



EU Type Examination Certificate Number: **0120/SGS0448**

## **SIA “Pawbol Baltic”**

Katlakalna iela 9  
Riga  
Latvia

Instrument Identification:  
**ESM3100 Series**

**Polyphase, Active Import / Export (kWh), Indoor, Electricity Meter**

Instrument Traceable Number  
**0120/SGS0448**

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 5<sup>th</sup> January 2025  
Issue 1

Certification is based on report number(s) SHES130800321501 dated 26<sup>th</sup> December 2014  
EMA198278/1 dated 26<sup>th</sup> December 2014  
EMA198278/2 dated 21<sup>st</sup> June 2016  
EMA282352

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](http://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](http://www.sgs.com)

	EU-Type Examination Certificate Number:	
	<b>0120/SGS0448</b>	
	Issue Number: 1	Dated: 14 <sup>th</sup> December 2020


## 1. Technical Data

<b>Manufacturer</b>	SIA "Pawbol Baltic"
<b>Meter Type</b>	ESM3100DP, ESM3100DMA, ESM3100DMM, ESM3100DMB, ESM3100DMMT, ESM3100DM2T, ESM3100DMB2T
<b>Voltage Rating (<math>U_n</math>)</b>	3x230/400V
<b>Current Rating (<math>I_{min} - I_{ref} (I_{max})</math>)</b>	0.5-10(100)A
<b>Frequency (<math>F_n</math>)</b>	50Hz
<b>Active Accuracy Class (<math>kWh</math>)</b>	A or B ( $kWh$ )
<b>Type of circuit</b>	3p4w, 3p3w, 1p2w
<b>Temperature Range</b>	-25°C to +55°C
<b>Software/ Firmware Version No</b> <b>CRC Checksum</b> <b>Identification Location</b>	ESM3100DMA, ESM3100DMMT, ESM3100DMM ESM3100DMB, ESM3100DP: V1.3 ESM3100DM2T: V1.4 ESM3100DMB2T: V1.6  ESM3100DMMT, ESM3100DMM, ESM3100DMA, ESM3100DP: 0x0000AFF9 ESM3100DMB: 0x00003C02 ESM3100DM2T: 0x00009DF4 ESM3100DMB2T: 0x000075BC  Nameplate
<b>Bill Of Materials Number</b>	ESM3100DMA, ESM3100DMMT, ESM3100DMM, ESM3100DMB, ESM3100DP, ESM3100DM2T: DH-JS-180008-1.0 ESM3100DMB2T: DH-JS-190020-1.0
<b>IP Rating</b>	IP51
<b>Insulation Protective Class</b>	Class II
<b>LED Pulse Constant</b>	400imp/ kWh
<b>Impulse Voltage Rating</b>	6kV
<b>AC Voltage Rating</b>	4kV
<b>Main Cover Sealing Type</b>	1 x Wire & Crimp
<b>Integrity of meter</b>	Inaccessible without breaking seals
<b>Intended Location of the Meter</b>	Indoor
<b>Type of Register</b>	LCD
<b>Terminal Arrangement(s)</b>	DIN
<b>Location of Manufacturers Address</b>	On nameplate and accompanying documentation

	EU-Type Examination Certificate Number:	
	<b>0120/SGS0448</b>	
	Issue Number: 1	Dated: 14 <sup>th</sup> December 2020

**2. Photograph of Meter and Sealing Plan**



	EU-Type Examination Certificate Number:	
	0120/SGS0448	
	Issue Number: 1	Dated: 14 <sup>th</sup> December 2020

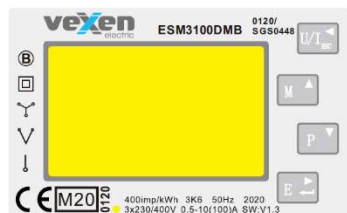
### 3. Examples of Nameplates



**vexen**  
**ESM3100DM2T 0120/SGS0448**  
**Three Phase Energy Meter**  
 3x230/400V AC 0,5-10(100)AAC 50Hz 2020  
 400imp/kWh EN50470-1/3 IP51 SW:1.4 CAT III  
 CE M20 0120 3K6  
 SIA "Pawbol Baltic"  
 Rīga, Katlakalna iela 9, LV-1073



**vexen**  
**ESM3100DMA 0120/SGS0448**  
**Three Phase Energy Meter**  
 3x230/400V AC 0,5-10(100)AAC 50Hz 2020  
 400imp/kWh EN50470-1/3 IP51 SW:1.3 CAT III  
 CE M20 0120 3K6  
 SIA "Pawbol Baltic"  
 Rīga, Katlakalna iela 9, LV-1073



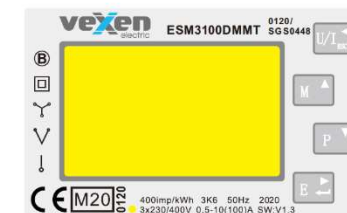
**vexen**  
**ESM3100DMB 0120/SGS0448**  
**Three Phase Energy Meter**  
 3x230/400V AC 0,5-10(100)AAC 50Hz 2020  
 400imp/kWh EN50470-1/3 IP51 SW:1.3 CAT III  
 CE M20 0120 3K6  
 SIA "Pawbol Baltic"  
 Rīga, Katlakalna iela 9, LV-1073



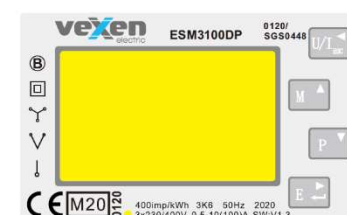
**vexen**  
**ESM3100DMB2T 0120/SGS0448**  
**Three Phase Energy Meter**  
 3x230/400V AC 0,5-10(100)AAC 50Hz 2020  
 400imp/kWh EN50470-1/3 IP51 SW:1.6 CAT III  
 CE M20 0120 3K6  
 SIA "Pawbol Baltic"  
 Rīga, Katlakalna iela 9, LV-1073




**vexen**  
**ESM3100DMM 0120/SGS0448**  
**Three Phase Energy Meter**  
 3x230/400V AC 0,5-10(100)AAC 50Hz 2020  
 400imp/kWh EN50470-1/3 IP51 SW:1.3 CAT III  
 CE M20 0120 3K6  
 SIA "Pawbol Baltic"  
 Rīga, Katlakalna iela 9, LV-1073



**vexen**  
**ESM3100DMMT 0120/SGS0448**  
**Three Phase Energy Meter**  
 3x230/400V AC 0,5-10(100)AAC 50Hz 2020  
 400imp/kWh EN50470-1/3 IP51 SW:1.3 CAT III  
 CE M20 0120 3K6  
 SIA "Pawbol Baltic"  
 Rīga, Katlakalna iela 9, LV-1073



**vexen**  
**ESM3100DP 0120/SGS0448**  
**Three Phase Energy Meter**  
 3x230/400V AC 0,5-10(100)AAC 50Hz 2020  
 400imp/kWh EN50470-1/3 IP51 SW:1.3 CAT III  
 CE M20 0120 3K6  
 SIA "Pawbol Baltic"  
 Rīga, Katlakalna iela 9, LV-1073

	EU-Type Examination Certificate Number:	
	<b>0120/SGS0448</b>	
	Issue Number: 1	Dated: 14 <sup>th</sup> December 2020

#### 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




EU-Type Examination Certificate Number:

**0120/SGS0448**

Issue Number: 1

Dated: 14<sup>th</sup> December 2020

		Influence Factors for Temperature. Frequency & Voltage					
Current	PF Cos	-25	-10	5	30	40	55
I <sub>min</sub>	1.0	0.46	0.34	0.14	0.18	0.29	0.52
I <sub>tr</sub>	1.0	0.57	0.39	0.19	0.11	0.24	0.46
10I <sub>tr</sub>	1.0	0.64	0.45	0.25	0.06	0.20	0.42
I <sub>max</sub>	1.0	0.75	0.60	0.44	0.26	0.23	0.30
I <sub>tr</sub>	0.5ind	0.56	0.40	0.20	0.14	0.24	0.49
10I <sub>tr</sub>	0.5ind	0.60	0.43	0.23	0.11	0.23	0.45
I <sub>max</sub>	0.5ind	0.62	0.47	0.30	0.05	0.10	0.28
I <sub>tr</sub>	0.8cap	0.65	0.46	0.27	0.11	0.21	0.43
10I <sub>tr</sub>	0.8cap	0.62	0.44	0.24	0.12	0.24	0.46
I <sub>max</sub>	0.8cap	0.69	0.55	0.37	0.16	0.14	0.28
L1							
I <sub>tr</sub>	1.0	0.84	0.60	0.32	0.08	0.20	0.48
10I <sub>tr</sub>	1.0	0.97	0.71	0.46	0.10	0.13	0.36
I <sub>max</sub>	1.0	0.93	0.70	0.48	0.16	0.06	0.25
I <sub>tr</sub>	0.5ind	0.60	0.32	0.09	0.25	0.42	0.66
10I <sub>tr</sub>	0.5ind	0.79	0.56	0.29	0.12	0.27	0.53
I <sub>max</sub>	0.5ind	0.84	0.63	0.40	0.10	0.11	0.33
L2							
I <sub>tr</sub>	1.0	0.40	0.26	0.09	0.08	0.16	0.37
10I <sub>tr</sub>	1.0	0.42	0.31	0.19	0.08	0.17	0.36
I <sub>max</sub>	1.0	0.44	0.36	0.25	0.08	0.08	0.23
I <sub>tr</sub>	0.5ind	0.20	0.09	0.24	0.27	0.35	0.53
10I <sub>tr</sub>	0.5ind	0.43	0.30	0.17	0.10	0.20	0.40
I <sub>max</sub>	0.5ind	0.46	0.35	0.25	0.09	0.06	0.20
L3							
I <sub>tr</sub>	1.0	0.55	0.37	0.15	0.14	0.30	0.51
10I <sub>tr</sub>	1.0	0.51	0.33	0.11	0.20	0.33	0.56
I <sub>max</sub>	1.0	0.55	0.39	0.21	0.10	0.21	0.52
I <sub>tr</sub>	0.5ind	0.41	0.24	0.06	0.32	0.46	0.66
10I <sub>tr</sub>	0.5ind	0.41	0.22	0.04	0.31	0.46	0.67
I <sub>max</sub>	0.5ind	0.43	0.30	0.34	0.17	0.30	0.53


	EU-Type Examination Certificate Number:	
	<b>0120/SGS0448</b>	
	Issue Number: 1	Dated: 14 <sup>th</sup> December 2020

## 5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
ESM3100DMMT:	Three phase, multi-function, multi-tariff, 2 pulse outputs and 1 RS485 Modbus communication port
ESM3100DMM:	Three phase, multi-function, 2 pulse outputs and 1 RS485 communication port
ESM3100DMB:	Three phase, multi-function, 2 pulse outputs and 1 Mbus communication port
ESM3100DP:	Three phase, multi-function, 2 pulse outputs
ESM3100DMA:	Three phase, 2 pulse outputs and 1 RS485 communication port
ESM3100DM2T:	Three phase, multi-function, dual tariffs, 2 pulse outputs and 1 RS485 communication port
ESM3100DMB2T:	Three phase, multi-function, dual tariffs, 2 pulse outputs and 1 Mbus communication port

Modifications to the meter(s) described according to approval No.**0120/SGS0448** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

	EU-Type Examination Certificate Number:	
	<b>0120/SGS0448</b>	
	Issue Number: 1	Dated: 14 <sup>th</sup> December 2020

## 6. Document Revision History

Issue	Date	Comments
1	14/12/2020	Initial Issue

This document is issued by the Company subject to its General Conditions for Certification Services, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested *and such sample(s) are retained for 28 days only*.

***END OF CERTIFICATE***