



ABB OY DISTRIBUTION SOLUTIONS

# Protection and control REX615

## Product introduction presentation



An aerial photograph of a modern city skyline, featuring a river, green spaces, and various buildings, including a prominent skyscraper. The image is used as a background for the left side of the advertisement.

## Protection and control REX615

All-in-one protection for power generation and distribution applications

**REX615 is a freely configurable all-in-one protection and control relay for power generation and distribution applications, representing the next step for ABB's 615 and 620 series relays.**

Multiapplication coverage combined with a fully modular and scalable hardware and software ensures maximum flexibility and optimal cost-effectivity throughout the relay life cycle – and supports sustainability.



# Protection and control REX615

The story continues – introducing REX615

## REX615 – 1 relay in 2 sizes

- REX615 – 615 and 620 series relays merged into one
- Available in two sizes – standard and wide
- All-in-one protection and control for utility and industrial applications
- Global coverage – supporting IEC, ANSI, CN standards and conventions



# Protection and control REX615

The next step for Relion® 615 and 620 series relays

## Addressing aging infrastructure by future-proofing the grid

- Ideal for one-to-one replacement as the next step for 615 and 620 series relays
- Easy customization and adaptation to changing requirements with modular and scalable hardware and software
- Extensive functionality to support the increasing integration of renewables and evolving grid codes

## Supporting the digitalization of substations

- Standardized IEC 61850-compliant communication for smooth interoperability between substation automation devices – and a cost-effective and ecological choice
- IEC 61850 9-2-based process bus for future integration with centralized protection
- Optimal cyber security to safeguard critical infrastructure



## Optimizing asset management

- Brand-new but with a strong history – familiar relay saves time and efforts
- Less to learn and less spare devices to store with one relay covering multiple application areas
- Extensive life cycle services – long-term global partner with longtime experience close to you in your language



## Complying with evolving regulations

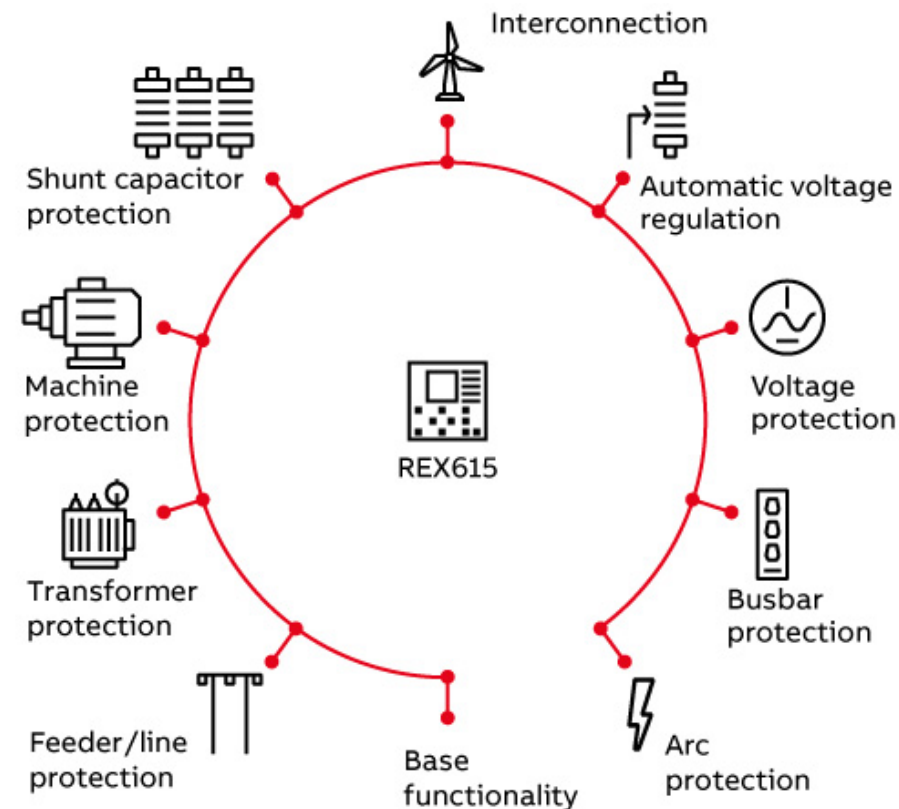
- Compliance with the latest grid codes to ensure renewables remain connected during disturbances
- Extensive protection functionality to ensure compliance with the regulation of electricity utilities and minimize costly downtime
- Minimized environmental impact with sustainable design, production, operation, maintenance and end-of-life management

# Protection and control REX615

Application package concept for maximum convenience and flexibility

## 12+2 application packages to support a large variety of applications

- Wide application coverage for utility and industrial applications
- Large selection of ready-made application packages to choose from
- Possibility to flexibly combine application packages to meet application-specific requirements



# Protection and control REX615

## Areas of application

### Supported applications

#### Base functionality\*

- Measurements and power quality
- Supervision
- Control
- Recorders

Note! With the right redundant communication module, REX615 can be used as a merging unit.

#### Arc protection

- Three lens-type arc flash light detection sensors

Note! Requires a communication module and arc flash light detection sensors.

#### Feeder/Line protection

- Extensive earth-fault protection
- Fault locator
- Line differential protection

Note! Requires a suitable communication module with a protection communication channel.

#### Machine protection

- Protection of asynchronous and synchronous machines

#### Power transformer protection and control

- Protection of two-winding power transformers
- On-load tap-changer control
- Automatic voltage regulation

#### Interconnection protection

- Protection of interconnection points of distributed generation units

#### Shunt capacitor protection

- Protection of single Y, double Y and H-bridge connected capacitor banks
- Protection of harmonic filter circuits

#### Voltage protection

- Voltage protection
- Frequency protection
- Synchrocheck
- Load shedding

#### Busbar protection

- High-impedance based busbar protection for single busbars/bus sections

# Protection and control REX615

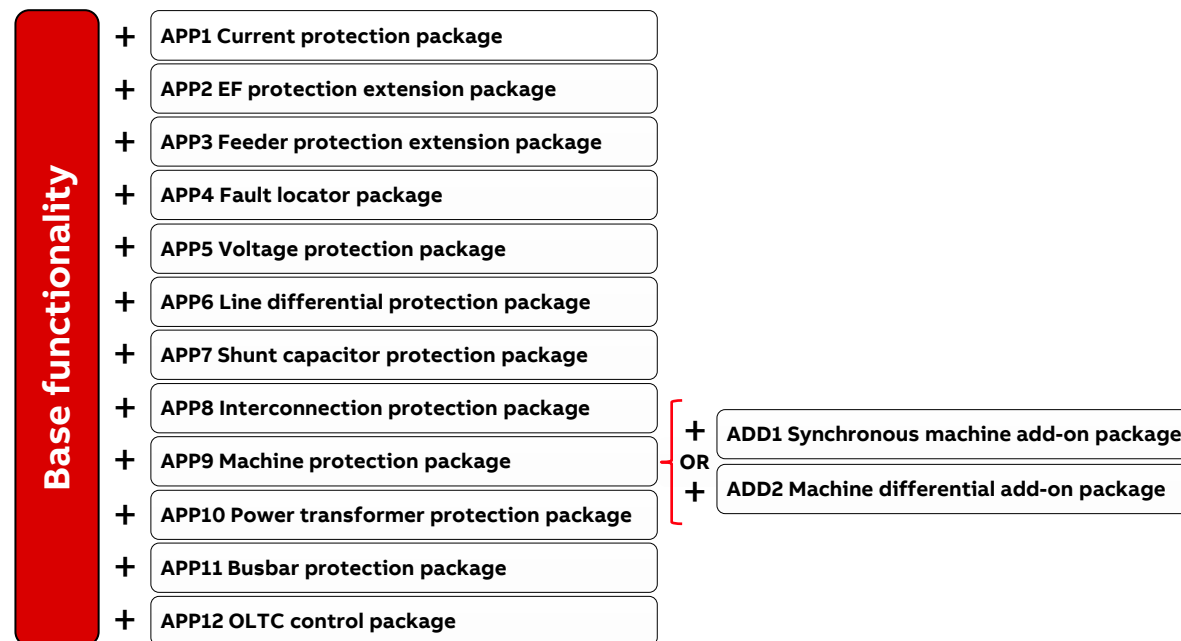
## Application packages

The functionality is divided into:

- **Base functionality** – always included
- **12 application packages** (optional) – freely selectable according to application-specific requirements (none, some or all)
- **2 alternative add-on packages** (optional) for APP9 Machine protection package – one for synchronous machines and generators and the other for motors requiring differential protection

Note! The software options can be customized, modified and added at a later stage, even on site after installation.

Note! Although all application packages can be selected, the relay configuration cannot include all application functions and their instances due to processor performance.



# Protection and control REX615

Hardware – one relay, two sizes

## Standard or wide – the choice is yours

- Available in two hardware sizes – standard (same dimensions as for the 615 series relays) and wide (same as for the 620 series relays)
- Wide is usually the best option for:
  - Applications requiring more I/Os or RTDs/mA measurements
  - More advance protection schemes requiring more current and voltage measurements

Standard	Wide
0-7 CTs + 0-5 VTs	0-8 CTs + 0-6 VTs
0-18 BIs + 6-13 BOs	0-32 BIs + 6-21 BOs
0-6 RTD + 0-2 mA inputs	0-14 RTD + 0-5 mA inputs
177 mm (w) x 177mm (h) x 201 mm (d)	262 mm (w) x 177 mm (h) x 201 mm (d)





# Protection and control REX615

## Replacing existing 615 series and 620 series relays with REX615



REX615 alone is a perfect match for replacing all 615 and 620 series relays. Hardware dimensions, modules and wiring connections remain the same.



Preconfigurations, intended as guiding examples, facilitate engineering and are conveniently accessible via ABB's relay setting and configuration tool, PCM600.



Its modular design, combined with multiapplication coverage, opens up entirely new possibilities, making REX615 ready to evolve with the grid.



# Protection and control REX615

## Modifying the delivered relay – Modification Sales

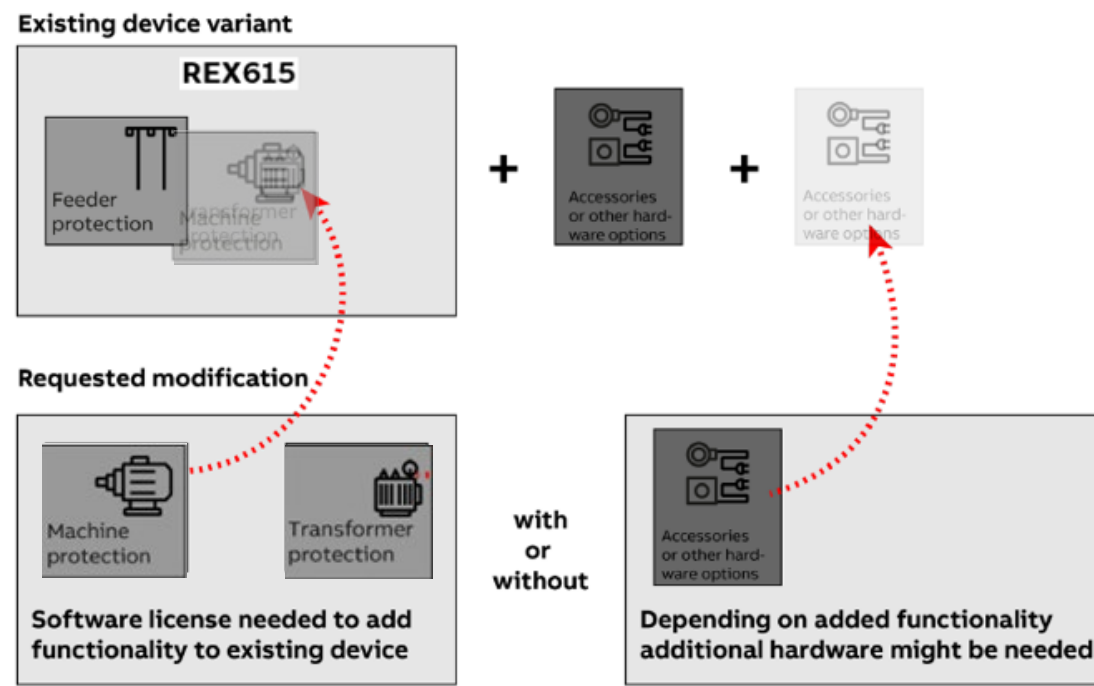
**REX615 hardware and software can be modified anytime – throughout the relay's entire life cycle:**

### Software

- Adding application package(s) or add-on(s)
- Changing communication protocol
- Adding a language

### Hardware

- Adding a module, such as a binary input/output module to an empty slot
- Replacing a module, such as a communication module, with another variant



# Protection and control REX615

## Extensive life cycle services for optimal usability

### Full support from start to finish

Extensive life cycle services for safe, reliable and cost-effective protection solutions with predictable maintenance costs – for the lifetime of the relay:

- Training
- Customer support
- Maintenance
- Modernization

ABB Ability™ Backup Management for electrical systems, Data Care – available as an optional add-on

- Web-based data-sharing and backup service
- Secure storing and easy sharing of technical information on your protection relays – online
- Easy access to firmware updates with the relay serial number

**Note! Firmware updates can also be accessed via ABB's intuitive e-business platform, ABB Relays-Online.**

**Training**

- Engineering
- Operation
- Maintenance

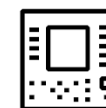


**Customer support**

- Product and application documentation
- Knowledgebase
- Technical support



### Life cycle services



**Maintenance**

- Spare parts and devices
- Repair
- Preventive maintenance



**Modernization**

- Modification and upgrades
- Replacements
- Recycling



# Protection and control REX615

## Retrofit program for easy modernization

### Smooth replacement of SPACOM with REX615 relays

- Convenient, tailor-made retrofit connector kit for fast and easy replacement of SPACOM with REX615 relays
- Easy, fast and exact machining of existing panel cutout with handheld all-in-one cutting tool
- Access to the latest protection and control technology
- Possibility to adapt the power protection system to meet new requirements
- Full availability of relay life cycle services
- Extended switchgear lifetime





## Protection and control REX615

Supporting the green transition  
with sustainability at the fore



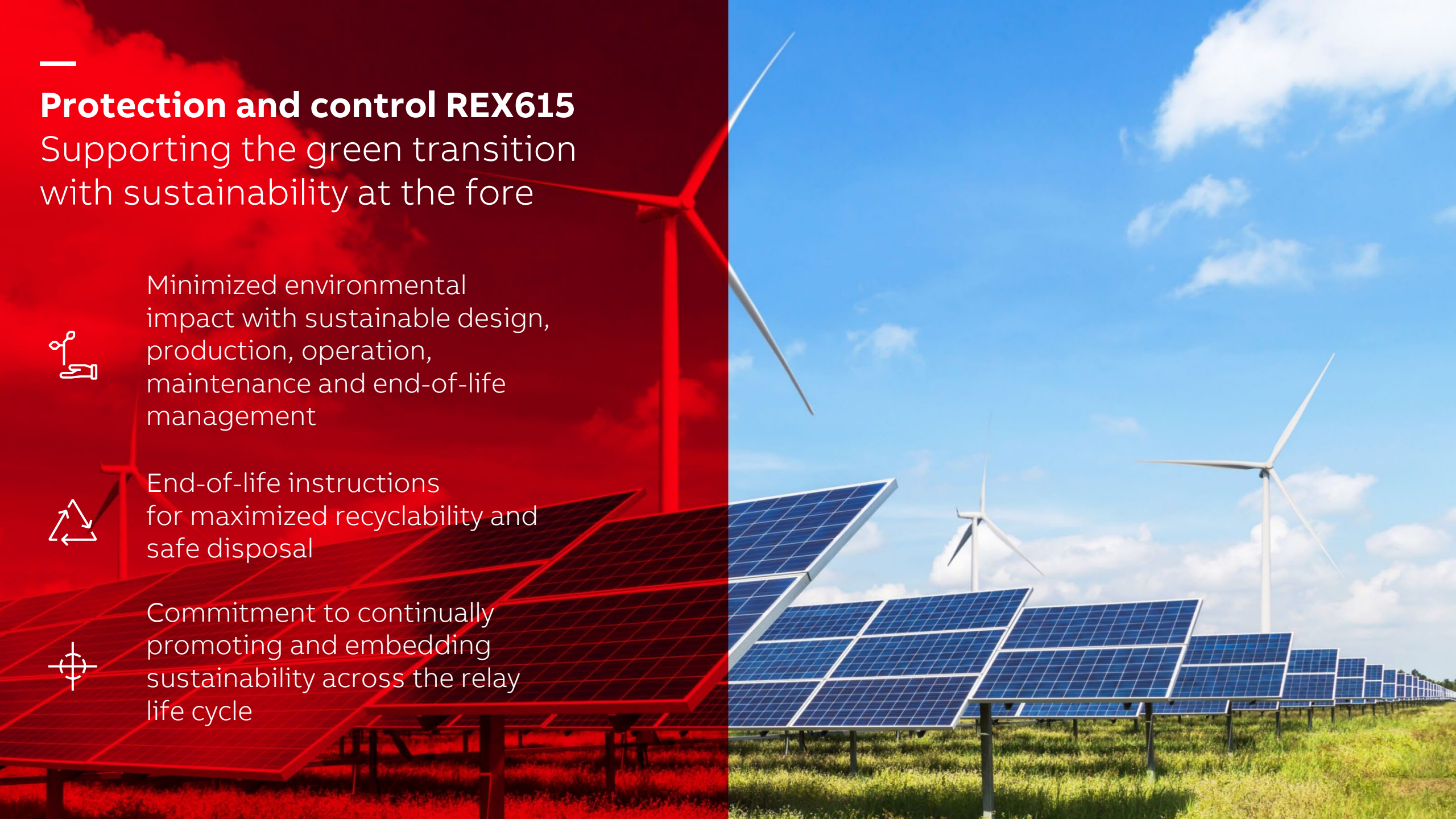
Minimized environmental  
impact with sustainable design,  
production, operation,  
maintenance and end-of-life  
management



End-of-life instructions  
for maximized recyclability and  
safe disposal

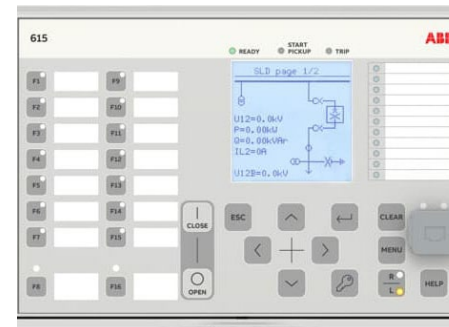
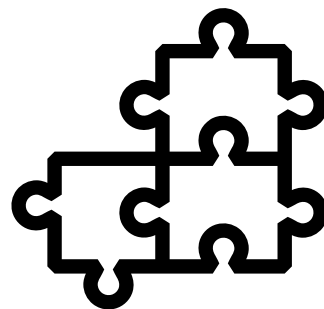
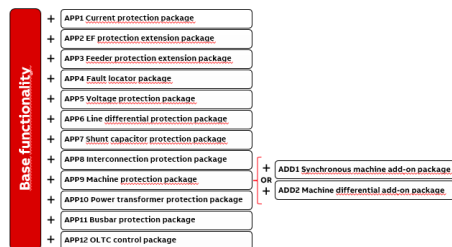
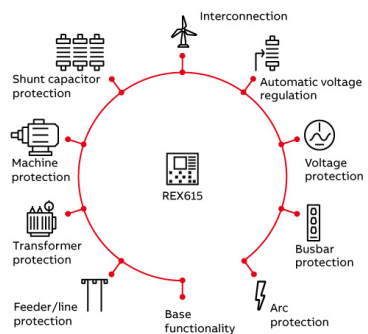


Commitment to continually  
promoting and embedding  
sustainability across the relay  
life cycle



# Protection and control REX615

All-in-one protection for power generation and distribution applications (1/2)



**Wide application coverage with one freely configurable device** for flexible and cost-effective tailoring to application-specific requirements

**Ready-made application packages** for convenient and smooth ordering

**Easy and flexible adaptation** to changing protection and communication requirements with **fully modular hardware and software**

**Intuitive human-machine interface (HMI)** with a large graphical display for showing customizable single-line diagrams (SLD)

**Unique earth-fault protection portfolio** for optimal selectivity, sensitivity and reliability – irrespective of the type of network and fault

Protection and control REX615 – the next step for Relion® 615 and 620 series relays

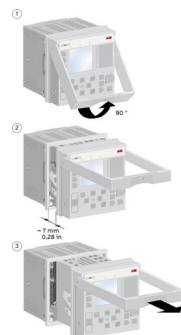


# Protection and control REX615

All-in-one protection for power generation and distribution applications (2/2)



**Optimal cyber security**  
to promote secure  
connectivity and  
safeguard today's  
network



**Withdrawable plug-in  
unit design** for swift  
installation, maintenance  
and testing



**The world's first truly  
IEC 61850-based  
protection relay** –  
designed to support the  
increasing digitalization  
of substations



**Over 1 million 615 and  
620 series relays  
installed worldwide** –  
demonstrating reliability  
and commitment to  
continuous evolution



**Extensive life cycle  
services** – full support  
from start to finish

Protection and control REX615 – modular and flexible for a future-proofed grid

**ABB**