

Lancio Nuovo Prodotto
New Product Launch

14/12/2012

Platforms B.U.
Germano Negri



Electricity meter

What we have developed

Two electricity meters - 230 Vac single-phase and 400Vac three-phase - for use in applications that require monitoring of power consumption. These devices are intended for the HVAC/R market and can be integrated with the other systems offered by CAREL.

The devices are used for continuous monitoring and can record the most significant power parameters, including:

- Active power;
- Reactive power;
- Current measurement;
- Phase sequence (three-phase only);
- $\cos\phi$ (three-phase only);
- Frequency (three-phase only);

The data are transferred to a pCO programmable controller, or a supervisor via Modbus RS485 serial connection. Up to 160 devices can be connected to the Modbus RS485 serial line, with addresses from 1 to 247.

Energy measurements are made in accordance with European standard EN50470-3 and international standards IEC62053-21 and IEC62053-23.

Benefits offered by the electricity meter

Single-phase model (emeter1)



The single-phase electricity meter is easy to install. It has its own power supply and manages loads of up to 65 A by direct activation. It is supplied with built-in display and occupies 4 DIN modules.



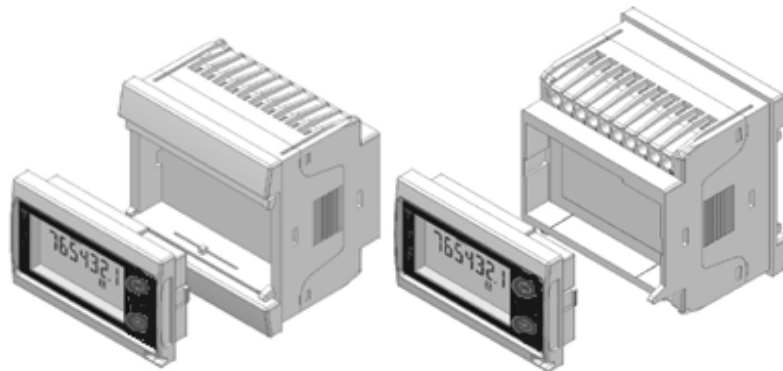
Three-phase model (emeter3)



The three-phase electricity meter can manage loads using current external transformers; It comes fitted with a pulse output for relaying the active power data, and can be used in combination with the rTM system pulse counters, P/N WS01N02M20 (mains power supply) and WS01E02M00 (battery powered).

The three-phase electricity meter is a compact device, just 4 DIN modules, and offers the advantage of two possible assembly options:

- panel (72x72 mm opening);
- DIN rail;



Panel assembly

DIN rail assembly

The patented, removable local user interface (optional), is housed in the compartment provided (front and rear), with no electrical connection required.

When the device is used in combination with CAREL programmable controllers or supervisors, all the parameters can be displayed on the controller/supervisor interface, avoiding the need to fit the local display **and offering significant cost savings.**

The three-phase electricity meter can be assembled in four different ways:

	DIN rail assembly	Panel assembly
Without display		
With display		

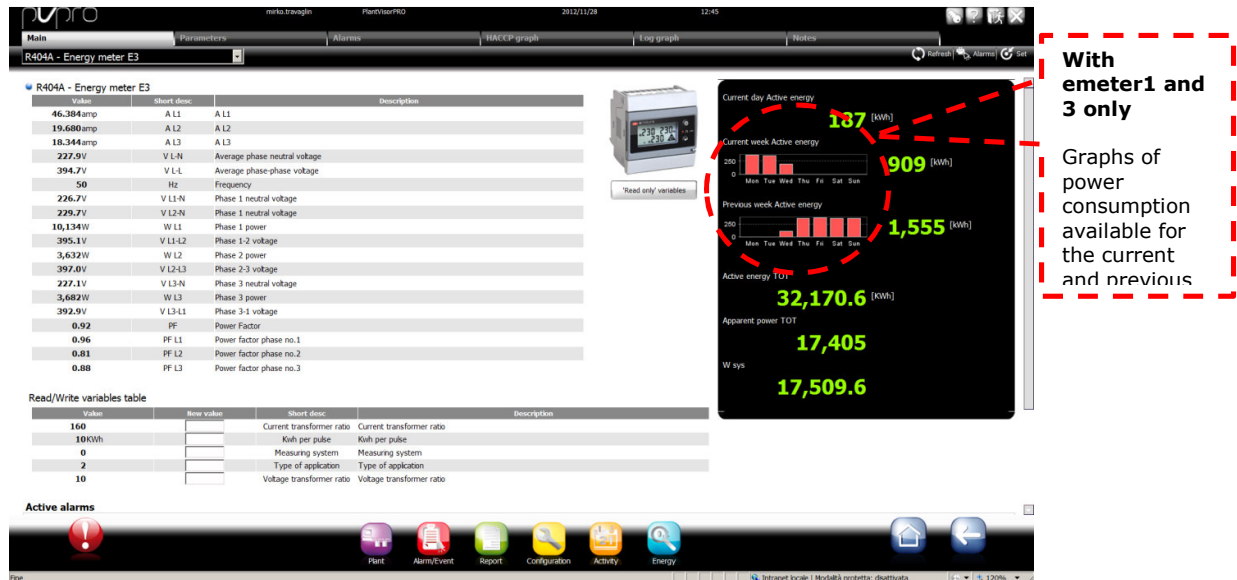


Integration with CAREL systems

The electricity meter can be connected to the following CAREL devices:

- pCO, using the standard 1tool module with special software;
- PlantVisorPRO;
- PlantWatchPRO;

CAREL supervisor templates will be available starting from the next revision of PVPRO (service pack 2.1.0), while for PWPRO templates will be available on KSA starting 07/01/2013.



1tool module

A 1tool module is available for integration with programmable controllers starting from service pack rev. 2.7.x, planned for April 2013. Macro blocks will be available for download from KSA by January 2013.

All the Modbus variables can be read from the supervisor and via the 1tool module.

Integration with third party systems

RS485 Modbus serial connection allows integration with the most common BMS systems.



Accessories

User terminal (optional on three-phase model)



The optional user terminal is used when local interaction with the device is required.

This is housed directly on the electricity meter module (panel or DIN rail assembly) and does not require any electrical connections.

Current transformers

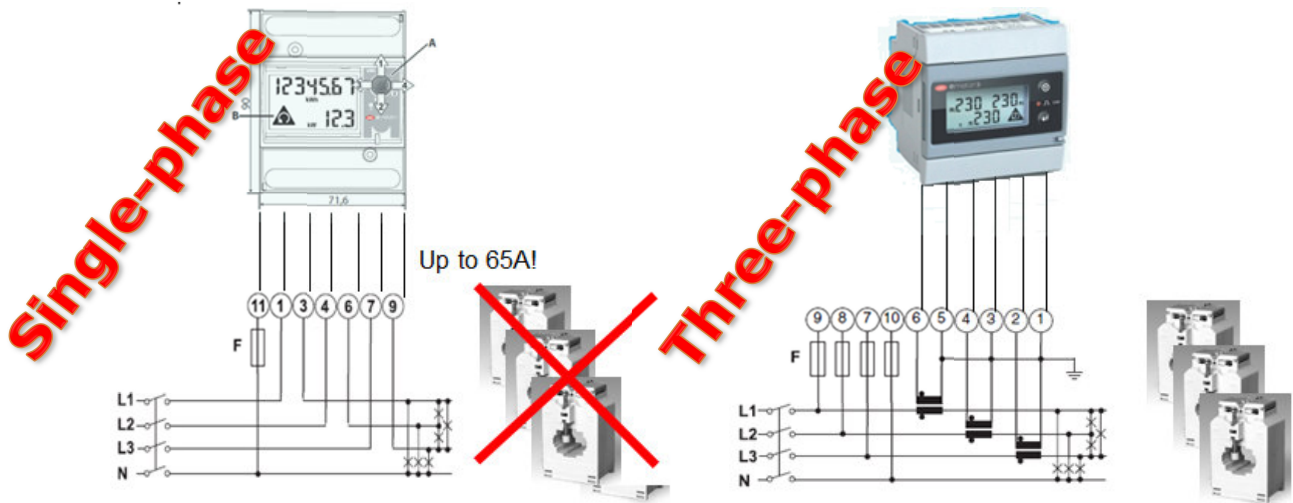


The CAREL offering is completed by two current transformers:

- up to 100 A version
- up to 200 A version

The use of different capacity current transformers is not excluded, as long as these have the same features as described in the emeter3 manual.

Upon request, other models are available for volumes greater than 1000 pcs/year.



Availability

The products will be available for sale from the first week of January 2013, including accessories (*).

P/N	Description	Data
MT100D2100	Single-phase electricity meter with interface, direct connection up to 65 A	January 2013
MT300W1100	Three-phase electricity meter without interface, connection with current transformers	January 2013
Accessories		
MTOPZD0000	User terminal for three-phase electricity meter	January 2013
MTOPZT1000	100 A current transformer, cable/bar	January 2013
MTOPZT2000	200 A current transformer, cable/bar	January 2013
Supervisor templates		
PVPRO	Next service pack for PVPRO 2.1.0.	First quarter of 2013
PWPRO	Available on KSA	January 2013
1 tool module		
1 tool macroblock	Available from service pack rev. 2.7.x	Within April 2013

(*) UL certification in progress

Product delivery in 3 weeks from customer order.

Communication plan

P/N	Description	Data
+0500046ML	Single-phase electricity meter instruction sheet	Available
+0500047ML	Three-phase electricity meter instruction sheet	Available
+0500048ML	User terminal for three-phase electricity meter instruction sheet	Available
+0300044IT	User manual	January 2013
+3000055IT	Application notes	February 2013

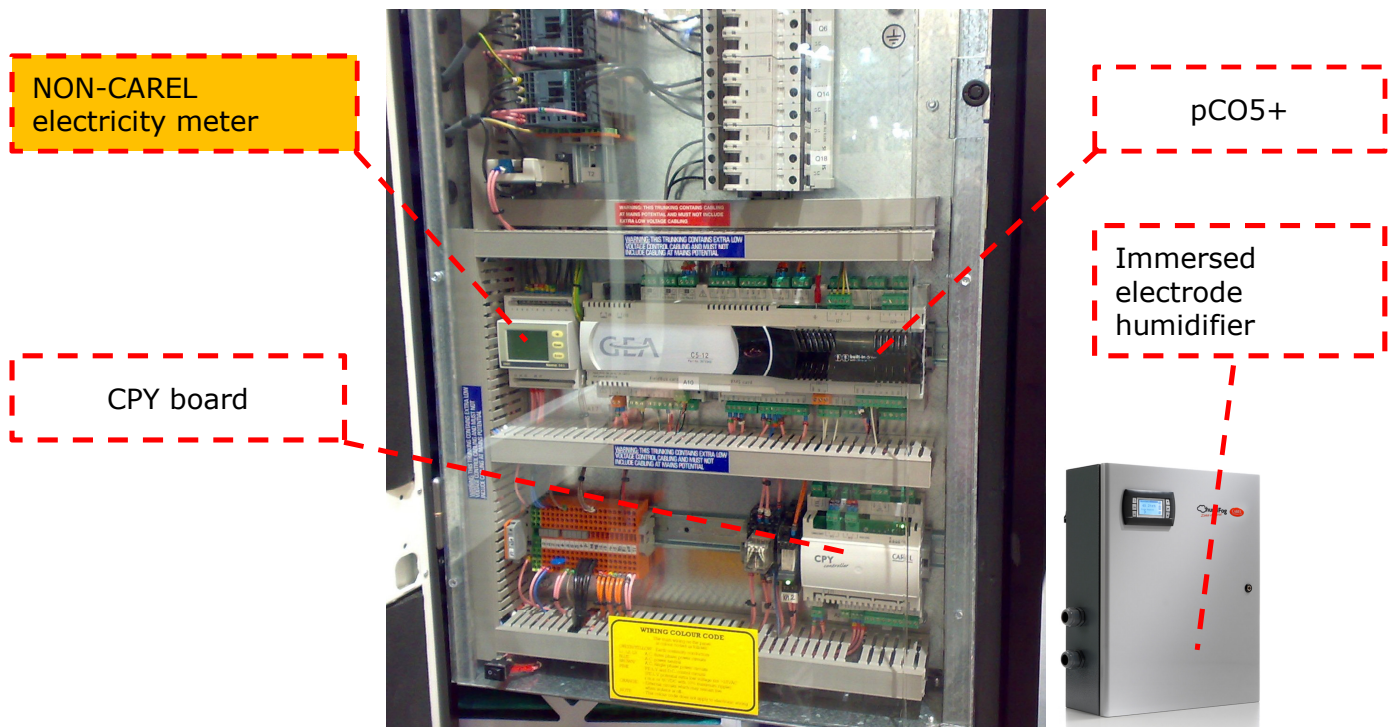


Main benefits to underline when presenting the product

The main benefits offered by the device that should be stressed when presenting the product are:

- Device suitable for measuring electricity either produced or consumed, simplifying analysis of consumption;
- CAREL propose a complete solution for monitoring energy consumption, in combination with the other solutions and systems we currently supply;
- Integration with CAREL or third party systems made simple by data transfer over RS485 serial line;
- All the advantages of remote supervision, with alarm notification (SMS, fax, email) and data logging;
- Possibility of wireless connection in combination with the rTM system (Access Point and Router-Bridge);
- Excellent quality/price ratio;
- CAREL wants to consolidate its brand as a "ONE STOP SHOP", with a complete supply of electronic systems. The example in the photo below (customer GEA Air Treatment - Germany) highlights the use of a CAREL controller without the electricity meter.

From today on, this latter device can also be supplied by CAREL, with the objective of providing all the electronics in the electrical panel.



Market opportunities

Market opportunities include:

- Direct sales for individual applications, including energy measurement in combination with monitoring using PWPRO and PVPRO in individual installations;
- Within CAREL systems. The electricity meters are suitable to be sold as part of wider and more complete solutions, i.e. "energy management solutions", together with the pLoads controller.

Product launch – Electricity meter



Competition

The market offers many solutions by different brands, ABB, Electrex, Ime, Ducati, Gavazzi, Socomec, AlgoDue Elettronica, ElectroMagnetica, Cewe, Iskraetc.

It must be stressed that the electricity meters are developed and manufactured by Carlo Gavazzi and are customised for CAREL. The list prices have been aligned and agreed on in order to avoid direct competition based on price. Nonetheless, when using the three-phase meter connected to a CAREL controller, data is shared with the control interface, saving the cost of purchasing a specific user interface (available separately). This solution is thus very advantageous compared to the Gavazzi brand product.



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MTOPZT2000	200 A current transformer, cable/bar	

For further technical information, please see the corresponding documents.

Kindly forward this information to all your colleagues and the sales network. If you are interested in these products, please send me details of potential quantities of each part number so we can manage availability accordingly.

Please do not hesitate to contact me for any further information or clarifications.
Best regards

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