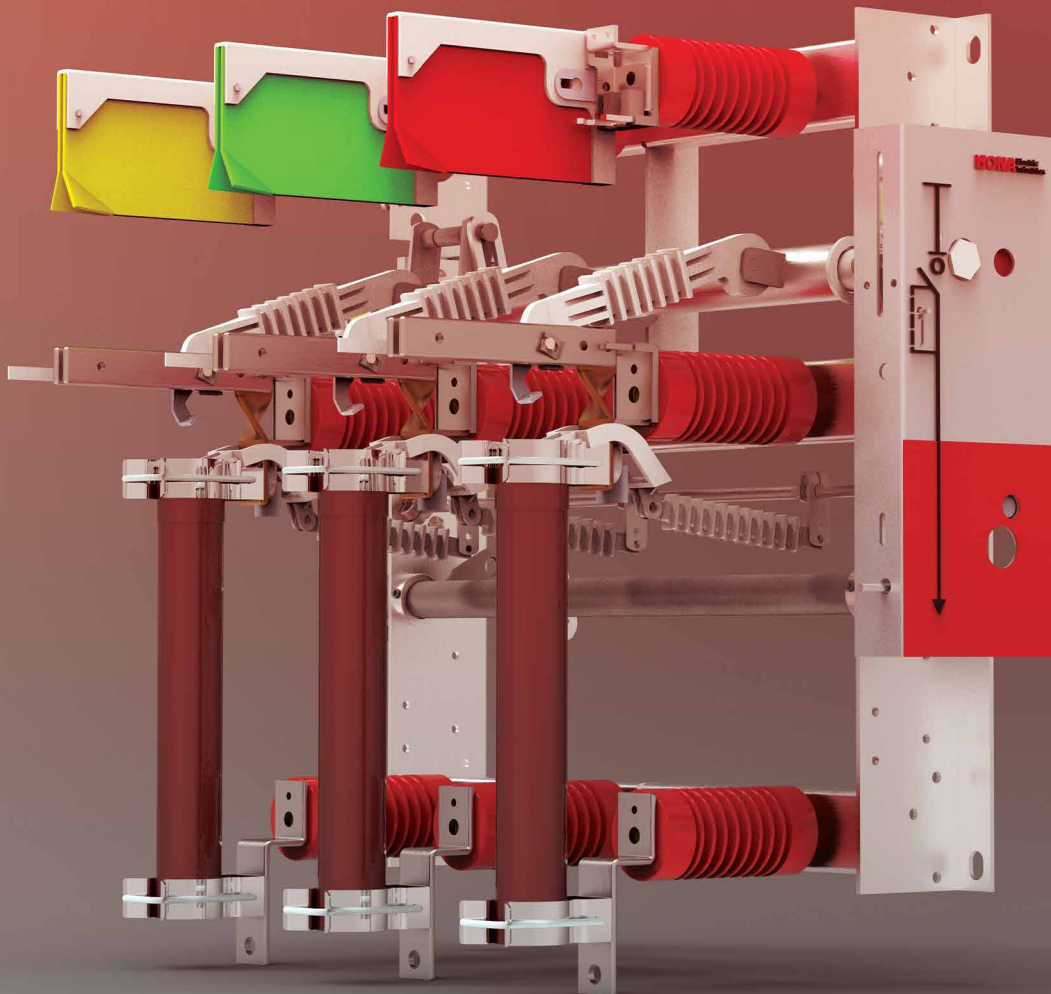


 Series

# SPARK

ONA Medium voltage  
Load Break Switch

# Optimizing power delivery & minimizing energy loss



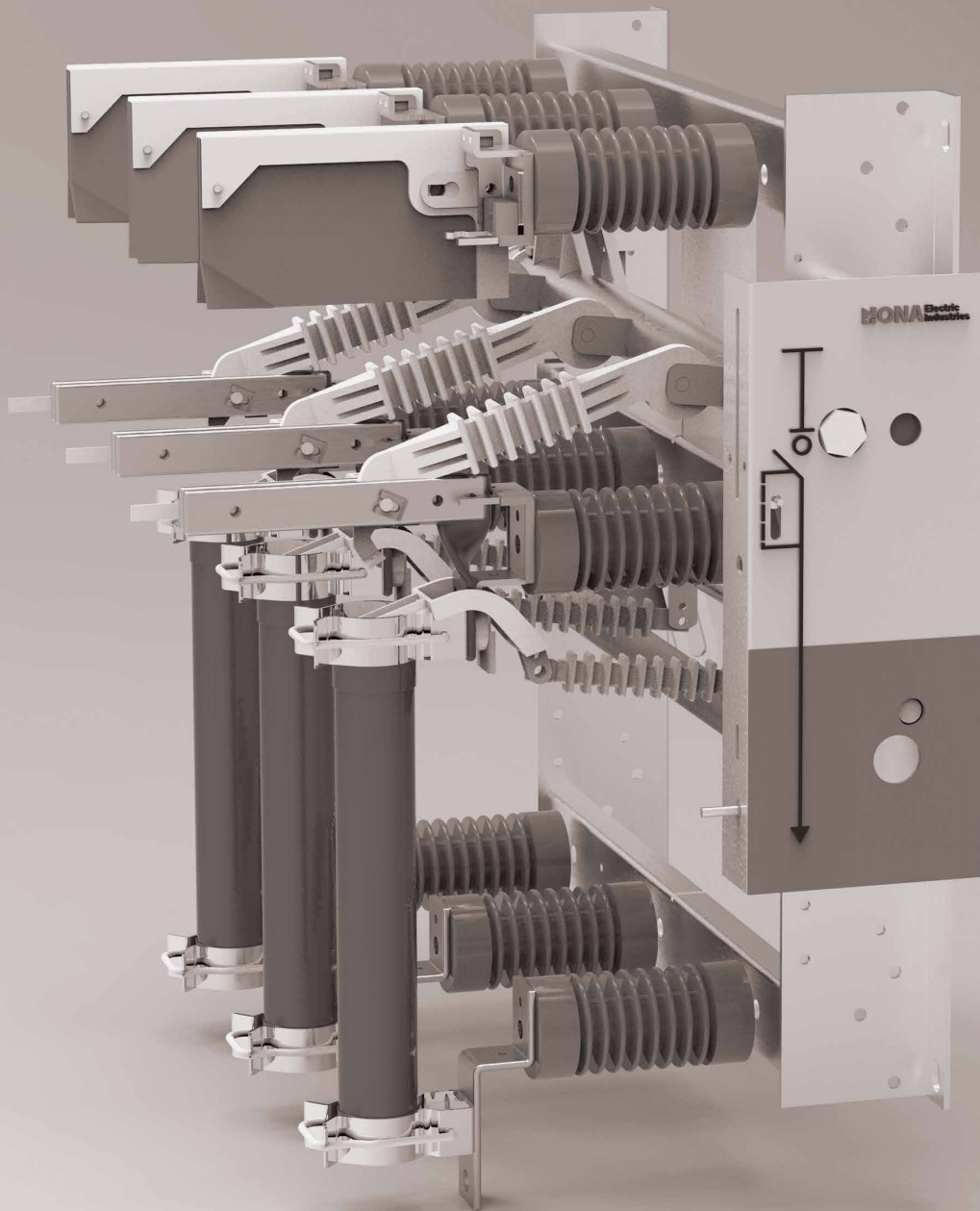
Powering factories, plants, and manufacturing facilities.

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Flexible options to  
meet your specific needs .

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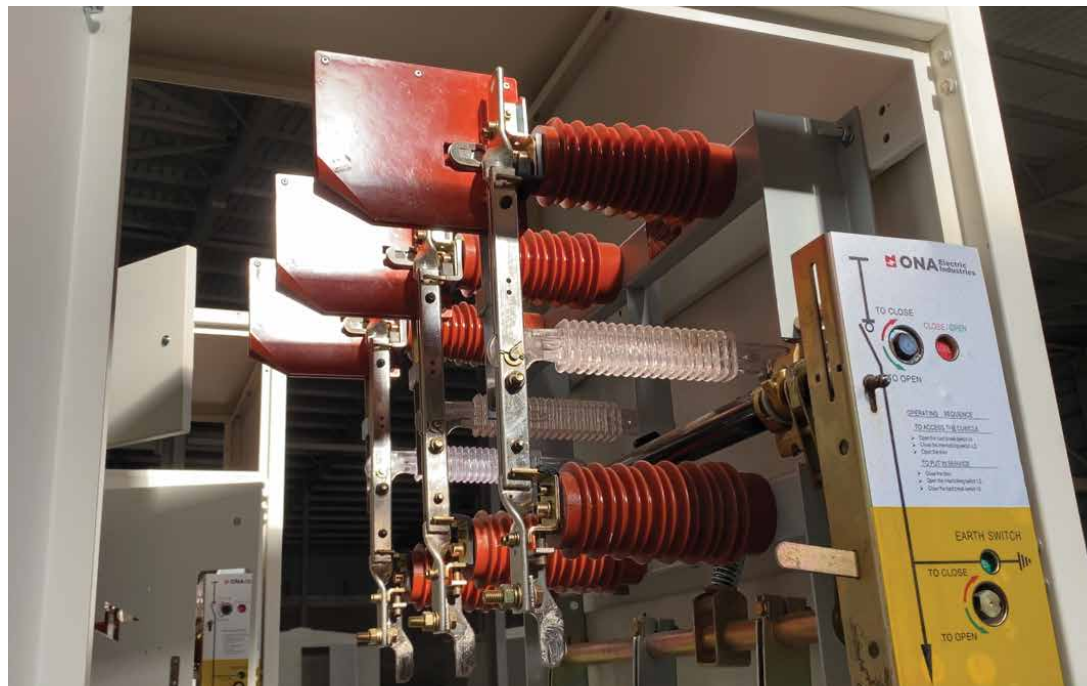
# Description

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01

# 01. Description

Critical to the operation of electrical power systems, load break switches (LBS) offer the capability to safely interrupt or isolate electrical circuits while they are carrying a load. This functionality is particularly valuable for switching and isolating medium-voltage circuits within distribution networks.



## Design and Construction

ONA AIS Load Break Switches leverage high-grade materials throughout their construction. This meticulous material selection ensures exceptional resilience in even the most demanding environmental conditions. Furthermore, the design integrates cutting-edge technologies to guarantee reliable switching performance.

# 01. Description

## **E2 & M2 Standards**

Our **spark** is designed with the highest standards of energy efficiency, adhering to both the E2 and M2 standards.

### **E2 Compliance**

The **spark** will meet the stringent requirements of the ETSI ES 202 706 E2 standard. This ensures optimal energy consumption, significantly reducing the environmental footprint while delivering top-tier performance and reliability.

### **M2 Compliance**

Additionally, our **spark** is currently undergoing certification to the M2 standard by the International Telecommunication Union (ITU). This certification will guarantee that our product operates at peak energy efficiency, promoting sustainability and cost-effectiveness in electrical distribution systems.

By adhering to these standards, our **spark** is designed to provide superior durability, safety, and efficiency in various applications, from industrial settings to power distribution networks.

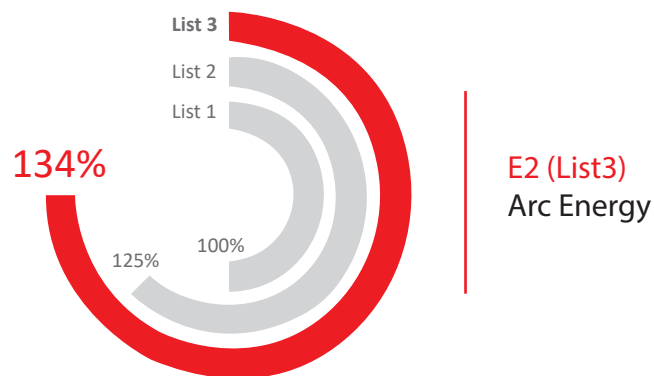
Once certified, they will meet the highest industry standards.



# 01. Description

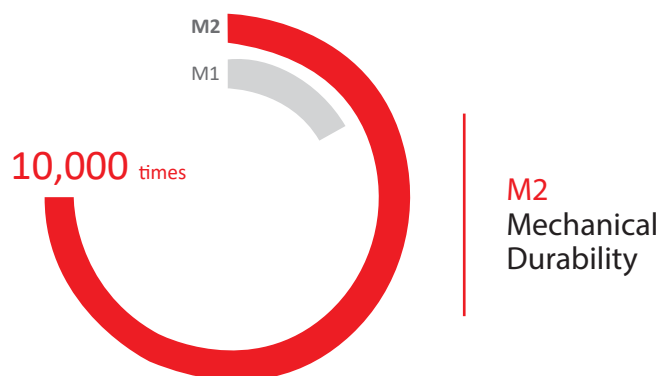
## Electrical Endurance Rating : E2 (List3)

The E2 grade, the highest electrical endurance level specified in IEC 62271-103, includes three test categories: List 1, List 2, and List 3. While List 1 is generally recommended, List 3, introduced in 2008, has fewer breaking operations for T10 and T30 but significantly longer T60 test durations. This results in a harsher test environment, with arc energy levels at 100% for List 1, 125% for List 2, and 134% for List 3..



## Mechanical Endurance Rating : M2

The IEC standard defines mechanical endurance ratings to guide customers in selecting products based on performance and quality levels. Our spark adheres to the more stringent M2 mechanical endurance standard.



# Features of SPARK

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02

# 02. Features of SPARK

## Enhancing Power System Control with Confidence

Load break switches (LBS) are critical components within electrical power systems, offering the capability to safely interrupt or isolate circuits while carrying a load. They play a vital role in ensuring system reliability, operational efficiency, and personnel safety. This catalogue showcases our comprehensive range of LBS solutions, designed to meet the demanding requirements of modern power distribution networks

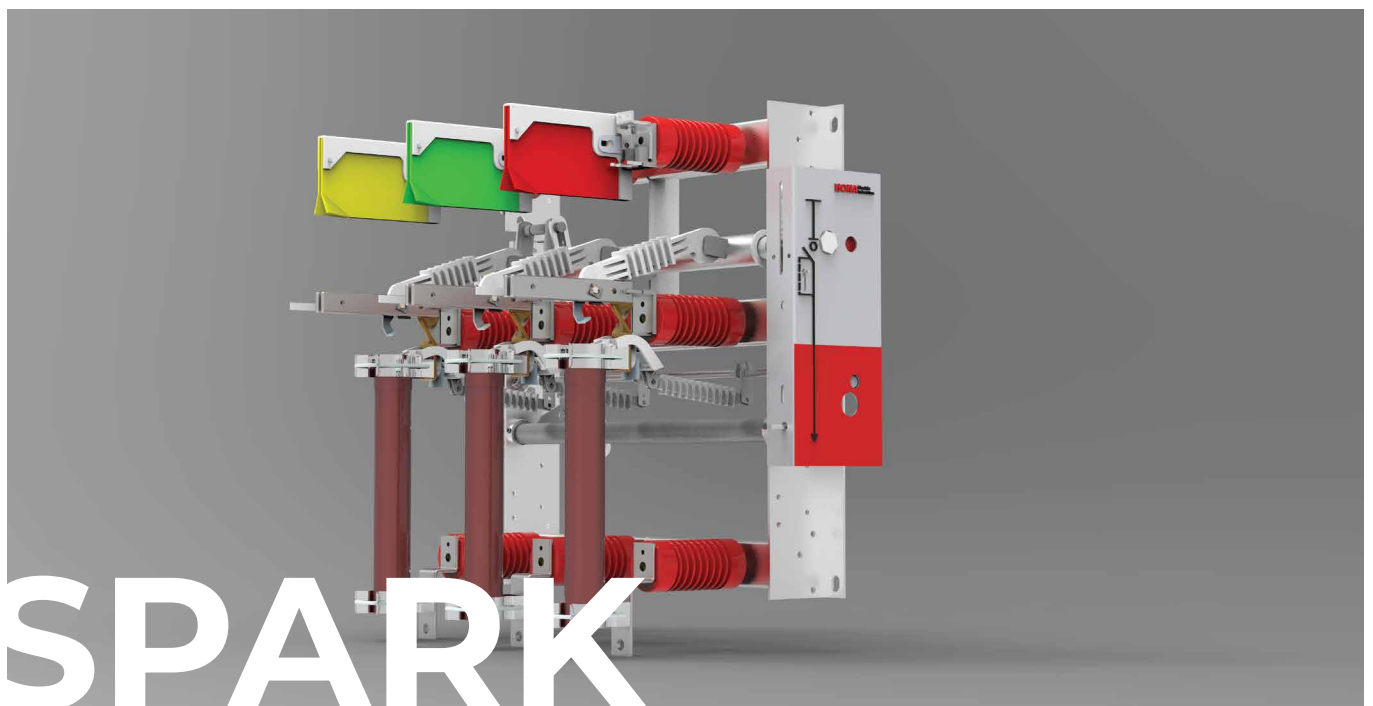
## Unmatched Features for Unwavering Performance

### Uncompromising Reliability :

Our LBS boast a robust and meticulously engineered design, ensuring extended operational life and minimal maintenance requirements. This translates to dependable performance and reduced downtime for your critical operations

### Safety at the Forefront :

We prioritize the safety of personnel and equipment. Our spark incorporate a comprehensive suite of safety mechanisms, including built-in interlocks to prevent accidental operation. Additionally, lockable handles offer an extra layer of security by restricting unauthorized access.



# 02. Features of SPARK

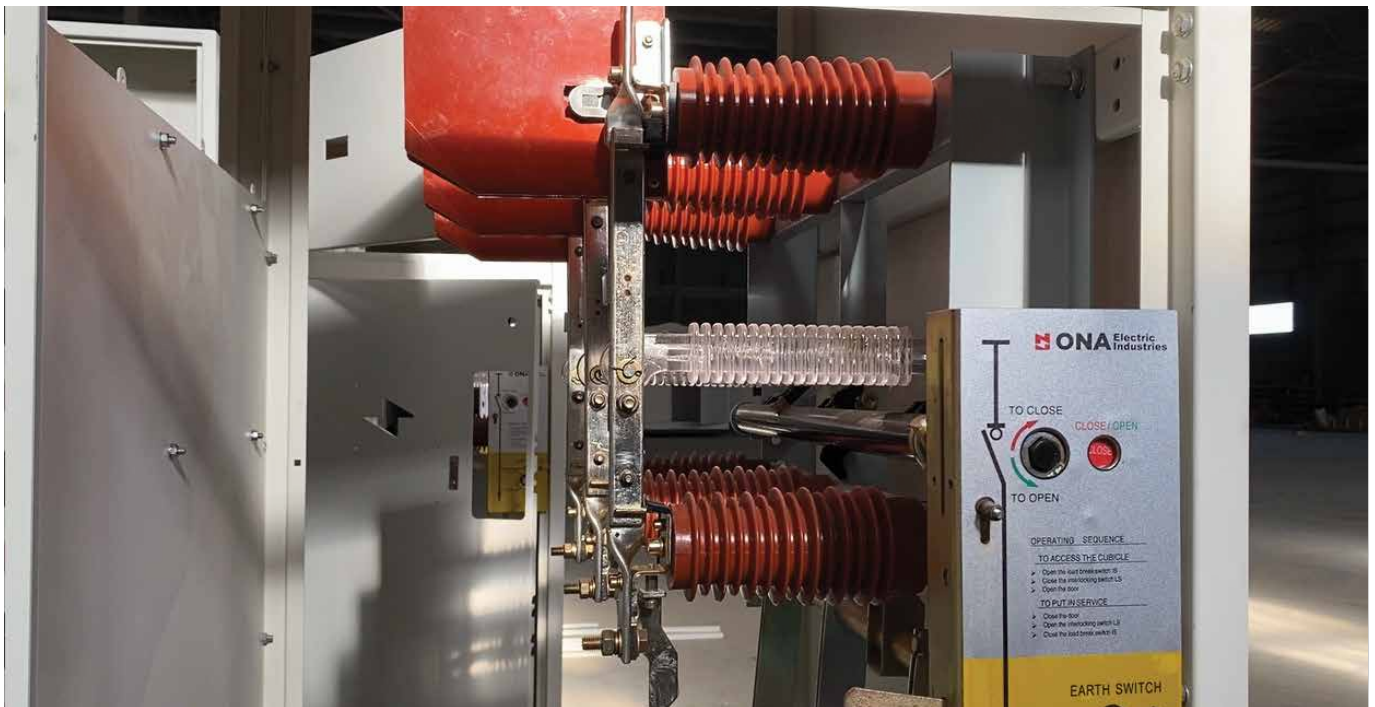
## **Streamlined Installation and Maintenance :**

We prioritize the safety of personnel and equipment.

Our **Spark** incorporate a comprehensive suite of safety mechanisms, including built-in interlocks to prevent accidental operation. Additionally, lockable handles offer an extra layer of security by restricting unauthorized access

## **Adaptable to Diverse Application :**

Our **Spark** cater to a wide spectrum of industrial environments. Whether you require a solution for medium-voltage distribution networks, transformer isolation, or motor control applications, we have the right LBS to meet your specific needs.



## **Advanced Technologies for Enhanced Safety**

### **Superior Arc Quenching :**

Our **Spark** integrate cutting-edge arc quenching technology. This technology effectively minimizes electrical hazards by rapidly extinguishing any arcing that may occur during operation, further ensuring personnel safety.

### **Standards Compliance :**

All our **Spark** are rigorously tested and certified to comply with stringent international standards, including IEC and ANSI. This provides you with the peace of mind of knowing that your investment adheres to the highest safety and performance benchmarks.

# 02. Features of SPARK



## **Standards Met: Certified for Safety & Performance**

Will meet IEC and ANSI standards for optimal safety and performance.



## **Arc Control: Minimized Electrical Hazards**

Advanced arc quenching technology maximizes safety by swiftly extinguishing arcing.



## **Diverse Applications: Wide Range of Uses**

Suitable for various industrial environments



### **Simplified Setup: Easy Installation & Maintenance**

Compact design streamlines installation and maintenance procedures



### **Safety First: Built-in Protection**

Interlocks prevent accidental operation, while lockable handles offer additional security.



### **Built to Last: Extended Operational Life**

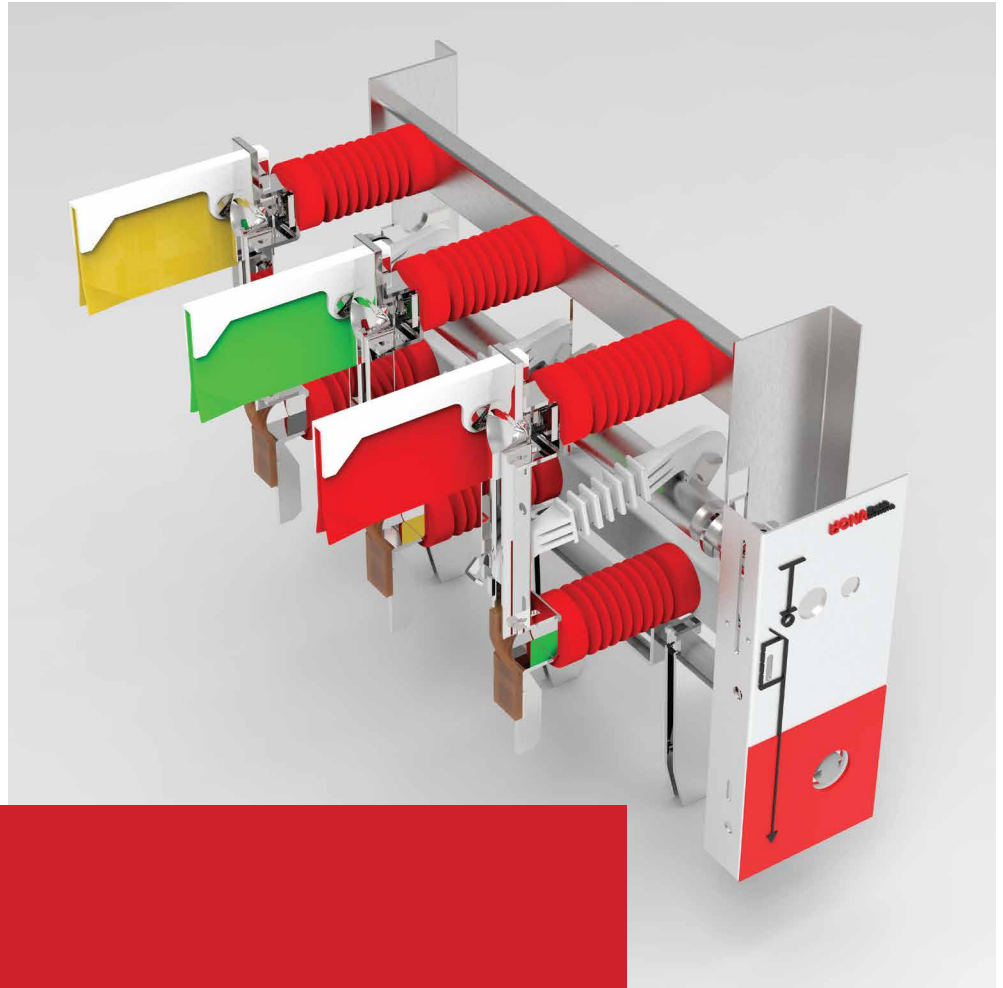
Robust design ensures long-lasting performance and minimal maintenance.

# Applications

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03

# 03. Applications



Load break switches are vital for electrical systems.

They ensure safe isolation, control circuits, and protect equipment.



# 03. Applications



## Utility Substations

### Enhanced Protection :

Load Break Switches (LBS) are integral components in utility substations, safeguarding transformers, generators, and critical infrastructure from electrical faults. Their rapid response capabilities minimize damage and ensure system uptime.

## Industrial Facilities

### Optimizing Operations :

Industrial facilities with demanding electrical needs, such as manufacturing plants and steel mills, rely on LBS for protection and control of their distribution systems. By providing efficient fault interruption, LBS prevent equipment damage and ensure uninterrupted operation.

## Renewable Energy Plants

### Enabling Sustainable Power :

LBS play a vital role in renewable energy installations like wind farms and solar power plants. They effectively manage fluctuating power output and provide essential protection against faults, ensuring reliable switching and protection for both generation and transmission lines.

# Specifications & Technical Parameters

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4

# 04. Specifications & Technical Parameters

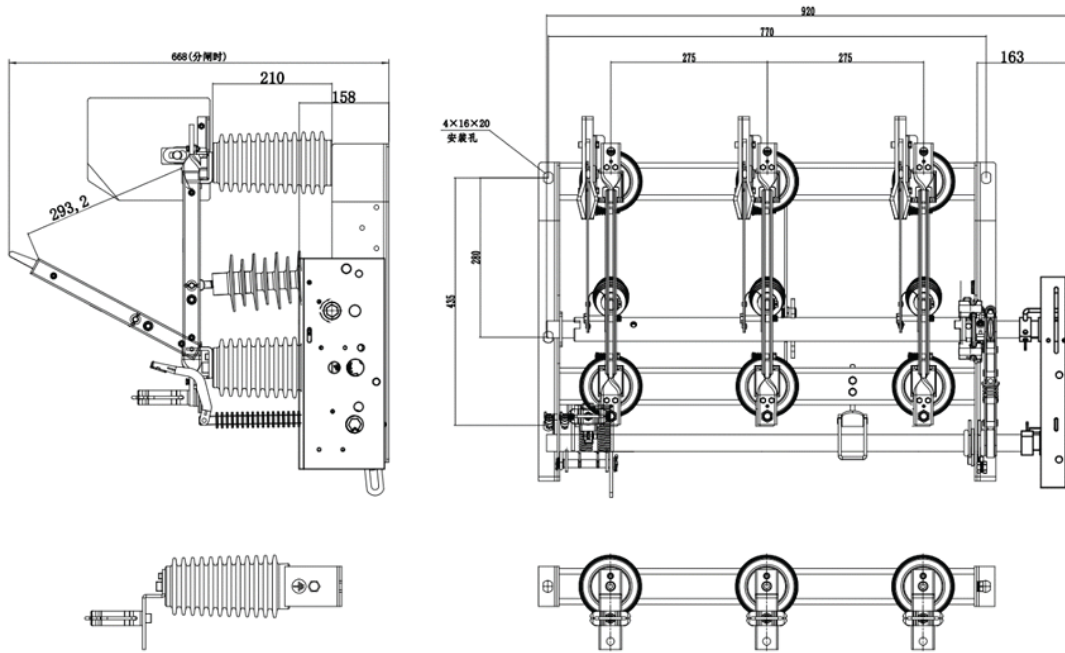
## ELECTRICAL SPECIFICATION

Model		ONA-12-630	ONA-24-630
Rated voltage		12 KV	24 KV
Rated Frequency		50/60 HZ	50/60 HZ
Rated Current		630 A	630 A
Rated short circuit closing current		50 K	50 K
Rated peak withstand current (Dynamic steady current)		50 K	50 K
Rated short - Time	1s	31.5 KA	25 KA
Withstand	2s	20 KV	25 KV
Current (Thermally stable current)	3s	18 KV	16 KV
Max. breaking capacity in co-operation with fuse		1600 KV	900 KV
Max fuse current		200 KV	200 KV
1 min power Frequency withstand Voltage (Effective value) Ground and phase	To earth and between pole	42 KV	65 KV
	Across isolating distance	48 KV	79 KV
Lightening impulse withstand Voltage (peak) 1.2 / 50 $\mu$ s	To earth and between pole	75 KV	125 KV
	Across isolating distance	85 KV	145 KV

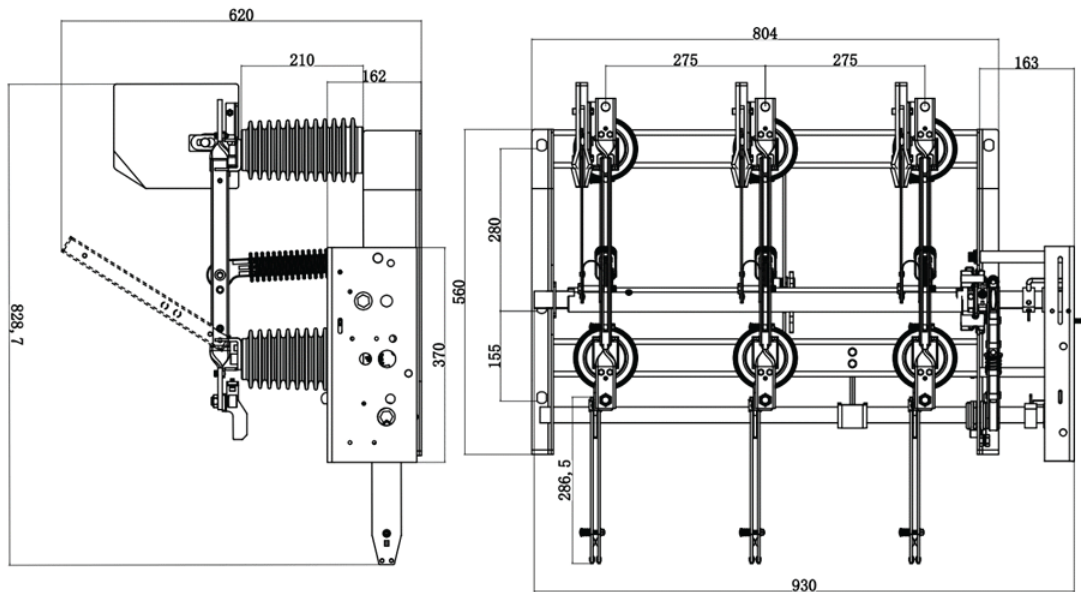
# 04. Specifications & Technical Parameters

## MECHANICAL SPECIFICATION

### For Fused 24K LBS



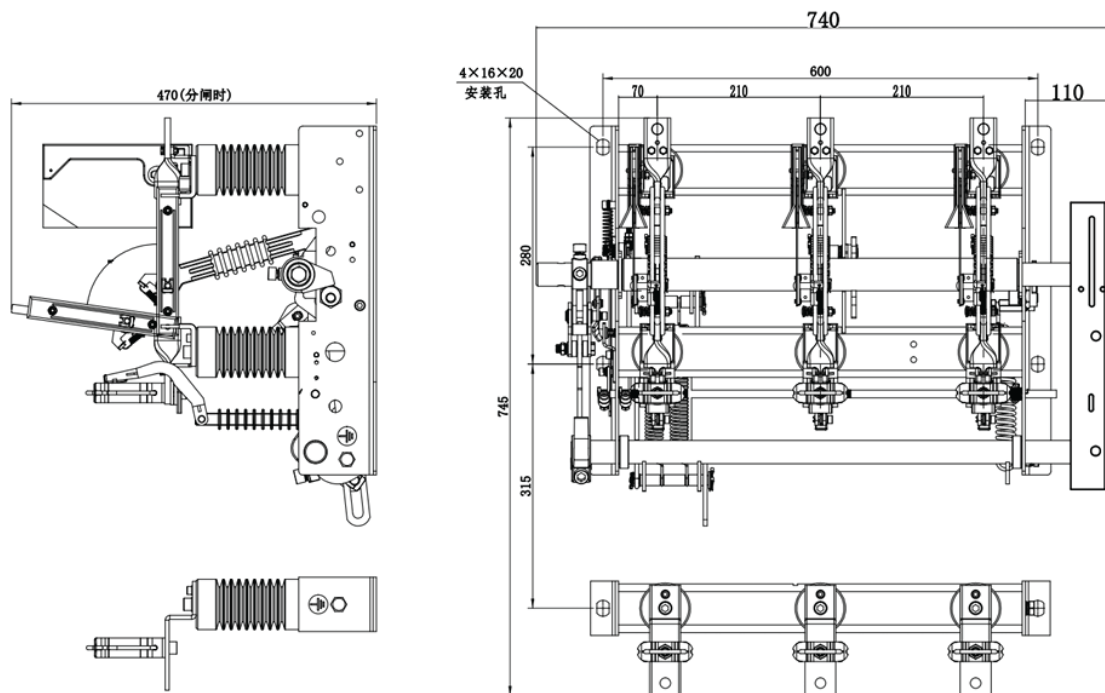
### For Cabled 24K LBS



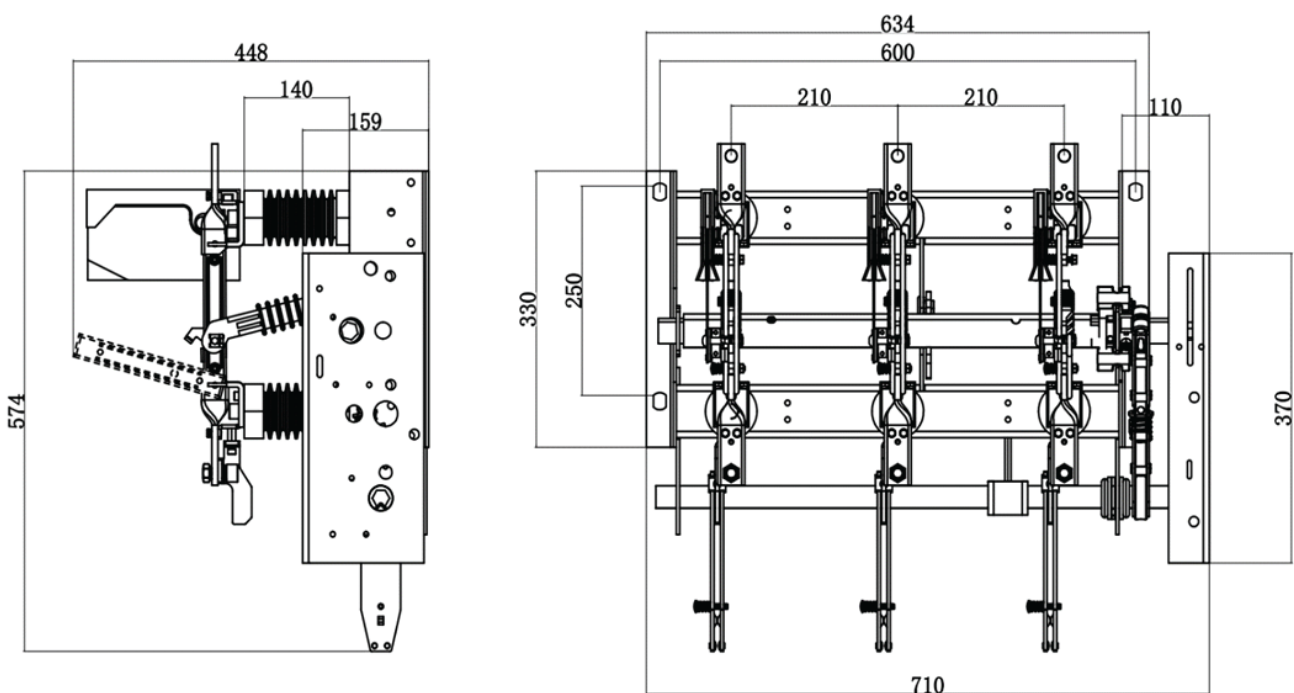
# 04. Specifications & Technical Parameters

## MECHANICAL SPECIFICATION

### For Fused 12K LBS

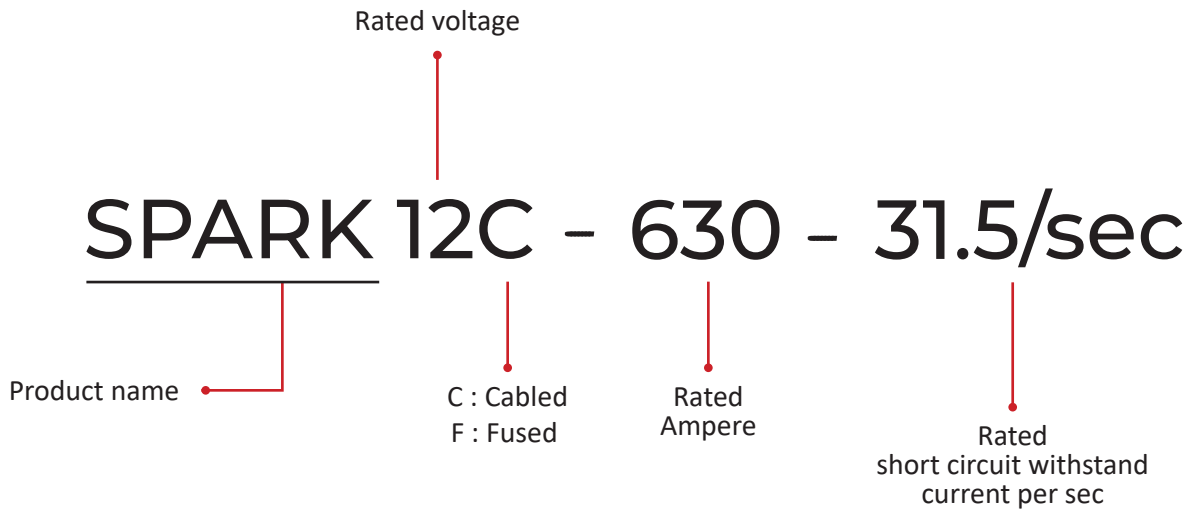


### For Cabled 12K LBS



# 04. Specifications & Technical Parameters

## MODEL DESIGNATION



# 04. Specifications & Technical Parameters

## ENVIRONMENTAL SPECIFICATION



### Ambient temperature

Maximum temperature: +40 °C  
Minimum temperature: -10 °C



### Ambient Humidity

The relative humidity of air  
daily average  $\leq 90\%$   
monthly average  $\leq 95\%$



### Altitude

No more than 1000m



### Seismic intensity

Does not exceed 8 degrees



### Surrounding air

Not significantly contaminated by dust, smoke, corrosive and/or flammable gases, vapors or salt spray.

# Maintenance & Support

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05



# 05. Maintenance & Support

## MAINTENANCE

### Simplified Maintenance Schedule

Our Spark is designed for minimal maintenance, ensuring optimal performance and reduced downtime.

Routine inspections are recommended every 6 months and include :

<b>Visual Inspection</b>	Checking for any signs of physical damage or abnormalities, such as cracks, dents, or corrosion
<b>Contact Inspection &amp; Cleaning</b>	Verifying contact integrity for proper conductivity and removing any build-up to ensure reliable operation.
<b>Component Replacement</b>	Prompt replacement of any worn or damaged components identified during inspection, such as fuses or insulators.
<b>Benifits</b>	Simplified maintenance procedures minimize downtime and ensure your system remains operational

We recommend referring to the detailed instructions provided in the user manual for proper inspection procedures.

# 05. Maintenance & Support

## **ACCESSORIES**

A range of accessories is available to customize your LBS for specific applications:

### **MANUAL HANDLE**

Enables safe and easy manual operation of the switch.

### **MOUNTING BRACKETS**

LBS securely mounted using brackets.

### **ARC QUENCHERS**

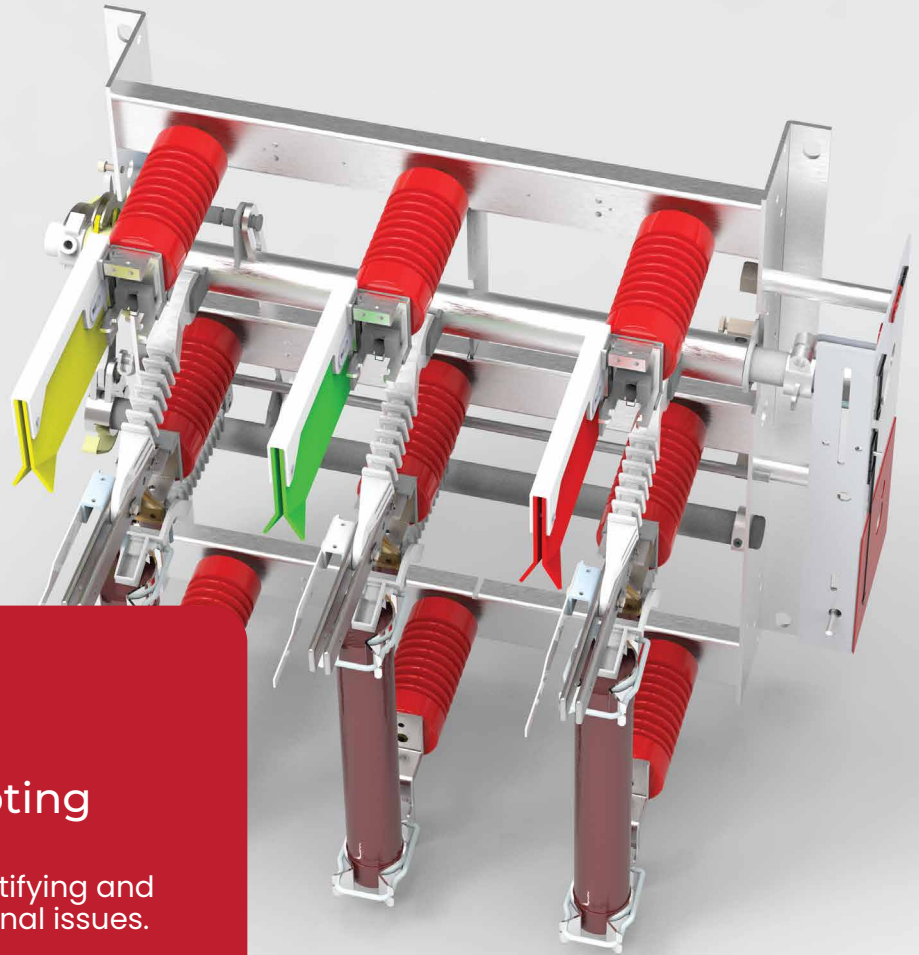
Offer an additional layer of safety by minimizing arcing during switching operations.



### ***Benifits***

Enhanced Safety ; Available accessories like arc quenchers provide an extra layer of protection during switching operations

# 05. Maintenance & Support



## Troubleshooting Guidance

Assistance in identifying and resolving operational issues.



## Replacement Parts

Access to genuine replacement parts to ensure continued optimal performance.



## Technical Expertise

Knowledge and experience to address any technical inquiries related to your LBS.

## Expert Technical Support

Our dedicated customer support team is ready available to assist you with any technical questions or troubleshooting needs.



# Ona Electric Industries **5-Year Warranty Commitment**

At Ona Electric Industries, we believe in the quality and durability of our products. That's why we offer a comprehensive 5-Year Warranty on all our electrical solutions, including our switchgear, transformers, smart grids, and more

## **Benefits of Choosing Ona Electric**

Long-Term Reliability: Trust in the longevity of your electrical systems.  
Top-Tier Support: Our dedicated support team is always here to assist.  
No Additional Costs: Enjoy full coverage with



New era of digital electricity  
solutions today



**Factory** Block 221, 6 Million South Industrial Region, 10th of Ramadan City, Sharqia.



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www.onaelectric-industries.com



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ONA Electric shall have the right to amend or modify the content of this brochure at any time and for any reason, without giving advance notice.

The image features a solid red background. In the upper left quadrant, there is a white geometric shape that resembles a stylized 'L' or a corner cut. The top edge of this shape is horizontal, the left edge is vertical, and the bottom edge is a diagonal line sloping downwards from left to right. The rest of the background is a uniform red color.

New era of digital electricity  
solutions today



## Troubleshooting Guidance

Assistance in identifying and resolving operational issues.



## Replacement Parts

Access to genuine replacement parts to ensure continued optimal performance.



## Technical Expertise

Knowledge and experience to address any technical inquiries related to your LBS.