

EU-TYPE EXAMINATION CERTIFICATE

Ningbo Sanxing Smart Electric Co., Ltd.
No.16 Fengwan Road, Cicheng Town, Jiangbei District, Ningbo City,
Zhejiang Province, 315034
China

EU-Type Examination

Certificate No.

1671-22

Revision 9



Type S34U28
Object Electronic three-phase four-wire energy meter.
Direct connected

The object has been assessed and meets the requirements of

EU Directive 2014/32/EU,
Module B

The energy meter(s) meet(s) the essential requirements of Annex V of EU Directive 2014/32/EU, on the harmonization of the laws of Member States relating to the making available on the market of measuring instruments (recast).

This Certification is based on the report(s) listed in the report list in this Certificate.

This Certificate is valid until: June 6, 2034.

This Certificate comprises 10 pages in total.

Issued by KEMA B.V.
Klingelbeekseweg 195,
Arnhem, The Netherlands
Notified Body 2290

Alessandro Bertani
Director,
Services & Smart Technologies

Arnhem, June 6, 2024



REVISION OVERVIEW

The highest revision always replaces the earlier issued versions.

Rev. No.	Date of issue	Reason
0	November 2, 2022	First issue
1	November 14, 2023	New variant of the meter added
2	November 14, 2023	New variant of the meter added
3	November 27, 2023	<ul style="list-style-type: none"> • Software version corrected (page 3) • Registration method description updated (page 3)
4	December 4, 2023	<ul style="list-style-type: none"> • Model name added (page 3) • Picture with model name added (page 5) • Revision of report 1668-23 and 1669-23 upgraded
5	December 22, 2023	Report 1698-23 and 1709-23 added
6	December 22, 2023	Report 1700-23 and 1706-23 added
7	February 16, 2024	<ul style="list-style-type: none"> • Report 1522-24 and 1523-24 added • Impuls voltage level increased to 8kV
8	March 27, 2024	Typo in report list corrected
9	June 6, 2024	Report 1615-24 and 1616-24 added

REPORT LIST

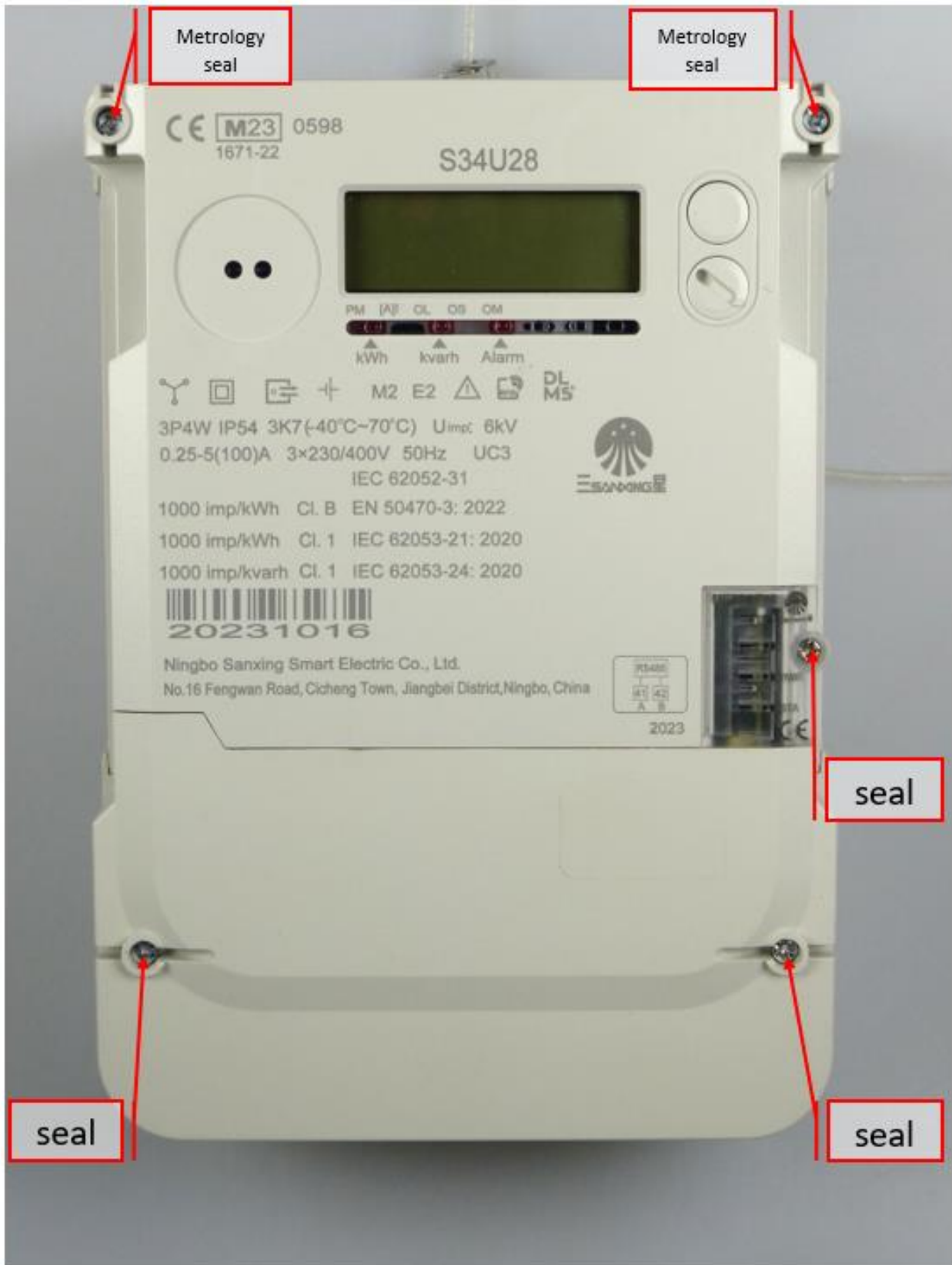
This Certificate is issued based on the following reports.

Report number	Revision	Firmware version
1696-22	R0	
1697-22	R0	
1659-23	R0	
1668-23	R2	
1669-23	R1	
1698-23	R0	V0.10.10
1709-23	R0	
1700-23	R1	V0.09.11
1706-23	R0	
1522-24	R0	
1523-24	R0	
1615-24	R0	
1616-24	R0	

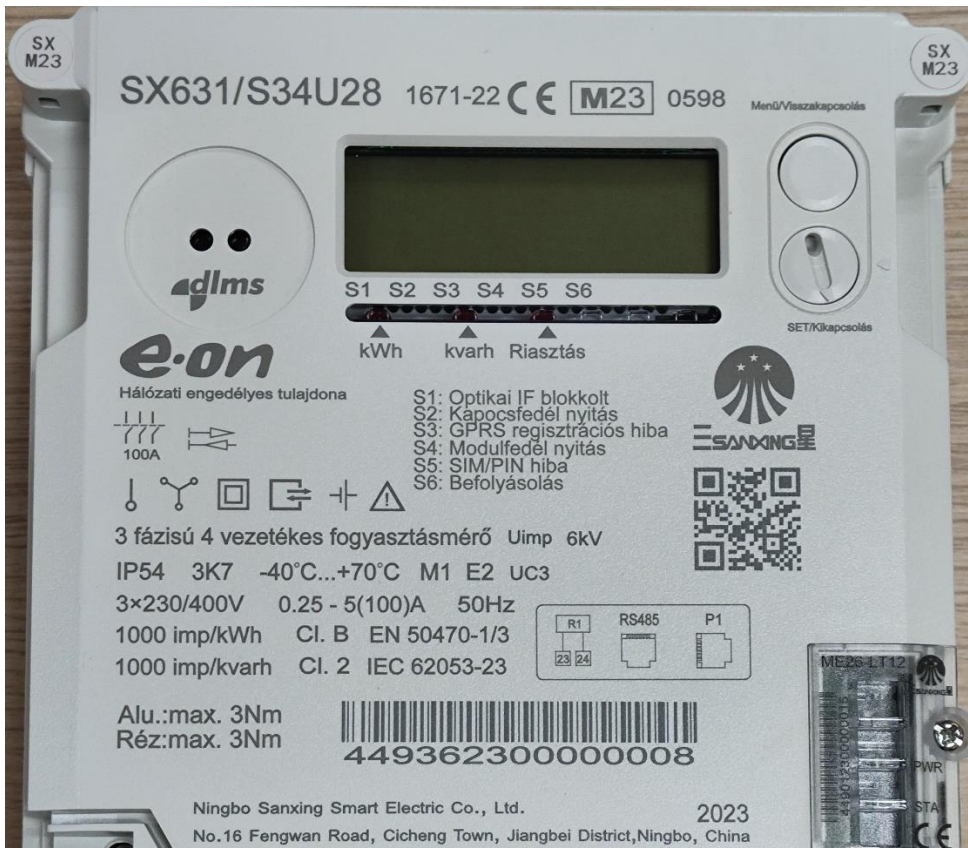
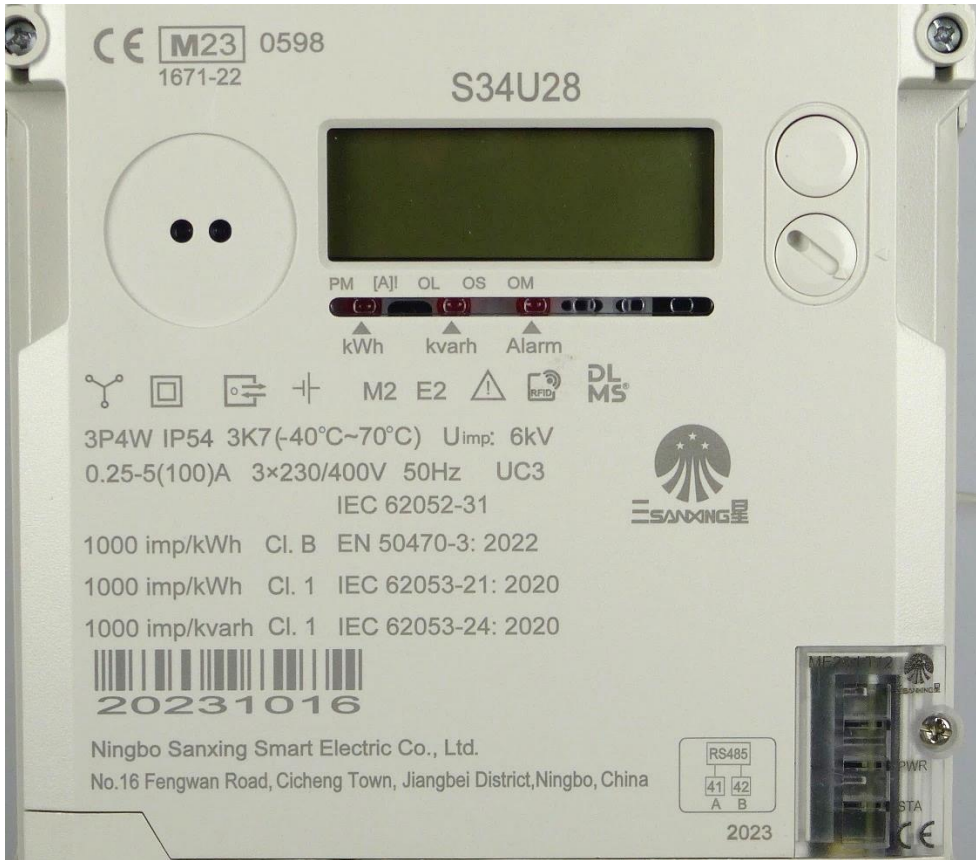
1 TECHNICAL DATA

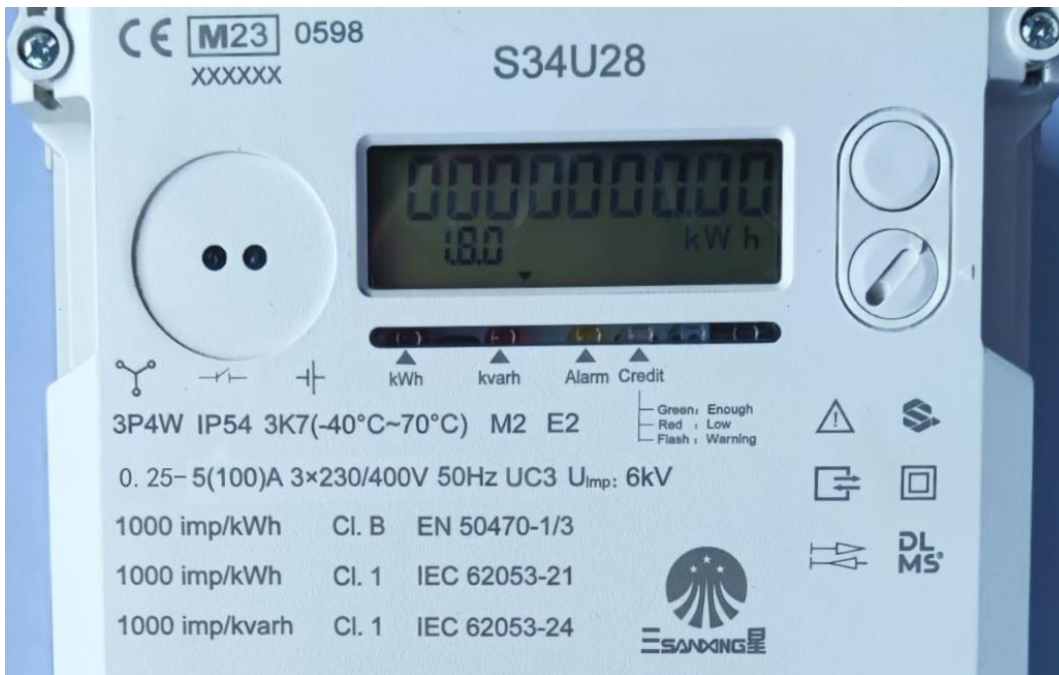
Manufacturer	Ningbo Sanxing Smart Electric Co., Ltd., No.16 Fengwan Road, Cicheng Town, Jiangbei District, Ningbo City, Zhejiang Province, 315034, China		
Production location	Ningbo Sanxing Smart Electric Co., Ltd., No.16 Fengwan Road, Cicheng Town, Jiangbei District, Ningbo City, Zhejiang Province, 315034, China		
Type	S34U28		
Model	SX631		
Connection	Direct		
Type of circuit	3P4W		
Accuracy class Wh	1/B		
Accuracy class varh	1 and 2		
Meter constant	1000 imp/kWh 1000 imp/kvarh		
V range	3*230/400 V		
I range I_{min} - I_n (I_{max})	0,25-5(60) A 0,25-5(80) A 0,25-5(100) A		
Frequency	50 Hz		
Temperature range	-40 .. 70 °C		
Use	Indoor		
IP rating	IP54		
Protection Class	II		
Impulse voltage	8 kV		
Internal clock	Crystal controlled		
Environmental class	M1, M2, E1 and E2, CISPR32 class B		
Utilisation category	UC3		
LR Firmware ID	V0.09.11		
LR Firmware CRC	D337		
Register	LCD		
Registry method(s):	Vectoral computation method and Algebraic computation method		

2 PHOTOGRAPHS AND SEALING



3 EXAMPLES OF NAME PLATES







4 CALCULATION OF THE COMPOSITE ERROR / MPE

During the type approval test the intrinsic errors for temperature, voltage and frequency variation are determined per load point. The composite error is determined with the following formula:

$$\varepsilon_m = \sqrt{\varepsilon^2(I, \cos\varphi) + \delta^2(T, I, \cos\varphi) + \delta^2(U, I, \cos\varphi) + \delta^2(f, I, \cos\varphi)}$$

Where

$\varepsilon^2(I, \cos\varphi)$ = Intrinsic error of the meter at a certain load

$\delta^2(T, I, \cos\varphi)$ = Additional error due to the variation of the temperature at the same load

$\delta^2(U, I, \cos\varphi)$ = Additional error due to the variation of the voltage at the same load

$\delta^2(f, I, \cos\varphi)$ = Additional error due to the variation of the frequency at the same load

Results are in the table below:

Current	cosφ	Phase	Composite error							
			-40°C	-25°C	-10°C	5°C	30°C	40°C	55°C	70°C
Imin	1	3ph	0,33%	0,23%	0,14%	0,10%	0,10%	0,10%	0,14%	0,21%
Itr	1	3ph	0,33%	0,22%	0,13%	0,10%	0,09%	0,10%	0,13%	0,20%
Itr	1	1ph,1	0,31%	0,20%	0,13%	0,10%	0,09%	0,10%	0,13%	0,20%
Itr	1	1ph,2	0,31%	0,22%	0,14%	0,11%	0,11%	0,12%	0,16%	0,23%
Itr	1	1ph,3	0,35%	0,23%	0,12%	0,08%	0,06%	0,07%	0,11%	0,17%
Itr	0,5i	3ph	0,32%	0,22%	0,11%	0,07%	0,06%	0,08%	0,14%	0,24%
Itr	0,5i	1ph,1	0,32%	0,23%	0,11%	0,06%	0,05%	0,07%	0,13%	0,22%
Itr	0,5i	1ph,2	0,30%	0,18%	0,11%	0,07%	0,07%	0,09%	0,16%	0,25%
Itr	0,5i	1ph,3	0,34%	0,22%	0,10%	0,03%	0,02%	0,03%	0,09%	0,18%
Itr	0,8c	3ph	0,36%	0,27%	0,20%	0,17%	0,17%	0,17%	0,20%	0,24%
In	1	3ph	0,32%	0,22%	0,14%	0,10%	0,09%	0,10%	0,14%	0,21%
In	1	1ph,1	0,32%	0,22%	0,13%	0,10%	0,09%	0,10%	0,14%	0,21%
In	1	1ph,2	0,32%	0,22%	0,15%	0,11%	0,11%	0,12%	0,16%	0,24%
In	1	1ph,3	0,35%	0,23%	0,13%	0,09%	0,08%	0,09%	0,13%	0,19%
In	0,5i	3ph	0,32%	0,21%	0,11%	0,07%	0,06%	0,07%	0,13%	0,22%
In	0,5i	1ph,1	0,32%	0,21%	0,10%	0,07%	0,06%	0,07%	0,12%	0,21%
In	0,5i	1ph,2	0,30%	0,20%	0,11%	0,08%	0,08%	0,10%	0,15%	0,24%
In	0,5i	1ph,3	0,33%	0,21%	0,10%	0,06%	0,04%	0,05%	0,10%	0,18%
In	0,8c	3ph	0,33%	0,23%	0,15%	0,12%	0,11%	0,11%	0,15%	0,21%
Imax	1	3ph	0,33%	0,22%	0,14%	0,11%	0,10%	0,11%	0,15%	0,22%
Imax	1	1ph,1	0,32%	0,21%	0,14%	0,12%	0,11%	0,12%	0,16%	0,22%
Imax	1	1ph,2	0,34%	0,25%	0,18%	0,16%	0,15%	0,16%	0,20%	0,26%
Imax	1	1ph,3	0,35%	0,23%	0,15%	0,11%	0,10%	0,11%	0,14%	0,21%
Imax	0,5i	3ph	0,37%	0,31%	0,25%	0,22%	0,25%	0,25%	0,26%	0,39%
Imax	0,5i	1ph,1	0,34%	0,26%	0,21%	0,20%	0,19%	0,20%	0,24%	0,31%
Imax	0,5i	1ph,2	0,29%	0,32%	0,23%	0,24%	0,25%	0,28%	0,24%	0,39%
Imax	0,5i	1ph,3	0,38%	0,29%	0,24%	0,23%	0,23%	0,23%	0,25%	0,34%
Imax	0,8c	3ph	0,34%	0,17%	0,14%	0,11%	0,10%	0,10%	0,15%	0,19%
Requirements										
Imin	1	3ph	4,00%	3,50%	2,50%	2,00%	2,00%	2,50%	3,50%	4,00%
>Imin	Any	3ph	4,00%	3,50%	2,50%	2,00%	2,00%	2,50%	3,50%	4,00%
>Imin	Any	1ph	4,50%	4,00%	3,00%	2,50%	2,50%	3,00%	4,00%	4,50%

5 OPTIONS AND VARIANTS

Overview of variants and options with details

Type designation	Details of the meter
S34U28	<ul style="list-style-type: none">• Pre-payment version• Communication options:<ul style="list-style-type: none">optical portRS485PLC4G module• Supply control switch

END OF DOCUMENT

The laboratories of KEMA Labs are:

- CESI S.p.A., Milan, Italy.
- FGH Engineering & Test GmbH, Mannheim, Germany.
- IPH Institut "Prüffeld für elektrische Hochleistungstechnik" GmbH, Berlin, Germany.
- KEMA B.V., Arnhem, The Netherlands.
- KEMA Labs, Zkušebnictví, a.s., Prague, the Czech Republic.
- KEMA-Powertest, LLC, Chalfont, United States.