



EU Type Examination Certificate Number: **0120/SGS0257**

Janitza Electronics GmbH

Vor dem Polstück 6
35633 Lahnau
Germany

Instrument Identification:
MPA-3-668 & MPA-3-668DI

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

Instrument Traceable Number
0120/SGS0257

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 5th January 2025
Issue 3

Certification is based on report number(s) SHES130800321501 dated 26th December 2014
EMA198278/1
EMA198278/2
EMA228182/1

Authorised Signature


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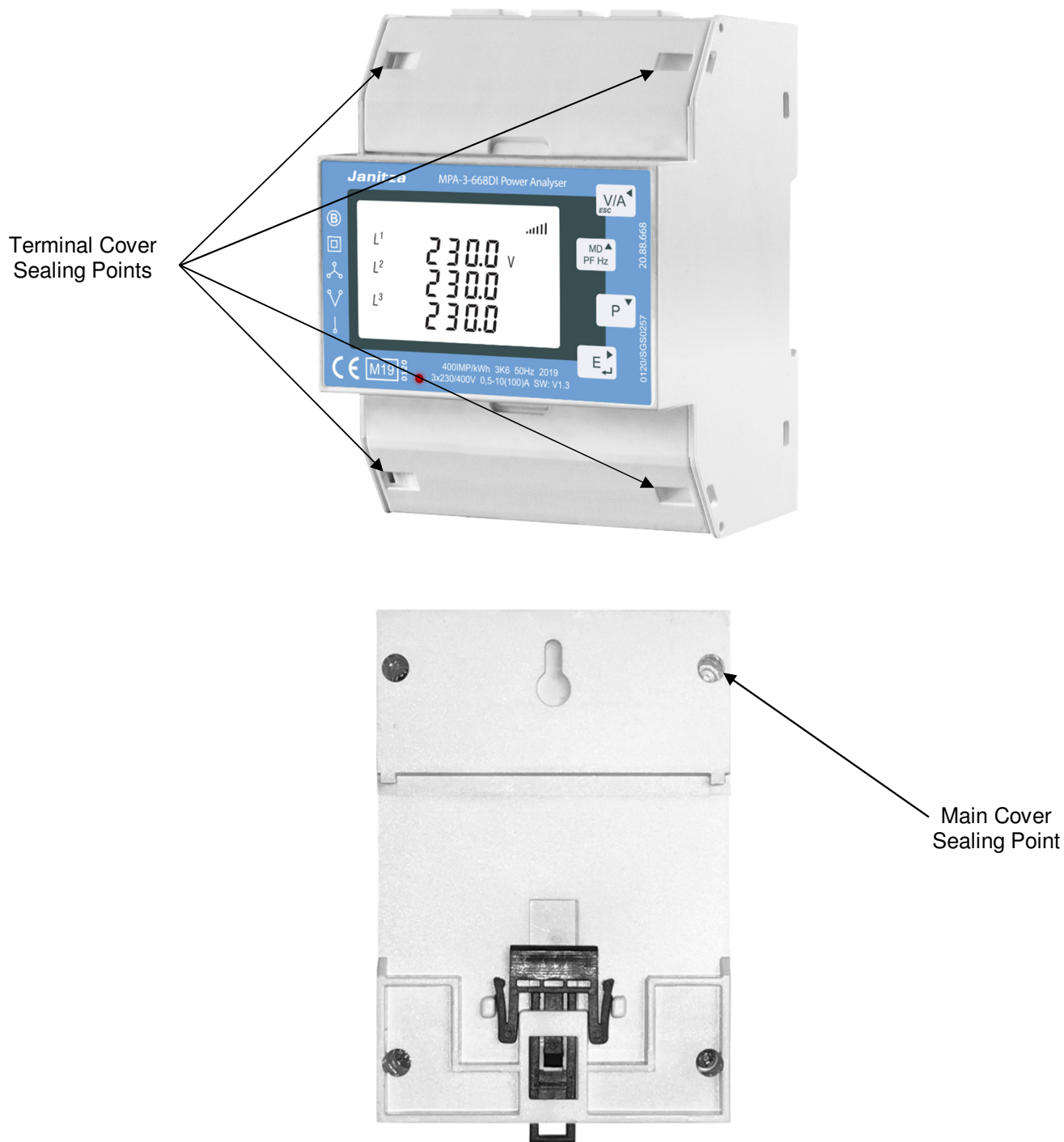
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	Issue Number: 3	Dated: 1 st October 2019


1. Technical Data

Manufacturer	Janitza Electronics GmbH
Meter Type	MPA-3-668 & MPA-3-668DI
Voltage Rating (U_n)	3x230/400V
Current Rating ($I_{min} - I_{ref} (I_{max})$)	0.5-10(100)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	A or B (kWh)
Type of circuit	3p4w, 3p3w, 1p2w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No	MPA-3-668: V1.3 MPA-3-668DI: V1.5
CRC Checksum	MPA-3-668: 0x0000AFF9 MPA-3-668DI: 0x00000A31
Identification Location	Nameplate
Bill Of Materials Number	MPA-3-668: V1.4 MPA-3-668DI: DH-JS-190002-1.0
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	400imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	1 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	On accompanying documentation

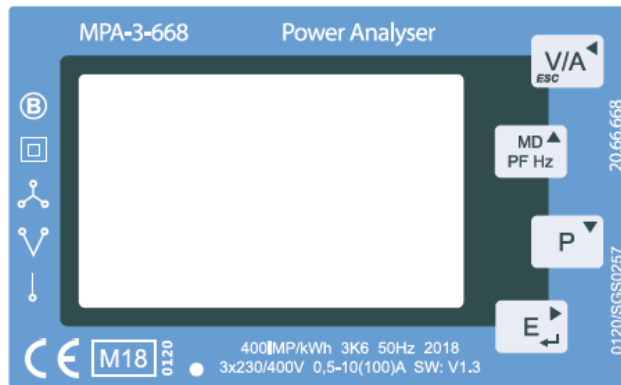
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2. Photograph of Meter and Sealing Plan

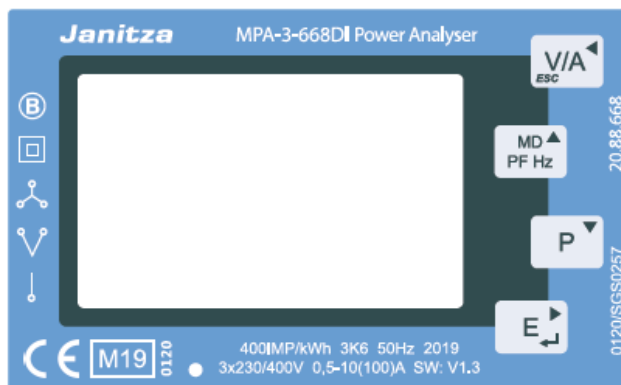


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3. Examples of Nameplates



Janitza electronics GmbH
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www.janitza.com



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


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5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
MPA-3-668:	Three phase, multi-function, 2 pulse outputs and 1 RS485 communication port
MPA-3-668DI:	Three phase, multi-function, 1 RS485 Modbus communication port, digital inputs

Modifications to the meter(s) described according to approval No.**0120/SGS0257** 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	17/08/2016	Initial Issue
2	28/10/2016	Change of meter type from ECS3-668MID to MPA-3-668
3	01/10/2019	Addition of MPA-3-668DI variant and change of manufacturer name & address

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END OF CERTIFICATE