

CVM-A1611-ITF

CVM-A1611-ITF, Class A power quality analyzer according to IEC61000-4-30 (Ed.3) and IEC62586-2 method

Code: M57111.

> Certification: IEC 61000-4-30
> Communications: Ethernet |RS-485 |Wi-Fi
> Transistor output: 6
> Nº relays: 2
> Digital inputs: 6
> 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.



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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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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	6
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	2
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



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Quantity	6
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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Dimensions

Connections