



EU Type Examination Certificate Number: 0120/SGS0141

# Zhejiang Eastron Electronic Co., Ltd

No.52, Dongjin Road  
Nanhu  
Jiaxing  
Zhejiang  
China

Instrument Identification:  
**SDM120 Series**

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

Instrument Traceable Number  
**0120/SGS0141**

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 17<sup>th</sup> February 2024  
Issue 8

Certification is based on report number(s): SHES130800321401 dated 18<sup>th</sup> February 2014  
EMA241425, EMA288737/1 dated 1<sup>st</sup> April 2021  
EMA309117/1 dated 22<sup>nd</sup> February 2023, EMA309117/1/TR50579 dated 20<sup>th</sup> January 2023  
EMA315686/1 dated 18<sup>th</sup> May 2023

Authorised Signature

Mikko Välimäki

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|                                                                                   |                                         |                        |
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|  | EU-Type Examination Certificate Number: |                        |
|                                                                                   | <b>0120/SGS0141</b>                     |                        |
|                                                                                   | Issue Number: 8                         | Dated: 03 October 2023 |

## 1. Technical Data

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                  |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Manufacturer                                     | Zhejiang Eastron Electronic Co., Ltd.                                                                                                                                                                                                                                                                                                                                              |                                                                                  |
| Meter Type(s)                                    | SDM120A V2, SDM120DB V2,<br>SDM120D V2, SDM120M V2.4, SDM120M V2.5, SDM120MB, SDM120P,<br>SDM120CTM, SDM120CTMB, SDM120CTP, SDM120CT-100mA,<br>SDM120CT-RJ                                                                                                                                                                                                                         |                                                                                  |
| Voltage Rating ( $U_n$ )                         | 230V                                                                                                                                                                                                                                                                                                                                                                               |                                                                                  |
| Current Rating ( $I_{min} - I_{ref} (I_{max})$ ) | Direct Connected: 0.25-5(45)A<br>CT Connected: 0.05-5(6)A<br>SDM120CT-100mA: 1-20(100)A<br>SDM120CT-RJ: 1-20(100)A                                                                                                                                                                                                                                                                 |                                                                                  |
| Frequency ( $F_n$ )                              | 50Hz                                                                                                                                                                                                                                                                                                                                                                               |                                                                                  |
| Active Accuracy Class (kWh)                      | A or B (kWh)                                                                                                                                                                                                                                                                                                                                                                       |                                                                                  |
| Type of circuit                                  | 1p2w                                                                                                                                                                                                                                                                                                                                                                               |                                                                                  |
| Temperature Range                                | -25°C to +55°C or -40°C to +70°C                                                                                                                                                                                                                                                                                                                                                   |                                                                                  |
| Software/ Firmware Version No's                  | V2.4                                                                                                                                                                                                                                                                                                                                                                               | V2.5                                                                             |
|                                                  | SDM120A V2<br>SDM120D V2<br>SDM120DB V2<br>SDM120P<br>SDM120MB<br>SDM120M                                                                                                                                                                                                                                                                                                          | SDM120CTM<br>SDM120CTMB<br>SDM120CTP<br>SDM120M<br>SDM120CT-100mA<br>SDM120CT-RJ |
| CRC Checksum No's                                | 0x0000272C                                                                                                                                                                                                                                                                                                                                                                         | 0x0000B594<br>B2CF0F70<br>5C01615A                                               |
| Identification Location                          | Meter Case                                                                                                                                                                                                                                                                                                                                                                         |                                                                                  |
| Bill of Materials No's                           | SDM120A V2: DH-JS-190006-1.0<br>SDM120D V2: DH-JS-180033-1.0<br>SDM120DB V2: DH-JS-190009-1.0<br>SDM120M V2.4, SDM120M V2.5: DH-JS-170009-1.2<br>SDM120CT-RJ: DH-JS-220095 V1.1<br>SDM120MB : DH-JS-170026-1.0<br>SDM120CT-100mA: DH-JS-220102 V1.0<br>SDM120P : DH-JS-170021-1.0<br>SDM120CTM : DH-JS-170014-1.1<br>SDM120CTMB : DH-JS-170027-1.0<br>SDM120CTP : DH-JS-170025-1.0 |                                                                                  |
| IP Rating                                        | IP51 Front Display<br>Meter body not rated. Must be installed in a suitable IP rated enclosure                                                                                                                                                                                                                                                                                     |                                                                                  |
| Insulation Protective Class                      | Class II                                                                                                                                                                                                                                                                                                                                                                           |                                                                                  |
| LED Pulse Constant                               | 1000imp/ kWh & 100imp/kWh                                                                                                                                                                                                                                                                                                                                                          |                                                                                  |
| Impulse Voltage Rating                           | 6kV                                                                                                                                                                                                                                                                                                                                                                                |                                                                                  |
| AC Voltage Rating                                | 4kV                                                                                                                                                                                                                                                                                                                                                                                |                                                                                  |
| Main Cover Sealing Type                          | 4 x Clips                                                                                                                                                                                                                                                                                                                                                                          |                                                                                  |
| Integrity of meter                               | Inaccessible without breaking seals                                                                                                                                                                                                                                                                                                                                                |                                                                                  |
| Intended Location of the Meter                   | Indoor                                                                                                                                                                                                                                                                                                                                                                             |                                                                                  |
| Type of Register                                 | LCD: SDM120MB, SDM120M V2.4, SDM120M V2.5, SDM120P,                                                                                                                                                                                                                                                                                                                                |                                                                                  |

The SGS logo consists of the letters 'SGS' in a bold, sans-serif font. A vertical line is positioned to the right of the 'S', and a horizontal line is positioned below the 'G'.

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SDM120CTM, SDM120CTMB, SDM120CTP, SDM120CT-100mA,  
SDM120DB V2, SDM120D V2, SDM120CT-RJ  
Mechanical:, SDM120A V2

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## Photograph of Meter and Sealing Plan



Main Cover Sealing Points

# SGS

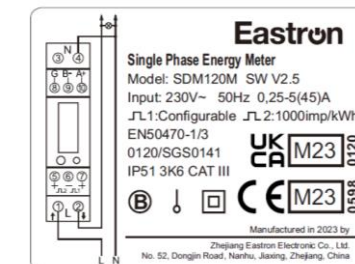
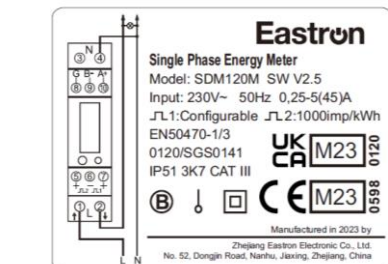
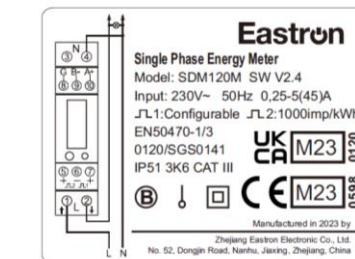
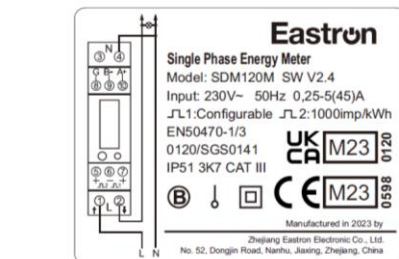
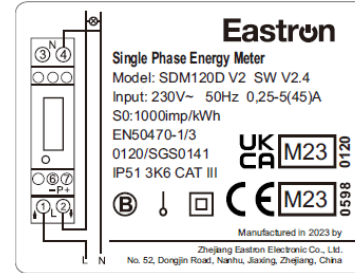
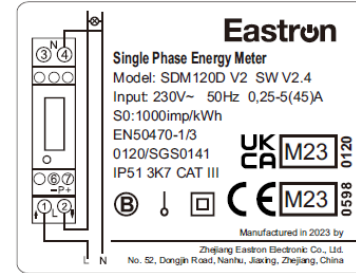
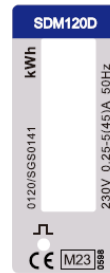
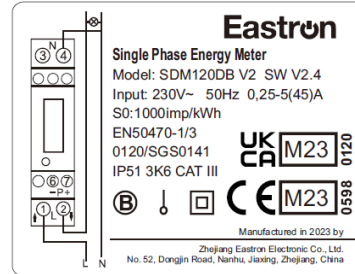
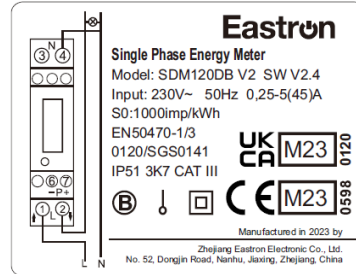
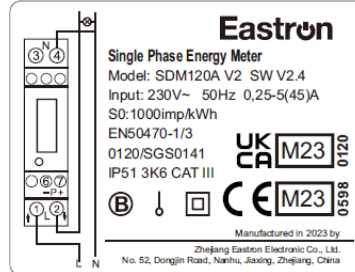
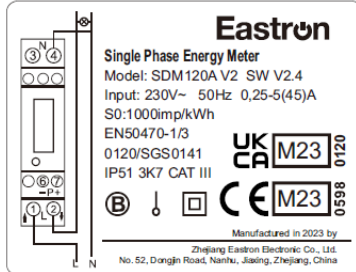
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## 2. Examples of Nameplates



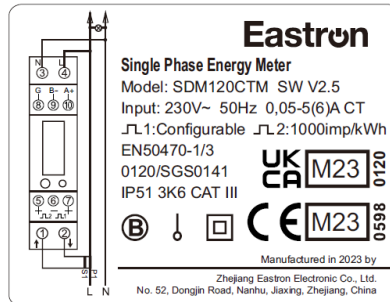
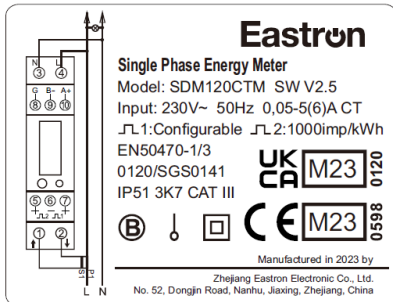
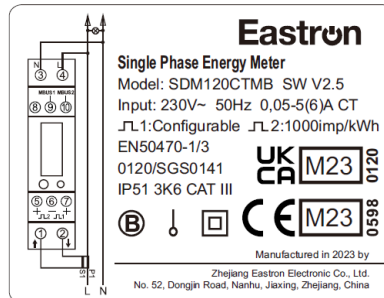
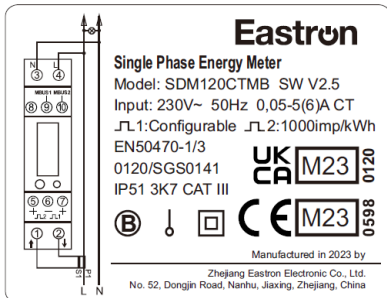
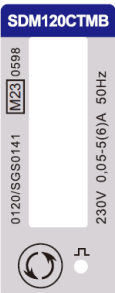
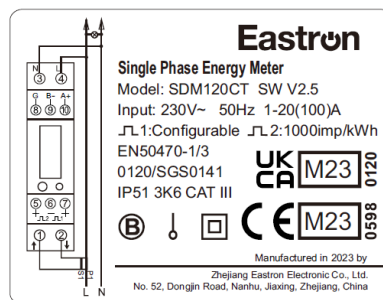
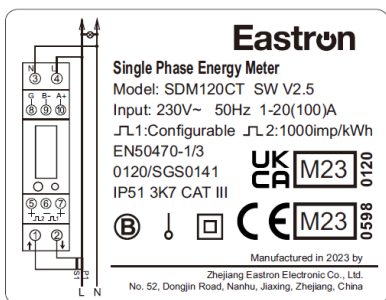
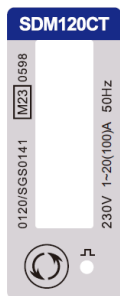
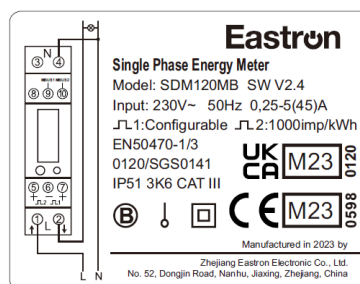
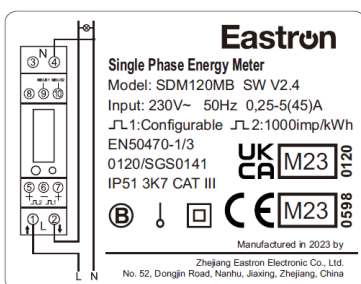
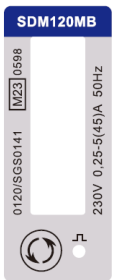
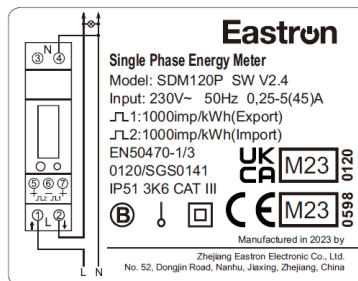
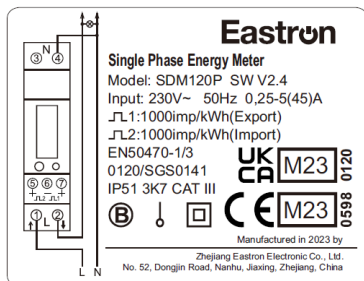
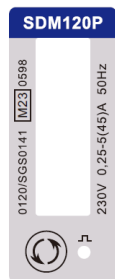
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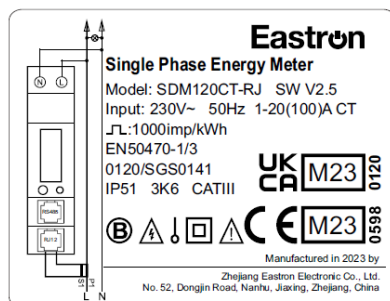
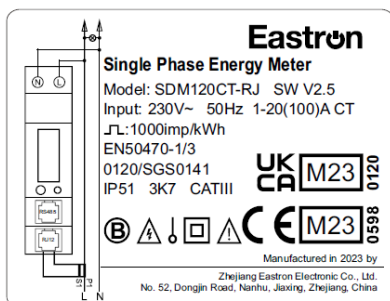
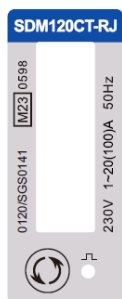
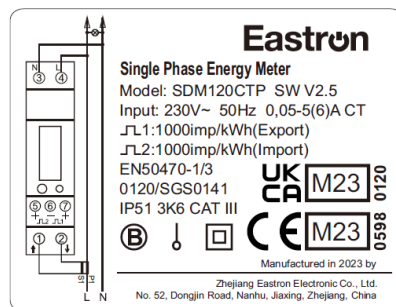
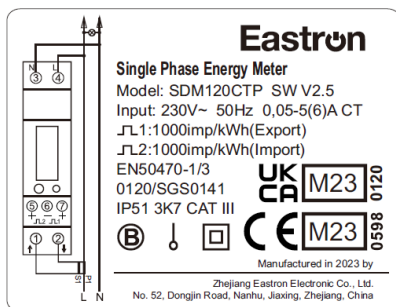
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### 3. Calculation of the composite error/ MPE

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:-

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

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

|         |        | Influence Factors for Temperature. Frequency & Voltage |       |       |      |      |      |      |      |
|---------|--------|--------------------------------------------------------|-------|-------|------|------|------|------|------|
| Current | PF Cos | -40°C                                                  | -25°C | -10°C | 5°C  | 30°C | 40°C | 55°C | 70°C |
| Imin    | 1.0    | 0.75                                                   | 0.12  | 0.12  | 0.12 | 0.13 | 0.12 | 0.12 | 0.21 |
| Itr     | 1.0    | 0.30                                                   | 0.16  | 0.16  | 0.16 | 0.16 | 0.16 | 0.16 | 0.28 |
| 10Itr   | 1.0    | 0.30                                                   | 0.17  | 0.16  | 0.16 | 0.16 | 0.16 | 0.16 | 0.27 |
| Imax    | 1.0    | 0.42                                                   | 0.13  | 0.13  | 0.13 | 0.13 | 0.13 | 0.13 | 0.29 |
| Itr     | 0.5ind | 0.53                                                   | 0.29  | 0.29  | 0.29 | 0.29 | 0.29 | 0.29 | 0.31 |
| 10Itr   | 0.5ind | 0.55                                                   | 0.40  | 0.40  | 0.40 | 0.40 | 0.40 | 0.40 | 0.43 |
| Imax    | 0.5ind | 0.62                                                   | 0.16  | 0.16  | 0.16 | 0.16 | 0.16 | 0.16 | 0.20 |
| Itr     | 0.8cap | 0.32                                                   | 0.24  | 0.24  | 0.24 | 0.24 | 0.24 | 0.24 | 0.39 |
| 10Itr   | 0.8cap | 0.38                                                   | 0.31  | 0.31  | 0.31 | 0.31 | 0.31 | 0.31 | 0.40 |
| Imax    | 0.8cap | 0.45                                                   | 0.09  | 0.09  | 0.09 | 0.09 | 0.09 | 0.09 | 0.25 |

|                                                                                   |                                         |                        |
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#### 4. Annex of Variants

Product Variant Identification Details:

| Type Designation | Description of meter                                                       |
|------------------|----------------------------------------------------------------------------|
| SDM120M V2.4     | Single Phase 230V, 0.25-5(45)A, RS485 Modbus                               |
| SDM120M V2.5     | Single Phase 230V, 0.25-5(45)A, RS485 Modbus                               |
| SDM120P          | Single Phase, 230V, 0.25-5(45)A                                            |
| SDM120MB         | Single Phase, 230V, 0.25-5(45)A, Mbus EN13757-3                            |
| SDM120A V2       | Single Phase 230V, 0.25-5(45)A Mechanical register                         |
| SDM120D V2       | Single Phase 230V, 0.25-5(45)A                                             |
| SDM120DB V2      | Single Phase 230V, 0.25-5(45)A backlight                                   |
| SDM120CTP        | Single Phase 230V, 0.05-5(6)A                                              |
| SDM120CTM        | Single Phase 230V, 0.05-5(6)A. RS485, Modbus                               |
| SDM120CTMB       | Single Phase 230V, 0.05-5(6)A. M-Bus EN13757-3                             |
| SDM120CT-100mA   | Single Phase 230V, 1-20(100)A. RS485, Modbus, External CT, 5M cable        |
| SDM120CT-RJ      | Single Phase 230V, 1-20(100)A. RS485, Modbus, External CT, RJ12 connection |

Modifications to the meter(s) described according to approval No.**0120/SGS0141** 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     | 18/02/2014 | Initial Issue                                                                                                                                                 |
| 2     | 27/11/2015 | Version SDM120-Modbus added to approval                                                                                                                       |
| 3     | 09/01/2018 | SDM120CT models added to approval                                                                                                                             |
| 4     | 07/08/2019 | Case modification. SDM120A V2, SDM120D V2, SDM120DB V2. 100imp/kWh option                                                                                     |
| 5     | 07/05/2021 | Temperature range updated to -40°C to +70°C. Change of Notified Body reference.                                                                               |
| 6     | 07/03/2023 | New model SDM120CT-100mA added to approval<br>New software version V2.5 for SDM120M                                                                           |
| 7     | 22/05/2023 | New model SDM120CT-RJ added to approval                                                                                                                       |
| 8     | 03/10/2023 | Company address change to new address<br>Nameplate and side nameplate change<br>BOM version update<br>Models SDM120A, SDM120D, SDM120DB removed from approval |

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**END OF CERTIFICATE**