

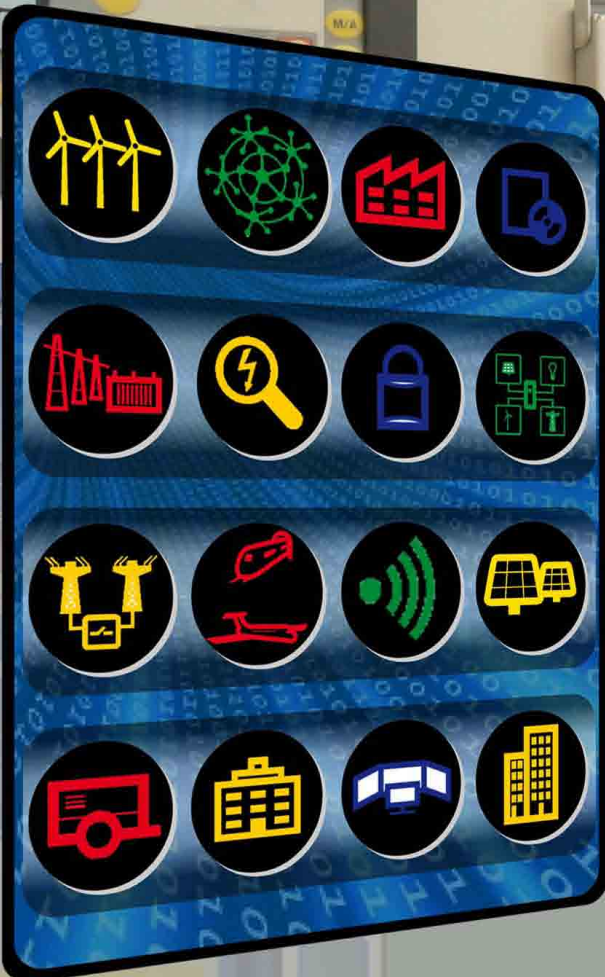


ORMAZABAL

Focus on Medium Voltage

ekorSYS units: protection, telemanagement & communication

Protection, telemanagement, communication and control applications in Medium Voltage networks



Introduction

Ormazabal supplies complete Medium Voltage installations that include **protection, control, automation and telemanagement functions**. The wide range of protection and automation applications and services meets the needs of existing distribution networks.

This is the reason that the units integrated in cubicles from Ormazabal's **ekorSYS** family have become the ideal solution for implementation in the most demanding installations, offering high performance in comparison with conventional systems.

Their **versatility, easy integration** into Ormazabal's Medium Voltage cubicles and **optimum interaction** with all units of the family (sensors, indicators, protection relays, power supplies, RTU, etc.) favour their use in a variety of applications, from basic protection functions to the more complex functions such as automation, integrated control, telemanagement and communication.

Protection

- ➔ Transformer substations (transformers)
- ➔ Switching substations
- ➔ General and line protection
- ➔ Capacitor banks and motors
- ➔ Substations
- ➔ Generator sets

- I. SUPPLY TO MEDIUM VOLTAGE CUSTOMERS
 - **ekorRPG**
 - **ekorRPT**
- II. PROTECTION OF SWITCHING SUBSTATIONS AND INDUSTRIAL CUSTOMERS
 - **ekorRPS**
 - **ekorRPGci**
 - **ekorRPTci**
- III. PROTECTION OF RURAL TRANSFORMER SUBSTATIONS (CTR)
 - **ekorRPT-K**
- IV. GENERATOR SET PROTECTION
 - **ekorUPG**
- V. SUBSTATION PROTECTION
 - **ekorRPS-TCP**

ekorRPG - ekorRPGci



Protection and metering unit integrated in circuit-breaker cubicles. Control functions in ekorRPGci.

ekorRPT - ekorRPTci



Protection and metering unit integrated in switch-fuse combination cubicles. Control functions in ekorRPTci.

ekorRPS



Multifunctional protection, metering and control unit integrated in circuit-breaker cubicles.

ekorUPG



Generator set portable protection unit.

ekorRPS-TCP



Multifunctional protection, metering and control unit for primary distribution substation.

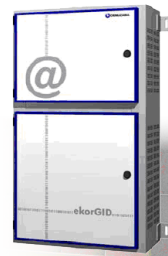
Telemanagement & Communication

- ➔ Surveillance of the Low Voltage Network
- ➔ Surveillance of the Medium Voltage Network
- ➔ SmartGrids: management of the information from meters (Smart Metering).
- ➔ Automation and control of the Medium Voltage Network

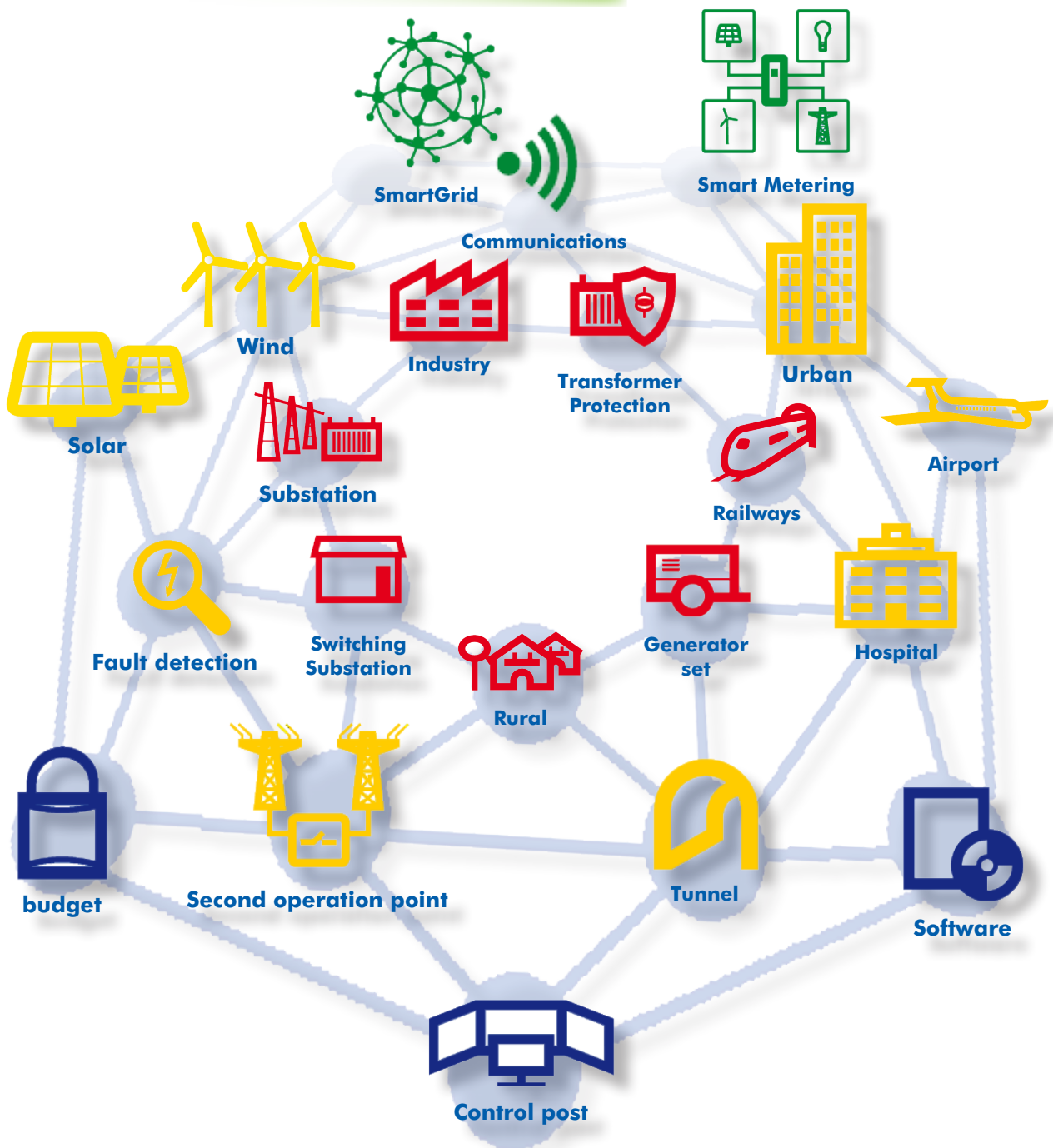
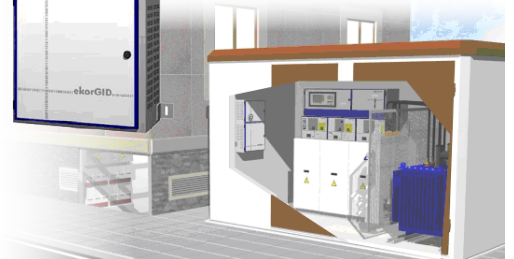
I. TELEMAGEMENT

- **ekorGID**

ekorGID



Smart distribution management unit



ekorUCT



Compact unit for remote control and automation of Transformer Substations, Switching Substations and Substations.

ekorRCI



Integrated control unit associated to the feeder functions: Earth Fault, measurements (I, V, P and Q)** and Web Server.

CGMCOSMOS-2LPT



Compact cubicle with integrated remote control unit (Plug&Play) for automation in Medium Voltage.

Second operation point



Circuit-breaker cubicle + ekorRPS + ekorUCT

ekorSTP



Programmable unit for uninterrupted supply via automatic transfer between two supply lines.

ekorRTK



Voltage detection unit for monitoring the state of Medium Voltage lines.

Automation and Remote Control

- ➔ Remote controlled transformer substations
- ➔ Automatic line transfer
- ➔ Automatic sectionaliser
- ➔ Remote control and automation terminal unit
- ➔ Infrastructures: hospitals, airports, etc.
- ➔ Second operation points
- ➔ Association with telemanagement equipment

I. REMOTE CONTROL

- ekorUCT
- ekorCCP (*)
- ekorRCI
- CGMCOSMOS-2LPT and CGM.3-2LPT

II. AUTOMATIC TRANSFERS

- ekorSTP
- ekorCCP*
- ekorRTK

III. DIRECTIONAL FAULT DETECTION

- ekorRCI

IV. SECOND OPERATION POINTS

- Second operation points

Common functions

I. SAFETY

- ekorSAS
- ekorVPIS
- ekorIVDS
- ekorSPC



Voltage presence indication units

II. SOFTWARE

- ekorSOFT



Configuration software for protection and integrated control units

III. DISPATCHING CENTER

- Dispatching center



SCADA remote control and management software

* ekorCCP: Ormazabal's programmable cubicle controller integrated in ekorSTP and as RTU in ekorUCT and CGMCOSMOS/CGM.3-2LPT.

** Does not require voltage transformers, signal acquisition via cubicle bushings.

Services

Ormazabal offers engineering services so that installations with Ormazabal products are supplied, installed, used and maintained correctly.

Analysis, generation of settings, configurations and databases.

Work prior to commissioning:

- Verification of protection and remote control systems installed. Compliance of range of settings to customer requirements.
- Protection patterns and databases for control and protection equipment.
- Configuration of communications.
- Configuration of digital inputs and outputs for automatism.
- Verification of factory-programmed functions on test equipment.
- Selectivity studies.

Commissioning.

- Loading protection patterns and databases.
- Verification of switchgear operation.
- Test operations (current and voltage injection), record of protection relays trip & pick-up values, checking switchgear errors, integrated units, communications, etc.
- Verification of remote control systems.
- Point-to-point tests with the Dispatching Center.

Documentation and record.

- Documentation and record of the completed and commissioned installation.
- Specification sheets for every unit.
- Record of values obtained during the tests.

Training, technical support, incident analysis and maintenance.

- Preparation of procedures.
- Test documentation.
- Analysis of oscillograms and fault records.
- Generation of fault reports.
- Modification of settings and configuration of automatism according to changes.



Torre Iberdrola (Bilbao - Spain)



Smart-City Málaga (Spain)



Gotthard Tunnel (Switzerland)



Valencia Fair (Spain)



ORMAZABAL

Focus on Medium Voltage

TECHNICAL-COMMERCIAL DEPARTMENT

Tel: +34 94 431 87 31

Fax: +34 94 431 87 32

www.ormazabal.com

Products, applications, solutions:

- Primary distribution switchgear
- Secondary distribution switchgear
- Automation, protection, remote control & communications in electrical networks
- Distribution transformers
- Low Voltage boards
- Transformer substations
- Medium Voltage applications for renewable energy

In view of the constant evolution in standards and design, the characteristics of the elements contained in this catalogue are subject to change without prior notification.

These characteristics, as well as the availability of components, are subject to confirmation by Ormazabal's Technical-Commercial Department.

CA-331-GB-1106

