

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 16



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: December 17, 2034.

This Certificate comprises 11 pages in total.

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


Marten Dekker
Operations Director Netherlands

Arnhem, September 16, 2025



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	- Software version corrected (page 3) - Registration method description updated (page 3)
4	December 4, 2023	- 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	- Report 1522-24 and 1523-24 added - Impulse voltage level increased to 8 kV
8	March 27, 2024	Typo in report list corrected
9	June 6, 2024	Report 1615-24 and 1616-24 added
10	July 10, 2024	Report 1633-24 and 1634-24 added
11	July 25, 2024	- Revision of report 1633-24 upgraded - Revision of report 1634-24 upgraded - Typo page 3 corrected
12	August 12, 2024	- Corrected photo page 6 and 7 - 1667-23 R10 - Corrected photo page 6 and 7
13	September 17, 2024	Report 1661-24 and 1662-24 added
14	December 11, 2024	- Report 1749-24 added - Pre-payment information removed from chapter 1
15	December 17, 2024	Pre-payment information removed from chapter 1
16	September 16, 2025	Clause 1; firmware and CRC updated

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	
1633-24	R1	
1634-24	R1	V0.10.10
1661-24	R0	V0.03.02
1662-24	R0	
1749-24	R0	V0.09.11
1749-24	R1	V0.09.11

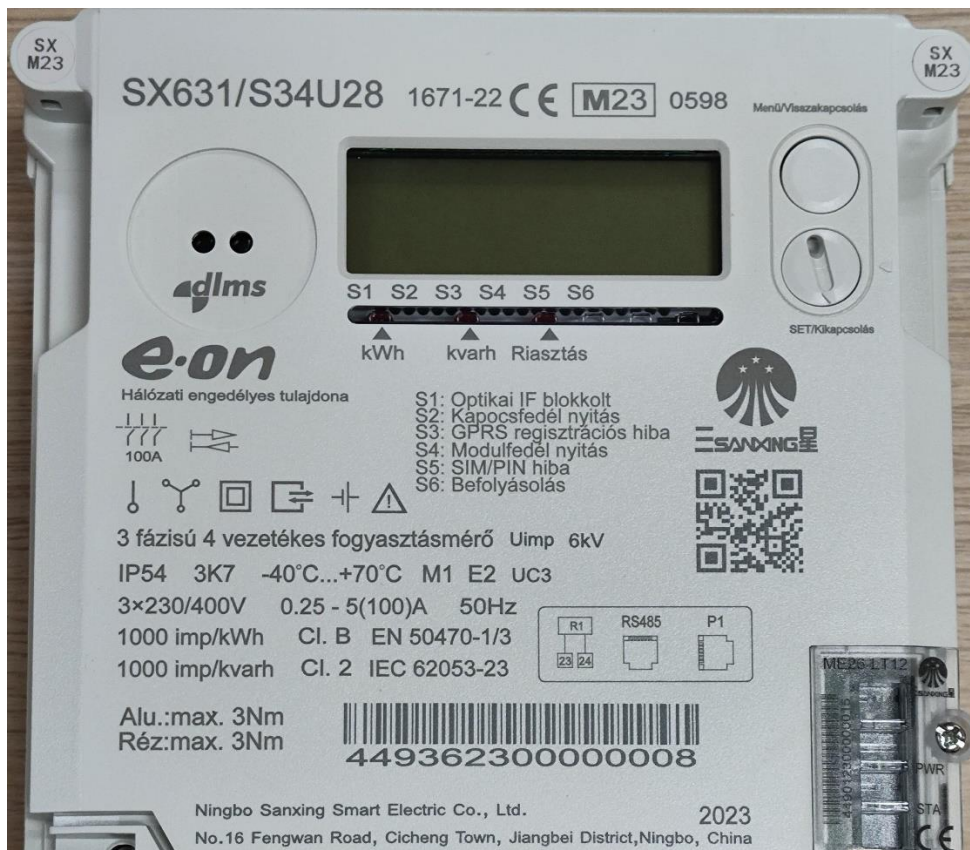
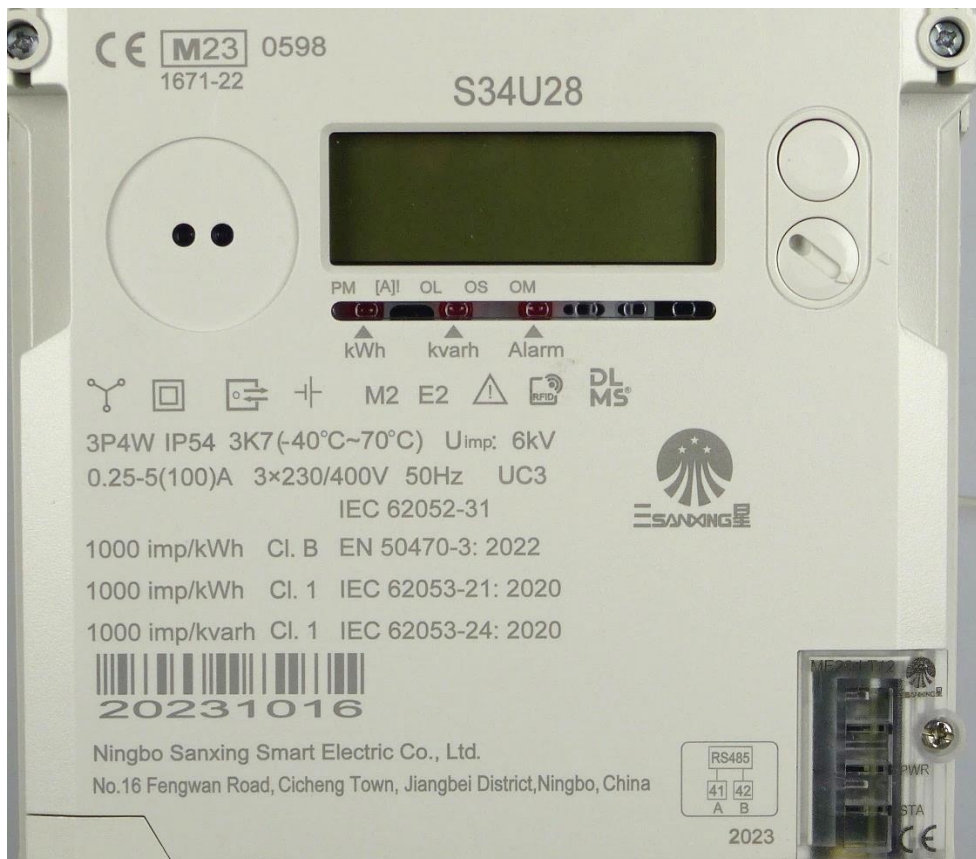
1 TECHNICAL DATA

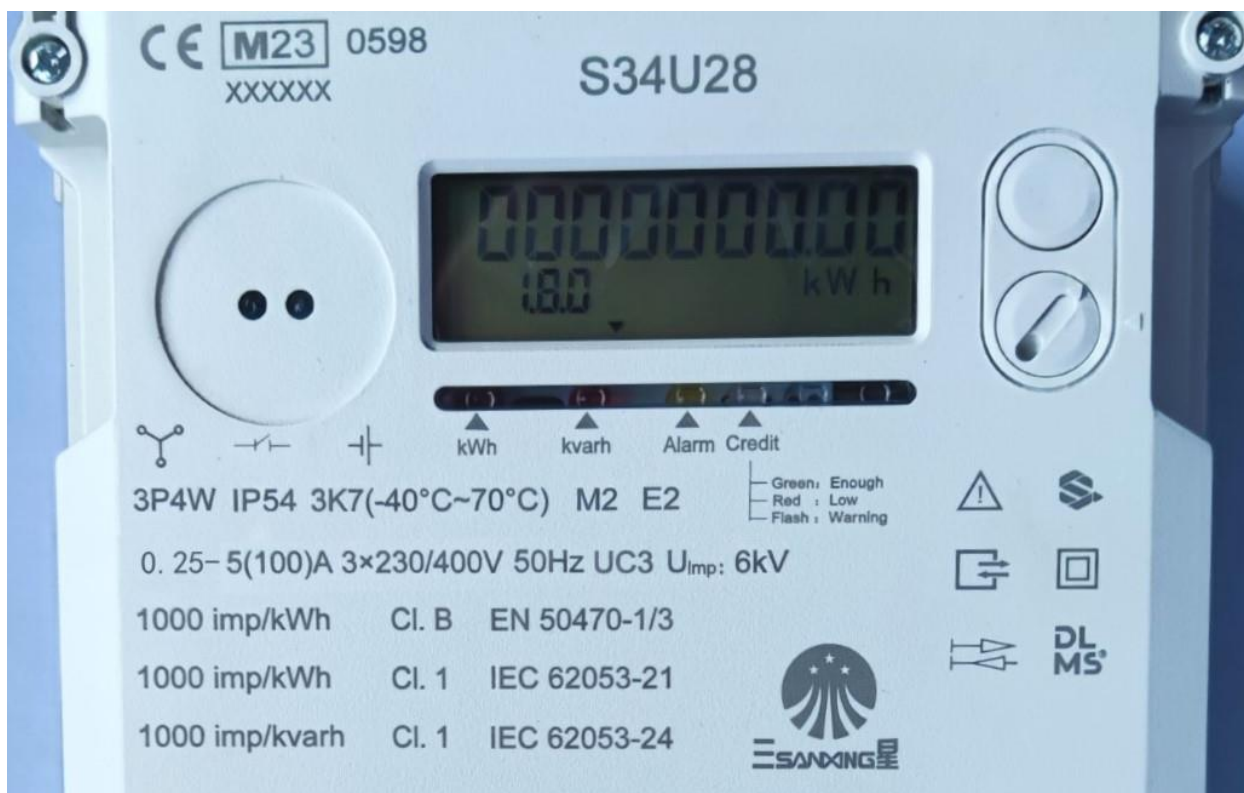
Manufacturer	Ningbo Sanxing Smart Electric Co., Ltd., No.16 Fengwan Road, Cicheng Town, Jiangbei District, Ningbo City, Zhejiang Province, 315034, China		
Production location	Ningbo Sanxing Smart Electric Co., Ltd., No.16 Fengwan Road, Cicheng Town, Jiangbei District, Ningbo City, Zhejiang Province, 315034, China		
Type	S34U28		
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*220/380 V 3*230/400 V 3*240/415 V		
I range $I_{min}-I_n(I_{max})$	0,25-5(60) A 0,5-10(60) A 0,25-5(80) A 0,25-5(100) A 0,5-10(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	V0.10.10	V0.03.02
LR Firmware CRC	D337	A434	8005
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:

			Composite error							
Current	cosφ	Phase	-40°C	-25°C	-10°C	5°C	30°C	40°C	55°C	70°C
I _{min}	1	3ph	0,33%	0,23%	0,14%	0,10%	0,10%	0,10%	0,14%	0,21%
I _{tr}	1	3ph	0,33%	0,22%	0,13%	0,10%	0,09%	0,10%	0,13%	0,20%
I _{tr}	1	1ph,1	0,31%	0,20%	0,13%	0,10%	0,09%	0,10%	0,13%	0,20%
I _{tr}	1	1ph,2	0,31%	0,22%	0,14%	0,11%	0,11%	0,12%	0,16%	0,23%
I _{tr}	1	1ph,3	0,35%	0,23%	0,12%	0,08%	0,06%	0,07%	0,11%	0,17%
I _{tr}	0,5i	3ph	0,32%	0,22%	0,11%	0,07%	0,06%	0,08%	0,14%	0,24%
I _{tr}	0,5i	1ph,1	0,32%	0,23%	0,11%	0,06%	0,05%	0,07%	0,13%	0,22%
I _{tr}	0,5i	1ph,2	0,30%	0,18%	0,11%	0,07%	0,07%	0,09%	0,16%	0,25%
I _{tr}	0,5i	1ph,3	0,34%	0,22%	0,10%	0,03%	0,02%	0,03%	0,09%	0,18%
I _{tr}	0,8c	3ph	0,36%	0,27%	0,20%	0,17%	0,17%	0,17%	0,20%	0,24%
I _n	1	3ph	0,32%	0,22%	0,14%	0,10%	0,09%	0,10%	0,14%	0,21%
I _n	1	1ph,1	0,32%	0,22%	0,13%	0,10%	0,09%	0,10%	0,14%	0,21%
I _n	1	1ph,2	0,32%	0,22%	0,15%	0,11%	0,11%	0,12%	0,16%	0,24%
I _n	1	1ph,3	0,35%	0,23%	0,13%	0,09%	0,08%	0,09%	0,13%	0,19%
I _n	0,5i	3ph	0,32%	0,21%	0,11%	0,07%	0,06%	0,07%	0,13%	0,22%
I _n	0,5i	1ph,1	0,32%	0,21%	0,10%	0,07%	0,06%	0,07%	0,12%	0,21%
I _n	0,5i	1ph,2	0,30%	0,20%	0,11%	0,08%	0,08%	0,10%	0,15%	0,24%
I _n	0,5i	1ph,3	0,33%	0,21%	0,10%	0,06%	0,04%	0,05%	0,10%	0,18%
I _n	0,8c	3ph	0,33%	0,23%	0,15%	0,12%	0,11%	0,11%	0,15%	0,21%
I _{max}	1	3ph	0,33%	0,22%	0,14%	0,11%	0,10%	0,11%	0,15%	0,22%
I _{max}	1	1ph,1	0,32%	0,21%	0,14%	0,12%	0,11%	0,12%	0,16%	0,22%
I _{max}	1	1ph,2	0,34%	0,25%	0,18%	0,16%	0,15%	0,16%	0,20%	0,26%
I _{max}	1	1ph,3	0,35%	0,23%	0,15%	0,11%	0,10%	0,11%	0,14%	0,21%
I _{max}	0,5i	3ph	0,37%	0,31%	0,25%	0,22%	0,25%	0,25%	0,26%	0,39%
I _{max}	0,5i	1ph,1	0,34%	0,26%	0,21%	0,20%	0,19%	0,20%	0,24%	0,31%
I _{max}	0,5i	1ph,2	0,29%	0,32%	0,23%	0,24%	0,25%	0,28%	0,24%	0,39%
I _{max}	0,5i	1ph,3	0,38%	0,29%	0,24%	0,23%	0,23%	0,23%	0,25%	0,34%
I _{max}	0,8c	3ph	0,34%	0,17%	0,14%	0,11%	0,10%	0,10%	0,15%	0,19%
Requirements										
I _{min}	1	3ph	4,00%	3,50%	2,50%	2,00%	2,00%	2,50%	3,50%	4,00%
>I _{min}	Any	3ph	4,00%	3,50%	2,50%	2,00%	2,00%	2,50%	3,50%	4,00%
>I _{min}	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	• Pre-payment version • Communication options: - optical port - RS485 - PLC 4G 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.