



HIGH PERFORMANCE POWER QUALITY ANALYZER

***Class A according to IEC61000-4-30
Class 0.1 for energy meter***



**ENEL EA 0530
IEC61000-4-30 Class A
Ed. 3**

Applications

LV electric systems

Functions

Three phase high-precision analyzer and recorder, PowerQuality, PowerMeter, Fault Recorder, Energy meter

Measures

- Voltages and Currents
- Active, Reactive and Apparent power
- Active and Reactive (4 quadrants) Energy
- Power Factor
- Frequency
- Flicker (Pst e Plt)
- Voltages and Currents Harmonics and Interharmonics (up to 50° order)
- Voltage Unbalance
- Voltage Dips and Swells
- Voltage Interruptions (short and long)
- Rapid Voltage Changes
- Waveforms (window records with programmable Pre and Post-Triggers)

Accuracy

According to IEC61000-4-30 Ed. 3 Class A and IEC62053-22-30 Class 0.1

Safety

CAT IV 300V, class 2 (double insulation) for voltage and direct current measuring circuits

Certification

IEC61000-4-30 Ed. 3 Class A

Approval

Approved according to ENEL EA 0530 specification
%Apparecchiature portatili per la registrazione delle grandezze elettriche nelle reti di distribuzione+

The most compact analyzer on the market, with full equipment of integrated resources

- 3 voltage channels 0÷400Vac
- 3 current channels 0÷1Aac
- Current Clamps 1000A/1A (max Ø 50mm)
- Internal storage memory 2GB (expandable)
- 1 mini USB 2.0 (device) port
- 1 USB 1.1 (host) port
- 1 Ethernet 100baseT port
- 1 integrated GSM/GPRS Modem
- 1 GPS receiver port (optional)
- Power supply truth measures: 160-350Vac/dc
- Internal UPS for more than 40 minutes backup supply
- HMI with graphic WQVGA color display, functional keys and signalling leds
- Pulse emitting leds for active and reactive energy accuracy test
- Plastic carrying case 465 x 365 x 180 mm
- Weight: Kg 8 (including cables and clamps)



Technical Specifications

Power Supply

Voltage: 160÷350 Vac/dc - 50/60Hz
Power consumptions: 20 VA
Battery: 12 V 0.8Ah Pb sealed
Battery operating time: 40 minutes, self-limited

Voltage input channels

Channels: 3 (R-S-T-N)
Single range up to 350 Vac/dc (phase-neutral)
Permanent overload: +50%
Type: resistor network
Impedance: 1 Mohm
Pluggable terminal blocks pitch 7,62 mm

Direct input Current channels

Channels: 3
Range: 0÷1 Aac
Permanent overload: +100%
Type: internal current transformer
Pluggable terminal blocks pitch 7,62 mm

Current Clamps

Model: C112
Range: 0÷1000 Aac / 1Aac (output)
Permanent overload: +120%
Cable max. Ø=50mm

Measurement method

Synchronous sampling with phase locking
Bandwidth: -3dB @ 6,4 kHz
A/D converter resolution: 16 bit
Sample rate: 25,6 ksample/sec.
Compliance: EN61000-4-30 Class A

Accuracy (@25 °C, 45-65Hz)

Voltage: $\pm 0.1\%$ U_{din} from 10% to 150% U_{din}
Current: $\pm 0.1\%$ I_{din} from 10% to 150% I_{din}
Frequency: $\pm 0.01\%$ reading
Harmonics: ± 0.5 reading for THD > 0.5%
Derived measures: $\pm 0.2\%$ from 10% to 150% of $U_{din} \times I_{din}$
Energy: Active Class 0.1 - Reactive Class 0.5
Active Energy: $\pm 0.2\%$ 1% $I_n \leq I < 5\%$ I_n , PF=1
 $\pm 0.1\%$ 5% $I_n \leq I \leq I_{max}$, PF=1
 $\pm 0.25\%$ 2% $I_n \leq I < 10\%$ I_n , PF=0.5 (IND/CAP)
 $\pm 0.15\%$ 10% $I_n \leq I \leq I_{max}$, PF=0.5 (IND/CAP)
 $\pm 0.15\%$ 10% $I_n \leq I \leq I_{max}$, PF=0.25 (IND)
Reactive Energy: $\pm 0.5\%$ 5% $I_n \leq I \leq I_{max}$, PF=0
(test methods according to 0.2S IEC 62053-22)

Led for Energy evaluation

IR Led (l = 850nm) pulses for active and reactive energy

User interface

Display: color graphic display WQVGA
Keyboard: n. 6 functional keys
Led: On, Battery status, Modem status
Battery charge indication leds

Ethernet Port

Type: 100baseT
Connector: RJ45

USB 1 Port

Type: Host 1.1
Interface for: external storage media, Wi-Fi communication adapter, external modem

USB 2 Type

Type: Device 2.0
Personal Computer data interface

Clock-Calendar

Format: yyyy/mm/dd hh:mm:ss.msec
Accuracy: better than 1 second/day without GPS
better than 16.67 ms/day from UTC with GPS
External time synchronization sources:
GPS receiver mod GTS9000 (optional)

Enclosure

Plastic carrying case: 465 x 365 x 180 mm
Enclosure: ABS
Weight: 8 Kg (cables and clamps included)
Protection rate: IP 67

Safety

Meets EN61010-1
Double insulated power supply
Voltage and current inputs: CAT IV / 300V class 2 (double insulation)
Degree of protection: IP40 (connection compartment IP20)

EMC

Emissions: EN61000-6-3 (residential)
Immunity: EN61000-6-2 (industrial) and EN61236-1

Environmental conditions

Operating temperature: -10 ÷ +50 °C
Storage temperature: -25 ÷ +70 °C
Humidity: 90% non-condensing

GSM/GPRS Modem

Modem type: Internal, Quadband 850/900/1800/1900 MHz
Networking: GSM and GPRS
Internal antenna
Optional external antenna
Sealable SIM holder

GTS 9000 GPS receiver (option)

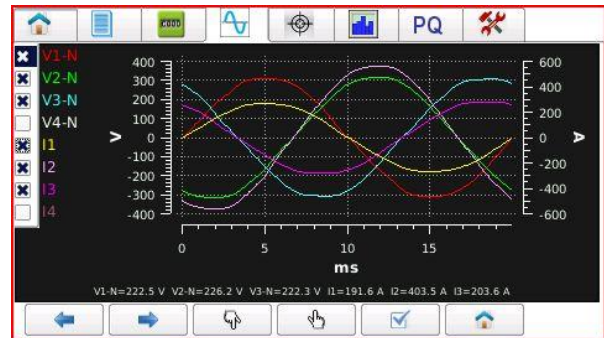
GPS receiver for time synchronization (antenna must be placed outside)

TW-TeamWare Srl

Via Pindaro, 19
20128 Milano - Italy
Tel. +39 02 27003261
Fax +39 02 27007753
email tw@teamware.it
web www.teamware.it



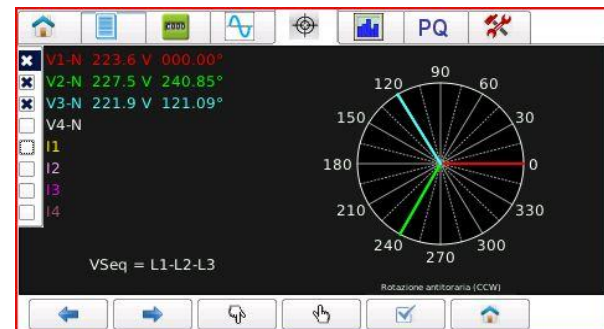
Intantaneous measures



Waveform Scope



Energy counters



Phasors diagram