

EU-TYPE EXAMINATION CERTIFICATE

Shenzhen Star Instrument Co., Ltd.
Star Industry Park, Baolong Industry City
518116, Shenzhen
China

EU-Type Examination

Certificate No.

1365-20

Revision 4



Type DTS27
Object Electronic three-phase four-wire energy meter.
Transformer 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: May 7, 2035

This Certificate comprises 8 pages in total.

Issued by KEMA B.V.

Marten Dekker
Operations Director Netherlands

Arnhem, May 7, 2025



REVISION OVERVIEW

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

Rev. No.	Date of issue	Reason
0	15-9-2020	First issue
1	3-9-2022	Typo corrected
2	13-10-2023	Voltage range extended
3	29-11-2023	Report 1678-23 issued
4	May 7, 2025	• Production location added • Report 103896403-25 added • Signature on the front sheet was adapted

REPORT LIST

This Certificate is issued based on the following reports.

Report number	Revision	Firmware version
1678-23	0	V1007100
103896403-25	0	

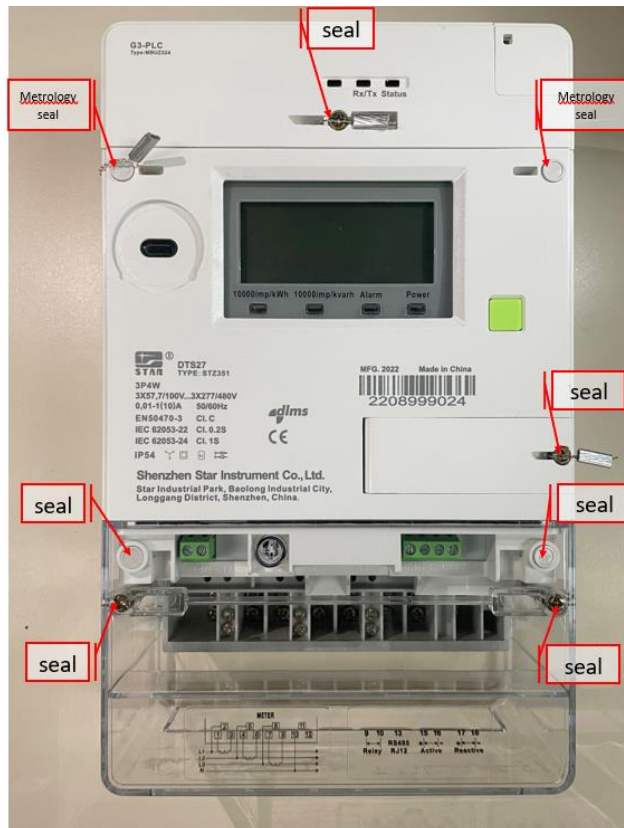
1 TECHNICAL DATA

Manufacturer	Shenzhen Star Instrument Co., Ltd., Star Industry Park, Baolong Industry City, 518116, Shenzhen, China
Production location 1	Shenzhen Star Instrument Co., Ltd., Star Industry Park, Baolong Industry City, 518116, Shenzhen China
Production location 2	4S4 Production Ltd., 3, Str. Eng. Marin Marinov, Botevgrad, 2140, Bulgaria
Type	DTS27
Model	STZ351
Connection	Transformer
Type of circuit	3P4W
Accuracy class Wh	0,2S/C
Accuracy class varh	1S
Meter constant	10000 imp/kWh 10000 imp/kvarh
V range	3x57,7/100V - 3x277/480 V ¹
I range $I_{min}-I_n(I_{max})$	0,01-1(10) A and 0,05-5(10) A*
Frequency	50* and 60 Hz
Temperature range	-40 .. 70 °C
Use	Outdoor
IP rating	IP54
Protection Class	II
Impulse voltage	6 kV
Internal clock	Crystal controlled
Environmental class	M1, M2, E1 and E2, CISPR32 class B
LR Firmware ID	V1007100
LR Firmware CRC	D1AAFEFA
Register	LCD
Registry method(s):	Bi-directional method separate registers: received- and delivered energy of the whole connection is added in separate registers

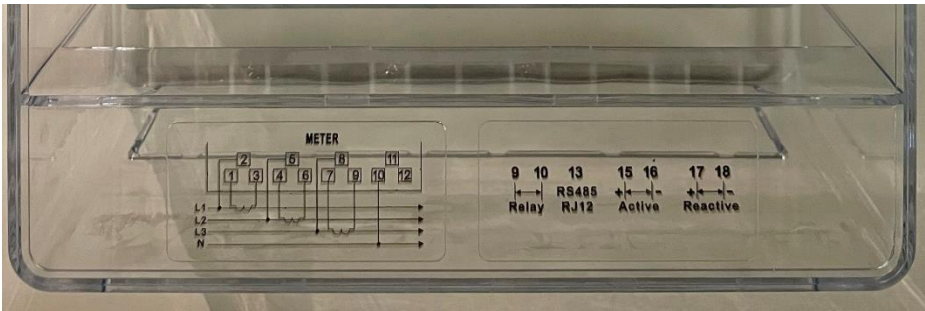
Production location 2 produces meters with ratings marked with *

¹ 50Hz only for range voltage rang 57,7/100 - 230/400 V.

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:

I in % of I _{ref}	cos φ	Phase	Composite error %							
			-40 °C	-25 °C	-10 °C	5 °C	30 °C	40 °C	55 °C	70 °C
1	1	RST	0,28%	0,23%	0,18%	0,17%	0,17%	0,17%	0,17%	0,17%
5	1	RST	0,24%	0,18%	0,12%	0,11%	0,11%	0,11%	0,11%	0,11%
5	0,5 ind.	RST	0,29%	0,23%	0,19%	0,18%	0,17%	0,17%	0,18%	0,19%
5	0,8 cap.	RST	0,26%	0,21%	0,18%	0,16%	0,16%	0,16%	0,17%	0,18%
5	1	R	0,33%	0,30%	0,28%	0,27%	0,27%	0,27%	0,27%	0,27%
5	0,5 ind.	R	0,27%	0,21%	0,17%	0,16%	0,15%	0,15%	0,15%	0,17%
5	1	S	0,25%	0,18%	0,12%	0,09%	0,09%	0,09%	0,09%	0,09%
5	0,5 ind.	S	0,32%	0,25%	0,21%	0,18%	0,18%	0,18%	0,18%	0,19%
5	1	T	0,24%	0,18%	0,13%	0,09%	0,08%	0,08%	0,08%	0,08%
5	0,5 ind.	T	0,34%	0,29%	0,24%	0,23%	0,22%	0,22%	0,23%	0,25%
I _{max}	1	RST	0,21%	0,14%	0,06%	0,02%	0,01%	0,01%	0,02%	0,02%
I _{max}	0,5 ind.	RST	0,24%	0,17%	0,13%	0,11%	0,11%	0,11%	0,11%	0,12%
I _{max}	0,8 cap.	RST	0,23%	0,16%	0,10%	0,07%	0,07%	0,07%	0,08%	0,09%
I _{max}	1	R	0,27%	0,21%	0,17%	0,15%	0,15%	0,15%	0,15%	0,16%
I _{max}	0,5 ind.	R	0,34%	0,30%	0,27%	0,26%	0,26%	0,26%	0,26%	0,26%
I _{max}	1	S	0,24%	0,18%	0,12%	0,09%	0,09%	0,09%	0,10%	0,10%
I _{max}	0,5 ind.	S	0,22%	0,15%	0,10%	0,08%	0,08%	0,08%	0,09%	0,09%
I _{max}	1	T	0,29%	0,25%	0,22%	0,21%	0,21%	0,21%	0,21%	0,21%
I _{max}	0,5 ind.	T	0,24%	0,17%	0,09%	0,05%	0,05%	0,05%	0,05%	0,05%

5 OPTIONS AND VARIANTS

Overview of variants with details

Type designation	Details of the meter
STZ351	• Communication options: - optical port - RS485 (terminals) - RS485 (RJ12) - Wi-SUN/4G/3G/GPRS - G3-PLC - WMBUS • Pulse output (active and reactive) • Relay output

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'.