ONA Electric Industries

OSP

ONA Secondary Protection
Ring Main Unit

ON Series

Reliable and Efficient Power Distribution

Ensure consistent and reliable power delivery with our high-performance ring main units

TABLE OF **CONTENT**

Description

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.

Ring Main Unit
Engineered for excellence

02. RMU:Engineered for excellence

Features of OSP

Unparalleled Reliability

The OSP is meticulously engineered for exceptional reliability. Its robust and durable construction minimizes the risk of malfunctions, ensuring a continuous and dependable power supply. This translates to reduced downtime and maintenance costs, maximizing Your operational efficiency.

Compact & Versatile Integration

The ONA OSP's compact design makes it ideal for space-constrained environments. Its versatility allows for easy installation and seamless integration into existing systems, even in tight locations.
This flexibility simplifies deployment and optimizes space utilization.

02. RMU:Engineered for excellence

Features of OSP

Eco-Conscious Design

The ONA OSP aligns with your commitment to sustainability. We utilize environmentally conscious materials and implement eco-friendly manufacturing processes wherever possible.
This approach minimizes our environmental footprint while delivering exceptional performance.

Advanced Safety Features

The ONA OSP prioritizes the safety of both personnel and equipment. We incorporate cutting-edge protective features to mitigate potential hazards.

User-Friendly Interface

The ONA OSP simplifies operation with its user-friendly interface. The intuitive design allows for easy monitoring and control, empowering efficient energy management. This user-centric approach
minimizes training requirements and maximizes operator efficiency.

02. RMU:Engineered for excellence

Safety Features Breakdown

1 Interlocking Mechanisms

Prevent accidental or incorrect operation of switches and earthing devices, ensuring safe operation sequences.

2 Earth Fault Indicator

Detects and indicates fault currents, allowing for rapid isolation and repair, minimizing equipment damage and downtime.

3 Grounding and Earthing

Proper grounding and earthing ensure safety by safely dissipating fault currents into the ground, protecting personnel and equipment.

4 Manual Load Transfer

Provides uninterrupted power supply by enabling manual switching to an alternate source in case of a fault, ensuring operational continuity.

5 Locking Mechanisms

Prevent unauthorized access and operation, minimizing the risk of accidental tampering or misuse.

Applications

03

03. Applications

The ONA OSP offers unparalleled performance and reliability across a wide range of medium voltage applications. Its compact design, advanced features, and robust construction make it a versatile solution for:

Industrial Facilities

Industries with heavy electrical equipment, such as manufacturing plants, chemical plants, and steel mills, Fuses on RMU for the protection and control of their electrical distribution systems.

Utility Substations

OSP are widely used in electrical utility substations to control and protect transformers, generators, and other critical infrastructure from electrical faults.

Renewable Energy Integration

OSP are crucial in wind farms, solar power plants, and other renewable energy installations to manage the variable power output and protect against faults.
They provide reliable switching and protection for both generation and transmission lines

Specifications & Technical Parameters

04

04. Specifications & Technical Parameters

Technical Specification

RMU		ONA-12	ONA-24
Rated voltage	UR (KV)	12	24
Rated Insulation Voltage	US (KV)	28	50
Thermal withstand current per sec	I (KA)/(Sec)	630	630
Rated frequency	Fr (HZ)	25	25
Rated normal current (40 °C)	IR (A)	50	50
C.S.A of the main bus bar and connectors	$(mm)^2$	630	630

04. Specifications & Technical Parameters

Enviromental Specification

Ambient temperature

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

Ambient Humidity

The relative humidity of air
daily average ≤ 90 %
monthly average ≤ 95 %

Altitude

No more than 1000m

Seismic intensity

Does not exceed 8 degrees

Surroinding air

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

Note

If your environment falls outside these parameters, please contact us for a customized solution

05

Standards & Certifications

05. Standards and Certifications

Confidence Through Compliance

Our OSP is designed to exceed the rigorous standards set forth by the International Electrotechnical Commission (IEC) 62271-102. This globally recognized standard ensures our equipment meets the highest safety and performance requirements for alternating current disconnectors and earthing switches used in high-voltage applications.

IEC 62271-102 Compliance

Our OSP is designed and manufactured to exceed the requirements of IEC 62271-102, the industry-leading standard for alternating current disconnectors and earthing switches. This ensures unparalleled safety, reliability, and compliance.

Safety

Equipment designed and built to meet strict safety protocols.

Performance

Reliable operation and functionality under demanding conditions.

Compatibility

Seamless integration with existing medium voltage systems.

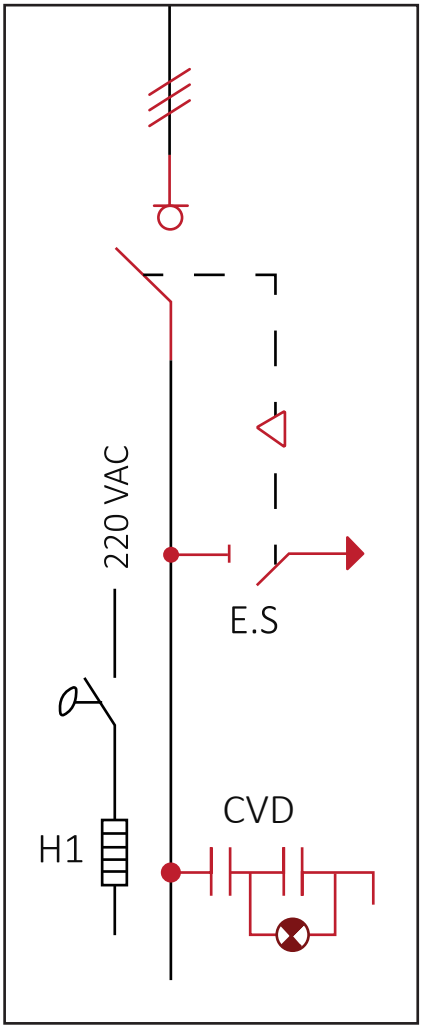
OSP Models

06. OSP Models

Incoming LBS without Fuse

Rated voltage (KV)	Width (mm)	Depth (mm)	Height (mm)	Panel code
12	600	800	1500	OSP-S12C
24	800	1100	2000	OSP-S24C

Optional equipment: Earth Fault Indicator & Surge arrestor
for customized solution, please contact us.

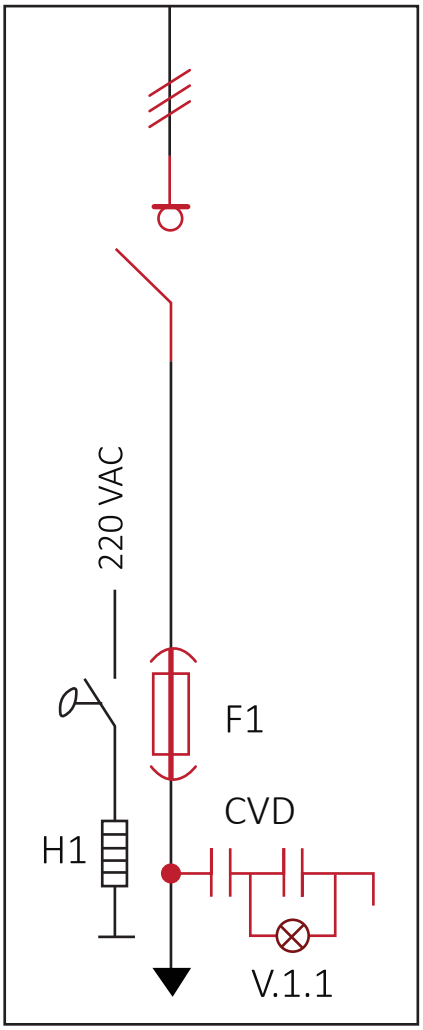


06. OSP Models

Outgoing LBS with Fuse

Rated voltage (KV)	Width (mm)	Depth (mm)	Height	Panel code
12	600	800	1500	OSP-S12F
24	800	1100	2000	OSP-S24F

Optional equipment: Earth Fault Indicator & Surge arrestor & Earthing Switch & Fuses
for customized solution, please contact us.

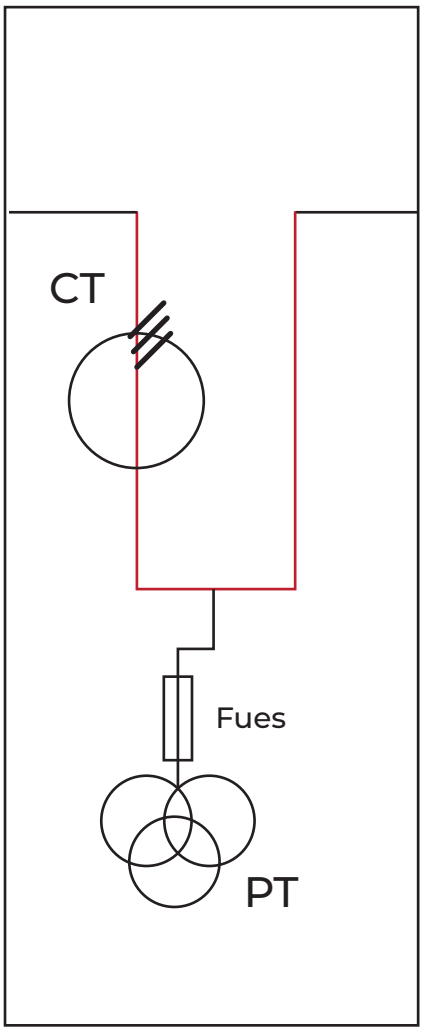


06 OSP Models

Measuring enclosure

Rated voltage (KV)	Width (mm)	Depth (mm)	Height (mm)	Panel code
12	600-800	1100	2000	OSP-M12
24	800-1000	1100	2000	OSP-M24

Optional equipment: KWH & Power meter
for customized solution, please contact us.



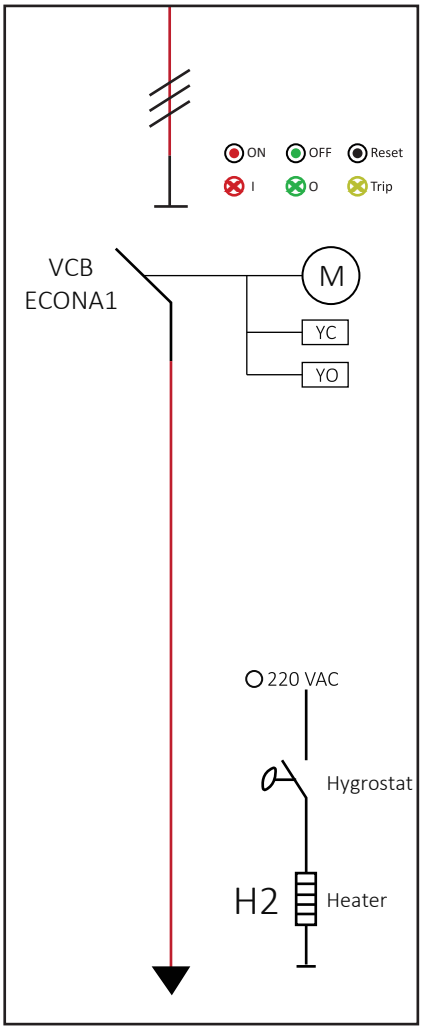
06. OSP Models

Outgoing VCB

An Outgoing Side Vacuum Circuit Breaker (VCB) inside a Ring Main Unit (RMU) that is **SF6-free** is designed to provide reliable protection and control for electrical distribution. It uses vacuum technology for interruption, ensuring safety and efficiency without the environmental impact of SF6 gas.

Rated voltage (KV)	Width (mm)	Depth (mm)	Height (mm)	Panel code
12	600	1100	2000	OSP-E12
24	600	1100	2000	OSP-E24

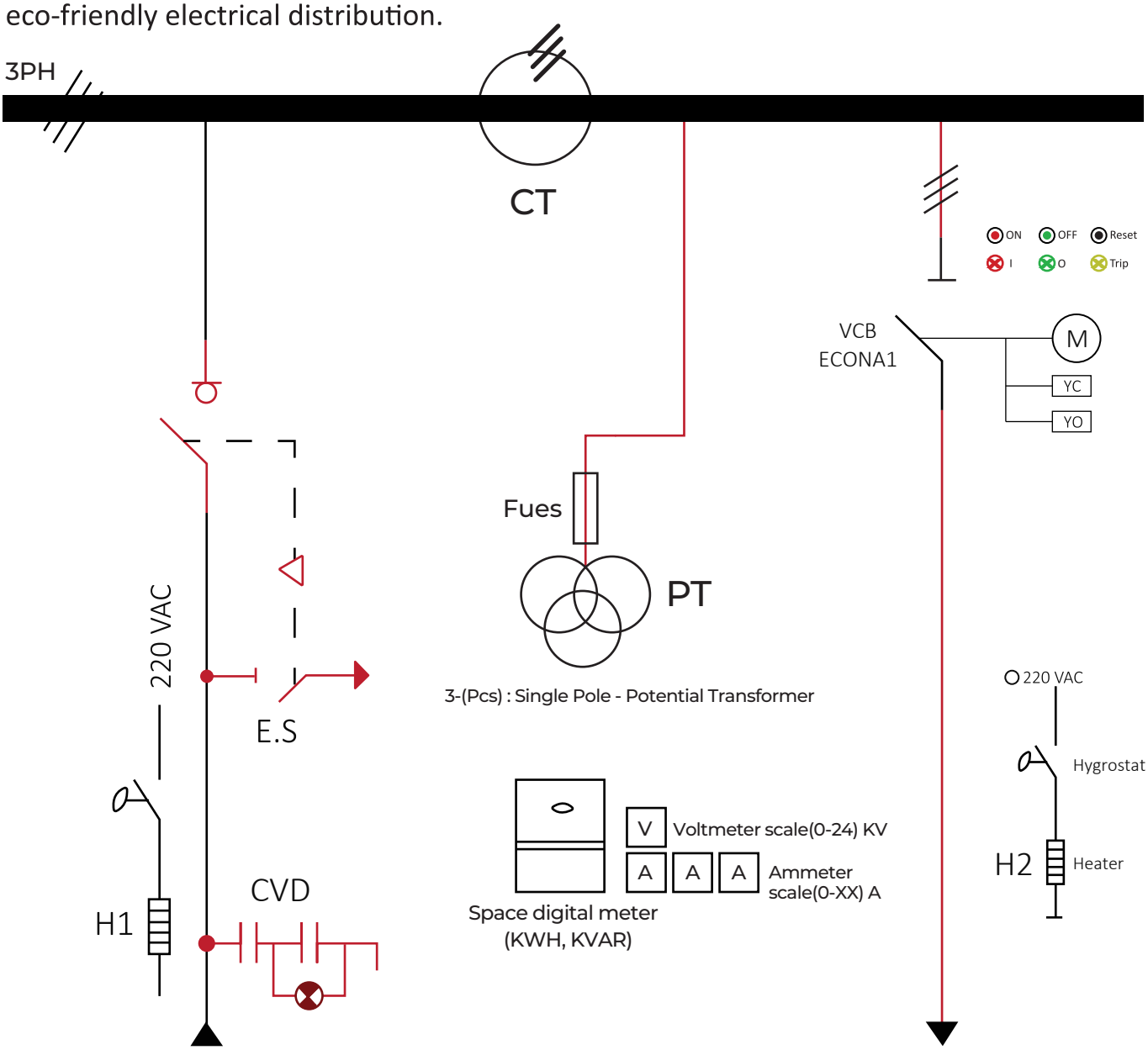
for customized solution, please contact us.



06. OSP Models

SMART Solution

A smart Ring Main Unit (RMU) solution integrates an incoming Air Load Break Switch (LBS) panel, a metering panel, and outgoing SF6-free Vacuum Circuit Breakers (VCBs). This advanced RMU enhances operational efficiency by enabling real-time monitoring and control. It connects seamlessly with Remote Terminal Units (RTUs) and SCADA systems, facilitating data collection and remote management, ensuring reliable and eco-friendly electrical distribution.



SMART
Solution

The core of reliability

07

07. The core of reliability

RMU Main Component

1. VCB - ECONA1

Interrupts faults, controls power flow, vacuum interrupter, reliable, fast, low maintenance, environmentally friendly, critical for protection and control.

2. LBS ONA-12-630 & ONA-24-630

Universal Compatibility:

These robust LBS models are suitable for use in AC power networks with frequencies of either 50 Hz or 60 Hz, offering operational flexibility.

Durable Construction:

Manufactured with high-grade materials, the ONA AIS LBS ensures exceptional durability and resistance to harsh environmental conditions, minimizing maintenance requirements and maximizing service life.

Advanced Switching Technology:

The LBS incorporates cutting-edge technology to guarantee reliable switching operations, minimizing downtime and ensuring smooth power distribution.

07. The core of reliability

RMU Main Component

3. Current and voltage transformers

Precise Measurement:

These integrated transformers provide accurate and reliable measurement of current and voltage flowing through the RMU, enabling effective monitoring and control of power consumption by connected loads.

4. Earthing switches

Enhanced Safety

The earthing switch plays a crucial role in safety by ensuring a safe closing circuit path in the event of a short circuit within the switchgear. This safeguards personnel and equipment from potential damage or injury during fault situations.

5. Voltage Indicator

Real-Time Monitoring

The voltage indicator provides real-time measurement of the voltage present on the main busbar of the OSP.
This allows for continuous monitoring of system voltage levels and facilitates proactive maintenance strategies.

07. The core of reliability

RMU Main Component

6. Metering Devices (Optional)

Comprehensive Monitoring & Control

A range of metering devices can be integrated into the ONA OSP based on specific system requirements. These devices offer comprehensive measurement capabilities, including energy consumption, power factor, harmonics, current, and voltage. Examples include voltmeters, ammeters, and energy meters.

7. Medium Voltage (MV) Fuses

Reliable Fault Protection

MV fuses filled with quartz sand provide effective protection against short-circuit currents and overcurrents. When exposed to such events, the sand extinguishes the arc and disperses heat, interrupting the fault current.

Visual Fault Indication

The MV fuses incorporate a mechanical indicator system. Upon overcurrent situations, the melting element melts, triggering a pin to move to a designated position, providing a clear visual indication of a blown fuse.

voltage	The transformer rating KVA	25	50	63	100	160	200	300	500	630	800	1000	1500
12 KV	Normal current for (H.R.C) fuses	6.3	6.3	10	16	20	25	40	50	63	100	100	160
24 KV		6.3	6.3	6.3	10	16	16	25	40	40	40	63	80

Onaelectric Industries RMU integrated with smart grid features

1. **SMART GRID INTEGRATION:**

   The RMU is designed to seamlessly integrate with smart grid technologies, enhancing energy distribution efficiency and reliability.

2. **REAL-TIME MONITORING:**

   It allows for real-time monitoring of electrical parameters, providing operators with instant data on system performance and health.

3. **AUTOMATED FAULT DETECTION:**

   The OX5 GridSafer EMS includes automated fault detection capabilities, quickly identifying and isolating faults to minimize downtime and enhance safety.

4. **LOAD MANAGEMENT:**

   The system can manage and optimize loads across the grid, ensuring balanced energy distribution and reducing peak demand.

5. **DATA ANALYTICS:**

   Advanced analytics tools within the EMS enable predictive maintenance and operational insights, allowing for proactive management of the electrical network.

6. **REMOTE CONTROL CAPABILITIES:**

   Operators can remotely control and configure the RMU, facilitating quick responses to changing grid conditions without needing physical access.

7. **ENHANCED SAFETY FEATURES:**

   The integration of smart grid technologies enhances safety protocols, including advanced protection schemes and automated alerts for abnormal conditions.

8. **ENVIRONMENTAL BENEFITS:**

   By optimizing energy flow and reducing losses, the system contributes to lower carbon emissions and a more sustainable energy infrastructure.

9. **USER-FRIENDLY INTERFACE:**

   The OX5 GridSafer EMS features an intuitive interface for easier navigation and management, making it accessible for operators of varying skill levels.

10. **SCALABILITY:**

    The system is designed to be scalable, accommodating future expansions and upgrades as grid demands evolve.

11. **INTEROPERABILITY:**

    It supports communication with various devices and systems, ensuring compatibility with existing infrastructure and third-party solutions.

12. **IMPROVED RELIABILITY:**

    The integration of smart grid features enhances the overall reliability of the power supply, reducing the frequency and duration of outages.

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 without hidden fees.

ONA Electric Industries

ONA Electric Industries

New era of digital electricity solutions today

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

+201091911654

eg@onaelectric-industries.com

www.onaelectric-industries.com

ONA Electric Industries