



PROTOTYPE DESIGN ASSESSMENT CERTIFICATE
No. ELE206724CS

This is to certify that the product identified below is in compliance with the regulations herewith specified.

<i>Description</i>	Monitoring module and datalogger of electrical parameters
<i>Type</i>	EMS-96, EMA-90N
<i>Applicant</i>	CONTREL ELETTRONICA Via San Fereolo 9 26900 Lodi (LO) Italy
<i>Manufacturer</i>	CONTREL ELETTRONICA
<i>Place of manufacture</i>	Via San Fereolo 9 26900 Lodi (LO) Italy
<i>Reference standards</i>	Rules for the classification of ships.- Part C - Machinery, systems and fire protection. - Ch.3, Sect. 6, Table 1.

This certificate is issued on request of the Manufacturer based on the PDA certification scheme according to RINA Rules for Testing and Certification of Marine Materials and Equipment

Issued in **Genoa** on **November 4, 2024**. *This Certificate is valid until* **November 4, 2029**

RINA Services S.p.A.
Luigi Benedetti

This certificate consists of this page and 1 enclosure

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EMS-96, EMA-90N

EMS-96 and EMA-90N Electrical Measurement Supervisor

Main features:

The EMS-96 and EMA-90N Electrical Measurement Supervisor has analysis functions that allow the measurement of the main electrical parameters: Voltage, Current, Frequency, Power Factor Active and Reactive power, Active and reactive Energy. The instrument allows the measurement and analysis in real time of electrical parameters, also verifying the quality of the Energy thanks to THD measurement. bidirectional metering of energy allows both production and consumption of energy to be monitored with a single device. All the information monitored by the analyzer can be transmitted to remote locations through communication interfaces RS485, Ethernet with the support of numerous protocols including Modbus RTU, Modbus TCP/IP and Profibus DP.

Interaction with the supervision systems is possible using inputs and outputs, all programmable.

EMS reads and displays the energy values measured in other energy meters connected to the network. This is achieved thanks to digital inputs, which are able to acquire the impulses generated by the counters. In this case, EMS acts as a data concentrator. It not only collects information from the electricity meters but also from the water, gas meters or other. EMS allows a complete, in-depth analysis of the network quality, including the measurement of the harmonic distortion (20th order) of the Voltage and Current signals.

Tested Accuracy:

EMS-96 and EMA-90N modules accuracy during EMC conducted and radiated immunity test:
 $\pm 10\%$ F.S. of the actual value.

EMS-96 and EMA-90N modules accuracy in Standard Atmosphere Condition:
according to the manufacturing specification: $\pm 0,1\%$ F.S. for (V) and (I); $\pm 0,2\%$ F.S. for Active Energy

Remarks:

EMS-96 and EMA-90N are not approved for controls and electrical protection purposes.

WI-FI communication (EMS-96) in general is not allowed
(on a case by case bases, special acceptance may be considered)

Technical specification:

Data sheet:

Instruction Manual n. IM1200-1 v2.0 Instruction Manual n. IM166-U v1.2 General description

Instruction Manual n. IM166-U v1.2_Modbus RTU communication protocol for EMS-96 Series

Instruction Manual n. IM128-1 v0.3 General description

Instruction Manual n. IM128-U v0.3 Electrical Measurement Analyzer

Instruction Manual n. IM145.1-U v1.6 Modbus RTU & TCP/IP communication protocol for EMA-N and EMS series

Test report:

TesLab Report n. 17C327F rev. 01 (2018-06-20)

TesLab Report n. 247231E rev. 01 (2024-09-26)

Reference documents:

IMQ certificate QMS n. 9105.CO35 (2024-03-25)

TAO-APP dated 12-01-2024

Offer 2024/6861 accepted on 06-05-2024

The documents above-mentioned have been archived in the Leonardo Draw Plus portal under the project:
<https://leodrawplus.rina.org/projects/44774/detail>

Genoa November 4, 2024