

EC Type Examination Certificate Number: 0120/SGS0221

Smart Process & Controls Ltd

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

Instrument Identification: SMARTRAIL X45 Series

Instrument Traceable Number 0120/SGS0221

Single Phase, Active Import/ Export (kWh), Indoor, 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 until 17th February 2024 Issue 1

Certification is based on report number(s) SHES130800321401 dated 18th February 2014 EMA 185971/1 dated 18th February 2014 EMA 219509/1 dated 9th February 2016

Authorised Signature

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Issue Number: 1 Dated: 9th February 2016

1. Technical Data

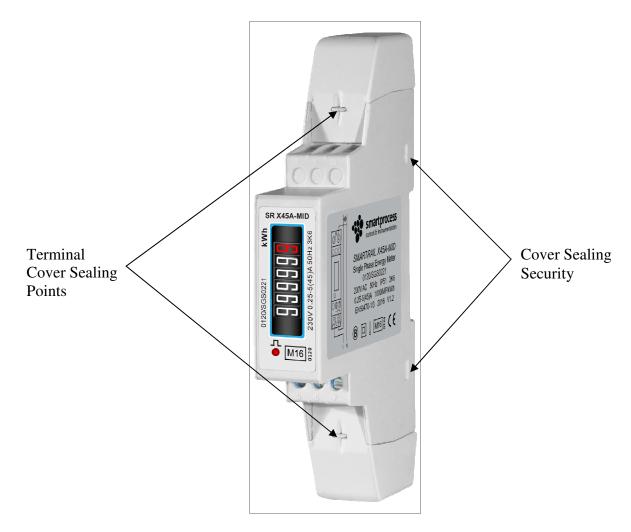
Manufacturer	Creart Discours 9 Controls Ltd			
Manufacturer	Smart Process & Controls Ltd.			
Meter Type(s)	SMARTRAIL X45A SMARTRAIL X45D			
	SMARTRAIL X45D SMARTRAIL X45DB			
	SMARTRAIL X45M			
Voltage Rating (Un)	230V			
Current Rating (Imin – Iref (Imax))	0.25-5(45)A			
Frequency (Fn)	50Hz			
Active Accuracy Class (kWh)	A or B (kWh)			
Type of circuit	1p2w			
Temperature Range	-25°C to +55°C			
Software Version No.	SMARTRAIL X45A, SMARTRAIL X45D, SMARTRAIL X45DB: V1.2			
	SMARTRAIL X45M: V2.3			
Identification Location	Nameplate			
Bill Of Materials No.'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 cover clips at least one of which is ultra sonic welded			
Integrity of meter	Inaccessible without using tools and breaking weld			
Intended Location of the Meter	Indoor			
Type of Register	LCD: SMARTRAIL X45D, SMARTRAIL X45DB, SMARTRAIL X45M Mechanical: SMARTRAIL X45A			



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2. Photograph of Meters and Sealing Plans



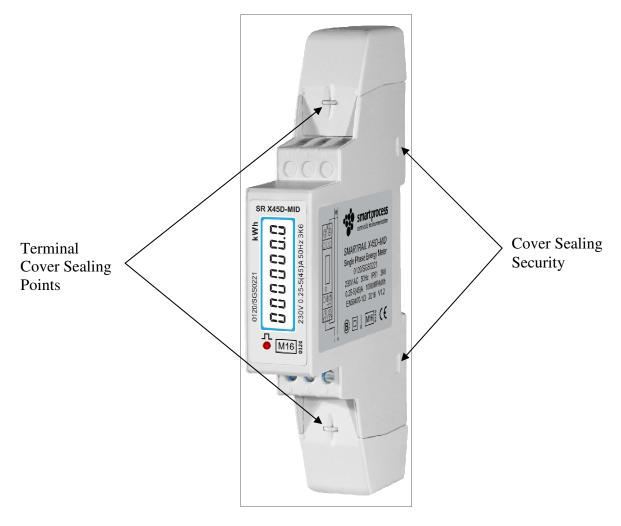
SMARTRAIL X45A



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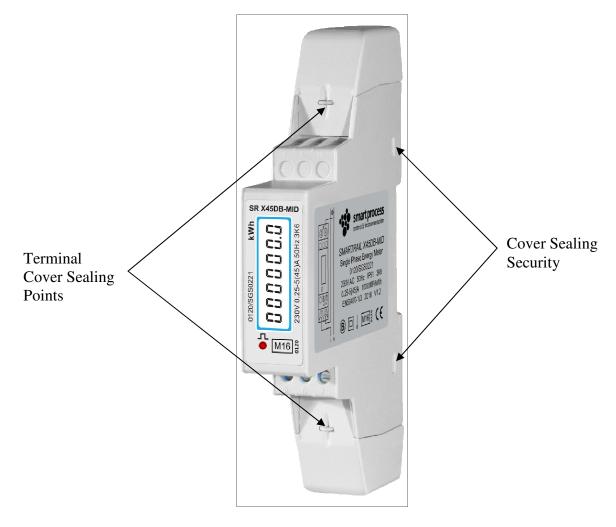
SMARTRAIL X45D



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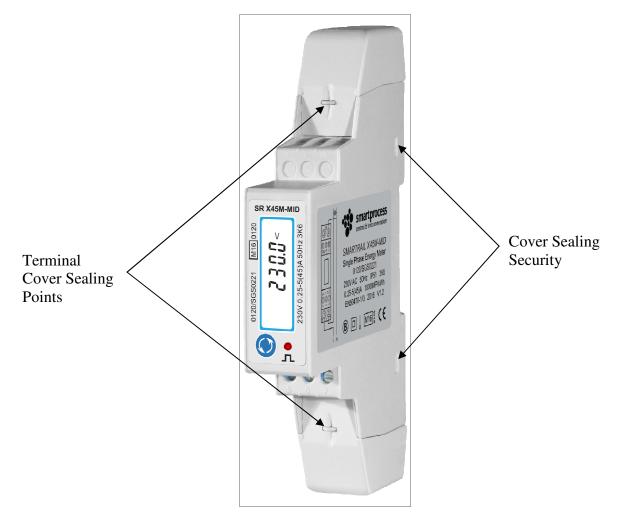
SMARTRAIL X45DB



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SMARTRAIL X45M



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3. Influence factors for temperature, frequency and voltage

		Influenc	e Factors 1	rs for temperature, frequency and voltage			
Current	PF Cos	-25	-10	5	30	40	55
Imin	1.0	0.12	0.12	0.12	0.13	0.12	0.12
ltr	1.0	0.16	0.16	0.16	0.16	0.16	0.16
10ltr	1.0	0.17	0.16	0.16	0.16	0.16	0.16
Imax	1.0	0.13	0.13	0.13	0.13	0.13	0.13
ltr	0.5ind	0.29	0.29	0.29	0.29	0.29	0.29
10ltr	0.5ind	0.40	0.40	0.40	0.40	0.40	0.40
Imax	0.5ind	0.16	0.16	0.16	0.16	0.16	0.16
ltr	0.8cap	0.24	0.24	0.24	0.24	0.24	0.24
10ltr	0.8cap	0.31	0.31	0.31	0.31	0.31	0.31
Imax	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:-

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

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 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
SMARTRAIL X45A	Single Phase 230V, 0.25-5(45)A Mechanical register
SMARTRAIL X45D	Single Phase 230V, 0.25-5(45)A LCD register
SMARTRAIL X45DB	Single Phase 230V, 0.25-5(45)A LCD register with backlight
SMARTRAIL X45M	Single Phase 230V, 0.25-5(45)A, LCD register, 2 Pulse Outputs, RS485 Communication Port, Modbus

Modifications to the meter(s) described according to approval No.0120/SGS0221 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	09/02/2016	Initial Issue