



EU Type Examination Certificate Number: **0120/SGS0286**

## **SmartProcess & Control Ltd.**

Unit 11 Totman Close  
Brook Road  
Rayleigh  
SS6 7UZ  
United Kingdom

Instrument Identification:  
**Smartpanel X835-MID**

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

Instrument Traceable Number  
**0120/SGS0286**

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 until 23<sup>rd</sup> April 2027  
Issue 3

Certification is based on report number(s) EMA234440/2 dated 24<sup>th</sup> April 2017, EMA250027/1 dated 27<sup>th</sup> April 2018  
EMA240491/1

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](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)

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	Issue Number: 3	Dated: 24 <sup>th</sup> May 2018


## 1. Technical Data

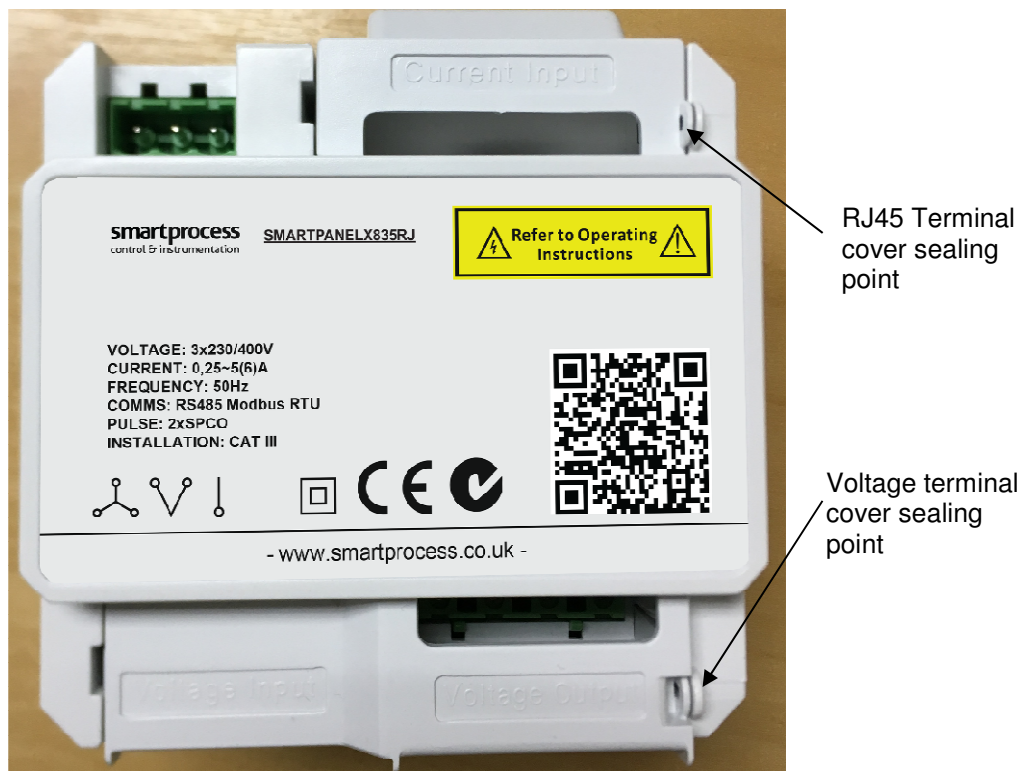
<b>Manufacturer</b>	Smartprocess & Control Ltd.
<b>Meter Type(s)</b>	Smartpanel X835-MID Smartpanel X835RJ-MID
<b>Voltage Rating (<math>U_n</math>)</b>	1P2W: 230V 3P3W: 3x230V 3P4W: 3 x 230/400V
<b>Wiring Configurations</b>	1P2W, 3P3W, 3P4W
<b>Current Rating (<math>I_{min}</math> – <math>I_{ref}</math> (<math>I_{max}</math>))</b>	0.25-5(6)A
<b>Frequency (<math>F_n</math>)</b>	50Hz
<b>Active Accuracy Class (<math>kWh</math>)</b>	B or C ( $kWh$ )
<b>Type of circuit</b>	1p2w, 3p3w, 3p4w
<b>Temperature Range</b>	-25°C to +55°C
<b>Software/ Firmware Version No's</b>	Smartpanel X835-MID: V1.3 Smartpanel X835RJ-MID: V1.5
<b>CRC Checksum No's</b>	Smartpanel X835-MID: 0x0059DD5E Smartpanel X835RJ-MID: 0x005C2B34
<b>Identification Location</b>	LCD
<b>Bill Of Materials No's</b>	Smartpanel X835-MID::DH-JS-160010-1.3 Smartpanel X835RJ-MID: DH-JS-180013-1.0
<b>IP Rating</b>	IP51 Front Display Meter body not rated. Must be installed in a suitable IP rated enclosure
<b>Insulation Protective Class</b>	Class I / Class II
<b>LED Pulse Constant</b>	3200imp/ kWh
<b>Impulse Voltage Rating</b>	6kV
<b>AC Voltage Rating</b>	4kV
<b>Terminal Cover Sealing Type</b>	Wire & Crimp
<b>Main Cover Sealing Type</b>	Laser Welded
<b>Integrity of meter</b>	Inaccessible without breaking seals
<b>Intended Location of the Meter</b>	Indoor
<b>Type of Register</b>	LCD
<b>Location of Manufacturers Address</b>	Associated Documents


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## 2. Photograph of Meter and Sealing Plan

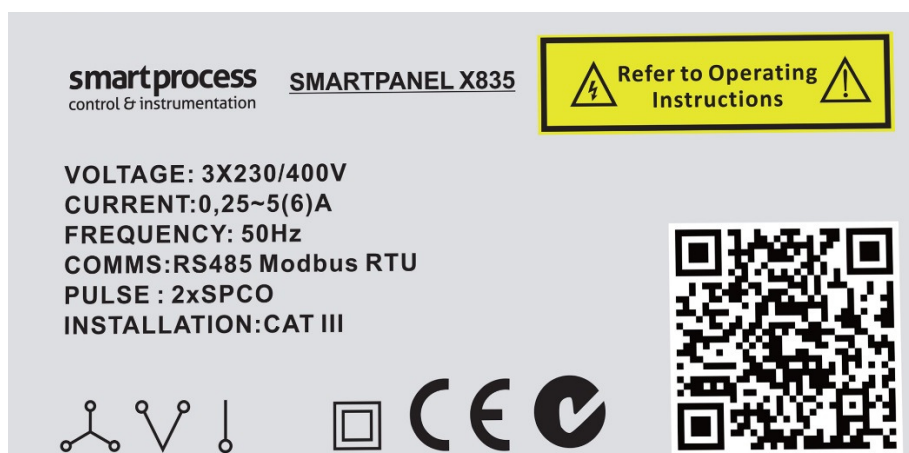
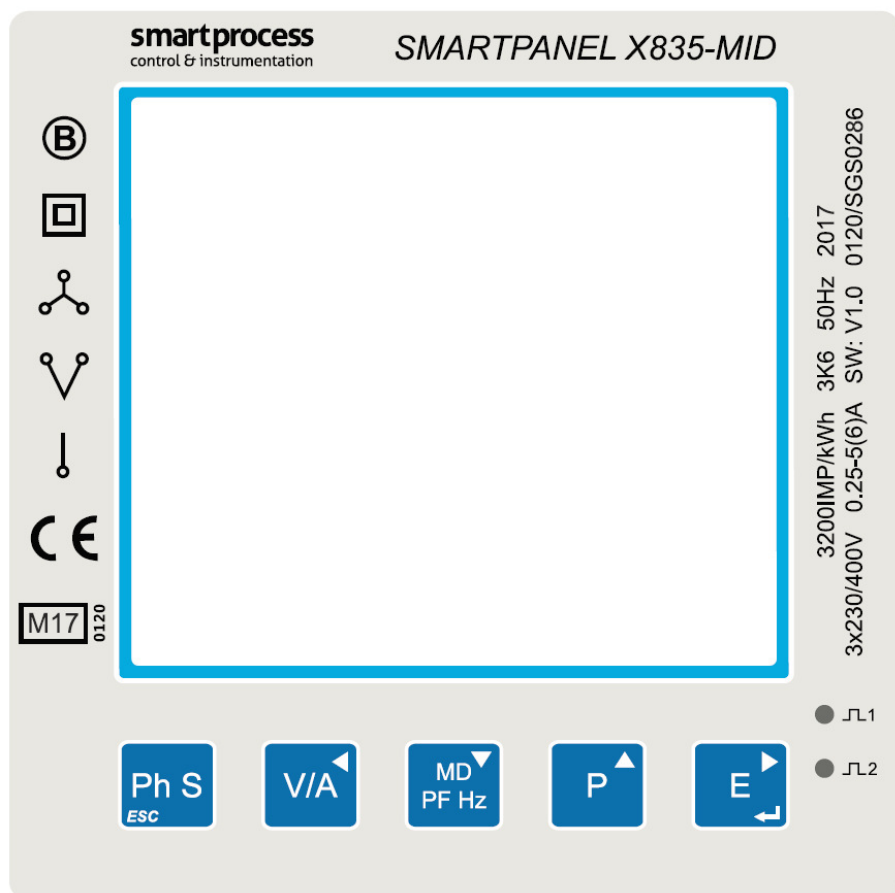



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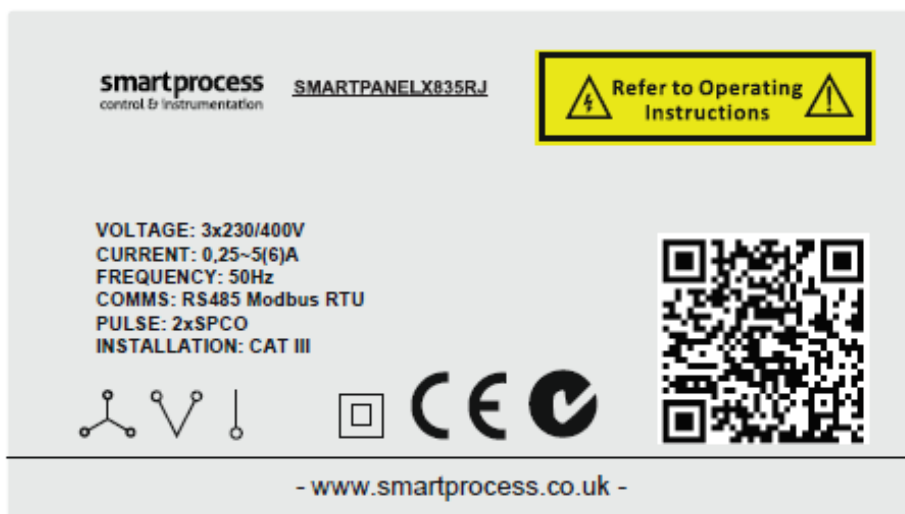
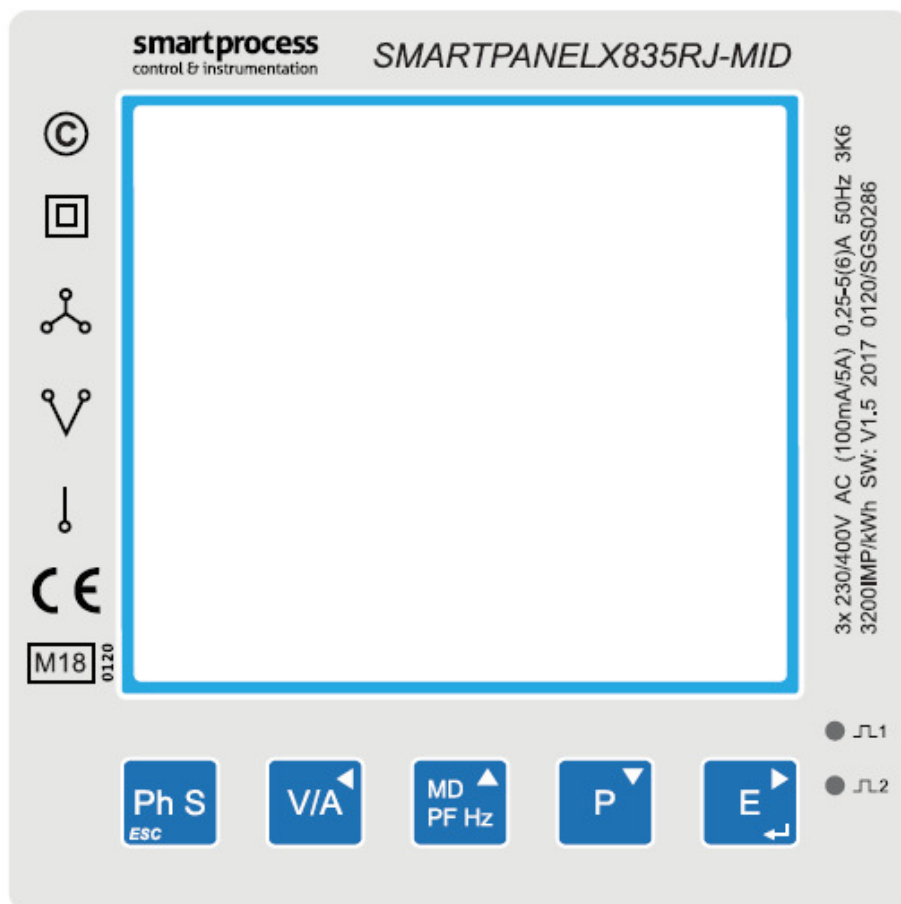



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### 3. Example of Nameplates



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#### 4. 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:-

$$\delta e(T, U, f) = \sqrt{(\delta e^2(T, I, \cos\phi) + \delta e^2(U, I, \cos\phi) + \delta e^2(f, I, \cos\phi))}$$


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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		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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## 5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
Smartpanel X835-MID	Active Import/Export (kWh), 3x230/400V, 5(6)A, Transformer operated, Multifunction, RS485 Modbus RTU
Smartpanel X835 RJ-MID	Active Import/Export (kWh), 3x230/400V, 100mA/5(6)A, Transformer operated, Multifunction, RS485 Modbus RTU, RJ12 Pluggable CT Input

Modifications to the meter(s) described according to approval No.**0120/SGS0286** 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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## 6. Document Revision History

Issue	Date	Comments
1	08/09/2017	Initial Issue
2	27/04/2018	Model X835 RJ – MID added to approval
3	24/05/2018	Photo of rear of X835RJ-MID showing RJ45 terminal cover added.

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**END OF CERTIFICATE**