Enhanced Compact Surge Protection
ESP D/DS 10A & 32A Series

furse

Power and productivity
for a better world™

ABB

Essential System Protection
Up to 32A

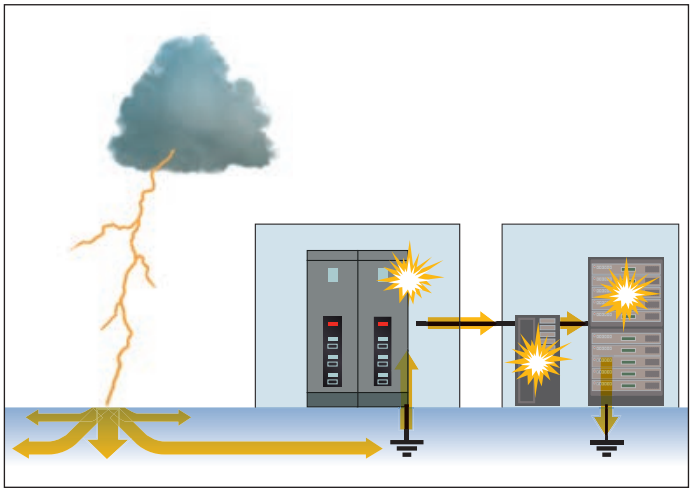
The protection of electrical systems is essential to maintain a continuous and efficient running of all electronic systems to meet our daily needs.

Society has become more and more dependent on electrical systems to provide us with solutions that give us essential services for daily life. This includes the use of computers and data communication networks, building management systems, fire and security systems, telemetry and data acquisition equipment plus many more.

These electronic systems are at risk every day from potentially devastating electrical surges, also known as transient overvoltages, which can cause critical degradation and damage to circuitry components, resulting in component burn out. Loss of these systems would cripple industrial, commercial and government organisations alike.

Transient overvoltages can be caused by a direct lightning strike, or more often indirect lightning strikes, from up to 1 kilometre away. However lightning is not the only cause of transient overvoltages, another common cause is electrical switching events created by large inductive loads such as air conditioning units and lifts.

Figure 1. Indirect lightning strike



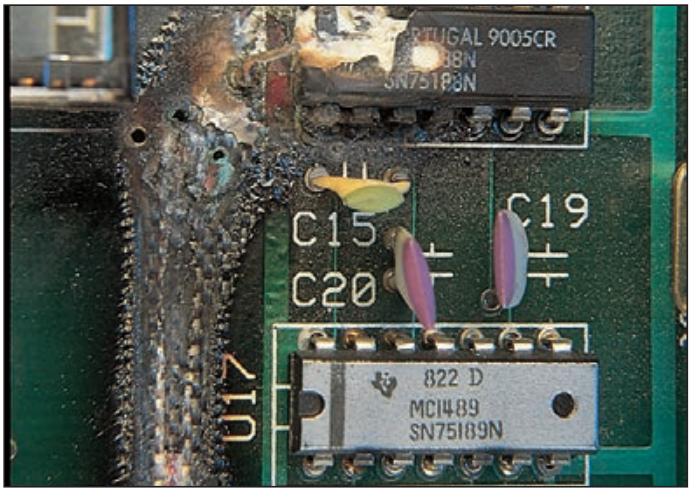


Figure 2. Damage occurs when a transient overvoltage exceeds the withstand voltage of electrical and electronic equipment.

Potential risks from transients:

- Health & Safety risks
- Disruption of vital/basic services
- Loss of data
- Reduced productivity & downtime
- Degradation of components & circuitry
- Costly disposal of damaged equipment

Protection of your electronic equipment is critical, economical, as well as helping to save the environment.

Furse Surge Protective Devices (SPDs) can provide effective protection covering incoming and outgoing mains and data line, protecting sensitive and critical electronic systems from damage.

The latest D/DS range is designed to complement the existing D1 Series of ESP products providing a further enhanced series to our existing ESP range of mains protector range for specific systems.

Figure 6. ESP240 DS-32A installed conveniently in a power distribution cabinet.

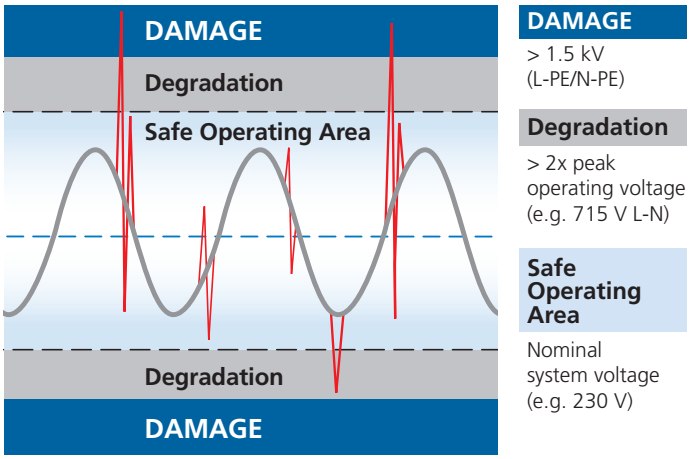


Figure 3. Equipment risks degradation of components at lower transient overvoltage levels, affecting critical electronic systems whenever the impulse immunity of the electronic equipment is compromised.

The new ESP D/DS Series now offers industry leading low let through voltage combined with the mains test Type 1, 2 & 3 (to BS EN 61643). Designed for use on low current single phase systems (up to 10A or 32A) to protect against transient overvoltages on the mains supply, as well as offering increased exposure level covering lightning protection zones (LPZ) 0 - 3.

It also features a three way visual indication of protector status and advanced pre-failure warning, as well as remote indication facilities to a BMS via a Volt-Free contact, so you need never be unprotected.

- Combined type 1, 2 & 3 tested protector (to BS EN 61643)
  For use on low current (up to 10A or 32A) single phase systems to protect against transient overvoltages on the mains supply.

- Very low let through voltages
  Protecting essential equipment by restricting transient overvoltages to a safe level.

- Industry leading, enhanced protection to BS EN 62305
  Minimising the risk of dangerous sparking (leading to flash over and electrical shock hazards) as well as equipment damage compared to standard protection.

- Compact DIN housing
  Mounts to standard 35mm top hat DIN utilising DIN foot with locking feature.

- Three way indication facility (DS Version)
  A flashing warning of potentially fatal neutral to earth supply faults as well as a Volt-Free contact to show pre failure warnings and potential phase loss. (Due to incorrect earthing, wiring errors or unbalanced conditions.)

- Remote indication facility
  Protectors linked to building management systems (BMS) for clear remote failure warning via an active change over Volt-Free contact.

- Repeat protection in lightning intense environments
  Protectors offer repeated protection against transient overvoltages, with a 5 year warranty.

Essential System Protection
Up to 32A

Figure 7 - Product applications
1.CCTV cameras | 2. Power distribution board | 3. Offices | 4. Fire Alarm panels | 5. Electric Vehicle battery charger | 6. Intruder alert panels.

Product Selection Information

Technical specification

DS Range features Volt-Free Contact & Neutral - Earth voltage warning

Part No.	Description	V rms range
ESP120 D-10A	Mains Protector 120 V, 10 A	120 – 150 V
ESP240 D-10A	Mains Protector 240 V, 10 A	240 – 280 V
ESP277 D-10A	Mains Protector 277 V, 10 A	277 – 350 V
ESP120 DS-10A	Mains Protector 120 V, 10 A	120 – 150 V
ESP240 DS-10A	Mains Protector 240 V, 10 A	240 – 280 V
ESP277 DS-10A	Mains Protector 277 V, 10 A	277 – 350 V
ESP120 D-32A	Mains Protector 120 V, 32 A	120 – 150 V
ESP240 D-32A	Mains Protector 240 V, 32 A	240 – 280 V
ESP277 D-32A	Mains Protector 277 V, 32 A	277 – 350 V
ESP120 DS-32A	Mains Protector 120 V, 32 A	120 – 150 V
ESP240 DS-32A	Mains Protector 240 V, 32 A	240 – 280 V
ESP277 DS-32A	Mains Protector 277 V, 32 A	277 – 350 V

Figure 4. ESP D Series

Figure 5. ESP DS Series

Quick & simple installation
For new installations or system upgrades

The ESP D/10A or ESP DS/32A series protectors are installed in series or in-line with the power supply, usually either within the equipment panel, in an external enclosure. (See Figure 9.)

ESP D/10A and ESP DS/10A protectors are connected in-line to supplies fused up to 10A. Similarly ESP D/32A and ESP DS/32A protectors are connected in-line to supplies fused up to 32A.

To protect equipment inside a building from transients entering on an outgoing feed (e.g. CCTV cameras or to site lighting) the protector should be installed either within an existing cabinet/ cubicle or in a separate enclosure.

ESP in-line mains products can work effectively up to 32A however you will need to ensure that the unit is correctly fused to meet the maximum rating of the supply current. (e.g. if the 230V supply is rated at 16A maximum, then an ESP 240DS-32A or ESP 240D-32A should be installed with an in-line fuse rated at 16A.

Figure 8. In-line Installation

For installations above 32A consider using the Furse ESP D1 Series of Enhanced Power Protectors. Designed to be installed as parallel (shunt) or in series (in line up to 125A) with the power supply for single phase and 3 phase applications.

Figure 9. WBX D4 Enclosure

Figure 10. ESP D1 Series - ESP 240D1 Shown

Figure 11. ESP D1 Series - ESP 415D1/LCD Shown

Product Training & support

Defining when and where to install SPDs can be a complex process, and sourcing the right expertise can often be as important as specifying the right product.

We're here to help

We have tailored a range of support and training solutions to help our customers acquire a greater understanding of earthing, lightning and transient overvoltage protection, and thereby to help clarify the IEC/BS EN 62305 standards.

Given the complexity of the standards, confusion and misinterpretation can easily lead to project delays, budget overruns and costly extra time on site. We aim to help customers avoid these risks, fully supporting Furse product ranges with high quality technical support services.

Technical guides

A wide range of product datasheets, technical guides and software is also available to help you improve your understanding of lightning protection. Please visit our website www.furse.com or contact us directly for more information.

We offer CPD accredited seminars and training to help ensure key areas are understood and followed:

- Key guidance on risk assessment principles.
- Selection & installation for overvoltage protection. (In accordance to section 534 of BS 7671:2008)
- Protection requirements for electrical & electronic equipment. (In accordance to BS EN 62305)
- Guidance on Lightning Protection Zones (LPZ)
- Concept & Coordination of SPDs

Seminars are held at the local ABB Furse Nottingham office, other convenient locations and customer premises - please contact us for further information.

CIBSE CPD

Contact us

Furse
UK Head Office
Wilford Road
Nottingham
NG2 1EB
United Kingdom

Switchboard +44 (0)115 964 3700
Fax +44 (0)115 986 0538
Sales tel +44 (0)115 964 3800
Sales fax +44 (0)115 986 0071

enquiry@furse.com

Thomas & Betts Ltd. Br.
Middle East Office
Office 724 6WA West Wing
Dubai Airport Free Zone
PO Box 54567
Dubai
United Arab Emirates

Tel +971 (0)4 609 1635
Fax +971 (0)4 609 1636

enquiryme@tnb.com

www.furse.com

Thomas & Betts ASIA (SINGAPORE) PTE Limited
South East Asia Office
10 Ang Mo Kio Street 65
#06-07 Techpoint
Singapore 569059

Tel +65 6720 8828
Fax +65 6720 8780

asia.inquiry@tnb.com

Q06054

Power and productivity
for a better world™