



EC Type Examination Certificate Number: **0120/SGS0150**

## **Smart Process & Controls Ltd**

Unit 11 Totman Close  
Brook Road Ind Est  
Rayleigh  
Essex  
SS6 7UZ

Instrument Identification:  
**Smartrail X835**

Instrument Traceable Number  
**0120/SGS0150**

Poly Phase, Active Import/ Export , Indoor, Multi-Function, Transformer Operated, Electricity Meter

has been assessed and certified as meeting the requirements of

## **EC Directive 2004/22/EC**

**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 for 10 years from 10<sup>th</sup> March 2014 to 9<sup>th</sup> March 2024  
Issue 1


Certification is based on report number(s) EMA174647/1/MID dated 30<sup>th</sup> January 2014

Authorised Signature

Jan Saunders


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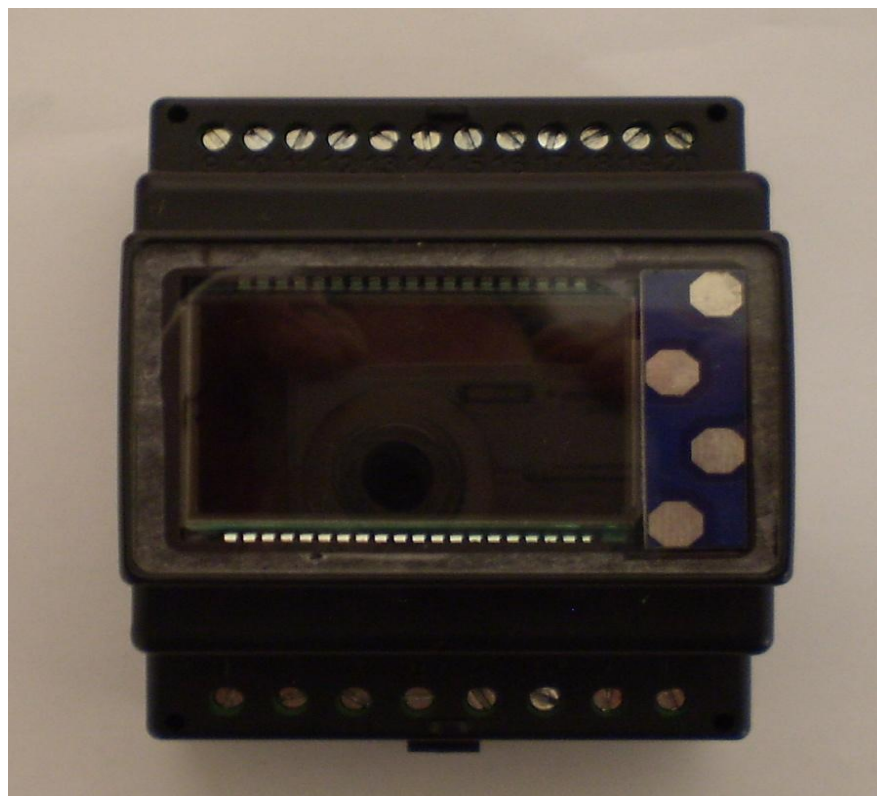
	EC-Type Examination Certificate Number:	
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	Issue Number: 1	Dated: 10 <sup>th</sup> March 2014


## 1. Technical Data

<b>Manufacturer</b>	Smart Process & Controls Ltd
<b>Meter Type</b>	Smartrail X835
<b>Voltage Rating (<math>U_n</math>)</b>	3x230/400V
<b>Current Rating (<math>I_{min} - I_{ref} (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>	A or B ( $kWh$ )
<b>Type of circuit</b>	3p4w, 3p3w, 1p2w
<b>Temperature Range</b>	-25°C to +55°C
<b>Software Version No.</b>	V1.3
<b>Identification Location</b>	Nameplate
<b>Bill Of Materials No.'s</b>	SDM630-1-L-V1.5 SDM630-1-BOT-V1.5 SDM630-1-TOP-V1.5 SDM630-1-KEY-V1.0 SDM630-1-R-V1.5
<b>IP Rating</b>	IP51
<b>Insulation Protective Class</b>	Class II
<b>LED Pulse Constant</b>	3200imp/ kWh
<b>Impulse Voltage Rating</b>	6kV
<b>AC Voltage Rating</b>	4kV
<b>Main Cover Sealing Type</b>	2 x Wire & Crimp
<b>Integrity of meter</b>	Inaccessible without breaking seals
<b>Intended Location of the Meter</b>	Indoor
<b>Type of Register</b>	LCD

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2. Photograph of Meter



	EC-Type Examination Certificate Number:	
	<b>0120/ SGS0150</b>	
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### 3. Influence factors for temperature, frequency and voltage

Influence Factors for Temperature, Frequency & Voltage							
Current	PF Cos	-25	-10	5	30	40	55
I <sub>min</sub>	1.0	<b>0.39</b>	<b>0.30</b>	<b>0.71</b>	<b>0.16</b>	<b>0.25</b>	<b>0.39</b>
I <sub>tr</sub>	1.0	<b>0.33</b>	<b>0.27</b>	<b>0.28</b>	<b>0.18</b>	<b>0.25</b>	<b>0.47</b>
10I <sub>tr</sub>	1.0	<b>0.35</b>	<b>0.31</b>	<b>0.24</b>	<b>0.22</b>	<b>0.29</b>	<b>0.49</b>
I <sub>max</sub>	1.0	<b>0.36</b>	<b>0.31</b>	<b>0.25</b>	<b>0.21</b>	<b>0.28</b>	<b>0.47</b>
I <sub>tr</sub>	0.5ind	<b>0.26</b>	<b>0.25</b>	<b>0.36</b>	<b>0.16</b>	<b>0.23</b>	<b>0.44</b>
10I <sub>tr</sub>	0.5ind	<b>0.38</b>	<b>0.34</b>	<b>0.29</b>	<b>0.27</b>	<b>0.34</b>	<b>0.52</b>
I <sub>max</sub>	0.5ind	<b>0.42</b>	<b>0.38</b>	<b>0.32</b>	<b>0.30</b>	<b>0.36</b>	<b>0.52</b>
I <sub>tr</sub>	0.8cap	<b>0.31</b>	<b>0.42</b>	<b>0.43</b>	<b>0.32</b>	<b>0.37</b>	<b>0.50</b>
10I <sub>tr</sub>	0.8cap	<b>0.32</b>	<b>0.27</b>	<b>0.21</b>	<b>0.17</b>	<b>0.26</b>	<b>0.45</b>
I <sub>max</sub>	0.8cap	<b>0.34</b>	<b>0.28</b>	<b>0.21</b>	<b>0.15</b>	<b>0.24</b>	<b>0.43</b>
L1							
I <sub>tr</sub>	1.0	<b>0.37</b>	<b>0.39</b>	<b>0.44</b>	<b>0.14</b>	<b>0.28</b>	<b>0.35</b>
10I <sub>tr</sub>	1.0	<b>0.34</b>	<b>0.30</b>	<b>0.24</b>	<b>0.20</b>	<b>0.27</b>	<b>0.47</b>
I <sub>max</sub>	1.0	<b>0.33</b>	<b>0.30</b>	<b>0.23</b>	<b>0.21</b>	<b>0.28</b>	<b>0.47</b>
I <sub>tr</sub>	0.5ind	<b>0.41</b>	<b>0.56</b>	<b>0.96</b>	<b>0.14</b>	<b>0.15</b>	<b>0.16</b>
10I <sub>tr</sub>	0.5ind	<b>0.49</b>	<b>0.46</b>	<b>0.42</b>	<b>0.38</b>	<b>0.43</b>	<b>0.62</b>
I <sub>max</sub>	0.5ind	<b>0.49</b>	<b>0.46</b>	<b>0.42</b>	<b>0.39</b>	<b>0.44</b>	<b>0.60</b>
L2							
I <sub>tr</sub>	1.0	<b>0.25</b>	<b>0.20</b>	<b>0.12</b>	<b>0.18</b>	<b>0.31</b>	<b>0.51</b>
10I <sub>tr</sub>	1.0	<b>0.38</b>	<b>0.32</b>	<b>0.23</b>	<b>0.19</b>	<b>0.28</b>	<b>0.45</b>
I <sub>max</sub>	1.0	<b>0.38</b>	<b>0.32</b>	<b>0.23</b>	<b>0.21</b>	<b>0.28</b>	<b>0.47</b>
I <sub>tr</sub>	0.5ind	<b>0.12</b>	<b>0.12</b>	<b>0.13</b>	<b>0.25</b>	<b>0.38</b>	<b>0.59</b>
10I <sub>tr</sub>	0.5ind	<b>0.36</b>	<b>0.33</b>	<b>0.25</b>	<b>0.25</b>	<b>0.32</b>	<b>0.49</b>
I <sub>max</sub>	0.5ind	<b>0.39</b>	<b>0.35</b>	<b>0.28</b>	<b>0.27</b>	<b>0.34</b>	<b>0.49</b>
L3							
I <sub>tr</sub>	1.0	<b>0.32</b>	<b>0.27</b>	<b>0.21</b>	<b>0.19</b>	<b>0.27</b>	<b>0.46</b>
10I <sub>tr</sub>	1.0	<b>0.32</b>	<b>0.28</b>	<b>0.22</b>	<b>0.21</b>	<b>0.30</b>	<b>0.50</b>
I <sub>max</sub>	1.0	<b>0.33</b>	<b>0.30</b>	<b>0.23</b>	<b>0.22</b>	<b>0.30</b>	<b>0.50</b>
I <sub>tr</sub>	0.5ind	<b>0.32</b>	<b>0.32</b>	<b>0.24</b>	<b>0.20</b>	<b>0.29</b>	<b>0.53</b>
10I <sub>tr</sub>	0.5ind	<b>0.34</b>	<b>0.29</b>	<b>0.23</b>	<b>0.23</b>	<b>0.33</b>	<b>0.54</b>
I <sub>max</sub>	0.5ind	<b>0.35</b>	<b>0.31</b>	<b>0.25</b>	<b>0.13</b>	<b>0.33</b>	<b>0.53</b>

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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

#### 4. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
X835 0.25-5(6)A – Poly Phase, Active Import/Export kWh, Multifunction, Transformer Operated, Electricity Meter	

Modifications to the meter(s) described according to approval No. **0120/ SGS0150** 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	10/03/2014	Initial Issue