



EC Type Examination Certificate Number: **0120/SGS0140**

Rayleigh Instruments Ltd

Raytel House
Brook Road
Rayleigh
Essex
SS6 7XH
United Kingdom

Instrument Identification:

RI-122-100-P

Poly Phase, Active Import/Export, Electricity Meter

Instrument Traceable Number

0120/SGS0140

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 from 18th November 2013 until 26th November 2022
Issue 1


Certification is based on report number(s)
SHES1207001819MI Issued 27th November 2012

Authorised Signature

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	EC-Type Examination Certificate Number:	
	0120/ SGS0140	
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1. Technical Data

Manufacturer	Rayleigh Instruments Ltd
Meter Type	RI-122-100-P
Voltage Rating (U_n)	3x230/400V
Current Rating ($I_{min} - I_{ref} (I_{max})$)	0,25-5(100)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	A or B (kWh)
Type of circuit	3p4w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No Identification Location	V1.0 Nameplate
Bill Of Materials Number	DTS353B BOM Rev 1
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	1000 imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Wire & Crimp
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	BS

	EC-Type Examination Certificate Number:	
	0120/ SGS0140	
	Issue Number: 1	Dated: 18 th November 2013

2. Nameplate & Photograph of Meter



	EC-Type Examination Certificate Number:	
	0120/ SGS0140	
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3. 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 presents 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

Current	PF Cos	e(U/cos)	e(f/cos)	-25°C	-10°C	5°C	30°C	40°C	55°C
				%MPE	%MPE	%MPE	%MPE	%MPE	%MPE
I _{min}	1.0	0.01	-0.10	0.33	0.31	0.16	0.04	0.03	0.04
I _{tr}	1.0	-0.08	-0.17	0.26	0.24	0.14	0.06	0.05	0.06
10I _{tr}	1.0	0.06	0.07	0.25	0.19	0.07	0.05	0.08	0.18
I _{max}	1.0	-0.05	-0.08	0.41	0.30	0.21	0.15	0.16	0.22
I _{tr}	0.5ind	0.01	0.02	0.33	0.25	0.22	0.16	0.23	0.20
10I _{tr}	0.5ind	-0.01	0.11	0.32	0.25	0.17	0.14	0.18	0.28
I _{max}	0.5ind	-0.04	-0.11	0.53	0.44	0.37	0.33	0.35	0.40
I _{tr}	0.8cap	0.06	0.07	0.33	0.23	0.07	0.07	0.06	0.08
10I _{tr}	0.8cap	-0.01	0.04	0.22	0.15	0.07	0.04	0.07	0.16
I _{max}	0.8cap	-0.03	-0.04	0.34	0.23	0.13	0.06	0.09	0.17




EC-Type Examination Certificate Number:

0120/ SGS0140

Issue Number: 1

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Current	PF Cos	e(Ulcos)	e(flcos)	-25°C	-10°C	5°C	30°C	40°C	55°C
				%MPE	%MPE	%MPE	%MPE	%MPE	%MPE
Line 1									
ltr	1.0	0.04	0.12	0.54	0.53	0.21	0.15	0.15	0.27
10ltr	1.0	-0.05	-0.07	0.53	0.36	0.19	0.06	0.14	0.26
lmax	1.0	-0.05	-0.09	0.59	0.40	0.22	0.04	0.11	0.26
ltr	0.5ind	-0.11	-0.27	0.56	0.26	0.23	0.04	0.15	0.32
10ltr	0.5ind	0.04	0.13	0.53	0.36	0.14	0.11	0.20	0.34
lmax	0.5ind	-0.04	-0.13	0.68	0.51	0.34	0.23	0.27	0.38
Line 2									
ltr	1.0	-0.13	-0.12	0.16	0.12	0.16	0.04	0.05	0.05
10ltr	1.0	0.02	0.08	0.10	0.08	0.08	0.08	0.08	0.09
lmax	1.0	-0.05	-0.06	0.16	0.10	0.05	0.01	0.02	0.07
ltr	0.5ind	-0.09	0.29	0.27	0.05	0.18	0.03	0.15	0.05
10ltr	0.5ind	-0.06	-0.13	0.07	0.09	0.03	0.02	0.05	0.06
lmax	0.5ind	-0.06	-0.12	0.23	0.18	0.13	0.10	0.11	0.13
Line 3									
ltr	1.0	0.14	-0.09	0.26	0.16	0.14	0.10	0.14	0.11
10ltr	1.0	0.04	0.07	0.25	0.18	0.14	0.14	0.17	0.25
lmax	1.0	-0.02	-0.06	0.34	0.23	0.12	0.02	0.09	0.19
ltr	0.5ind	-0.25	0.07	0.35	0.36	0.21	0.09	0.07	0.12
10ltr	0.5ind	0.05	0.12	0.27	0.22	0.13	0.09	0.17	0.25
lmax	0.5ind	-0.04	-0.11	0.45	0.32	0.33	0.15	0.19	0.28

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4. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
RI-122-100-P 0,25-5(100)A - Poly Phase, Active Import/Export, Electricity Meter	

Modifications to the meter(s) described according to approval No.**0120/ SGS0140** 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	18/11/2013	Initial Issue