Prevent Fires
Save Lives
Protect Property

ecolight

Sk Resident

Who we are:

- ECOLIGHT Ltd. is an innovative Russian manufacturer of LED lighting fixtures, operating under the ECOLIGHT brand.
- Since 2017, the company has developed and launched a new Arc Fault Detection Device (AFDD). This latest iteration will help reduce the number of fires caused due to electrical main faults by more than a factor of 2.
- The main advantages of ECOLIGHT products are their high build quality, reliability, and affordability.

What the problem is:

The proportion of fire causes in different countries.

Country	Europe	USA	Germany	Germany	China	Norway	India
Period	2004	2009- 2011	1987- 1996	2002- 2013	2005- 2010	2009- 2013	2009- 2012
Institute Company	ICF	CPSC	GDV	IFS	Beijing univ.	DSB	FICCI
Analyzed fires	600,000	639,000	2,804	12,000	132,000	4240	13,185
Electricity	**13-20%**	**5-18%**	**25%**	**33%**	**27%**	**21%**	**73%**
Lightning			1%	0 %	1 %	1 %	27%
Explosion			9%	2 %	n.m.	0%	
Incendiary			26%	9 %	6 %	6%	
Work with fire			7%	3%	32%	23%	
Human error			2%	16%			
Open fire			7%	4%		23%	
Self-ignition			6%	2%	2%	3%	
Overheat			9%	9%	n.m.	4%	
Misc. & unknown			9%	21%	32%	19%	

Source: https://d-nb.info/1152096966/34

TYPICAL POWER GRID AND ELECTRICAL EQUIPMENT ISSUES:

Loose contact

Mechanical damage of cable

Crushed cable

Impaired contact

Cable defect

Damage by gnawing rodents

Mechanical damage of insulation

Damage or aging of insulation

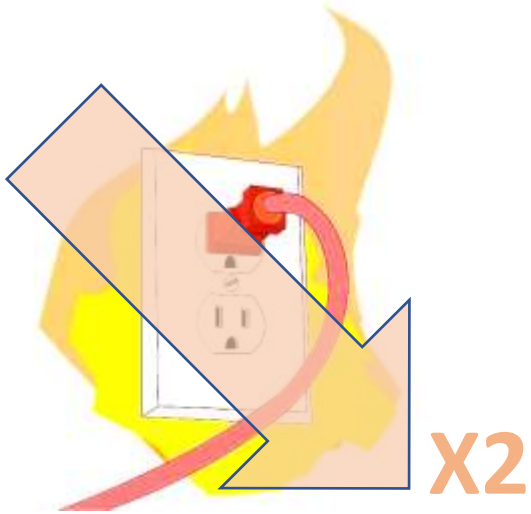
Copper and aluminum twisting

These problems can occur singularly or in any combination at any location.

How to fix:

Arc Fault Detection Device (AFDD)

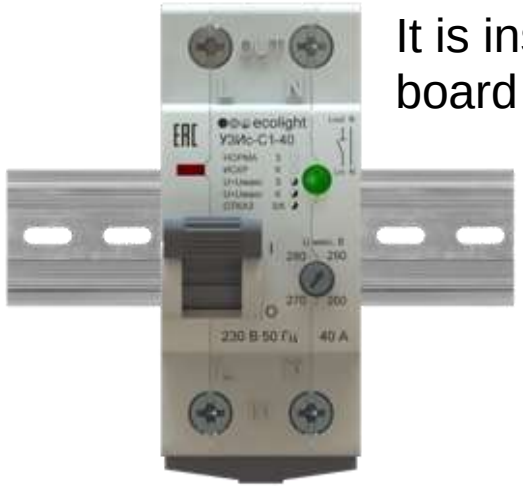
The third stage of development of electrical mains protection devices,
following Miniature Circuit Breaker (MCB) and Residual Circuit Breaker (RCB).



The use of an AFDD will reduce the number of fires due to problems with wiring and electrical equipment by more than a factor of 2*

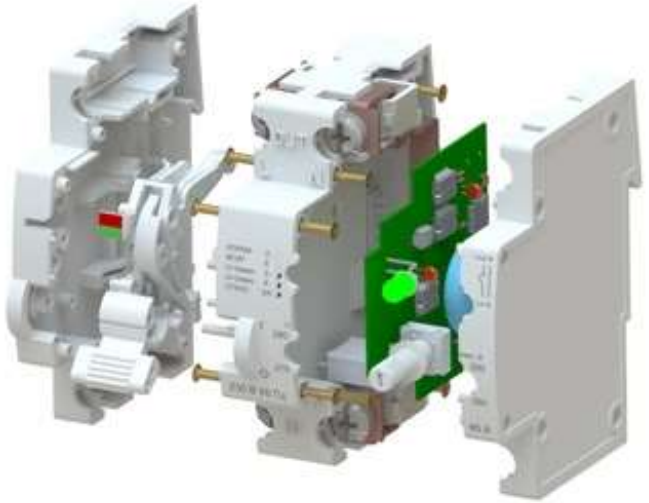
* based on data from the Consumer Product Safety Commission (US CPSC)

Ecolight’s AFDD features:



It is installed in the distribution board on the DIN-rail.

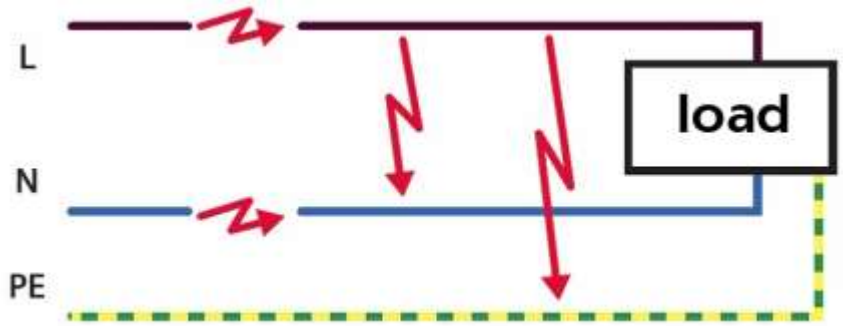
It is equipped with an AFDD-I control device designed to configure and verify functionality at the places of installation.



AFDDs are able to identify arcs within protected circuitry and automatically disconnect.

STANDARD EQUIPMENT FOR THE PROTECTION OF ELECTRICAL CIRCUITS:

To protect electrical lines, the automatic circuit breakers provide overcurrent protection (hereinafter MCB), as well as circuit breakers operated by differential current (RCB).



Protection device	Type of arcing		
	Series (BTR – poor contact)	Parallel Phase - neutral	Parallel Phase - ground
 MCB	✗	✗✓	✗✓
 RCB	✗	✗	✗✓
 AFDD	✓	✓	✓

Target audience

Householder
To protect his own property

Electrician
To provide better and more diverse services

Building designer
To consider AFDD features for new buildings and renovations

Insurer
To reduce the number of insurance claims

State official
To reduce the number of victims and material losses

Licenses, patents

AFDDs were successfully tested and are recommended for use:

- **FSBEI HPE MSCU Institute of Integrated Safety in Construction**;
- **The All-Russian Center for Emergency Situations;**
- **FSBEI HPE State Fire-Fighting Service Academy of the Ministry of Emergency Situations of Russia**

The Patents below was obtained (№124451, №2528137, №2572371, №2580011; №2660285)

Patents:

Project supports

Agency for Strategic Initiatives

Moscow Agency of Innovation

Innovation Center "Skolkovo"

Awards:

The project is the winner of the “Live Electronics of Russia” award in the following nominations: "The most promising startup" and "Developing a successful consumer product."

The project is the winner of the MOSGORTECH Innovation Technologies Competition on the track “Technologies of the Smart City”.

Finalist of the «Energy Breakthrough 2019» - the All-Russian competition in the field of research intensive innovative projects and developments.

Competitors:

Legrand

Schneider

Hager

Siemens

ABB

Eaton

- Large working area
- Resistance to false positives
- Means by which to control the zone of operation
- Separate device
- Maximum power
- Low price

Ecolight

$70

$1000

Now in development are:

- Line combined with MCB and RCBO devices
- Three Phase Line
- Line of bipolar devices
- Embedded in extension cords and switching devices
- Line of devices for direct current