

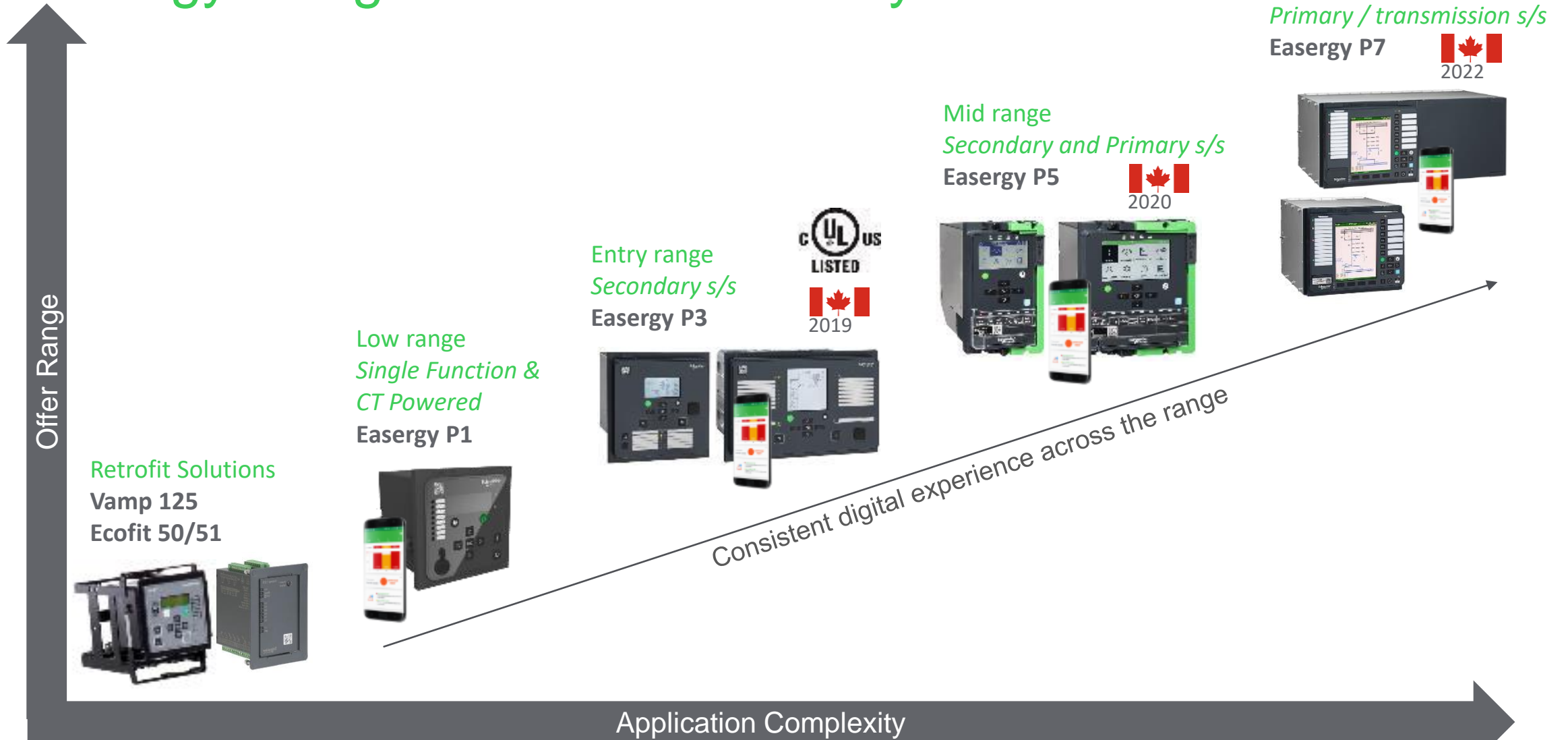
RELIABLE

Easergy P3

Complete Range of Protection Relays for MV Applications



Easergy Range of Protection Relays



Based on more than 100 years of experience in protection (MiCOM, Sepam, and Vamp Relays)

Easergy P3 Introduction



Easergy P3 Flexible and Scalable Architecture

2 platforms to cover all medium voltage applications

Easergy P3Ux0

Standard applications

Simple solution for standard applications



I & U

Easergy P3x3x

Advanced applications

Performing solution for demanding applications



I & U

Arc Flash / Differential
> 1MW

P3U10/20/30 = Universal protection

- Feeder
- Transformer
- Motor
- Generator
- Voltage, Frequency
- Capacitor

P3F30 = Feeder & Transformer

P3M30 = Motor

P3G30 = Generator

P3L30 = Line differential & Distance

P3T32 = Transformer differential

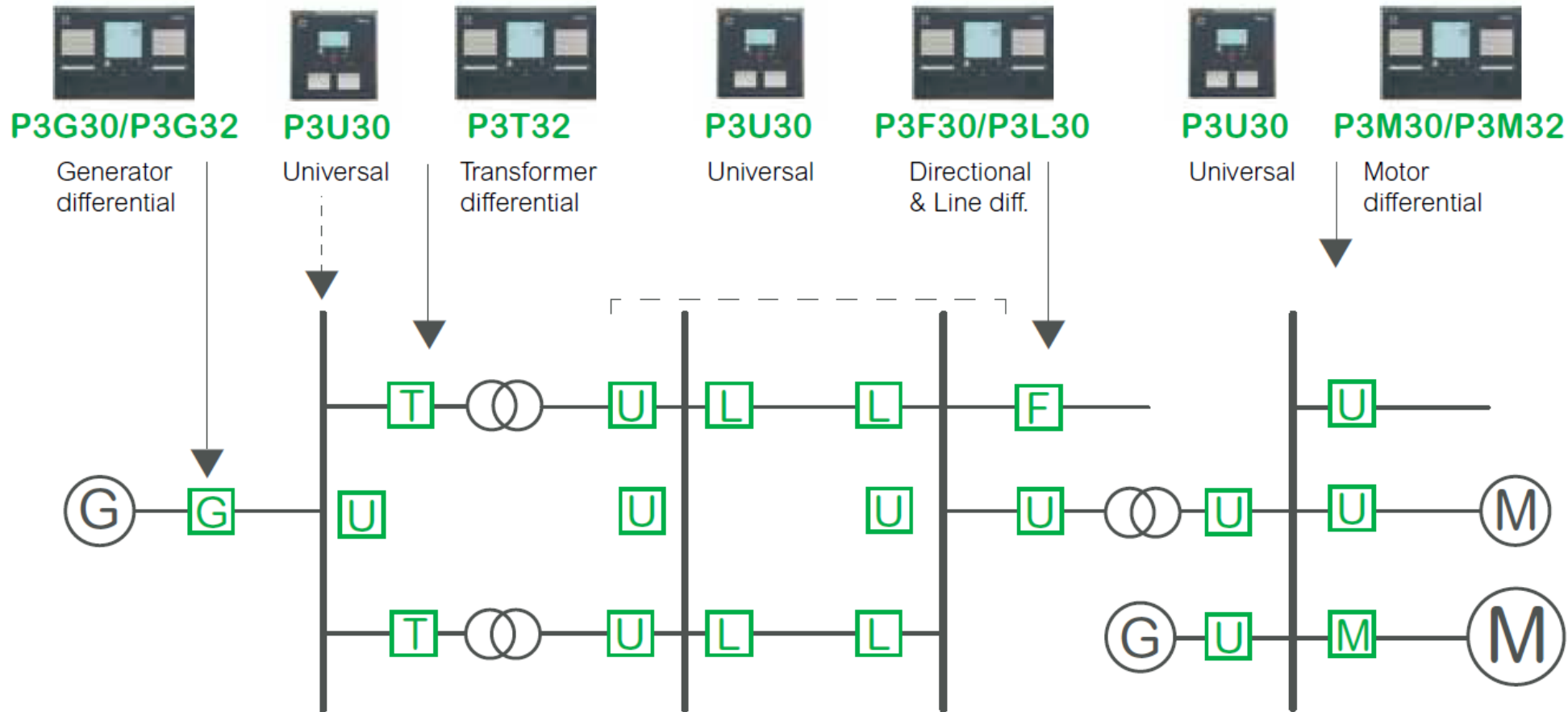
P3M32 = Motor differential

P3G32 = Generator differential

Life Is On

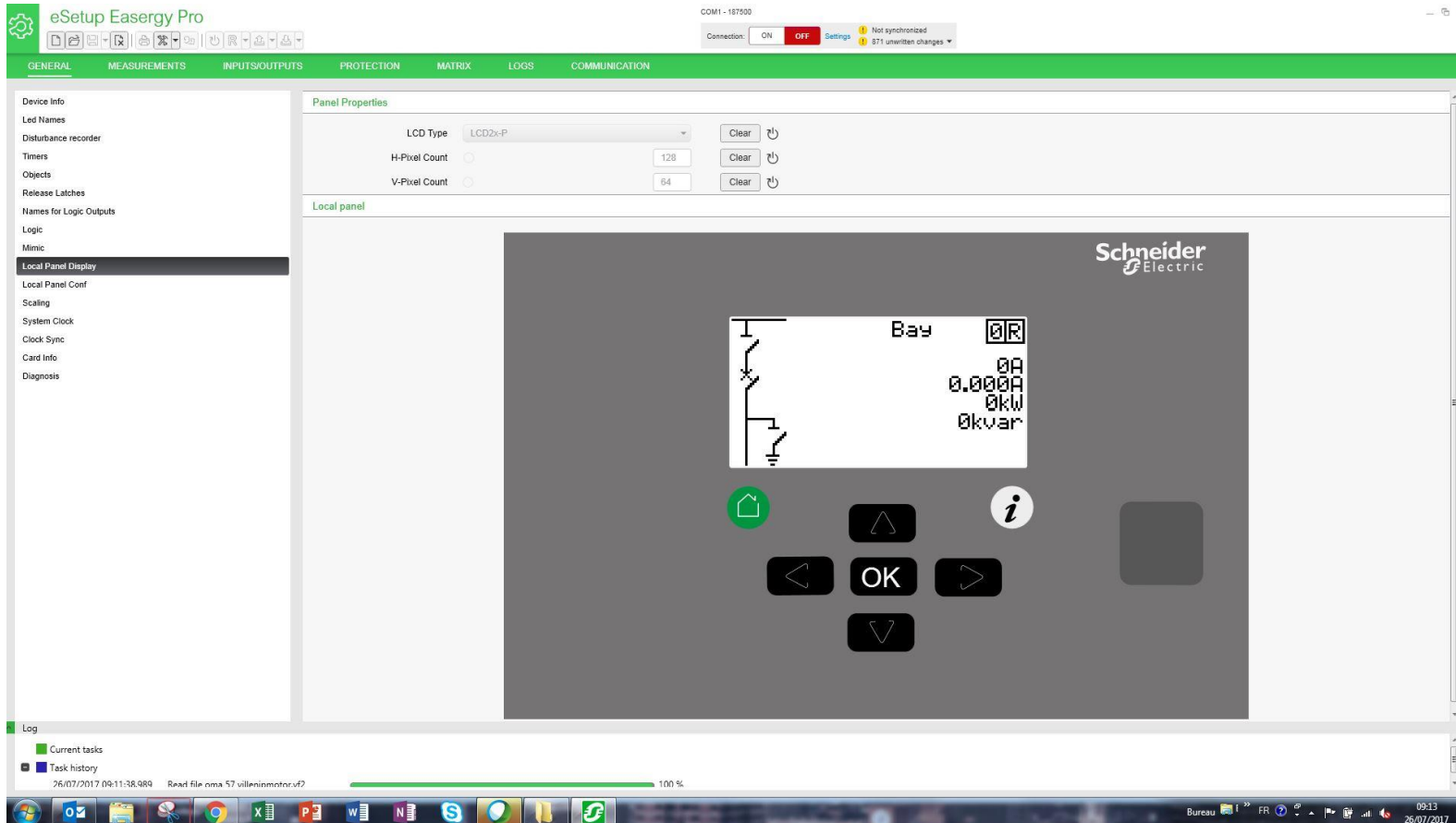
Schneider
Electric

Example of installation protected by Easergy P3



eSetup Easergy Pro

Easergy P3's intuitive setting software



Benefits

Simplicity and ease of use

- Light installation on computer
- On-line & off-line access
- Virtual simulation test
- Intuitive mimic configuration
- Programmable logics
- Measurements with clear and explicit phasor diagram
- Standard USB connection



Life Is On

Schneider
Electric

eSetup Easergy Pro – virtual simulation test

Easergy P3's intuitive setting software

The screenshot displays the eSetup Easergy Pro software interface, version RC 1.1. The main window is titled "Phase overcurrent I> 50/51" and shows various configuration options for protection stages, including "Enable for I>", "Max. of IL1 IL2 IL3", "Status", "Estimated time to trip", "Start counter", and "Trip counter". A table below shows settings for four groups (Group 1 to Group 4) for pick-up setting, delay curve family, delay type, operation delay, and inverse delay.

Group	Group 1	Group 2	Group 3	Group 4
Pick-up setting [A]	1048	1258	1258	1258
Pick-up setting [In]	1.00	1.20	1.20	1.20
Delay curve family	DT	IEC	IEC	IEC
Delay type	DT	NI	NI	NI
Operation delay [s]	1.00	0.30	0.30	0.30
Inv. time coefficient k	1.00	1.00	1.00	1.00
Inverse delay (20x) [s]	-	2.26	2.26	2.26
Inverse delay (4x) [s]	-	4.97	4.97	4.97
Inverse delay (1x) [s]	-	600.02	600.02	600.02

On the right side, the "Virtual injection" window is open, showing a graph of a sine wave and a table of settings for virtual injections. The "Virtual injection" window includes a "Graph" section with a sine wave plot and a "Scalings" section with a table of settings for IL1, UL1, IL2, UL2, IL3, UL3, Io1, and Iio.

Parameter	Value	Unit
IL1	349	A
UL1	0	V
IL2	317	A
UL2	0	V
IL3	412	A
UL3	0	V
Io1	0	A
Iio	0	%

Benefits

Simplicity and ease of use

- Virtual simulation test
- Provides the possibility to test the configuration and settings without connecting a primary injection device
- Speeds up the engineering and commissioning phase

Easy and flexible programmable stages

Easergy P3

The screenshot displays the 'eSetup Easergy Pro' software interface for 'RC 1.1' (COM4 - 187500). The 'PROTECTION' tab is active, showing the configuration for 'Programmable stage Prg1 99'. The interface includes a top navigation bar with tabs for GENERAL, MEASUREMENTS, INPUTS/OUTPUTS, PROTECTION, MATRIX, LOGS, and COMMUNICATION. A left sidebar lists various protection functions, with 'Programmable stage Prg1 99' selected. The main configuration area for Prg1 includes:

- Enable for Prg1:
- Priority: 20 (dropdown)
- Programmable stage 1 status: - (dropdown)
- Force flag:
- Timebase for input value A: Instant (dropdown)
- Coupling A: IL (dropdown)
- IL1: 0
- Compare condition: > (dropdown)
- Set group 1 DI control: - (dropdown)
- Set group 2 DI control: - (dropdown)
- Set group 3 DI control: - (dropdown)
- Set group 4 DI control: - (dropdown)

Below these settings, a table shows pick-up and operation delay settings for four groups:

	Group 1	Group 2	Group 3	Group 4
Pick-up setting [A]	300	360	360	360
Pick-up setting [xIn]	1.00	1.20	1.20	1.20
Operation delay [s]	0.50	0.50	0.50	0.50

The bottom of the interface shows a 'Log' section with 'Current tasks' and 'Task history' (4.10.2017 10.18.17.715) and a 'Read all settings' button.

Benefits

- Increase the number of protection stages
- Make new/advanced protection functions
- Make advanced logic based on analog values

Easergy P3 WebHMI

New embedded web-pages for easier operations

The screenshot displays the Easergy P3 WebHMI interface. At the top left is a gear icon and the text "EASERGY P3 Feeder Protection". To the right is an "Auto-refresh" toggle set to "ON". Below this is a green navigation bar with tabs: GENERAL, MEASUREMENTS, INPUTS/OUTPUTS, PROTECTION, MATRIX, LOGS, and COMMUNICATION. A sidebar on the left contains a menu with items: DEVICE INFO, LED NAMES, DISTURBANCE RECORDER, TIMERS, OBJECTS, RELEASE LATCHES, NAMES for LOGIC OUTPUTS, LOCAL PANEL DISPLAY (highlighted), LOCAL PANEL CONF, SCALING, SYSTEM CLOCK, CLOCK SYNC, CARD INFO, and DIAGNOSIS. The main content area is divided into two sections: "Panel Properties" with input fields for LCD Type (LCD2x-P), H-Pixel Count (128), and V-Pixel Count (64); and "Local panel" which shows a schematic diagram of a bay with a digital display showing "0A", "0.000A", "0kw", and "0kvar". At the bottom is a virtual keypad with a home button, an information icon, and directional arrows.

Benefits

Consistent interface with Easergy Pro

- Secured local access to Easergy P3
- Active settings modification
- Direct CB control
- Easy access to alarms and logs
- Easy access to measurements and wave form records

Try our P3 relay from 6000km away, using your browser!

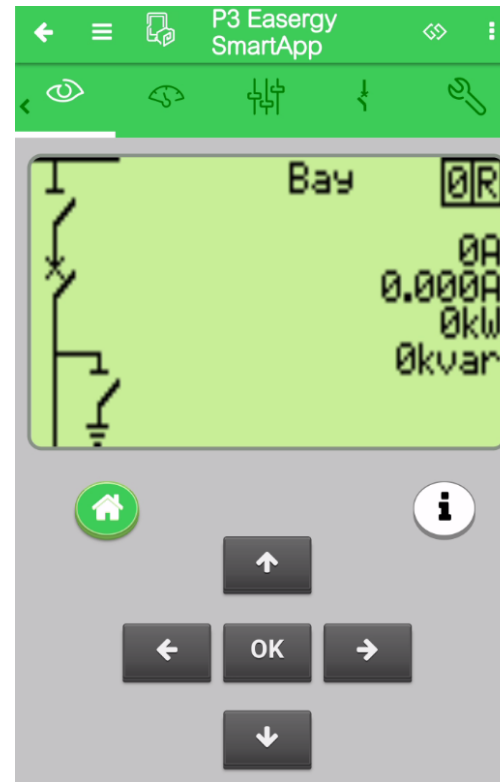
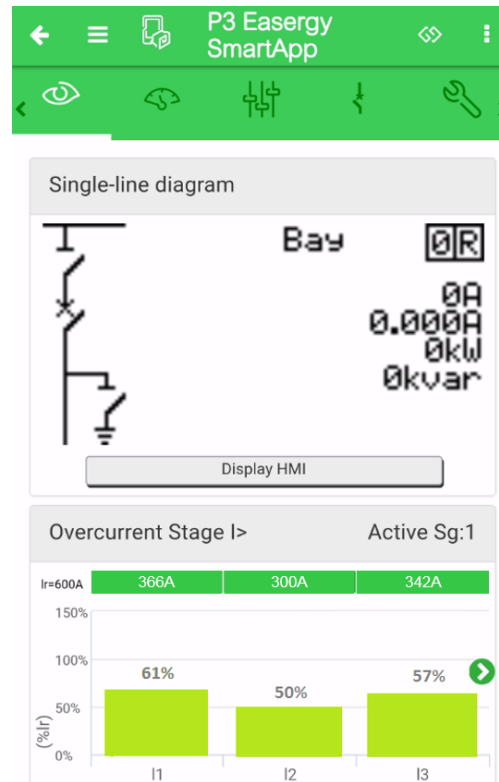
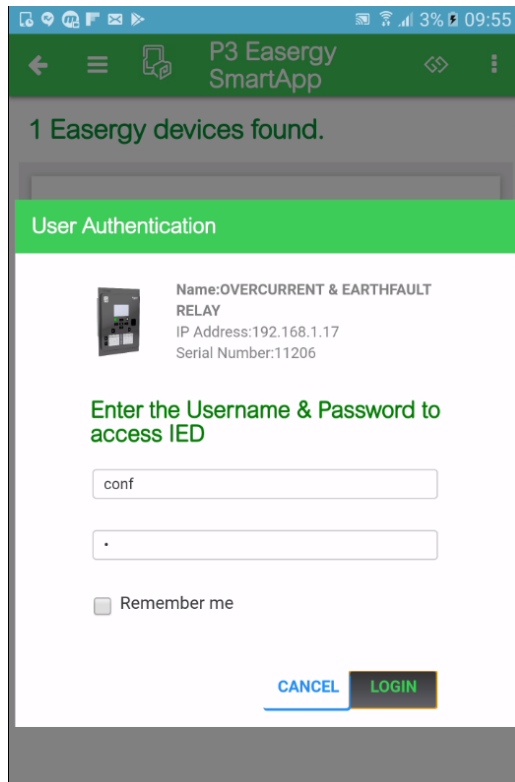
- 10.158.45.39 P3U
- 10.158.45.38 G32
- 10.158.45.37 T32
- Username: conf
- Password: 2

Life Is On

Schneider
Electric

Easergy SmartApp

The first smartphone & tablet apps of the market for a MV protection relay



Benefits

Intuitive interface for faster operations

- Active settings modification
- Easy access to measurements and wave form records
- Alarm historical
- Direct CB control
- Direct access to documentation via the SafeRepository

Striving for sustainability for our customers and the planet



Green
Premium™
Product

Awards and recognitions



ROBECOSAM
Sustainability Award
Gold Class 2014

Enjeux
Les Echos



RoHS, PEP, EoLI, Reach



Compliant with the latest directives





Easy access to information

Discover Easergy P3 Features



Easergy P3 key characteristics

- Protection **1 platform** for more than 35 protection functions
8 programable stages (ANSI 99)
- Control Up to **6 objects** with **mimic**
Matrix and logic equations
- Digital tool 3-phase voltage/current injection simulator
Embedded Web Pages HMI 
Remote connection by **Apps**
QR code to get access to Relays information 
- Communication protocols IEC61850 Ed.1 & Ed.2
DNP3.0, DNP3oE
Modbus RTU, Modbus TCP
IEC60870-5-101 / 103
Ethernet/IP
DeviceNet, Profibus, SPA-bus
Redundancy RSTP, PRP



- CT/VT inputs 4/5CT + 1/4VT (compatible with residual current sensor CSH)
Detachable connector (easy installation) + **Automatic CT shortening**
- Digital I/Os P3Ux : up to 16I / 8O + wd
P3x3x : up to 36I / 21O + wd
- Arc Flash Up to 6 sensors (Advanced)
- Comm. ports Serial or extension port with IRIG-B
2nd serial port or line diff. com port
Dual Ethernet port with RSTP & PRP
- Analog I/O 4 inputs / 4 outputs (external module)
- Temperature sensors 12 RTDs (external module)
- Other USB type B connector
Detachable HMI (Advanced)

Protection functions per model 1/2



Protection functions	ANSI code	P3U10 P3U20	P3U30	P3F30	P3L30	P3M30	P3M32	P3G30	P3G32	P3T32
Distance	21	-	-	-	1	-	-	-	-	-
Under-impedance	21G	-	-	-	-	-	-	2	2	-
Fault locator	21FL	-	1	1	1	-	-	-	-	-
Overfluxing	24	-	-	-	-	-	-	1	1	1
Synchro-check	25	-	2	2	2	2	2	2	2	2
Undervoltage	27	-	3	3	3	3	3	3	3	3
Positive sequence undervoltage	27P	-	-	-	-	-	-	2	2	-
Stator earth-fault detection	27TN/64G	-	-	-	-	-	-	1	1	-
Directional active underpower	32	-	2	2	2	2	2	2	2	2
Phase undercurrent	37	1	1	-	-	1	1	-	-	-
Temperature monitoring	38/49T	12 ⁽⁰⁾⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾
Loss of field	40	-	-	-	-	-	-	1	1	-
Under-reactance	21/40	-	-	-	-	-	-	2	2	-
Negative sequence overcurrent (motor, generator)	46	2	2	-	-	2	2	2	2	2
Cur. unbalance, broken conductor	46BC	1	1	1	1	-	-	-	-	-
Incorrect phase sequence	47	-	-	-	-	1	1	-	-	-
Excessive start time, locked rotor	48/51LR	1	1	-	-	1	1	-	-	-
Thermal overload	49	1	1	1	1	1	1	1	1	1
Phase overcurrent	50/51	3	3	3	3	3	3	3	3	3
Earth fault overcurrent	50N/51N	5	5	5	5	5	5	5	5	5
Breaker failure	50BF	1	1	1	1	1	1	1	1	1
Switch On To Fault (SOTF)	50HS	1	1	1	1	1	1	1	1	1
Capacitor bank unbalance	51C	1	1	2	2	2	2	2	2	2
Voltage dependant overcurrent	51V	-	1	1	1	-	-	1	1	-
Overvoltage	59	-	3	3	3	3	3	3	3	3

Protection functions per model 2/2



Standard (P3U)



Advanced (P3x)

Protection functions	ANSI code
Capacitor overvoltage	59C
Neutral voltage displacement	59N
CT supervision	60
VT supervision	60FL
Stator earth fault	64S
Frequent start inhibition	66
Directional phase overcurrent	67
Directional earth-fault o/c	67N
Transient intermittent	67NI
Magnetizing inrush detection	68F2
Fifth harmonic detection	68H5
Pole slip	78PS
Auto-recloser	79
Over or under frequency	81
Rate of change of frequency	81R
Under frequency	81U
Lockout	86
Line differential	87L
Machine differential	87M
Transformer differential	87T
Programmable stages	99
Arc-flash detection stages	
Cold load pick-up	
Programmable curves	
Setting groups ⁽³⁾	

P3U10 P3U20	P3U30
1	1
3	3
1	1
-	1
-	-
1	1
-	4
3	3
1	1
1	1
1	1
-	-
5	5
-	2/2
-	1
-	2
1	1
-	-
-	-
-	-
8	8
-	-
1	1
3	3
4	4

P3F30	P3L30	P3M30	P3M32	P3G30	P3G32	P3T32
1	1	-	-	-	-	-
2	2	2	2	2	2	2
1	1	1	1	1	2	2
1	1	1	1	1	1	1
-	-	-	-	1	1	-
-	-	1	1	-	-	-
4	4	4	4	4	4	4
3	3	3	3	3	3	3
1	1	-	-	-	-	-
1	1	1	1	1	1	1
1	1	1	1	1	1	1
-	-	-	-	1	1	-
5	5	-	-	-	-	-
2/2	2/2	2/2	2/2	2/2	2/2	2/2
1	1	1	1	1	1	1
2	2	2	2	2	2	2
1	1	1	1	1	1	1
-	2	-	-	-	-	-
-	-	-	2	-	2	-
-	-	-	-	-	-	2
8	8	8	8	8	8	8
8	-	8	8	8	8	8
1	1	1	1	1	1	1
3	3	3	3	3	3	3
4	4	4	4	4	4	4

(0) No temperature sensors for P3U10 and 12 optional for P3U20
 (1) Using external RTD module

(2) P3U10 and P3U20 offer one voltage input. Function availability depends on the connection of the voltage input
 (3) Not all protection functions have 4 setting groups. See details in the manual.

Key Customer Benefits

✓ Enhanced **safety, security, and reliability:**

- Meets **latest standards**
- Includes **embedded Arc flash detection**
- SmartApp allows **remote operations**
- Standard **conformal coated** circuit boards
- Proven platform **based on 100+ years of cumulated experience in protection relays** (Sepam, Micom, Vamp)

✓ Outstanding **ease of use:**

- **Easy access to data** via display or embedded Web-HMI
- Smartphone & tablet apps for **faster operations & maintenance**
- **Simplified configuration** through intuitive setting software (**no installation required**)
- Built-in **virtual injection testing**
- Detachable connectors (P3Ux0) for **simple installation**

✓ Greater efficiency:

- **Smooth system integration** with Serial or Ethernet (IEC61850) comm.
- **Integrated functionalities** for operational efficiency

✓ Optimised total cost of ownership:

- **All in one** and **future-ready** devices
- Powerful tools to **reduce engineering costs**

✓ Extended control possibilities:

- **Programmable logic**
- **Virtual I/O**
- **Programmable** push buttons & LEDs
- **Mimic display** (single-line)
- **CB control buttons**

Easergy P3Tutorials/How To Videos Available on YouTube!

The screenshot shows a YouTube search results page for the query 'easergy p3'. The search bar at the top contains the text 'easergy p3'. The results are displayed in a list format, each with a video thumbnail, title, channel name, view count, and upload date. The videos are:

- Easergy P3 - Part 1 - Communication to the Device** by Schneider Electric (2K views, 1 year ago). Description: The purpose of this 9 minute video is to learn how to establish a connection between EasergyPro setting tool and Easergy P3 ...
- Easergy P3 - Part 2 - Overcurrent function setup** by Schneider Electric (624 views, 1 year ago). Description: This 6 minute e-learning is to learn how to set over-current protection function for a typical feeder on Easergy P3 protection ...
- Meet the efficient new Easergy P3 protection relay** by Schneider Electric (2.5K views, 1 year ago). Description: Discover unparalleled efficiency with the new Easergy P3 protection relay. With a more efficient ordering process, shorter ...
- Easergy P3 - HMI Quick Introduction** by Schneider Electric (499 views, 1 year ago). Description: This 03 minutes e-learning is to discover Easergy P3 HMI of both Easergy P3 Universal and Easergy P3 advanced protection ...
- Easergy P3 - Part 4 - IEC 61850 Configuration with EasergyPro** by Schneider Electric (971 views, 1 year ago). Description: This 13 minutes e-learning is to learn how to active IEC 61850 protocol. Then you will learn how to activate signals, you will ...

Webserver:

<https://www.youtube.com/watch?v=XTD9nDyUh2g>

EcoStruxure Power Device app:

<https://www.youtube.com/watch?v=o5ADO6d7Gtg>

eSetup EasergyPro:

<https://www.youtube.com/watch?v=VCU9RpF6m9s>

Virtual Injection:

<https://www.youtube.com/watch?v=jYObqPodzSM>

Life Is On

Schneider
Electric

Life Is On

Schneider
Electric