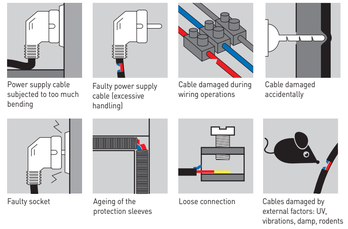
NEW

ELECTRICAL ARCS

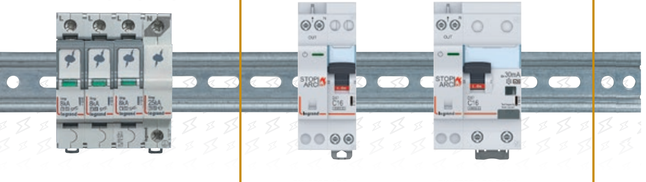
These appear in cables or their connections.

EXAMPLES OF SITUATIONS WHICH CAN LEAD TO THE APPEARANCE OF ELECTRICAL ARCS



ATMOSPHERIC OVERVOLTAGES

Overvoltages propagated on power supply lines due to an increase in the reference potential, induced in the installation by the magnetic field from a lightning strike.
EXAMPLE: lightning during a storm.



SURGE PROTECTIVE DEVICE

DX³ STOP ARC CIRCUIT BREAKER

DX³ STOP ARC RCBO

- lightning conductors, protect against direct effects
- surge protective devices, protect against indirect effects

- arc fault detection devices (AFDD)
Legrand DX³ Stop Arc protects against electrical arc faults and also against overloads, short-circuits and fault currents (residual current version only)

DX³ STOP ARC

EXTRA PROTECTION FOR PEOPLE AND PROPERTY

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legrand

Head office
and International Department
87045 Limoges Cedex - France
Tel: +33(0)5 55 06 87 87
Fax: +33(0)5 55 06 74 55

THE GLOBAL SPECIALIST IN ELECTRICAL AND DIGITAL BUILDING INFRASTRUCTURES

legrand®

FIRE RISKS OF ELECTRICAL ORIGIN

AND ASSOCIATED PROTECTION DEVICES

The risk of fire is real and is much feared, as it can have devastating consequences for both people and property. Paradoxically, its origins are still not well known and even today, taking the risk of fire into account undoubtedly represents one of the most complex aspects of safety. Statistical studies show that a third of domestic fires are of electrical origin. Ever keen to provide a greater level of safety, Legrand is enhancing its protection offer with a range of circuit breakers capable of detecting faults which up to now have been impossible to detect using conventional protection methods.

ELECTRICAL CAUSES OF FAILURE

OVERLOAD

Overcurrent circulating when there is no electrical fault in a circuit, caused by under-sizing of the busbar system for the load being supplied.
EXAMPLE: too many appliances plugged into the same socket.

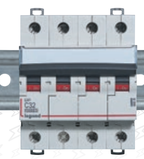
SHORT-CIRCUIT

Overcurrent produced by a minor impedance fault between conductors with different potentials.

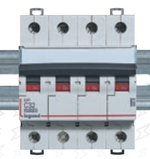
EXAMPLE: two bare wires coming into contact.

FAULT CURRENT

Current that flows to earth via the exposed conductive parts or the protective conductor following an insulation fault.
EXAMPLE: electrocution by direct or indirect contact.



THERMAL-MAGNETIC CIRCUIT BREAKER



THERMAL-MAGNETIC CIRCUIT BREAKER

RCBO

PROTECTION DEVICES

- fuses (gG type) circuit breakers with thermal relay
- circuit breakers with electronic relay, contactors with measurement relay

- fuses (gG or aM type)
- circuit breakers with magnetic relay
- circuit breakers with electronic relay (overcurrent)

- RCCBs
- RCBOs

TYPES OF PROJECT

In order to improve the safety of buildings and their occupants, international installation standard IEC 60364-4-42 now recommends the use of arc fault detection devices (AFDD) in compliance with product standard IEC 62606, especially in the following cases: sleeping accommodation, premises constituting a fire risk due to the types of material processed or stored therein (barns, woodworking shops, paper mills, etc), premises constructed with combustible building materials (wooden buildings and houses), structures where fire spreads easily (tower blocks) and premises where irreplaceable goods might be in danger.

Arc fault detection devices (AFDD) are installed in consumer units, mainly on circuits dedicated to 2P+E power sockets. In residential installations, they should ideally be installed on the bedroom and living room circuits.
In the case of total refurbishment, they should play an active part in making the installation safe.




DX³ STOP ARC RANGE:

A COMPLETE RANGE SUITED TO DIFFERENT WIRING PRACTICES

FUNCTION	POWER SUPPLY			
	TOP SIDE		BOTTOM SIDE	
	DX³ Stop Arc Circuit breaker	DX³ Stop Arc RCBO	DX³ Stop Arc Circuit breaker	DX³ Stop Arc RCBO
Number of poles	1P+N		1P+N	
Neutral position	On the left		On the right	
Breaking capacity Isc (A)	6000 A IEC/EN 60898	6000 A IEC/EN 61009-1	6000 A IEC/EN 60898	10000 A IEC/EN 61009-1
Curve	C		B and C	
Nominal current In (A)	10, 16, 20		6, 10, 13, 16, 20	
Sensitivity	-	30 mA type AC	-	30 mA type A

DX³ STOP ARC

SAFETY AND EASE OF INSTALLATION

The DX³ Stop Arc range is suitable for different wiring practices in different countries.
It is available in two versions with top or bottom side power supply and is compatible with both prong-type and fork-type supply busbars. Designed to give users peace of mind, these products remain faithful to Legrand's philosophy: simple, intuitive, quick installation and, as ever, an uncompromising level of quality.

SAFETY

DX³ Stop Arc is a monobloc product (AFDD + circuit breaker or AFDD + RCBO) which is assembled in the factory. This guarantees quality and eliminates the risk of mistakes during assembly.
The built-in self-test function is an extra safety feature.

1 **Indicator light showing the product operating status**
- off: the product is not powered (fault)
- green: the product is working normally
- red: the product is faulty

2 Innovative label-holder for easy circuit identification

3 Colour marking on the handle to view the status of the circuit breaker contacts: Red = I-ON (contacts closed), Green = O-OFF (contacts open)

4 Mechanical indicator for tripping on arc fault

5 Trips on residual current faults are signalled by a yellow indicator

6 Manual test for residual current function

EASE OF INSTALLATION

The DX³ Stop Arc is very easy to install in the consumer unit.
It is fitted instead of a circuit breaker and is connected in the same way.

7 Neutral position and wiring direction (downstream terminals) clearly identified to prevent connection errors

8 Clear marking including the catalogue number and main technical characteristics

9 Clamping screw for flat-blade or Pozidriv screwdriver.

10 Compatible with the various control and signalling auxiliaries

11 Technical marking area

DX³ Stop Arc - top side supply

arc fault detection devices from 10 to 20 A


4 159 13


4 159 51

Conform to IEC/EN 62606 and GB/T31143-2014
Compatible with prong-type supply busbars
Can be equipped with DX³ signalling and remote tripping auxiliaries
Specific use: fire prevention by arc detection

Pack	Cat.Nos	Arc fault detection circuit breakers		
		Breaking capacity: 6000 - EN/IEC 60898 - 230/240 V~		
		Single pole + neutral 230 V~		
		Neutral on left-hand side		
	C curve	Nominal rating In (A)	Number of modules	
1	4 159 12	10	2	
1	4 159 13	16	2	
1	4 159 14	20	2	
		Arc fault detection residual current circuit breakers		
		Breaking capacity: 6000 - IEC 61009-1 - 230/240 V~		
		Single pole + neutral 230 V~		
		AC Type ⎓ 30 mA		
		Neutral on left-hand side		
	C curve	Nominal rating In (A)	Number of modules	
1	4 159 50	10	3	
1	4 159 51	16	3	
1	4 159 52	20	3	

DX³ Stop Arc - bottom side supply

arc fault detection devices from 6 to 20 A


4 159 31


4 159 67

Conform to IEC/EN 62606
Can be equipped with DX³ signalling and remote tripping auxiliaries
Specific use: fire prevention by arc detection

Pack	Cat.Nos		Arc fault detection circuit breakers	
			Breaking capacity: 6000 - EN/IEC 60898 - 230/240 V~	
			Compatible with prong-type supply busbars	
			Single pole + neutral 230 V~	
			Neutral on right-hand side	
	B curve	C curve	Nominal rating In (A)	Number of modules
1	4 159 19	4 159 28	6	2
1	4 159 20	4 159 29	10	2
1	4 159 21	4 159 30	13	2
1	4 159 22	4 159 31	16	2
1		4 159 32	20	2
			Arc fault detection residual current circuit breakers	
			Breaking capacity: 10000 - IEC 61009-1 - 230/240 V~	
			Compatible with both prong-type and fork type supply busbars	
			Single pole + neutral 230 V~	
			A Type ⎓ 30 mA	
			Neutral on right-hand side	
	B curve	C curve	Nominal rating In (A)	Number of modules
1	4 159 55	4 159 64	6	3
1	4 159 56	4 159 65	10	3
1	4 159 57	4 159 66	13	3
1	4 159 58	4 159 67	16	3
1		4 159 68	20	3