



SGS

EU Type Examination Certificate Number: **0120/SGS0419**

S&T Smart Energy GmbH

Industriezeile 35/4
4020 Linz
Austria

Instrument Identification:
MSM100 Series

Single Phase, Import/Export (KWh), Multi-rate, Smart, Electricity Meter

Instrument Traceable Number
0120/SGS0419

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 for 10 years from 15th May 2019 until 14th May 2029
Issue 1

Certification is based on report number(s) SHES190301209901 dated 10th May 2019, EMA266641/1/TR50579 dated 9th May 2019
EMA266641/1

Authorised Signature

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DU CST-ME-002 Rev 2


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EU Type Examination Cert.


SGSPAPER
19794053



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	Issue Number: 1	Dated: 15 th May 2019

1. Technical Data


Manufacturer	S&T Smart Energy GmbH
Meter Type	MSM100
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)	B (kWh)
Type of circuit	1p2w
Temperature Range	-40°C to +70°C
Software/ Firmware Version No	ATDZY221W2305[100]10V2.00
CRC Checksum	5B324D63
Identification Location	LCD
Bill Of Materials Number	761303000061002F
IP Rating	IP54
Insulation Protective Class	Class II
LED Pulse Constant	1000 imp/kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Wire & Crimp
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Outdoor
Type of Register	LCD
Terminal Arrangement(s)	DIN
Location of Manufacturers Address	Nameplate

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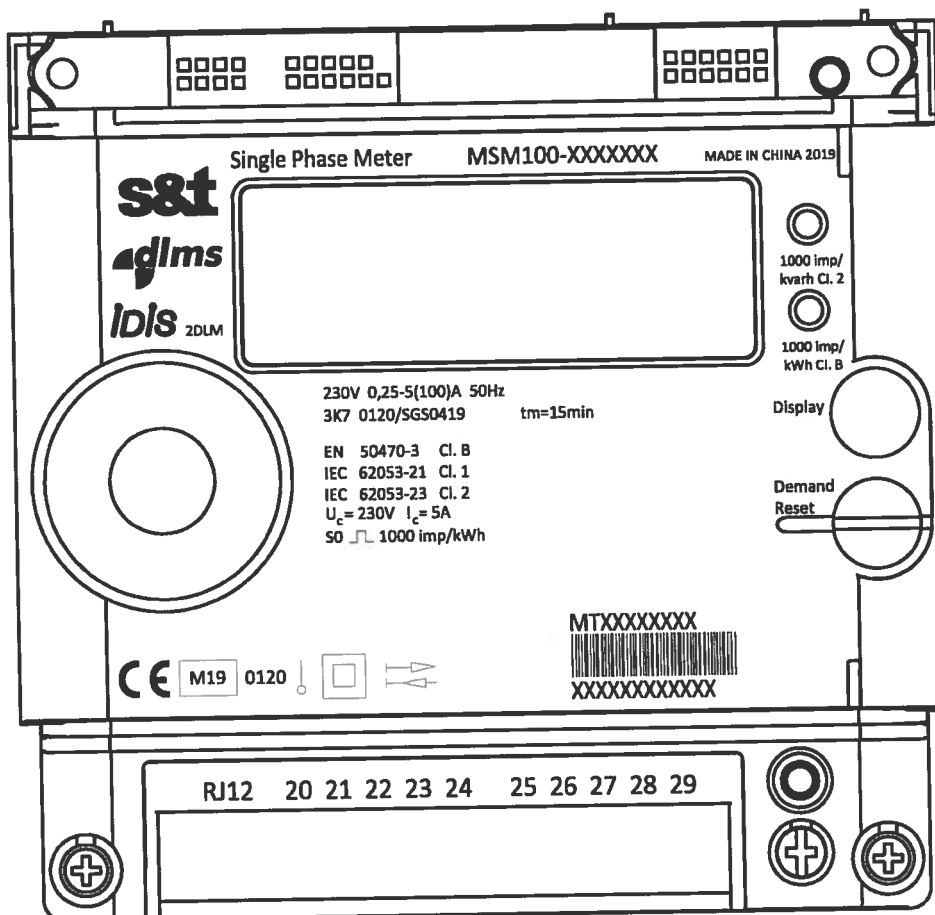
2. Photograph of Meter and Sealing Plan




Main Cover Sealing Points

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3. Examples of Nameplate



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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	-40°C	-25°C	-10°C	5°C	30°C	40°C	55°C	70°C
I _{min}	1.0	0.61	0.49	0.49	0.18	0.10	0.06	0.13	0.16
I _{tr}	1.0	0.58	0.46	0.46	0.14	0.04	0.07	0.12	0.17
10I _{tr}	1.0	0.57	0.44	0.44	0.13	0.05	0.10	0.15	0.15
I _{max}	1.0	0.72	0.55	0.55	0.17	0.06	0.11	0.18	0.21
I _{tr}	0.5ind	0.64	0.47	0.47	0.17	0.08	0.12	0.17	0.20
10I _{tr}	0.5ind	0.58	0.41	0.41	0.11	0.07	0.12	0.18	0.18
I _{max}	0.5ind	0.72	0.52	0.52	0.15	0.08	0.14	0.22	0.24
I _{tr}	0.8cap	0.57	0.41	0.41	0.16	0.06	0.09	0.14	0.15
10I _{tr}	0.8cap	0.56	0.40	0.40	0.11	0.06	0.10	0.14	0.15
I _{max}	0.8cap	0.70	0.50	0.50	0.14	0.08	0.12	0.17	0.20

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5. Annex of Variants

Product Variant Identification Details:

MSM100-ABCDEFGH **Modular Smart Meter - Single Phase**

with magnetic tamper, LCD

Backlight

A: Ratings

see Table

A: "Ratings"

Table Ratings

	Voltage Range	Frequency	Base Current
A	220 - 240 VAC	50 HZ ± 5%	5 A

B: Internal Relay

A: 100 A UC3

B: 63 A UC2

C: closed

C: Optional IO's

see Table "Optional

D: IO's"

Table Optional IO's

	Pulse Input	SO Pulse Output			External Relay	
		1	2	MPA	1	2
A						
B				1	1	
C					1	1
D	1	1	1	1	1	1

D: Optional Interfaces's

A: no option

B: RS-485

C: Wired M-Bus
RS-485 and Wired

D: M-Bus

E: Optional Features

A: no option

B: Supercap

C: Buzzer

D: Supercap + Buzzer

F: Hardware Generation


1: Generation 1

G: Hardware Revision

0: Prototype

1: Version 1

Modifications to the meter(s) described according to approval No. **0120/SGS0419** 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	15/05/2019	Initial Issue

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