# beama

Introduction to AFDDs

Modern technology within AFDDs now makes it possible to detect & disconnect dangerous arcs and enhance protection standards for people and property. Arc fault detection devices (AFDDs) disconnect the electricity supply when the presence of dangerous electrical arcs is detected, thus preventing the outbreak of fire.

Historically, the use of overcurrent and residual current protection has vastly reduced the risk and consequence of electrical fires from overload conditions or earth leakage faults. However, these devices cannot detect electric arcs in cables and connections nor prevent the fires that such electric arcs can cause.

How AFDDs work

An AFDD utilizes electronic technology to analyze the signature (waveform) of an arc to differentiate between normal arcing and arcing faults. Upon detection of an arcing fault, the AFDD disconnects the final circuit from the supply.

AFDDs are designed and tested to not respond to arcing under normal operation of equipment such as vacuum cleaners, drills, dimmers, switch mode power supplies, fluorescent lamps, etc. In addition, they are designed and tested to continue to respond to arc faults whilst the aforementioned equipment is being operated.
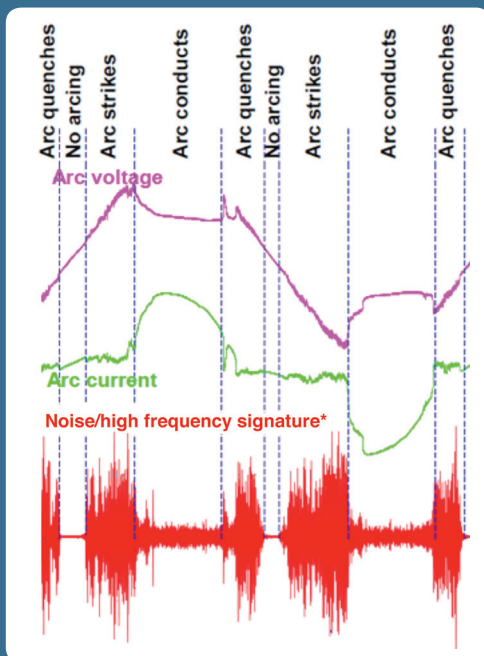

This diagram illustrates a typical arc fault signature. The noise / high frequency signature exceeds 50 Hz and can be kHz or MHz thus allowing the detection of an electric arc fault by an AFDD.
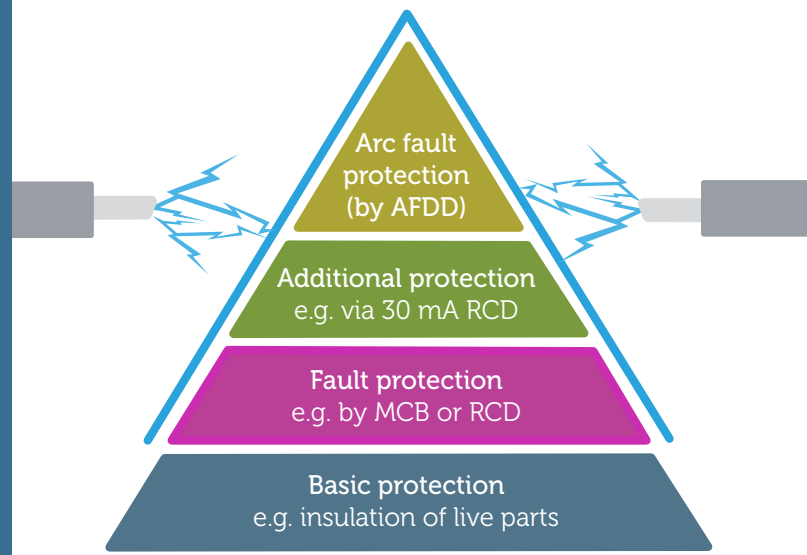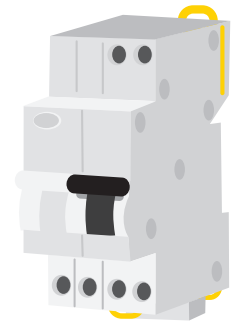

AFDDs provide additional protection that is not offered by MCBs and RCDs. AFDDs detect low level hazardous arcing that MCBs, Fuses & RCDs are not able to detect.
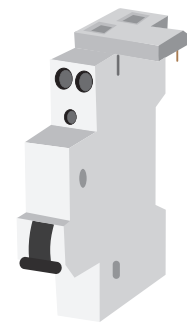
AFDD configurations can vary e.g.
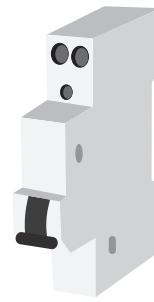
AFDD AS ONE SINGLE STAND-ALONE DEVICE
An AFD unit and opening means, intended to be connected in series with a suitable short circuit protective device.

AFDD AS ONE SINGLE INTEGRATED DEVICE
An AFD unit integrated with a protective device such as an MCB or RCBO.

AFDD COMPRISING OF AN AFD UNIT (ADD-ON MODULE)
An AFD intended to be assembled (on site) to a declared compatible protective device.

Contact a BEAMA member for more information.

Download the BEAMA AFDD guide from **www.beama.org.uk** or scan the QR code