



EU Type Examination Certificate Number: **0120/SGS0289**

## **Tyco Electronics UK Ltd**

Freebournes Road,  
Witham,  
Essex,  
England,  
CM8 3AH.

Instrument Identification:  
**Integra-1231 : Integra-1232**

**Polyphase, Active Import/Export (kWh), Indoor, Transformer Operated, Multi-function,  
Electricity Meter**

Instrument Traceable Number  
**0120/SGS0289**

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 for 10 years from 7<sup>th</sup> August 2017 until 6th August 2027  
Issue 1

Certification is based on report number(s) EMA234440/2 dated 24<sup>th</sup> April 2017

Authorised Signature


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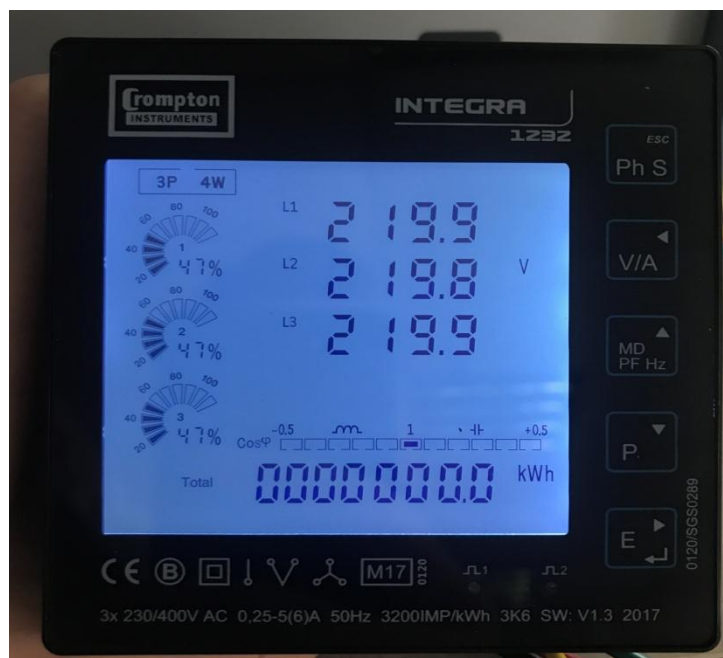
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## 1. Technical Data

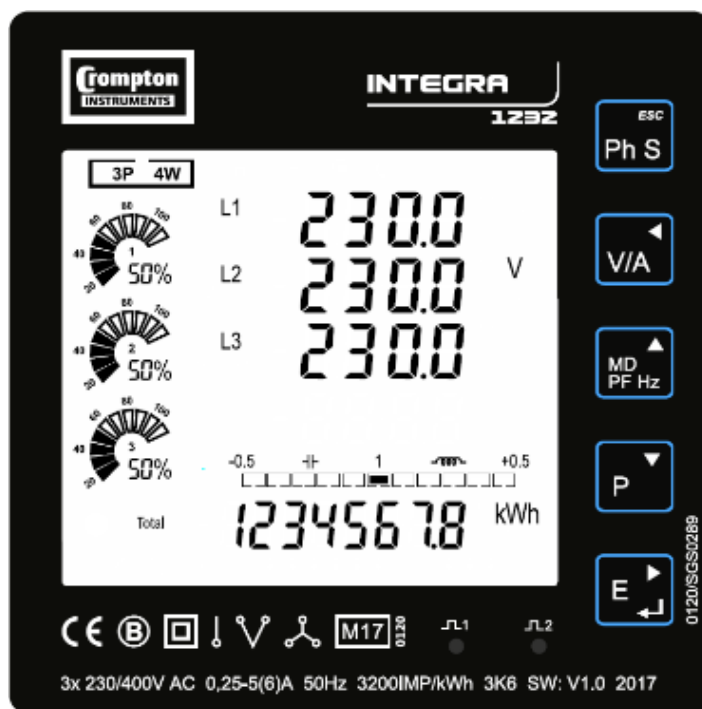
Manufacturer	Tyco Electronics UK Ltd
Meter Type	Integra-1231 Integra-1232
Voltage Rating ( $U_n$ )	1P2W: 230V 3P3W: 3x230V 3P4W: 3 x 230/400V
Current Rating ( $I_{min} - I_{ref} (I_{max})$ )	0.25-5(6)A
Frequency ( $F_n$ )	50Hz
Active Accuracy Class ( $kWh$ )	B or C ( $kWh$ )
Type of circuit	1p2w, 3p3w, 3p4w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No	V1.3
CRC Checksum	0x0059DD5E
Identification Location	LCD
Bill Of Materials Number	DH-JS-160010-1.3
IP Rating	IP51 Front Display Meter body not rated. Must be installed in a suitable IP rated enclosure
Insulation Protective Class	Class I / Class II
LED Pulse Constant	3200imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Terminal Cover Sealing Type	Wire & Crimp
Main Cover Sealing Type	Laser Welded
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD
Location of Manufacturers Address	Associated Documents

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## 2. Photograph of Meter and Nameplate markings



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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 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

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		Influence Factors for Temperature. Frequency & Voltage					
Current	PF Cos	-25°C	-10°C	5°C	30°C	40°C	55°C
I <sub>min</sub>	1.0	0.21	0.20	0.14	0.07	0.19	0.39
I <sub>tr</sub>	1.0	0.25	0.24	0.20	0.10	0.17	0.37
10I <sub>tr</sub>	1.0	0.24	0.23	0.19	0.10	0.20	0.39
I <sub>max</sub>	1.0	0.24	0.24	0.18	0.10	0.18	0.39
I <sub>tr</sub>	0.5ind	0.25	0.25	0.21	0.10	0.19	0.44
10I <sub>tr</sub>	0.5ind	0.20	0.06	0.11	0.31	0.56	0.70
I <sub>max</sub>	0.5ind	0.23	0.19	0.10	0.36	0.51	0.51
I <sub>tr</sub>	0.8cap	0.25	0.25	0.20	0.12	0.18	0.37
10I <sub>tr</sub>	0.8cap	0.35	0.30	0.23	0.09	0.11	0.33
I <sub>max</sub>	0.8cap	0.33	0.29	0.27	0.16	0.18	0.30
L1							
I <sub>tr</sub>	1.0	0.19	0.17	0.11	0.08	0.19	0.40
10I <sub>tr</sub>	1.0	0.18	0.17	0.11	0.10	0.20	0.41
I <sub>max</sub>	1.0	0.18	0.16	0.10	0.10	0.20	0.40
I <sub>tr</sub>	0.5ind	0.21	0.19	0.13	0.07	0.20	0.45
10I <sub>tr</sub>	0.5ind	0.23	0.22	0.17	0.12	0.18	0.39
I <sub>max</sub>	0.5ind	0.19	0.17	0.13	0.09	0.19	0.41
L2							
I <sub>tr</sub>	1.0	0.35	0.35	0.31	0.19	0.21	0.40
10I <sub>tr</sub>	1.0	0.29	0.30	0.25	0.16	0.22	0.47
I <sub>max</sub>	1.0	0.30	0.30	0.27	0.15	0.20	0.43
I <sub>tr</sub>	0.5ind	0.31	0.32	0.28	0.16	0.16	0.35
10I <sub>tr</sub>	0.5ind	0.74	0.14	0.33	0.77	0.46	0.92
I <sub>max</sub>	0.5ind	0.33	0.34	0.37	0.63	0.47	1.19
L3							
I <sub>tr</sub>	1.0	0.16	0.15	0.10	0.08	0.19	0.40
10I <sub>tr</sub>	1.0	0.18	0.16	0.10	0.10	0.20	0.41
I <sub>max</sub>	1.0	0.17	0.16	0.10	0.11	0.21	0.41
I <sub>tr</sub>	0.5ind	0.17	0.20	0.17	0.12	0.26	0.58
10I <sub>tr</sub>	0.5ind	0.18	0.18	0.11	0.36	0.40	0.62
I <sub>max</sub>	0.5ind		0.15	0.08	0.62	0.37	0.57


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#### 4. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
Integra-1232	Active Import/Export (kWh), 3x230/400V, 5(6)A, Transformer operated, Multifunction, RS485 Modbus RTU

Modifications to the meter(s) described according to approval No.**0120/SGS0289** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

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## 5. Document Revision History

Issue	Date	Comments
1	07/08/2017	Initial Issue

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