

InMonitor

MODEL DIN3LV12AI

Self-powered, Wi-Fi-interface, 12-current, 3-voltage digital data acquisition module for low-voltage electrical switchboards. This module performs:

- Direct measurement of 3 line-to-neutral voltages;
- Measurement 12 currents using current transformers;
- Voltage and current RMS computing;
- Single- and three-phase kW, VA and var computing;
- Wireless (Wi-Fi) and wired communication (RS-485);
- Configurable output data rate (15 minutes by default).

It is recommended for online energy consumption monitoring of large buildings and industrial facilities.

Technical Data (Preliminary)

Acquisition	Rated/Default	Min.	Max.
Sample rate/frequency	1 kHz	1 kHz	2 kHz*
Integration period for RMS	100 ms	--	--
Output Integration Period	15 min	1 min	60 min
Frequency	50 Hz	50 Hz	60 Hz
Voltage input (AC, RMS)	230 V	0 V	240 V
Current inputs (DC)	--	0	3.3 V
Number of voltage inputs	3	--	--
Number of current inputs	12	--	--
Operating temperature	30°C	0°C	50°C
Supply Voltage (50-60 Hz)	230 V	220 V	250 V
TRIAC tripping temp.	100°C	--	--
Supply tripping temp.	80°C	--	--
Internal losses	50 W	0.3 W	100 W
Consumption	< 10 W	--	--
In-built communication	RS-485/Modbus, Wi-Fi		
Overvoltage protection	By VDR/Varistor		
Internal protection fuse	Fuse Resistor (not replaceable)		
Overvolt. Cat. Poll. Deg.	II - 2 (IEC 664-1)		
Standards & Approvals	EN60950 (reference), CE marking		
EMC Standards	EN61000-6-2, EN61000-6-4		
Protection degree	IP20 acc. to EN60529		
Case material	Plastic ABS, UL94V0		
Fixation	DIN-rail acc. to EN50022		
Approx. weight	180 g		
External Size (W x H x D)	157 x 86 x 58 mm		

*Optional.



Pin/Input Assignment

N	Neutral	GND	Ground
V1	Line Voltage R	V2	Line Voltage S
V3	Line Voltage T	A1	Line Current 1
A2	Line Current 2	A3	Line Current 3
A4	Line Current 4	A5	Line Current 5
A6	Line Current 6	A7	Line Current 7
A8	Line Current 8	A9	Line Current 9
A10	Line Current 10	A11	Line Current 11
A12	Line Current 12	A_	3.5 mm "jack" TR plug

Communication

Wi-Fi	Wireless data output
RS-485	General communication with industrial networks

Software for Commissioning

PC/laptop	Windows (32-bit and 64-bit)
Tablet & Smartphone	Android

Note 1: The current sensors can be replaced by other types of sensors, such as temperature, relative humidity, CO₂, CO, etc.

Note 2: Technical data are typical and may change without prior notice.

Typical Current Transformers

Output: 0-3.3 Vdc

Connection: "jack" TR plug type, 3.5 mm diameter.



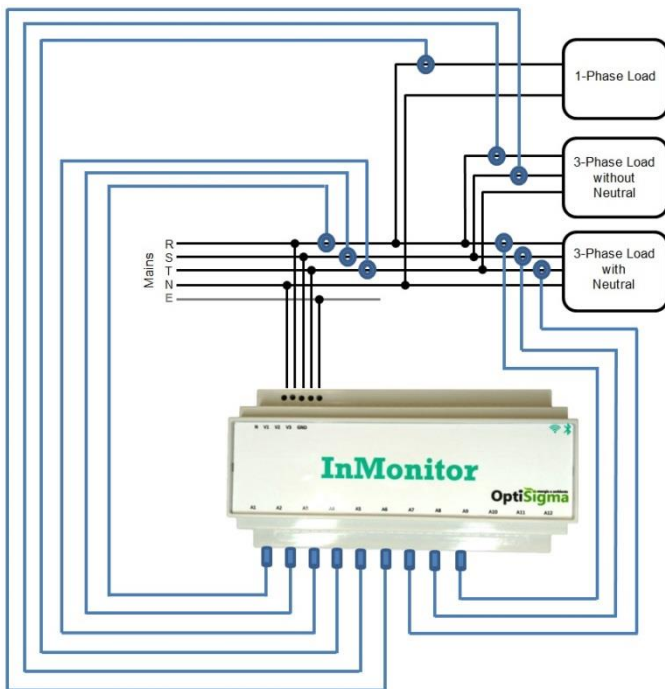
Typical Wiring

Mandatory connections: R-N, S-N, T-N voltages & Earth.

Single-Phase Load: 1 current sensor

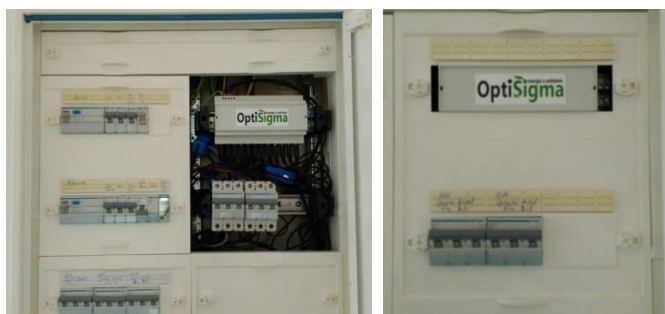
Three-Phase Load without Neutral: 2 current sensors

Three-Phase Load with Neutral: 3 current sensors

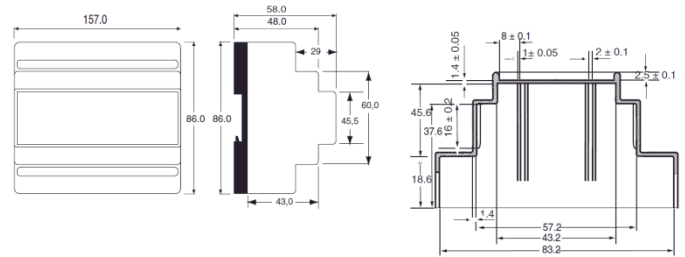


Example of Installation in a Typical Switchboard

The InMonitor does not require any external power supply. The recommended communication interface is Wi-Fi.



Outer Case/Frame Dimensions (in mm)

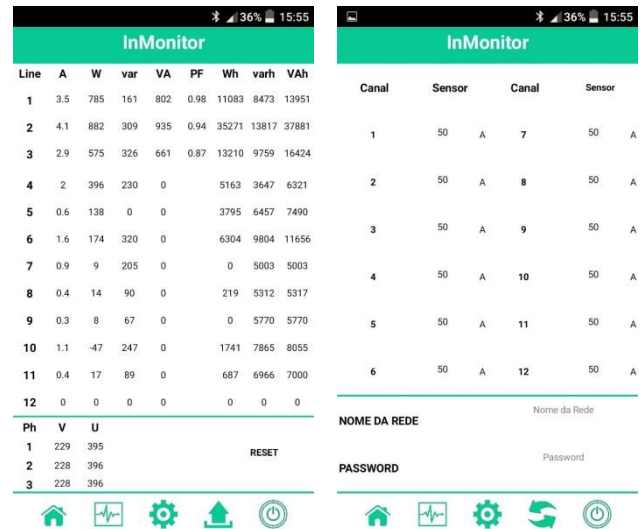


Technical Data

Top part: Material: Lexan 940 Color: Grey (RAL 7035) Max. temperature: 100°C Self-extinguishing: Acc. To UL94-V0 Protection degree: IP20	Base part: Material: Norl VO 1550 Color: Black (RAL 9005) Max. temperature: 100°C Self-extinguishing: Acc. To UL94-V0 Mounting: DIN-rail (EN50022)
--	--

Android Application for Commissioning

Measured and calculated variables refreshed every second in the software applications.



Note: Technical information may change without prior notice.

OPTISIGMA – ENERGIA & AMBIENTE, LDA.

Edifício INOPOL, Academia de Empreendedorismo, Quinta Agrícola, Bencanta, 3040-316 Coimbra, Portugal

&
 EDP Starter, Av. 24 de Julho, Nº 12
 Torre Poente – 2º Piso, 1249-300 Lisboa, Portugal

www.optisigma.pt
 e-mail: geral.optisigma@gmail.com