

EU-TYPE EXAMINATION CERTIFICATE

EDMI Ltd.
47 Yishun Industrial Park A
768724 Singapore
Singapore

EU-Type Examination

Certificate No.

1672-23

Revision 2



Type Mk6Es
Object Electronic three-phase four-wire energy meter.
Transformer 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: June 26, 2034.

This Certificate comprises 9 pages in total.

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

Alessandro Bertani
Director,
Services & Smart Technologies

Arnhem, June 26, 2024



REVISION OVERVIEW

The highest revision always replaces the earlier issued versions.

Rev. No.	Date of issue	Reason
0	November 13, 2023	First issue
1	December 13, 2023	• Hardware version added (page 3). • Report 1673-23 revision updated.
2	June 26, 2024	• Variant Mk6ESL added • Report 1530-24 added

REPORT LIST

This Certificate is issued based on the following reports.

Report number	Revision
1673-23	1
1530-24	0

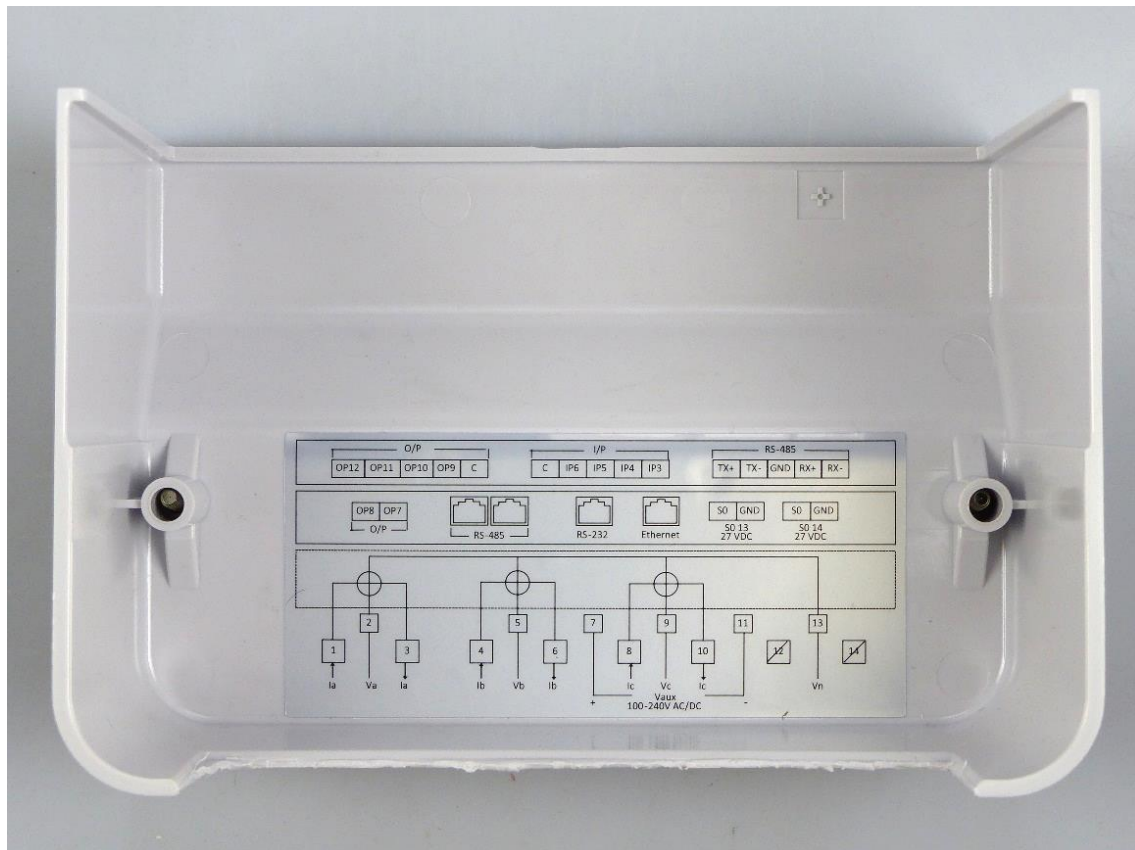
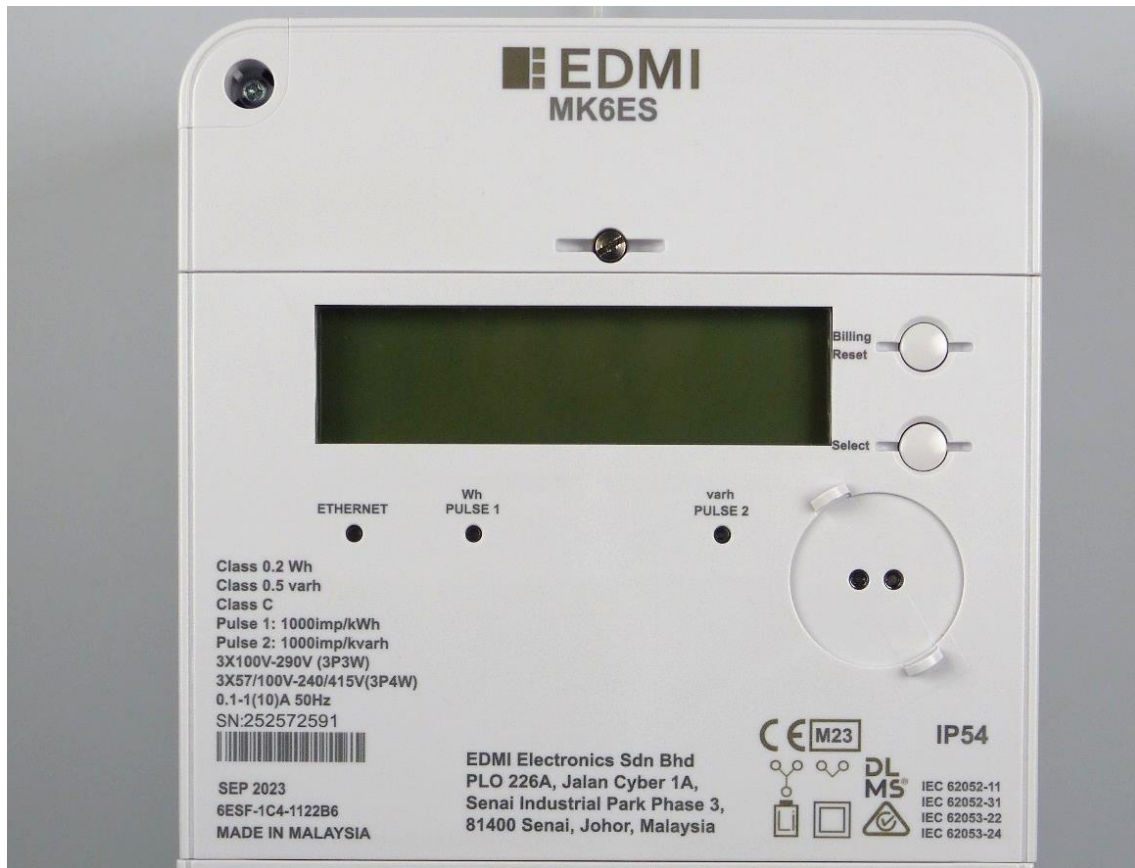
1 TECHNICAL DATA

Manufacturer	EDMI Ltd. 47 Yishun Industrial Park A 768724 Singapore Singapore	
Production location	EDMI Electronics Sdn Bhd PLO 226A, Jalan Cyber 1A, Senai Industrial Park Phase 3, 81400 Senai, Johor, Malaysia	
Type	Mk6Es	
Variant	MK6ESL	
Hardware version	E	
Connection	CT	
Type of circuit	3P4W	3P3W
Accuracy class Wh	0,2S	
Accuracy class varh	0,5S	
Standard	IEC 62052-11 IEC 62053-22 / -24	
Meter constant	1000 or 10000 imp/kWh 1000 or 10000 imp/kvarh	
V range	57/98,8 V - 240/415 V	100-290 V
I range $I_{min}-I_n(I_{max})$	0,01-1(10)A and 0,05-5(20) A	
Frequency	50 and 60 Hz	
Temperature range	-40 .. 70 °C	
Use	Indoor	
IP rating	IP54	
Protection Class	II	
Impulse voltage	12 kV	
Environmental class	M1, M2, E1 and E2, CISPR32 class B	
Internal clock	Crystal controlled	
LR Firmware ID	version 8.00 Build 66	
LR Firmware CRC	354355c4	
Register	LCD	
Auxiliary supply	100 – 240 V AC/ DC	

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}	$\cos \varphi$	Phase	Composite error %							
			-40 °C	-25 °C	-10 °C	5 °C	30 °C	40 °C	55 °C	70 °C
5	1	RST	0,13%	0,12%	0,09%	0,07%	0,04%	0,06%	0,08%	0,15%
10	1	RST	0,15%	0,12%	0,09%	0,05%	0,01%	0,04%	0,07%	0,11%
10	0,5 ind.	RST	0,17%	0,16%	0,13%	0,09%	0,07%	0,08%	0,08%	0,08%
10	0,8 cap.	RST	0,15%	0,12%	0,09%	0,06%	0,05%	0,07%	0,11%	0,17%
10	1	R	0,23%	0,21%	0,19%	0,17%	0,17%	0,18%	0,19%	0,23%
10	0,5 ind.	R	0,43%	0,43%	0,41%	0,41%	0,40%	0,40%	0,40%	0,40%
10	1	S	0,21%	0,19%	0,16%	0,15%	0,14%	0,14%	0,16%	0,20%
10	0,5 ind.	S	0,41%	0,40%	0,39%	0,38%	0,37%	0,38%	0,38%	0,38%
10	1	T	0,20%	0,19%	0,17%	0,16%	0,16%	0,16%	0,16%	0,17%
10	0,5 ind.	T	0,32%	0,30%	0,30%	0,29%	0,29%	0,29%	0,29%	0,29%
I_{max}	1	RST	0,16%	0,14%	0,09%	0,06%	0,02%	0,05%	0,07%	0,12%
I_{max}	0,5 ind.	RST	0,17%	0,16%	0,12%	0,10%	0,07%	0,08%	0,09%	0,09%
I_{max}	0,8 cap.	RST	0,15%	0,12%	0,08%	0,06%	0,05%	0,06%	0,12%	0,17%
I_{max}	1	R	0,16%	0,12%	0,09%	0,04%	0,02%	0,07%	0,10%	0,14%
I_{max}	0,5 ind.	R	0,19%	0,17%	0,14%	0,11%	0,09%	0,08%	0,09%	0,09%
I_{max}	1	S	0,16%	0,14%	0,09%	0,06%	0,05%	0,06%	0,11%	0,19%
I_{max}	0,5 ind.	S	0,15%	0,12%	0,08%	0,04%	0,04%	0,06%	0,11%	0,16%
I_{max}	1	T	0,19%	0,17%	0,13%	0,10%	0,08%	0,10%	0,09%	0,09%
I_{max}	0,5 ind.	T	0,18%	0,14%	0,11%	0,04%	0,03%	0,05%	0,11%	0,15%

5 OPTIONS AND VARIANTS

Overview of variants with details

Type designation	Details of the meter
Mk6Es	• Communication options: optical port RS485 (RJ-45), 2x RS485 (4-wire screw terminal) RS232 10/100Base-T Ethernet NB-IoT GPRS Modem • Pulse output • Inputs I/O (4x) • Outputs I/O (6x) • Auxiliary supply
Mk6ESL	• Communication options: optical port RS485 (RJ-45), 2x 10/100Base-T Ethernet NB-IoT GPRS Modem • Inputs I/O (2x) • Outputs I/O (4x)

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.