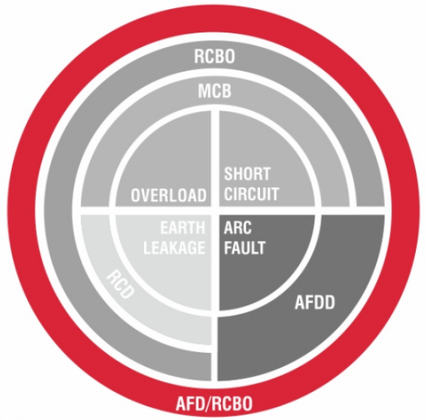
Complete Circuit Protection



RCD
Protection against earth leakage

MCB
Protection against overload and short circuit

RCBO
Protection against overload, short circuit and earth leakage

AFDD
Protection against arc fault

AFD/RCBO
Complete comprehensive circuit protection

AFDD Part Operating Criteria

Series Arcing Fault	
Load current (A)	Maximum allowed tripping time(s)
2.5	1
5	0.5
10	0.25
16	0.15
32	0.12
40	0.12

Paralle Arcing Fault	
Test current (A)	Maximum allowed number of arcing half-waves within 0.5s(N)
75	12
100	10
150	8
200	8
300	8
500	8

AFDD with LED Indicator to Show Fault Cause

LED Indication after tripping and reclosing	Description of fault cause
Steady red light	Over current fault or residual current fault
1 blink/sec(total 10 sec)	Series arcing fault or parallel arcing fault
continumus blinking 2 blinks/sec(total 10 sec)	Over voltage fault (U>275Vac)
5 blinks/sec(continuous blinking)	Internal self-test fault

Cable Connection

AFDD with LED Indicator to Show Fault Cause

Test Button

ON-OFF Indicator

Bottom Clamp Terminals


MASN


HASN

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ARC FAULT DETECTION DEVICES

INCREASING PROTECTION

What is an Arc Fault?

An arc-fault occurs when loose or corroded connections make intermittent contact and causes sparking or arcing between the connections.
This translates into heat, which will break down the insulations of the wire and potentially trigger an electrical fire. Such arc's can range in power and vary a great deal in strength and duration.

What is an AFDD?

Arc Fault Detection Devices use digital electronics to analyse the waveform of an A.C. circuit to detect arc faults. The device continuously monitors the circuit for different variations including the duration of an arc and the waveform. Once the device detects an irregular fault the device trips and disconnects the circuit, reducing the chance of it over heating and potentially causing an electrical fire.

What Types of Circuits Can AFDDs Be Used On?

The regulations state AC single-phase circuits not exceeding 230V, that includes ring circuits, radials etc.

Where should AFDDs be used?

AFDDs are recommended to be fitted in consumer units or distribution boards in premises with sleeping accommodation, locations where there is a risk of fire due to the activity within, premises constructed of combustible materials, fire propagating structures such as high rising buildings and locations where there are irreplaceable goods.

Types of Arc Faults

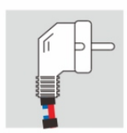
The regulations state AC single-phase circuits not exceeding 230V, that includes ring circuits, radials etc.

Parallel arc faults are found with damage caused to insulation which allows current to flow between conductors, usually between phase and neutral.

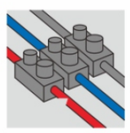
Series arc faults are found in loose terminal connections, damaged cords or frayed/ damaged conductors. These arc's are created in one conductor only, either phase or neutral.

Potential Causes of Arc Faults Could Include

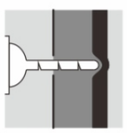
Kink/break in the cable



Cable wear due to frequent use



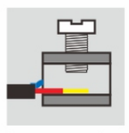
Incorrect wire stripping



Line damage resulting from drilling or construction work

Defective wall plugs

Incorrect bending radii



Loose screwed connections

Rodent bites

Product Name			MASN	HASN	HAT
Number of Poles			1P+N	1P+N	1P+N
			 6 kA IEC/EN 61009-1	 6 kA IEC/EN 61009-1	 10kA IEC/EN 61009-1
Approval / Marking					
			CE CB RoHS	CE CB RoHS	CE CB RoHS
Technical Data					
Type (Wave form of The Earth Leakage Sensed)			A	A	A
Rated Current (In)		A	6, 10, 13, 16, 20, 25, 32, 40	6, 10, 13, 16, 20, 25, 32, 40	6, 10, 13, 15, 16, 20, 25, 32, 40
Rated Voltage (Ue)		V	230/240	230/240	230/240
Rated Breaking Capacity	Ultimate (Icn)	kA	6	6	10
	Service (Ics)	kA	6	6	7.5
Rated Residual Making and Breaking Capacity (I△m)		A	6000	4500	4500
Rated Residual Current (I△n)		mA	30	30	30
Sensitivity			Type A	Type A	Type A
Characteristic			B/C	B/C	
Rated Impulse Withstand Voltage (U_{imp})		kV	4	4	4
Rated Frequency		Hz	50/60	50/60	50/60
Rated Insulation Voltage (Ui)		V	-	-	500
Operating Voltage of RCD Circuit Test Ut		V	-	-	170-264
Threshold for Protection Against Overvoltage		V	-	-	275
IP Degree			IP20	IP20	IP20
Energy Limiting Class			3	3	3
Electrical Endurance		Cycles	2000	2000	2000
Mechanical Endurance		Cycles	10000	10000	10000
Dielectric Test Voltage at ind. freq. for 1 min.		kV	-	-	2kV (50/60Hz. 1 min.)
Cable Termination		mm^2	25/16	25/16	25
Torque Screw		N.m	2.0/1.2	2.0/1.2	2.5
Terminal			Pillar Type	Pillar Type	Pillar Type