ENERGY & POWER METERING

Basic, Energy & Power Monitoring Products.



ELMEASURE®
Possibilities...Infinite

ENERGY & POWER MONITORS

THD, TDD, TEHD, TOHD, K-Factor, Crest Factor, Harmonics, Sag & Swell, Power Inter.

W, VA, PF, VAR, Wh, Vah, VARh, Load Hours, Load Efficiency, Co2, V2H, A2H, NET Energy, TOTAL Energy.

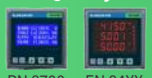
VAF, PF, VLL, VLN, A, Hz, RPM

Class A/S Power Analyzers



PQ 8800 PQ 8500

Power Quality Monitors



PN 8700 EN 84XX

Demand Controllers



PN 8700 EN 8400 LG 6400 EN 7500

Gateways



GW 3000X GW 1XXX GW 25XX

Branch Circuit Power Monitors



ET 5030

Dual Source Energy Meters



LG 25XX LG 25XXD

DC Energy Meters



EDC 2150 EDC 2450 EDC 2450X

Multi-functional Energy Meters



LG 64XX LG 25XX µG 1119 LG 25XXD LG MXX IoT XX

Transducers



TR 1XXX TR 2XXX TR 4200 TR 5200

Isolators



ISO 100 ISO 200

VAF Meters



SL 13XX

Ammeter / Voltmeter



SL 3V+ SL 3A+ SL AV+

BASIC SL XX+ METERING

MID-LEVEL ENERGY / POWER / PROCESS MONITORING

ADVANCED ENERGY / POWER MONITORING

QUICKLY EXPLORE OUR RANGE OF PRODUCTS.

SWITCHGEARS, PROTECTION, CONTROL & NETWORKING PRODUCTS.

PROTECTION AND CONTROL

Ground Monitoring Device

GMD 10

Earth Leakage Relay

iELR 300

iELR 200D

Earth Fault Relay

EFR 100

Load Disconnector

LD 2510D

LD 2310D

UTILITY / REVENUE METERS

Smart Meters

PE 5121S

PE 5120S

Prepaid Meters

PE 5121-P

PE 5120-P

SOURCE CHANGEOVER SWITCHES

Automatic Transfer Switches

Solenoid ATS

ATeS (40A - 3200A)

Manual Transfer Switches


ACCL


iACCL M3XX


iACCL M3XX

iACCL A400

iACCL 400C

iACCL M400

LOW VOLTAGE SWITCHGEARS

ACB


MCCB


Switch Disconnector


Overload Relays


EL-Guard


Contactors




"Product Explorer"



POWER QUALITY ANALYSERS

Every harmonic, sag, and swell at your fingertips.

PQ 8800X

- High-Precision **Power Quality Measurement**: IEC 61000-4-30 **Class A**, IEEE 519-2014, EN 50160, ITIC Curve/CBEMA and COMTRADE
- Proactive Power Quality Monitoring: Records **Flickers, Transients, RVC, Sag, Swell** and **Interruptions**
- Ultra-Fast Sampling: **1024 samples/cycle**
- **IoT-ready with MQTT,** web server & 2 TCP client support for remote monitoring
- Offers advanced feature: built in web server with powerful dashboard and report generation
- **4GB in-built memory** with USB expansion for extended data storage & reports

PQ 8500

- High-Precision **Power Quality Measurement**: IEC 61000-4-30 **Class S**
- Proactive Power Quality Monitoring: Records **Sag, Swell, RVC** and **Interruptions**
- High Sampling: **512 samples/cycle**
- **IoT-ready with MQTT,** web server & 2 TCP client support for remote monitoring
- Offers advanced feature: built in web server with powerful dashboard and report generation
- **2GB in-built memory** with USB expansion for extended data storage & reports



LOW VOLTAGE SWITCHGEAR

Easily control, protect, and isolate Electrical Equipment and Circuits in various Industries, with our efficient range of LV Switchgears.

- **Improved Safety**
  - Switchgear protect electrical network & equipment from damage, reducing hazards & enhancing safety.
- **Enhanced Efficiency**
  - They offer better operational control, reduce waste & downtime, improving efficiency & cost savings.
- **Extended Life**
  - They help in extending equipment lifespan, reduces repairs, enhances reliability & performance.



POWER QUALITY MONITORS

Monitor the healthiness of the power systems effectively.

IDENTIFY POTENTIAL ISSUES AND MAXIMIZE POWER QUALITY.

- Power quality inspection of main incomer
- Protection of equipment from Under/ Over Voltage or Current or Frequency
- Process control
- Protection of 3 phase equipment from Single phase prevention, Overload etc
- RTC setup available through communication.

REMOTELY MONITOR, EASILY VISUALISE AND ANALYSE POWER DATA.

- **Dual communication port- RS485, Ethernet-** simultaneous polling
- **Built in web server** displays all the parameters and waveform for Voltage and current
- **256MB storage** downloadable through USB - Continuous logging in pen drive up to 8GB
- **12AM snapshot**, 31st day snapshot
- Measures THD and Individual harmonics upto **63rd order** with a sampling rate of **512 samples/cycle** (PN)

BETTER EQUIPMENT AND ELECTRICAL SYSTEM DESIGN.

- Captures and measures power quality events: K Factor, Crest factor, Dip/Swell, Interruption and unbalance in accordance with EN 50160
- Record events such as Dip/Swell for voltage with the time stamp in 1s duration
- Representation of waveforms for instantaneous V,I, Dip/Swell. Voltage and Current harmonics histogram (PN only)
- Phase wise voltage Dip/Swell waveforms (PN only)

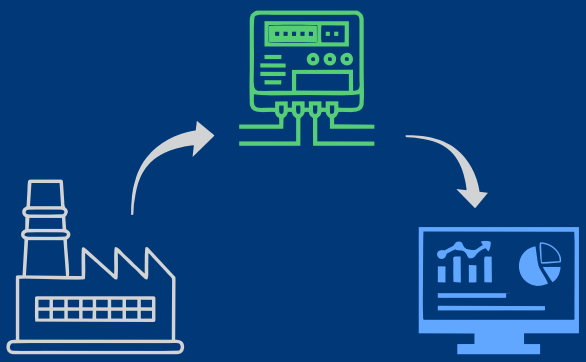
63rd Harmonics recording

512 SAMPLING RATE For detailed monitoring

SAG | SWELL PQ Measurements

CAPTURE.
ANALYSE.
EXECUTE.

Collect various electrical load parameters from the field, visualize hidden patterns through an EMS solution, and make data-driven management decisions.



Features

- Simultaneous sampling of voltage and current
- Programmable PT & CT ratio
- **High / Low recording for last one minute VLL and A**
- Accuracy class 1.0 as per IEC 62053-21, Class 0.2s - IEC 62053-22, 0.5s - IEC 62053-22 (optional)
- User programmable Password Protection
- Measures THD and Individual harmonics up to 63rd order for PN and 31st order for EN
- Sampling rate of 512 samples / cycle for PN and 256 samples / cycle for EN
- **Voltage measurements up to 600 VLL**
- Representation of waveforms for instantaneous V, I, voltage and current harmonics histogram for PN.
- Records events and waveforms of such as **Dip & Swell** for voltage input with the time stamp in 1s duration applicable for power quality (PN)
- CO2 emission, ON Hrs, Power Interruptions
- **Max demand, 12am snapshot,** 31st day snapshot.
- **Demand update every second** to forecast VA, W & VAR
- True PF and Displacement PF(EN)
- Programmable starting current in % of 5A secondary (Default 10mA)
- Programmable Auto scrolling time - 1 sec. to 10 sec. (Default 5 sec.) - available in PN
- Programmable Energy display - Counter or Resolution based
- Energy resetting at 99999999kVAh x MF
- Front POP for better accuracy 16000 Imp/KWh
- 8 Parameter display at a time, 8 digits energy (PN)
- Byte order option - Field Programmable Float/ Little Endian/data format (PN)
- Optional **neutral current measurement** (EN 7500)

Optional Features

- **Digital outputs - 2/4** potential free contacts with programmable time delay Hysteresis of 1%. Trip time delay: 1 to 180 sec. Single relay o/p configurable up to 23 parameters (VLL, A, F, PF, kW, kVA....) with auto/manual recovery. Manual override option available
- TOD option (Energy & Demand upto 8 slots)
- Analog Input upto 2. Accuracy of class 1% FS - Input signal 4-20 mA or 0-20mA selectable
- Digital Input upto 4 - Four digital input (5-24V) - Programmable for high frequency (72000 RPM) or low frequency (6 RPM). ON and OFF time for low frequency input
- Analog Output - Two independently programmable to 0-20 mA (or) 4-20 mA (On Request)
- Individual Harmonics upto 63rd order for PN, 31st for EN
- Upto 100/200A direct measurements using Hanging CT or Clip on or Split Core CT (MOQ).
- Dual Source (Only for EN)
- Ethernet Interface - Modbus TCP, BACNET IP
- 4 Relay Demand Controller - 8 TOD optional.
- Rogowski Coil up to 3000A

High Profile Multifunctional Meter



Demand Controller

- Demand Prediction based on sliding or fixed
- Forecast interval 1% to 50% of demand period (manually set)
- **Max Demand 4 high/4 low** (PN)
- Demand control based on programmable parameters kVA, kW & kVAR.
- Either 2 or 4 Relay outputs for circuit breaker or contactor control for demand controller
- Optional **8 Demand and Energy TOD slots**

High Profile Dual Source Meter

- 240V AMF Input
- Dual source with Demand Monitor

Ethernet Communication - Only for EN & PN

- User configurable **MQTT data transfer time interval**
- Programming option for MODBUS or MQTT
- DNS server connection configuration option for MQTT
- **Web browser** for configuration and setup
- Configuring through web page for selected parameters (RAW-JSON data)

BACNET IP Meter

Ethernet Interface:
BACNET IP Protocol supports read & read multiple for 240 parameter as Analog Input (restricted option).



Multiplication Factor

Counter based energy mode

Full Scale in Watts : $\sqrt{3}$ × VPri x Apri	0.4k to 4.0k	4.01k to 40k	40.1k to 400k	400.1k to 4000k	4M to 40 M	40 M to 400 M	400M to 4000M
Multiplication Factor:	0.01	0.1	1.0	10	100	1000	10000
Unit of display	kWh				MWh		GWh

Product Selection:	EN 8400	EN 8420	EN 7500	EN 7520	PN 8700
ACCURACY OPTION	Customised LED		Segmented LCD		Graphical LCD
CLASS 1.0	■	■	■		■
CLASS 0.2S/0.5S	□	□ 0.5S	■ 0.5S	■ 0.5S	□
BASIC PARAMETERS					
V_{12} V_{23} V_{31}	■	■	■	■	■
V V_1 V_2 V_3	■	■	■	■	■
A A_1 A_2 A_3	■	■	■	■	■
Hz	■	■	■	■	■
Angle V & A, RPM	■	■	■	■	■
Unbalance V & A	■	■	■	■	■
Neutral Current (Calculated)	■	■	■	■	■
POWER PARAMETERS					
W W_1 W_2 W_3	■	■	■	■	■
VA VA_1 VA_2 VA_3	■	■	■	■	■
PF PF_1 PF_2 PF_3	■	■	■	■	■
VAR VAR_1 VAR_2 VAR_3	■	■	■	■	■
POWER QUALITY PARAMETERS					
THD - Voltage and Current	■	■	■	■	■
Individual Harmonics	31st □ *	31st □ *	31st □ *	31st □ *	63rd □
K Factor, Crest Factor					■
High Low - Instantaneous					■
High Low - Last Minute (VLL and Amps)	■ *	■ *	■ *	■ *	■ *
Voltage Sag, Swell and Interruptions					□
Power Cycles	■	■	■	■	■
TEHD and TOHD					■
Power THD and TDD					■
INTEGRATED PARAMETERS					
Wh	■	■	■	■	■
VAh	■	■	■	■	■
VARh -Ind	■	■	■	■	■
VARh-Cap	■	■	■	■	■
Load Hours	■	■	■	■	■
Phase Energy and Load hours	■ *	■ *	■ *	■ *	■ *
RD (Import & export)	■	DS	■	DS	■
Wh- Total and Net					■
VAh- Total and Net					■
VARh - Total and Net					■
ON hours	■	■	■	■	■
CO2 Emission	■	■			■
Bargraph (% Load)	■	■	■	■	
Volt squared hours					■
Amp squared hours					■
TOD PARAMETERS					
TOD Demand - Import	□ *	□ *	□ *	□ *	□
TOD Energy - Import and Export	□ *	□ * Imp	□ *		□
DEMAND PARAMETERS					
Rising Demand (Sliding/Block - Programmable)	□	□	□	□	□
Forecast demand	□	□	□	□	□
Maximum demand	□	□	□	□	□
Demand Profile 4High & 4 Low					□ *
ADDITIONAL FEATURES					
12am & 31st day snap shot	■ *	■ *	■ *	■ *	■ *
Data Logger - 512kb, Time interval 1 min to 12 hrs selectable. Programmable Parameters upto 29.	512kb □ *	512kb □ *	512kb □ *	512kb □ *	□ *
Load Efficiency	■ *	■ *	■ *	■ *	■ *
Energy Trends					■ *
Dynamic communication	■ *	■ *	■ *	■ *	■ *
DUAL SOURCE		■		■	
4th CT (Neutral)			□	□	
ADDITIONAL OPTIONAL FEATURES(ANY ONE)					
Ethernet +256 MB Data Logging	□				□
Ethernet (TCP IP)	□				
2DI + 2DO	□				▲ *
2AI + 2DO	□				▲ *
2DO	□		2DO □	1DO □	
2AO (on request)	▲ *				
4DI	▲ *				▲ *
4DO	▲ *				▲ *
DMC	4R ▲ *		2R □		4R ▲ *
COMMUNICATION					
RS485 (MODBUS)	■	■	■	■	■
WiFi	▲		▲		▲
ETHERNET	▲				▲
TCP/IP(MODBUS) - with 2DI, 2DO	▲				▲
BACNET IP - without I/O)	▲				

■ Default □ Optional ▲ Restricted option * Through communication only

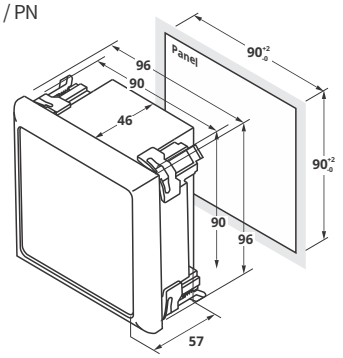


Technical Specification

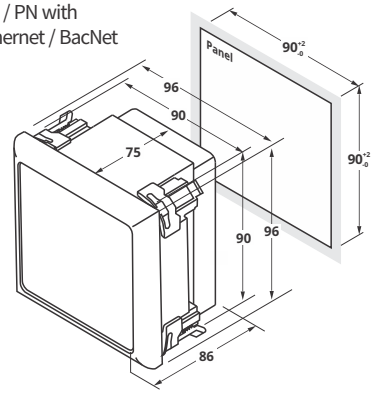
Specification	Description
GENERAL CHARACTERISTICS	
Display type:	Graphical LCD for PN, LED for EN 84xx, LCD for EN 75xx. Integrated 8 digits, Instantaneous 4 digits.
Sensing / Measurement:	True RMS, 1 sec update time, 4 Quadrant power & energy
Rated Voltage:	50 - 600 VLL
Rated Current:	10 mA - 6A
Frequency:	45 - 65 Hz
Sampling rate	512 samples / cycle / channel for PN, 256 for EN
Measured accuracy class:	Class 1 as per IEC 62053-21 / Class 0.5 / Class 0.2S as per IEC 62053-22 (Optional)
Permissible overload:	120%, Burden: 0.2VA per phase
External fuse rating:	200 mA
CT PT ratio max.:	2000 MVA programmable
Auxiliary supply:	80 - 300V AC / DC (Lower AUX. on request based on MOQ)
Power consumption:	4VA nominal. 5VA for DMC
Data update rate:	1 sec.
COMMUNICATION	
Rs485 MODBUS:	*Device ID & Parity:* 1-247 & odd, even, none (preferred even) *Baud rate:* 9600 bps to 38400 bps (preferred 9600 bps) *Isolation:* 2000 volts AC isolation for 1 minute between communication & other circuits.
Optional	ETHERNET TCP IP / BACNET IP, **WiFi:** WiFi Protocol: 802.11 b/g/n; Frequency: 2.4 Ghz - 2.5 Ghz Security: WP/WPA2, WPA-PSK/WPA2-PSK Encryption: WEP/TKIP/AES; Network Protocol: IPV4, TCP Receive Sensitivity: -83 dBm Typical
ENVIRONMENTAL CHARACTERISTICS	
Operating temperature:	-10°C to +55°C (14°F - 130°F)
Storage temperature:	-25°C to +70°C (-13°F - 158°F)
Humidity:	5% to 95% non-condensing
Altitude:	Below 2000 mts
Measurement category:	CAT III
Pollution degree:	2 (As per IEC 61010)
PROTECTION CLASS	
Ingress protection:	IP20 - terminal side, IP 54 - Front facia panel mount (Double insulation as per IEC 61010-1)
SAFETY AND STANDARDS	
Construction:	IEC/EN 61010-1 EDITION 3, CAT III, 300V LN / 600V LL, Protection Class II
Standards:	UL 61010-1, IEC/EN 62052-11
MECHANICAL CHARACTERISTICS	
Weight:	Unpacked: 600gms, Packed: 800gms
Torque:	1 N-m (For 5A)
Wire-guage:	11 AWG (For 5A)
ELECTROMAGNETIC COMPATIBILITY	
Electrostatic discharge:	IEC 61000-4-2
Immunity to electromagnetic RF fields:	IEC 61000-4-3
Conducted immunity:	IEC 61000-4-6
Immunity to magnetic fields:	IEC 61000-4-8
Immunity to voltage dips and interruptions:	IEC 61000-4-11
Immunity to surge waves:	IEC 61000-4-5
Fast transient:	IEC 61000-4-4
Conducted and radiated emission:	CISPR - 22

Mechanical Specification

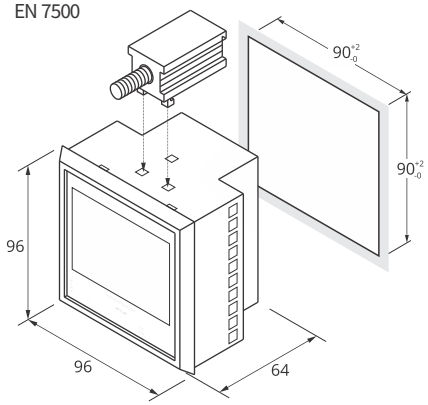
EN / PN



EN / PN with
Ethernet / BacNet



EN 7500





Powering Today.
Preserving Tomorrow.

ELMEASURE®
Possibilities...Infinite

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Registered Address:
Elmeasure India Private Limited,
#47P, KIADB, Huvinayakanahalli,
Jala Hobli, Bagalur - 562149
Bangalore, Karnataka, India.

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