

EU TYPE EXAMINATION CERTIFICATE

Directive 2014/32/EU, Module B

0598/MID/B/25/025 Issue 1

Product Active Electrical Energy Meters (Annex V MI-003)

Model Meter type(s)
UEM2L-A R,
UEM4L-A R

Description Polyphase, Active
Import/Export (kWh)
Transformer Operated
Electricity Meter

Instrument Traceable No. 0598/MID/B/25/025

Trademark algodue

Certificate holder / Manufacturer Algodue Elettronica Srl
Via P. Gobetti 16/F, 28014 Maggiore (NO), Italy

Directive information For the instruments mentioned in this Certificate, the following essential requirements of Directive 2014/32/EU apply:
- Annex I Essential requirements
- Annex V Active electrical meters (MI-003)

Standards EN50470-1:2006, EN50470-3:2006

Validity This certificate is valid until 2032-03-15
The manufacturer must inform SGS Fimko in case of any intended change to the design.
Unauthorised changes will invalidate this certificate.

The Manufacturer is permitted to affix the CE-marking onto the instrument(s) after complying with the conformity assessment procedures referred to in Article 17 of the Directive and to draw up a written declaration of conformity.

Date of issue 2025-03-28

SGS Fimko OY
Notified Body 0598

Signature



Mikko Välimäki
Certification Manager



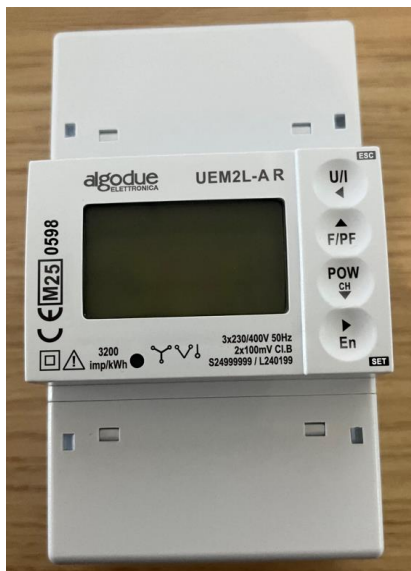
Test report(s)

Report Number	Date
EMA293874/1	2022-03-16
SHES241202553701-01	2025-03-21

Technical information

Meter type(s)	UEM2L-A R, UEM4L-A R
Voltage rating (U ⁿ)	3*230/400V
Current rating (I _{min} – I _{ref} (I _{max}))	100mV 0.05-5(6)A
Frequency (F _n)	50Hz
Active Accuracy Class (kWh)	A or B (kWh)
Type of circuit	1p2w, 3p3w, 3p4w
Temperature range	-40 °C ~ +70 °C
Software version no.	V01.01
CRC Checksum	DE20D183
Identification location	LCD
Bill of Materials No(s).	UEM2L-A R: DH-JS-240183 V1.0 UEM4L-A R: DH-JS-240182 V1.0
IP rating	IP51. Must be intalled in an IP rated enclosure
Insulation protective class	Class II
LED Pulse Constant	3200imp/kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Main cover clipped in place
Integrity of Meter	Inaccessible without breaking seals
Intended location of the Meter	Indoor
Type of Register	LCD

Photograph of Meter and Sealing Plan



Main Cover Sealing Points

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Takomotie 8

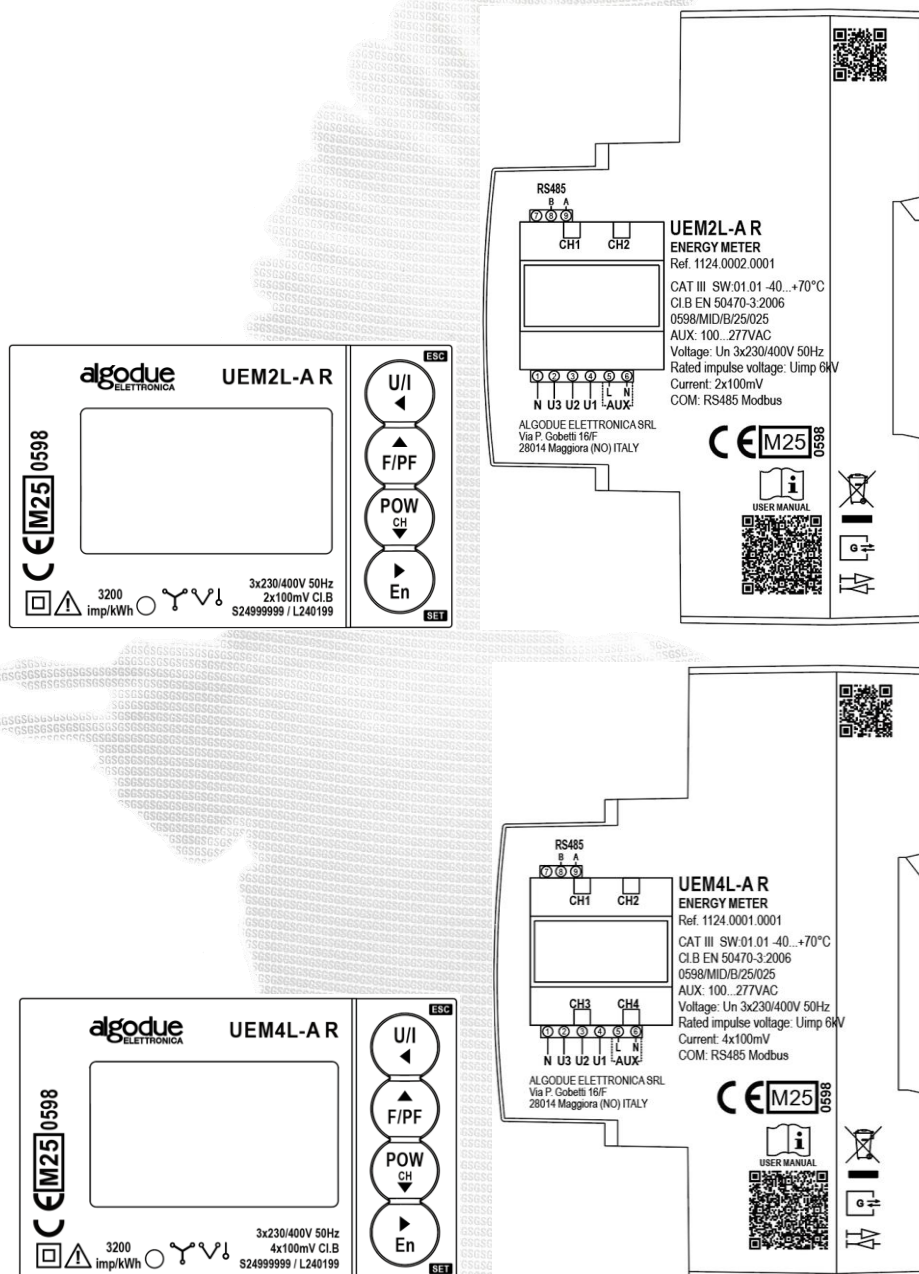
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Nameplate examples



Calculation of the composite error / MPE

During the type approval examination the influence factors for temperature, frequency and voltage are determined per load point. The table below represents the sum of the square values per load, determined via the following formula:

$$\delta e(T, U, f) = \sqrt{(\delta e^2(T, I, \cos\phi) + \delta e^2(U, I, \cos\phi) + \delta e^2(f, I, \cos\phi))}$$

where

$\delta e(T, I, \cos\phi)$ = Additional error due to variation of the temperature at the same load

$\delta e(U, I, \cos\phi)$ = Additional error due to variation of the voltage at the same load

$\delta e(f, I, \cos\phi)$ = Additional error due to variation of the frequency at the same load.

		Influence Factors for Temperature, Frequency & Voltage							
Current	PF Cos	-40°C	-25°C	-10°C	5°C	30°C	40°C	55°C	70°C
I _{min}	1.0	2.42	2.17	1.70	1.26	1.28	1.28	1.83	2.58
I _{tr}	1.0	2.42	2.17	1.70	1.26	1.27	1.27	1.83	2.55
10I _{tr}	1.0	2.43	2.19	1.71	1.27	1.27	1.27	1.83	2.55
I _{max}	1.0	2.44	2.21	1.73	1.28	1.26	1.26	1.82	2.54
I _{tr}	0.5ind	3.12	2.88	1.70	1.23	0.16	0.16	0.60	1.36
10I _{tr}	0.5ind	2.28	2.04	1.49	0.87	0.69	0.69	1.47	2.22
I _{max}	0.5ind	2.40	2.16	1.61	1.00	0.62	0.62	1.37	2.12
I _{tr}	0.8cap	1.79	1.93	0.98	0.36	0.85	0.85	2.00	2.78
10I _{tr}	0.8cap	2.17	1.92	1.36	0.75	0.81	0.81	1.61	2.39
I _{max}	0.8cap	2.19	1.93	1.37	0.76	0.80	0.80	1.60	2.38
L1									
I _{tr}	1.0	2.10	1.86	1.31	0.70	0.85	0.85	1.65	2.41
10I _{tr}	1.0	2.13	1.89	1.34	0.73	0.83	0.83	1.63	2.38
I _{max}	1.0	2.14	1.90	1.35	0.74	0.82	0.82	1.62	2.38
I _{tr}	0.5ind	3.05	2.81	2.27	1.28	0.11	0.11	0.66	1.39
10I _{tr}	0.5ind	2.09	1.84	1.30	0.68	0.88	0.88	1.63	2.37
I _{max}	0.5ind	2.09	1.85	1.30	0.68	0.87	0.87	1.62	2.37
L2									
I _{tr}	1.0	2.09	1.83	1.26	0.63	0.95	0.95	1.76	2.54
10I _{tr}	1.0	2.13	1.86	1.29	0.67	0.92	0.92	1.73	2.51
I _{max}	1.0	2.15	1.87	1.31	0.68	0.91	0.91	1.72	2.48
I _{tr}	0.5ind	3.10	2.82	2.27	1.27	0.09	0.09	0.73	1.50
10I _{tr}	0.5ind	2.22	1.94	1.38	0.75	0.85	0.85	1.63	2.41
I _{max}	0.5ind	2.23	1.96	1.39	0.76	0.84	0.84	1.63	2.40
L3									
I _{tr}	1.0	2.39	2.11	1.57	0.97	0.12	0.57	1.34	2.11
10I _{tr}	1.0	2.41	2.13	1.59	0.99	0.10	0.55	1.33	2.09
I _{max}	1.0	2.42	2.14	1.60	1.00	0.09	0.54	1.33	2.09
I _{tr}	0.5ind	3.31	3.04	2.28	1.28	0.82	0.67	0.41	1.12
10I _{tr}	0.5ind	2.65	2.37	1.84	1.24	0.17	0.32	1.08	1.82
I _{max}	0.5ind	2.65	2.37	1.84	1.24	0.15	0.32	1.06	1.81

Annex of Variants

Product variant identification details:

Type Designation	Description of Meter
UEM2L-A R	3x230/400V, 100mV/5(6)A, Active Import/Export (kWh), Transformer operated, Multifunction, RS485 Modbus RTU, Two current inputs
UEM4L-A R	3x230/400V, 100mV/5(6)A, Active Import/Export (kWh), Transformer operated, Multifunction, RS485 Modbus RTU, Four current inputs

Certificate Revision History

Issue	Date	Comments
1	2025-03-28	Initial Issue