



# SGS

EC Type Examination Certificate Number: **0120/SGS0175**

**Carlo Gavazzi Controls S.p.A**

Via Safforze 8  
32100 Belluno  
Italy

Instrument Identification:  
**EM110 Series**

Instrument Traceable Number  
**0120/SGS0175**

Single Phase, Active Import (kWh), Indoor, Electricity Meter

has been assessed and certified as meeting the requirements of

**EC Directive 2004/22/EC**

**Measuring Instruments Annex B**

It is certified that the manufacturer's technical design and specimen for the above instrument has been examined and, based on the evidence submitted, it is considered that the instrument conforms to the requirements of MI-003 of EC Directive 2004/22/EC

This certificate must be used in conjunction with a certificate covering the product verification as required in Annex D or Annex F

This certificate is valid for 10 years from 4<sup>th</sup> June 2015 to 3<sup>rd</sup> June 2025  
Issue 1

Certification is based on report number(s) SHES141200635201 dated 28<sup>th</sup> May 2015

Authorised Signature

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SGS PAFTB Examination Declaration  
15083135



	EC-Type Examination Certificate Number:	
	<b>0120/ SGS0175</b>	
	Issue Number: 1	Dated: 5 <sup>th</sup> June 2015

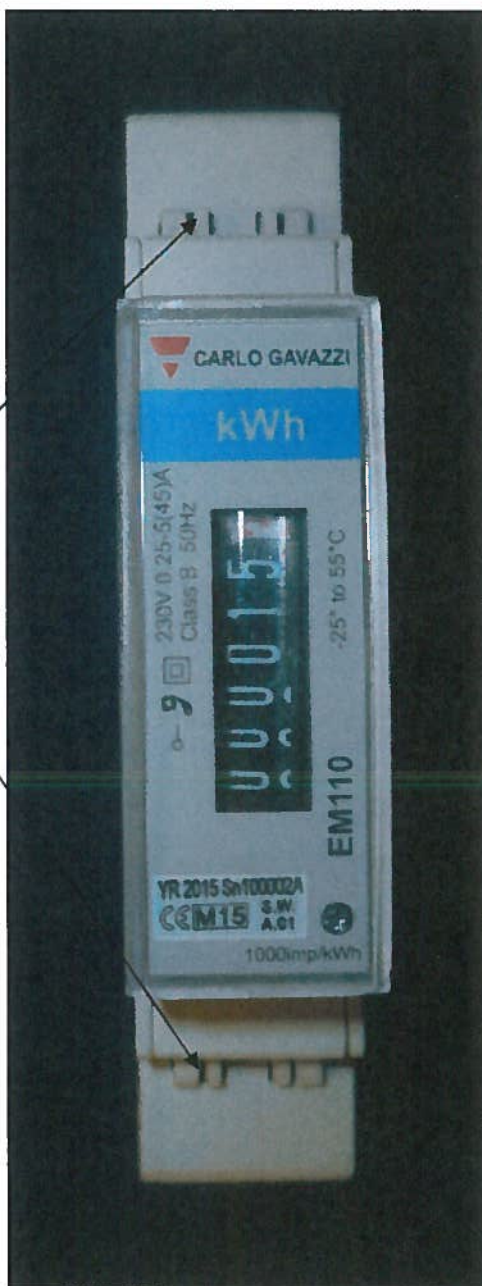
## 1. Technical Data


Manufacturer	Carlo Gavazzi Controls S.p.A
Meter Type(s)	EM110-DIN.AV8.1.X.O1.PF.B
Voltage Rating ( $U_n$ )	230V
Current Rating ( $I_{min}$ – $I_{ref}$ ( $I_{max}$ ))	0.25-5(45)A
Frequency ( $F_n$ )	50Hz
Active Accuracy Class ( $kWh$ )	A or B ( $kWh$ )
Type of circuit	1p2w
Temperature Range	-25°C to +55°C
Software Version No's.	A.01
Identification Location	Nameplate
Bill Of Materials No.	D111020
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	1000imp/kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	2 x Wire & Crimp
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	Mechanical

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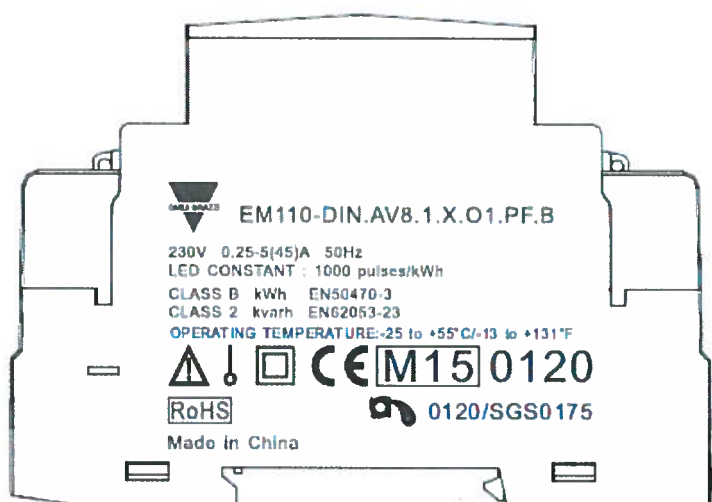
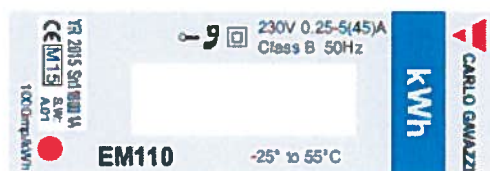
## 2. Photograph of Meter and Sealing Plan


Utility Seals



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### 3. Name-plate



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#### 4. Influence factors for temperature, frequency and voltage


Current	PF Cos	-25 °C	-10 °C	5 °C	30 °C	40 °C	55 °C
I <sub>min</sub>	1.0	0.41	0.31	0.28	0.27	0.27	0.28
I <sub>tr</sub>	1.0	0.35	0.25	0.25	0.24	0.26	0.25
10I <sub>tr</sub>	1.0	0.31	0.19	0.14	0.13	0.13	0.14
I <sub>max</sub>	1.0	0.34	0.23	0.14	0.10	0.12	0.12
I <sub>tr</sub>	0.5ind	0.67	0.53	0.54	0.48	0.49	0.48
10I <sub>tr</sub>	0.5ind	0.32	0.20	0.15	0.13	0.14	0.14
I <sub>max</sub>	0.5ind	0.37	0.25	0.19	0.18	0.19	0.19
I <sub>tr</sub>	0.8cap	0.43	0.35	0.32	0.30	0.30	0.31
10I <sub>tr</sub>	0.8cap	0.24	0.12	0.08	0.07	0.08	0.08
I <sub>max</sub>	0.8cap	0.32	0.17	0.09	0.07	0.10	0.10

During the type approval examination the influence factors for temperature, frequency and voltage are determined per load point. The table above represents the sum of the square values per load, determined via the following formula:-

$$\delta e(T, U, f) = \sqrt{(\delta e^2(T, I, \cos\varphi) + \delta e^2(U, I, \cos\varphi) + \delta e^2(f, I, \cos\varphi))}$$

where

$\delta e(T, I, \cos\varphi) =$  Additional error due to variation of the temperature at the same load  
 $\delta e(U, I, \cos\varphi) =$  Additional error due to variation of the voltage at the same load  
 $\delta e(f, I, \cos\varphi) =$  Additional error due to variation of the frequency at the same load

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## 5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
EM110-DIN.AV8.1.X.O1.PF.B	230V, 0.25-5(45)A, Pulse Output

Modifications to the meter(s) described according to approval No.**0120/ SGS0173**. must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

## 6. Document Revision History

Issue	Date	Comments
1	05/06/2015	Initial Issue