



EU Type Examination Certificate Number: **0120/SGS0339**

as – Schwabe GmbH

Merkurstr.10
72184 Eutingen
Germany

Instrument Identification:
Art. 202 Series

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

Instrument Traceable Number
0120/SGS0339

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 17th February 2024
Issue 2

Certification is based on report number(s): SHES130800321401 dated 18th February 2014
EMA248749/1

Authorised Signature


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	Issue Number: 2	Dated: 28 th August 2019

1. Technical Data


Manufacturer	as – Schwabe GmbH.
Meter Type	Art. 20218, Art. 20243, Art. 20244, Art. 20245 Art. 20218 V2, Art. 20243 V2, Art. 20244 V2
Voltage Rating (U_n)	230V
Current Rating ($I_{min} - I_{ref} (I_{max})$)	0.25-5(45)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/ Firmware Version No	Art. 20218, Art. 20243, Art. 20244: V1.2 Art. 20245, Art. 20218 V2, Art. 20243 V2, Art. 20244 V2: V2.4
CRC Checksum	Art. 20218, Art. 20243, Art. 20244: 0x00008E1E Art. 20245, Art. 20218 V2, Art. 20243 V2, Art. 20244 V2: 0x0000272C
Identification Location	Nameplate
Bill Of Materials Number	Art. 20218: DH-JS-150002-1.5 Art. 20243, Art. 20244: DH-JS-150003-1.5 Art. 20245: DH-JS-170009-1.2 Art. 20218 V2: DH-JS-190006-1.0 Art. 20243 V2: DH-JS-180033-1.0 Art. 20244 V2: DH-JS-190009-1.0
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	4 x Wire & Crimp
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD: Art. 20243, Art. 20244, Art. 20245, Art. 20243 V2, Art. 20244 V2 Mechanical: Art. 20218, Art. 20218 V2
Terminal Arrangement(s)	DIN
Location of Manufacturers Address	Side of meter case

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2. Photograph of Meters and Sealing Plan



Photograph of Art. 20243

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Photograph of Art. 20218



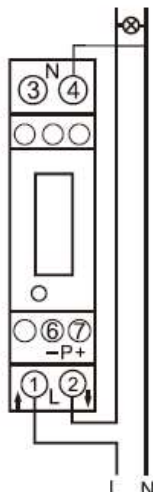
Photograph of Art. 20244



Photograph of Art. 20245

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3. Examples of Nameplates



Single Phase Energy Meter

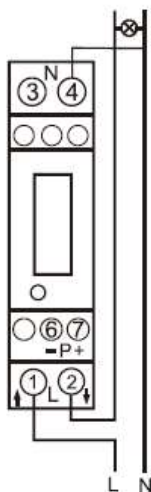
Model: Art.20218
Input: 230V AC 50Hz
0,25~5(45)A
S0: 1000imp/kWh
EN50470-1/3 IP51
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Single Phase Energy Meter


Model: Art.20243
Input: 230V AC 50Hz
0,25~5(45)A
S0: 1000imp/kWh
EN50470-1/3 IP51
0120/SGS0339 [®]B3K6

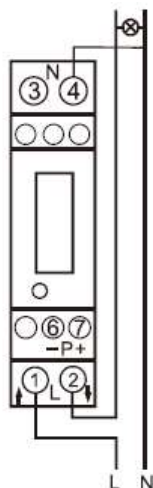
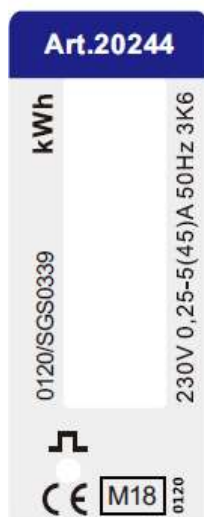


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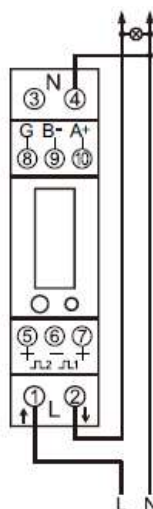
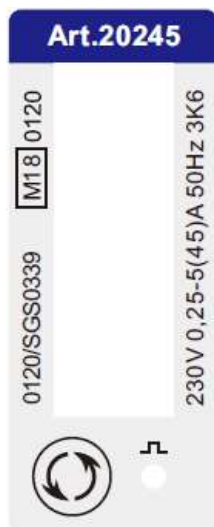


Single Phase Energy Meter

Model: Art.20244
Input: 230V AC 50Hz
0,25~5(45)A
S0: 1000imp/kWh
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Single Phase Energy Meter

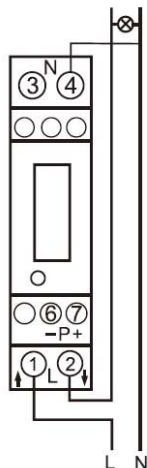
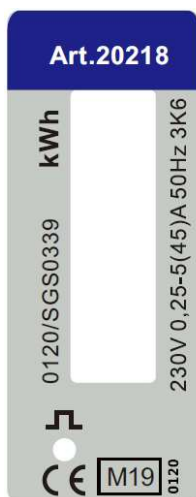
Model: Art.20245
Input: 230V AC 50Hz
0,25~5(45)A
S0: 1000imp/kWh
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Single Phase Energy Meter

Model: Art.20218 V2 SW V2.4

Input: 230V AC 50Hz

0,25~5(45)A

S0: 1000imp/kWh

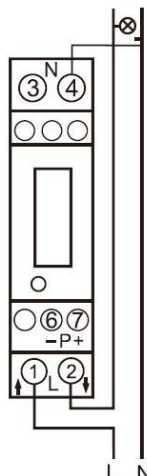
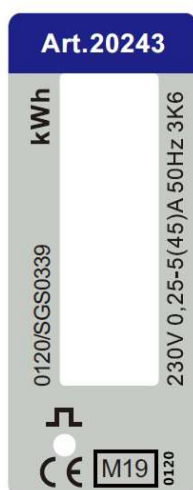
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Single Phase Energy Meter

Model: Art.20243 V2 SW V2.4

Input: 230V AC 50Hz

0,25~5(45)A

S0: 1000imp/kWh

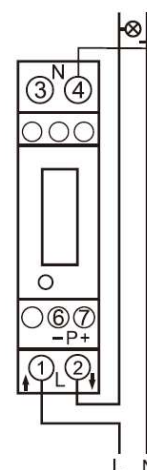
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Single Phase Energy Meter

Model: Art.20244 V2 SW V2.4

Input: 230V AC 50Hz

0,25~5(45)A

S0: 1000imp/kWh


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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

		Influence Factors for Temperature, Voltage & Frequency					
Current	PF Cos	-25°C	-10°C	5°C	30°C	40°C	55°C
I _{min}	1.0	0.12	0.12	0.12	0.13	0.12	0.12
I _{tr}	1.0	0.16	0.16	0.16	0.16	0.16	0.16
10I _{tr}	1.0	0.17	0.16	0.16	0.16	0.16	0.16
I _{max}	1.0	0.13	0.13	0.13	0.13	0.13	0.13
I _{tr}	0.5ind	0.29	0.29	0.29	0.29	0.29	0.29
10I _{tr}	0.5ind	0.40	0.40	0.40	0.40	0.40	0.40
I _{max}	0.5ind	0.16	0.16	0.16	0.16	0.16	0.16
I _{tr}	0.8cap	0.24	0.24	0.24	0.24	0.24	0.24
10I _{tr}	0.8cap	0.31	0.31	0.31	0.31	0.31	0.31
I _{max}	0.8cap	0.09	0.09	0.09	0.09	0.09	0.09


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5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
Art. 20243, Art. 20243 V2	Single Phase 230V, 0.25-5(45)A LCD register
Art. 20244, Art. 20244 V2	Single Phase 230V, 0.25-5(45)A LCD register with backlight
Art. 20218, Art. 20218 V2	Single Phase 230V, 0.25-5(45)A Mechanical register
Art. 20245	Single Phase 230V, 0.25-5(45)A, LCD register, 2 Pulse Outputs, RS485 Communication Port, Modbus

Modifications to the meter(s) described according to approval No.**0120/SGS0339** 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	12/01/2018	Initial Issue
2	28/08/2019	Addition of Art. 20218 V2, Art. 20243 V2 & Art. 20244 V2 variants

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