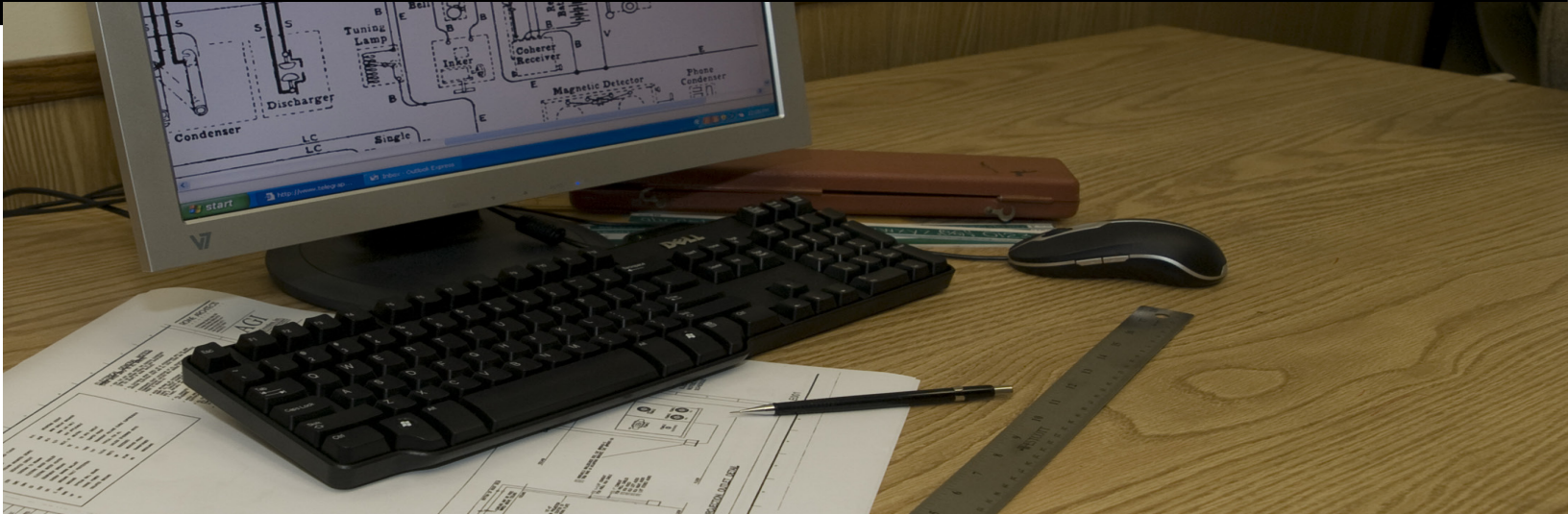




Data Line Protection



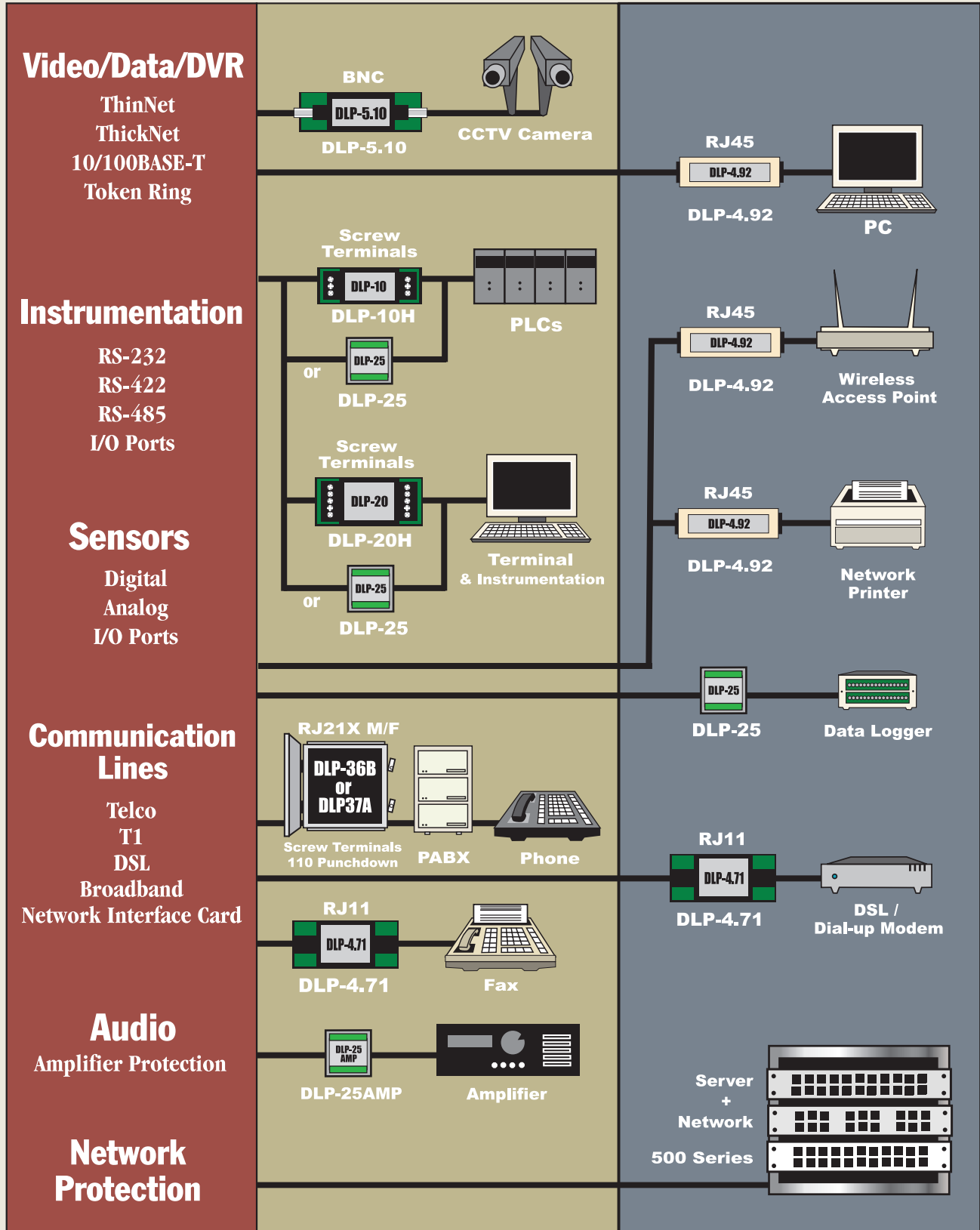
MCG SURGE PROTECTION



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Data Line Protection Applications



Data Line & Rackmounted Protection Overview

FOLLOW

the letters below and to the right to quickly select a suitable protector.

(A) Applications	(B) Protocols	(C) Connectors	Load Line	BNC (F) BNC (F)	RJ11 RJ11	RJ11 RJ11	RJ45 RJ45	6-32 TB 6-32 TB	6-32 TB 6-32 TB	6-32 TB 6-32 TB	Screw Term. Screw Term.	RJ21X RJ21X	Screw or Pinch Dn	R/45 IDC-110	R/45 IDC-110	R/45 RJ45			
				1	1	1	1	-	-	-	-	-	-	12	24	16			
				Cr. + Sh.	6 Wire	6 Wire	8 Wire	2 Wire	4 Wire	8 Wire	5 Wire & 2 Ch. Audio	50 Wires	28 Wires	8 Wire	8 Wire	8 Wire			
				DLP 5.10	DLP 4.71	DLP 4.90	DLP 4.92	DLP 10H	DLP 20H	DLP 30H	DLP-25 & DLP-25AMP*	DLP 36B	DLP 37A	512H	524H	516H			
				Pages															
High Frequency	Cat. 5						5										7	7	6
100 Mbps+	ATM155						5										7	7	6
Clamp V=6V	GDDI						5										7	7	6
	100 Base-T						5										7	7	6
	100VG						5										7	7	6
Ethernet	10 Base-T						5										7	7	6
10 Mbps	10 Base2			6			5										7	7	6
Clamp V=6V	CCTV			6			5										7	7	6
	Token Ring						5										7	7	6
Instrumentation	3270						5										7	7	6
Clamp V=6V	RS422						5										7	7	6
	RS423						5										7	7	6
	RS485						5										7	7	6
Instrumentation	ARCNet			6			5										7	7	6
Clamp V=25V	Current Loop						5										7	7	6
	Digital 4-20ma						5										7	7	6
	RS232						5										7	7	6
Telecom	DDS						5										7	7	6
Clamp V=60V	ISDN						5										7	7	6
	Leased Lines						5										7	7	6
	T1, T1 non-span						5										7	7	6
Telephone	Answering Systems						5										7	7	6
Clamp V=200V	Dial-up Voice						5										7	7	6
	DSL						5										7	7	6
	Fax Machine						5										7	7	6
	Modems						5										7	7	6

* See Page 8 for Audio Amplifier Protection

Data Line Protection

MODEL

DLP-10H • 20H • 30H

Protects 4-20mA loops, I/O Ports, Sensors

The DLP H series provides superior surge protection for data and signal line applications. Using higher capacity components, these units offer an improved level of reliability than other similarly priced products. To cover a broader range of applications, four different styles of protection circuits and ten standard voltages are offered to fine tune the protection to your equipment.

•2, 4, or 8 protected wires •Hybrid or high power silicon avalanche diode technology •Standard Duty or Heavy Duty Capability •DIN rail mountable option •Low profile enclosure •UL497B Listed •20-year Warranty

SPECS

All Models

Response Time: <1ns
 Attenuation: <1dB @ 10 MHz
 Terminal Blocks: Barrier Type
 Connection: 6-32 Screw Terminals
 Wire Size Range: 12-24 AWG
 Maximum Screw Torque: 10 lb. in.
 Enclosure: High Impact Plastic
 Certification: UL497B Listed

Hybrid Models (per circuit ratings):

Ipk, Standard Duty: 10kA (8x20 microsecond)
 Ipk, Heavy Duty Models: 20kA (8x20 microsecond)
 Series Resistance: 5 Ohms
 Current, Continuous: 350mA Maximum

Silicon Avalanche Diode Models (per circuit ratings):

Peak Power, Standard Duty: 10kW (10x1000 microsecond)
 Peak Power, Heavy Duty: 60kW (10x1000 microsecond)
 Series Resistance: 0 Ohms
 Current, Continuous: 10A Maximum (Series Connected)
 Current, Continuous: Unlimited (Parallel Connected)

Dimensions, LxWxD (models w/o "-DIN" option):

DLP-10H/HH Models: 5.0" x 2.1" x 1.1" (127 x 54 x 28mm)
 DLP-20H/HH Models: 5.0" x 2.8" x 1.1" (127 x 72 x 28mm)
 DLP-30H/HH Models: 5.0" x 4.4" x 1.1" (127 x 112 x 28mm)

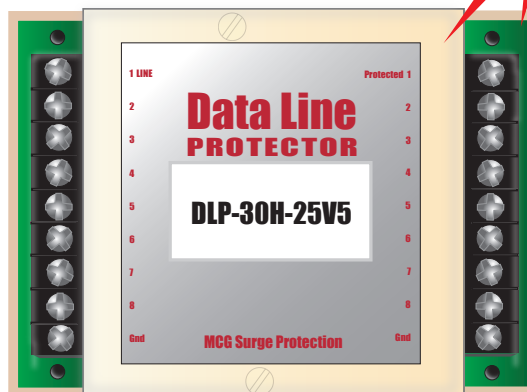
Dimensions, LxWxD (models w/ "-DIN" option):

DLP-10H/HH Models: 5.0" x 2.1" x 1.9" (127 x 54 x 49mm)
 DLP-20H/HH Models: 5.0" x 2.8" x 1.9" (127 x 72 x 49mm)
 DLP-30H/HH Models: 5.0" x 4.4" x 1.9" (127 x 112 x 49mm)
 Overall Mounting Depth (w/ DIN 35 Top Hat Style Rail): 1.96" (50mm)

Mounting Dimensions (models w/o "-DIN" option):

DLP-10H/HH Models: 4.2"x1.50"/0.185" ID (107 x 38mm/4.7mm ID)
 DLP-20H/HH Models: 4.2"x2.25"/0.185" ID (107 x 57mm/4.7mm ID)
 DLP-30H/HH Models: 4.2"x3.75"/0.185" ID (107 x 95mm/4.7mm ID)

NEW



How To Order

DLP - xxHx - xxxVx - xxx
 1 2 3 4

1st Field: DLP = DLP model family.

2nd Field: xxHx represents the style (# of wires protected and the protection capacity).

10H=2 Wire, standard duty; 10HH=2 Wire, heavy duty
 20H=4 Wire, standard duty; 20HH=4 Wire, heavy duty
 30H=8 Wire, standard duty; 30HH=8 Wire, heavy duty

3rd Field: xxxVx represents the voltage of the protector and series resistance.

Hybrid models: 6V5, 8V5, 12V5, 15V5, 25V5, 36V5, 55V5, 100V5, 150V5, 180V5*

Silicon avalanche diode models: 6V0, 8V0, 12V0, 15V0, 25V0, 36V0, 55V0, 100V0, 150V0, 180V0**

4th Field: xxx represents whether or not the DIN rail option is present.

"DIN" means protector will include the DIN rail mount feature. A blank field means protector will not include the DIN rail mount option.

Ordering Example: DLP-20HH-25V5. This is a 4 wire, heavy-duty, 25 volt, hybrid protector.

*Hybrid models use gas tubes, resistors, and silicon avalanche diodes in the protection circuit.

** Silicon avalanche diode models do not employ series resistors or gas tubes.



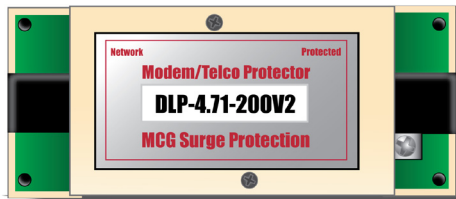
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Data Line Protection

MODEL

DLP-4.71

Protects Modems, Fax, Telco



Modems, fax machines and telephone equipment are easily damaged by transients caused by lightning and switching surges. The DLP-4.71 installs in minutes between the telephone/data line and the sensitive equipment to provide quick and dependable protection for I/O ports.

For particularly severe transient conditions, model DLP-4.71 incorporates a one-two punch of fast-acting avalanche diodes with brute force gas diodes for substantially greater heavy-duty diversion capability. Protection circuitry on the DLP-4.71 automatically resets after the transient has passed. The DLP-4.71 handles hit after hit without degradation.

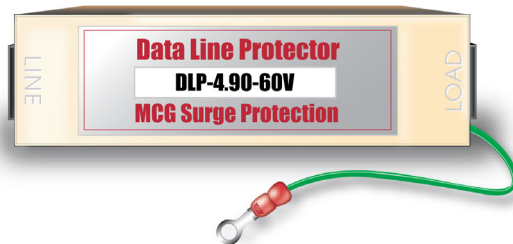
SPECS

Extra Heavy Duty: Ipk=10kA, 8/20 μ s
 Connector: RJ11 (F/F)
 Clamp V: 6, 25, 60, 200V
 Response Time: <1ns
 Protected: Pins 2, 3, 4, 5
 Series Rs: 2.4 Ohms
 Attenuation: <1dB at 10MHz
 Mounting: 4.2" x 2.25" (.185" ID)
 107 x 57mm (4.7mm ID)
 UL: 497A (Fuse), 497B
 Weight: <1 lb. (.45kg)
 Warranty: 20 Years

MODELS

DLP-4.90 • 4.92

**Protects Modems, Fax, Telco, T1, E1
 10/100 BASE-T Networks**



MCG's DLP-4.90 and 4.92 surge protectors are designed to handle demanding Cat.5 applications.

Single port applications such as local area networks are easily damaged by transients caused by lightning and switching surges. The DLP-4 series installs in minutes between the data line and the sensitive equipment to provide quick and dependable protection for I/O ports.

Protection circuitry on both units automatically resets after the transient has passed.

SPECS

Model:	DLP-4.90	DLP-4.92
I Peak:	400A, 8/20 μ s	400A, 8/20 μ s
Attenuation:	<1dB at 100MHz	<1dB at 100MHz
Connector:	RJ11 (F/F)	RJ45 (F/F)
Clamp:	6, 25, 60, 200V	6, 25, 60, 200V
Response Time:	<1ns	<1ns
Protected:	Pins 1-6	Pins 1-8
Heavy Duty:	Ipk=400A, 8/20 μ s	Ipk=400A, 8/20 μ s
Mounting:	3.5" x 1" x 1"	3.5" x 1" x 1"
	89 x 25 x 25mm	89 x 25 x 25mm
Weight:	<1 lb. (.45kg)	<1 lb. (.45kg)
Warranty:	20 Years	20 Years

**DIN-Rail mounting available upon request.
 Call MCG for additional non-standard voltages.**

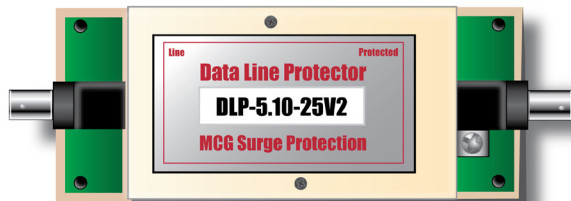
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Data Line Protection

MODEL

DLP-5.10

Protects 10BASE-T, CCTV, Token Ring, I/O Ports



The DLP-5.10 is a heavy-duty wideband protector that prevents cable transients from damaging sensitive loads. When sensing a transient on either shield or the center automatically shunt damaging transients to ground.

The DLP-5.10 offers ideal protection for 10BASE-T, hubs, CCTV, routers, token ring and I/O ports.

Installation is quick and easy using BNC connectors. The DLP-5.10, like all MCG protectors, is backed with a twenty year, no-nonsense warranty. Please call our Technical Support Staff with all your application questions.

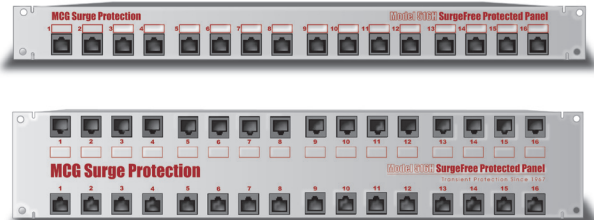
SPECS

Extra Heavy Duty: Ipk=10kA, 8/20 μ s
 Connector: BNC (F/F)
 Clamp V: 6V, 25V
 Protected Lines: Center and Shield
 Series Rs: 2.4 Ohms
 Attenuation: <1dB at 70MHz
 Mounting: 4.2" x 1.5" / 185" ID
 107 x 38mm/4.7mm ID
 UL: 497B
 Weight: <1 lb. (.45kg)
 Warranty: 20 Years

MODEL

516 Series Rack Protector

Sixteen Port Protection



These rack mount protectors offer a choice of heavy duty (516H, protects 8 wires) or extra heavy-duty (516HX, protects 2 wires) capability. Units feature 16-port RJ45 protection and can be purchased as a two unit, front-to-front or a compact, one unit front-to-back protector. Provides rugged protection for Cat. 5, 100BASE-T, token ring, 4-20ma loop, etc.

All MCG rack mounted protectors come supplied with an internal connection to the rack's metal framework. An additional ground strap is provided for connection to the rack frame to ensure superior uninterrupted protection.

SPECS

Capability: Cat. 5, 100Mbps
 Clamp V: 6, 25, 60, 200V
 Response: <1ns
 Rack Height: 1 or 2 Units Available
 Ports: 16, F/F or F/B
 Protects (H): 1-8 Wires
 (HX): Pins 4 & 5
 Connectors: RJ45, RJ45 (Female)
 Dimensions: 19" x 1.75" x 3.75" Front/Back
 19" x 3.50" x 0.75" Front/Front
 Weight <3 lbs.
 Warranty: 20 Years

Note:
 (H) denotes Heavy Duty unit.
 (HX) Extra Heavy Duty.*

* Attenuation <1dB at 10MHz for HX

Call MCG for additional non-standard voltages.

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Data Line Protection

MODEL

512 Series Rack Protector

Twelve Port Protection



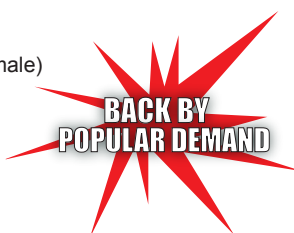
Unshielded twisted-pair cable used in networks is more susceptible to electrical noise than shielded cable. And, because the networks are frequently moved and changed, it's easy to lose track of where these cables run. Induced transients appear along the run of these cables, unfettered and ready to cause damage to downstream equipment.

The 512 Series of 19" rack protectors guard routers, hubs, patch panels and other complex instrumentation from damage due to lightning and switching surges. Housed in a compact, one-unit design, the 512 Series offers twelve protected ports (front to back).

SPECS

Capability: Cat. 5, 100Mbps
 Clamp V: 6, 25, 60, 200V
 Response: <1ns
 Rack Height: 1 Unit
 Ports: 12, Front/Back
 Protects: 1-8 Wires
 Connectors: IDC-110, RJ45 (Female)
 Dimensions: 19" x 1.75" x 1.38"
 Weight: <3 lbs.
 Warranty: 20 Years

Note:
 6V for 100BASE-T, RS-422
 25V for RS-232
 60V for CSU/DSU's
 200V for DSL, Dial-up



MODEL

524 Series Rack Protector

Twenty Four Port Protection



Ideal for telephone, telcom, instrumentation or Ethernet applications, this front-to-back 24-port protector fits into any standard 19" equipment rack. Protects eight wires per RJ45 port with clamp voltages of 6V, 25V, 60V, and 200V available.

Demanding Cat. 5, 100BASE-T, 100VG, CDDI, ATM155 applications are ideally suited to the 524H rack protector.

Employing an internal ground connection and an additional ground strap, the units install quickly in new or retrofit applications.

MCG's twenty-year, no-nonsense warranty guarantees free, immediate replacement of any MCG data line protector that gets damaged in service.

SPECS

Capability: Cat. 5, 100Mbps
 Clamp V: 6, 25, 60, 200V
 Response: <1ns
 Rack Height: 2 Units
 Ports: 24, Front/Back
 Protects: 1-8 Wires
 Connectors: IDC-110, RJ45 (Female)
 Dimensions: 19" x 3.50" x 1.38"
 Weight: <3 lbs.
 Warranty: 20 Years

Note:
 6V for 100BASE-T, RS-422
 25V for RS-232
 60V for CSU/DSU's
 200V for DSL, Dial-up

Call MCG for additional non-standard voltages.

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Data Line Protection

MODEL

DLP-25

Protects Critical Control Circuits



MCG's DLP-25 series protects critical control circuits from lightning induced transients. The DLP-25 series comes in three offerings - light duty, standard duty, and heavy duty and protects up to five wires. The unit uses a compact, aluminum DIN-rail mount enclosure. For easy mounting, a DIN-rail bracket is provided for mounting to any flat surface.

Ideal for 4-20mA loops, I/O ports, sensors, mainframes, process controllers, and other complex instrumentation applications.

Heavy duty models are rated at 20kA (8x20us) per wire. Standard duty models are rated at 10kA (8x20us).

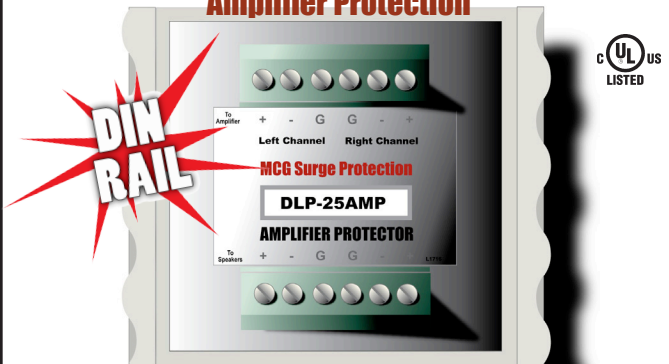
SPECS

Number of Protected Circuits: 5
 Protection Modes: L-L, L-G
 Connection: Series Connection
 (Light Duty may be shunt connected)
 Connector: Screw Terminals
 Rated Voltage: 6V - 180V
 Rated System Current Per Circuit (Std/Heavy Duty): 350 mA DC Maximum
 Rated System Current Per Circuit (Light Duty): 5 ADC (Series Connected)
 Rated System Current Per Circuit (Light Duty): Unlimited (Shunt Connection)
 Temperature (Operating/Storage): -55° to +65°C / -55° to +75°C
 Protection Type: Bidirectional
 Wire Gauge Range: 22-12 AWG
 Enclosure: Aluminum
 Dimensions: 2.95 x 2.83 x 1.86" (L x W x D)
 Mounting: Din-Rail Mount (DIN 35 Type)/Flat Surface
 Warranty: 20 Years

MODEL

DLP-25AMP

Amplifier Protection



MCG's DLP-25AMP protects amplifiers from lightning induced, or other surges on the speaker cables. Left unchecked, these surges will cause damage or degraded performance of the output stages of an amplifier.

Designed to be transparent to the audio path, the unit will not impact sound quality. The DLP-25AMP will momentarily conduct when an unsafe over voltage condition is present, thus protecting the amplifier. Protects two channels. Protection mode is 3 per channel - positive to negative, positive to ground, negative to ground. DIN-rail mount.

SPECS

Number of Protected Circuits: 2
 Protection Modes: 3 per channel - positive to negative, positive to ground, negative to ground
 Connection: Series Connected
 Connectors: Screw Terminals
 Certification: UL497B Listed
 Series Resistance per Circuit: 0.025 Ohms Maximum
 Surge Capacity Per Mode: 15,000 Watts (10x1000us Waveform)
 Temperature: -55° to +65°C / -55° to +75°C
 Wire Gauge Range: 22-12 AWG
 Enclosure: Aluminum
 Dimensions: 2.95 x 2.83 x 1.86" (L x W x D)
 Dimensions, DIN Rail Section: 3.0" Length
 Mounting: Din Rail Mount (DIN 35 type)/Flat Surface
 Warranty: 1 Year

Call MCG for additional non-standard voltages.

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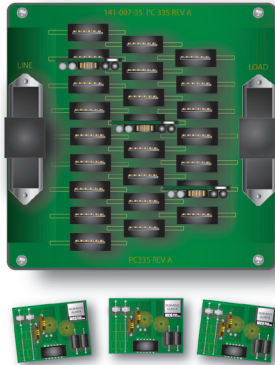
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Data Line Protection

MODEL

DLP-36B

PABX / Terminal Protection



The DLP-36B is a 25-pair (50 wire) transient suppressor offering high speed protection for PABX systems, key systems, port selectors and any instrumentation system using telephone lines, RS-232, 423 and 4-20mA loops.

Utilizing 50-pin RJ21X connectors, the DLP-36B is ideal for termination to 66 blocks. Protection circuitry resets automatically after the transient has passed. The DLP-36B can be delivered with or without a NEMA-12 enclosure that accepts up to 25 DLM plug-in protection modules. Customize the unit by choosing the voltages you need.

SPECS

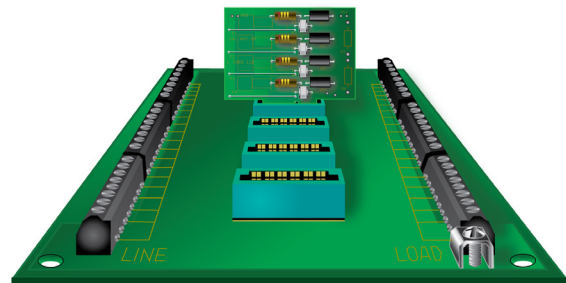
Model: DLP-36B Assy (Heavy Duty)
 Connector: RJ21X, M/F
 Protects: Up to 50 Wires
 Enclosure: NEMA-12
 Mounting: 8.75" x 6.0" (.31 ID)
 248 x 152mm (7.9mm ID)
 Weight: 10 lbs., (4.5kg)

Protection Module Type: DLM
 Clamp Voltage: 6V, 25V, 60V, 200V
 I Peak: 5kA
 Response Time: <1 ns
 Attenuation: <1db at 10MHz
 Series Rs: 2.4 Ohms
 UL: 497A (fuse), 497B
 Warranty: 20 Years

MODEL

DLP-37A

Instrumentation Protection



The DLP-37A/DLM4 protects computer mainframes, terminals, process controllers, data loggers, etc. from damaging lightning and surges. Screw terminal strip and/or punchdown connections enable the heavy duty DLP-37A system to be used or retrofitted virtually anywhere. Protects up to 28 wires, using plug-in DLM4 modules (4 wire) available at 6V, 25V, 60V, 200V levels.

Unit automatically resets, ready for the next event, after the transient has passed.

SPECS

DLP-37A Assy: Accepts up to 7 DLM4 Modules
 Connectors: Screw Terminals or 110
 Punch Down Blocks (DLP-37A1)
 Assembly: PC Board
 Mounting: 6.50" x 4.20" (0.19")
 165 x 107mm (4.7mm ID)

Protection Module Type: DLM4
 Clamp Voltage: 6V, 25V, 60V, 200V
 I Peak: I_{pk}=10kA, 8/20μs
 Response Time: <1 ns
 Attenuation: <1db at 10MHz
 Series Rs: 2.4 Ohms
 UL: 497A (fuse), 497B
 Warranty: 20 Years

Call MCG for additional non-standard voltages.

Important Tips on Data Line Protection

MCG's Data Line Protectors (DLP) MUST be referenced to a local chassis ground to insure proper protection of your critical systems.

- MCG's data line protectors (DLP-5.10, 4.92, etc.) have a ground wire that MUST be connected to local chassis metal. The ground lead length should not exceed 6 inches (15 cm), otherwise protection will be compromised.
- MCG's rack-mount protectors (512H, 516H, etc.) are already internally connected to the rack's metal framework. An additional ground wire is provided for connection to the frame rack to insure continued excellent protection.

In areas of SEVERE LIGHTNING or with ESPECIALLY CRITICAL OPERATING SYSTEMS that must remain on-line, we recommend that heavy duty, data line protectors be used.

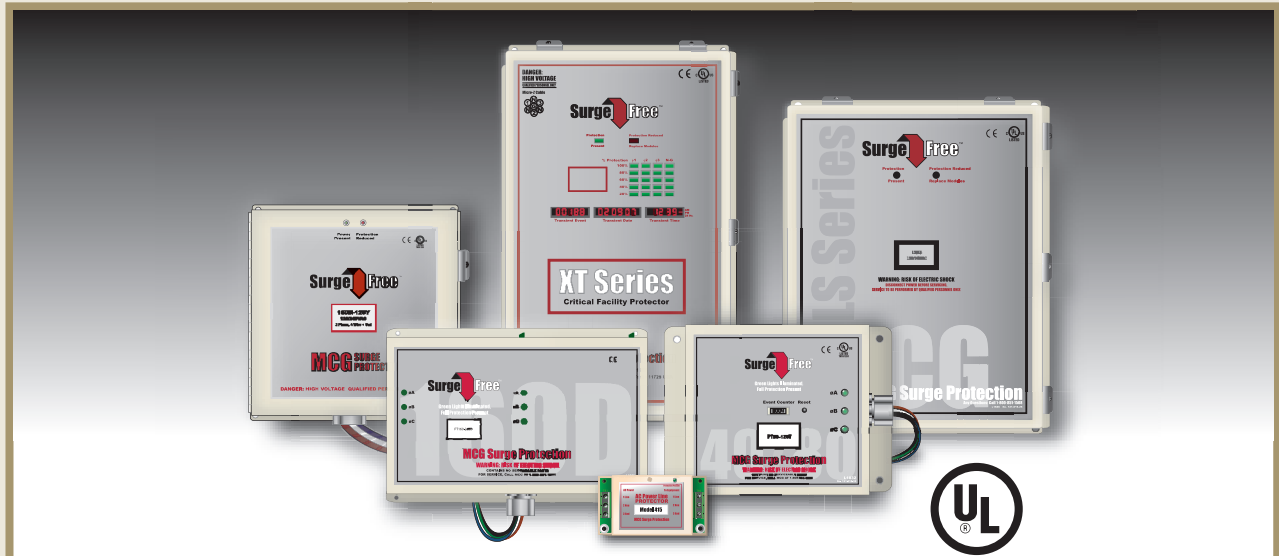
- MCG's high speed protectors are capable of continually withstanding 400A, 8/20 μ s impulses without damage. In most applications, this capability is greatly in excess of the transients that your equipment will experience.
- MCG's standard data line protectors are rated at 10kA (8/20 microseconds) per wire. For the majority of applications, these protectors will easily guard your equipment for decades. The DLP-H Series, DLP-4.71, DLP-37A and DLP-5.10 are some examples. However, for the most critical sites, and sites with frequent lightning occurrences, it may be necessary to use a protector that can handle more than the average surge exposure. In this case, heavy duty models should be employed. These models are rated 20kA (8/20 microseconds) per wire. They use larger components than our standard models which enables them to divert high amplitude surge current repeatedly. The DLP-10HH-6V5 is an example of an MCG heavy duty line of protectors.

MCG's Incomparable 20-Year Warranty: FREE, NO-NONSENSE REPAIR or REPLACEMENT of any MCG data line protector that gets damaged in service. See "Warranty & Limitation of Liability" at www.mcgsurge.com/warranty.htm for full details.*

APPLICATIONS ASSISTANCE. Our application engineers are only a phone call away. A five minute conversation with an MCG engineer can save you hours of design time.

** Limited, 1 year warranty on DLP-25AMP.*

AC Power Line Protectors

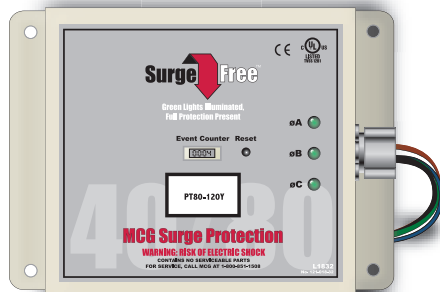


Transients, lightning, and surges appearing on the AC power lines can damage or destroy downstream equipment. Vulnerable circuitry exists in an extremely hostile environment. A properly applied surge protector can prevent equipment damage, downtime and data corruption.

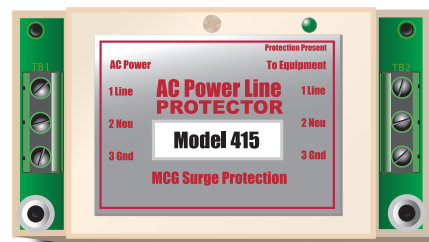
MCG AC Power Line Protectors are available for applications at the **Main, Branch and Local Service Panels**. 120-600VAC, 1-3 phase, S, T, DCT, Y, and D.OEM Models are used directly inside distribution panels or sensitive equipment. 5-23A, 1 phase. Visit our website for information on AC Power Line Protectors as well as Low Voltage Crowbars and Direct Current protectors

Local Service Panel Protector

OEM Equipment Protection



Utilizing powerful 40kA MOVs models PT80 and PT40 are compact AC power line surge protectors used at the local service panel to provide brute force protection for sensitive equipment such as CNC machines, industrial robots, soft start control systems, electronic adjustable speed drives, etc.



The 400 Series installed at or within a piece of equipment (PLCs, fire alarm monitoring systems, security controls, etc.) provide compact heavy-duty surge suppression. The 400 Series employ a sophisticated combination of brute force surge protection and impulse filtering to prevent damage or malfunction to sensitive equipment. DIN rail option available.



Transients Turn Us On

Over **40** Years of
Perfect Protection

Our application engineers are only a phone call away.

A five minute conversation with an MCG engineer
can solve your surge protection problems.

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SURGE
PROTECTION**

\$6.00USD
Part No. 299-300-04