

Energy Management Solutions

A life cycle approach with active Energy Efficiency



Schneider
Electric

For more information visit our website at: www.schneider-electric.co.in
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Schneider
Electric



Schneider Electric offers integrated solutions across multiple market segments, including leadership positions in energy and infrastructure, industrial processes, building automation, and data centers/networks, as well as a broad presence in residential applications.



Schneider Electric Worldwide

- Global Specialist in Energy Management
- Making Energy safe, reliable, productive, efficient and green.
- Presence in **180 + countries**
- Specialised workforce of **1,14,000 employees**
- Consolidated revenue worth **Rs. 1,28,100 Cr. in 2008**
- **25 Research and development centers**
- Developing technologies, processes and solutions that are simple, efficient and environment friendly.

Schneider Electric in India

- **7500 + employees**
- **12 Global Manufacturing Plants**
- **6 Distribution Centres**
- **35 Sales Offices**
- **500 + Authorised Partners:** Distributors, System Integrators, Panel Builders
- **2 Global Customer Care Centres**
- **6 R&D Centres**
- **2 Global Software Centres**
- **1 Regional Project & Engineering Centre**
- **1 Schneider Electric India Training Institute**



Conzerv System is now a part of Schneider Electric family and strengthens its leadership position in Energy Management.

- Comprehensive metering & Energy management software offer
- Advanced Energy audit & consulting competencies (WAGES)
- Tailored training programs
- Wealth of experience-30,000 metering customers, more than one million meters in operation, 500 EMS installations, 300 Energy audits & over 160 Power quality audits.



Meher Capacitors joins Schneider Electric thus making our Energy Management offer most formidable.

- Power factor correction & Harmonic filtering
- Advanced Reactive power solutions & Active filters
- Medium & Low voltage capacitors & power factor correction systems
- Strong technical competencies, having pioneered design & manufacture of Self-Healing Power factor correction capacitors & systems



Schneider Electric + Conzerv + Meher Capacitors = EE^{3*}

*EE = Energy Efficiency

A life cycle approach with active Energy Efficiency

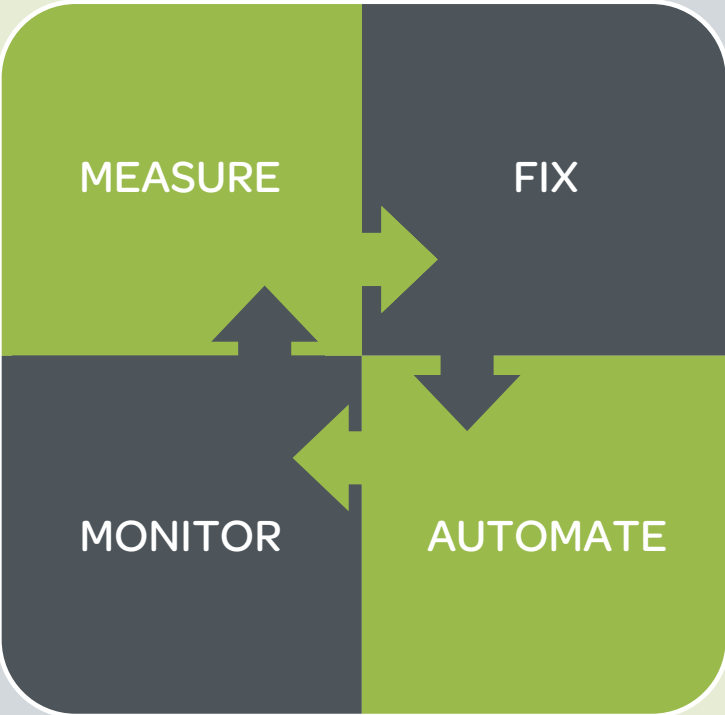


Measurement & Consulting

- Power meters
- Energy audits
- Power quality audits

Fix the basics

- Power factor correction
- Harmonic filters
- Low consumption devices
- Insulation material



Monitoring & verification

- Energy management system
- Online monitoring
- Remote monitoring services

Automation & regulation

- Building management system
- Lighting management system
- Motor control systems
- Home control systems
- Variable speed drives



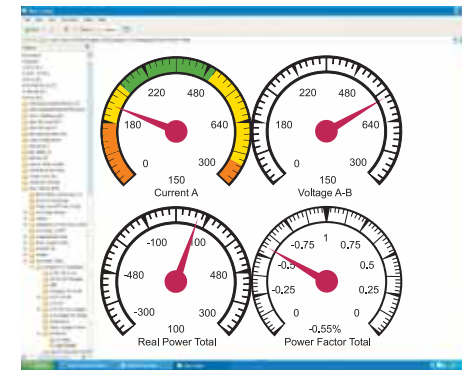
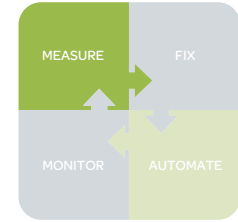
Measure



Measure

Efficient energy management begins with accurate measurement, the first step being measuring and monitoring critical parameters in real-time. Measurement of parameters help to control energy related costs, improve energy efficiency, power quality & reliability and enhance accuracy of billing & cost allocation.

Further, for an effective Energy improvement program, one of the main activities is an Energy Audit that assists clients for decisions on appropriate energy mix and using the right equipment and technologies for improved energy efficiency.



Energy Audits

- Comprehensive energy audits for varied sectors.

Objective

- Accumulating data at various energy points
- Identifying energy losses and critical junctions
- Enabling energy conservation and cost savings

Methodology

- Analyzing the performance of each equipment
- Collating the parameter data with benchmarks
- Manifesting and implementing corrective measures

What it covers

- All operations, processes, products and departments
- All forms of energy - mechanical, electrical and thermal
- Study of utility equipment
- Thermal imaging, insulation survey

What it leads to

- Energy, heat and mass balance
- Establishing specific energy consumption
- Identifying opportunities for energy efficiency

What it helps achieve

- Compliance with regulations
- Lower costs & faster recovery of investments
- Better performance and reduced downtime
- Enhanced power quality and productivity
- Reduced emission levels

Types of Energy Audit

- Electrical Audit: distribution system study, energy balancing, PF study, loads, loss estimation
- Process Study and Process Optimization
- Thermal Audit: energy balancing, waste heat recovery, thermal control systems and energy savings study

Power Quality Audit

Comprehensive Power Quality Audits to identify harmonics in the network and Design mitigating solutions filters to eliminate their effects.

Approach

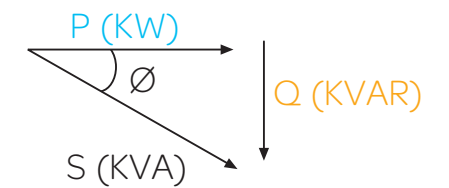
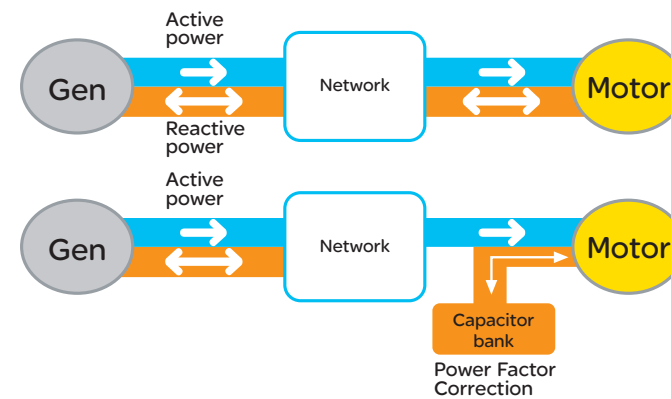
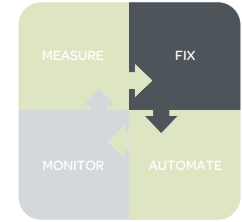
- Detect harmonics in the network at different feeders
- Identification of type of harmonics, amplitude of distortion and percentage of I-THD and V-THD
- Design of tuned filters to nullify effects of identified harmonics
- Supply, installation and commissioning of filters
- Performance evaluation of filters and benefits after installation

FIX

Fix the Basics

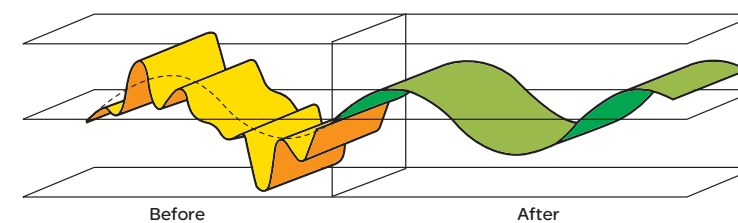
Power Factor Correction

- Save on energy costs
- Reduce the energy bill
- Reduce the losses
- Optimize the size of your installation
- Increase the power availability
- Reduce the size of transformers, cables and switchgear equipments
- Improve the reliability and extend the life-span of the system when using with detuned reactors
- Increase the life-span of electrical devices
- Contribute to the reduction of CO2 emission; thanks to lower energy consumption



Harmonic Filters

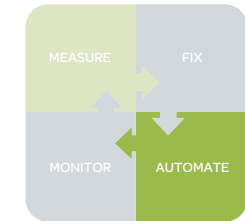
- Reduce Harmonics Optimize capacity disturbances to improve your energy efficiency and the life-span of your electrical equipment
- Minimize temperature rise in electrical equipment
- Increase the life-span of equipment up to 32% for single-phase machines, 18% for three-phase machines, 5% for transformers.
- Improve the continuity of your production processes
- Eliminate production downtime
- Eliminate the strong negative impacts of harmonics on all electronic devices: computers, telephones etc.
- Improve ability to meet electrical utilities' requirements



Automate

Automate

Schneider Electric's automation solutions for Energy optimisation



Variable speed drives: Comprehensive range of variable speed drives for optimisation

- Applications: Ventilation, Pumping, Cooling towers, HVAC
- Energy savings with precise motor speed adjustment
- Precise regulation of air flow/water pressure
- Motor protection, soft starting, motor speed adjustment
- Connection to the building management system using field buses

HVAC Control

- Centralised control system for AHUs, Screw chiller control, enclosed drive for variable torque applications
- Complete solution with SCADA, motor control, drives, soft starters, HMI & PLCs.
- Sequence control, protection control & power adjustment
- Easy data exchange with building automation system and remote control

Building Automation Systems

TAC's open, integrated building management solution helps you:

- On-demand energy management
- Customised energy analysis and reports
- Reduce installations, operation, training and maintenance costs
- Enhance comfort and security
- Simplified administration

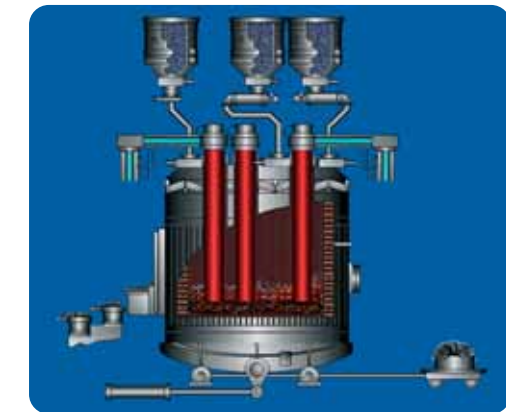
Lighting Management Systems:

Clipsal's LMS ensures energy optimization by:

- Occupancy based sensing & Scheduled switching
- Personal control of lighting
- Daylight Harvesting
- Shade and blind control
- Astronomical switching of outdoor lighting
- Demand control
- Switching and dimming
- Integration with other building systems
- Real time monitoring and verification of system performance

Home Automation

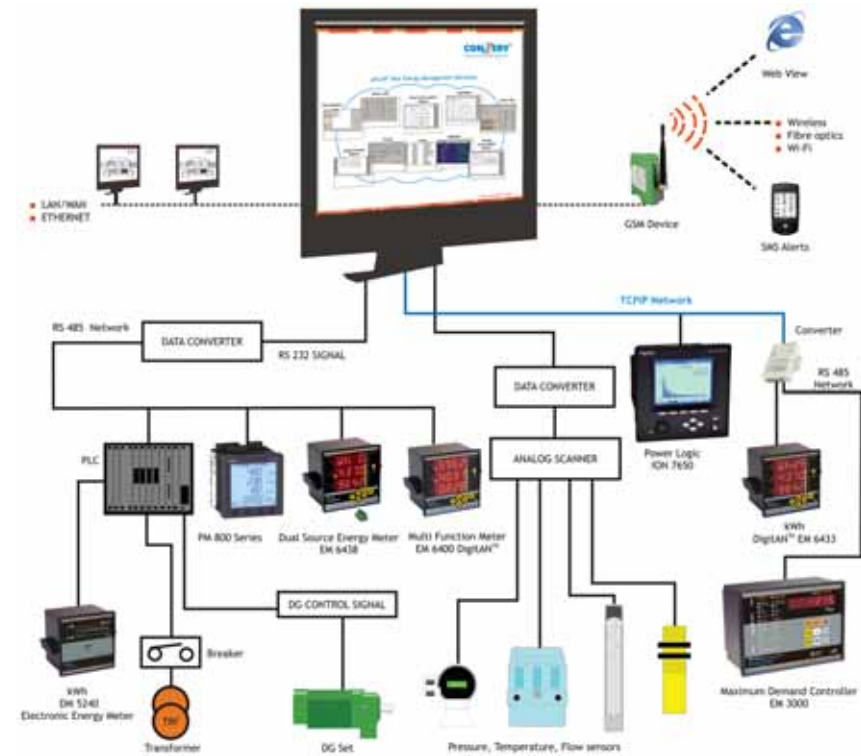
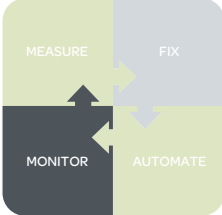
- One touch scene control & Customized pre-set scenarios
- Advanced lighting control solutions for residential buildings.



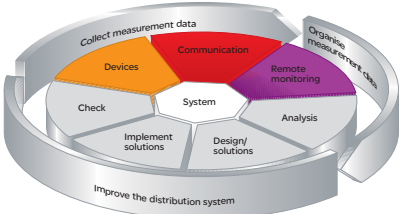
Monitor

Monitor

A complete range of advanced EMS Solutions to provide the real benefit of centralized monitoring of all electrical and non electrical parameters for efficient management of the entire system.



- Real time monitoring of an installation via web technologies
- Aid preventive and corrective maintenance of the installation ensuring continuity of service.
- The range includes simple solutions, web enabled energy management systems and advanced EMS Softwares including WAGES (Water, Air, Gas, Electricity, Steam) and GHG calculations .
- Seamless integration with 3rd Party EMS, BMS, ECS, DCS, DMS, Scada, Business Systems and so on.

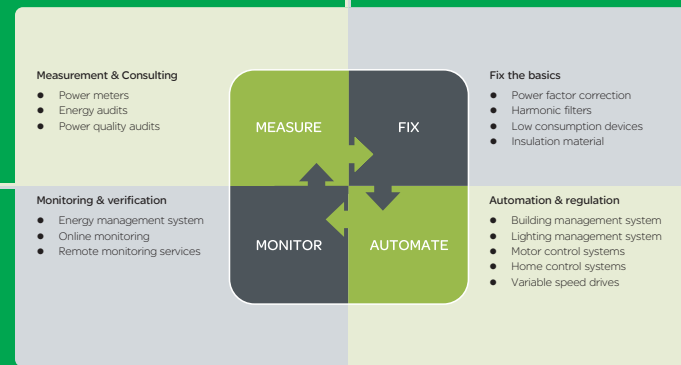


Selection Guide

Features	1 Single Function	2 Restricted Multifunction	3 Multifunction (Load Manager)	4 Real Time Monitoring	5 Power Quality	6 Real Clock Time	7 I/Os for status & control	8 "Data Logs, Trends & Forecast	9 Automatic Alarming & Control	10 Direct Ethernet Access	11 Waveform Capture	12 Sag/ Swell Detection	13 High Speed Metering	14 Advanced Control	15 Advanced Revenue & GPS Sync	16 Web - enabled	17 Loss Compe- nsation	18 Transient detection	19 Advanced Power Quality
Non Communicable Devices																			
DM 1000 / DM 3000	✓																		
ELF	✓	✓																	
Communicable Devices																			
DM 52	✓																		
EM 6459		✓		✓															
EM 6433		✓		✓															
EM 6434		✓		✓															
EM 6436		✓		✓															
PM 210			✓	✓															
PM 710			✓	✓	✓														
EM 6438 (Dual source)	✓	✓		✓															
EM 6400			✓	✓	✓														
ION 6200			✓	✓	✓														
EM 3000			✓	✓	✓	✓	✓		✓										
PM 810			✓	✓	✓	✓	✓	✓	✓	✓			✓						
PM 820			✓	✓	✓	✓	✓	✓	✓	✓			✓						
PM 850			✓	✓	✓	✓	✓	✓	✓	✓	✓		✓						
PM 870			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						
ION 7300			✓	✓	✓	✓	✓	✓	✓	✓			✓			✓			
ION 7330			✓	✓	✓	✓	✓	✓	✓	✓			✓			✓			
ION 7350			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			
ION 7550			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
ION 7650			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CM 4000			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ION 8600			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ION 8800			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Some of the features like RS485, I/Os, Power Quality, etc are optional, which needs to be checked from the individual product catalogue and clarified at the time of ordering.

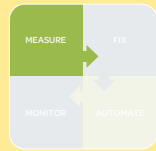
The above hardware supported by a complete range of EMS softwares from basic to advanced EMS. For details on EMS offer, please refer page 5



Energy Management - Product and Solutions

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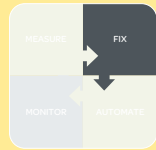
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Measure :

Metering

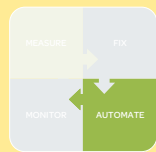
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Fix the basics :

Power Factor Correction

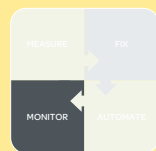
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Automate :

Automation & Energy Saving Solutions

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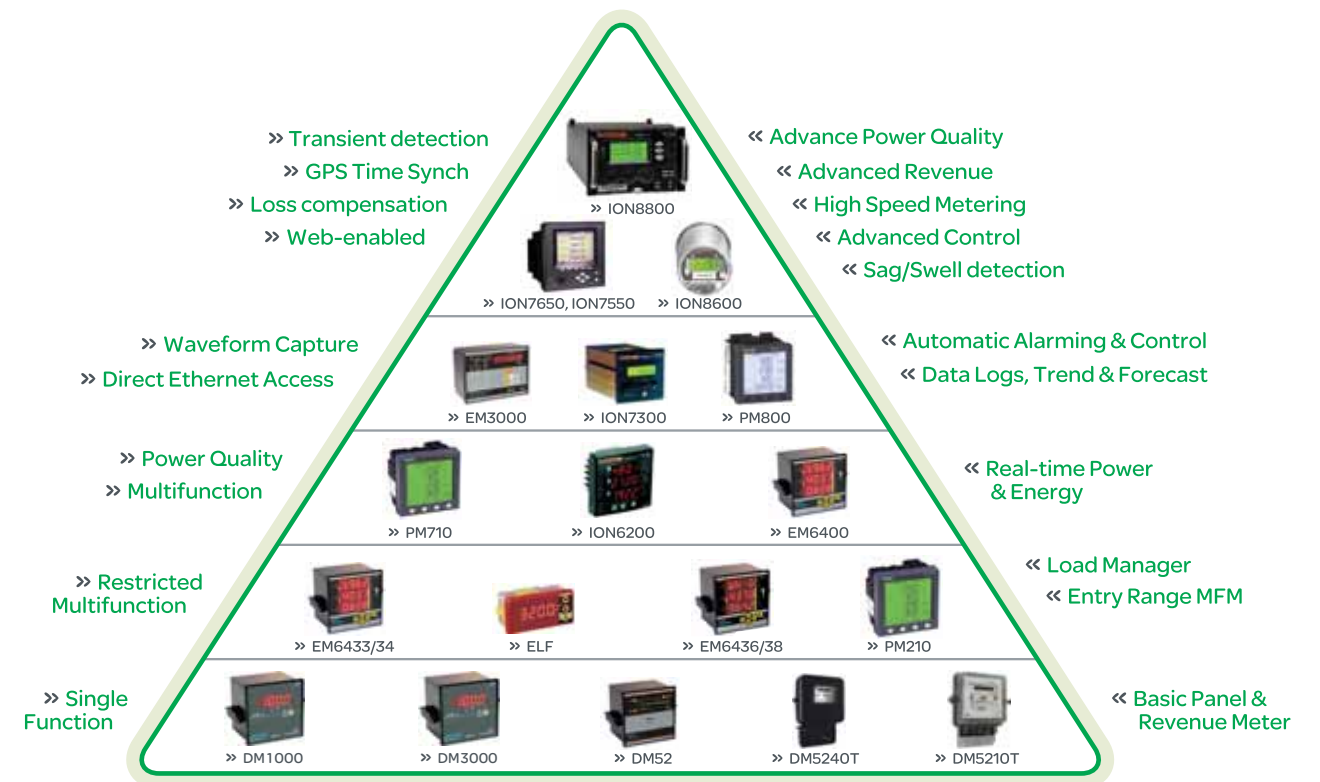
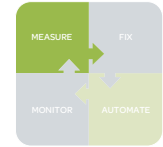
Monitor :

Energy Management Systems

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Metering - Product and Solutions

An extensive range of Power Metering to cover the entire network from the main incomers upto the final loads/terminal points.

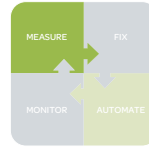


The range covers:

- Basic single function communicable and non communicable meters measuring V, A, F or KWh.
- The next platform covers the entry range of Multifunction devices measuring basic electrical parameters as also advanced measurements like power quality, demand values, digital inputs & outputs including relay & pulse outputs, etc.
- The range is further complimented by medium range meters having additional functionalities like on board memory (for data logs, trends & forecasts), alarming & control, ethernet port. These also cover advanced PQ features such as individual harmonics, waveform capture, sags & swells, etc.
- The advanced metering comprises of most sophisticated measurement solutions that provide a larger memory, high speed metering, transient capturing, inbuilt gateways & Modbus mastering, RTU & logic programming facility, Transformer & Instrument Transformer loss compensation, advanced revenue metering like ABT applications, embedded web pages, GPS Time synchronization and much more.



Metering - Products and Solutions



DM1000/DM3000

- Displays V, A, F
- 1 Phase & 3 Phase
- Compact 96 x 96 mm DIN case, 80mm Depth
- Flush mount
- Accuracy Class 1.0, 0.5
- Built-In Phase Selector Switch - 3 phase meters



DM52

- Kwh meter
- True RMS
- Low PT, CT burden
- Accuracy class 1.0 IEC 61036 & Class 0.5
- Field settable standard full scale
- Pulse output feature
- Tamper proof cover option



DM5210T

- Whole current Kwh meter (Single Phase)
- State of Art SMD Technology
- Wide Working Voltage Range
- Universal Whole Current 2.5A, 5 A & 10A lb
- Equivalent of 7 digit display
- Accuracy Class 1.0 as per IEC 61036, CBIP 88
- Over voltage protection (415 V)
- Tamper Indication; Current Reversal, Earthed
- Pulse output option for online Energy Billing



DM5240T

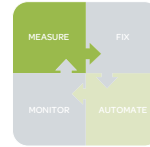
- Whole current Kwh meter (Three Phase)
- State of Art SMD Technology
- Wide Working Voltage Range
- Universal Whole Current 5A, 10A lb
- Equivalent of 7 digit display
- Accuracy Class 1.0 as per CBIP 88 & IEC 61036
- LED indications for individual phase current reversal
- Pulse output option for online Energy Billing Systems
- Not affected by current reversal



EM 6459

- Displays Volts, Amps, Frequency/PF simultaneously
- Monitors generator speed (RPM)
- Monitors generator loading efficiency
- ON hours & number of power interruptions

Metering - Products and Solutions



ELF Series

- 96 x 48 mm. Depth 40 mm
- Auto scaling: Kilo - Mega - Giga
- Multiple Parameters like V, A, F, unbalance in phases (%), RPM*
- True RMS & Integrated values of power & energy**
- OLD Energy Parameter (Wh, VAh, VARh, -VARh) previous energy values**

* ELF 3259 **ELF 3234



PM200 / 700 series

- Displays all instantaneous and integrated parameters of basic, power & energy
- Accuracy Class 1.0 as per IEC 62053-21
- Present & maximum demand values of current, active, reactive & apparent power
- THD option in PM700 series



EM6438

- Dual source energy meter
- Two registers separately record consumption based on a control signal for dual source energy billing (for utility and genset KWh monitoring and billing)
- Option - multifunction parameters
- Display apparent/active power and energy
- Used at shopping malls, Residential complexes and Buildings for tenant billing



EM 6433

- Monitors active/apparent power & energy consumption, load current, Run hours, ON hours in a single meter
- Displays Amps, Power simultaneously

EM 6434

- Displays all power and energy parameters, Run hours, ON hours & number of power interruptions
- Monitors loading characteristics of motors

EM 6436

- All benefits of EM 6433 and more
- Displays Volts, Amps, Frequency/PF simultaneously
 - Displays Amps, Power, PF simultaneously

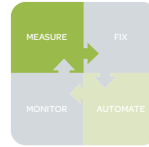
EM 6400

- All benefits of the above models and:
- Monitors all instantaneous and integrated parameters of basic, power and energy
 - Monitors demand (Rising demand - optional)
 - Analyses power quality using THD parameter
 - Helps energy balancing
 - Import/Export - optional

* Available in accuracy class 1.0, 0.5 & 0.2 for all EM64xx series



Metering - Products and Solutions



ION6200

- Displays all instantaneous and integrated parameters of basic, power & energy
- Accuracy Class 0.5s as per IEC 60687
- Demand values of current, active, reactive & apparent power
- Analyzes Power Quality using THD
- Import/Export
- Optional - 2 digital outputs for energy pulsing



EM3460

- Offers Demand Monitoring & control
- Ensures automatic synchronisation of demand with utility meter
- Displays Max demand along with date and time of occurrence.
- Helps to set realistic demand target, Optimises demand utilisation
- Predictive feature enables prior indication of crossing demand
- Facilitates tripping of non essential loads
- Analyses electrical faults & planning of load schedules.
- 3 Potential Free Relay Configurable for Predictive Demand, Demand and Restore



PM800 series

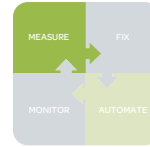
- Displays all instantaneous and integrated parameters of basic, power & energy
- Accuracy Class 0.5s as per IEC 62053-22
- Demand values of current, active, reactive & apparent power
- Onboard memory and configurable alarms
- THD and Individual Harmonics
- Analog Inputs/Outputs
- Digital Inputs/Outputs
- Optional Ethernet port
- Waveform capture and Sags & Swells detection in PM870 model only



ION7300 series

- All the benefits of above models and more,
- Additional front optical port (apart from RS485)
 - Optional Ethernet port
 - Optional Profibus port in 7300 model
 - Optional built in modem and 2 x RS485 ports in 7330 model
 - Waveform capture and Sags & Swells in 7350 model only

Metering - Products and Solutions



ION7550

- Displays all basic electric parameters
- Accuracy Class 0.2s as per IEC 62053-22
- Demand values of current, active, reactive & apparent power
- Onboard memory (5MB/10MB)
- Configurable alarms (65 Setpoints, response time - 10ms)
- Sag/Swell detection
- Waveform capture @ 256 samples/cycle (configurable)
- Individual harmonics to the 63rd (upto 127 through software)
- Transformer Loss Compensation (TLC)
- Instrument transformer correction (save money and improve accuracy by correcting for less accurate transformers)
- V4, I4 and I5 terminals for metering neutral and ground circuits
- NICT (current probe) option available
- Optional built in modem (Ethernet), 1x RS485 and 1x RS232/RS485 communications ports
- Modbus RTU, ION, DNP 3.0, EtherGate, ModemGate
- Optional IRIG-B port

ION7650

- All the above plus:
- Symmetrical components
- Transient detection (<20µs)
- Waveform capture @ 512 (1024 optional) samples/cycle
- EN50160
- IEC61000-4-15 flicker
- IEC61000-4-7 interharmonics
- IEC61000-4-30 Class A

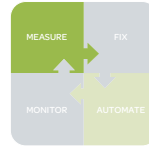


ION8600

- Transmission and distribution metering (including ABT).
- Accuracy Class 0.2s as per IEC 61036
- Demand values of current, active, reactive & apparent power
- Sag/Swell detection and Symmetrical Components
- Transformer Loss Compensation (TLC)
- Instrument transformer correction (save money and improve accuracy by correcting for less accurate transformers)
- 1 second setpoint alarms
- Configurable event and trending data logging
- Alarming via e-mail or pager (with Ethernet or modem option)
- Optional built in modem (Ethernet), 1x RS485 and 1x RS232/RS485 communications ports
- Modbus RTU, ION, DNP 3.0, EtherGate, ModemGate
- Optional IRIG-B port
- Individual harmonics to the 63rd
- cycle response time for setpoint based alarms
- Transient detection
- Waveform capture @ 256 samples/cycle (configurable)
- EN50160 and Flicker



Metering - Products and Solutions



ION8800

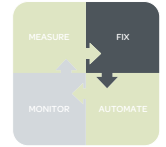
- Transmission and distribution metering (including ABT).
- For interconnection points on medium, high, and ultra-high voltage networks in compliance with IEC 62053-22 Class 0,2S for settlements and customer billing.
- Extensive power quality monitoring and analysis.
- Digital fault recording.
- Contract optimisation and compliance verification.
- Instrument transformer correction.
- Transformer/line loss compensation.
- IEC 19-inch rack mount design to DIN 43862 std Essaielc connectors
- Monitor compliance with international quality-of-supply standards (IEC 61000-4-30 class A, EN 50160, IEC 61000-4-7, IEC 61000-4-15, CBEMA/ITIC)
- Simultaneous capture of voltage and current channels for sub-cycle disturbance transients
- IEC1107 optical port, optional communications module supports concurrent Ethernet (10BaseFL or 10BaseT), serial, and modem communications
- Apply tariffs, seasonal rate schedules to measure energy and demand values for time periods with specific billing requirements
- Total of 24 setpoints for single/multi-condition alarms and control functions; 1 second response
- Instrument transformer correction (save money and improve accuracy by correcting for less accurate transformers)
- High-priority alarms, data logs sent directly to the user's PC. Instant notification of power quality events by email.



CM4000

- Displays all basic electric parameters
- Accuracy Class 0.2s as per IEC 62053-22
- Demand values of current, active, reactive & apparent power
- Onboard memory (16/32MB)
- Configurable alarms
- Individual Harmonics upto 255th
- Digital Inputs/Outputs
- Waveform capture
- Disturbance - Response time of 10ms
- Sag and swell detection
- Transient detection (< 1Ps)
- Sampling rate 5MHz
- EN50160 and IEC 61000-4-7, IEC 61000-4-30 compliance
- Flicker evaluation based on IEC 61000-4-15 and IEEE 1453
- Ultra-fast recording of electrical parameters every 100 ms or every cycle
- Ethernet 10/100 Mbits/s card and server for HTML pages

Power Factor Correction – Products & Solutions



Capacitors

- Range of LV/MV Capacitors for Power Factor Improvement.
- LV 415/440/480/525 V; Peak Inrush Range: 150/200/300/350 In
- MAA/APP/Gas Filled Technology; Self Healing & Non-self healing
- To suit from standard to Most Demanding environments & applications.



APFC Systems

- Maintain Power factor even under Variable Load Conditions, with APFC Relays
- Thyristor Switches for fast fluctuating Loads.



Filter Applications

- Detuned Filters for PF improvement in Harmonic rich environment
- Tuned/Broadband/Active Filters for Harmonic Mitigation



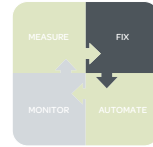
Systems & Solutions

- HT/LT capacitors Banks, PFC Projects
- Harmonic Audits, PFC Training and Consultancy



VARPLUS Range of Capacitors

A comprehensive LV range that offers 2 different construction technologies to fulfill your needs....



>> CAN TYPE



>> BOX TYPE

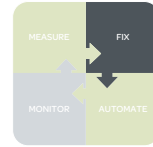
LV Capacitor selection guide

Capacitors must be selected depending on the working conditions expected during their lifetime.

Solution	Description	Recommended use for	Max. condition	Life expectancy (hours)
S Duty	Standard capacitor	Networks with non significant non-linear loads Standard over-current Standard operating temperature Normal switching frequency	$N_{LL} \leq 10\%$ $1.5 I_N$ 55°C (class D) 5000	Up to 100000
HDuty	Heavy duty capacitor	A few non-linear loads Significant over-current Standard operating temperature Significant switching frequency	$N_{LL} \leq 20\%$ $1.8 I_N$ 55°C (class D) 7000	Up to 130000
Energy	MDXL Capacitor for special conditions	Significant number of non-linear loads (up to 25%) Significant over-current Extreme temperature conditions (up to 70°C) Very frequent switching	$N_{LL} \leq 25\%$ $2.5 I_N$ 70°C 10000	Up to 160000
Harmonic HDuty	Heavy duty, harmonic rated capacitor + Detuned reactor	High level of non-linear loads (up to 30%) Significant over-current Standard operating temperature Significant switching frequency	$N_{LL} \leq 30\%$ $1.8 I_N$ 55°C (class D) 7000	Up to 130000
Harmonic Energy	Energy, harmonic rated MDXL capacitor + Detuned reactor	High level of non-linear loads (up to 40%) Significant over-current Extreme temperature conditions (up to 70°C) Very frequent switching	$N_{LL} \leq 40\%$ $2.5 I_N$ 70°C 10000	Up to 160000
HGDuty	Heavy duty gas filled capacitor	A few non-linear loads Significant over-current Standard operating temperature Significant switching frequency	$N_{LL} \leq 20\%$ $1.8 I_N$ 55°C (class D) 7000	Up to 130000
APP	Super heavy duty capacitor	A few non-linear loads Significant over-current Standard operating temperature Significant switching frequency	$N_{LL} \leq 20\%$ $2 I_N$ 55°C (class D) 8000	Up to 140000

- Above 25% and below 40% of non linear loads use capacitor + detuned harmonic Filter
- Above 40% and below 60% of non linear loads system Study is required

APFC SYSTEMS



Both Contactor & Thyristorised Control for Dynamic Variable Load Conditions.

- Modular Standard or Customized design which allows easy handling by the user and also capable of being extended/upgraded.
- Minimal joining in all the connections to ensure better reliability and lower losses.
- State of the Art , Schneider Switchgear used such as contactors, MCCB's etc. confirm to the latest Indian and international standards.
- Use of special connecting cables suitable for high temperature withstands.
- Advanced microprocessor relay.
- Use of SDuty/Hduty/Energy (MDXL) type capacitors.
- Range 5Kvar-400Kvar with Engineered Step Selection to suit your requirement

Engineered MV APFC Systems using Vacuum Contactor.



>> LV APFC



>> MV APFC

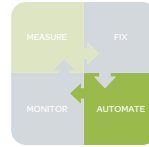
HT Capacitors & Banking/Projects



- 1.8KV to 15KV Capacitors in single phase and three phases configuration with external or internal fuse designs in containers of mild steel or stainless steel.
- Banking Capabilities for Higher Voltages
- Delta Connected or Star Connected
- 500Kvar-300000Kvar Design
- HRC Fuse / residual Voltage Transformer Protection Options
- Comprehensive Numerical Protection Relay Option



Automation & Energy Saving solutions

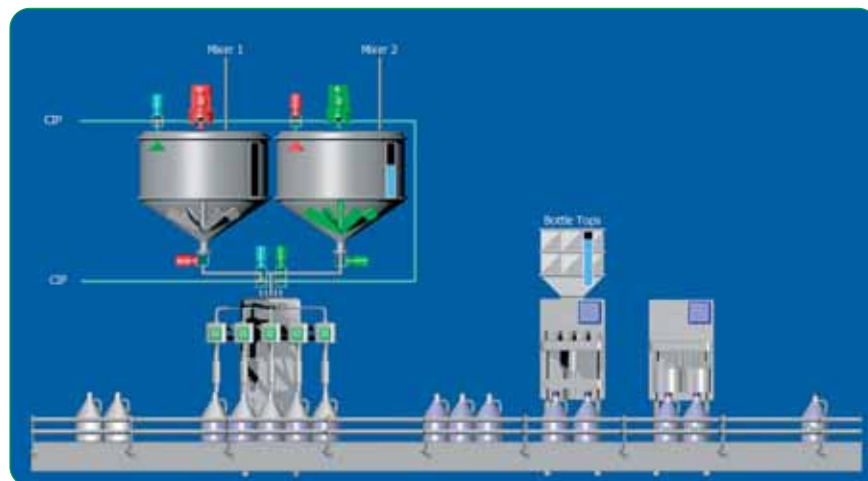
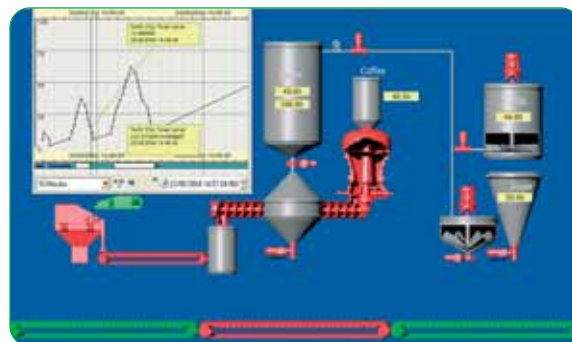


How can I optimize my energy costs with better ROI?

Schneider Electric offers a host of automation solutions to optimize your energy costs.

Solutions & Knowledge

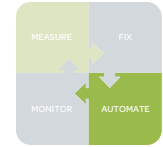
- HVAC, Ventilation, Fan control, Lighting control & management
- Pump, compressor control, Motor control & management
- Process optimization
- Home automation



Enabling technology

- Automation & Sensors
- Drives & motor control
- Lighting control systems,
- Building automation systems

Automation & Energy Saving solutions



coolLite™ – Lighting Energy Saver



Savings selector-
select savings to suit load

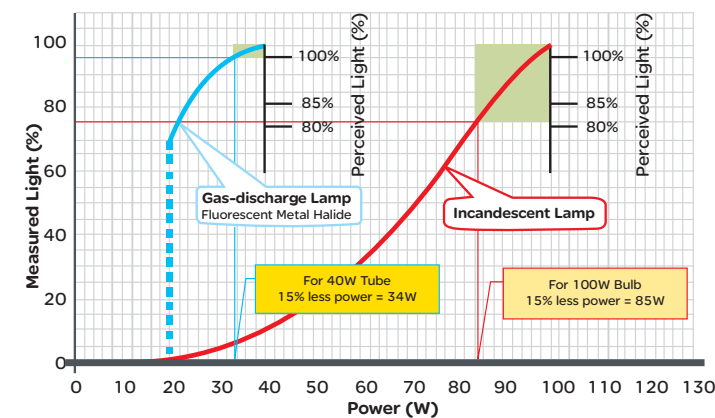
20% for Technology parks
with OLTC / UPS Stabilised supply / Hi – efficiency Lamps

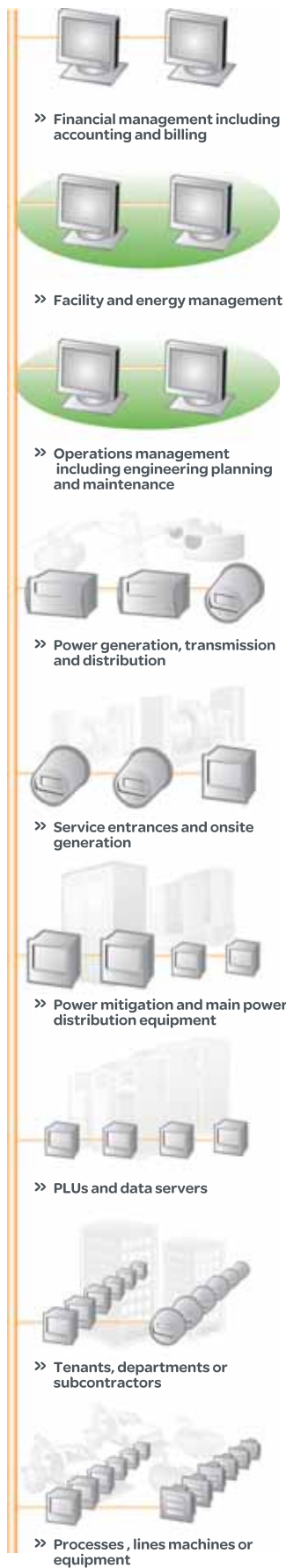
15% for general use
in Malls, Offices, Multiplexes, Auditoriums with
stabilized supply, mixed Old / New basic Lamps

10% for lamps older than 5 yrs
Supply varies occasionally between 220 – 260v

0%, No saving
Erratic Supply, < 220v

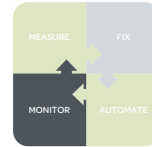
- Available ratings
 - 1Ø models - 3kVA to 33kVA
 - 3Ø models - 9kVA to 400kVA
- Standard features
 - 1Ø & 3Ø models
 - MCCB at input side – For savings mode
 - Fuse protection at out put side – For bypass mode
 - Bypass provision (Through changeover switch)
 - Multi point output provision
 - Savings positions
 - 10%, 15% and 20% till 120kVA
 - 12% and 20% for 150kVA to 400kVA
 - EM 6400 meter with port
 - Indoor with floor mounting and castor mounting (upto 120 KVA)





Comprehensive EMS Offer

Schneider Electric's range of Power Monitoring Devices and associated softwares help in reducing costs, optimizing consumption and improving quality of power. A comprehensive range covering the entire basket from a single function to the most advanced multifunction power monitors - DM, EM, PM, ION series and IONE, SMS µeLAN and eLAN softwares.

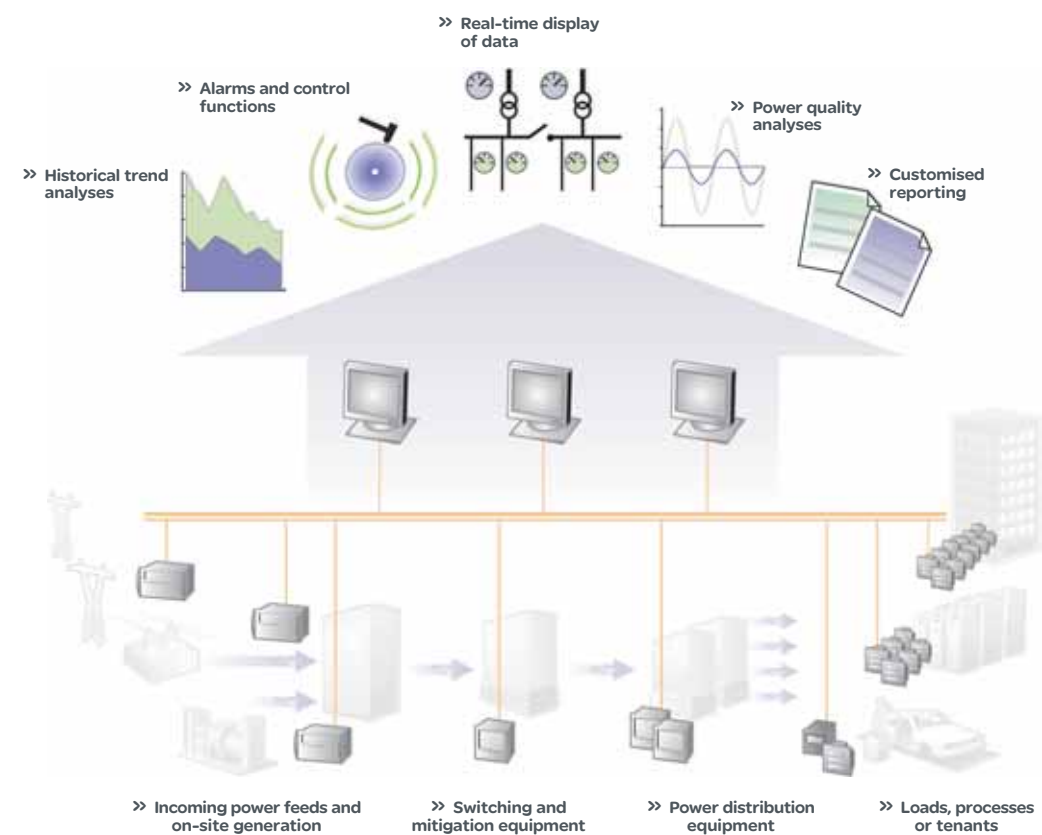
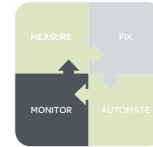


The benefits provided are:

- Measurement & Verification - continuous Measurements of all energy parameters like consumption, load, demand, switchgear status, non electrical parameters,
- Power Quality (harmonics, sags/ swells, transients, waveform, logging)
- Increased sensitivity for online energy management every second of the day, everyday apart from revenue management
- Demand, Trending, Forecasting & Controlling
- Tracking and helping control energy costs
- Real time energy balancing and T&D loss tracking
- Tracking specific energy consumption
- Assist Power Factor Improvement
- Aid regular energy auditing
- Online billing for commercial complexes, housing colonies, dual source, etc
- Cost center allocation by precisely allocating energy costs over tenants or various segments of an enterprise
- Specialised energy management over and above complementary systems like BMS
- Interface with most modern PLC automation and Building Management, ERP and DCS Systems for process optimization
- Genset optimization by smart planning and control
- Alarm & Control functions
- Customised Solutions complying the most stringent global standards including domestic like The Energy Conservation Act 2001 (India)
- Customised reporting
- Industry specific dashboard screen and reports
- Availability brand tariff (ABT) solutions and UI management
- Remote access for viewing, support as well as control
- Cost effective web based monitoring of energy for small & medium enterprises
- Plant analysis, predictive maintenance, root cause analysis, energy resource planning and estimating return on investment

EMS Typical Application

Schneider Electric offers the world's largest and most comprehensive offering of software, metering products and services for helping energy providers and consumers to control energy related costs improve energy efficiency, power quality and reliability. These also enhance accuracy of energy billing and cost allocation.

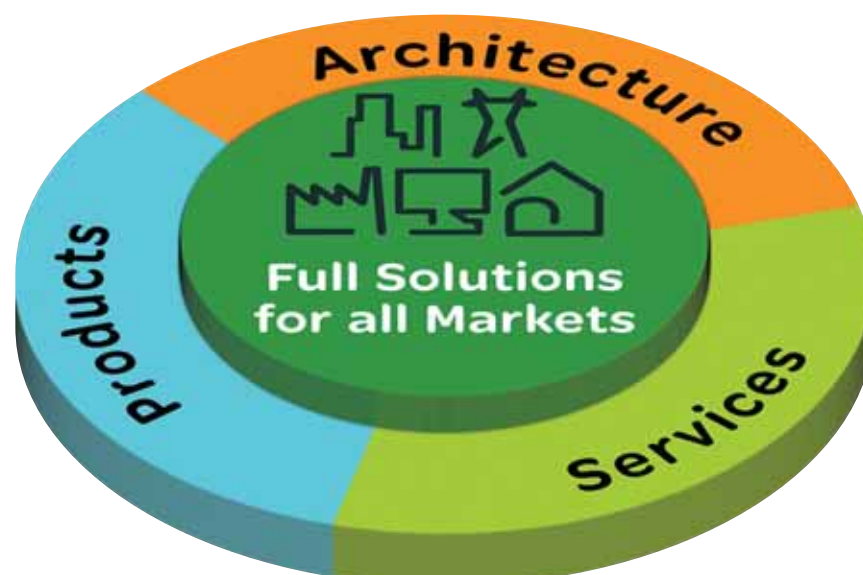


Equipped to offer full solutions for all markets in India



Schneider Electric is an Energy Efficiency specialist with **over 3 decades** of experience in power and energy management globally. Schneider Electric further re enforce its leadership position in the field of Energy Efficiency with the acquisitions of Conzerv Systems and Meher Capacitors. Schneider Electric's Energy Efficiency division has over **35,000 metering customers, one million meters sold, over 500 EMS installations** and **400 energy & power quality audits done.**

- Automobiles
- Aluminium
- Airports / Airlines
- Banks
- Beverages/ Bottling
- Breweries
- Cement
- Consumer products
- Commercial Complexes
- Chemicals
- Chlor Alkali
- Data Centres
- Electronics
- Engineering
- Entertainment Facilities
- FMCG
- Glass
- Hotels
- Hospitals
- Information Tech.
- IT Parks
- OEMs
- Paints
- Paper
- Petro Chemical
- Pharmaceuticals
- Ports & Docks
- Railways
- Residential Complexes
- Steel
- Sugar
- Textiles/Jute
- Tobacco
- Thermal Power Plants



Make the most of
your energy™



