



EC Type Examination Certificate Number: **0120/ SGS0124**

## **Kohler Elektrik Sayaclari San ve Tic. A.S**

Bankalar Cad. Tenha Sok. No:8 Uçarlar Han Karaköy  
Beyoğlu  
İSTANBUL  
TURKEY

Instrument Identification:

**AEL.MF.15**

**Single Phase, Multi-rate, Active Import, Outdoor, Electricity Meter**

Instrument Traceable Number

**0120/ SGS0124**

has been assessed and certified as meeting the requirements of

# **EC Directive 2004/22/EC**

## **on Measuring Instruments Annex 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 MI-003 of EC Directive 2004/22/EC

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

This certificate is valid for 10 years from 28<sup>th</sup> June 2013 until 27<sup>th</sup> June 2023  
Issue 1

Certification is based on report number(s)


ELDAS EL-2601 issued 26<sup>th</sup> April 2013

Authorised Signature

Jan Saunders

SGS United Kingdom Limited, Notified Body 0120  
Unit 202B Worle Parkway, Weston-super-Mare, BS22 6WA UK  
t +44 (0)1934 522917 f +44 (0)1934 522137 [www.sgs.com](http://www.sgs.com)


Contact Address  
SGS United Kingdom Ltd, Units 12A & 12B, South Industrial Estate, Bowburn, Durham, DH6 5AD UK  
t +44 (0)191 377 2000 f +44 (0)191 377 2020 [www.sgs.com](http://www.sgs.com)

	EC-Type Examination Certificate Number:	
	<b>0120/ SGS0124</b>	
	Issue Number: 1	Dated: 28 <sup>th</sup> June 2013

## 1. Technical Data

<b>Manufacturer</b>	Kohler Elektrik Sayaclari San ve Tic. A.S
<b>Meter Type</b>	AEL.MF.15
<b>Voltage Rating (<math>U_n</math>)</b>	230-240V
<b>Current Rating (<math>I_{min}</math> – <math>I_{ref}</math> (<math>I_{max}</math>))</b>	0,25-5(80)A
<b>Frequency (<math>F_n</math>)</b>	50Hz
<b>Active Accuracy Class (<math>kWh</math>)</b>	A or B ( $kWh$ )
<b>Type of circuit</b>	1p2w
<b>Temperature Range</b>	-40°C to +70°C
<b>Software/ Firmware Version No Identification Location</b>	PR0G:0008 LCD
<b>Bill Of Materials Number</b>	MFRFI300ML - REV: 001
<b>IP Rating</b>	IP54
<b>Insulation Protective Class</b>	Class II
<b>LED Pulse Constant</b>	1600 imp/ kWh
<b>Impulse Voltage Rating</b>	6kV
<b>AC Voltage Rating</b>	4kV
<b>Main Cover Sealing Type</b>	Main Meter Cover – Lead Inserts Terminal Cover - Plastic Crimp
<b>Integrity of meter</b>	Inaccessible without breaking seals
<b>Intended Location of the Meter</b>	Outdoor
<b>Type of Register</b>	LCD
<b>Terminal Arrangement(s)</b>	BS/ DIN



	EC-Type Examination Certificate Number:	
	<b>0120/ SGS0124</b>	
	Issue Number: 1	Dated: 28 <sup>th</sup> June 2013

### 3. Calculation of the composite error/ MPE

In addition to the accuracy requirements the composite error  $e_c$  of the meter is shown below


The composite error at a certain load is calculated from the following formula:

$$e_c = \sqrt{e^2(l.\cos\theta) + e^2(T.I.\cos\theta) + e^2(U.I.\cos\theta) + e^2(f.I.\cos\theta)}$$

where

$e^2(l.\cos\theta)$	=	Intrinsic error of meter at a certain load
$e^2(T.I.\cos\theta)$	=	Additional error due to variation of the temperature at the same load
$e^2(U.I.\cos\theta)$	=	Additional error due to variation of the voltage at the same load
$e^2(f.I.\cos\theta)$	=	Additional error due to variation of the frequency at the same load

		Maximum Permissible Error (MPE)							
Current	PF Cos	-40	-25	-10	5	30	40	55	70
$I_{min}$	1.0	0.64	0.58	0.54	0.52	0.51	0.53	0.58	0.63
$I_{tr}$	1.0	0.62	0.43	0.51	0.47	0.47	0.50	0.53	0.58
$10I_{tr}$	1.0	0.42	0.35	0.22	0.19	0.17	0.23	0.31	0.35
$I_{max}$	1.0	0.38	0.34	0.25	0.21	0.19	0.22	0.28	0.41
$I_{tr}$	0.5ind	0.44	0.35	0.30	0.27	0.26	0.28	0.35	0.46
$10I_{tr}$	0.5ind	0.44	0.37	0.33	0.29	0.29	0.33	0.39	0.44
$I_{max}$	0.5ind	0.37	0.30	0.18	0.15	0.14	0.19	0.26	0.37
$I_{tr}$	0.8cap	0.48	0.43	0.32	0.29	0.28	0.29	0.38	0.43
$10I_{tr}$	0.8cap	0.46	0.33	0.23	0.18	0.16	0.20	0.32	0.39
$I_{max}$	0.8cap	0.44	0.26	0.21	0.18	0.17	0.24	0.26	0.35

	EC-Type Examination Certificate Number:	
	<b>0120/ SGS0124</b>	
	Issue Number: 1	Dated: 28 <sup>th</sup> June 2013

#### 4. Annex of Variants

Product Variant Identification Details:

##### Type Designation

##### Description of meter

AEL.MF.15

Single Phase, Multi-rate, Active Import, Outdoor, Electricity Meter

Modifications to the meter(s) described according to approval No.**0120/SGS0124** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

#### 5. Document Revision History

Issue	Date	Comments
1	28/06/2013	Initial Issue