

MTL surge protection solutions

CROUSE-HINDS
SERIES

A photograph of an offshore oil rig at night, illuminated by its own lights. The rig is a complex of steel structures, including several tall, slender towers. The scene is set against a dark blue night sky, with several bright, jagged lightning bolts striking around the rig. The rig's lights and the lightning create a dramatic, high-contrast scene. The rig is situated on a body of water, which reflects the lights and the lightning. The overall mood is one of industrial power and resilience in a harsh environment.

Protecting
operational
performance
worldwide

EATON

Powering Business Worldwide

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Only Eaton can deliver...

- Protection and safety of people and assets around the world with unsurpassed reliability and quality in every product we offer
- Industry leading innovation and product efficiency
- Product solutions designed and certified for global specifications
- Best-in-class, global sales, and customer service teams that provide local support
- More than 40 years of process automation industry knowledge and expertise



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MTL surge protection products, part of Eaton's Crouse-Hinds series portfolio, are closely associated with the process industry along with a strong presence through installed base within the networks and wireless infrastructure markets, which means that we are well placed to support a wide range of industries and applications around the world.

Eaton supplies a comprehensive range of MTL surge protection devices offering solutions for all mains power, process control, network and communications, telecom, wireless and RF systems. All of which are designed and manufactured to ensure the highest level of protection for increased reliability and availability of your systems and valuable assets.

Our commitment to not only meet, but surpass our customers' high expectations can only be achieved by maintaining very high standards in all aspects of our business.

Independent verification of our quality and safety procedures is of paramount importance and our accreditation to internationally recognised standards such as ISO 9001 is proof of this commitment.

Many of the world's most safety-critical processes are monitored, controlled, visualised or protected by our products and is distinguished by its global network of sales and support centres.

Our 'no fuss' product warranty, (details of which can be found at the back of this document), is even further evidence of our confidence in our products and their application capabilities.



The cost of reliable surge protection is a small price to pay to safeguard the significant investment in today's process systems



Reliability, availability, maintenance, return on assets and surge protection?

Surge... tell me more

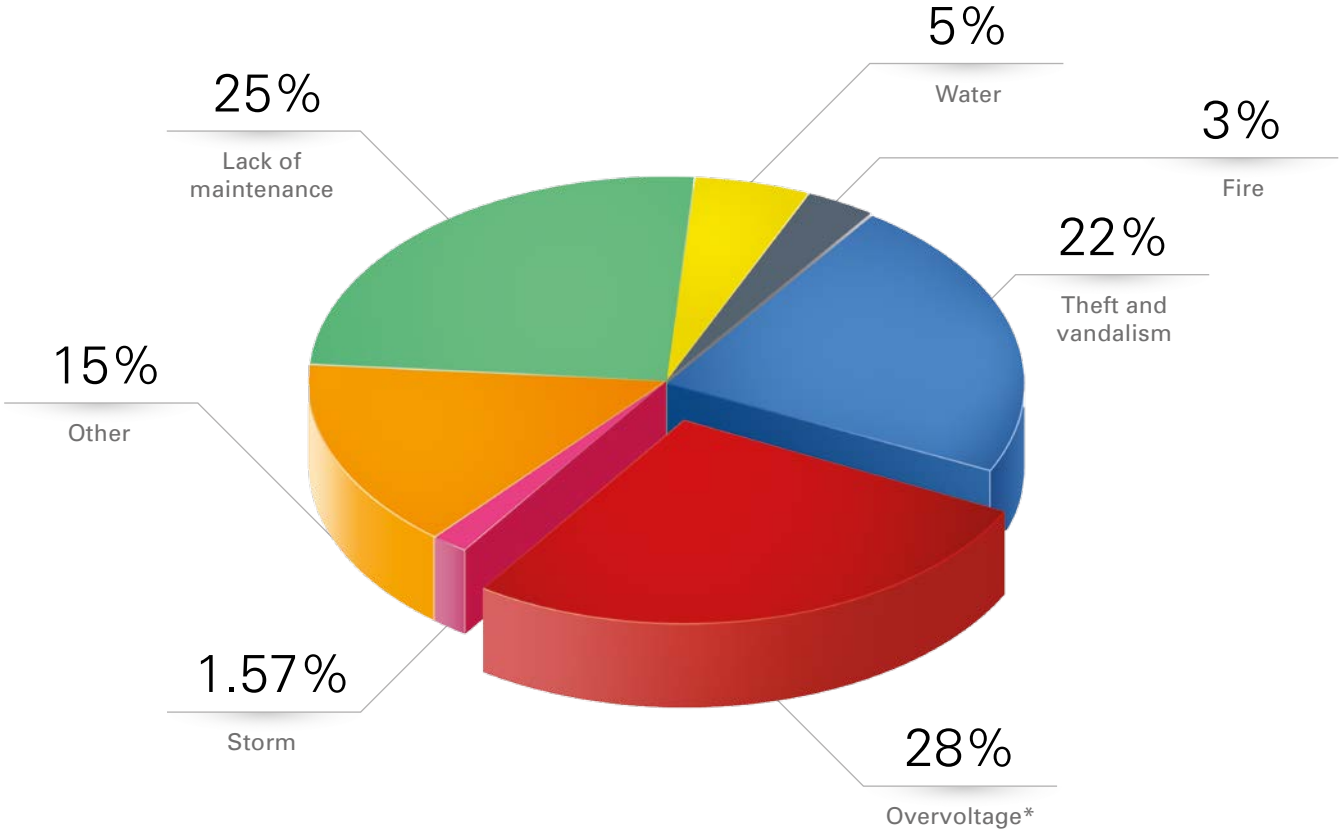
Eaton designs and manufactures a vast range of protection solutions including a comprehensive range of MTL surge protection products for all mains power, process control, network and communications, telecom, wireless and RF systems.

For many years process plant managers have installed surge protection devices as a precaution against catastrophic damage due to lightning. The most keen are those whose memory of serious trouble is fresh. However, studies have shown that the obvious surge related damage (blackened hardware) is only the tip of a very large iceberg. A study by a major European insurance company indicated that lightning and surge are the single most significant cause for control equipment failure. A close second is lack of maintenance. Together surge and maintenance account for over 50% of premature electronic equipment failures.

Underestimating the problem

Surge overvoltages are simply short duration, high magnitude impulses that exist on all electrical (power and signal) lines for a brief time. Common causes can range from lightning strikes to switching of electrical loads. The common belief among plant managers and finance gurus is that their plant does not experience surge-related problems. This belief guarantees that preventative action (such as surge protection) will not be taken. However a closer inspection reveals that a wide range of electronic devices are failing well short of their design life. These failures are just not associated with surge overvoltage by the plant maintenance team.

A study by a major European insurance company (below) illustrates the problem. Over 7700 items of industrial electronics were evaluated. The most significant cause of premature failure was surge overvoltage. In fact surge damage contributed to 28% of failures. Just as interesting is the next most significant category; lack of maintenance which contributed 25% of failures.



*Lightning discharge and switching operations

Over 50 years of experience in the surge protection industry

There is an appropriate level of surge protection, that when applied to a plant, reduces equipment failure directly, increases plant availability and indirectly frees the maintenance team up to perform a more proactive role. Improvements can be measured in terms of Return on Assets (ROA) – a key measure of operational performance.

Surge protection can lead to improvements in ROA in the three following areas:

1. **Direct savings in hardware**
 - reduction in premature failures
 - elimination of catastrophic failure
2. **Increased plant availability**
3. **Indirect savings** as a result of a better deployed maintenance crew

Maximise your return on assets

There are not many areas of the world today that do not experience surge-related incidents. Lightning is only one of the many causes of transient surge related problems. Today's modern electronic equipment is much smaller, much faster, and much more susceptible to transient related problems than was the last generation of equipment. The sheer number of control and communication devices interlinked together in today's networks make their susceptibility many times greater. These are new problems that were not nearly as frequent with previous generations of control equipment.

Experience dictates that plant engineers tend to underestimate the impact of surge voltages, both in terms of the cost of premature failure of electronics and the impact on plant availability and hence ROA. Between 25 and 30% of premature hardware failures can be attributed to surge voltage.

Current industry trends suggest that surge related failures are likely to increase as electronics become more sophisticated. Further the impact of a single surge related problem is likely to have a greater impact on operations in today's and future plants. The old wives tales will provide less and less comfort. "We don't need to worry, we have a full lightning protection system and the best earthing system available!" Oh really?

"Much effort and 'focus' is devoted to maintenance, however, surge protection could eliminate a substantial number of failures, maximise the design life of hardware and potentially improve the efficiency and availability of the maintenance team"

For most companies, a single surge related incident in a ten-year period, which causes the loss of system availability, far outweighs the cost of protection. View the control and instrumentation system as an asset whose function provides the operational return (profit). Which of these assets if disabled or subject to premature failure, will have the most significant impact on plant operations?

Finally review the risk exposure of these assets to surge related damage. Protect the hardware that has the highest impact on ROA and is at risk to damage from surge.

If you look at the four main factors: price, packaging, performance, and safety, MTL surge products are the best in the industry offering complete solution plans, from the AC power service entrance down to the individual equipment and all the control/communication lines in between. In today's ever more complex process environment, a properly designed surge protection plan is a key step in improving plant reliability, increasing availability and hence maximizing Return on Assets.





MTL power protection

Surges and spikes from nearby lightning strikes, arc-welders and high voltage cables can destroy or disrupt unprotected electronic equipment. These destructive forces enter mains power circuits within buildings by a variety of methods.

The primary route is where power, often 'dirty' and spike-laden, actually enters the building. It is at this point that surges should be stopped in order to prevent them from propagating further. However, surges and RFI can also corrupt power supplies from within the building.

By providing protection at the main power distribution board and then at each piece of equipment, mains borne surges and spikes are eliminated before they can cause damage. Power protection is fundamental - our MTL products provide that protection.

High quality AC and DC surge protection for commercial and industrial facilities

MTL power protection

ZoneDefender range

The extensive range of ZoneDefender PRO non-modular products have been specifically engineered to be compact, powerful, and feature-rich. They offer cost-effective, high capacity protection along with application versatility. The state-of-the-art circuitry of the ZoneDefender PRO protects equipment from high frequency noise as well as from damaging electrical transients and high-energy disturbances. Meets UL96A requirements for UL master label installations.

- 80kA to 240kA protection for a wide variety of industrial, institutional and commercial applications
- High-performance EMI/RFI filtering
- Built-in audible alarm
- Thermal and short circuit fusing for safety
- UL 1449 3rd Edition Listed
- Type 2 listed



The most compact, powerful, feature-rich surge protector on the market today



ZoneMaster and ZoneMaster All-Mode

The ZoneMaster All-Mode is available in units with 200kA, 240kA, 340kA and 400kA ratings while the ZoneMaster has 170kA or 200kA ratings. All ZoneMaster units are engineered to protect the most critical electronic systems, suppressing surges at the main service panel. The ZoneMaster range of devices has the advantage of remote monitoring capabilities and full module diagnostic indication as well as optional filter modules.

The ZoneMaster Pro combines all the features of the "All Mode" into a metal enclosure. In addition the ZoneMaster Pro is type 1 & 2 UL listed.


- Full protection redundancy plus thermal and short circuit fusing
- Remote monitoring and module diagnostics
- Optional high performance mains power filter
- 15 year warranty
- UL 1449 3rd edition listed

ZoneSentinel range

The ZoneSentinel range is engineered for application at distribution boards and small service locations and provides cost effective, high capacity surge protection to 100kA per phase. When used at a local panel in combination with a ZoneMaster at the service entrance, the ZoneSentinel provides the ultimate in surge protection. The ZoneSentinel offers ten mode protection and, like the ZoneMaster range, has remote indication capabilities.

- 100kA protection for distribution board and small service entrance locations
- Remote monitoring - audio and visual indication of status
- Optional high performance mains power filter
- 15 year warranty
- UL 1449 3rd edition listed
- Type1 (not available with filter) or Type 2 UL96A listed (type 2 std with filter)





Surges and spikes from nearby lightning strikes, arc-welders and high voltage cables can destroy or disrupt unprotected electronic equipment

MA05, MA10, MA15 & MA30 range

MA05, MA10, MA15 and MA30 EMC/surge protection devices can be incorporated into, or mounted close to, individual items of electrical equipment, providing immediate local protection against surges and electrical noise. They can also be used in conjunction with the MA3100 range to provide IEC Class III protection levels. Available with either a 5, 10, 15 or 30 amp operating current, come standard with real time status indication, 110 or 240V working voltage and with 3 package types, this is a truly versatile range. These unique units combine RFI filtering and ring suppression therefore aiding compliance with EMC directives. DIN rail mounting MA15 units, suitable for AC or DC application, are UL recognised components and UL hazardous location Class I Div. 2. Versions of the 4kA rated MA15's, MA05 and MA10 units are 6.5kA rated.

- Combines high quality filtering with 'ring' suppression
- Three package types - DIN rail, wall/floor mounting and filter case
- Added thermal fuse protection
- EMC compliance, exceeding IEC 61000-4-5, level 4



MA3145 range

The MA3145 is designed to work as a Class II standalone device. A single module will withstand 40kA (8/20µs). The MA3145 is available in a single module variation for maximum user flexibility, double module width for all mode protection on a single-phase supply and a quad width module for all mode protection on three phase supplies.

- 40kA (8/20µs) Class II rated per pole
- Three prepackaged solutions; one pole, two pole and four pole
- Standard remote indication via voltage free contacts
- UL1449 recognised component approved



Did you know?

Eaton can provide surge and transient protection for LED lighting systems

MTL LS range

The MTL LS range of surge protection devices are versatile, high performance surge protection devices which can be used within a wide variety of equipment in industrial and commercial applications. The circuitry will protect equipment from damaging electrical transients and disturbances and are ideal for protecting lighting systems and drivers.

The space-saving footprint allows the LS range to be mounted in confined locations whilst providing protection the Line/Neutral, Line/Ground, and Neutral/Ground modes. With both parallel and series versions available, this product range offers great flexibility. The LS10N-S2 models are series-connected devices which automatically disconnect power to the load under fault conditions. The LS12N-P2 are parallel connected devices which disconnect themselves from the load under fault conditions leaving power to the load.

- Space-saving footprint for mounting in confined locations
- Protects 120V-347V and 480V systems
- High performance-to-size ratio
- Fully automatic operation
- Models for both series and parallel connection
- UL1449 3rd edition type 4CA recognized component
- IP66 protection allows for installation in extreme environments
- Unique hybrid technology
- No external fusing required



More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL office, or via our website at www.mtl-inst.com

MTL data and signal protection

Induced surges and transient voltages can destroy or, perhaps more worryingly, render inaccurate sensitive control and measurement instruments. Control systems, sensors and telecommunications equipment may be subjected to a barrage of interference and surges of energy, therefore to disregard the need for simple, effective and reliable surge protection is to compromise the safety of the plant.

Eaton's MTL surge protection products provide protection both at the controller and at the field-mounted instrument, with specifically designed devices suitable for all data and signal requirements.

Designed for all process data and signal requirements from the controller out to the field mounted instruments



MTL data and signal protection

MTL SD Modular (SDM) range

Based on the proven reliability of the well established MTL SD range, the MTL SD Modular (SDM) surge device brings additional features designed to reduce cost, optimise productivity and increase plant safety.

The MTL SD Modular has a compact 7mm footprint, enabling high packing density and reduced cabinet space, whilst providing a powerful 15kA market leading level of protection. Its modular design allows easy maintenance with on-board LED diagnostics prompting operators when replacement of a module is required. This change can be achieved quickly without the use of tools or need to disconnect the device.

The 'make before break' feature ensures no interruption to the signal current during the removal of the module. The MTL SD Modular is backwards compatible with the popular MTL SD range to make upgrading easy.

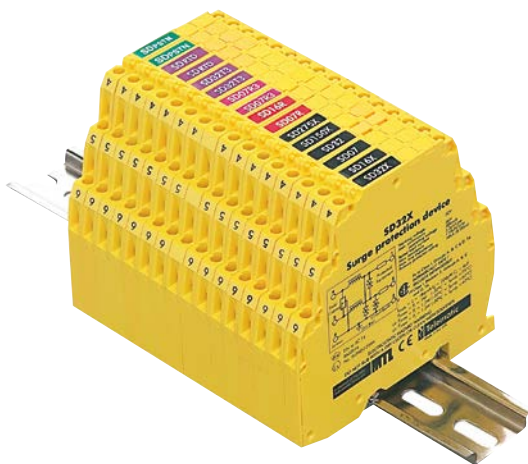
Available in 7v, 16v, 32v and 55v variants with a current capacity of 700mA, the MTL SD Modular represents a significant step forward in surge protection suited to a wide variety of process control applications.

- Slim, modular, space-saving design
- High-performing 15kA level of protection
- LED for quick fault diagnostics
- Proven multi-stage hybrid functionality
- Make before break for signal continuity
- Fuse disconnect options for ease of test and commissioning
- Voltage ratings to suit process I/O applications
- ATEX certified, IECEx approval and suitable for use in SIL3 loops
- 10 year no-fuss warranty



MTL SD range

The MTL SD range of surge protection devices combine unparalleled packing densities, application versatility, proven reliable hybrid circuitry, simple installation and optional 'loop disconnect' facilities - features which make the range the ultimate surge protection solution. The exceptionally high packing densities are the consequence of an ultra slim 'footprint' for individual modules which can thus 'double-up' as feedback terminals. Each module provides full hybrid surge protection for 2 and 3 wire loop protection.



SDX

SDX units, available in 7V, 16V, 32V and 55V versions (SD07X, SD16X, SD32X and SD55X respectively) are suitable for a wide range of applications including THCs, 4-20mA loops, shut-down systems and fire and gas detectors.

SD

In addition to the many beneficial features offered by SDX devices, the SD variants fuse/disconnect package provides both fused protection against fault currents and a convenient method of isolating field circuitry from protected circuitry without needing additional disconnect terminals. Also provided is a third connection on the field and safe side of the protector in order to terminate screens safely to earth.

SDR

The SDR devices have been specially designed to meet the requirements for high speed data links with an extremely high bandwidth. SDR units are available in a range of voltage variants enabling a wide range of communication systems to be protected e.g. RS232, RS422, RS485, Bus powered systems etc. These devices are classed as simple apparatus and can therefore be used in hazardous areas without affecting the certification of the circuit.

SD32T3, SDRTD, SDR3

These SD surge protectors offer excellent levels of protection over all three wires in conjunction with minimal footprint requirements. They are the most compact 3-wire surge protectors on the market.

MTL data surge tester

The MTL data surge tester is a unique versatile and compact, bench-top test device designed to give performance status of data communication surge protectors.

This portable, rugged tester makes continuity and current leakage tests of data surge devices quick and easy during routine maintenance, with LED's illuminating to indicate surge module health. This in turn allows users to quickly determine whether the surge protection device has failed or degraded in performance to an unacceptable level. These tests validate the integrity of the surge protection system, thus ensuring safety and a continuous high-level of protection.

- Lightweight portable design
- Rugged carrying case
- Easy-to-read LED indicators
- Simple pass / fail operation
- Selectable test voltages
- Continuity and leakage current tests
- Operates with 90V - 264V AC
- Slot for testing MTL SD Modular plug modules



SLP range

The SLP range provides application versatility, proven reliable hybrid circuitry and simple installation - features which make it an ideal surge protection solution for process equipment, systems I/O and communications networks.

The SLP units are suitable for general process I/O applications and are available in a range of voltage ratings. Where small size and higher currents are required or loop resistance is critical, the SLP units are ideal.

- Easy installation - simple DIN rail mounting
- Range of voltage ratings to suit all process I/O applications
- Fully auto-resetting, maintenance free
- Plug-connection for quick and easy wiring
- Protection for two loops per SLP
- FM approved and ATEX certified
- SIL suitable

IOP range

Offering digital I/O surge protection, the IOP range provides high packing density plus a high protection level.

Designed to exhibit exceptionally low line resistance, the IOP has removable terminals for ease of installation, maintenance and for providing a loop disconnect by simply unplugging the terminals from the side of the module. In addition, wire entry is angled to assist wiring within limited space enclosures.

- Surge protection for digital I/O
- Hybrid protection circuit - 20kA rated surge current
- Two versions - single loop and dual loop
- FM approved and ATEX certified
- Space saving - 6mm width per loop IOP32D - 12mm width per loop IOP32
- SIL suitable



More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL office, or via our website at www.mtl-inst.com

SSP range

The SSP range offers state of the art surge protection including protection against AC power crossover.

This design makes the SSP range resilient to sustained overvoltages caused by earth faults and power faults. Suitable for all general process I/O applications and also higher voltage signal applications for SCADA run over private wire networks.

- Easy installation
- 20kA rating
- Full range of voltages
- Maintenance free
- Protection against power faults



TP48 range

The TP48 surge protection device safeguards field-mounted process transmitters where it matters, right at the unit. After a simple installation (the TP48 screws into an unused conduit entry, with no additional modification), it provides high-level protection against surges and transients whilst normal operation remains unaffected. The TP48 resets itself automatically after each operation.

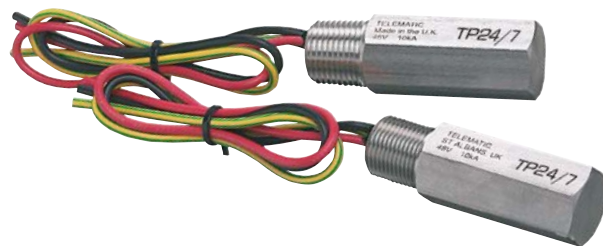
The TP48 is available in 2, 3 and 4 wire versions with screw threads to suit different transmitters, and is both explosion proof and intrinsically safe for hazardous areas. Working voltage is 35V DC maximum with impulse ratings of 20kA peak current and 10kV peak voltage.

- Easy and direct mounting - simply screws into spare conduit entry
- Intrinsically safe and flameproof to CENELEC standards
- Parallel connection avoids introduction of any resistance into loop
- Designed for 2, 3 and 4 wire transmitters
- FM, CSA and ATEX approved, SIL suitable

TP24/7 range

The TP24/7 is uniquely configured to protect multivariable transmitters and level transmitters that typically use a 24V supply and provide an output via an RS485 communications link. The TP24/7 will also protect any applications using 24V on one pair of wires and a signal (up to 7V) on the second pair.

- Specifically designed for multivariable transmitters and level transmitters
- Four wires protected, one pair at 24V and one pair at 7V. Ideal for any transmitter with 24V power and 7V signal (e.g. RS485)
- FM, CSA and ATEX approved, SIL suitable



TP-Pipe range

The TP-Pipe adds a level of surge protection to field mounted devices far above that provided as standard in the transmitter. No additional fixtures, enclosures or procedures are required.

- Designed for transmitters with only ONE conduit entry
- Simply screws directly into the conduit entry
- Intrinsically safe and flameproof (Ex d) to CENELEC standards
- FM approved and ATEX certified, SIL suitable



MTL fieldbus protection

The fieldbus system, by the very nature of the environment in which it will be placed, is at risk from surges across the fieldbus system. Because the fieldbus system is controlling and handling the data transactions across a common trunk, the importance of safeguarding the integrity of the fieldbus system is paramount in order that the shutdown of multiple processes does not occur.

Eaton's MTL surge products can provide that protection, whether for AC power, transmitter or trunk protection we have your fieldbus system covered. Our fieldbus solutions can be applied without impacting the length of the fieldbus run or the number of devices.

Safeguarding the integrity of the entire fieldbus system including AC power, transmitter and/or trunk protection



MTL fieldbus protection



FS32

The FS32 surge protection device prevents surges and transient over-voltages conducted along the trunk or spurs of fieldbus systems from damaging the associated electronics such as terminators, spur blocks and the bus control equipment.

In operation the FS32 does not adversely affect the performance or operation of the fieldbus or connected equipment, and allows signals to pass with little attenuation.

- Plug connectors for quick and easy connection
- 20kA maximum surge current per line
- Protects intrinsically safe spurs on MTL 937x-FB range fieldbus
- Meets the requirements of IEC61158-2:2004
- Can be used on MTL megablocks or other fieldbus equipment



FP32 range

FP32 devices provide surge protection along the trunk or spurs of fieldbus systems from damaging the associated electronics such as terminators, spur blocks, and the bus control equipment.

Fully automatic, the FP32 reacts immediately to ensure that equipment is never exposed to damaging surges by directing surges safely to earth and then resets automatically. Its small footprint also allows the FP32 to be located near terminators and spur blocks.

- Meets the requirements of IEC61158-2:2000 for FOUNDATION™ fieldbus
- Plug connectors for quick and easy connection or rewiring
- 20kA maximum surge current
- FM, CSA, FISCO and ATEX approved
- Lloyd's approval



TP32 range

The TP32 is specifically designed to protect process transmitters and devices on fieldbus systems. The TP32 is a hybrid design consisting of high-power, solid state electronics and a gas discharge tube which is capable of diverting surges up to 20kA. For hazardous-area use, approvals for both intrinsically safe and flameproof (explosion proof) operation are available.

- Fieldbus specific - meets the requirements of IEC61158-2:2000 and ANSI/ISA-50.02-2 1992
- Easy and direct mounting - simply screws into a spare conduit entry on the transmitter
- Intrinsically safe and flameproof to CENELEC standards
- Parallel connection for zero voltage drop across device
- FM, CSA, FISCO and ATEX approved
- SIL suitable



TP32-T (Terminator) range

The terminated TP32-T has the same protection circuit as the standard product, but also includes a FOUNDATION™ fieldbus termination circuit. This unique combination eliminates the need to purchase and install additional termination circuitry for the FF segment. The TP32-T provides excellent transient protection control and terminates the bus segment in one simple-to-install package.

- Same excellent protection as provided by the TP32
- TP32-T includes a fieldbus terminator in addition to surge protection
- FM, CSA, FISCO and ATEX approved
- SIL suitable



TP-Pipe range

The TP-P-32 adds a level of surge protection to fieldbus devices far above that provided as standard in the transmitter. No additional fixtures, enclosures or procedures are required.

- For transmitters with only ONE conduit entry
- Simply screws directly into the conduit entry
- Intrinsically safe and flameproof (Ex d) to CENELEC standards
- FM approved and ATEX certified
- SIL suitable



MA15 range

The MA15 was designed to protect electronic equipment and computer networks against the effects of 'noise pollution' induced in power supplies. These units clean up the effects of industrial noise and surges caused by lightning, switching devices, thyristor controls, transmission system overloads and power-factor correction circuits. UL 1449 recognised components (certified by UL for both US and Canadian requirements), the MA15 exceeds the requirements of IEC 61000-4-5.

- Protects panel loads up to 15 amps in series, unlimited amps in parallel
- Suitable for AC or DC applications
- Thermal and short circuit protection
- LED status indication
- UL 1449 recognised component
- Ten year warranty
- Class 1 Division 2 approved for hazardous areas

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL office, or via our website at www.mtl-inst.com



MTL network and comms protection

Network technologies from the Internet to LANs have revolutionised the way businesses operate. From last month's sales figures to the real-time status of a remote pumping station, industry relies on computer networks now more than ever.

Network surge protection is essential if your business relies on IT services for its minute to minute operation.

Eaton provides an excellent range of MTL surge protection products serving a wide range of network and comms applications.

Modular
communication
line protection
designed for
multi-port or
single port
applications

MTL network and comms protection



ZoneBarrier range

Our ZoneBarrier range is a completely modular communication line protection system. Designed for multi-port or single port applications, ZoneBarrier offers a flexible and uniquely customer configurable port-by-port protection approach.

ZoneBarrier can be utilised as either a wall mountable stand-alone device or as DIN rail mounting building blocks to create an unlimited multi-port network protection system. Rail assembly units will also accommodate a mix of up to 32 ZoneBarrier modules and can be mounted on any flat surface or mounted in a 19" rack. Modules are available for a range of network and comms applications including RS232, RS485, 1000Base-T, 100Base-T, 10Base-T and PoE.

ZoneBarrier Cat 6 Ethernet models are UL497B listed and tested to IEC 61000-4-5 and CCITT K17. ZoneBarrier surge protection devices are available with RJ45, BNC or terminal strip connectors.

- Modular, expandable protection for one to an unlimited number of ports
- Wall, DIN or 19" Rack mountable
- Modules suitable for a wide range of network and comms applications
- High speed ethernet, industrial ethernet compatible and suitable for Cat. 6 applications
- Ruggedised 10kA surge current capacity ideal for external lines
- ATEX and IEC approvals for hazardous areas

A flexible and uniquely customer configurable port-by-port protection approach

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL office, or via our website at www.mtl-inst.com



MTL telecom protection

Highly integrated, small signal telecommunications equipment is becoming increasingly sensitive to damage and disruption from voltage surges and spikes. It makes sound sense to protect expensive telephone installations from damage and commercially damaging downtime by fitting effective and unobtrusive protection wherever surges could enter the system.

Eaton's MTL surge protection products can provide that protection, whether for private wire or public switched telephone network (PSTN) requirements and with a range of mounting and enclosure types to suit all applications.

Covering all applications for both private wire and public switch telephone networks

MTL telecom protection



DP200 BT & RJ range

The DP200 BT & RJ range provides robust, 10kA, plug in protection for fax, modem, telemetry and other telecom applications.

Units are available with either a BT or RJ11 style plug and socket, DP200/BT and DP200/RJ respectively. Where filtering is required in addition to surge protection the DP200/BT and DP200/RJ can be supplied. These devices suppress interference due to medium wave radio transmissions, and other sources.

- Protects fax, modems, telemetry and other telecom equipment
- BT and RJ11 style plug and socket
- Full 4-wire protection
- BABS certified



SDPSTN

The ultra-slim, SDPSTN, has been specifically developed for the protection of signals transmitted on public switched telephone networks (PSTNs).

The SDPSTN provides protection for telecom/modem type applications including telemetry outstations. Installation is easy, one simple manual operation clamps the SDPSTN securely on to DIN rail, an action that also provides the essential high-integrity earth connection.

- Suitable for PSTN telecom/modem applications including telemetry outstations
- Ultra slim space saving design
- Automatic earthing with simple DIN rail mounting
- SIL suitable



mSA range

mSA range telecom protection devices provide protection for private wire installation (mSA units) or public switched telephone networks (mSAPN devices).

mSA units are available in a variety of working voltages and in either single or dual pair versions, allowing application versatility. These self-contained units are housed in an IP65 enclosure fitted with cable glands and an external earth stud, so installation is simple.

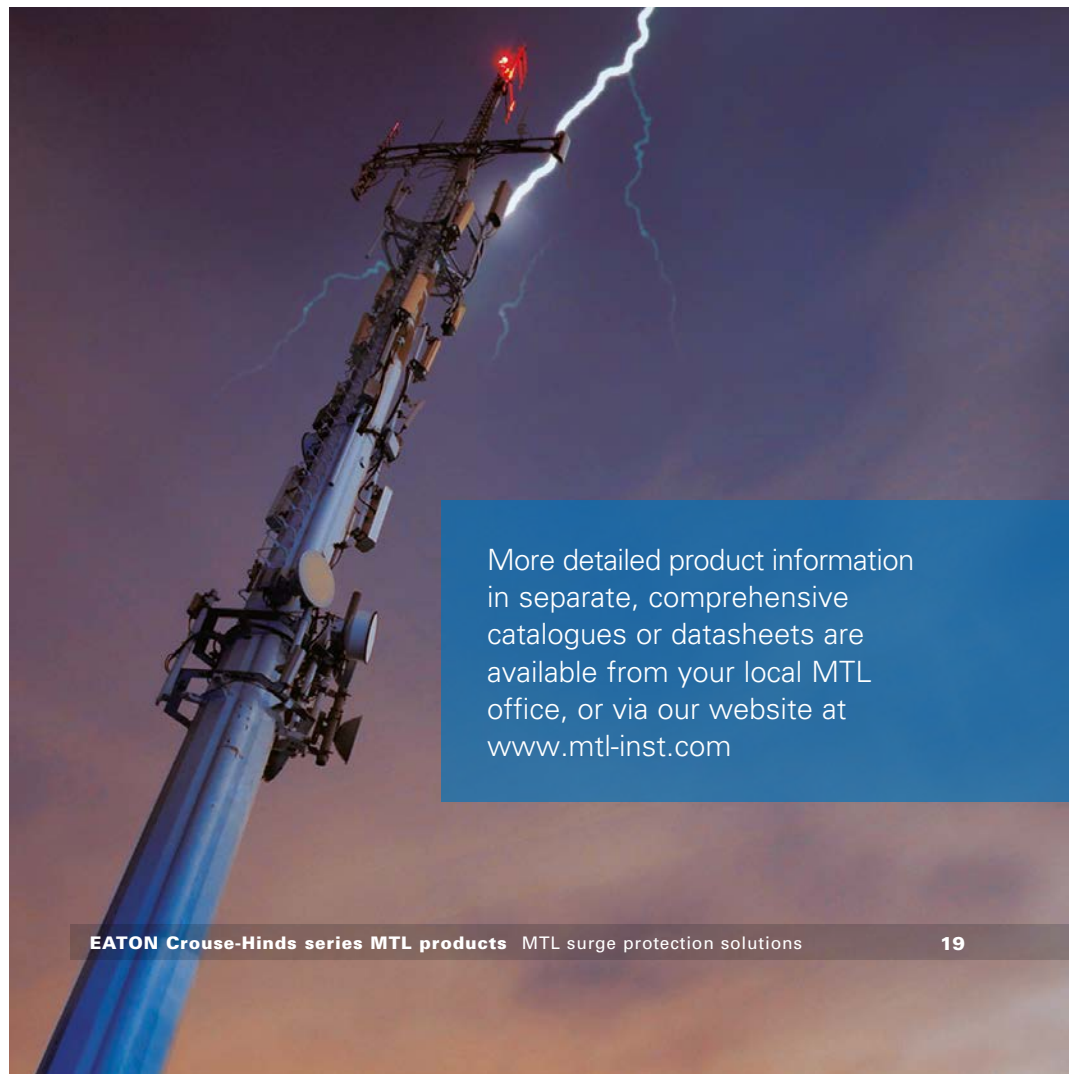
- Specially designed for PSTN or private wire applications
- Ready boxed in weatherproof housing with cable glands
- Single and dual pair versions
- Fully auto resetting - maintenance free



ZoneBarrier range

ZoneBarrier modular telecom protection devices provide a uniquely customer configurable port-by-port protection approach, utilised as either stand-alone devices or as building blocks to create an unlimited multi-port protection system. Modules are available in modular jack or terminal strip formats for applications including dial-up, lease line, ISDN, T1 and E1. ZoneBarrier devices can be wall mounted, DIN rail mounted or mounted on any flat surface. 19" rack mount kits are available.

- High surge current capacity
- Modular jack or terminal strip connectors
- Modules available for a range of telecom applications
- UL 497A listed



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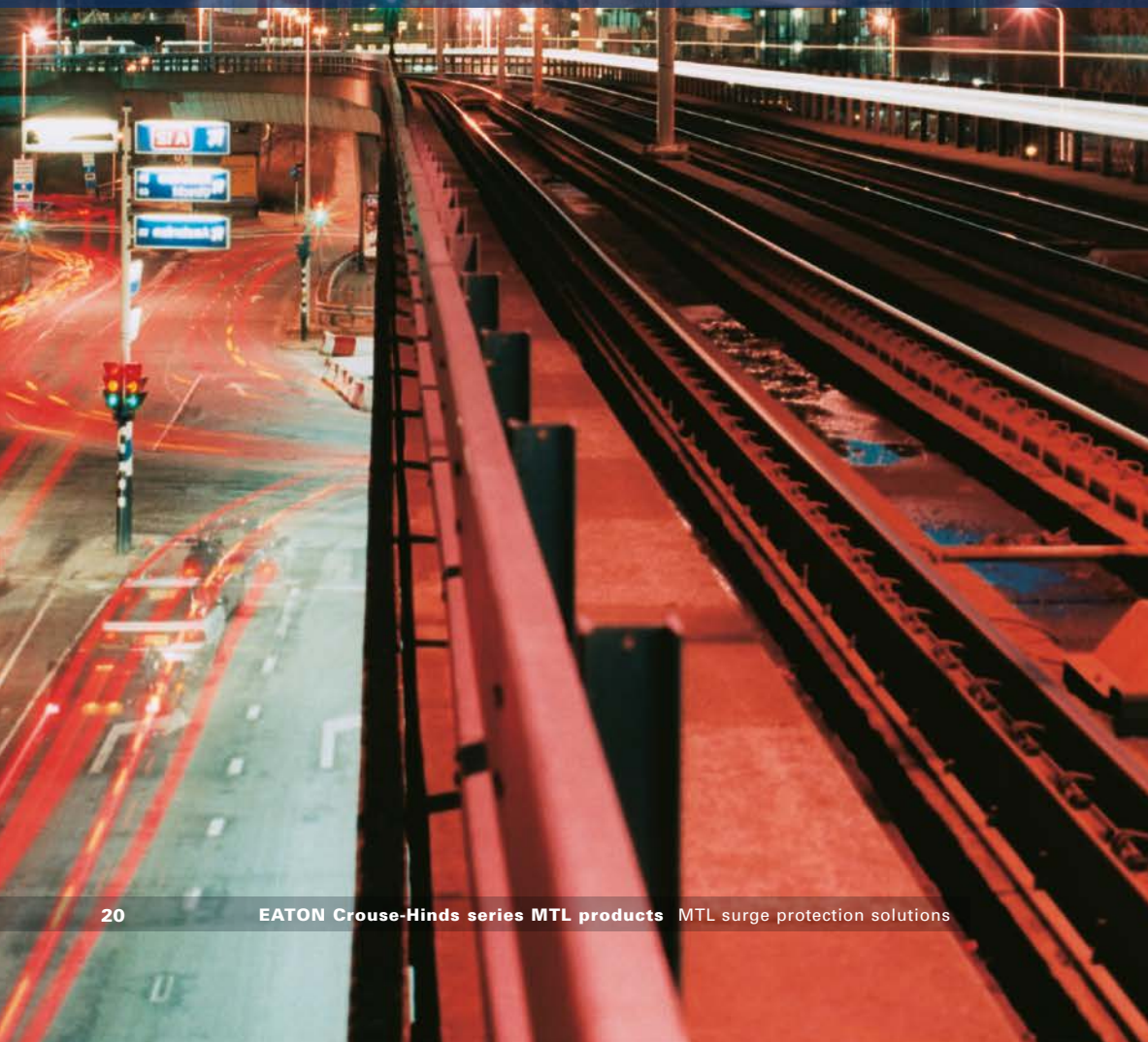
MTL specialist protection

Eaton has a wealth of experience in the design and manufacture of surge protection solutions for very specialised areas of application.

Whether protection is required for loadcells and weighing systems, CCTV installations or antennae protection, Eaton can supply a superior protection device to meet your requirements.

It is not just the obvious areas, such as mains power, networks and telecom systems that require protection - these specialist applications should not be overlooked.

Designed for antennas (RF), weighing systems, load cells and a comprehensive line of security cameras



MTL specialist protection

CA range

Our CA range provides wideband, high current devices for the protection of radio transmitters and receivers connected to coaxial feeders. They protect vulnerable equipment without affecting normal operation, passing high frequency signals with little attenuation while diverting surge currents safely to earth and clamping output voltages to safe levels.

- For the protection of radio transmitters and receivers connected to coaxial feeders
- Wide range of connector styles to suit all applications
- Large bandwidth DC to >2GHz
- Range of mounting kits and enclosures available

Specialist antennae protection

Eaton offers specialist MTL coax protection, please consult your local sales representative for details.

- Narrowband or wideband quarterwave stub versions
- Large bandwidth DC to 6GHz
- 7/16 and N-Type connectors



LC30

The LC30 surge protection device protects load cell and weighing system installations from possible malfunctions, or damage to individual strain-gauge bridges of associated electronic instrumentation etc., caused by severe overvoltages or impulse currents on signal cabling. Fully solid state, the LC30 clamps incoming surges immediately without causing undue leakage losses under normal conditions. Once the surge has passed, the device automatically resets to the passive state, allowing normal operations to continue. The advanced protection concept used in the LC30 also eliminates the expensive additional earthing systems specified by other suppliers so field installation is very simple indeed. The LC30 device is non-voltage producing, non-energy storing 'simple apparatus' and as such, can be used in hazardous areas with appropriate self generated system documentation.

- Protects load cells, weighbridges, process weighing and silos
- Rugged weatherproof enclosure
- Certified for use in legal metrology application
- Suitable for intrinsically safe circuits

Comprehensive CCTV surge protection

These modules can be purchased individually for DIN rail or surface mounting. For specific applications, the modules can easily be configured in sets, for example a three-module set may be required for an outdoor camera (video, PTZ and 24V AC power). Each module provides high, 10kA minimum, levels of protection as well as very low insertion loss to maintain excellent video quality. Surge damage to CCTV surveillance systems and video equipment is not always obvious and may reduce the reliability of the installation and lead to costly system downtime. Monitoring stations are particularly at risk as they may be linked to a large number of cameras, any of which may introduce surge current from nearby lightning strikes. Fitting reliable surge protection is therefore vital, can you afford to take the risk?

Protection modules available for:

- Analogue video signal
- RS232, RS422, RS485 for Pan Tilt Zoom (PTZ)
- 24V or 48V AC/DC power, 120V or 240V AC power
- Video over IP/Ethernet
- Video power over ethernet (PoE)



More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL office, or via our website at www.mtl-inst.com



Getting it right from the start is the key to the success of any project and we are here to help you get your surge protection right

MTL products

Eaton supplies a comprehensive range of MTL surge protection devices offering solutions for all mains power, process control, network and communications, telecom, wireless and RF systems. All of which are designed and manufactured to ensure the highest level of protection for increased reliability and availability of your systems and valuable assets.

So wherever electronic equipment requires protection, we can supply a solution. Particular areas of expertise include:

- Process Control • Telemetry Systems • Control and Instrumentation • Network Applications

MTL 'no fuss' warranty - as standard

We understand that your business relies on our products so we aim to design and manufacture the very best devices available. We know that when you install our MTL surge solutions you want to know that it will give years of reliable maintenance free protection, protection you can depend on, and we're confident that it will.

We offer a 10 year 'no fuss' warranty on all our surge solutions regardless of application. Our commitment is not only to meet but surpass our customer's high expectations which can only be achieved by maintaining very high standards in all aspects of our business. Therefore, with that philosophy in mind, in the unlikely event of product failure, you can simply exchange the faulty device for a new one.



Service and support

In addition to our comprehensive range of MTL surge protection products, Eaton provides expert consulting services to aid customers in the design and deployment of surge protection systems. Through our strong global network, we are able to offer local technical and sales support throughout the world. Our services include:

Technical advice available online

Our highly trained application engineers will be glad to provide unbeatable technical advice and to discuss your particular system requirements. We have recently launched a web support form for customers and distributors to submit their technical questions to our technical support experts around the world. Questions initiated via this system are routed to the appropriate subject matter experts in your region for a speedy response and resolution.

To submit your technical questions you can visit our website at www.mtl-inst.com/onlineforms/product_support or email mtlsupport@cooperindustries.com

Seminars

Training seminars are run covering various aspects relating to the protection of electronic based systems. The seminar includes topics such as lightning theory, earthing/grounding requirements, types of surge protection devices and the application of these devices.

Site surveys

Our engineers can survey your entire building or plant and make informed technical recommendations. Once your design is complete, we can then supply the necessary surge protection products for the job.

OEM capability

Although we currently offer a comprehensive product portfolio, there may be instances where a custom designed product may be more suitable for your application. We have vast experience in this area and will be happy to discuss your particular requirements.

Application notes

Our easy to understand Technical Application Notes provide a wealth of useful background information, with helpful advice on using surge protection devices to their best effect. These are available to download from our MTL website or can be sent upon request.

We continue to listen to our customer needs and develop solutions which exceed requirements in all respects





EATON Crouse-Hinds series

The safety you rely on.

See the complete MTL surge protection product portfolio at www.mtl-inst.com

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