. The device mostly used is the Metal Oxide Varistor (MOV). This type of suppressor is really designed to protect against catastrophic equipment damage. From January 2005, Surge Protection Devices (SPD) must be installed in distribution boards of any premises, whether they be residences, factories or offices before a certified electrical officer issues a certificate of compliance. Many of the computer grade suppressors are EMI/RFI filters combined with MOV'S which are then able to clamp large surges, as well as filtering data damaging interference.

All the Surge/Transient and Lightning power protection products are earthed correctly by plugging the units into a mains socket. It is important that the earthing in the building is correctly installed.

Below is a key to indicate the protection levels:



Power Protection Level 1 - MOV's only are used to protect the Live, Neutral & Earth connections



Power Protection Level 2 - As for protection level 1 as well as a **single** cascade EMI/RFI filter



Power Protection Level 3 - As for protection level 1 as well as a **double** cascade EMI/RFI filter



Power Protection Level 4 - Complete filtration as well as class 2 surge protection is provided



Telephone Protection Level 1 - A gas arrestor is used to protect the telephone line



Telephone Protection Level 2 - As for protection level 1 and a high speed component (sidactor) is used to protect the telephone line



Telephone Protection Level 3 - As for protection level 2 and resistors are also used to protect the telephone line



SURGE PROTECTION POWER PROTECTION

Black Box Power Conditioner/Filterplug

DESCRIPTION:

The POWER CONDITIONER and FILTERPLUG combines both surge / transient suppression and EMI / RFI filtration. These high performance devices are designed for the protection of sensitive electronic / electrical equipment against transients transmitted via the mains lines.

The units are available in configurations of one to five standard sockets or Powerite sockets (coded). As an option the unit may be ordered with graded filtration where two or more sockets are required. Guarded filtration will inhibit any feed back noise generated by equipment plugged into the BLACK BOX. e.g. Laser printers.

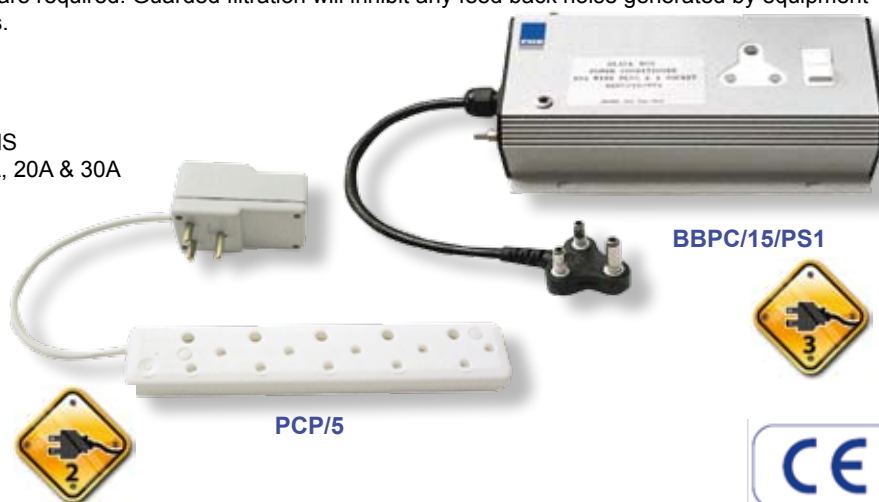
SPECIFICATIONS:

Normal Conditions

Voltage Rating (Max.)	: 250V RMS
Current Rating (BLACK BOX)	: 10A, 15A, 20A & 30A
Current Rating (FILTERBOX)	: 10A
Earth leakage current	: <2mA

Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.)	: >6kV
Current Withstand @ 8/20uS (Max.)	: >6kA
Power rating per wire (Max.)	: 140J
Noise Attenuation (BLACK BOX)	: ± 100 dB
Noise Attenuation (FILTERPLUG)	: ± 45 dB
Clamping Voltage	: 570V
Response Time	: <25ns



Black Box Model		Filter Plug Model	
BBPC/XX/PSY	Black Box Power Conditioner 10 or 15A fitted with 16A plug & socket, add G to the end of the part number for graded filtration	PCP/1	Plug with 1 x 16A socket
BBPC/XX/PSCY	Black Box Power Conditioner 10 or 15A fitted with 16A powerite (coded) Plug & Socket, add G to the end of the part number for graded filtration	PCP/3	Plug with 3 x 16A socket
BBPC/XX/FT	Black Box Power Conditioner 15, 20 or 30A feed through unit	PCP/5	Plug with 5 x 16A socket

*XX = current rating Y = No sockets required (1,3,5 available) **110V units available on request

Surge Cord



DESCRIPTION:

The SURGE CORD power conditioner combines both surge/transient suppression and EMI/RFI filtration. The unit may be plugged into a standard socket and is connected to the equipment by means of standard IEC socket outlet/s. This compact and inexpensive plug-in unit has full suppression on all conductors and incorporates powerful filtration circuitry. The SURGE CORD range is also supplied with BRITISH or EUROPEAN plugs upon request.

SPECIFICATIONS:

Normal Conditions

Voltage Rating (Max.)	: 250V RMS
Current Rating (Max.)	: 10A
Earth leakage current	: <2mA

Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.)	: >6kV
Current Withstand @ 8/20uS (Max.)	: >6kA
Power rating per wire (Max.)	: 140J
Noise Attenuation	: ± 45 dB
Clamping Voltage	: 570V
Response Time	: <25ns



Model	
PCSC/1	16A SA Plug – Filter/suppression – 1 x IEC cold mould socket outlet
PCSC/1/UK	13A British Plug – Filter/suppression – 1 x IEC cold mould socket outlet
PCSC/1/EUR	10A European Plug – Filter/suppression – 1 x IEC cold mould socket outlet



SURGE PROTECTION

POWER AND TELEPHONE PROTECTION

Lightning & Surge Protectors Over Voltage Protection



DESCRIPTION:

The protector is used to protect any electronic device connected to the telephone line including fax machines, answering machines, cordless telephones, modems and digital communications on alarm panels.

SPECIFICATIONS:

Max. continuous voltage	: 275VAC 50Hz
Max. current	: 16A
Max. discharge current	: 10 000A, (8/20) (L-N, L-E, N-E)
Connectors	: RJ11
Certifications	: IEC 61000/4/5 : PE/2005\102
Indication 2 LEDS	: Power on, Earth present

INSTALLATION:

PLUG AND PLAY. Simply connect the equipment and plug into the wall part no: PHD101 socket!

FEATURES:

- Power and data protection
- No additional earthing required
- Failsafe protection
- Protection status indication
- Fire hazard protection
- Easy installation

Model	
PHD-101	Telephone and Mains Surge Protection Unit



DESCRIPTION:

The protector is used to protect any electronic device eg printers, fax machines, answering machines, modems, alarm panels and TV's etc.

SPECIFICATIONS:

Max. continuous voltage	: 275VAC 50Hz
Max. current	: 16A
Max. discharge current	: 6 000A, (8/20) (L-N, L-E, N-E)
Indication 1 LED	: Power on

INSTALLATION:

PLUG AND PLAY. Simply connect the equipment and plug into the wall socket!

FEATURES:

- Power protection
- No additional earthing required
- Failsafe protection
- Protection status indication
- Fire hazard protection
- Easy installation

Model	
PHD-102	Plug to Socket Mains Protection - White Plug
PHD-102-C	Plug to Socket Mains Protection - Clear Plug
PHD-102-4	Plug to Socket Mains Protection - 4 Sockets
PHD-102-6	Plug to Socket Mains Protection - 6 Sockets





SURGE PROTECTION POWER PROTECTION

Electric Fence Protection Kit



DESCRIPTION:

This protection kit provides an integrated approach to the protection of electric fences. It provides surge and filtered protection for the incoming mains supply with an individual protector for earth potential equalisation. A high voltage unit is supplied for the energiser output terminals. The kit includes the econo power conditioner can (model no. PC/10/E).

SPECIFICATIONS:

Max. continuous voltage	: 275VAC 50Hz
Max. discharge current	: 8000A, (8/20) (L-N, L-E, N-E)
Max. high voltage output	: 15kV DC
Max. high voltage surge current	: 8000A 8/20
Response time	: <25ns
Temperature range	: -20°C - 70°C
Filtration (power only)	: -50dB L-N, L-E, N-E
Standards Compliance	: IEC 61643-1, ANSI 662.1



Model	
PHD-EF	Electric Fence Surge Protection Kit
PHD-EF-2	Electric Fence Surge Protection Kit - Dual Energiser Protection

Lightning & Surge Protector over voltage protection



DESCRIPTION:

The protector is used to protect any electronic device eg printers, fax machines, answering machines, modems, alarm panels and TV's etc.

SPECIFICATIONS:

Max. continuous voltage	: 275VAC 50Hz
Max. current	: 16A
Max. discharge current	: 6 000A, (8/20) (L-N, L-E, N-E)
Indication 1 LED	: Power on

INSTALLATION:

Live, Neutral and Earth to be wired into the plug.

FEATURES:

- Power protection
- No additional earthing required
- Failsafe protection
- Protection status indication
- Fire hazard protection
- Easy installation

APPLICATIONS:

A high quality surge protection unit to protect your electronic equipment.



Model	
PHD-103	Plug to Socket Mains Protection - Standard Plug
PHD-103-D	Plug to Socket Mains Protection - Dedicated Plug



SURGE PROTECTION POWER PROTECTION

Power Conditioner Can



DESCRIPTION:

The POWER CONDITIONER CAN combines both surge / transient suppression and EMI / RFI filtration. This high performance device is designed for the protection of sensitive electronic / electrical equipment against transients transmitted via the mains lines. It is also widely used for the protection of gate motors. The unit is housed in a compact can for easy fitment into electrical / electronic enclosures. The unit may also be mounted on a Din Rail by means of a Din Rail mounting bracket.

The POWER CONDITIONER CAN is available in an Econo version which has a noise attenuation of -45db or a High performance version with noise attenuation of -100db.

SPECIFICATIONS:

Normal Conditions

Voltage Rating (Max.)	: 250V RMS
Current Rating (Max.)	: 10A, 15A & 20A
Earth leakage current	: <2mA

Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.)	: >6kV
Current Withstand @ 8/20uS (Max.)	: >6kA
Power rating per wire (Max.)	: 140J
Noise Attenuation (Econo)	: ±45dB
Noise Attenuation (High Performance)	: ±100dB
Clamping Voltage	: 570V
Response Time	: <25ns



Model	
PC/XX/E	Power Conditioner Econo
PC/XX/H	Power Conditioner High Performance
*XX = current rating (10A, 15A, 20A ratings available)	

House Hold Surge Protection



DESCRIPTION:

The protector is used to protect devices connected to any mains socket. Simply wire the three lines (live, neutral and earth) behind the socket and then all equipment connected is protected.

SPECIFICATIONS:

Max. continuous voltage	: 275VAC 50Hz
Max. current	: 15A
Max. discharge current	: 6 000A, (8/20) (L-N, L-E, N-E)

FEATURES:

- Power protection
- No additional earthing required
- Failsafe protection
- Fire hazard protection
- Easy installation

Model	
HHSP/15	House Hold Surge Protection Unit





SURGE PROTECTION POWER PROTECTION

AA110 Power Conditioner



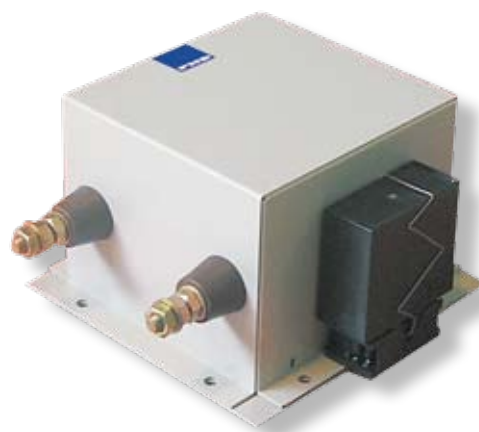
DESCRIPTION:

The AA110 POWER CONDITIONER provides both surge / transient suppression and EMI/RFI filtration. The unit is available in a single phase configuration and is rated at 110 amps. For easy maintenance the unit is supplied with a removable transient suppression module and is wall mountable.

SPECIFICATIONS:

Normal Conditions

Voltage Rating (Max.)	: 250V
Continuous Current (Max.)	: 110A
DC Resistance / Line	: 1m Ω
Volt Drop / Line @ full load	: 0.1V
Inductance / Line	: 160uH
Total Capacitance L to N	: 4uF
Total Capacitance L/N to E	: 44nF
Earth Leakage Current (TYP)	: 3.6mA
Power Dissipation @ Full Load	: <25 Watts
Temp. Rise above ambient	: \pm 25 deg



Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.)	: >10kV
Current Withstand @ 8/20uS (Max.)	: >6.5kA
Attenuation in differential mode @ 1MHz	: 80dB
Attenuation in differential mode @ 100MHz	: 35dB
Attenuation in common mode @ 1MHz	: 95dB
Attenuation in common mode @ 100MHz	: 75dB
Clamping Voltage (Max.)	: 570V

Model	
AA/110FT	AA110 Power Conditioner - high current 110A single phase

Equalizer

DESCRIPTION:

The EQUALIZER is designed to protect dedicated earthing systems used for electronic systems, from noise contamination. The unit is connected between the dedicated earth and the raw mains earth, and maintains equal potential between the two earths. Noise suppression and maintaining equal potentials are critical to prevent damage to sensitive instrumentation and control equipment where a dedicated earth is required, particularly those situated in industrial environments. The EQUALIZER is designed so that in the case of a sudden and serious rise in potential in one of the earthing systems, due to perhaps a lightning strike, the unit will activate, creating a low impedance path between the two earthing systems for the duration of the overvoltage. In its normal state the unit continuously inhibits noise contamination between the two earths.

SPECIFICATIONS:

Normal Conditions

DC Resistance (Max.)	: <1 Ω
Continuous Current (Max.)	: 5A
Noise Attenuation @ 50Hz	: 17dB
Noise Attenuation @ 10KHz	: 64dB
Noise Attenuation @ 200KHz	: 108dB
Noise Attenuation @ 10MHz	: 57dB

Transient/Surge Conditions

Current Withstand @ 8/20uS (Max.)	: >5kA
Clamping Voltage	: 110V
Response Time	: <25ns



Model	
PE/1	Earth potential equalizer and suppressor



SURGE PROTECTION POWER PROTECTION

Power Conditioner - High Current



DESCRIPTION:

The single or three phase POWER CONDITIONER – HIGH CURRENT units combine both surge / transient suppression and EMI / RFI filtration and come standard with circuit breakers. The unit is supplied in a wall mountable housing with a hinged locable door. These modular units are fully serviceable and are available with either 40kA or 100kA suppression modules on the primary side. These units are ideal for protection of high cost hospital equipment i.e. CAT / MRI scanners, computer rooms etc.

SPECIFICATIONS:

Normal Conditions

Voltage Rating (Max.)	: 250V/400V RMS
Current Rating (Max.)	: 60A/90A/120A/150A/200A/300A & 400A
Earth Leakage Current	: <2mA
Capacitance	: 2700pF/8100pF

Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.)	: >10kV
Current Withstand @ 8/20uS (Max.) - Primary – common mode	: >40kA or 100kA
Current Withstand @ 8/20uS (Max.) - Secondary – differential mode	: >6.5kA
Power Rating per wire (Max.)	: 550J/1320J
Noise Attenuation	: ±60dB
Clamping Voltage	: 710V



	Model	Housing	H x W x D (mm)
PCH/P1/60	60A Single Phase unit with 40kA suppression on the primary side	MP532	400 x 300 x 200
PCH/P3/60	60A Three Phase unit with 40kA suppression on the primary side	MP533	600 x 400 x 260
PCH/P1/90	90A Single Phase unit with 40kA suppression on the primary side	MP533	600 x 400 x 260
PCH/P3/90	90A Three Phase unit with 40kA suppression on the primary side	MP534	600 x 400 x 260
PCH/P1/120	120A Single Phase unit with 40kA suppression on the primary side	MP533	600 x 400 x 260
PCH/P3/120	120A Three Phase unit with 40kA suppression on the primary side	MP534	700 x 500 x 260
PCH/P3/150	150A Three Phase unit with 40kA suppression on the primary side	MP534	700 x 500 x 260
PCH/P3/200	200A Three Phase unit with 40kA suppression on the primary side	MP534	1200 x 800 x 320
PCH/P3/300	300A Three Phase unit with 40kA suppression on the primary side	MP535	1400 x 800 x 400
PCH/P3/400	400A Three Phase unit with 40kA suppression on the primary side	MP535	1400 x 800 x 400

* For 100kA suppression please add /100 to the part number

** Higher currents available on request



SURGE PROTECTION

DIN MOUNT

Din Rail Mount Surge Protection Devices: Class 1 (200kA)

DESCRIPTION:

Surge arrester for low-voltage power supply systems. Protection against surges at the boundaries and lightning zone 0B-1 and higher.

FEATURES:

- Class 1 arrester in accordance with IEC61643-1:2001.
- Two part design consisting of base and non-pluggable protection module.
- High energy MOV (Metal Oxide Varistor) inside.
- Reliable supervision due to disconnection device.
- Fault indication by red indication flag in window.
- Fast response.
- 2 pole and 4 pole configurations supplied with GDT for N-PE pole with same specs as the G50



Model	V200/320/N
Test Grade	Class 1
In accordance with	IEC61643-1:2001; EN61643-1 2001; UL1449 ed.3
Max. continuous operating voltage (AC/DC)	320/420
Nominal discharge current (8/20) In	100KA
Max. discharge current(8/20) I _{max}	200KA
I _{imp} (10/350)	30KA
Voltage protection level Up	1.5KV
Response time	≤25 ns
Follow current	No
Backup fuse(only required if not already provided in mains)	315A gL/gG
Operating temperature range	- 40°C ... + 80°C
Cross-section of connection wire	Single-strand 35mm ² ; multi-strand 25mm ²
Degree of protection	IP20
Thermal disconnecter	Internal green – normal red - failure
"N" = number of poles (1, 2 & 4 available)	
* For models with alarm contacts add "-AC" to the part number	

Din Rail Mount Surge Protection Devices: Class 1 & Class 2 (GDT, Spark Gap)

DESCRIPTION:

The Class 1 & class 2 GDT surge protection devices are designed for AC 50/60Hz, 380V power systems and is used between the N line and PE line. It protects the electrical installation against surges, lightning and over voltage situations. When combined with the voltage limiting surge protective device, it can be used as "3+1, 2+1 and P+1" type surge protective devices for improved protection against surges and lightning.

Model	N-PE-1	G50
In accordance with	IEC61643-1:2005; UL 1449 3rd	
Max. continuous operating voltage U _c	320VAC	255VAC
Nominal discharge current (8/20) I _n	20kA	50kA
Max. discharge current (8/20) I _{max}	40kA	150kA
Lightning Impulse Current (10/350) I _{imp}	12kA	50kA
Voltage protection level Up	≤2kV	1.5kV
Response Time	≤100 ns	
Remote alarm contact	Optional	



N-PE-1



G50



SURGE PROTECTION

DIN MOUNT (SABS APPROVED)

Din Rail Mount Surge Protection Devices: Class 2 (20kA - 40kA)

DESCRIPTION:

The Class 2 BY7 surge protection device is designed for AC 50/60Hz, 380V and other electrical systems such as TT, IT, TN-S, TN-C and TN-C-S. It is used for protection of electrical systems against surges and lightning. The 2 pole and 4 pole configurations include a 12kA Class 1 rated N-PE pole SPD.

TRIPPING DEVICE:

It is designed with a tripping device on the plug-in module of the protector. When the protector over heats or is struck (by lightning or a surge), the tripping device automatically separates it from the electrical network and at the same time showing the indication signal. The indicator is green when the protector is normal and red when it has tripped.



BY7-20/1/275



BY7-20/4/275

Model		BY7-YY/X/140	BY7-YY/X/275	BY7-YY/X/320	BY7-YY/X/385	BY7-YY/X/420	BY7-YY/X/550
Test Grade		Class 2 (N-PE pole is 12kA Class 1, same specifications as the N-PE-1)					
Maximum Continuous Operating Voltage Uc		140	275	320	385	420	550
Maximum Discharge Current I _{max} (8/20us) kA		YY	YY	YY	YY	YY	YY
Nominal Discharge Current I _n (8/20us) kA		YY/2	YY/2	YY/2	YY/2	YY/2	YY/2
Voltage Protection Level Up		0.8kV	1.2kV	1.5kV	2.0kV	2.0kV	2.5kV
Max. Fuse Intensity		32					
Response time ns		<25ns					
Width mm		18 per pole					
Color		Grey					
Protection Level		IP20					
Shell Material		Reinforced fire-retardant nylon PBT					
Connect Ways	L,N	2.5 ---- 35mm ²					
	Earthing	4.0 ---- 35mm ²					
	Signal Line	1.5mm ²					
X = Number of Poles (1,2 and 4 available)							
YY = kA Rating (20kA and 40kA available)							
* For models with alarm contacts add “-AC” to the part number							



SURGE PROTECTION

DIN MOUNT

Din Rail Mount Surge Protection Devices: Class 2 (60kA - 100kA)

DESCRIPTION:

Class 2 Surge Protection Device, functioning as an equi-potential connection for protection against surges and lightning. Usually installed in a low voltage main distribution board cabinet connected to the incoming end of the building. It adopts 35mm DIN rail mounting clips and is linked by 6-35mm² copper wires.

Model	BY4-60/X-VVV	BY4-80/X-VVV	BY4-100/X-VVV
Test Grade	Class 2		
Nominal Discharge Current In(8/20us) kA	30kA	40kA	60kA
Maximum Discharge Current I _{max} (8/20us) kA	60kA	80kA	100kA
Voltage Protection Level Up	2.0kV	2.0kV	2.5kV
Response time ns	<25ns		
Definition Grade	IP20		
Ambient Temperature	-40°C -- +85°C		
Color (Module)	Orange		
Base	Grey		
Outer Covering Material	Reinforced fire-retardant nylon PBT		
Phase Line, Zero Line	6 ---- 35mm ²		
Earth Line	6 ---- 35mm ²		
Signal Line	1.5mm ²		
Accessory	If needed, a remote signaling contact can be added		
X = Number of Poles (1,2,3 and 4 available)			
VVV = Maximum Continuous Operating Voltage U _c (320V and 385V available)			



BY4-100/1-320

Din Rail Mount Power Conditioner/Surge Protector



DESCRIPTION:

The Din Rail Power Conditioner / Surge Protector combines both Surge and EMI/RFI filtering. The unit is designed in a Din Rail housing for easy fitment into electrical/electronic enclosures and is used for the protection of sensitive electronic or electrical equipment against transients transmitted via the mains supply.

SPECIFICATIONS:

Normal Conditions

Voltage Rating (Max.)	: 250V RMS
Current Rating (Max.)	: 15A
Earth leakage current	: <2mA

Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.)	: >6kV
Current Withstand @ 8/20uS (Max.)	: >6kA
Power rating per wire (Max.)	: 140J
Noise Attenuation	: ±45dB
Clamping Voltage	: 570V
Response Time	: <25ns

Model	
PCSPD	Din Rail Mount Power Conditioner / Surge Protector





SURGE PROTECTION

POWER AND DATA PROTECTION

Mains Power, Aerial & DSTV Line Transient Conditioner

DESCRIPTION:

The MAINS POWER, AERIAL & DSTV LINE TRANSIENT CONDITIONER combines powerful protection circuitry (suppression and filtration) for mains and TV / DSTV aerials (suppression only). Standard modules are fitted with a 16A plug / socket, two TV sockets (female) and two F type sockets for DSTV (female). Male to male patch leads are supplied for both the TV and DSTV aerials.

SPECIFICATIONS:

Normal Conditions (Mains)

Voltage Rating (Max.) : 250V RMS
Current Rating (Max.) : 10A
Earth leakage current : <2mA

Transient/Surge Conditions (Mains)

Voltage Withstand @ 1.2/50uS (Max.) : >6kV
Current Withstand @ 8/20uS (Max.) : >6kA
Power rating per wire (Max.) : 140J
Noise Attenuation : ± 45 dB
Clamping Voltage : 570V
Response Time : <25ns

Normal Conditions (TV/VCR Line)

Frequency (Max.) : 1GHz

Transient/Surge Conditions (TV/VCR Line)

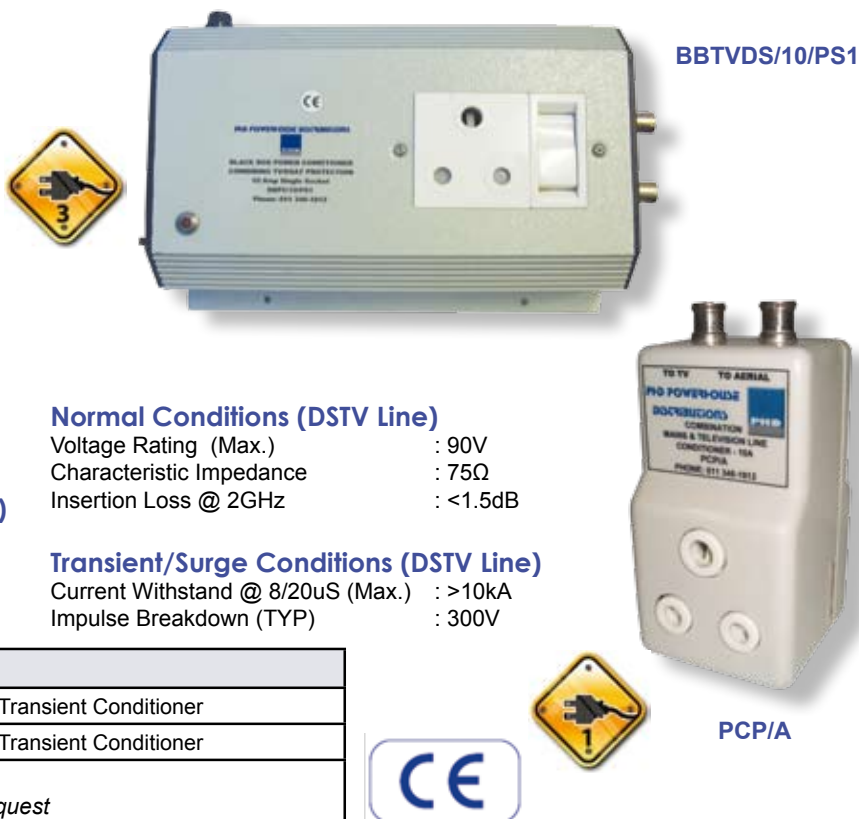
Voltage Withstand @ 1.2/50uS (Max.) : 3kV
Current Withstand @ 8/20uS (Max.) : 5kA
Clamping Voltage (TYP) : 110V
Noise Attenuation : <1us

Normal Conditions (DSTV Line)

Voltage Rating (Max.) : 90V
Characteristic Impedance : 75 Ω
Insertion Loss @ 2GHz : <1.5dB

Transient/Surge Conditions (DSTV Line)

Current Withstand @ 8/20uS (Max.) : >10kA
Impulse Breakdown (TYP) : 300V



Model	
BBTVDS/10/PSX *	Mains / Aerial / 2 x DSTV Line Transient Conditioner
PCP/A	Mains / Aerial / 1 x DSTV Line Transient Conditioner
<i>X = Number of Sockets (1, 3 and 5 available)</i>	
<i>* Option for 4 x DSTV protectors is available on request</i>	

Access Conditioner

DESCRIPTION:

The ACCESS CONDITIONER is designed to protect data and control lines for automatic gate systems intercoms and alarm systems. The unit will handle data speeds in excess of 20 kbps with insertion losses of less than 0.1dB. For simple installation the unit is fitted with screw type terminal blocks and is available in a ten line configuration. Standard voltages available are 5 to 48Vdc. Other voltages are available on request.

SPECIFICATIONS:

Normal Conditions

Voltage Rating (Max.) : 5 ~ 48V
Data Rate (Max.) : 100kbps
Insertion Loss @ 20kbps : 0.1dB
Series Resistance (Max.) : 0.3 Ω

Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.) : >6kV
Current Withstand @ 8/20uS (Max.) : >10kA
Response Time : <5ns

Model	
DCIC/10/YY	Access / Security Line Conditioner
<i>YY = Voltage required</i>	





SURGE PROTECTION DATA PROTECTION

100 Base T

DESCRIPTION:

The 100 Base T data transient suppression units are designed to handle speeds in excess of 100 Mbps fully duplexed. They have an insertion loss of less than 0.5dB. Interconnection is made by means of RJ45 Cat. 5 sockets. The units are available in 19" 1U rackmount panels (24 port) or as a stand alone unit (single port) in an 8 wire configuration.

SPECIFICATIONS:

Normal Conditions

Voltage Rating (Max.)	: $\pm 6.5V_p$
Data Rate (Max.) – Duplexed	: 100Mbps
Insertion Loss @ 1000Mbps	: <0.5dB
Series Resistance (Max.)	: <0.5 Ω

Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.)	: >5kV
Current Withstand @ 8/20uS (Max.)	: >5kA
Protection Levels (TYP) - Line to Line	: 10V
Protection Levels (TYP) - Line to Earth	: 10V
Response Time	: <5ns

Model	
DC100/SA8	100 BASE T RJ45 8 wire stand alone unit
DC100/SA8/24	100 BASE T RJ45 8 wire rack mount unit 24 port

DC100/SA8/24



DC100/SA8



RS232 Line Conditioners

DESCRIPTION:

The RS232 line conditioners are used to protect the RS232/V.24 protocol. These compact devices are fitted into a standard gender bender housing with a DB25 or DB9 connector configuration. (Male to equipment, female to line). Reversed genders are also offered as a standard as indicated in the part number listing below.

SPECIFICATIONS:

Normal Conditions

Voltage Rating (Max.)	: $\pm 15V_p$
Data Rate (Max.)	: 20kbps
Insertion Loss @ 2kbps	: <0.1dB
Series Resistance (Max.)	: 3.3 Ω

Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.)	: >6kV
Current Withstand @ 8/20uS (Max.)	: >3.7kA
Per Line @ 8/20uS	: 470A
Signal Ground to Earth @ 8/20uS	: 10kA
Clamping Voltage (Max.) - Line to Signal Ground	: 24p
Clamping Voltage (Max.) - Signal Ground to Earth	: 24p
Response Time	: <5ns

Model	
DC/RS232/9	RS232 DONGLE – Lines 1, 2, 3, 4, 5, 7 (1 - Earth, 7 - Signal Ground)
DC/RS232/25	RS232 DONGLE – Lines 1, 2, 3, 4, 5, 6, 7, 8 & 20 (1 - Earth, 7 - Signal Ground)
For reversed genders please add R to the part number, e.g. DC/RS232/9R	

DC/RS232/25



DC/RS232/9





SURGE PROTECTION

DATA PROTECTION

COAX Line Conditioner

DESCRIPTION:

The COAX LINE CONDITIONER is designed to protect high speed digital networks using Arcnet or Ethernet. It is also suitable for protection of loop powered CCTV systems. These low loss, fast response time units are supplied standard in a 12 or 1 volt format and are fitted with 50 OHM BNC connectors. Other voltage and connector configurations are available on request.

SPECIFICATIONS:

Normal Conditions

Current Rating (Max.)	: 360mA
Data Rate (Max.)	: 100Mbps
Insertion Loss @ 10mHZ	: ± 5 db
Insertion Loss @ 100mHZ	: ± 2 db
Series Resistance (Max.)	: 1.5 Ω

Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.)	: >10kV
Current Withstand @ 8/20uS (Max.)	: >10kA
Clamping Voltage	: 24Vpp
Response Time	: <2ns



Models

DCCA/12-XY	12V Coaxial Line Conditioner
DCCA/1	1V Coaxial Line Conditioner
DCCA/1-XY-15	1V Coaxial Line Conditioner with 15Vdc power protection

X = input connection type, i.e. male or female ("M" or "F")

Y = output connection type, i.e. male or female ("M" or "F")

Outdoor unit available on request

RF Line Conditioners

DESCRIPTION:

The RFC coax unit is a transient suppression device designed to protect RF transceivers. It can be used for frequencies of up to 1GHz with negligible signal loss. The standard device is supplied fitted with "N" type female connectors. Other connector configurations are available on request. The unit is supplied in a compact housing with a removable gas discharge tube (GDT) for easy inspection / replacement.

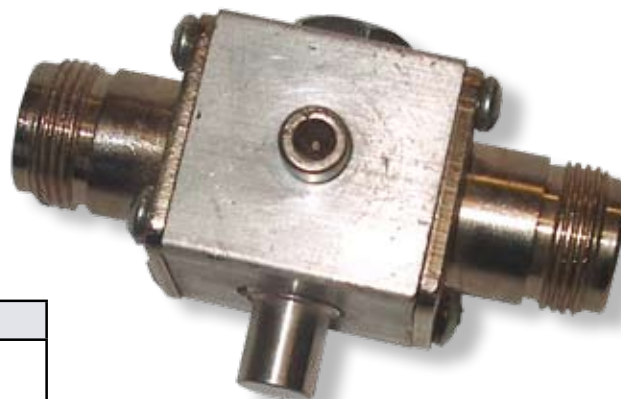
SPECIFICATIONS:

Normal Conditions

Transmitting Power (Max.)	: ± 15 Vp
Insertion Loss (Up to 1 GHz)	: 20kbps

Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.)	: >10kV
Current Withstand @ 8/20uS (Max.)	: >10kA (ND)
Clamping Voltage (TYP)	: <30V
Response Time	: 1us



Model

RFC-N	RF Tranceiver Line Conditioner – With "N" type female connectors
-------	--



SURGE PROTECTION DATA PROTECTION

PLC Line Conditioner

DESCRIPTION:

This range of miniature line transient conditioners affords excellent protection to low voltage conductor pairs. The unit is available either in a Din Rail mount format or as a low profile unit. This low cost, high performance unit is ideally suited for the protection of most two wire systems.

General information regarding the standard range of PLC Line Conditioners is listed below. For further technical details and application data, please refer to the part numbers table below.

RANGE:

DPLC/SR/XX (Standard) and DPLC/SRF/XX (Fused)

XX = voltage required

This is the most widely used device in the PLC Conditioner range. The DPLC/SR/XX offers excellent common and differential mode suppression characteristics. It is designed for use with semi-floating, low to medium frequency circuits (up to 200kHz) which carry currents up to 450mA at a range of voltages from 5 to 48 volts DC (3 to 32 volts AC rms 50Hz). Typical applications for this device would be security systems, 4~20mA current loops and other low voltage instrumentation and control circuitry.

DPLC/SI/XX (Standard) and DPLC/SH/XX (Heavy Duty)

XX = voltage required

This unit has similar suppression characteristics to the DPLC/SR, but is designed for use with semi-floating DC or low frequency circuits (up to 10kHz). It has a lower DC series impedance and can handle steady state currents up to 1 amp. A typical application for this range of devices would be for the protection of DC power supplies.



Model	Nominal Voltage		Max. Operating Current	Series Resistance/ Inductance	Clamping Level @ 10A (10/100us)	Clamping Level @ 10A (10/100us)	Response Time	Max Frequency	Surge Current is Max. (8/20us)
	DC	AC rms			Line/Earth	Line/Line			
DPLC/SR/XX DPLC/SRF/XX	5	3	450mA	10Ω	7.5	7.5	<5ns	200kHz	10kA
	12	8			13.0	13.0			
	24	15			25.5	25.5			
	36	25			38.0	38.0			
	48	32			54.0	54.0			
DPLC/SI/XX DPLC/SH/XX	5	3	1A (Standard) 15A (Heavy Duty)	<0.1Ω 25uH both modes	7.5	7.5	<5ns	10kHz	10kA
	12	8			13.0	13.0			
	24	15			25.5	25.5			
	36	25			38.0	38.0			
	48	32			54.0	54.0			



SURGE PROTECTION

TELEPHONE PROTECTION

Subscriber Line Surge & Lightning Protection



DESCRIPTION:

A full range of **SURGE** and **LIGHTNING PROTECTION** to interface with Krone Disconnect Modules. Installation is easy and grounding is done via connection to the existing frame. The **PHD-104** range of plug-in modules protect the equipment and at the same time remain transparent to data flow, allowing it to operate at maximum speed and bandwidth without signal degradation.

The PABX101 panel combines a **POWER FILTER** to protect the power supply, a 10 way **DISCONNECT PROTECTOR** which plugs into a 10 way Krone Disconnect Block to protect the telephone lines and a **DATA NETWORK PROTECTOR** to protect the telephone management system.

SPECIFICATIONS:

POWER FILTER

NORMAL CONDITIONS

Voltage Rating (Max.)	: 275V RMS
Current Rating (Max.)	: 5A, 10A, 15A
Earth Leakage Current	: <2mA

TRANSIENT/SURGE CONDITIONS

Voltage withstand @ 1.2/50uS (Max.)	: >6kV
Current withstand @ 8/20uS (Max.)	: >6kA
Power Rating Per Wire (Max.)	: 140J
Noise Attenuation, Clamping Voltage	: +45dB, 570V
Response Time	: <25ns

DISCONNECT PROTECTORS

NORMAL CONDITIONS

Voltage Rating (Max.)	: 275V RMS
Continuous Current (Max.)	: 5A, 10A, 15A
Frequency Response @ 2MHz	: <2mA
Series Resistance	: 22 Ohms

TRANSIENT/SURGE CONDITIONS

Voltage withstand @ 1.2/50uS (Max.)	: >10kV
Current withstand @ 8/20uS (Max.)	: >10kA
Protection Levels (Line-Line & Line-Earth)	: 270V
Response Time	: <5ns

DATA NETWORK PROTECTOR

Nominal Voltage	: 6V
Nominal Discharge Current 8/20uS	: 3kA
Clamping Voltage 10/700uS	
Core-Shield	: <20V
Transmission Speed	: 2Mbps
Environmental Temperature	: -25°C - +70°C

Max. Discharge Current 8/20uS	: 5kA
Core-Ground	: <300V
Insertion Loss	: <0.5dB
Connection Type	
In	: DB9 Female
Out	: DB9 Male

Model	
PHD104-10	10 Way Disconnect Protector
PHD104-1	1 Way Disconnect Protector
PHD104-ES	Earth Strip
PABX101	Full PABX Surge Protection Including Power Filtering for PABX Power Supply



SURGE PROTECTION

TELEPHONE PROTECTION

Telephone Line Conditioner



DESCRIPTION:

The TELEPHONE LINE CONDITIONER affords powerful lightning protection to equipment which is connected to telephone lines i.e. fax machines, answering machines, computer modems, handsets etc. This telephone device is simply installed by means of an RJ11 plug and socket. A heavy duty version is also available for areas with very severe lightning activity.

The unit is also supplied in a hard wire format for installation in an alternative position away from the telephone socket outlet.

SPECIFICATIONS:

Normal Conditions

Voltage Rating (Max.)	: 200V
Continuous Current (Max.)	: 150mA
Frequency Response @ 2MHz	: <1.5dB
Series Resistance (Max.) (Not on LD model)	: 22Ω

Transient/Surge Conditions

Voltage Withstand @ 1.2/50uS (Max.)	: >10kV
Current Withstand @ 8/20uS (Max.) - LD & ND	: >10kA
Current Withstand @ 8/20uS (Max.) - HD	: >20kA
Protection Levels (TYP) - Line to Line	: 270V
Protection Levels (TYP) - Line to Earth	: 270V
Response Time	: <5ns



TDC/HD



TDC/LD

Model	
TDC/LD	Telephone Line conditioner – light duty (RJ11 plug and socket)
TDC/ND	Telephone Line conditioner – normal duty (RJ11 plug and socket)
TDC/HD	Telephone Line conditioner – heavy duty (RJ11 plug and socket)
TDC/ND/HW	Telephone Line conditioner – normal duty (for hard wiring)



Din Rail Mount Surge Protection Devices For Telecoms Applications



DESCRIPTION:

This SPD uses the connector method and is available in several variations i.e. 1 return circuit, 4 return circuits, 8 return circuits, 12 return circuits, 16 return circuits and 24 return circuits. It is used in telephone, fax, DDN, ISDN and computer interface applications for protection against lightning and surges.

Model	GC110	GD110	GC48	GD48	GC24	GD24	GF110	GF48	GF24
Operating Voltage Un	DC110		DC48		DC24		DC110	DC48	DC24
Maximum Continuous Operating Voltage	DC150		DC60		DC30		DC150	DC60	DC30
Voltage Limiting Up	≤500V		≤200V		≤120V		≤550V	≤200V	≤120V
Nominal Discharge Current In	10kA								
Impulse Protective Voltage Ur (1kv/us)	≤600V								
Frequency Range	2MHz	10MHz	2MHz	10MHz	2MHz	10MHz	100MHz		
Insertion Loss	<0.5dB						<3dB		
Response Time	<10ns								





SURGE PROTECTION

METAL OXIDE VARISTORS

Metal Oxide Varistors

Features:

Steady State AC Voltage Range ($V_{M(AC)RMS}$)	11V – 1000V
High Peak Surge Current Rating (I_{TM}) 8/20us Pulse	250A – 10000A
Single-Pulse Energy Range (W_{TM}) 2ms Square Wave	0.40J – 860J
Average Power dissipation of transients	<0.10W – <1.00W
Operating Temperature Range	-55° C – +85° C
Storage Temperature Range	-55° C – +125° C
Hi-Pot Encapsulation (Isolation Voltage Capability)	2500V _{DC}
Insulation Resistance	1000 MΩ
Maximum Voltage-Temperature Coefficient	0.01% / °C
Response Time	25ns

MYG Series



MYL40 Pin B Type



MYE40 Terminal B Type



MYE70 Terminal D Type



Model	Specification (25° C)						Maximum Rating (85° C)						Certification		
	Varistor Voltage (1mA DC)			@Ip Clamping Voltage (8/20us)		Typical Capacitance	Continuous Voltage		Energy (J)		Peak Current (8/20us)				
	Min (V)	V _{N(DC)} (V)	Max (V)	V _C (V)	Ip (A)	F=1KHz (pF)	V _{RMS}	V _{DC}	W _{TM}		I _{TM} (A)	CE	VDE	UL	
							V _{M(AC)} (V)	V _{M(D)} (V)	10/1000us	2ms					
MYG05-431A MYG07-431A MYG10-431A MYG14-431A MYG20-431A	389	430	303	745	5	70	275	350	13.5	20	800	Y	Y	Y	
710				10	150	27.5			40	1750	Y	Y			
710				25	400	55			80	3500	Y	Y		Y	
710				50	650	110			160	6000	Y	Y		Y	
710				100	1350	215			325	10000	Y	Y		Y	
MYG05-751A MYG07-781A MYG10-781A MYG14-781A MYG20-781A	702	780	858	810	5	70	485	640	15	21	800	Y	Y	Y	
1290				10	110	32			59	1750	Y				
1290				25	150	75			120	3500	Y	Y			
1290				50	330	160			235	6000	Y	Y			
1290				100	530	315			460	10000	Y				
MYG07-911A MYG10-102A MYG14-102A MYG20-102A	900	1000	1100	915	10	120	625	825	32	46	1750	Y	Y	Y	
1650				25	140	100			145	3500	Y	Y		Y	
1650				50	300	200			290	6000	Y	Y		Y	
1650				100	480	400			565	10000	Y	Y		Y	
MYL40-431A/B	389	430	466	710		4100	275	360	530			Y			
MYL40-781A/B	702	780	858	1300		2270	480	640	930			Y			
MYL40-102A/B	900	1000	1080	1650		1730	620	800	1040			Y			
MYE40-431B	389	430	466	710		3800	275	360	550		40	Y		Y	
MYE40-781B	702	780	858	1300		2100	480	640	930			Y		Y	
MYE40-102B	900	1000	1080	1650		1600	620	800	1040			Y		Y	
MYE70-431D	389	430	466	710		6600	275	360	950					Y	
MYE70-781D	702	780	858	1300		3800	480	640	1600					Y	
MYE70-102D	900	1000	1080	1650		2900	620	800	2200					Y	



SURGE PROTECTION

AUTOMATIC VOLTAGE SWITCHERS

Automatic Voltage Switchers

FEATURES:

- Relay Protection
- High Voltage Protection
- Low Voltage Protection
- Spike/Surge Protection
- Power-back Surge Protection
- RFI (radio frequency interference and noise) Protection
- Lightning Protection
- Three phase and Single Phase Available



AVS-5A

AVS-15ACPU



AVS-30A

Model	AVS-5A	AVS-13A	AVS-15A	AVS-30A	AVS-3P
Spike/Surges	■	■	■	■	■
High Voltage	■	■	■	■	■
Low Voltage	■	■	■	■	■
Lightning	■	■	■		
Power Cut	■	■	■	■	■
Power-back Surges	■	■	■	■	■
Current	5A	13A	15A	30A	Unlimited
No of Phases	1	1	1	1	3
Connect By	Plug/Socket	Plug/Socket	Plug/Socket	Direct Wiring	Direct Wiring
Suitable for	Any electrical or electronic equipment (incl. air conditioners)				
Size (mm)	141 x 65 x 60	145 x 102 x 50		205 x 135 x 55	
Net Weight (kg)	0.15kg	0.3kg		0.5kg	
Available Sockets	Brittish/Shuko	Universal	South African	N/A	
Available Plugs	Brittish/Shuko	Brittish/Shuko	South African	N/A	
Available with Adjustable Time Delay Dial		■	■	■	
Add "CPU" to part number for models with adjustable time delay dial					



CATEGORY PRODUCT INDEX

Cat. Code	Description	Sub Cat. Code	Description	Page
10	Surge Protection	101	Power Surge Protection	
			Black Box and Filterplug	3
			Surge Cord	3
			Mains and Telephone Protector	4
			Mains Only Protector	4
			Electric Fence Protection Kit	5
			Mains Only Protector (Plugtop)	5
			Power Conditioner Can	6
			House Hold Surge Protector	6
			AA110 Power Conditioner	7
			Equaliser (Pontechoke)	7
			Power Conditioners - High Current (Surge Panels)	8
			Din Mount SPD Class 1	9
			Din Mount Spark Gap Class 1 and Class 2	9
			Din Mount SPD Class 2 (20kA-40kA)	10
			Din Mount SPD Class 2 (60kA-100kA)	11
			Din Mount Power Conditioner	11
		102	Data Surge Protection	
			DSTV Surge Protectors	12
			Access Conditioner	12
			100 Base T Surge Protectors	13
			RS232 Surge Protectors	13
			COAX Line Conditioners	14
			RF Line Conditioners	14
			PLC Line Conditioners	15
		103	Telephone Surge Protection	
			PABX Surge Protector	16
			Telephone Line Conditioner	17
			Din Mount SPD for Telecoms	17
		104	General Surge Protection Devices	
			Metal Oxide Varistors	18
			Automatic Voltage Switchers	19