

EU Type Examination Certificate Number: **0120/SGS0243**

KHLSM

Akçaburgaz Mahallesi 58.
Sokak No:3 Esenyurt
İSTANBUL
TURKEY

Instrument Identification:

AEL.MF.15

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

Instrument Traceable Number

0120/ SGS0243

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 EC 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 27th June 2023
Issue 1


Certification is based on report number(s)
ELDAS EL-2601 issued 26th April 2013
EMA177357
EMA225326

Authorised Signature




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

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

	EU-Type Examination Certificate Number:	
	0120/ SGS0243	
	Issue Number: 1	Dated: 29 th September 2016

1. Technical Data

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


	EU-Type Examination Certificate Number:	
	0120/ SGS0243	
	Issue Number: 1	Dated: 29 th September 2016

2. Photograph of Meter and Sealing Plan



Main Cover seals

Terminal cover seal

	EU-Type Examination Certificate Number:	
	0120/ SGS0243	
	Issue Number: 1	Dated: 29 th September 2016

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:

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

where

$e^2(I.\cos\theta)$	=	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


	EU-Type Examination Certificate Number:	
	0120/ SGS0243	
	Issue Number: 1	Dated: 29 th September 2016

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/SGS0243** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

	EU-Type Examination Certificate Number:	
	0120/ SGS0243	
	Issue Number: 1	Dated: 29 th September 2016

5. Document Revision History

Issue	Date	Comments
1	29/09/16	Initial Issue