Make sustainable manufacturing

IMPACT

with energy-efficient solutions

Thời gian: 04.07.2025 | 09:00 - 14:00

Địa điểm: Trung tâm Hội nghị & Triển lãm Tỉnh Bình Dương - B11, Đường Hùng Vương, Phường Hòa Phú, TP. Thủ Dầu Một, Bình Dương

Đơn vị phối hợp tổ chức:

Life Is On | Schneider Electric

Agenda

Mapping a sustainable future

01 Overview of Schneider Electric & Service Business

02 Overview about Power Meter & Power Monitoring Expert

03 Overview about AHF PCS+, PCSn, EVC+ (Electronic VAR)

04 *Tea Break*

05 Overview of DVR (Dynamic Voltage Restorer) + UPS (Uninterruptible Power Supply) + Ecofit Relay

06 Overview of Micro-Grid

07 Panel Discussion and Q&A Session

POWER QUALITY SOLUTION

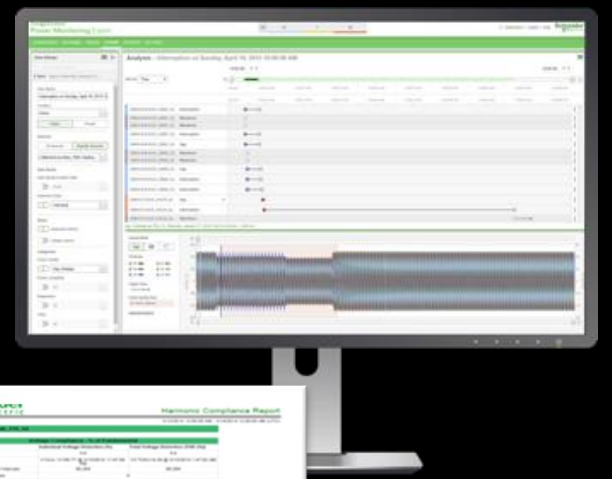
Power meter, Active Harmonic filter, DVR, EVC+

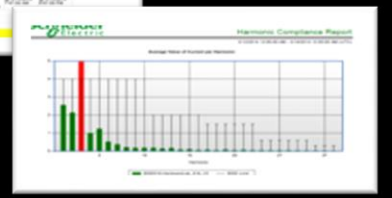
Nguyễn Thế Vinh Technical Consultant

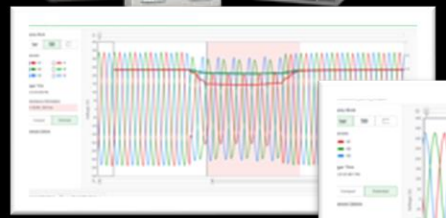
Solution cycle with validation

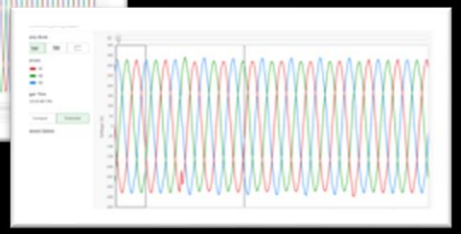
Measure

Understand









Action with performance validation

Technical Specs

PM8000 vs ION9000 vs ION9000T

Value

Functionality

PM8000

- IEC61000-4-30 **class S**
- Class 0.2 accuracy
- 512 MB memory
- Color display
- 256 samples per cycle
- Sag / Swell, THD, individual harmonics, extended waveform capture, DDD

ION9000

- IEC61000-4-30 **class A**
- Class 0.1 accuracy
- 2GB memory
- Color and touch display
- **1024 samples per cycle**
- Sag / Swell, , THD, individual harmonics, extended waveform capture, DDD, Flicker and Transients

ION9000T

- IEC61000-4-30 class A
- Class 0.1 accuracy
- 2GB memory
- Color and touch display
- 10MHZ sampling rate
- Sag / Swell, THD, individual harmonics, extended waveform capture, DDD, Flicker and high-speed Transients

Because critical decisions matter.

Let Power Monitoring Expert help you make all the right moves.

Make informed decisions to maintain power reliability and a safe installation

Run power events analysis thanks to default/rich data integration for connected devices (e.g. Masterpact MTZ circuit breaker, ION9000, PM8000, AccuSine), events time-sequence, location, and power quality waveform analysis.

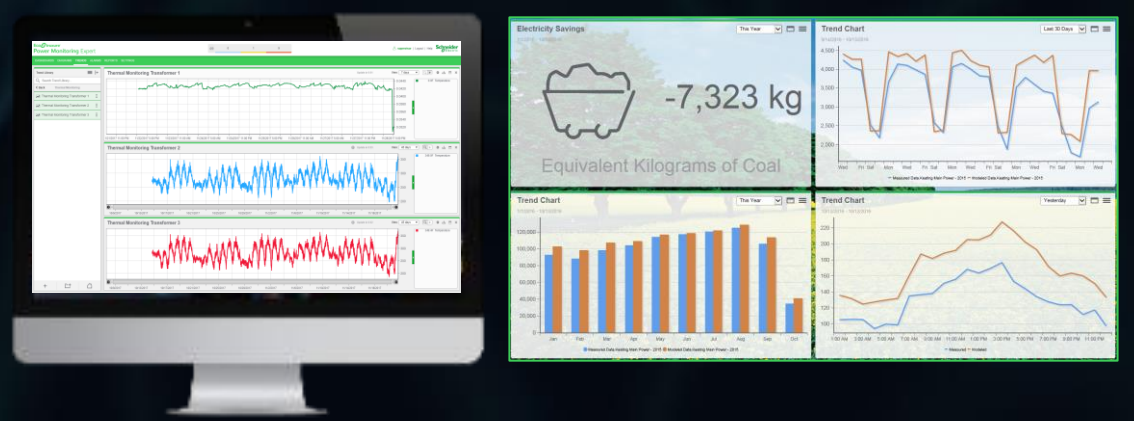
Track your facility's power quality performance and compliance against standards

Run an efficient and compliant facility

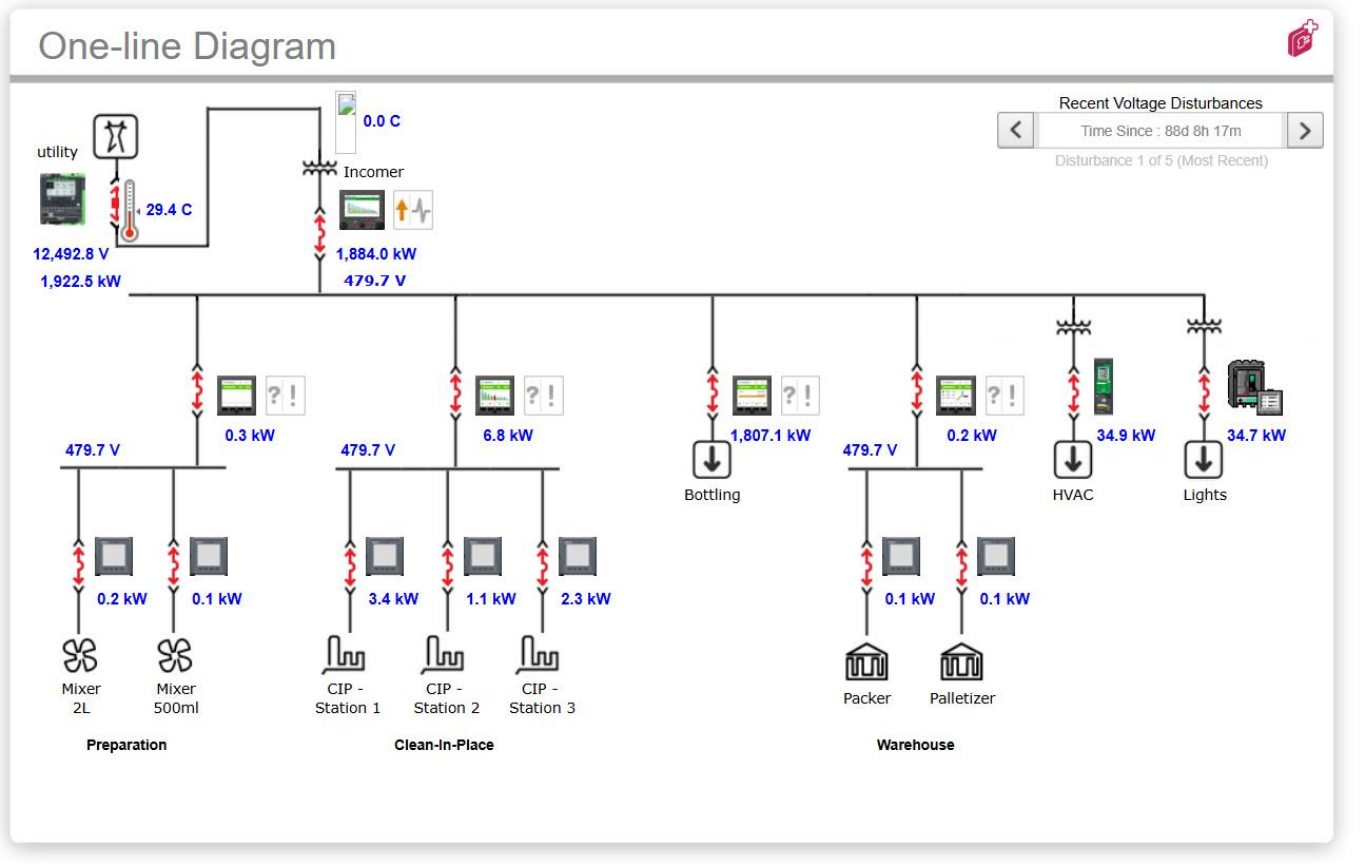
PME and all PS devices are a Certified Energy Data Management System in accordance with ISO 50001, ISO 50002 and ISO 50006

- Collect and analyze energy performance data of your facility
- Provide appropriate data for your energy audit
- Enable you to implement action plans to improve performance based on review of energy audit

ISO 50001 ENERGY MANAGEMENT



Single Line Diagram

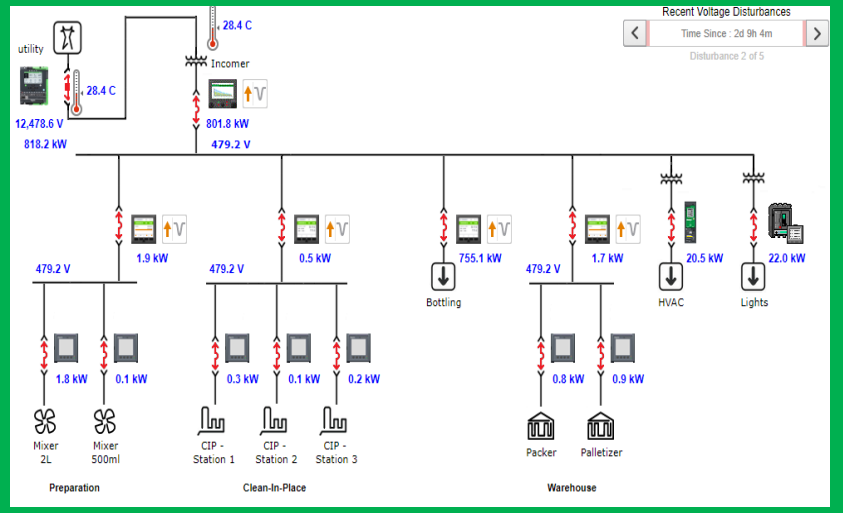


PQ Analytics enable users quickly and simply understand PQ performance and identify cause of power disturbances

EcoStruxure Power Monitoring Expert

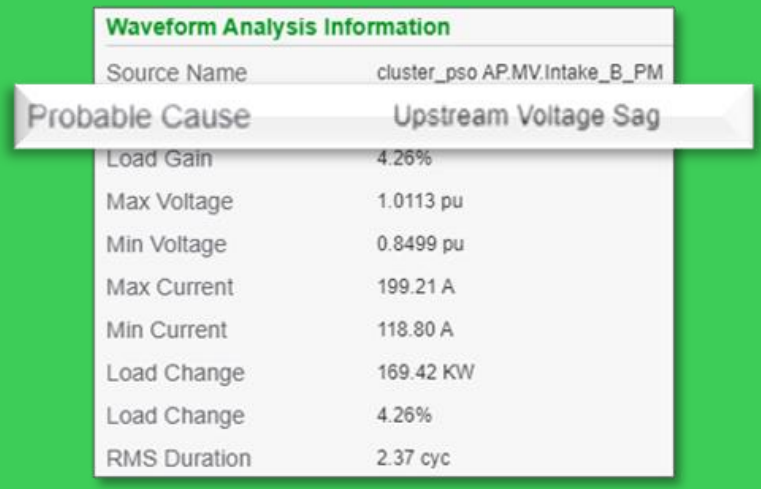
Assess PQ Impacts

- Reveal penalty on poor Power Quality
- Estimate financial/operation impact from power disturbances
- Recognize main contributor to power quality issues



Disturbance Direction

- Identify where disturbance is originated from
- Locate where is the right place to implement PQ mitigation
- Make utility accountable for disturbance in their electric network

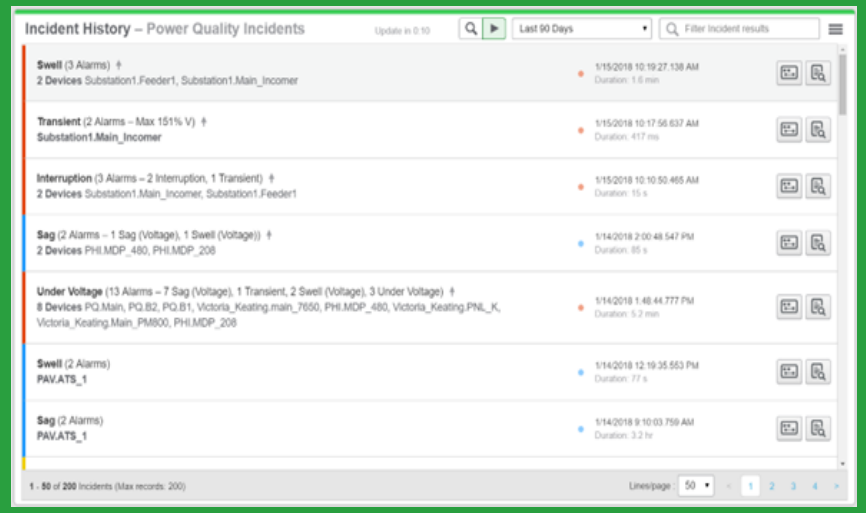


Identify Probable Cause

- Answers question of what may have caused the power disturbance
- Caused by upstream voltage sag or capacitor switching
- Caused by downstream inrush event, load start or faults

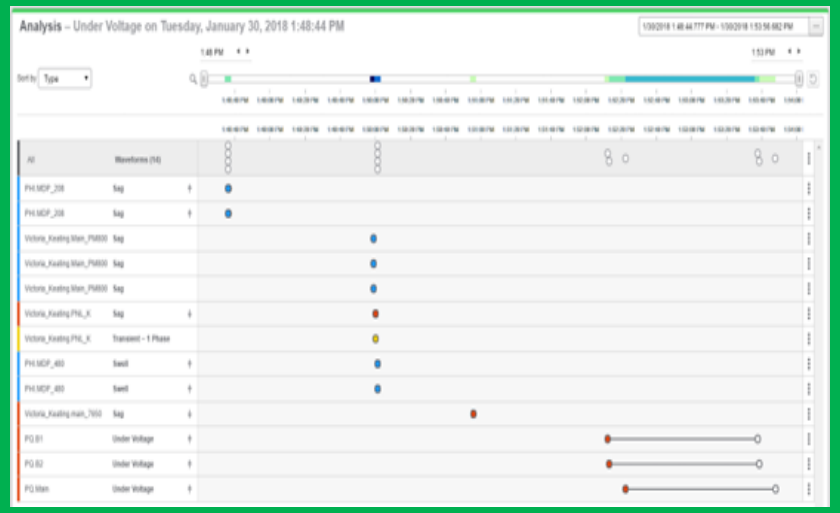
Provides right information at the right time to help analyze power events

EcoStruxure Power Monitoring Expert



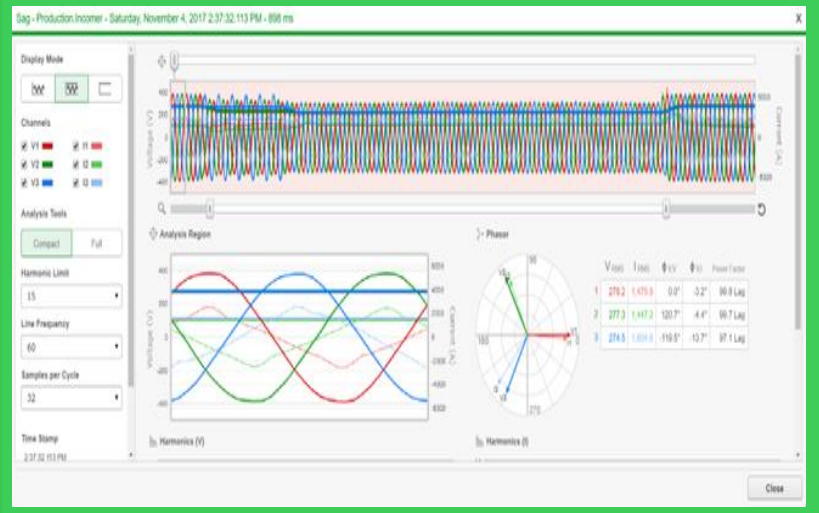
Smart Alarms

- Group related alarms to reduce alarm flooding
- Make decisions faster with key alarm information at a glance



Timeline Analysis

- Analyze events with their sequence
- Flexible time analysis window to include more events before and after a power disturbance event



Waveform Analysis

- Examine waveform in detail with channel selection and RMS values
- Animated phasor and harmonic histograms
- Export and compare waveforms

Power Quality Solutions

Overview

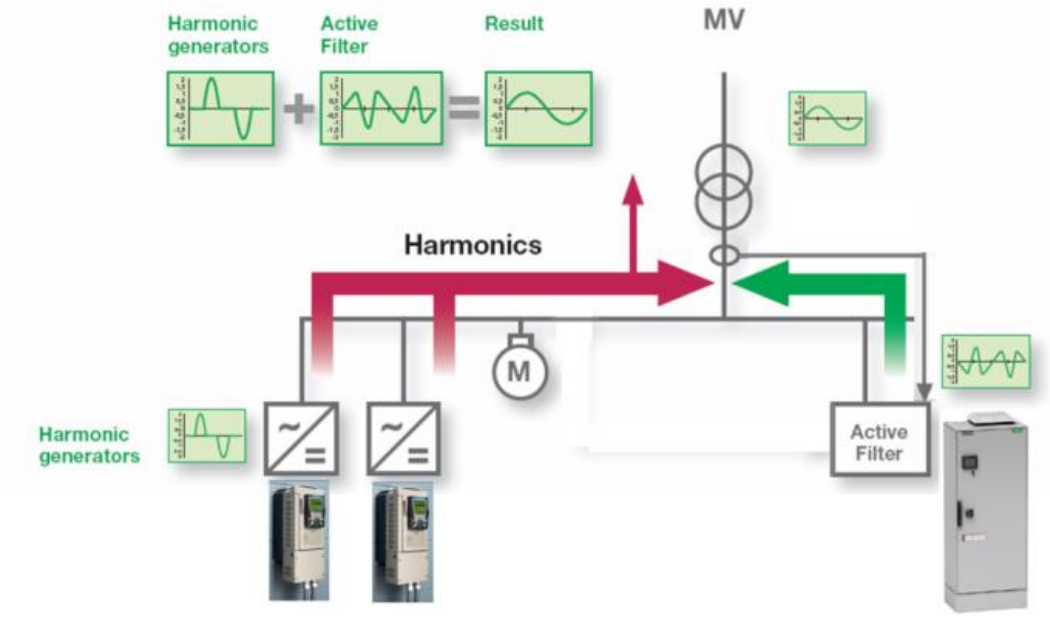
FROST & SULLIVAN

2016 BEST PRACTICES AWARD

GLOBAL POWER CORRECTION
NEW PRODUCT INNOVATION AWARD

Harmonic Assessment & Mitigation Solution

HARMONIC MITIGATION



PCS+ Mode of Operation	OPEX Reduction	CAPEX Reduction	Benefits
Harmonic Mitigation	Yes	Yes	• **Reduce downtime** • Reduce RMS current => optimal use of distribution equipment Reduce maintenance • **Comply with Vietnam Circular (30/2019)** => allow installation to be connected to the grid
Power Factor Correction	Yes	Yes	• **Reduction** of **demand billing** • Eliminate downtime related to leading PF => Gen set issue • **Reduce Apparent Power** => optimal use of distribution equipment
Load Balancing	Yes	No	• **Reduction** in **maintenance** => allow induction motor to operate cooler, extending their life span

AccuSine+ key specification highlights:

- CE Certified - all models
- Logic + Response:
  - Topology: Digital FFT
  - Harmonic correction time ≤2 cycles
  - Reactive current response ≤¼ cycle (PCS+/PFV+) ≤½ cycle
  - Control Response: 25 µSec (PCS+/PFV+)
  - Paralleling:
  - Load Share or Lead-Lag
  - Proprietary CAN+ communications bus
  - Master-Slave/MultiMaster-MultiSlave
- Performance:
  - Harmonic spectrum: 2nd to 51st (independently adjustable)
  - Harmonic THD: Closed Loop: <3% THD(i); max 20:1
  - Open Loop: <5% TDD (for retrofit)
  - Set point % THDv
  - Set point %THDi
  - Reactive (leading or lagging to unity PF)
  - Mains current balancing (negative sequence)
  - Optimized PF correction

PowerLogic AccuSine™ EVC Plus

Active Technology, Intelligent Investing

PowerLogic AccuSine™ EVC Plus

Correct both lagging PF, & leading PF

Ultra-fast PF Correction
within ¼ cycle

Easy to Choose, no complex calculations for capacitor bank Design

Easy Calculation
75 & 100KVAR

Major orders harmonic currents like (5, 7, 11 & 13th)

Filters Harmonic Currents
Correct Voltage & Current Imbalance

100Kvar EVC+ losses at 100% Loading (400V) => 1700W 100Kvar APF Platform Losses at 100% Loading (400V) => 2600W

Low Carbon Emission
~35% lower Vs Traditional

Active Tech
Harsh Environment Design

No traditional PFC Capacitors

Up to +50°C without derating. Fully certified to IEC 61439-1 & 2

EMC Filter
Operate in THDv ≤ 15%

Certified from 3rd-party Lab complies to IEC 61000 series

Third Party Certification
Conformal Coating

UL and DNV (Marine and Sesmic)

Sourced from International leading companies

Retrofit Options
Wall Mounted

Available in IP00 for retrofitting PFC Panels and installing EVC+ or IP21/31 for easy wall mount

No additional enclosures needed to fit the IP00 , Up to 10 in loop

Retrofitting with wall-mountable solutions for improved serviceability

- Cost effective
- Modular design
- Retrofitted
- Wall-mounted

Installed 4 EVC units and retrofitted

Removes all capacitors, reactors, contactors, MCCBs, cabling etc.

Dynamic Voltage Regulator

Voltage Sag/ Well

Prepare by: Trịnh Minh Tới – Nguyễn Thế Vinh – Solution Consultant

Dynamic Voltage Regulator (DVR)

Applications

Voltage Sags and Interruption disturb many types of devices connected to the network which are sensitive to the voltage disturbances.

The most sensitive applications (but not limited to)

Semiconductor Industries

Sensitive Machineries

Food and Beverage

Packaging, Bottling plats

Precision Operations

Repetitive operations at Automotive, Printing, Paper, petrochemical etc.

Pharmaceutical

Critical processes in Pharma industry

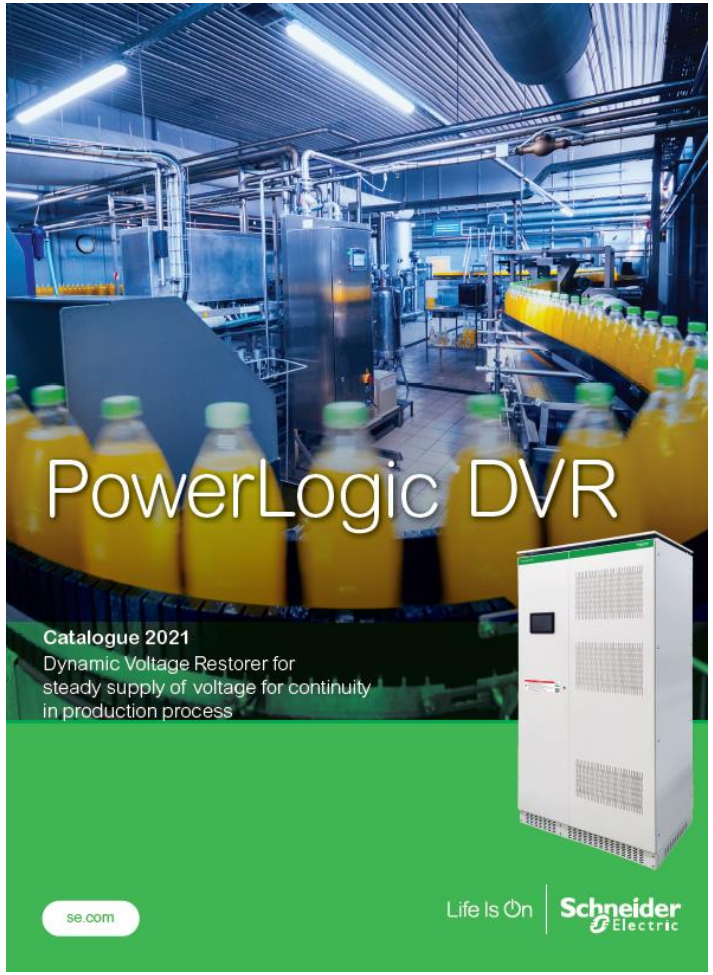
Textile Industry

Continuous processes in textile industries

Introducing PowerLogic DVR

Offer, Spread, Specification & Other information

PowerLogic DVR



	PowerLogic DVR
Input Nominal Voltage	200 to 690 Vac **(Other voltage rating on request)**
Range	150 - 900KVA **(Larger rating on request)**
Continuous Voltage Regulation	+20% -20%
Frequency	50/60 Hz ±10%
Global Efficiency	> 98%
Overload	110% -30 sec, 150%- 1 sec (normal mode)
Maximum Sag depth (3 Phase)	- 40% **(Larger rating on request)**
Maximum 1,2 ph Sag Correction	-70%
Static Regulation	±1%
Response time	< 3 ms
Transference Time to Bypass	< 0,5 ms

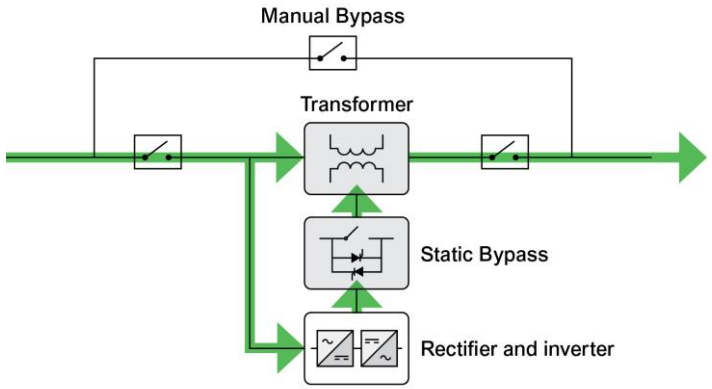
PowerLogic DVR

3 modes of operations

Normal Mode

This is the normal operating mode where DVR will

- Correct the +/- 20% over voltage or Sag
- Correct the momentary, Temporary and Instantaneous sag up to the guaranteed duration

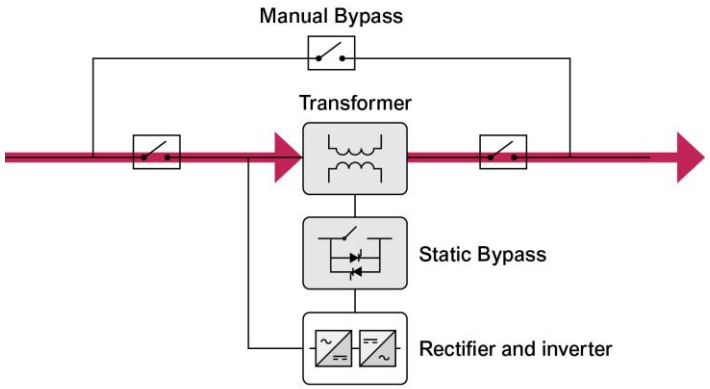


Static Bypass Mode

In this mode DVR will by pass automatically so that the line supply continues to the load

This happens during

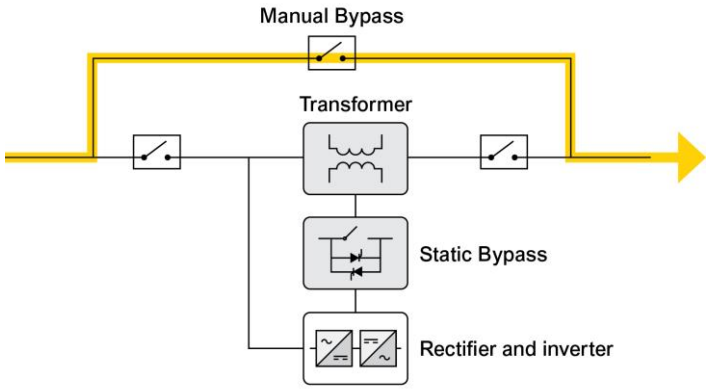
- Above the overvoltage limits (+20%) or If the sag continues over and above the guaranteed sag correction time.
- DVR Faulty or load above inverter overload



Manual Bypass mode*

The DVR has manual bypass switches that enables maintenance work without interrupting the electrical supply to the load.

In this operating mode, loads cannot be protected against disturbances in the electrical supply



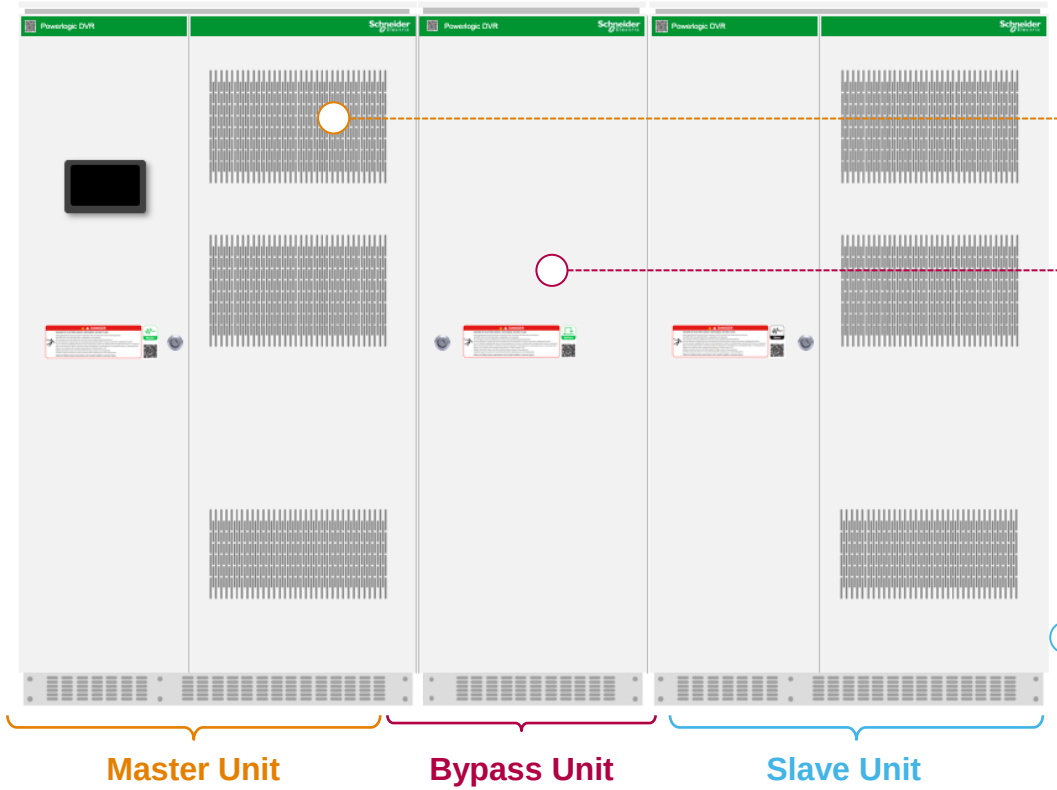
**The Manual bypass is mandatory to be ordered with DVR for ensuring continuity in operation*

PowerLogic DVR

Offer Architecture & Reference Numbering

The PowerLogic DVR system can be formed either by

- One master unit only (for Lower Power) , or
- By parallel system consisting of one master unit and a maximum of two slave units.



Master Unit

Every PowerLogic comes with a Master Unit.

Master – Slave combination is Factory set and cant be changed in the Site

For 150KVA – 60% Sag, 220KVA – 50% Sag and 300KVA – 40% Sag there will be only One Master and No Slave

Manual bypass Unit

It is mandatory to install this cabinet as it has the following functionalities

- Allows continuous power supply to the load during the maintenance of the System
- Works as a distribution cabinet to facilitate the power connection between units that are in a parallel system

Slave Unit

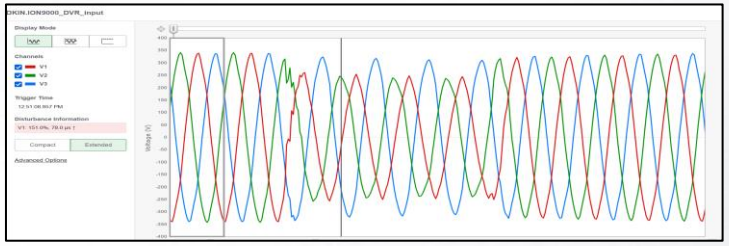
For Higher Power ratings PowerLogic DVR comes with a Slave which will work with Master to deliver the required correction.

Every slave unit is set to work with a master and can't be interchanged.

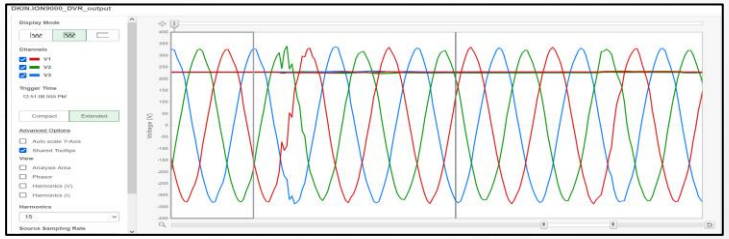
For Power more than 150KVA – 60% Sag, 220KVA – 50% Sag and 300KVA – 40% Sag every PowerLogic DVR comes with 1 or 2 Slave unit to work with the Master

PowerLogic DVR-Performance validation

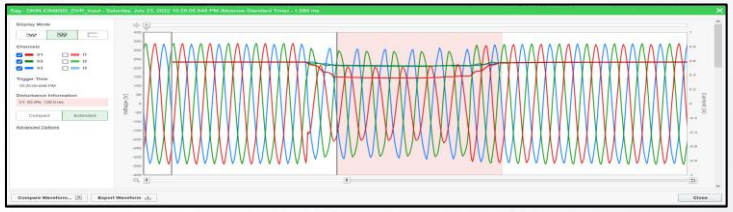
DVR Input: Sag: 70.8% of Nominal Voltage



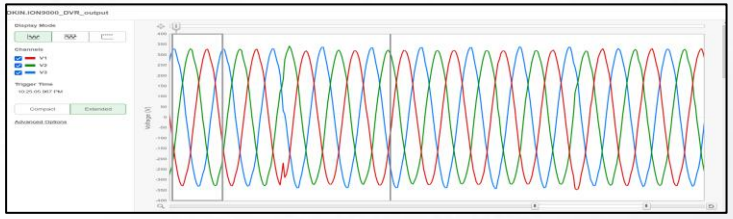
>>>> DVR Output



DVR Input: Sag: 62.8% of Nominal Voltage



>>>> DVR Output



DVR Input: Sag: 52.2% of Nominal Voltage

>>>> DVR Output

Upgrade solution for Sepam Relay- EcoFit™ Relay

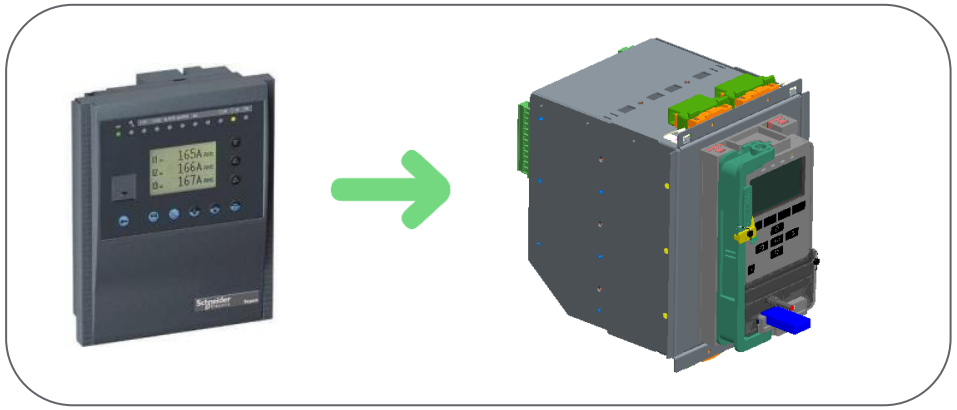
Presented by: Trịnh Minh Tới– Technical consultant

EcoFit™ Life Extension Advanced for protection relay

☑ **Tested, Validated and Approved by Schneider Electric**

☑ **Repeatability & Industrialization ensure Quality & Safety requirements EcoFit™ Solution**

☑ **Manufactured by SE's own protection relay factory with optimized Cost and Time**



Sepam series 20/40 with PowerLogic P5

Protection Relays

Sepam series 40
with P5

Original brand: Merlin Gerin, Schneider Electric

EcoFit™ Life Extension Advanced for Electrical Distribution, a true extended life time

EcoFit™ PowerLogic P5 Value delivered

- **Sustainable**
  - REACH & RoHS Compliant
- **New Features:**
  - Draw-out design with memory support
  - Cybersecurity features
  - Nearby control
  - Web-server
  - Circuit breaker monitoring
  - New design with removable communication port
  - Arc flash protection

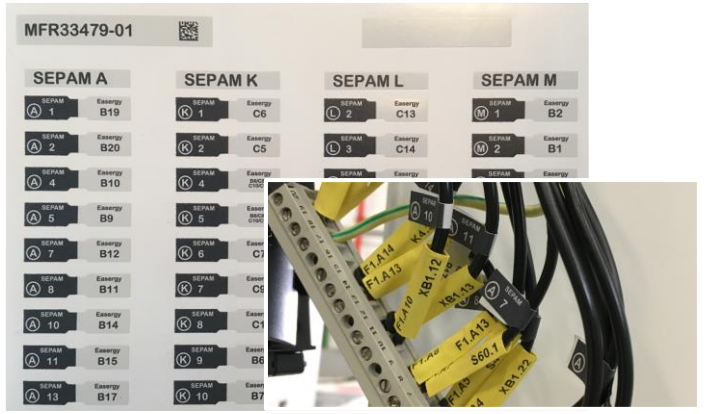
- **Low power protection relay:**
  - 40% Energy saving
- **Efficiency:**
  - 30% more compact (compared to MiCOM)
  - No internal battery

Green Premium™ Product

PowerLogic P5 offer is in line with **ecoDesign Way™ by Schneider** and will also be eco-labeled **Green Premium.**

EcoFit™ PowerLogic P5 Value delivered: **no need to update Connection Diagram**

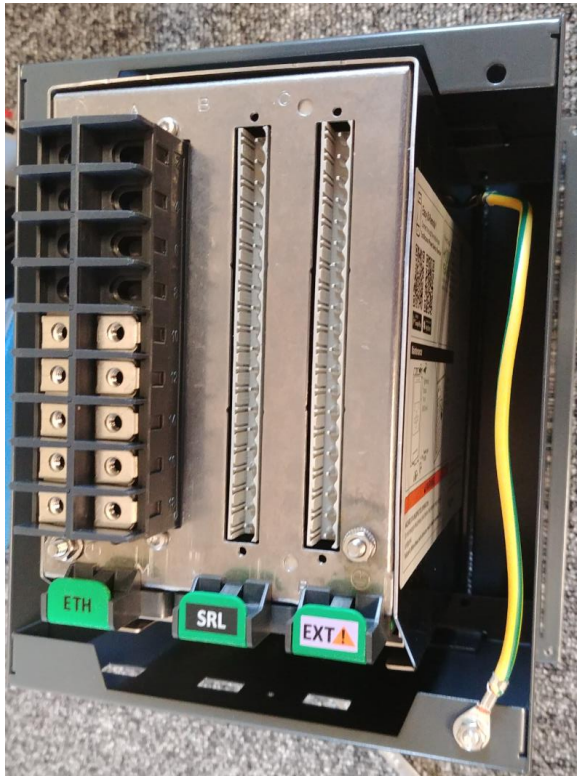
EcoFit™ PowerLogic P5 is delivered with **“smart pin relabeling”** renaming **pins of** PowerLogic P5 relay with Sepam series 20/40 or MiCOM P20 **relay pin labeling**.



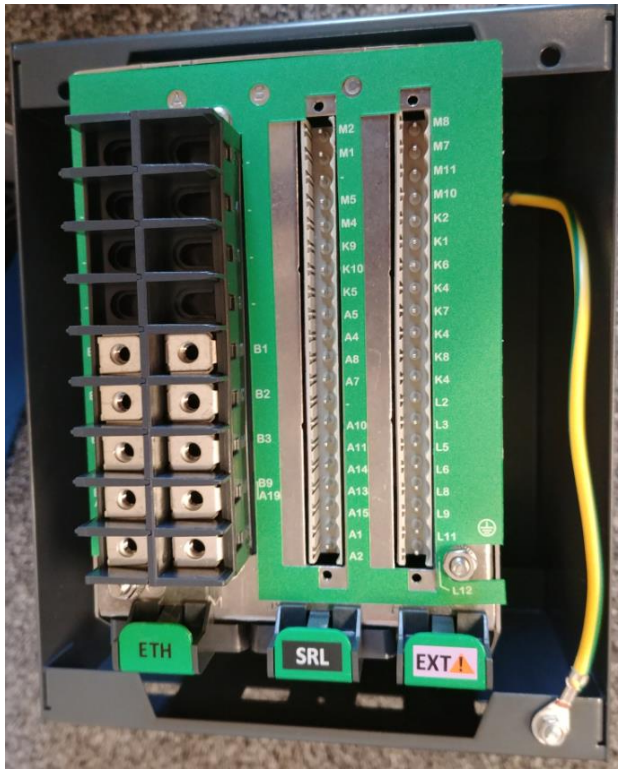
EcoFit™ PowerLogic P5 được cung cấp kèm theo bộ **“miếng dán dây thông minh”** với **chỉ báo kép về vị trí dây rơ le cũ và vị trí dây rơ le mới**

- **Save time with Schneider Electric smart wire labels.**
  - No need to analyze and compare the old and new relay schematics
  - No systematic updating of the circuit diagram and single-wire schematic. The new relay is labeled with the previous pin name.
  - Each label indicates the old relay and the PowerLogic P5 pin.
  - Reduces the risk of wiring errors

WITHOUT smart pin labelling



WITH smart pin labelling



DIGITAL

Microgrid Solutions

Khuu Duc Vinh

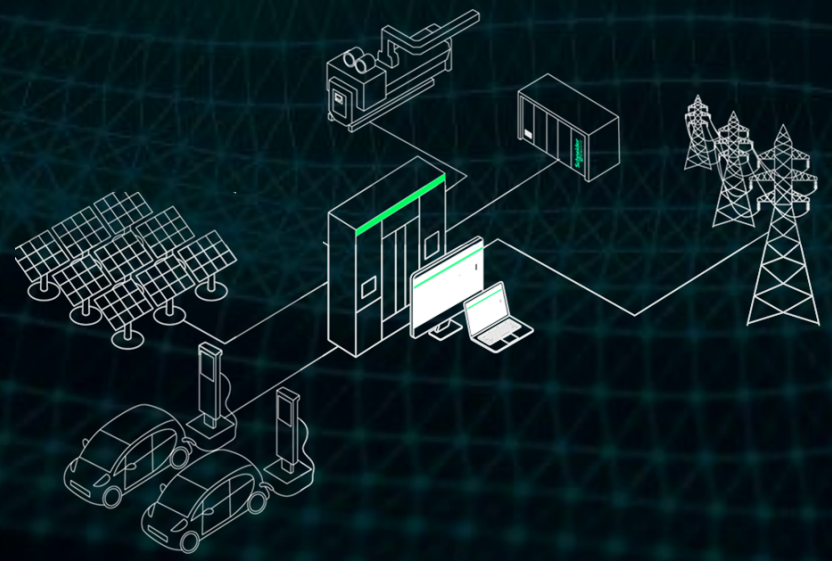
Key Account Manager

New Energy Landscape

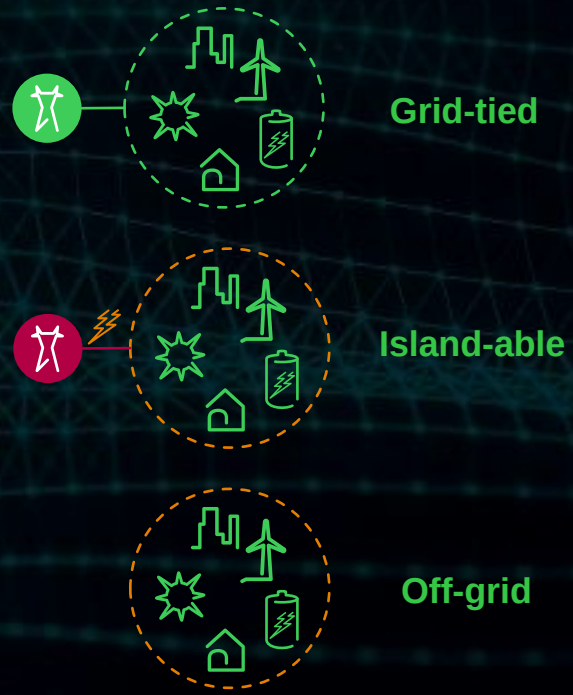
Life Is On | Schneider Electric

What is a Microgrid?

A local electrical distribution network with **Distributed Energy Resources (DER):** generation, storage & flexible loads interconnected & coordinated by **intelligent management systems**



generation + storage + flexible loads



Sustainability | Reliability / independence | Savings and earnings

Schneider Electric's Microgrid Offerings & Services

Apps, Analytics & Services

Edge Control

Connected Products

Enterprise

Real-Time Information, Alerts

System Visibility & Orchestration

- Integration to VPP Enterprise network
- Integration to Market Layer
- Integration to DERMS & ADMS
- AI Analytics

EcoStruxure™ ADMS & DERMS

VPP/Market Layer Autogrid

Analytics & Advice

Optimisation & Availability

Energy & Asset Management

- Energy Forecasting
- DER Optimisation & Dispatch
- Orchestration, DR & VPP participation
- Data integration for AI

EcoStruxure™ Microgrid Advisor

Power Management

Real-Time Information, Alerts

Protection, Metering, Control

- Microgrid control & Power Management
- Grid compliance
- IoT Connectivity & control execution
- Protection, Supervision & Monitoring

EcoStruxure™ Microgrid Operation

Electrical Distribution

Protection, Coordination

- LV & MV Electrical distribution
- Automatic Transfer Switches
- Motorized operations

Microgrid Control Centre

DERs

Local Energy Production

- Power Conversion System (PCS)
- Electric Vehicle Charging Stations

PCS for BESS

EV Chargers

Services

Microgrid Feasibility Studies
Power System Studies & Design Assist
(EcoStruxure™ Microgrid Designer)

Tools

Design, Build, Operate & Maintain
(etap, EMB, MGDT)

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