



# Enhanced Compact Surge Protection up to 32A

## ESP D/DS 10A & 32A 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

Figure 9. WBX D4 Enclosure



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 10. ESP D1 Series - ESP 240 D1 Shown



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

# 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.

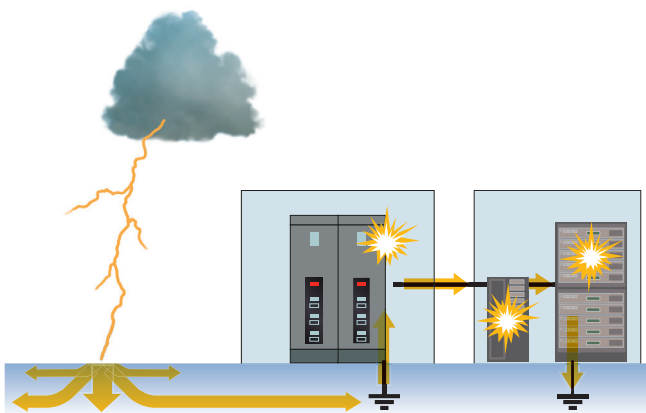


Figure 1. Indirect lightning strike

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.

## 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



Figure 2. ESP D Series



Figure 3. ESP DS Series

Protection of your electronic equipment is critical, economical, as well as helping to save the environment. Furse Surge Protective Devices (SPD's) can provide effective protection covering incoming and outgoing mains and data line, protecting sensitive and critical electronic systems from damage.

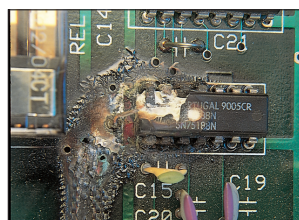


Figure 4. Damage occurs when a transient overvoltage exceeds the withstand voltage of electrical and electronic equipment.

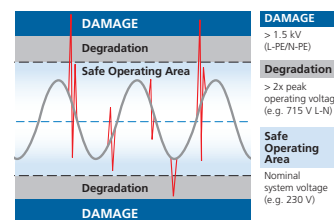


Figure 5. Equipment risks degradation of components at lower transient overvoltage levels, affecting critical electronic systems whenever the impulse immunity of the electronic equipment is compromised.

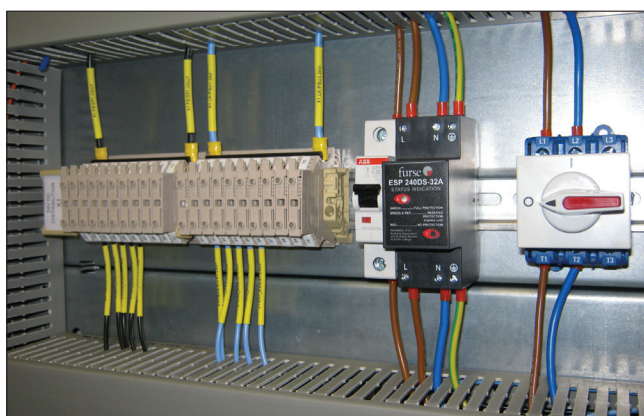


The latest D/ DS range is designed to complement the existing D1 Series of ESP products providing a further enhanced series to our existing ESP range of mains protector range for specific systems.

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.

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



✓ **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 overvoltage's, with a 5 year warranty.



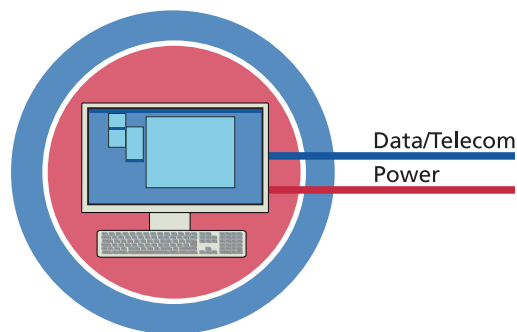
Figure 7. Product applications. 1.CCTV cameras 2. Power distribution board 3. Offices 4. Fire Alarm panels 5. Electric Vehicle battery charger 6. Intruder alert panels.

## 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 |



**WARNING** Equipment is **ONLY** protected if all incoming lines have protection fitted

## Product training & support

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

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 SPD's



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