Application GUIDES

Surge Protection for EVERY Application

VIDEO SURVEILLANCE  FIRE  COMMUNICATIONS  ACCESS/INTRUSION  AC POWER

DITEK Surge Protection
DITEK provides the industry’s most comprehensive line of surge protective devices for power, video surveillance, networking and communications in industrial, commercial, institutional and residential applications. DITEK’s system-specific product designs cover the full spectrum of application requirements, delivering optimum protection and performance. Building on its core platform of varistor-based products for high energy dissipation applications, the company then introduced diode-based technologies to address the low impedance and fast-clamping performance characteristics necessary to protect high-speed video and data signals. DITEK’s new multi-stage devices utilize multiple technologies and include filtering, power conditioning and over-current protection. These next-generation products provide a comprehensive solution at a nominal cost.

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**Things You Should Know**

**What causes surges and spikes?**
- **Lightning** - a direct hit is usually catastrophic.
- **Proximity Strikes** - lightning strikes several miles away causing large voltage spikes along transmission lines.
- **Brownouts / Blackouts** - under-voltage or sag that’s immediately followed by an unusually high voltage transient. If your lights flicker or dim, it’s usually an indication that a brownout occurred.
- **Utility Grid Switching** - utility companies switching transmission lines from one supply system to another.
- **Inductive Loads** - the switching on and off of electric motors inside or outside a facility (for example air conditioners or heavy machinery).

**What are power surges and spikes?**
Surges and spikes are temporary and instantaneous events that increase “normal” electrical line voltage, and can cause serious damage to sensitive equipment.

Conventional fuses and breakers do not guard against surges.

**The effects of surges and spikes are the three D’s:**
- **Degradation** - gradual deterioration of internal circuitry from repeated power surges.
- **Destruction** - resulting in expensive equipment replacement costs.
- **Downtime** - the most costly effect - can result in lost productivity or lost customers.

**The payback for investing in quality surge protection is:**
- Reduced downtime
- Extended equipment life
- Increased Customer Satisfaction

**What equipment should be protected against power surges?**
Surges can be present on any metallic conductor, including utility power lines, telephone lines, computer data lines, and CCTV/CATV cable feeds. Therefore surge protection should be installed on all circuits within a system.

Visit our Web Portal
Choose your product category and our interactive Product Selector will assist you in selecting the right surge protection devices for your specific application.

www.diteksurgeprotection.com

24/7 technical support staff at 888.472.6100
IP/PoE Networks
To keep surges from entering your building and your network, you must provide a layer of protection. This head-end protection point is the only way to reduce the risk associated with metallic conductors connecting external devices to internal network components. In addition, externally mounted devices should be protected from surges that are introduced on the same metallic conductors.

It is also recommended to install an Uninterruptible Power Supply (UPS). A UPS provides consistent backup power during inconsistent power quality issues. Not only will it protect your hardware investment, it prevents data loss.

Failure to install surge protective devices (SPD’s) and UPS systems places all internal network connected equipment at risk.

*DSee page 6 for complete list of UPS products

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**DTK-UPS Series**
On-Line Uninterruptible Power Supply
DITEK’s uninterruptible power supply combines robust surge protection with on-line double conversion technology, enabling your equipment to survive even the harshest power quality issues.

*See page 6 for complete list of UPS products

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**DTK-RM24NETS**
Rack Mount Shielded Network Surge Protector
The new DTK-RM24NETS uses SAD and GDT technologies to provide the industry’s strongest surge protection for shielded Ethernet, PoE and PoE extender* circuits. Data speeds up to 10GbE without signal degradation.

*See page 2 for complete list of Networking products
Networking Surge Protection

DTK-RM24NETS / RM16NETS / RM12NETS
Rack Mount Ethernet and PoE Surge Protection
- 24, 16 or 12 Front accessible, modular channels
- Ethernet data speeds up to 10GbE
- 20kA surge current rating per pair, highest available
- Shielded RJ45 connections

DTK-CAT6A Series
10 Gigabit Ethernet Surge Protection
- Primary protector for communications circuits
- Compatible with CAT5e, CAT6 & CAT6A cable
- Conforms to TIA data transmission standards
- Protects all four pairs

DTK-RM12POES
Rack Mount PoE Surge Protection
- Uses SAD and GDT technologies
- Ethernet data speeds up to 10GbE
- PoE+ and High PoE ready
- Shielded RJ45 connections

DTK-RM12ETHS
Rack Mount Ethernet Surge Protection
- Uses SAD and GDT technologies
- Shielded RJ45 connections
- Data speeds up to 10GbE

DTK-RM16POC
Surge Protection for Ethernet and PoE Extenders
- Protects IP video over Coax converters from damaging transient surges
- Individual and rack mount models available

DTK-RMAC12
Rack Mount AC power Surge Protection
- 12 surge protected outlets - 6 in front, 6 in back
- EMI/RFI noise filtering
- LED indicator lights

Versa-Module Series Surge Protection System
DITEK’s Versa-Module Series is designed to protect analog, digital, high speed data and communications circuits. Installing any combination of up to 6 or 12 protection modules in one of our face plates allows you to utilize a single point ground, and simplifies cable management where space is limited.

DTK-VM12RM: Rack Mount System
(Shown with shielded RJ45 and BNC interface modules)

DTK-VM6WM: Wall Mount System
(Shown with shielded RJ45 and BNC interface modules)

DTK-VM Series: Surge Protection Modules
**IP Video Surge Protection**

**DTK-MRJPOEX**
Shielded Gigabit PoE Surge Protection for Outdoor Applications
- Uses SAD and GDT technologies
- Ethernet data speeds up to 10GbE
- PoE+, HiPoE ready for high wattage
- NEMA 4X enclosure with liquid-tight cordgrips

**DTK-MRJPOE / DTK-MRJPOES**
PoE Camera Surge Protection
- Uses SAD and GDT technologies
- Ethernet data speeds up to 10 GbE
- PoE+, HiPoE ready for high wattage
- Shielded or unshielded RJ45 connections

**DTK-PVPIPS**
IP/PoE Video Surge Protection
- Protects all four video/power pairs
- Up to 10GbE data speeds - high wattage
- Accessory power protection circuit for heater/blower/defroster
- RJ45 connections with grounding screw

**DTK-MRJEXTS**
Shielded Surge Protection for PoE Extender Circuits
- Designed to be installed on the outputs of PoE extender devices
- Uses SAD and GDT technologies
- Ethernet data speed Up to 10GbE

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TIP: Surge protectors with shielded RJ45 connections offer a robust 20kA surge current rating, and do not require an additional earth ground when used with STP cabling.
DTK-2MHLPB / DTK-2MHLPF Series
Loop Circuit Surge Protectors
- Modular design, 2 pairs per module
- 20kA surge current, 5-130V configurations
- B series shorts to ground
- F series removes load and opens circuit so it can be easily identified

DTK-MRJ31XSCPWP / DTK-2MHTPWB
Dialer Surge Protectors
- MRJ31X: single pair, RJ31X connection
- Automatic reset, handles multiple surges
- 2MHTP: 2-Pair, screw terminal connection w/base

DTK-120SRD
AC Power Surge Protector With Dry Contacts for Remote Monitoring
- 120V, 20A series configuration
- UL1283 EMI/RFI filtering
- 50,000A max surge current

DTK-120HW
AC Power Surge Protector
- 120V, 20A parallel configuration
- Compact NEMA 4X enclosure
- 50,000A max surge current
- Models available for 120/240VAC & 240VAC

www.diteksurgeprotection.com
DITEK’s Total Surge Solution (TSS) is a family of products that provide total surge protection for addressable and conventional alarm systems. Protect 120V system power and up to ten pairs of SLC, IDC, PIV, NAC and telco circuits. Loop protector test module also available to aid in troubleshooting self-sacrificed surge protection modules.

Complete protection, simple installation, high quality and field replaceable modules make the TSS a perfect fit for all major alarm systems.

**DTK-TSS1**
120VAC Alarm Panel Protection with a 5-Position Hardwired Base
- Protects AC power, and up to ten SLC, IDC, PIV, NAC & dialer circuits (2MHLP loop circuit protectors sold separately)

**DTK-TSS2 / DTK-TSS2NM**
120V Alarm Panel Surge Protection
- **TSS2**: Protects 120V system power and up to four pairs of loop circuits - NEMA 4X enclosure
- **TSS2NM**: Protects 120V system power with space for monitor module - NEMA 4X enclosure

**DTK-TSS4D**
120VAC Power Surge Protection
- Protects 120V system power
- Dry contacts for remote monitoring
- NEMA 4X enclosure for harsh environments

**DTK-TSS3**
2-Position Base for SLC Loop Surge Protection modules
- Protects up to four pairs of building-to-building notification runs
- NEMA 4X enclosure for harsh environments

**Technical Support**: 888-472-6100
Uninterruptible Power Supplies

On-Line Uninterruptible Power Supplies - Tower/Rack Mount

DITEK’s DTK-UPS Series combines robust surge protection with on-line double conversion Uninterruptible Power Supply technology to enable your equipment to survive even the harshest power quality issues. From surges and spikes to brownouts and complete power loss, the DTK-UPS Series will keep your equipment up and running when it matters most. DITEK’s industry proven UPS products provide cost-effective and reliable performance for network servers, video surveillance systems, back office computers and similar mission critical equipment.

DTK-UPS1000R / DTK-UPS1000RE: 1kVA Uninterruptible Power Supply
DTK-UPS1500RE: 1.5kVA Uninterruptible Power Supply
DTK-UPS2000RE: 2kVA Uninterruptible Power Supply
DTK-UPS3000RE: 3kVA Uninterruptible Power Supply

- Online double conversion technology provides superior equipment protection
- Intuitive LCD display, and software provided for remote monitoring
- Invisible transitioning between AC and battery, with auto shutdown when battery is depleted
- Rack/tower models available in 1kVA, 1.5kVA, 2kVA and 3kVA (mounting rails included with 2kVA and 3kVA models)
- USB and Ethernet interfaces available on all models - SNMP Card included with all “E” models

DTK-UETH1
SNMP Web Card
- Allows you to monitor and manage multiple UPS’s in a networked environment
- Included with all “E” models

DTK-BU600PLUS
600VA Line Interactive UPS with Surge Protection
- Seven outlets protected, 3 with UPS power
- Diagnostic LED indicates suppressor function/battery charge
- Audible alarm for notification of power loss or low battery
- 12-22 minutes battery run time (typical)

DTK-URK1
Rack Mounting Rails
- Secures UPS to 19” rack chassis
- Included with all 2kVA & 3kVA models

www.diteksurgeprotection.com
High Definition Analog Video Surge Protection

- Outdoor Fixed Camera: DTK-PVP27B or DTK-DP4P
- Outdoor PTZ Camera: DTK-VM12RM or DTK-VM6WM
- Outdoor HD Camera: DTK-RM16NM
- Interior Exterior HD Camera: DTK-RM16POC
- Technical Support: 888-472-6100

DTK-DRP16
16 Channel DVR Surge Protection & UPS
- Protects power & data, with up to 20 minutes DVR backup power
- Ideal for analog, HD-CVI, AHD and HD-TVI signals

DTK-DP4P
PTZ Camera Surge Protection
- Protects power, analog video & four data wires
- BNC in/out connections
- Also available in UTP configuration

DTK-RM16NM
16 Channel Video Line Protection
- BNC Coax In/out
- Analog video
- 1U

DTK-PVP27B
Fixed Camera Surge Protection
- Protects power & analog video
- BNC in/out connections
- Also available in UTP configuration

Install DTK-IBNC in or near camera housing
Protects IP Video over Coax Converters and Extenders from damaging transient surges

For HD-SDI applications

Compatible with HD-TVI, HD-CVI and AHD

Protects power & data, with up to 20 minutes DVR backup power
Ideal for analog, HD-CVI, AHD and HD-TVI signals

On-line double conversion technology, rack or tower

Install DTK-IBNC in or near camera housing
Protects IP Video over Coax Converters and Extenders from damaging transient surges

For HD-SDI applications
Compatible with HD-TVI, HD-CVI and AHD

Protects power & data, with up to 20 minutes DVR backup power
Ideal for analog, HD-CVI, AHD and HD-TVI signals

On-line double conversion technology, rack or tower
Hardwired Industrial AC Surge Protection

DITEK’s ZEUS Series industrial surge protective devices (SPD’s) are designed to provide transient surge protection for electrical systems in the most demanding environments. Each model incorporates the latest in surge protection technology for maximum performance and protection. Available in a wide range of voltage configurations, ZEUS products are an excellent choice for protecting your electrical systems.

- UL1449 Listed Type 1 SPD, Type 2 in Canada
- Complies with ANSI/IEEE C62.41 and C62.45 category B and C3 standards
- NEMA 4X enclosure for harsh environments
- D200 Series offers audible alarm with switch, and dry contacts for remote monitoring of surge protection status

D50-CM
- 120/240VAC Split Phase, 50kA/Phase
- Type 1 SPD, Type 2 SPD in Canada
- 100kA short circuit current rating
- NEMA 4X enclosure for harsh environments
- UL1449 Listed

DTK-CMXPLUS Series
- Three Phase SPD’s, 240VAC - 600VAC
- Type 1 SPD, Type 2 SPD in Canada
- 75,000A max surge current rating
- NEMA 4X enclosure for harsh environments
- UL1449 Listed

Key Questions to Ask:
- What is the service voltage configuration?
- What is the maximum service current?
- How many wires including ground?

Surge Protection with Load Sensing Technology

DTK-3VWMUSB
3-Outlet Charging Station
- 120VAC - 15A
- 2 port USB charger
- Illuminated Load-Status Indicator - different colors for each level of load status

DTK-7VS
7-Outlet Power Strip
- 120VAC - 15A
- 7 AC outlets with 4 ft power cord
- 2-in-1 power ON/OFF rocker switch
- Illuminated Load-Status Indicator - different colors for each level of load status

www.diteksurgeprotection.com
HVAC Systems Surge Protection

Power outages, surges and voltage transients can damage your heating and cooling system just like any other valuable electronic device. While a single electrical event may show no obvious signs of damage, repeated surges cause gradual deterioration of the systems internal circuitry. DITEK’s HVAC system surge protective devices help prevent equipment loss from these damaging electrical events.

DTK-120/240CM+
Single Phase Surge Protective Device
- Install and wire to the load side of the disconnect
- 120/240V, Type 2 SPD
- NEMA 4X weatherproof enclosure
- Parallel connection for easy installation

DTK-4LVLPLV
4-Pair, 8-Wire 24V Surge Protection
- Install in series with thermostat control wires at air handler
- Series connection, parallel function adds no resistance to loop circuits

Data and Signaling Surge Protection

DTK-2MHLP/2MHTP Series
Modular Low Voltage Surge Protection
- Protects two pairs per module
- Multi-stage, SAD technology
- 20kA surge current rating
- 5 - 130V configurations

DTK-LVLLP Series
Hardwired Terminal Strip Surge Protection
- Protects 1, 2, 4 or 8 pairs per module
- Series connection, parallel function
- Five voltage levels available to protect all types of data/signal applications

DTK-S/SL Series
66 Block Quick-Connect Surge Protection
- Protects One Digital Line Pair
- Quick connect module, no bridge clips
- Field-replaceable modules

DTK-P Series
66 Block Punchdown Surge Protection
- Protects 1, 2, 4 or 8 Pairs
- Flying leads allow connection via downblocks or wire terminals

Technical Support: 888-472-6100
Access Control Surge Protection

**DTK-ESS**
Electric Door Strike Surge Protection
- Protects low voltage mag-lock & control panel
- Compact design fits inside door jam & panel
- Two per package to protect both ends of lock circuit

**DTK-4LVLPCR**
Card Reader Surge Protection
- Protects 4 pairs of power/data & LED connections

**DTK-3LVLPX**
Wiegand-Type Card Reader Surge Protection
- Protects 3 pairs of power/data connections

**DTK-8FF**
8-Outlet Surge Protection
- Accommodates up to 6 transformers
- 1 In / 2 Out telco protection
- Diagnostic LED’s for ground presence & unit function

**DTK-MRJPOE / DTK-MRJPOES**
PoE Surge Protection
- Uses SAD and GDT technologies
- Data speeds up to 10GbE
- PoE+, HiPoE ready for high wattage
- Shielded or unshielded RJ45 connections

www.diteksurgeprotection.com
**Gate Access Surge Protection**

**DTK-4LVTEP**
- Telephone Entry System Surge Protection
- Protects power, telco and data/release circuits
- Single point ground for all protected circuits
- Automatic reset protects against repeated surges

**DTK-120HW**
- Gate Motor Surge Protective Device
- Protects 120V single phase gate motor

**DTK-120/240HW**
- Protects 120/240V split phase gate motor

**DTK-4LVLPCR**
- Card Reader Surge Protection
- Protects 4 pairs of power/data & LED connections

**DTK-3LVLPX**
- Wiegand-Type Card Reader Protection
- Protects 3 pairs of power/data connections

**DTK-2MHLP5BWB**
- Loop Circuit Surge Protection
- Protect two 5V pairs per module
- Field replaceable module w/hardwired base
- Available in multi-base configurations
- 20,000 A Surge Current

Technical Support: 888-472-6100
Intrusion Surge Protection

OPTION 1

1F31X
120VAC POWER & TELCO

2MHLP12BWB
REMOTE ZONE NOTIFICATION & SIGNAL LOOPS

OPTION 2

MRJ31XSCPWP

120VAC POWER

DTK-2MHLP12BWB
Low Voltage Surge Protector
- Protects two 12V circuit pairs per module
- Convenient field-replaceable modules
- Hard-wired mounting system protects up to ten pairs with a common ground

DTK-1F31X
Single Outlet Plug-In Surge Protector
- Protects 120VAC power, and dialer circuit
- Automatically resets to protect against multiple surges
- Screw terminal connections

DTK-MRJ31XSCPWP
Central Station Dialer Surge Protector
- Modular RJ31X Connection
- Protects one pair
- Automatically Resets to protect against multiple surges

DTK-1F
Single Outlet Plug-In Surge Protector
- Protects 120VAC power
- Center screw secures to outlet and can also secure a connected transformer
- Diagnostic LED confirms surge protection status

www.diteksurgeprotection.com
The use of a grounding bar is strongly recommended as a means of terminating SPD ground wires to existing electrical grounding leads. This will ensure a solid mechanical connection of all grounding wires.

The use of twist-on wire connectors (“wire nuts”) is not recommended for termination of SPD ground wires to existing electrical leads. Twist-on wire connectors may become loose and/or corroded over time, can cause increased ground resistance, and can also unnecessarily extend the length of the grounding conductor. This would degrade the performance of the SPD due to the lack of a short, low impedance ground path.

When installing multiple Surge Protective Devices (SPD’s) and terminating to a common ground, a dedicated ground wire running from each individual SPD to a common grounding bus bar is strongly recommended. “Daisy-chaining” multiple SPD ground wires together via the SPD grounding terminals, or by using twist-on wire connectors is not recommended as this increases the resistance and extends the length of the ground path.
DITEK Surge Protection is your first line of defense for Video Surveillance, Fire, Networking and, Communications, Intrusion Detection, Access Control and AC Power Systems. We have led the industry in the design and manufacturing of surge protection solutions for 30 years, providing quality products built to order and delivered on time, with unparalleled factory support and competitive pricing.

At DITEK’s ISO 9001:2015 certified manufacturing facility in Largo, FL, a highly-trained and culturally diverse workforce utilizes state-of-the-art equipment and lean manufacturing methodologies. DITEK’s Technical Support Team is available 24/7 to answer application or installation questions by phone or Internet live chat. Live and web-based product training, CEU courses and collateral materials are readily available through DITEK’s Marketing Group.

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