



EU Type Examination Certificate Number: **0120/SGS0336**

GARO AB

Södergaten26
Gnosjö
Sweden

Instrument Identification:
GNM1D-100 Series

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

Instrument Traceable Number
0120/SGS0336

has been assessed and certified as meeting the requirements of

EU Directive 2014/32/EU
on Measuring Instruments Annex II, Module 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 Annex V of EU Directive 2014/32/EU

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


This certificate is valid until 13th May 2025
Issue 2

Certification is based on report number(s) SHES141200635401 dated 14th May 2015
SHES160200092501 dated 16th March 2016
EMA203792
EMA246176

Authorised Signature


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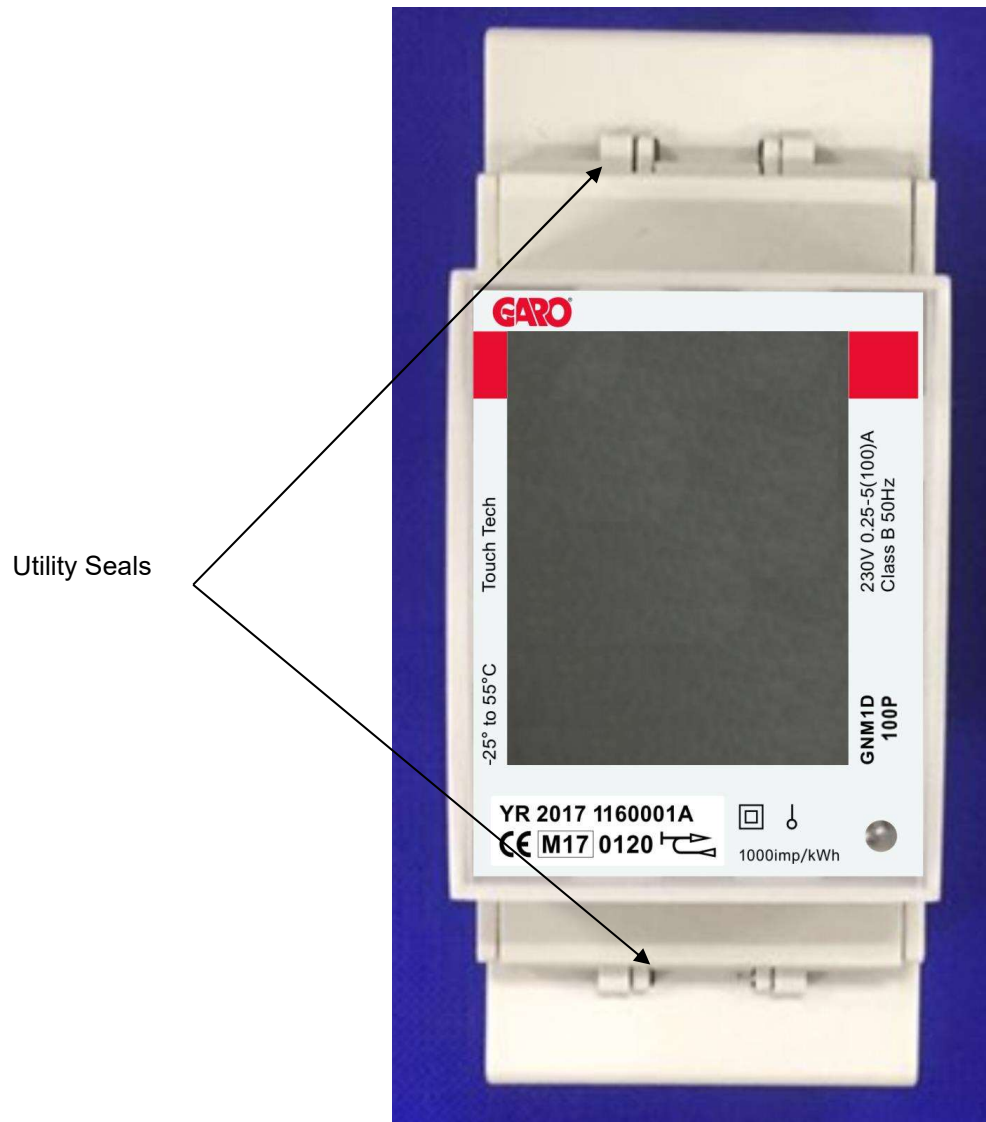
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	Issue Number: 2	Dated: 26 th June 2020


1. Technical Data

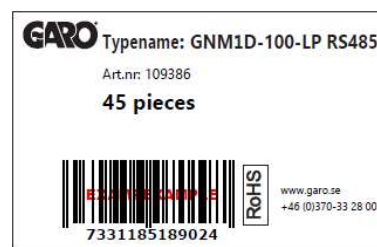
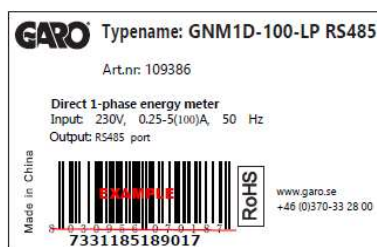
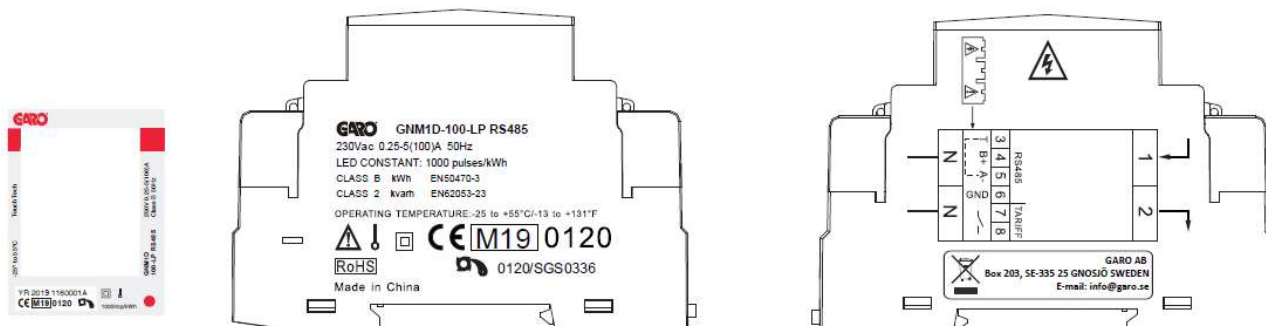
Manufacturer	Garo AB
Meter Type(s)	GNM1D-100-RS485, GNM1D-100P & GNM1D-100-LP RS485
Voltage Rating (U_n)	230V
Current Rating (I_{min} – I_{ref} (I_{max}))	0.25-5(100)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	A or B (kWh)
Type of circuit	1p2w
Temperature Range	-25°C to +55°C
Software Version No.'s.	GNM1D-100P: AA.02 GNM1D-100-RS485: AB.03 GNM1D-100-LP RS485: BB.05
CRC Checksum	GNM1D-100P: CC94H GNM1D-100-RS485: 9EDAH GNM1D-100-LP RS485: 419BH
Identification Location	LCD
Bill Of Materials No.'s	GNM1D-100P: D116014-01 V.01 GNM1D-100-RS485: D116016-01 V.01 GNM1D-100-LP RS485: D116016-01 V.01
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	LCD
Terminal Arrangement(s)	DIN
Location of Manufacturers Address	Side of meter and associated documents


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2. Photograph of Meter and Sealing Plan



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4. Influence factors for temperature, frequency and voltage


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

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

where

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

		Influence Factors for Temperature. Frequency & Voltage					
Current	PF Cos	-25 °C	-10 °C	5 °C	30 °C	40 °C	55 °C
I _{min}	1.0	0.80	0.50	0.34	0.17	0.29	0.56
I _{tr}	1.0	0.74	0.53	0.33	0.20	0.36	0.66
10I _{tr}	1.0	0.78	0.54	0.30	0.17	0.33	0.62
I _{max}	1.0	1.06	0.88	0.70	0.42	0.37	0.43
I _{tr}	0.5ind	0.82	0.60	0.18	0.19	0.38	0.62
10I _{tr}	0.5ind	0.78	0.55	0.30	0.20	0.34	0.63
I _{max}	0.5ind	0.96	0.78	0.58	0.26	0.20	0.35
I _{tr}	0.8cap	0.78	0.55	0.35	0.21	0.32	0.61
10I _{tr}	0.8cap	0.77	0.53	0.29	0.23	0.38	0.67
I _{max}	0.8cap	1.02	0.83	0.63	0.34	0.29	0.39


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5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
GNM1D-100P	230V, 0,25-5(100)A, Pulse output. Measuring mode: A. Positive energy = positive energy + negative energy
GNM1D-100-RS485	230V, 0,25-5(100)A, Modbus module. Measuring mode: A. Positive energy = positive energy + negative energy
GNM1D-100-LP RS485	230V, 0,25-5(100)A, Modbus module

Modifications to the meter(s) described according to approval No.**0120/SGS0336** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

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6. Document Revision History

Issue	Date	Comments
1	29/03/2018	Initial Issue
2	26/06/2020	Addition of GNM1D-100-LP RS485 variant and software reference updates

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