

EU-TYPE EXAMINATION CERTIFICATE

Hangzhou Meteronic Technology Co., Ltd.
Building 3, No. 2620 Yuhangtang Road, Cangqian street, Yuhang District,
Hangzhou 311121 Zhejiang,
China

EU-Type Examination

Certificate No.

1511-22

Revision 1



Type MT118
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: September 27, 2034.

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, September 27, 2024



REVISION OVERVIEW

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

Rev. No.	Date of issue	Reason
0	19 January 2022	First issue
1	September 27, 2024	Report 1683-24 added

REPORT LIST

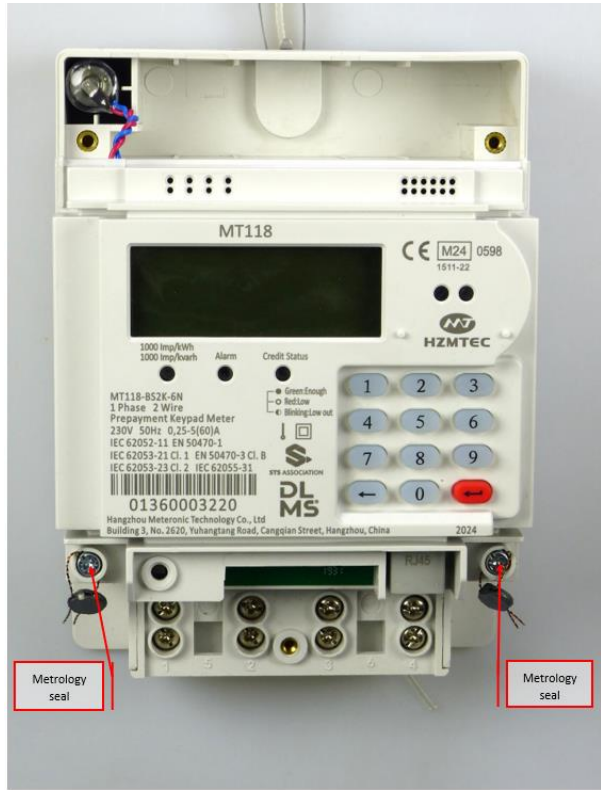
This Certificate is issued based on the following reports.

Report number	Revision
1510-22	R0
1683-24	R0

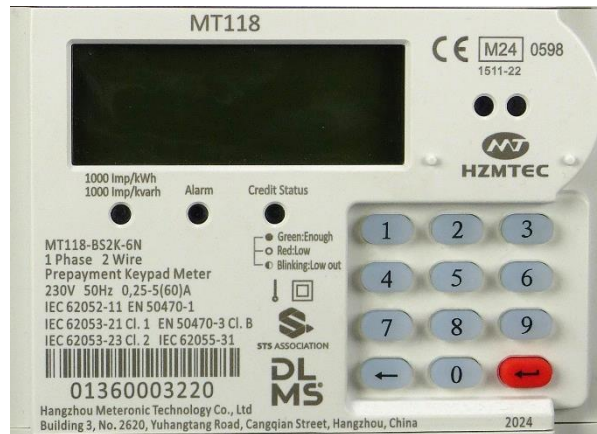
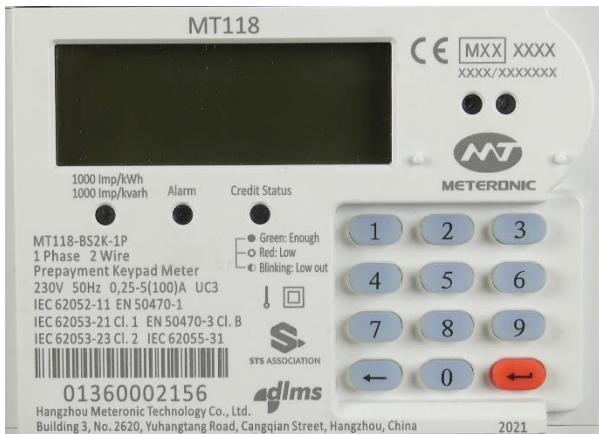
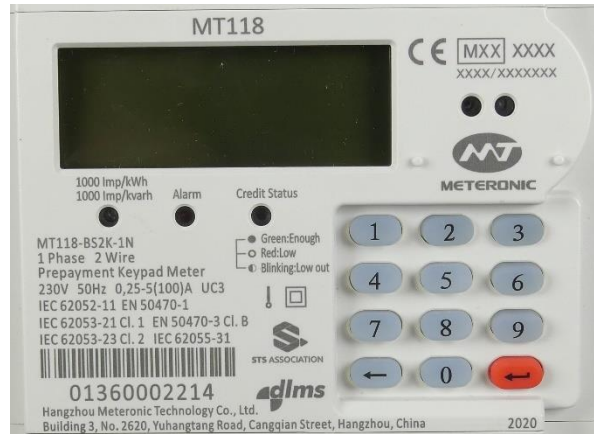
1 TECHNICAL DATA

Manufacturer	Hangzhou Meteronic Technology Co., Ltd., Building 3, No. 2620 Yuhangtang Road, Cangqian street, Yuhang District, Hangzhou 311121 Zhejiang, China					
Production location	Hangzhou Meteronic Technology Co., Ltd., Building 3, No. 2620 Yuhangtang Road, Cangqian street, Yuhang District, Hangzhou 311121 Zhejiang, China					
Type	MT118					
Model	BS2-1N	DS2-1N	BS2-1P	BS2K-1N	BS2K-1P	BS2K-6N
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(100) A					0,25..5(60)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					
Token interface	No interface				Keypad interface	
Payment type:	kWh					
LR Firmware ID	V01.00	V01.00	V01.01	V01.01	V01.02	V01.01
LR Firmware CRC	4CF8C1A6H	51C2317BH	93EAB679H	3760106FH	DA639337H	253143AFH
Register	LCD					
Registry method(s):	bi-directional method with separate registers: received- and delivered energy 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 %								
		°C	-40	-25	-10	5	30	40	55	70
5	1		0,37%	0,32%	0,30%	0,29%	0,28%	0,29%	0,31%	0,36%
10	1		0,25%	0,18%	0,13%	0,12%	0,11%	0,11%	0,19%	0,27%
10	0,5 ind.		0,35%	0,28%	0,26%	0,25%	0,23%	0,24%	0,25%	0,28%
10	0,8 cap.		0,27%	0,21%	0,18%	0,16%	0,15%	0,14%	0,21%	0,30%
I _{max}	1		0,07%	0,06%	0,05%	0,06%	0,06%	0,07%	0,11%	0,18%
I _{max}	0,5 ind.		0,14%	0,15%	0,15%	0,14%	0,14%	0,15%	0,15%	0,15%
I _{max}	0,8 cap.		0,10%	0,10%	0,10%	0,09%	0,09%	0,10%	0,14%	0,18%

5 OPTIONS AND VARIANTS

Overview of variants with details

Type designation	Details of the meter
MT118-BS2-1N	<ul style="list-style-type: none"> • Communication options: optical port RS485 • neutral Measurement • BS terminal block
MT118-DS2-1N	<ul style="list-style-type: none"> • Communication options: optical port RS485 • neutral Measurement • DIN terminal block
MT118-BS2-1P	<ul style="list-style-type: none"> • Communication options: optical port RS485 PLC module Built-in for UIU communication • neutral Measurement • BS terminal block
MT118-BS2K-1N	<ul style="list-style-type: none"> • Communication options: optical port RS485 • neutral Measurement • BS terminal block • Keypad
MT118-BS2K-1P	<ul style="list-style-type: none"> • Communication options: optical port RS485 PLC module Built-in for UIU communication • neutral Measurement • BS terminal block • Keypad
MT118-BS2K-6N	<ul style="list-style-type: none"> • Communication options: optical port RS485 • neutral Measurement • BS terminal block • Keypad

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'.