



EU Type Examination Certificate Number: **0120/SGS0301**

GARO AB

Södergaten26
Gnosjö
Sweden

Instrument Identification:
GNM3D Series

Polyphase, Active Import (kWh), Indoor, Electricity Meter

Instrument Traceable Number
0120/SGS0301

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 15th November 2025
Issue 3

Certification is based on report number(s) SHES141200635601 dated 16th November 2015
EMA210752/1 dated 16th November 2015
EMA 225751/1 dated 23rd June 2016

Authorised Signature


SGS United Kingdom Limited, Notified Body 0120
Unit 202B Worle Parkway, Weston-super-Mare, BS22 6WA, UK
t +44 (0)1934 522917 f +44 (0)1934 522137 www.sgs.com

Contact Address
SGS United Kingdom Limited, Units 12A & 12B, South Industrial Estate, Bowburn, Durham, DH6 5AD, UK
t +44 (0)191 377 2000 f +44 (0)191 377 2020 www.sgs.com

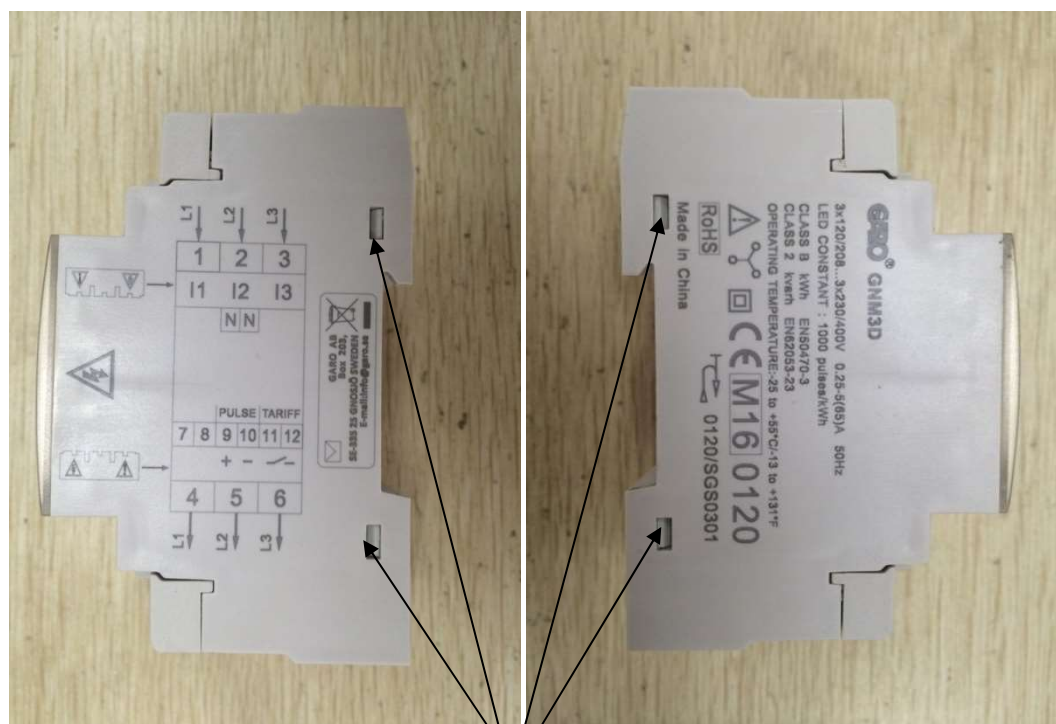
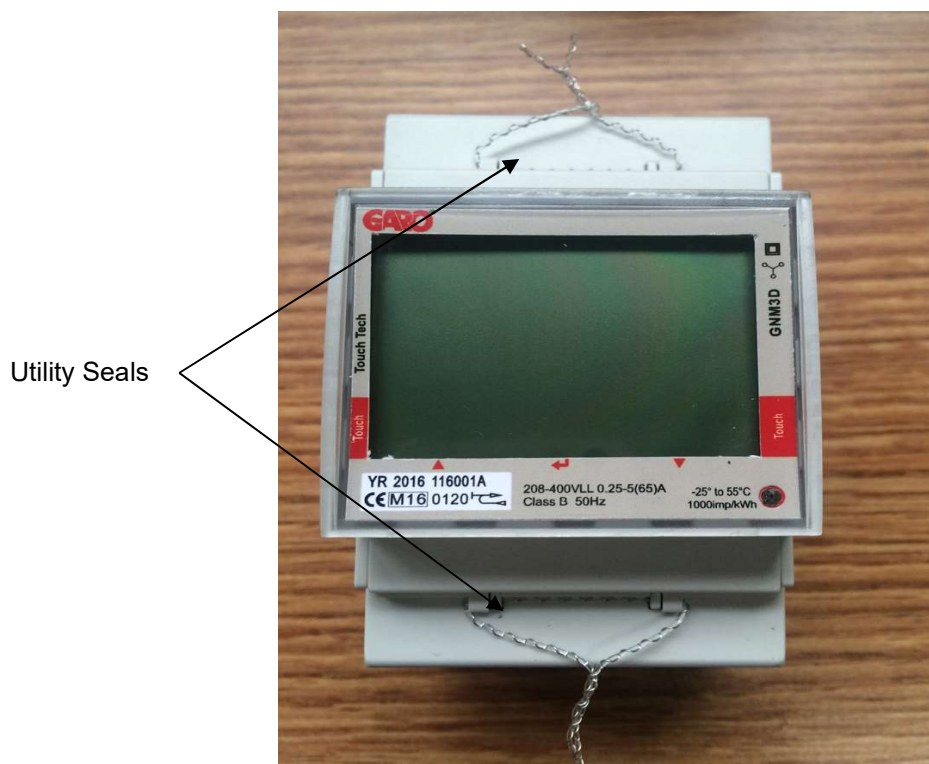
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1. Technical Data


Manufacturer	GARO AB
Meter Type	GNM3D, GNM3D-RS485, GNM3D-MBUS, GNM3D-LP, GNM3D-LP-RS485, GNM3D-LP-MBUS
Voltage Rating (U_n)	3x230/400V
Current Rating ($I_{min} - I_{ref} (I_{max})$)	0.25-5(65)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	A or B (kWh)
Type of circuit	3p3w, 3p4w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No	GNM3D: AA.02 GNM3D-RS485: AB.02 GNM3D-MBUS: AC.02 GNM3D-LP: BA.03 GNM3D-LP-RS485: BB.04 GNM3D-LP-MBUS: BC.05
Identification Location	LCD
Bill Of Materials Number	GNM3D & GNM3D-LP: D116014 V.03 GNM3D-RS485 & GNM3D-LP-RS485: D116016 V.03 GNM3D-MBUS & GNM3D-LP-MBUS: D116015 V.03
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 and 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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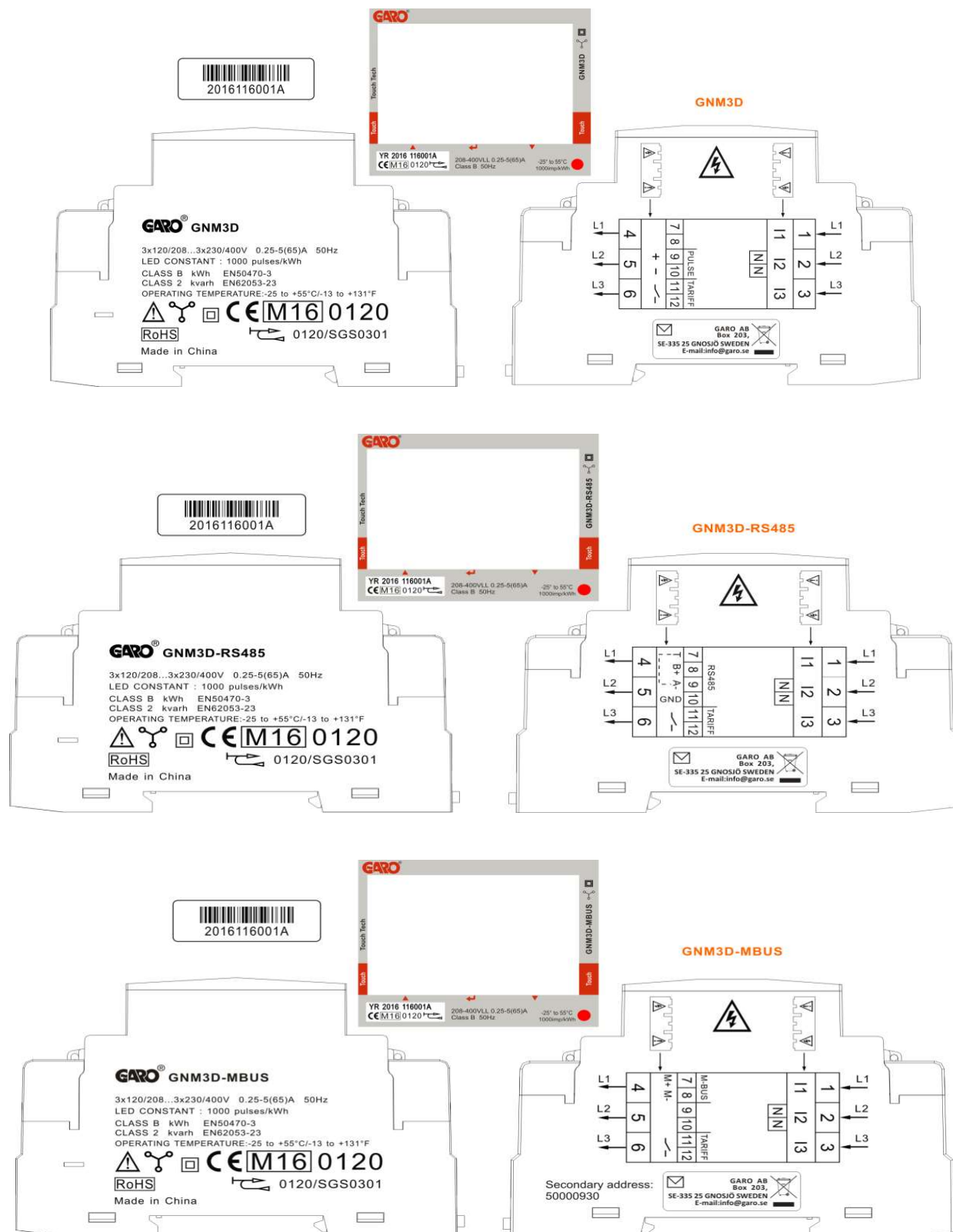
2. Photograph of Meter and Sealing Plan



Main Cover Seals

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3. Examples of Nameplates



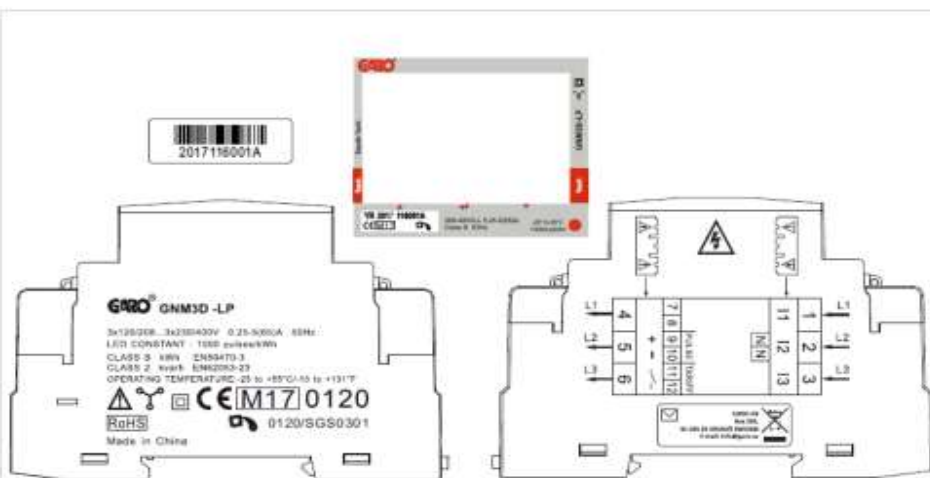
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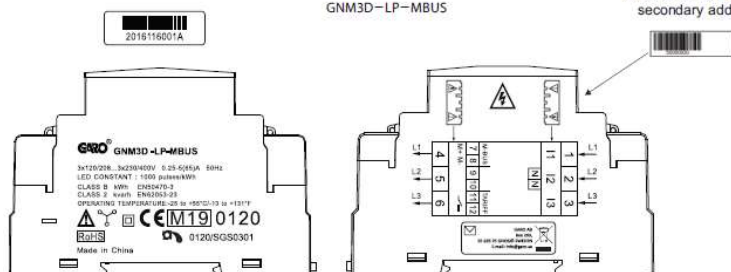
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GNM3D-LP-RS485



GNM3D-LP-MBUS



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4. Calculation of the composite error/ MPE

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

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		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	0.70	0.52	0.29	0.22	0.38	0.68
I _{tr}	1.0	0.74	0.55	0.31	0.15	0.33	0.63
10I _{tr}	1.0	0.74	0.54	0.31	0.15	0.33	0.64
I _{max}	1.0	0.75	0.56	0.35	0.21	0.37	0.65
I _{tr}	0.5ind	0.79	0.59	0.36	0.12	0.30	0.60
10I _{tr}	0.5ind	0.77	0.57	0.34	0.13	0.32	0.62
I _{max}	0.5ind	0.76	0.59	0.36	0.21	0.35	0.64
I _{tr}	0.8cap	0.81	0.61	0.38	0.08	0.26	0.57
10I _{tr}	0.8cap	0.78	0.59	0.35	0.10	0.29	0.60
I _{max}	0.8cap	0.76	0.59	0.29	0.19	0.33	0.62
L1							
I _{tr}	1.0	0.91	0.68	0.40	0.10	0.30	0.63
10I _{tr}	1.0	0.88	0.65	0.37	0.14	0.33	0.66
I _{max}	1.0	0.93	0.70	0.44	0.14	0.31	0.61
I _{tr}	0.5ind	0.88	0.60	0.35	0.18	0.37	0.69
10I _{tr}	0.5ind	0.83	0.59	0.33	0.19	0.39	0.71
I _{max}	0.5ind	0.87	0.66	0.40	0.14	0.33	0.63
L2							
I _{tr}	1.0	0.80	0.60	0.36	0.12	0.32	0.66
10I _{tr}	1.0	0.78	0.59	0.34	0.14	0.34	0.68
I _{max}	1.0	0.77	0.59	0.36	0.18	0.36	0.69
I _{tr}	0.5ind	0.75	0.56	0.34	0.17	0.36	0.70
10I _{tr}	0.5ind	0.74	0.55	0.31	0.18	0.39	0.73
I _{max}	0.5ind	0.91	0.76	0.60	0.48	0.56	0.81
L3							
I _{tr}	1.0	0.60	0.45	0.28	0.13	0.26	0.52
10I _{tr}	1.0	0.62	0.46	0.30	0.10	0.25	0.53
I _{max}	1.0	0.59	0.42	0.29	0.14	0.30	0.56
I _{tr}	0.5ind	0.56	0.40	0.28	0.15	0.32	0.58
10I _{tr}	0.5ind	0.57	0.40	0.24	0.16	0.32	0.59
I _{max}	0.5ind	0.56	0.40	0.41	0.18	0.37	0.62


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5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
GNM3D	3x230/400V, 0.25-5(65)A, Active Import/Export kWh, Pulse Output
GNM3D-RS485	3x230/400V, 0.25-5(65)A, Active Import/Export kWh, Mbus Module
GNM3D-MBUS	3x230/400V, 0.25-5(65)A, Active Import/Export kWh, Modbus Module
GNM3D-LP	3x230/400V, 0.25-5(65)A, Active Import kWh, Pulse Output
GNM3D-LP-MBUS	3x230/400V, 0.25-5(65)A, Active Import kWh, Mbus Module
GNM3D-LP-RS485	3x230/400V, 0.25-5(65)A, Active Import kWh, Modbus Module

Modifications to the meter(s) described according to approval No.**0120/SGS0301** 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	23/06/2016	Initial Issue
2	31/07/2017	Addition of new model GNM3D-LP and details
3	26/06/2020	Addition of GNM3D-LP-RS485 & GNM3D-LP-MBUS models

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