EU-TYPE EXAMINATION CERTIFICATE

Elgama-Elektronika UAB
Visorių g. 2, Vilnius
Lithuania

EU-Type Examination Certificate No.
1693-24
Revision 1

Type GAMA 350

Object Electronic three-phase four-wire energy meter.
Transformer connected

The object has been assessed and meets the requirements of

EU Directive 2014/32/EU
Module B

The energy meter(s) meet(s) the essential requirements of Annex V of EU Directive 2014/32/EU, on the harmonization of the laws of Member States relating to the making available on the market of measuring instruments (recast).

This Certification is based on the report(s) listed in the report list in this Certificate.

This Certificate is valid until: November 15, 2034.

This Certificate comprises 8 pages in total.

Issued by KEMA B.V.
Klingelbeekseweg 195,
Arnhem, The Netherlands
Notified Body 2290

Alessandro Bertani
Director,
Services & Smart Technologies

Arnhem, November 15, 2024

REVISION OVERVIEW

The edition with the highest revision number always replaces the earlier issued editions.

Rev. No.	Date of issue	Reason
0	November 5, 2024	First issue
1	November 15, 2024	Table corrected; Clause 4

REPORT LIST

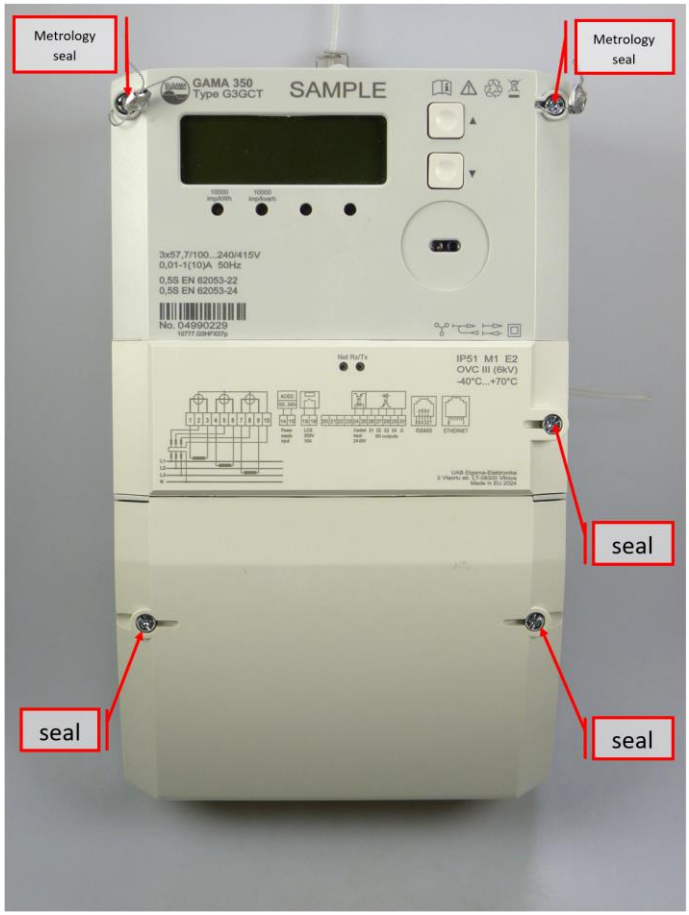
This Certificate is issued based on the following reports.

Report number	Revision	Firmware version
1694-24	R0	G3HFX07p
1695-24	R0	G3HFX07p
1696-24	R0	G3HFX07p

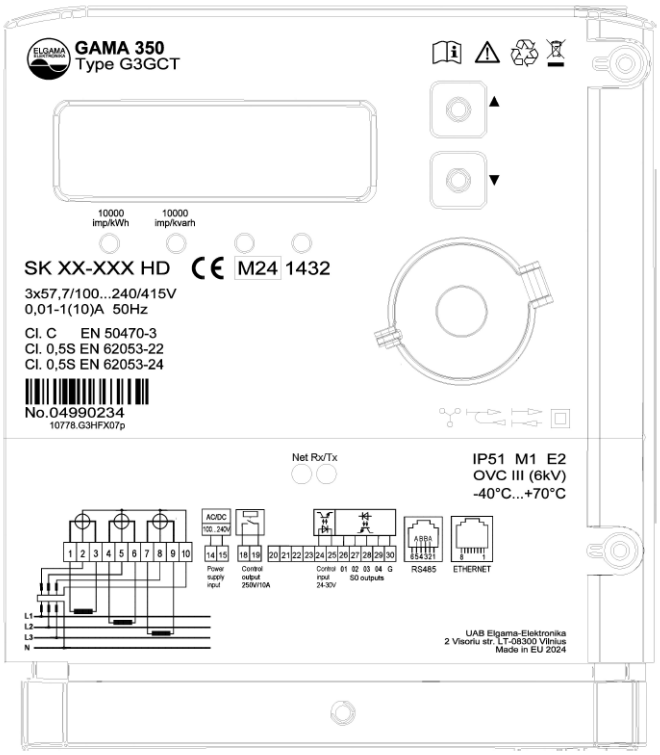
1 TECHNICAL DATA

Manufacturer	Elgama-Elektronika UAB, Visorių g. 2, Vilnius Lithuania
Production location	Elgama-Elektronika UAB, Visorių g. 2, Vilnius Lithuania
Type	GAMA350
Model	G3GCT
Connection	Transformer
Type of circuit	3P4W
Accuracy class Wh	0,5s/C
Accuracy class varh	0,5s
Meter constant	10000 imp/kWh 10000 imp/kvarh
V range	3x57,7/100 – 3x240/415 V
I range I_{min}-I_n(I_{max})	0,01-1(10) A
Frequency	50 Hz
Temperature range	-40….+70 °C
Use	Indoor
IP rating	IP54
Protection Class	II
Impulse voltage	6 kV
Internal clock	Crystal controlled
Environmental class	M1, M2, E1 and E2, CISPR32 class B
LR Firmware ID	G3HFX07p
LR Firmware CRC	FE6613ED
Register	LCD
Registry method(s):	Algebraic computation method

2 PHOTOGRAPHS AND SEALING



3 EXAMPLES OF NAME PLATES



4 CALCULATION OF THE COMPOSITE ERROR / MPE

During the type approval test the intrinsic errors for temperature, voltage and frequency variation are determined per load point. The composite error is determined with the following formula:

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

Where
$\varepsilon^2(I, cos\varphi)$ = Intrinsic error of the meter at a certain load
$\delta^2(T, I, cos\varphi)$ = Additional error due to the variation of the temperature at the same load
$\delta^2(U, I, cos\varphi)$ = Additional error due to the variation of the voltage at the same load
$\delta^2(f, I, cos\varphi)$ = Additional error due to the variation of the frequency at the same load

Results are in the table below:

			Composite error							
Current	cosϕ	Phase	-40°C	-25°C	-10°C	5°C	30°C	40°C	55°C	70°C
Imin	1	3ph	0,08%	0,06%	0,04%	0,04%	0,03%	0,04%	0,06%	0,10%
Itr	1	3ph	0,07%	0,06%	0,04%	0,02%	0,00%	0,02%	0,05%	0,09%
Itr	1	1ph,1	0,14%	0,13%	0,12%	0,11%	0,11%	0,11%	0,13%	0,15%
Itr	1	1ph,2	0,15%	0,15%	0,14%	0,14%	0,14%	0,14%	0,15%	0,16%
Itr	1	1ph,3	0,10%	0,08%	0,05%	0,04%	0,03%	0,04%	0,07%	0,10%
Itr	0,5i	3ph	0,14%	0,12%	0,09%	0,08%	0,07%	0,07%	0,09%	0,12%
Itr	0,5i	1ph,1	0,24%	0,23%	0,22%	0,21%	0,21%	0,21%	0,22%	0,24%
Itr	0,5i	1ph,2	0,20%	0,19%	0,17%	0,16%	0,16%	0,16%	0,18%	0,21%
Itr	0,5i	1ph,3	0,15%	0,13%	0,12%	0,11%	0,10%	0,11%	0,12%	0,13%
Itr	0,8c	3ph	0,16%	0,12%	0,09%	0,05%	0,04%	0,06%	0,11%	0,19%
In	1	3ph	0,07%	0,05%	0,03%	0,01%	0,01%	0,02%	0,06%	0,10%
In	1	1ph,1	0,14%	0,13%	0,12%	0,11%	0,11%	0,11%	0,13%	0,15%
In	1	1ph,2	0,13%	0,13%	0,12%	0,12%	0,12%	0,12%	0,13%	0,15%
In	1	1ph,3	0,09%	0,07%	0,05%	0,04%	0,03%	0,04%	0,07%	0,11%
In	0,5i	3ph	0,12%	0,10%	0,09%	0,07%	0,06%	0,06%	0,08%	0,10%
In	0,5i	1ph,1	0,18%	0,17%	0,16%	0,15%	0,14%	0,15%	0,16%	0,17%
In	0,5i	1ph,2	0,17%	0,16%	0,14%	0,13%	0,13%	0,14%	0,15%	0,17%
In	0,5i	1ph,3	0,13%	0,12%	0,10%	0,09%	0,09%	0,09%	0,10%	0,10%
In	0,8c	3ph	0,15%	0,11%	0,08%	0,04%	0,03%	0,05%	0,12%	0,19%
Imax	1	3ph	0,07%	0,05%	0,03%	0,02%	0,02%	0,02%	0,06%	0,11%
Imax	1	1ph,1	0,15%	0,14%	0,13%	0,12%	0,12%	0,12%	0,13%	0,16%
Imax	1	1ph,2	0,12%	0,12%	0,11%	0,11%	0,11%	0,11%	0,13%	0,15%
Imax	1	1ph,3	0,09%	0,07%	0,06%	0,05%	0,04%	0,04%	0,07%	0,12%
Imax	0,5i	3ph	0,11%	0,09%	0,08%	0,06%	0,05%	0,06%	0,07%	0,07%
Imax	0,5i	1ph,1	0,14%	0,13%	0,12%	0,11%	0,10%	0,11%	0,11%	0,11%
Imax	0,5i	1ph,2	0,17%	0,16%	0,14%	0,13%	0,12%	0,13%	0,13%	0,13%
Imax	0,5i	1ph,3	0,10%	0,08%	0,07%	0,06%	0,05%	0,06%	0,07%	0,07%
Imax	0,8c	3ph	0,14%	0,12%	0,08%	0,05%	0,04%	0,07%	0,12%	0,18%

5 OPTIONS AND VARIANTS

Overview of variants with details

Type designation	Details of the meter
GAMA 350 G3GCT	• Communication options: optical port RS485 Ethernet 2G/4G • Pulse output (4x) • Pulse input • external relay input • Auxiliary power supplyinputs I/O

END OF DOCUMENT

The laboratories of KEMA Labs are:

- CESI S.p.A., Milan, Italy, accredited by ACCREDIA in accordance with ISO/IEC 17025:2017 under no. 0030L.
- FGH Engineering & Test GmbH, Mannheim, Germany, accredited by DAkkS in accordance with DIN EN ISO/IEC 17025:2018 under no. D-PL-12110-01-00.
- IPH Institut "Prüffeld für elektrische Hochleistungstechnik" GmbH, Berlin, Germany accredited by DAkkS in accordance with DIN EN ISO/IEC 17025:2018 under nos. D-PL-12107-01-00 and D-K-12107-01-00.
- KEMA B.V., Arnhem, The Netherlands, accredited by RvA in accordance with EN ISO/IEC 17025:2017 under nos. L020, L218 and K006 and with EN ISO/IEC 17065:2012 under no. C685.
- KEMA Labs, Zkušebnictví, a.s., Prague, the Czech Republic, testing laboratory no. 1035 accredited by CAI in accordance with ČSN EN ISO/IEC 17025:2018.
- KEMA-Powertest, LLC, Chalfont, United States, accredited by A2LA in accordance with ISO/IEC 17025:2017 under no. 0553.01.

Tests are carried out under the scope of accreditation, unless otherwise indicated in the chapter 'Tests carried out'.