Smart Panels
Embrace the future of power distribution

schneider-electric.com/smart-panels
The coffee factory

- Meeting rooms
- General office space
- Elevators
- Loading bay
- Warehouse
- Processing and packaging
- Main electrical room
- Cafe
- Logistics
- Accounts
- Facility Manager
Electrical network is the backbone of all operations.
Yesterday’s system

**Electrical system design**
- Protection against faults
- Continuity of supply
- Cascading/ Discrimination calculations

**Loads**
- Simple heating
- Lighting
- Simple process
- …

**Single Source**
Fossil/ Hydro
The equation has evolved

Electrical system design
- Protection against faults
- Continuity of supply
- Cascading/ Discrimination calculations
- Regulations?
- Efficiency/ Carbon footprint?
- Connectivity/ Data Security?

Loads
- Automated HVAC
- Presence based lighting
- Variable speed drives
- Security systems
- Access control systems
- Storage temperature control
- Condition based monitoring
- Software/ servers (ordering, accounting, Human resources, …)

Distributed generation
Conventional + Renewables
Measurement/ Control at every level of the system

- **Quick/ reliable crisis recovery**
- **Pre – alarms with cause of failure**
- **Comprehensive network management**
- **Preventive maintenance information**
- **Asset optimization**

- **Efficient load management**
  - Pre - alarms
  - Remote operation
  - Billing/ Benchmarking

- **Real time network monitoring**
  - Pre-alarms
  - Load balance
  - Load failure indication

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  - Remote operation
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To maximise efficiency and meet green standards

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Data analysis
(Raw data converted into useful information)

Communication
(Information aiding understanding)

Action
(Understanding aiding results)

Data gathering
3 layer architecture for a comprehensive solution

Connected Products → Smart Panels equipped with
- Protection
- Control
- Metering
- Connectivity

Edge Control
On premises, real time management to improve efficiency & reliability

Apps, Analytics & Services
Advanced analysis of data and remote services

End-to-End Cybersecurity
Protection:

Electrical Protection safeguards circuit elements against thermal and mechanical stresses, preventing harm in the event of insulation failure. Smart Panels provides the information needed to analyze the fault and restore power.

Traditional:

- Protection against overload current, short-circuit & insulation failure
- Fault isolation

+ Smart crisis management:

- Failure diagnosis & recommended actions
- Quick power restoration
- Pre-alarms and notifications through communication
Control:

Switchgear control functions allow personnel to modify a loaded system, allowing maintenance operation to occur. Smart Panels offer this control with ease and convenience.

Traditional:

- Local functional/ emergency switching
- Maintenance operations

+ Smart control:

- Remote operation for load/ source management
- Digital interface for additional security while operating within an electrical room
Metering:

Electrical metering provides users with the data needed to achieve energy efficiency. Smart Panels provides this data both locally and remotely, with class one accuracy.

Traditional:

- Meters for billing/ Sub-billing
- Manual data collection through meter HMI

+ Smart metering:

- Embedded metering at Class 1 accuracy for rich maintenance data without sacrificing Panel space
- Plug and play monitoring of final loads
- High configurability for advanced applications
Connectivity:

Digitization demands that every component in the electrical installation be able to communicate with higher platforms like software and analytics. With Smart Panels, your system is open and compatible with all other components.

Traditional:

- Modbus serial line
- Proprietary protocols

+ Smart connectivity:

- Open → Ethernet
- Secure → Highest cyber security standards
- Flexible → Energy sever/ Cloud data logger/ Gateway for interfacing with SW
Ready to connect Smart Panels

Protection
Control
Metering
Connectivity

+ 

At all levels of electrical distribution

Free set-up, test & commissioning software
## Communication Test Report

Communication test conducted on 09/03/2017 10:10:09

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<th>#</th>
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<th>Name</th>
<th>Device Type</th>
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<th>Baud Rate</th>
<th>Parity</th>
<th>Stop Bits</th>
<th>Device Address</th>
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Buildings consume 53% of world electricity.
...Homes and Buildings show a huge untapped potential for more…

1. Safety

600,000 electrical accidents in France, in 2015.

Source: ONSE (National Observatory for Electrical Security)

>50,000 home fire in US caused by electrical failure; causing loss of property of USD 1.5Bn.

Source: EHS Today
...Homes and Buildings show a huge untapped potential for more…

30-50% energy efficiency potential through active control of the building space

1. World Energy Outlook 2012, OECD / IEA,
...Homes and Buildings show a huge untapped potential for more...

75% of a building’s lifetime costs go to maintenance and operations

Source: US Department of Energy, August 2010

1. Safety
2. Energy Efficiency
3. Operational Efficiency

10X

1X Reactive
5X Preventive
Predictive

Lifetime ROI of different approaches to maintenance

Life Is On  
Schneider Electric
Buildings classification

- **Large Buildings**
  - > 30,000 m² / 323,000 sq ft
    - High rise buildings, large and critical sites (data centers, hospital). Large retail, campus

- **Mid size – Commercial & Industrial buildings**
  - > 10,000 m² / 107,500 sq ft
    - Office buildings, tertiary, large hotels, shopping malls, Industrial, warehouse
  - > 3,000 m² / 32,000 sq ft
    - Medium tertiary buildings, city hall, small critical industrial sites, hotels, educational building
  - > 500 m² / 5,300 sq ft
    - Small shops, small retail, commercial agency, workshop, restaurant

- > 85% of total building market (surface)
Services business opportunity
Massive potential in mid size buildings

- Low CAPEX
- No facility Management on-site
- Massive savings potential
Leverage pay-per-use software with Smart Panels
EcoStruxure™ Facility Expert

Energy monitoring
50-80 £/ month

Maintenance management
Free Logbook + Pay per connected asset
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**Maintenance management**
Free Logbook + Pay per connected asset

- Maintenance data management & sharing
- Detailed building maintenance view
- Maintenance calendar
- Instantaneous alerts

- **Energy monitoring**
- **Maintenance management**

- **EcoStruxure Facility Expert**

- **Energy monitoring**
  - 50-80 £/ month

- **Maintenance management**
  - Free Logbook + Pay per connected asset
Leverage pay-per-use software with Smart Panels

**EcoStruxure™ Facility Expert**

**Energy monitoring**  
50-80 £/ month

**Maintenance management**  
Free Logbook + Pay per connected asset

- Be the first to know about electrical issues at end user sites
- Prepare quotations in advance
- Offer high level service easy to use maintenance solution
Leverage pay-per-use software with Smart Panels
EcoStruxure™ Facility Expert

Schneider Electric
Technology Partner

Distributors
Easy to quote/purchase hardware packages

EcoXpert™
Connected Power Certified by Schneider Electric

End users – Mid Size Buildings
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