Innovation for MV distribution

Introducing Premset switchgear, a new way to design, install, and operate MV networks
Premset architecture: Innovation to meet your needs

The experience of a leader in MV distribution

A global player with local capabilities
Schneider Electric™ has 150,000 people in more than 100 countries dedicated to delivering reliable products and solutions. It’s this global reach that helps us ensure high quality and local project and service capabilities, no matter your location.

Combining technologies for breakthrough innovation
Combining our expertise in both air-insulated switchgear (AIS) and gas-insulated switchgear (GIS), we’re breaking new ground with the extremely reliable Shielded Solid Insulation System (2SIS).

Network management making you smart grid-ready
Add to this our familiarity with all aspects of MV network management and you have a partner who knows what the smart grid will mean for your business, and how best to keep you at the forefront of technology.

A new generation of switchgear technology
Premset™ architecture represents the future of MV distribution, embracing the smart grid’s functionality and changing the way our industry views the design, installation, and operation of MV distribution installations.

A technological breakthrough, opening the way to unprecedented safety, efficiency, and ease of use:

- Safe and reliable in any environment: Insulation and screening of all live parts ensure a trouble-free service life, while innovative technology enhances peace of mind.

- Flexible, simple, modular, and functional: Easy to install and easy to use, with operator-friendly switchgear and no servicing of main units thanks to 2SIS.

- Smart grid-ready, distributed intelligence: Advanced protection, control and monitoring, fully integrated for higher dependability and energy efficiency.

Building a smarter future with reliable, efficient energy
Efficiency
Smart grid and advanced digital management solutions across your network

The electricity market is changing. Every day, end-users’ expectations increase and suppliers worldwide gain a greater awareness of energy’s environmental impact. Meanwhile, overall consumption is steadily growing. But as this reliance on electricity grows globally, the ways in which we produce, distribute, and use energy must also evolve. The solution will involve not only smarter demand, but also smarter supply and a smarter grid.

Intelligent, smart grid-ready solutions
To meet these challenges, we need to enhance our electrical distribution networks with intelligent, smart grid-ready solutions that bring a new level of efficiency through advanced monitoring and control. This is precisely what Premset architecture is designed to do, enhancing your installation with such features as:
> Feeder automation, with switchgear including built-in communication and local intelligence
> Load management, with integrated smart metering
> Asset management, with advanced switchgear and transformer monitoring
> Automatic Transfer System, with integrated source transfer solution to reduce power supply interruption.

Architecture with distributed intelligence
The intelligent electronic devices used in Premset solutions allow easy integration, based on a standard communications protocol, with a plug-and-play scanning system for easy configuration. All this adds up to a flexible system with integrated Web technology, pre-engineered and pre-tested, which you can easily upgrade as necessary. With Premset architecture, you can easily build a smarter MV distribution system.

Reliability
Long-lasting performance with the Shielded Solid Insulation System (2SIS)

In addition to its impressive ability to maintain optimal performance in any environment, the Shielded Solid Insulation System is also the combination of robustness with a flexible and modular design, allowing its functional blocks to be used in any combination.

Extending protection to the entire switchgear
While insulation has previously been used, Premset switchgear is the first global product using solid and shielded insulation. The system is applicable for all network functions, including:
> Load break switches or circuit breakers
> Integrated metering unit
> Current and voltage transformers.

Enhanced safety, reduced internal arcing risk
The earth shielded system helps to extend the equipment service life, resulting in lower total cost of ownership (TCO). And, with no part of the main circuit exposed to free air, you’ll also:
> Reduce risk of internal arcing
> Optimize maintenance operations
> Improve the safety of people and assets.

Shielded Solid Insulation System (2SIS)
In addition to its impressive ability to maintain optimal performance in any environment, the Shielded Solid Insulation System is also the combination of robustness with a flexible and modular design, allowing its functional blocks to be used in any combination.

Intelligent Electronic Devices
Communication / Radio / GSM / GPRS / Ethernet
Fault detection
Protection
Measurement
Local control
Remote control
2SIS is applicable for any switching function such as load break switches or circuit breakers, new compact metering functions, or current and voltage transformers.
**Flexibility**

A compact and modular design for all functions

Premset range is a functional switchgear, with the added advantage of being both simplified and modular. The end result is a system that is easy to choose, easy to use, cost effective, and facilitates both simple installation and modification.

**Fast, stress-free installation, upgrading, and maintenance**

Because the range uses the same design for every configuration, customizing the switchgear to your needs is easier than ever before. And with its standardized dimensions, reduced footprint, and simple front power connections, time and money spent installing Premset switchgear is greatly reduced.

Every aspect of the system is designed with the intention of making installation and adaptations as seamless as possible, including:

- **Straightforward assembly** because identical busbar and cable connections are used for the entire range.
- **Easy-to-install** patented universal flat power connection system.
- **Easy cabling** since all cables connections are at a height of 700 mm.
- **Optimized** maintenance and servicing requirements.

Upgrading is easy, with the same auxiliaries, accessories, and monitoring devices being used for the entire range. In fact, this ‘plug and play’ design also allows on-site additions that do not require any special training, tools, or adjustments.

Lastly, end-of-life management is easier, because the innovative design means there are far fewer labour and administrative considerations.

**3 ways that total cost of ownership (TCO) is reduced:**

- **Up to 30%**
  - The increase in life expectancy due to the absence of pressurized gases.

**Trouble-free installation**

With an up to 50% reduction in footprint.

**Easy cabling**

All cables connections are aligned in front at a height of 700 mm, along with extended possibilities of cable entry arrangements (bottom-front, bottom-rear, top-rear, etc.).
Safety
An intuitive 3-in-1 architecture for breaking, disconnection, and earthing

With its 3-in-1 switchgear design, the Premset system’s breaking, disconnection, and earthing functions are all integrated into a single disconnecting switch or disconnecting circuit breaker.

There are also only three possible operating positions: closed, open and disconnected, and earthed.

Simple and user-friendly operation
The Premset 3-in-1 system has proven itself to be the most reliable and end-user friendly, providing:

- Earthing in a single operation
- Intuitive mimic diagram and operation
- Direct downstream cable earthing
- Positively driven built-in interlocks
- Easy front access to cable test injection points.

Intuitive operation reduces worker risk
With only two operations from line to earth – one to open and disconnect, and one to earth – the Premset range ensures optimized operating safety, keeping all aspects as simple as possible. Additionally, standard built-in safety interlocking between the main and earthing functions is keyless and positively driven, which contributes to making every interaction with the unit safe and easy.

The safest MV switchgear in its class
This three-position scheme provides an integrated cable test feature, implemented by dedicated earthed rods, accessible from the front, without needing to enter the cable box or unmount cable terminations.
Premset
Standards and technical characteristics

Premset
15 kV
Compact modular vacuum switchgear

Premset units meet all the following recommendations, standards, and specifications:

Technical characteristics

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>7.2 kV</th>
<th>12 kV</th>
<th>15 kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated current</td>
<td>630 A</td>
<td>21 kA 3s</td>
<td>25 kA 3s</td>
</tr>
<tr>
<td>Maximum short-time withstand</td>
<td>20 kA 4s</td>
<td>21 kA 3s</td>
<td>25 kA 3s</td>
</tr>
<tr>
<td>Rated BIL withstand voltage</td>
<td>95/110 kV</td>
<td></td>
<td></td>
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<tr>
<td>Rated PF withstand voltage</td>
<td>42/48 kV 1 min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions W x H x D</td>
<td>375 x 1600 x 910</td>
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<tr>
<td>Internal arc withstand</td>
<td>A-FLR 21 kA 1 s</td>
<td></td>
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</tbody>
</table>

Standards information

Premset units meet all the following recommendations:

<table>
<thead>
<tr>
<th>Standards</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC 62271-1</td>
<td>Common specifications for high voltage switchgear and controlgear</td>
</tr>
<tr>
<td>IEC 62271-200</td>
<td>AC metal-enclosed switchgear and controlgear for rated voltage above 1 kV and up to and including 52 kV</td>
</tr>
<tr>
<td>IEC 62271-103</td>
<td>Switches for rated voltages above 1 kV and less than 52 kV (replaces IEC 60265-1)</td>
</tr>
<tr>
<td>IEC 62271-100</td>
<td>High-voltage alternating current circuit breakers</td>
</tr>
<tr>
<td>IEC 62271-102</td>
<td>High-voltage alternating current disconnectors and earthing switches</td>
</tr>
<tr>
<td>IEC 61958</td>
<td>High-voltage prefabricated switchgear and controlgear assemblies – voltage presence indicating systems</td>
</tr>
<tr>
<td>IEC 60529</td>
<td>Degrees of protection provided by enclosures (IP Code)</td>
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<tr>
<td>IEC 60044</td>
<td>Current and Voltage transformers</td>
</tr>
<tr>
<td>IEC 60255</td>
<td>Electrical relays</td>
</tr>
</tbody>
</table>

Schneider Electric:
A partner you can trust

Delivering innovative products, services, and solutions worldwide

With more than 255 service centres in 72 countries and millions of MV units installed worldwide, Schneider Electric is the ideal partner to optimize your installation’s efficiency throughout its life cycle. Peace of mind is critical when overseeing operations, and our Premset architecture, as well as our solutions and services, are all designed to bring safe, reliable energy to any environment while minimizing maintenance and ensuring the easiest end-of-life treatment.

We pride ourselves on consistently bringing both reliability and innovation to the table, devoting 4 to 5 per cent of sales annually to R&D. It’s this history of investment that has proactively made us smart grid-ready, with products and solutions that support all your MV needs.

Our vision isn’t just to connect our customers to the smart grid, but also to connect them with each other, facilitating smarter interactions and leading to increased energy management capabilities. In moving toward this goal, we’re confident our greatest achievements are still ahead of us.

150 000 people in 100+ countries
5% of sales devoted to R&D
Visit www.schneider-electric.com/premset