



ekorsys units: protection,  
telemangement & communication

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Protection and metering unit with  
integrated control for circuit-breaker  
protection cubicles

Reliable innovation. Personal solutions.

## Preface

Protection, metering and control unit, integrated in **Ormazabal** circuit-breaker cubicles for general protection with integrated control functions.

- » Presence / absence of voltage
- » Breaker control
- » Remote control
- » Current and voltage metering functions

Microprocessor-based with protection functions for timed (overload) and instant (shortcircuit) overcurrent of phases and neutral (Optional: Directional overcurrent).

- » Communicable electronic relay
- » Toroidal-core current transformers (1000/1 or 300/1)
- » Bistable trigger

## Applications

- » Protection of remote-controlled Medium Voltage customers.
- » Protection of Transformer Substations and industrial customers:
  - » Transformer protection (up to 15 MVA - 24 kV and up to 25 MVA - 36 kV)
  - » General and line protection with circuit-breaker
  - » Automatic transferring of lines
  - » Capacitor banks and motors
  - » Switching substations

## Most notable features

- » IEC inverse time curves
- » External trip
- » Presence of voltage from capacitors
- » Phase metering from 5 A
- » Earth current measurement from 0.5 A
- » Factory-installed toroidal-core current transformers: prevention of errors on site
- » Neutral Directional Unit with configurable MTA to detect directional earth faults in any earthing system

## Tests

### Insulation

IEC 60255-5

### EMC

IEC 60255-11  
IEC 60255-22-1  
IEC 60255-22-2  
IEC 60255-22-3  
IEC 60255-22-4  
IEC 60255-22-5  
IEC 60255-22-6  
IEC 61000-4-8  
IEC 61000-4-12  
IEC 60255-25

### Climatic

IEC 60068-2-1  
IEC 60068-2-2  
IEC 60068-2-78  
IEC 60068-2-30

### Mechanical

IEC 60255-21-1  
IEC 60255-21-2

### Power

IEC 60265  
IEC 60056

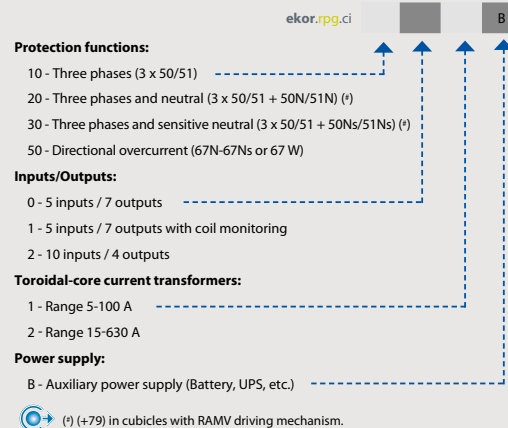
### CE Conformity

CE-26/08-43-EE-1  
IEC60255

## Current Transformers

CT Ratio [A]	1000 / 1	300 / 1
Protection Accuracy	5P20	5P20
Measuring Accuracy	Cl 0.5	Cl 0.5
Extended current range	130%	130%
Measuring range for Cl 0.5 [A]	5-1300	3-390
Rated burden [VA]	0.20	0.18
Saturation current [A]	26 000	7800
Thermal current $I_{th}$ [kA · s]	31.5 – 3	31.5 – 3
Dynamic current $I_{dyn}$	2.5 $I_{th}$ (80 kA)	2.5 $I_{th}$ (0 kA)
Standard	IEC 60044-1	

## Configurator



## Technical Characteristics

### General

Phase current sensors	3
Zero-sequence earth current sensor	1 (optional)
Voltage sensors	3
Time synchronisation	Yes

### Power Supply Options

AC [Vac...Vac]	24 ... 110 ± 30%
DC [Vdc...Vdc]	24 ... 125 ± 30%
Consumption [VA]	< 2

### Frequency

[Hz; Hz]	50; 60 ± 1%
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### Current inputs

Primary phase [A ... A]	5 ... 630 (acc/ model)
Earth [A ... A]	0,5 ... 50 (acc/ model)
Impedance [Ω]	0,1

### Accuracy

Time delay	5% (minimum 20 ms)
Metering / Protection	Class 1 / 5P20

### Output contacts

Voltage [Vac]	270
Current [A]	5 (AC)
Switching power [VA]	750 (resistive load)

### Measurements

Current	Amperimeter Function
Presence / absence of voltage	

### Protection Functions

Phase overcurrent	50-51
Earth overcurrent	50N-51N
Ultrasensitive earth leakage protection	50Ns-51Ns
Thermometer (external trip)	49T
Directional overcurrent (optional)	67N - 67Ns (*) or 67 W

### Voltage

Detection of voltage presence / absence

### Detection, Automation and Control

5 inputs / 7 outputs (*)	
10 inputs / 4 outputs (*)	
Recloser	79

### Communications

Front port configuration	DB9 RS232
Rear port remote control	RS485 (5kV) -RJ45 RJ485 - optical Fibre
Protocol	MODBUS (RTU) PROCOME
Setup and monitoring program	ekor.soft (optional)

### Indications

Tripping cause indication	
Error display	
History Log	

### Test

Test blocks for current injection	
Output contact for test	

(\*) Both modules are not cumulative. The availability of one or the other depends on the model.  
(!) For capacitive or resistive currents.