

Brief Product Description

A combined Arc Fault Detection Device and RCBO. This combination within a single module is effective at detecting electrical arcing faults within cable, wiring accessories, and appliances that could cause an electrical fire. This is in addition to earth leakage and overload. Bidirectional, Double Pole (Switched Neutral) as standard.

AFDDs detect electrical arc faults that an MCB, RCBO or RCD are unable to detect, such as serial arcing faults, parallel arcing between conductors and parallel arcing between live and protective conductor (Earth). These devices are suitable for use on circuits, radial circuits and will also offer protection to spurs and leads. These single module AFDDs with integral RCBO function are available in B curve with 30mA tripe sensitivity and fit into the BG range of consumer units and enclosures and can be easily retro fitted into existing installations.

Features

- Bidirectional
- Double Pole, Switched Neutral disconnection
- BS7671 Amendment 4 compliant device
- Pollution degree 3 tested
- -25°C - +40°C operating temperature range
- Single module
- Type A >6mA pulsed DC detection
- 6kA
- Available in 6-40A
- B and C Curve Available

Technical Specifications (6A - 40A)

Bidirectional	Yes
Number of Poles	2 P
Type of Pole	1P + N
Fixing Mode	DIN Rail
Curve	B & C
Rated Operational Voltage Ue	230 V
Pollution Degree	3
Frequency	50 Hz
Type of Supply Voltage	AC
Rated Insulation Voltage	400 V
Max Operating Voltage	264 V
Rated Impulse Withstand Voltage	4 kV
Rated Residual Operating Current	30 mA
RCD Type	Type A
Electric Endurance In Number of Cycles	4,000
Number of Mechanical Operations	20,000
Screw Terminal	Yes - Pozidrive 2
Terminal Torque	L In 2Nm L Out L In 1.2 Nm
Max cable Capacity	L2 - 16mm L1/N1 - 10mm
Standards	IEC/EN61009-01 IEC/EN62606



Part Codes

Cat No.		
B Curve	C Curve	Rating
CURAFDB6DPA	CURAFDC6DPA	6A
CURAFDB10DPA	CURAFDC10DPA	10A
CURAFDB16DPA	CURAFDC16DPA	16A
CURAFDB20DPA	CURAFDC20DPA	20A
CURAFDB32DPA	CURAFDC32DPA	32A
CURAFDB40DPA	CURAFDC40DPA	40A

Product Images



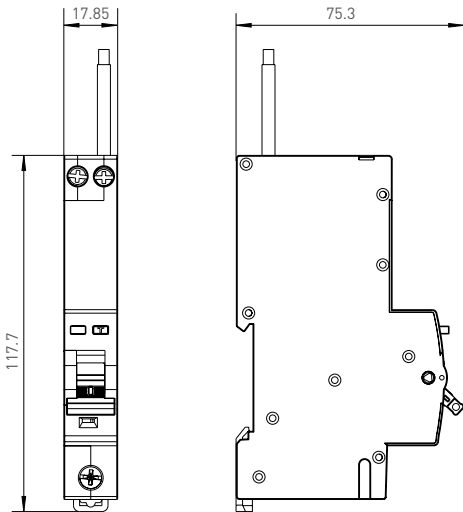
Operating Temperature

The rated value of the current of a double pole bidirectional AFDD B & C curve characteristic refers to ambient temperature of 30°C.

The following table contains the derating of the load capacity at ambient temperatures from -30°C to 70°C for B & C characteristics.

Rated Current In	Maximum operating current at ambient temperature T																				
	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
6	8.05	7.9	7.74	7.58	7.42	7.26	7.09	6.92	6.74	6.56	6.37	6.18	6	5.81	5.6	5.38	5.15	4.91	4.65	4.38	4.08
10	12.23	12.06	11.89	11.71	11.53	11.35	11.16	10.98	10.78	10.59	10.39	10.19	10	9.81	9.59	9.37	9.17	8.91	8.68	8.43	8.18
13	17.27	16.86	16.26	15.83	15.26	14.82	14.56	14.26	13.98	13.74	13.49	13.24	13	12.76	12.53	12.22	11.96	11.7	11.46	11.21	10.98
16	19.4	19.13	18.87	18.6	18.33	18.05	17.77	17.48	17.19	16.9	16.6	16.29	16	15.7	15.38	15.05	14.71	14.36	14	13.64	13.26
20	24.31	23.98	23.65	23.31	22.96	22.61	22.25	21.89	21.52	21.15	20.77	20.38	20	19.62	19.2	18.78	18.35	17.91	17.45	16.99	16.51
25	30.4	29.98	29.56	29.14	28.71	28.27	27.82	27.37	26.91	26.44	25.96	25.48	25	24.51	24	23.47	22.93	22.38	21.81	21.23	20.63
32	38.15	37.67	37.19	36.7	36.21	35.71	35.2	34.68	34.16	33.13	33.09	32.54	32	31.45	30.87	30.28	29.68	29.07	28.44	27.8	27.14
40	47.88	47.25	46.85	46.26	45.86	45.22	44.56	43.78	43.05	42.33	41.56	40.77	40	39.19	38.35	37.46	36.66	35.74	34.88	34.03	33.26

Dimensional Line Drawing



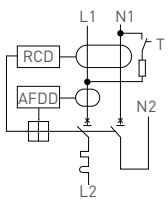
Dimensions of product

Height: 117.7 mm
 Width: 17.85 mm
 Depth: 75.3 mm

Maintenance

The AFDD should be tested on a regular basis by pressing the test button (T) in accordance with the latest edition of the IET Wiring regulations BS7671.
 Make sure all terminations are tightened to the correct torque level supplied in this document.

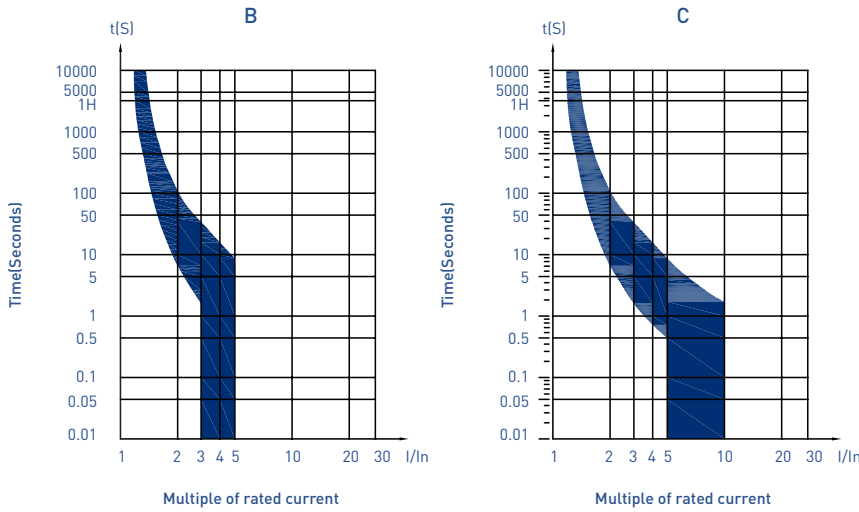
Wiring Diagram



What to do if an AFDD trips

Reset tripped AFDD to the ON position.
 If device trips again, disconnect all appliances connected to this circuit. Switch AFDD ON and safely connect appliances one at a time to identify which one trips the device.
 In all cases, once the faulty appliance has been identified, do not continue to use the item until it has been checked.

Trip Curve Data



Test Parameter (AC Setting)	Result
0.5x In	RCBO will not trip
1.0x In	0 & 180° RCBO must trip within 300ms
5.0x In	0 & 180° RCBO must trip within 40ms

Type B - Domestic and light commercial installations such as lighting and power circuits running low power appliances.

Type C - Domestic and light commercial installations such as lighting and power circuits running higher current appliances that may cause nuisance tripping of a B Curve RCBO.

Table 41.5 – Maximum Earth Loop Impedance Values – BS7671 IET Wiring Regulations

Maximum earth loop impedance (Z_s) for non delayed and time delayed 'S' type RCD to BSEN61008-01 and BSEN61009-1 for U_o of 230V (see regulation 411.5.3).

Rated residual operating current (mA)	Maximum earth fault loop impedance Z_s (ohms)
30	1667*
100	500*
300	167*
500	100

Disconnection shall be within the times stated in table 41.1. in BS7671 IET Wiring Regulations.

NOTE1: Figures for Z_s result from the application of regulation 411.5.3 (i) and (ii).

NOTE2: * the resistance of the installation earth electrode should be as low as practicable. A value exceeding 200 ohms may not be stable. Refer to Regulation 542.2.4.

Rated Diversity Factor (RDF)/Values of assumed loading

CU Ways	RDF
1 Way	1
2-3 Ways	0.8
4-5 Ways	0.7
6-9 Ways	0.6
10 Ways+	0.5

Adjacent thermal magnetic RCBOs/MCBs should not be continuously loaded at their nominal rated currents when mounted within enclosures.

A rated diversity factor (RDF) should be applied to the nominal current rating of the RCBO/MCB where it is intended to load the circuits continuously and simultaneously.

Pollution Degree 3 Definition

This is an approval rating given when testing has been performed on devices or electrical items. It ensures that both conductive pollution or dry non-conductive pollution does not become conductive when natural condensation is present.

Natural condensation can occur when an enclosure containing electrical devices/products is installed externally or in more harsh conditions than an internal application and could potentially be exposed to lower or higher ambient temperatures which could generate natural condensation which may harm the internal electrical components inside the enclosure.

BG Devices are tested to pollution degree 3 and also temperature tested to -25°C to + 40°C.