

EU-TYPE EXAMINATION CERTIFICATE

Ningbo Sanxing Smart Electric Co., Ltd.
No. 16 Fengwan Road, Cicheng Town
Jianbei District NINGBO
China

EU-Type Examination

Certificate No.

1658-24

Revision 3



Type S34U18
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: February 13, 2035.

This Certificate comprises 8 pages in total.

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

Alessandro Bertani
Director,
Services & Smart Technologies

Arnhem, February 13, 2025



REVISION OVERVIEW

The edition with the highest revision number always replaces the earlier issued editions.

Rev. No.	Date of issue	Reason
0	December 20, 2024	First issue
1	December 20, 2024	Added report 1744-24 and safety report 1745-24
2	February 13, 2025	Updated 1740-24, 1741-24, 1742-24, 1750-24 and updated software version
3	February 13, 2025	Updated 1744-24 and 1745-24 and updated picture

REPORT LIST

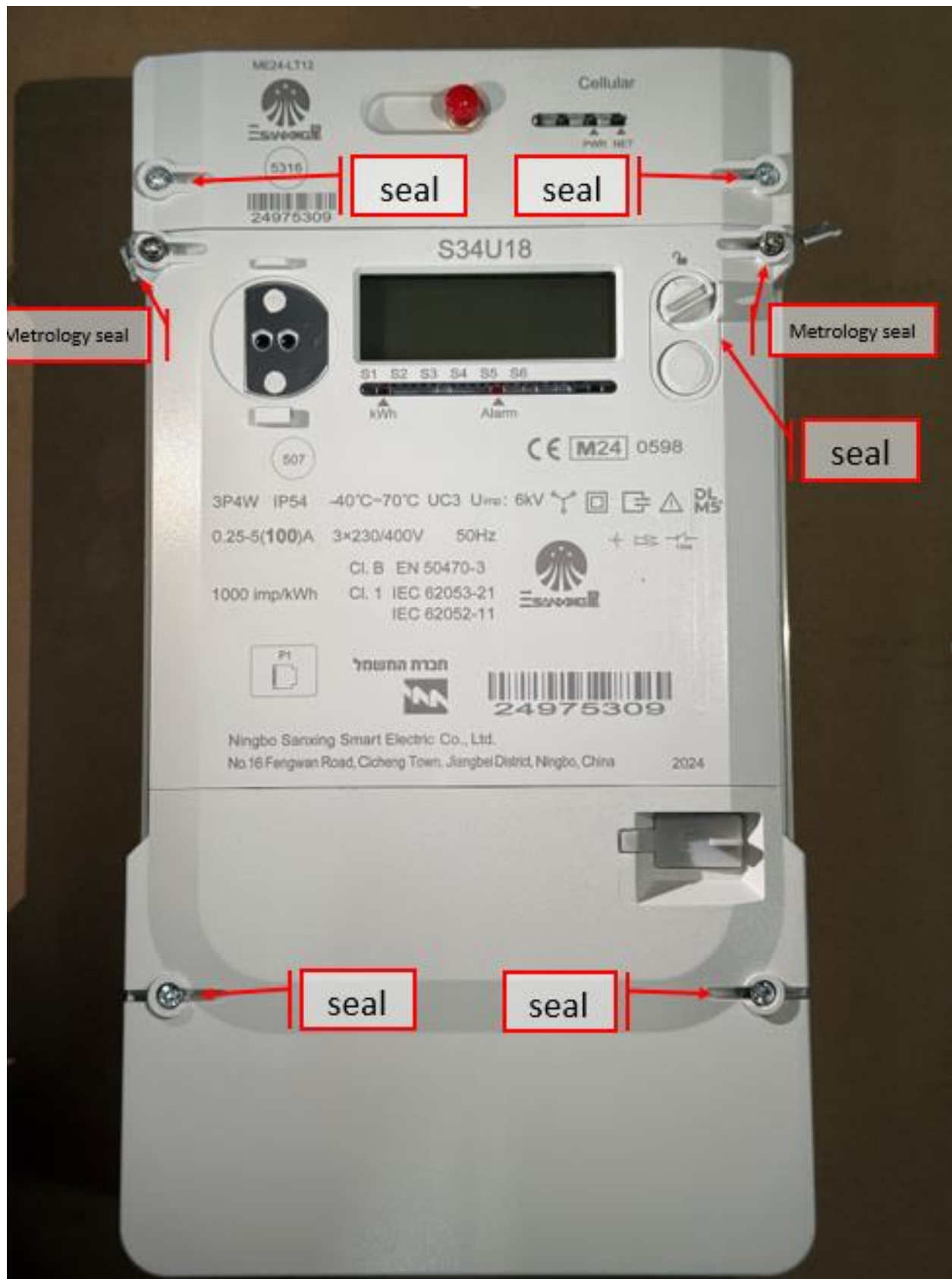
This Certificate is issued based on the following reports.

Report number	Revision	Firmware version
1740-24	0	V1.03.00
1741-24	0	V1.03.00
1742-24	0	V1.03.00
1744-24	0	V1.03.00
1745-24	0	V1.03.00
1750-24	0	V1.03.00
1740-24	1	V2.10.01
1741-24	1	V2.10.01
1742-24	1	V2.10.01
1744-24	1	V2.10.01
1745-24	1	V2.10.01
1750-24	1	V2.10.01

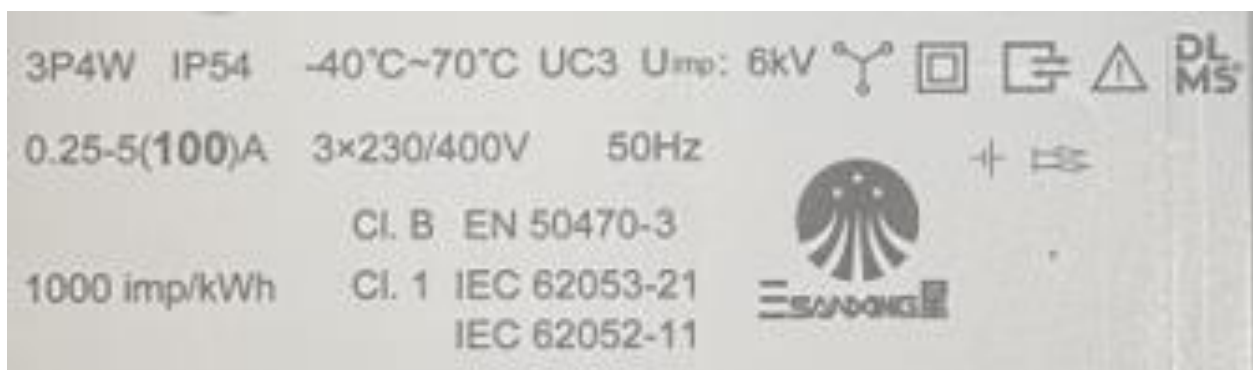
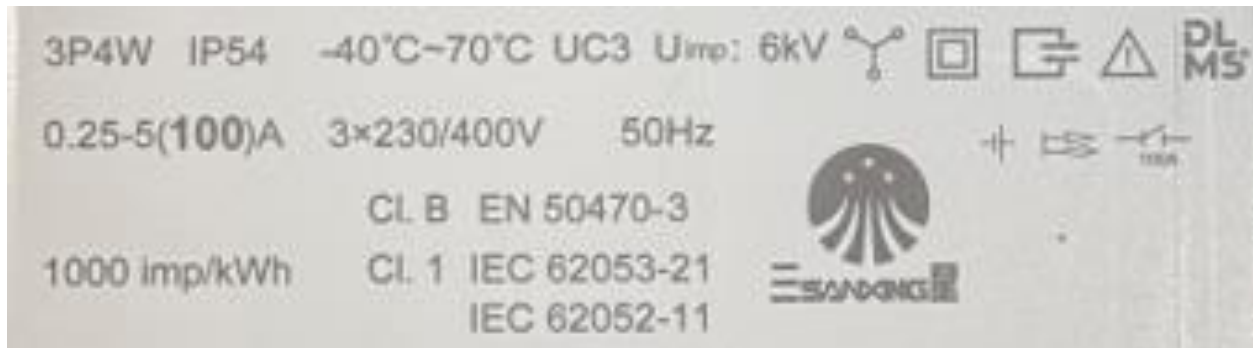
1 TECHNICAL DATA

Manufacturer	Ningbo Sanxing Smart Electric Co., Ltd. No. 16 Fengwan Road, Cicheng Town Jianbei District NINGBO China
Production location	Ningbo Sanxing Smart Electric Co., Ltd. No. 16 Fengwan Road, Cicheng Town Jianbei District NINGBO China
Type	S34U18
Connection	Direct
Type of circuit	3P4W
Accuracy class Wh	1/B
Accuracy class varh	-
Standard	IEC 62052-11, IEC 62053-21, EN 50470-3
Meter constant	1000 imp/kWh
V range	3*230/400 V
I range I_{min} - I_n (I_{max})	0,25-5(100) A
Frequency	50 Hz
Temperature range	-40 .. 70 °C
Use	Outdoor
IP rating	IP54 (category 2)
Protection Class	II
Impulse voltage	6 kV
Internal clock	Crystal controlled
Environmental class	M1, M2, E1 and E2, CISPR32 class B
Utilisation category	UC3
LR Firmware ID	V2.10.01
LR Firmware CRC	571212C698C58969A6BA2A50E108894C5C222780E8E82E41 56B1C4ECEA482AC858AF2C8E44A6759095F0770D893ECB44
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	0,20%	0,16%	0,11%	0,09%	0,05%	0,05%	0,05%	0,06%
I _{tr}	1	3ph	0,20%	0,15%	0,10%	0,07%	0,03%	0,03%	0,03%	0,04%
I _{tr}	1	1ph,1	0,24%	0,19%	0,12%	0,09%	0,03%	0,03%	0,04%	0,07%
I _{tr}	1	1ph,2	0,19%	0,15%	0,10%	0,07%	0,05%	0,05%	0,05%	0,05%
I _{tr}	1	1ph,3	0,17%	0,13%	0,09%	0,05%	0,03%	0,03%	0,03%	0,04%
I _{tr}	0,5i	3ph	0,18%	0,13%	0,07%	0,05%	0,01%	0,02%	0,05%	0,05%
I _{tr}	0,5i	1ph,1	0,20%	0,15%	0,09%	0,09%	0,02%	0,03%	0,04%	0,04%
I _{tr}	0,5i	1ph,2	0,19%	0,14%	0,08%	0,05%	0,04%	0,04%	0,05%	0,05%
I _{tr}	0,5i	1ph,3	0,13%	0,10%	0,06%	0,04%	0,03%	0,04%	0,08%	0,08%
I _{tr}	0,8c	3ph	0,21%	0,16%	0,12%	0,09%	0,07%	0,07%	0,07%	0,09%
I _n	1	3ph	0,20%	0,15%	0,09%	0,04%	0,00%	0,00%	0,02%	0,04%
I _n	1	1ph,1	0,23%	0,17%	0,11%	0,05%	0,01%	0,02%	0,05%	0,08%
I _n	1	1ph,2	0,17%	0,13%	0,08%	0,03%	0,02%	0,02%	0,02%	0,03%
I _n	1	1ph,3	0,17%	0,13%	0,08%	0,03%	0,01%	0,01%	0,01%	0,03%
I _n	0,5i	3ph	0,20%	0,16%	0,11%	0,08%	0,07%	0,07%	0,07%	0,07%
I _n	0,5i	1ph,1	0,22%	0,18%	0,12%	0,09%	0,07%	0,07%	0,07%	0,08%
I _n	0,5i	1ph,2	0,23%	0,17%	0,11%	0,07%	0,05%	0,05%	0,06%	0,07%
I _n	0,5i	1ph,3	0,17%	0,14%	0,11%	0,09%	0,08%	0,08%	0,08%	0,08%
I _n	0,8c	3ph	0,20%	0,16%	0,10%	0,06%	0,04%	0,04%	0,05%	0,06%
I _{max}	1	3ph	0,21%	0,16%	0,10%	0,05%	0,04%	0,05%	0,07%	0,09%
I _{max}	1	1ph,1	0,26%	0,20%	0,13%	0,08%	0,04%	0,06%	0,09%	0,12%
I _{max}	1	1ph,2	0,19%	0,14%	0,09%	0,04%	0,03%	0,04%	0,05%	0,07%
I _{max}	1	1ph,3	0,20%	0,15%	0,10%	0,06%	0,04%	0,05%	0,06%	0,07%
I _{max}	0,5i	3ph	0,30%	0,27%	0,26%	0,24%	0,24%	0,24%	0,25%	0,40%
I _{max}	0,5i	1ph,1	0,32%	0,30%	0,27%	0,26%	0,25%	0,25%	0,25%	0,25%
I _{max}	0,5i	1ph,2	0,29%	0,27%	0,25%	0,24%	0,24%	0,24%	0,28%	0,61%
I _{max}	0,5i	1ph,3	0,28%	0,26%	0,24%	0,23%	0,23%	0,23%	0,27%	0,60%
I _{max}	0,8c	3ph	0,26%	0,20%	0,14%	0,07%	0,05%	0,07%	0,15%	0,33%
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 with details

Type designation	Details of the meter
	• Communication options: optical port communication modules 3G/4G/RF P1 port • Version with SCS and version without SCS

END OF DOCUMENT

The laboratories of KEMA Labs are:

- CESI S.p.A., Milan, Italy, accredited by ACCREDIA in accordance with ISO/IEC 17025:2017 under no. 0030L.
- FGH Engineering & Test GmbH, Mannheim, Germany, accredited by DAkkS in accordance with DIN EN ISO/IEC 17025:2018 under no. D-PL-12110-01-00.
- IPH Institut "Prüffeld für elektrische Hochleistungstechnik" GmbH, Berlin, Germany accredited by DAkkS in accordance with DIN EN ISO/IEC 17025:2018 under nos. D-PL-12107-01-00 and D-K-12107-01-00.
- KEMA B.V., Arnhem, The Netherlands, accredited by RvA in accordance with EN ISO/IEC 17025:2017 under nos. L020, L218 and K006 and with EN ISO/IEC 17065:2012 under no. C685.
- KEMA Labs, Zkušebnictví, a.s., Prague, the Czech Republic, testing laboratory no. 1035 accredited by CAI in accordance with ČSN EN ISO/IEC 17025:2018.
- KEMA-Powertest, LLC, Chalfont, United States, accredited by A2LA in accordance with ISO/IEC 17025:2017 under no. 0553.01.

Tests are carried out under the scope of accreditation, unless otherwise indicated in the chapter 'Tests carried out'.