



EC Type Examination Certificate Number: **0120/SGS0207**

Rayleigh Instruments Limited

Raytel House
Cutlers Road
South Woodham Ferrers
Chelmsford
Essex, CM3 5WA
United Kingdom

Instrument Identification
RI-17-45 Series

Single Phase, Active Import (kWh) Indoor, Electricity Meter

Instrument Traceable Number
0120/SGS0207

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 17th December 2015 until 17th February 2024


Certification is based on report number(s) SHES130800321401 dated 18th February 2014
EMA185897/1 dated 18th February 2014
EMA217582 dated 17th December 2015

Authorised Signature

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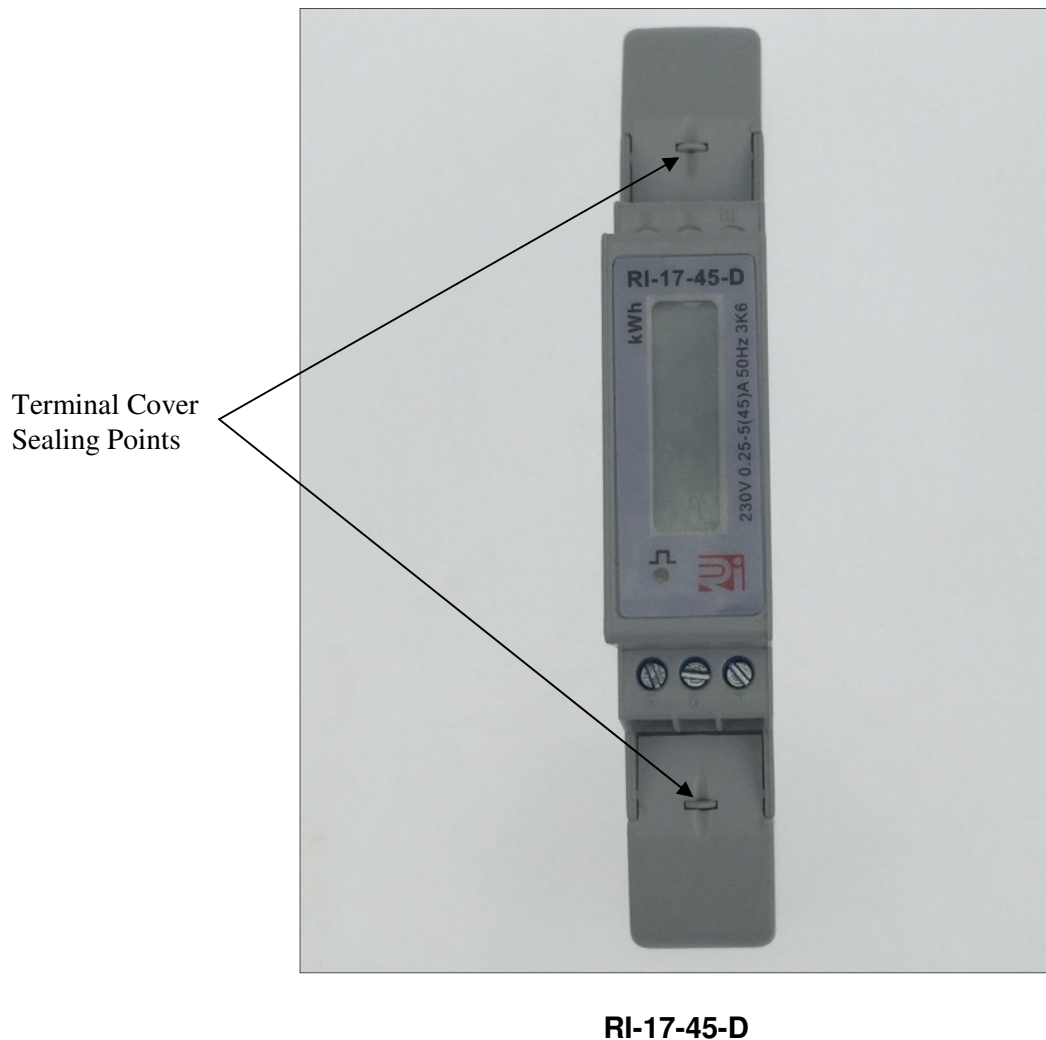
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	Issue Number: 2	Dated: 5 th April 2016


1. Technical Data

Manufacturer	Rayleigh Instruments Limited
Meter Types	RI-17-45-D RI-17-45-DB RI-17-45-A
Voltage Rating (U_n)	230V
Current Rating ($I_{min} - I_{ref} (I_{max})$)	0.25-5(45)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	A or B (kWh)
Type of circuit	1p2w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No's	SDM120A, SDM120D, SDM120DB: V1.2 SDM120-Modbus: V2.3
Identification Location	Nameplate
Bill Of Materials Number's	SDM120-Measure: V2.1 SDM120-Power: V2.1 SDM120-Pulse: V2.0 SDM120Modbus: V151119
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	1000imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	4 clips, one of which is covered by a self-destructive label. A self destructive label is also present across the joint between base and side of case.
Integrity of meter	Inaccessible without removing labels
Intended Location of the Meter	Indoor
Type of Register	LCD: SDM120D, SDM120DB, SDM120C, SDM120-Modbus Mechanical (SDM120A)

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2. Photographs of Meters




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Photographs of Meters (cont)

Terminal Cover
Sealing Points



RI-17-45-DB

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3. Influence factors for temperature, frequency and voltage


		Influence Factors for temperature, frequency and voltage					
Current	PF Cos	-25	-10	5	30	40	55
I _{min}	1.0	0.12	0.12	0.12	0.13	0.12	0.12
I _{tr}	1.0	0.16	0.16	0.16	0.16	0.16	0.16
10I _{tr}	1.0	0.17	0.16	0.16	0.16	0.16	0.16
I _{max}	1.0	0.13	0.13	0.13	0.13	0.13	0.13
I _{tr}	0.5ind	0.29	0.29	0.29	0.29	0.29	0.29
10I _{tr}	0.5ind	0.40	0.40	0.40	0.40	0.40	0.40
I _{max}	0.5ind	0.16	0.16	0.16	0.16	0.16	0.16
I _{tr}	0.8cap	0.24	0.24	0.24	0.24	0.24	0.24
10I _{tr}	0.8cap	0.31	0.31	0.31	0.31	0.31	0.31
I _{max}	0.8cap	0.09	0.09	0.09	0.09	0.09	0.09

During the type approval examination the influence factors for temperature, frequency and voltage are determined per load point. The table above 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

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4. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
RI-17-45-D	Single Phase 230V, 0.25-5(45)A LCD register
RI-17-45-DB	Single Phase 230V, 0.25-5(45)A LCD register with backlight
RI-17-45-A	Single Phase 230V, 0.25-5(45)A Mechanical register

Modifications to the meter(s) described according to approval No.**0120/ SGS0207** 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	17/12/2015	Initial Issue
2	05/04/2016	Main cover sealing arrangements amended from an ultrasonic weld to self-destructive labels