EU-TYPE EXAMINATION CERTIFICATE

Huizhou Zhong Cheng Electronic Technology Co., Ltd.
No.7, Hechang East 4th Road, Zhongkai High-new-tech Zone,
516006 Guangdong,
China

EU-Type Examination Certificate No.
104011801-25
Revision 0

Type DDS1398

Object Electronic %%single-phase two-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: April 16, 2035.

This Certificate comprises 8 pages in total.

Issued by KEMA B.V.

Marten Dekker
Operations Director Netherlands

Arnhem, April 16, 2025

REVISION OVERVIEW

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

Rev. No.	Date of issue	Reason
0	April 16, 2025	First issue

REPORT LIST

This Certificate is issued based on the following reports.

Report number	Revision	Firmware version
104011803-25	R0	V1002

1 TECHNICAL DATA

Manufacturer	Huizhou Zhong Cheng Electronic Technology Co., Ltd. No.7, Hechang East 4th Road, Zhongkai High-new-tech Zone, 516006 Guangdong, China
Production location	Huizhou Zhong Cheng Electronic Technology Co., Ltd. No.7, Hechang East 4th Road, Zhongkai High-new-tech Zone, 516006 Guangdong, China
Type	DDS1398
Connection	Direct
Type of circuit	1P2W two-element
Accuracy class Wh	1/B
Accuracy class varh	2
Meter constant	1000 imp/kWh 1000 imp/kvarh
V range	230 V
I range I_{min}-I_n(I_{max})	0,25..5(80) A
Frequency	50 Hz
Temperature range	-40..70 °C
Use	Indoor
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	V1002
LR Firmware CRC	70024830
Register	LCD
Registry method(s):	Bi-directional method separate registers: received- and delivered energy of the whole connection is added in separate registers

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		Composite error %							
		ºC	-40	-25	-10	5	30	40	55	70
5	1		0,55%	0,43%	0,31%	0,19%	0,11%	0,16%	0,30%	0,44%
10	1		0,52%	0,41%	0,28%	0,15%	0,06%	0,14%	0,28%	0,43%
10	0,5 ind.		0,56%	0,42%	0,29%	0,21%	0,15%	0,20%	0,32%	0,45%
10	0,8 cap.		0,54%	0,42%	0,27%	0,17%	0,05%	0,14%	0,27%	0,43%
I_{max}	1		0,37%	0,30%	0,22%	0,15%	0,10%	0,15%	0,26%	0,39%
I_{max}	0,5 ind.		0,32%	0,26%	0,19%	0,14%	0,11%	0,17%	0,27%	0,39%
I_{max}	0,8 cap.		0,35%	0,29%	0,22%	0,15%	0,11%	0,15%	0,25%	0,38%

5 OPTIONS AND VARIANTS

Overview of variants with details

Type designation	Details of the meter
DDSY1398	• Communication options: optical port RS485 3G-PLC • Pulse output (active and reactive) • SI output • Supply control switch • Neutral Measurement

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'.