



**EM21 72R and EM21 72V: the retrofit solutions**

**Controls**

# EM21 72R 72V

## The Retro-fit solutions

EM21-72R and EM21-72V are two innovative, cost-effective and compact energy meters for retro-fit applications: they are the first on the market to have a detachable display allowing them to be mounted either on a panel with just 72x72 mm or on a DIN-rail in only 4 modules with neither any adaptor or external accessory. Current measurements are carried out by means of external miniature split-core current sensors, which can be included in the box (72R) or not (72V).



## Simple while saving space and money

### Detachable display

- Detachable display to carry out up to 3 installation modes from the same instrument: DIN-rail, panel mounting or transducer.

### Ready-to-use

- Miniature split-core current sensors supplied together with EM21-72R: everything is needed in just a single box.

### Easy Installation

- Time saving installation system exploiting self-power supply, automatic phase detection and application oriented programming procedure.

### Communication

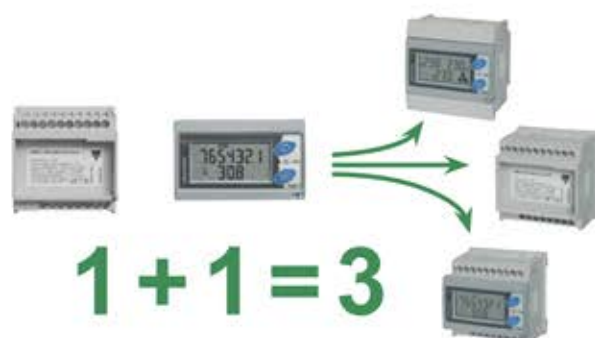
- Pulsing output for easy and quick data transmission to PC/PLC for full load control.
- RS485 communication port for full BMS integration.

### Compact housing

- Space saving on panel boards by means of its compact housing.

### The standards

- Energy measurement equivalent to class 1 of the international standard IEC62053-21 (EM21-72V) or class 2 (including the whole measuring chain, in case of 72R model).



## Market Application

### Retro-fit of existing installations

When dealing with old buildings and existing installations realised in the past years, when the sensibility to the energy efficiency issue was totally negligible, there is no other way then retrofitting the switch-gears introducing an energy measuring system. EM21-72R and EM21-72V are com-

plete retrofitting solutions which does not imply any modification in the existing wiring. Installing them, it is possible to realise the current measurement simply clamping on the wires, without disconnecting them, the relevant miniature split-core current sensors.



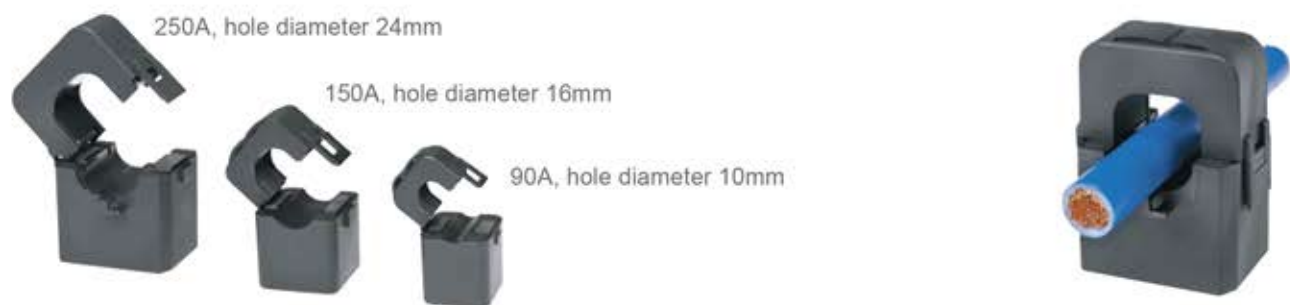
### Some of the instrument features

- Accuracy  $\pm 0.5\%$  RDG (V).
- Accuracy  $\pm 0.5\%$  RDG (A), 0.333V standard current inputs (72V).
- Accuracy  $\pm 1\%$  RDG (A), including also the current sensors (72R).
- Programmable primary current value from 10 to 10000 A (72V).
- Pre-programmed primary current value (72R).
- Instantaneous variables readout: 3 DGT.
- Energies readout: 6+1 DGT.
- System variables: W, var, PF, Hz, Phase-sequence.
- Single phase variables: VLL, VLN, A, PF.
- Energy measurements: total kWh and kvarh.
- TRMS measurements of distorted sine waves.
- Protection degree (front): IP50.
- Self power supply.



### The EM21-72R dedicated split core CTs

The EM21-72R is provided with 3 miniature current sensors with split core technology: no wiring modification and no cable disconnection are required. The CTs come in 3 different types:


















### CTV series: the current sensors for EM21-72V

The CTV series includes 5 ranges of split-core current sensors (0,333V output) suitable to be used with EM21-72V.

Name	Range	Hole size (mm)
CTV1X	60A	9,6 (diameter)
CTV2X	100A	15,7 (diameter)
CTV3X	200A	15,3 (diameter)
CTV4X	400A	20,5 (diameter)
CTV8X	800A	50 x 89,8 (rectangular hole)



# Energy Applications Map

	Fiscal metering for cost allocation	Power quality analyzer for load control
<b>Modularity</b> 		
<b>Direct Connection</b> 		
<b>Extended Communication</b> 		
<b>Double-housing feature</b> 		
<b>Eye-catching display</b> 		

The right features for every application

Multi function meters for basic measurements

Transducers for Building Management Systems (BMS)

Field bus communication and energy metering for Building Automation



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