EU Type Examination Certificate Number: **0120/ SGS0277**

ORNO-LOGISTIC Sp. Z O.O

Katowicka 134 43-190
Mikolow
Poland

Instrument Identification:
OR-WE-512, OR-WE-514, OR-WE-515

Single phase, Active Import/Export (kWh), Electricity Meter

Instrument Traceable Number
0120/ SGS0277

has been assessed and certified as meeting the requirements of

EU Directive 2014/32/EU

on Measuring Instruments Annex II, Module B

It is certified that the manufacturer's technical design and specimen for the above instrument has been examined and, based on the evidence submitted, it is considered that the instrument conforms to the requirements of Annex V of EU Directive 2014/32/EU

This certificate must be used in conjunction with a certificate covering the product verification as required in Annex II, Module D or Annex II, Module F

This certificate is valid until 11th October 2026
Issue 1

Certification is based on report number(s) SHES1601000434001 dated 10th October 2016
EMA228674
EMA238069

Authorised Signature

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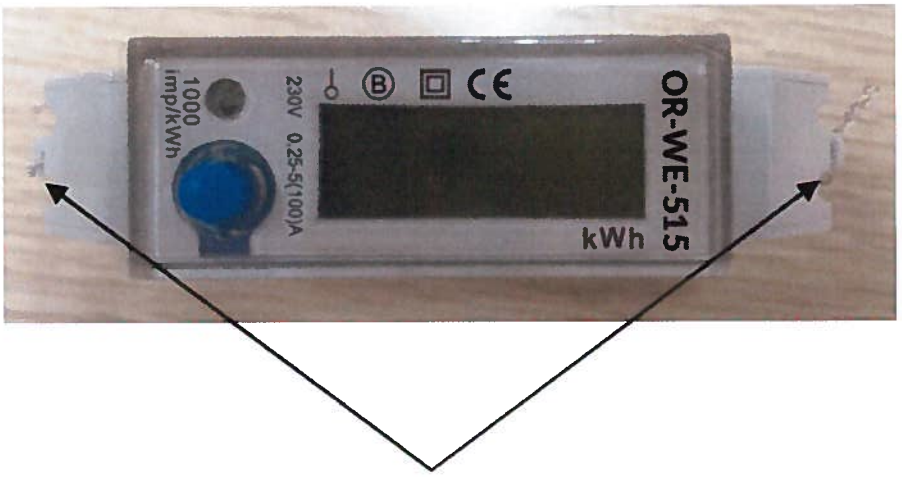
1. Technical Data

Manufacturer	ORNO-LOGISTIC Sp. Z O.O
Meter Types	OR-WE-512 OR-WE-514 OR-WE-515
Voltage Rating *(Un)*	230V
Current Rating *(Imin – Iref (Imax))*	0.25-5(30)A, 0.25-5(32)A, 0.25-5(40)A, 0.25-5(45)A, 0.25-5(50)A, 0.25-5(60)A, 0.25-5(80)A, 0.25-5(100)A
Frequency *(Fn)*	50Hz
Active Accuracy Class *(kWh)*	B (kWh)
Type of circuit	1p2w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No's **Identification Location**	OR-WE-512: V1.0 OR-WE-514: V1.0 OR-WE-515: V1.1 LCD & Nameplate
Bill Of Materials Numbers	OR-WE-512: D118018 OR-WE-514: D118019 OR-WE-515: D113022
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	100imp/kWh,1000imp/kWh,2000imp/kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Wire & Crimp
Integrity of meter	Inaccessible without breaking seal
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	DIN
Location of Manufacturers Name & Address	Side of the meter and associated documentation

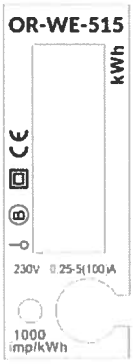
2. Photograph of Meter and Sealing Plan



Terminal cover sealing points

Main over cover sealing points

3. Examples of Nameplates


OR-WE-515
kWh
CE
230V 0.25-5(100)A
1000
imp/kWh


ORNO
CE M17 0120
OR-WE-515 kWh meter
S.W. V1.1
EN 50470-1/3
230V -25℃ ...+55℃
0,25-5(100)A 50Hz
L-OUT
RS485
B
G
A
25
24
23
kWh
L-IN
ORNO-LOGISTIC Sp. z o.o. Katowicka 134, 43-190 Mikołów
0120/SGS0277

4. 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:-

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

where

$\delta e(T, I, \cos\varphi)$ = Additional error due to variation of the temperature at the same load
$\delta e(U, I, \cos\varphi)$ = Additional error due to variation of the voltage at the same load
$\delta e(f, I, \cos\varphi)$ = Additional error due to variation of the frequency at the same load

		Influence Factors for Temperature, Voltage & Frequency					
Current	PF Cos	-25°C	-10°C	5°C	30°C	40°C	55°C
Imin	1.0	0.58	0.38	0.23	0.11	0.21	0.45
Itr	1.0	0.50	0.40	0.21	0.10	0.24	0.44
10Itr	1.0	0.52	0.37	0.23	0.09	0.23	0.43
Imax	1.0	0.48	0.37	0.25	0.12	0.20	0.39
Itr	0.5ind	0.51	0.38	0.25	0.16	0.28	0.45
10Itr	0.5ind	0.53	0.39	0.23	0.13	0.25	0.44
Imax	0.5ind	0.49	0.39	0.27	0.19	0.26	0.42
Itr	0.8cap	0.55	0.39	0.24	0.15	0.27	0.47
10Itr	0.8cap	0.52	0.38	0.24	0.15	0.24	0.46
Imax	0.8cap	0.49	0.39	0.27	0.17	0.23	0.40

5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
OR-WE-512	230V, 0.25-5(30)A - 0.25-5(100)A, 100imp/kWh,1000imp/kWh,2000imp/kWh, Single Tariff
OR-WE-514	230V, 0.25-5(30)A - 0.25-5(100)A, 100imp/kWh,1000imp/kWh,2000imp/kWh, Single Tariff + Modbus Module
OR-WE-515	230V, 0.25-5(30)A - 0.25-5(100)A, 100imp/kWh,1000imp/kWh,2000imp/kWh, Multi-rate + Modbus Module

Modifications to the meter(s) described according to approval No.**0120/ SGS0277** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

6. Document Revision History

Issue	Date	Comments
1	07/04/2017	Initial Issue

END OF TEST CERTIFICATE