

# CVM-A1612-ITF

CVM-A1612-ITF, Class A power quality analyzer according to IEC61000-4-30 (Ed.3) and IEC62586-2 method

Code: M57112.

> Certification: IEC 61000-4-30
> Communications: Ethernet |RS-485 |Wi-Fi
> Transistor output: 12
> Nº relays: 4
> Digital inputs: 12
> Power supply: 100...300 Vac/Vdc
> Input current: .../5 A | .../1 A | 250 mA
> Mounting: Pannel

## Description

The **CVM□A1600** is a high-performance power quality analyzer designed for monitoring and recording quality in medium- and low-voltage installations. In addition to measuring, calculating, recording, and displaying the main electrical parameters, it logs power quality events detected in voltage and current along with their waveforms.

Electrical parameters and quality events are measured and calculated in accordance with IEC□61000□4□30, 3rd edition, and the device ensures strict compliance with IEC□62586□2 testing methods.

As a power analyzer, it also calculates electrical efficiency parameters such as active and reactive power, THD (%), TDD (%), harmonics up to the 63rd order, imbalance, crest factor, and other quality parameters such as flicker and the k factor.

Its touchscreen lets you navigate through all configuration and parameter display screens. Instantaneous, historical, and recorded quality event values can all be viewed.

The built-in web server enables remote access to instantaneous and historical parameters, as well as device configuration.

## Application

The primary application of a Class A-certified power quality analyzer according to IEC 61000□4□30 is to measure and record voltage and current quality at the installation's connection point, in order to detect disturbances or quality issues that could cause equipment failures or production downtime.

Its most common use is installation at the company supply boundary point, in distribution boards, or at the main electrical connection of the installation, operating in parallel with the billing meter. It can also be installed for quality control of high-consumption individual loads, such as motors, furnaces, and so on.

All data can be integrated into Energy Management Systems via APIRest, Modbus TCP, or the IEC□61850 protocol.



# CVM-A1612-ITF

Power quality analyzer, Class A, as per IEC 61000 4 30 (Ed. 3) and IEC 62586 2 method.

Code: M57112.

## Specifications

### Auxiliary battery power supply

| | |
|---|---|
| Autonomy | 20 s |

### AC power supply

| | |
|---|---|
| Installation category | CATIII 300 V (2000 m), CATII 300 V (5000 m) |
| Consumption | 14 ... 20 VA |
| Frequency | 47 ... 63 Hz |
| Nominal voltage | 100 ... 300 V ~ |

### DC power supply

| | |
|---|---|
| Installation category | CATIII 300 V (2000 m), CATII 300 V (5000 m) |
| Consumption | 8,5 ... 9 W |
| Nominal voltage | 100 ... 300 Vdc |

### Mechanical characteristics

| | |
|---|---|
| Size (mm) width x height x depth | 201 x 145 x 131 (mm) |
| Envelope | Self-extinguishing UL94-V0 plastic |
| Fastening | Pannel (DIN43700) 138x138 |
| Weight (kg) | 0,95 |

### Environmental characteristics

| | |
|---|---|
| Protection class | IP 40 (Front), IP 30 (unmounted) |
| Relative humidity (without condensation) | 5 ... 95% |
| Storage temperature | -20... +80 °C |
| Working temperature | -20...+65 °C |

### Current measurement circuit

| | |
|---|---|
| Installation category | CATIII 600 V (2000 m), CATIII 300 V (5000 m) |
| Nominal current (In) | .../5A (for IEC61000-4-30), .../1A, .../0,250A |
| Phase current measuring range | 0.01...6A (.../5 A) IEC61000-4-30, 0.01...12 A (.../1 A), 0.01...0.3 A (.../0.250 A) |
| Neutral current measuring range | 0.01...6A (.../5A), 0.01...12 A (.../1A), 0.01...0.3 A (.../0.250A) |
| Maximum input current consumption | 0.9 VA |
| Maximum pulse current | 15A (.../5A) |
| Minimum current measurement | 0,01 A |

### Voltage measurement circuit

| | |
|---|---|
| Installation category | CATIII 600 V (2000 m), CATIII 300 V (5000 m) |
| Sampling frequency | 42.5 ... 69 Hz |



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Power quality analyzer, Class A, as per IEC61000430 (Ed.3) and IEC62586-2 method.

Code: M57112.

| | |
|---|---|
| Input impedance | 2 MΩ |
| Frequency measuring range | 42.5 ... 69 Hz |
| Voltage measuring range | 10 ... 600 V~ (Ph-N) |
| Nominal voltage | 110 ... 480 Vph-N, 190 ... 830 Vph-ph |
| Minimum measurement voltage (Vstart) | 10 Vph-N, 17 Vph-ph |

## Communication Network

| | |
|---|---|
| Connection mechanism | RJ45 |
| Protocol | HTTPS, NTP, DNS, WSS, SFTP, FTP, IEC 61850, SMTP, ModbusTCP, DNP3, IEC 60870-5-104 |
| Technology / Interface | 2 x Ethernet 10BaseT - 100BaseTx |

## User interface

| | |
|---|---|
| Display type | 8" touchscreen |

## Digital inputs

| | |
|---|---|
| Input/output insulation | 5 kV |
| Quantity | 12 |
| Type | Potential-free contact |
| Maximum short-circuit current | 0,4 mA |
| Maximum open circuit voltage | 80 Vcc |

## Standards

| | |
|---|---|
| Standards | UNE-EN 55016-2-1; UNE-EN 55022; UNE-EN 61000-4-2; UNE-EN 61000-4-4; UNE-EN 61000-4-5; UNE-EN 61000-4-6; UNE-EN 61000-4-8; UNE-EN 61000-4-11; UNE-EN 61000-4-20; UNE-EN 61000-4-30; IEC 62586-2; UNE-EN 60068-2-1; UNE-EN 60068-2-2; UNE-EN 60068-2-78; UNE-EN 61010-1; UNE-EN 61010-2-30; UNE-EN 61557-12; EN 18031-1:2024; ETSI EN 301 489-1 V2.2.3; ETSI EN 301 489-17 V3.3.1; ETSI EN 301 489-19 V2.2.1; EN 62311:2008; |

## Digital relay outputs

| | |
|---|---|
| Quantity | 4 |
| Nominal current | 2,5 A |
| Nominal voltage | 230V~ |
| Maximum current | 0,3 A |
| Maximum open contact voltage | 251 V ~ / 30 Vdc |
| Electrical life (at maximum load) | $3x10^4$ cycles |
| Mechanical life | $1x10^7$ cycles |
| Maximum switching capacity | 1500 VA / 180 W |

## Digital transistor outputs

| | |
|---|---|
| Pulse width | 1 ms |



# CVM-A1612-ITF

Power quality analyzer, Class A, as per IEC 61000 4 30 (Ed. 3) and IEC 62586 2 method.

Code: M57112.

| | |
|---|---|
| Quantity | 12 |
| Pulse output, time period (Ton / Toff) | 0,3 ms / 0,7 ms |
| Maximum frequency | 1 kHz |
| Maximum current | 120 mA |
| Maximum voltage | 48 Vdc |

## Measurement accuracy

| | |
|---|---|
| Current unbalance (Kd) | Class A IEC 61000-4-30 ± 0.15% (0% .. 200%) |
| Voltage unbalance (Kd) | Class A IEC 61000-4-30 ± 0.15% (0% .. 200%) |
| Frequency measurement | Class 0,02 (42,5 ... 69 Hz) ±10 mHz IEC61000-4-30 |
| Phase current measurement | 0,2% (0,01 ... 10A) (.../5A) Class A IEC 61000-4-30 |
| Neutral current measurement | 0,2% (0,01 ... 10A) (.../5A) |
| Reactive energy measurement (kvarh) | Class 0,5S IEC62053-24 |
| Reactive power measurement (kvar) | Class 0,5 ± 1 digit IEC61557-12 |
| Apparent power measurement (kVA) | Class 0,02 (42,5 ... 69 Hz) ±10mHz IEC61000-4-30 |
| Active energy measurement (kWh) | Class 0,2S IEC62053-22 |
| Active power measurement (kW) | Class 0,2 ± 1 digit IEC61557-12 |
| Power factor measurement | Class 0,5 IEC61557-12 |
| Current THD | Class A IEC61000-4-30 & Class I (IEC61000-4-7) (0,2% .. 100%) |
| Voltage THD | Class A IEC61000-4-30 & Class I (IEC61000-4-7) (0,2% .. 100%) |
| Phase voltage measurement | ± 0.1 % Un (class 0.1) (10% ... 150%) Class A IEC61000-4-30 |
| Neutral voltage measurement | ± 0.1 % Un (class 0.1) (10% ... 150%) |
| Pinst. Flicker | Class A IEC61000-4-30 & Class F1 IEC61000-4-15 (0 .. 10 Pst) |
| Pst Flicker | Class A IEC61000-4-30 & Class F1 IEC61000-4-15 (0 .. 10 Pst) |
| Voltage harmonics (THD) | Class A IEC61000-4-30 & Class I (IEC61000-4-7) ±0,15% (0,08% .. 200%) |

## Serial communication

| | |
|---|---|
| Protocol | Modbus RTU |
| Technology / Type | RS-485 |

### CVM-A1600

Power quality analyzers, colour display, panel mounted

| CODE | TYPE | Power supply | Input current | Transistor output | N° relays | Digital inputs | Communications |
|---|---|---|---|---|---|---|---|
| M57110. | CVM-A1610-ITF | 100...300 Vac/Vdc | .../5 A \| .../1 A \| 250 mA | - | - | - | Ethernet \|RS-485 \|Wi-Fi |
| M57111. | CVM-A1611-ITF | 100...300 Vac/Vdc | .../5 A \| .../1 A \| 250 mA | 6 | 2 | 6 | Ethernet \|RS-485 \|Wi-Fi |
| M57112. | CVM-A1612-ITF | 100...300 Vac/Vdc | .../5 A \| .../1 A \| 250 mA | 12 | 4 | 12 | Ethernet \|RS-485 \|Wi-Fi |

Resolves via webserver wiring errors.
**Energy accuracy without connected sensors.**

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# CVM-A1612-ITF

Power quality analyzer, Class A, as per IEC 61000 4 30 (Ed. 3) and IEC 62586 2 method.

Code: M57112.

## Dimensions

## Connections