

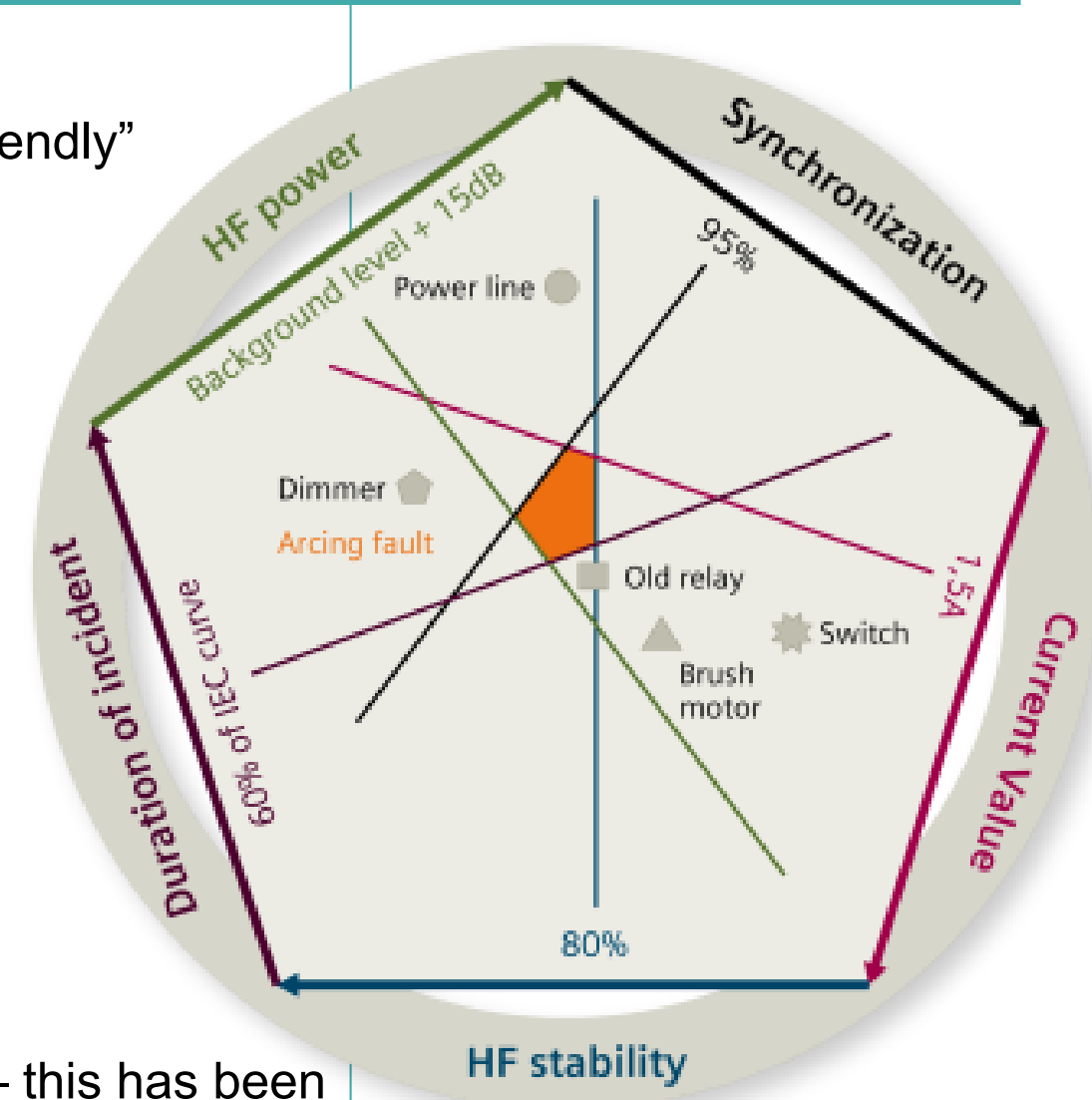
SIARC technology

Differentiation of sources of interference

Arc detection

Microprocessor and / or ASIC

- Five main criteria for differentiating between Dangerous arcing faults & “Friendly” arc sources of faults
- **1. High Frequency Power**
 - If there is an increase of background level +15dB or more
- **2. Synchronization**
 - If this is greater than 95%
- **3. Current Value**
 - If this is greater than 1.5A
- **4. High Frequency Stability**
 - If this is greater than 80%
- **5. Duration of the Incident**
 - If this is more than 60% of the tripping curve
- **Yes** to all 5 criteria puts the monitored Arc into the **Pentagon Fault Zone** – this has been analyzed as genuine Arc fault, the Microprocessor sends a signal to trip the RCBO.



AFDDs PRODUCT OVERVIEW

SIEMENS
Ingenuity for life



- Electrium AFDDs are ONE module wide & DIN mounted devices
- AFDDs are combined with RCBOs to meet a number of requirements of the wiring regulations
- Devices are 90mm tall (same size as an MCB & Miniature RCBO)
- Each device includes integral AFDD, MCB & RCD technology
- RCBO Device ratings are from 6A to 40A
- RCD is TYPE A 30mA for additional protection purposes
- RCBO Devices are rated to 6kA 230v 50hz A.C.
- Product standards are ;-
 - BS EN 61009 for the RCBO
 - BS EN 62606 for the AFDD
- Devices are **two pole switching** for total isolation in the event of a fault
- AFDD / RCBO device includes a test button and illumination LED ;-
 - Test button for testing both AFD/RCBO at the same time.
 - Illumination of Red and Yellow LEDs fault sequenced.

Electrium AFDDs - What about Ring Circuits?

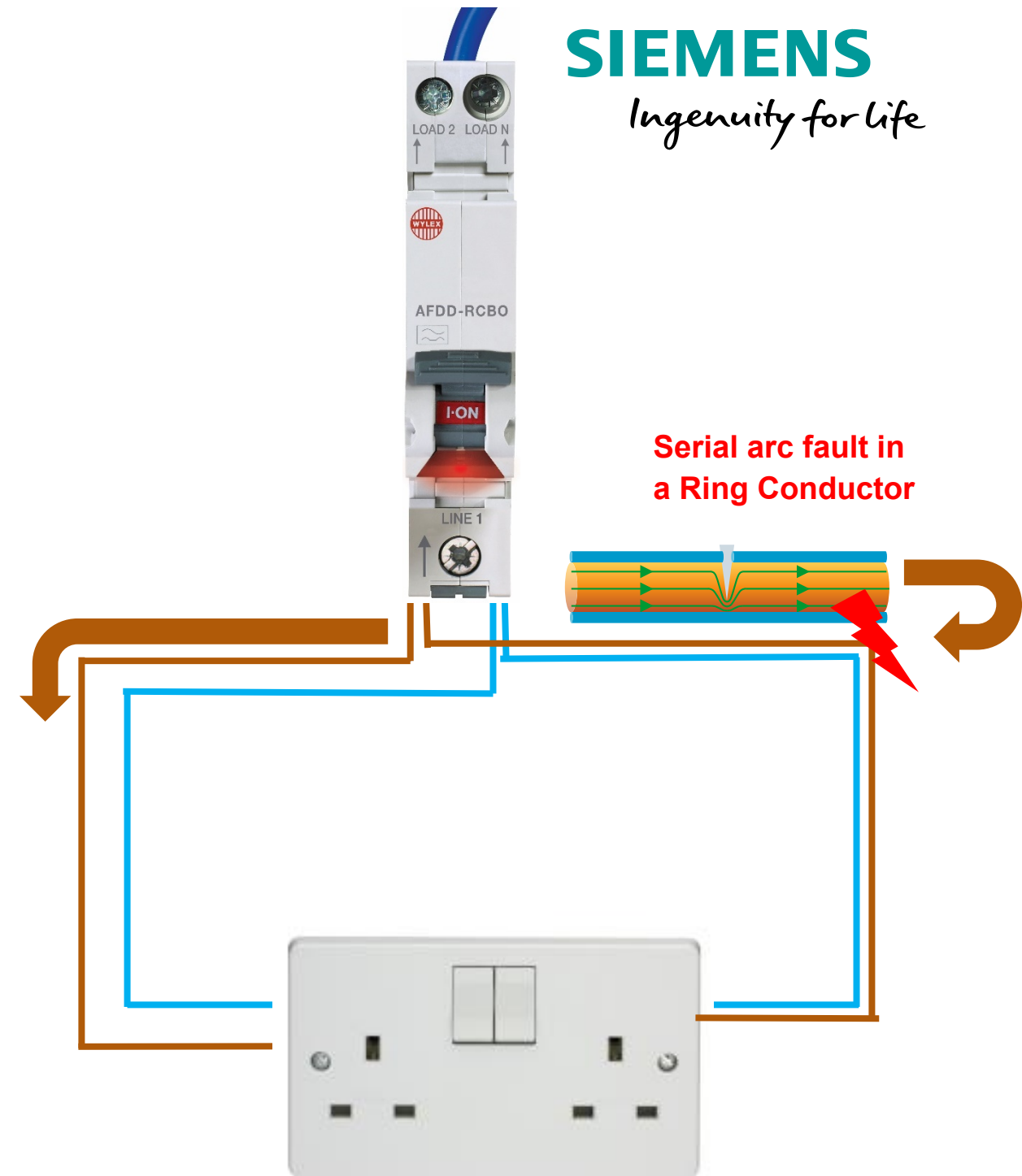
AFDD's will work on Ring circuits – they detect Parallel Arcs, but they won't see a Serial Arc – because they don't exist.

The Nature of a Serial Arc fault –

Loose connection, kinks in connectors / cables, broken but touching conductors:- all limit the current flow (“a blockage”), automatically increasing the impedance / resistance at the fault.

Obviously, the current flow to the load will take the path of least resistance and therefore will flow down the undamaged conductor of the ring – removing the potential of serial arcing (no current flow).

The broken ‘Ring’ effectively becomes 2 Radial circuits - Serial Arcs can exist on a radial circuit.



AFDDs PRODUCT OVERVIEW



- Overload protection
- Short circuit protection
- Earth leakage protection
- Arc fault protection
- Two pole isolation

18mm wide

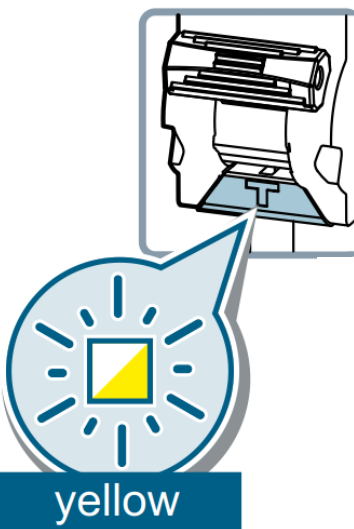
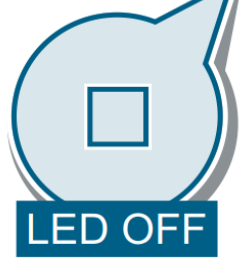
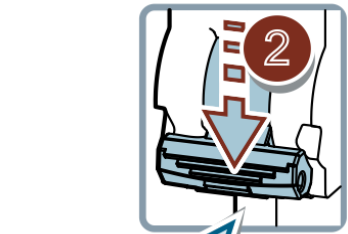
Electrium AFDDs Operation



- On the new AFDD, tripping is indicated by means of 2 flashing LEDs (Red & Yellow) behind the transparent RCBO Test button.
- During normal operation, the LED is illuminated in **red** and also serves as a test button T for RCBO.
- Once the AFDD / RCBO has tripped, it can be reset using the T test button, the **yellow** illumination indicates reason for trip

	Device operable
1x	Serial or parallel arc detected
2x	Overvoltage (>285 V)
3x	Residual current detected
	Self test failed
	No supply voltage

Electrium AFDDs Operation



- If the AFDD / RCBO has tripped then the T test push button / light is clear (no supply voltage)
- Turn the AFDD / RCBO on - Resetting the toggle allows the indication lamps to be lit

1x	Serial or parallel arc detected
2x	Overtoltage (>285 V)
3x	Residual current detected

- Single pulsating flash



- Double pulsating flash



- Triple pulsating flash



Electrium AFDDs

Wylex Product variants

The New Single Module AFDD / RCBO are available as two Curve options, matching the Miniature RCBO. .

Catalogue Number	Description
NXSB06AFD	6A B 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSB10AFD	10A B 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSB13AFD	13A B 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSB16AFD	16A B 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSB20AFD	20A B 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSB25AFD	25A B 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSB32AFD	32A B 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSB40AFD	40A B 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSC06AFD	6A C 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSC10AFD	10A C 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSC13AFD	13A C 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSC16AFD	16A C 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSC20AFD	20A C 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSC25AFD	25A C 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSC32AFD	32A C 30mA RCBO AFDD Sw Neutral 1 mod wide
NXSC40AFD	40A C 30mA RCBO AFDD Sw Neutral 1 mod wide

