

EU Type Examination Certificate Number: **0120/SGS0213**

Zhejiang Eastron Electronic Co., Ltd.

No. 1369, Chengnan Road,
Jiaxing,
Zhejiang,
China,
314001

Instrument Identification:
SDM72D, SDM72DR, SDM72D-M-1, SDM72D-M-2, SDM72Bi, SDM72D-M

Polyphase, Active Import/Export (kWh), Electricity Meter

Instrument Traceable Number
0120/SGS0213

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 20th April 2026
Issue 2

Certification is based on report number(s):

Certification is based on report number(s): SHES151000648101 dated 19th April 2016
EMA288418/1 dated 1st April 2021, EMA288737/3 dated 1st April 2021, EMA288418.1p2w dated 4th July 2022, EMA314862/1 dated 18th April 2023

Authorised Signature



Tuomas Hänninen

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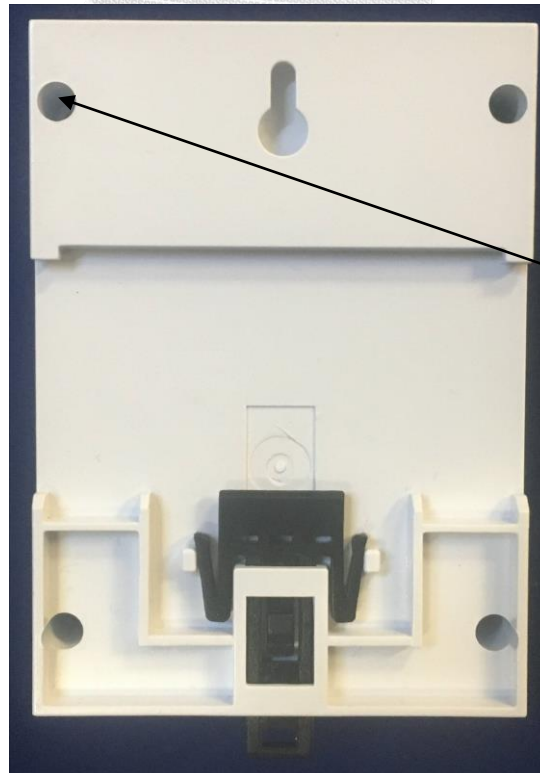
Dated: 27th April 2023**1. Technical Data**

Manufacturer	Zhejiang Eastron Electronic Co Ltd
Meter Type	SDM72D, SDM72DR, SDM72D-M-1, SDM72D-M-2, SDM72Bi, SDM72D-M
Voltage Rating (U_n)	230V & 3 x 230/400V
Current Rating ($I_{min} - I_{ref} (I_{max})$)	0,5-10(100)A & 0.5-10(80)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	B (kWh)
Type of circuit	3p4w, 1p2w
Temperature Range	-40°C to +70°C
Software/ Firmware Version No's	SDM72D: V1.1 CRC: 0282 SDM72DR: V1.1 CRC: 0283 SDM72Bi: V1.1 CRC: 0284
CRC Checksum No's	SDM72D-M V1.3 CRC: 0388 SDM72D-M-1: V1.3 CRC: 0388 SDM72D-M-2: V1.3 CRC: 0388
Identification Location	Laser printed on meter case & LCD
Bill Of Materials No's	SDM72D: V1.2 SDM72DR: V1.2, SDM72Bi: V1.2 SDM72D-M-1: DH-JS-200010-1.2 SDM72D-M-2: DH-JS-200010-1.2
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	1000 imp/kWh or 100imp/kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Wire & Crimp on terminal cover Meter case sealed with screws
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD
Terminal Arrangement(s)	DIN
Location of Manufacturers Address	Associated documents

2. Photograph of Meter and Sealing Plan



Terminal cover sealing points



Meter case sealing point

SGS

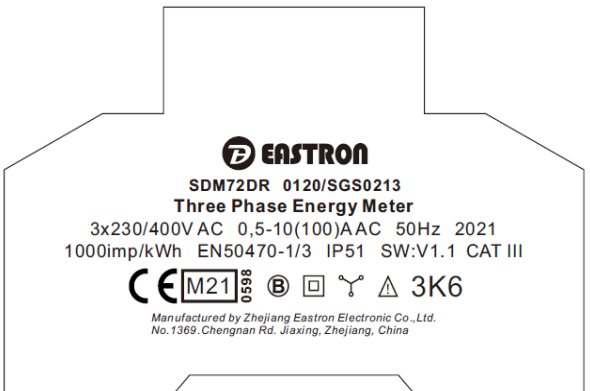
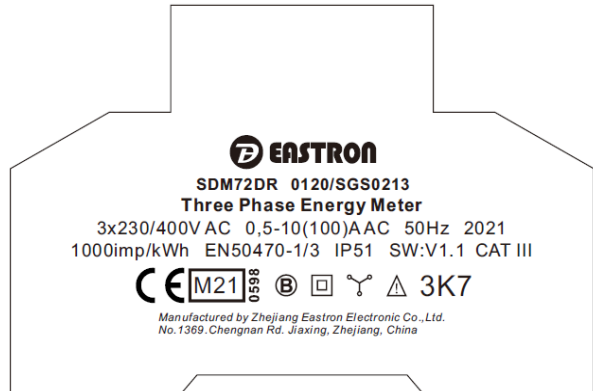
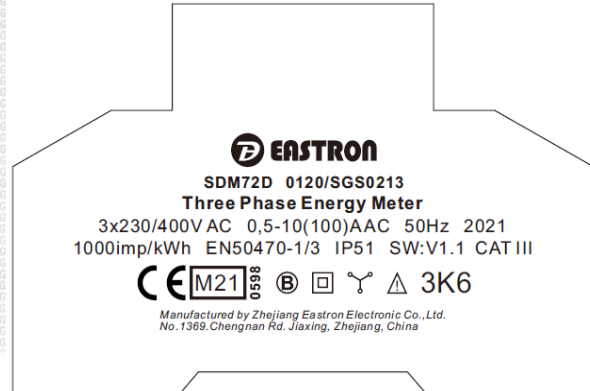
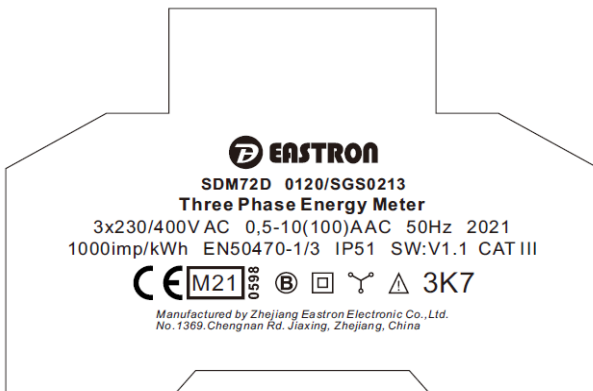
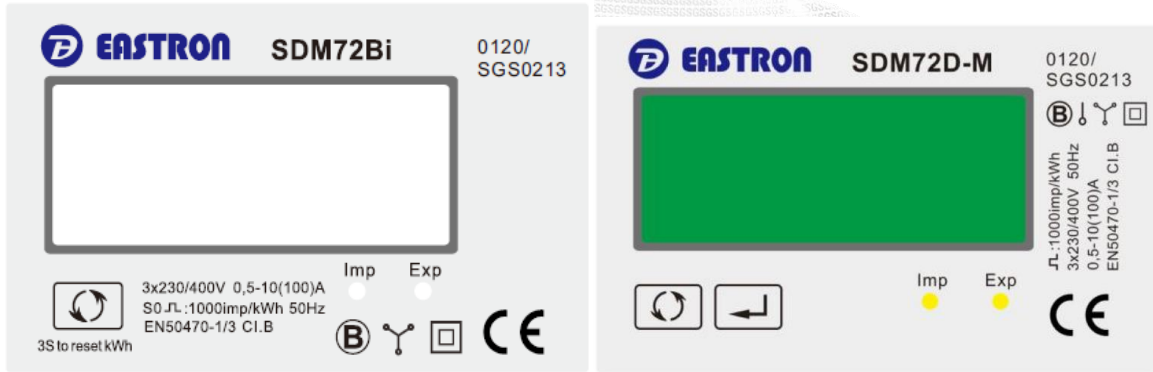
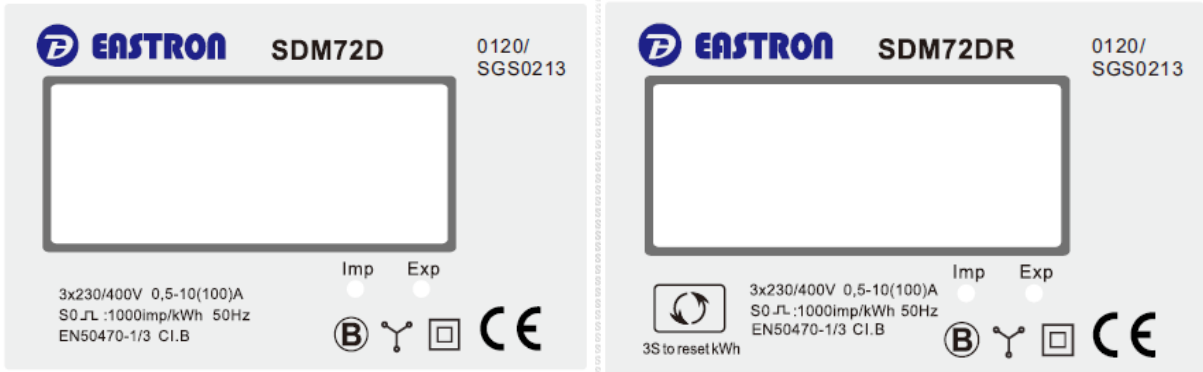
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3. Examples of Nameplates





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EASTRON
SDM72Bi 0120/SGS0213
Three Phase Energy Meter
3x230/400V AC 0.5-10(100)AAC 50Hz 2021
1000imp/kWh EN50470-1/3 IP51 SW:V1.1 CAT III
CE M21 0598 B □ Y △ 3K7
Manufactured by Zhejiang Eastron Electronic Co., Ltd.
No.1369.Chengnan Rd. Jiaxing, Zhejiang, China

EASTRON
SDM72Bi 0120/SGS0213
Three Phase Energy Meter
3x230/400V AC 0.5-10(100)AAC 50Hz 2021
1000imp/kWh EN50470-1/3 IP51 SW:V1.1 CAT III
CE M21 0598 B □ Y △ 3K6
Manufactured by Zhejiang Eastron Electronic Co., Ltd.
No.1369.Chengnan Rd. Jiaxing, Zhejiang, China

EASTRON
SDM72D-M-1 0120/SGS0213
Three Phase Energy Meter
3x230/400V AC 0.5-10(100)AAC 50Hz 2021
1000imp/kWh EN50470-1/3 IP51 SW:V1.3 CAT III
CE M21 0598 B □ Y △ 3K7
Manufactured by Zhejiang Eastron Electronic Co., Ltd.
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EASTRON
SDM72D-M-1 0120/SGS0213
Three Phase Energy Meter
3x230/400V AC 0.5-10(100)AAC 50Hz 2021
1000imp/kWh EN50470-1/3 IP51 SW:V1.3 CAT III
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Manufactured by Zhejiang Eastron Electronic Co., Ltd.
No.1369.Chengnan Rd. Jiaxing, Zhejiang, China

EASTRON
SDM72D-M-2 0120/SGS0213
Three Phase Energy Meter
3x230/400V AC 0.5-10(100)AAC 50Hz 2021
1000imp/kWh EN50470-1/3 IP51 SW:V1.3 CAT III
CE M21 0598 B □ Y △ 3K7
Manufactured by Zhejiang Eastron Electronic Co., Ltd.
No.1369.Chengnan Rd. Jiaxing, Zhejiang, China

EASTRON
SDM72D-M-2 0120/SGS0213
Three Phase Energy Meter
3x230/400V AC 0.5-10(100)AAC 50Hz 2021
1000imp/kWh EN50470-1/3 IP51 SW:V1.3 CAT III
CE M21 0598 B □ Y △ 3K6
Manufactured by Zhejiang Eastron Electronic Co., Ltd.
No.1369.Chengnan Rd. Jiaxing, Zhejiang, China

EASTRON
SDM72D-M-1 0120/SGS0213
Three Phase Energy Meter
3x230/400V AC 0.5-10(100)AAC 50Hz 2022
1000imp/kWh EN50470-1/3 IP51 SW:V1.3 CAT III
CE M22 0598 B □ Y △ 3K7
Manufactured by Zhejiang Eastron Electronic Co., Ltd.
No.1369.Chengnan Rd. Jiaxing, Zhejiang, China

EASTRON
SDM72D-M-1 0120/SGS0213
Three Phase Energy Meter
3x230/400V AC 0.5-10(100)AAC 50Hz 2022
1000imp/kWh EN50470-1/3 IP51 SW:V1.3 CAT III
CE M22 0598 B □ Y △ 3K6
Manufactured by Zhejiang Eastron Electronic Co., Ltd.
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EASTRON

SDM72D-M-2 0120/SGS0213

Three Phase Energy Meter

3x230/400V AC 0,5-10(100)AAC 50Hz 2022
1000imp/kWh EN50470-1/3 IP51 SW: V1.3 CAT III

3K6

Manufactured by Zhejiang Eastron Electronic Co., Ltd.
No. 1369 Chengnan Rd. Jiaxing, Zhejiang, China

EASTRON

SDM72D-M-2 0120/SGS0213

Three Phase Energy Meter

3x230/400V AC 0,5-10(100)AAC 50Hz 2022
1000imp/kWh EN50470-1/3 IP51 SW: V1.3 CAT III

3K7

Manufactured by Zhejiang Eastron Electronic Co., Ltd.
No. 1369 Chengnan Rd. Jiaxing, Zhejiang, China

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

1P2W Configuration

		Influence Factors for temperature, frequency and voltage							
Current	PF Cos	-40°C	-25°C	-10°C	5°C	30°C	40°C	55°C	70°C
Imin	1.0	0.10	0.11	0.11	0.07	0.08	0.12	0.17	0.21
Itr	1.0	0.07	0.10	0.10	0.06	0.05	0.09	0.15	0.19
10ltr	1.0	0.05	0.08	0.08	0.05	0.06	0.09	0.15	0.19
Imax	1.0	0.18	0.14	0.08	0.03	0.09	0.12	0.15	0.16
Itr	0.5ind	0.12	0.13	0.12	0.07	0.07	0.11	0.15	0.19
10ltr	0.5ind	0.05	0.08	0.08	0.05	0.07	0.10	0.15	0.18
Imax	0.5ind	0.11	0.07	0.02	0.07	0.17	0.20	0.22	0.22
Itr	0.8cap	0.12	0.14	0.14	0.09	0.03	0.07	0.12	0.16
10ltr	0.8cap	0.07	0.10	0.10	0.06	0.05	0.08	0.14	0.17
Imax	0.8cap	0.19	0.15	0.09	0.04	0.07	0.11	0.14	0.14



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3P4W Configuration

		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
I _{min}	1.0	0.08	0.32	0.24	0.15	0.12	0.15	0.26	0.70
I _{tr}	1.0	0.13	0.34	0.24	0.15	0.10	0.15	0.30	0.61
10I _{tr}	1.0	0.26	0.37	0.28	0.17	0.10	0.15	0.28	0.51
I _{max}	1.0	0.12	0.30	0.24	0.19	0.15	0.17	0.24	0.44
I _{tr}	0.5ind	0.26	0.51	0.45	0.37	0.30	0.30	0.36	0.59
10I _{tr}	0.5ind	0.34	0.40	0.32	0.25	0.18	0.22	0.32	0.43
I _{max}	0.5ind	0.45	0.66	0.62	0.58	0.52	0.51	0.50	0.40
I _{tr}	0.8cap	0.18	0.44	0.34	0.26	0.16	0.17	0.24	0.62
10I _{tr}	0.8cap	0.19	0.37	0.25	0.15	0.09	0.15	0.27	0.56
I _{max}	0.8cap	0.27	0.48	0.42	0.38	0.33	0.31	0.32	0.44
L1									
I _{tr}	1.0	0.19	0.37	0.33	0.29	0.26	0.28	0.38	0.93
10I _{tr}	1.0	0.08	0.30	0.21	0.15	0.10	0.17	0.29	1.09
I _{max}	1.0	0.29	0.23	0.18	0.17	0.11	0.14	0.23	1.09
I _{tr}	0.5ind	0.15	0.44	0.38	0.35	0.34	0.38	0.44	1.16
10I _{tr}	0.5ind	0.19	0.31	0.24	0.22	0.19	0.26	0.38	1.25
I _{max}	0.5ind	0.31	0.29	0.26	0.25	0.22	0.24	0.34	1.08
L2									
I _{tr}	1.0	0.21	0.61	0.61	0.61	0.61	0.61	0.61	0.68
10I _{tr}	1.0	0.11	0.19	0.19	0.19	0.19	0.19	0.20	0.49
I _{max}	1.0	0.30	0.16	0.14	0.12	0.12	0.12	0.12	0.50
I _{tr}	0.5ind	0.53	0.76	0.77	0.77	0.76	0.77	0.77	1.00
10I _{tr}	0.5ind	0.48	0.31	0.30	0.30	0.30	0.31	0.32	0.97
I _{max}	0.5ind	0.66	0.30	0.28	0.27	0.27	0.27	0.27	0.85
L3									
I _{tr}	1.0	0.46	0.80	0.52	0.38	0.27	0.37	0.54	0.17
10I _{tr}	1.0	0.70	0.86	0.64	0.50	0.42	0.48	0.63	0.14
I _{max}	1.0	0.71	1.09	0.97	0.90	0.87	0.89	0.95	0.68
I _{tr}	0.5ind	1.40	1.04	0.92	0.82	0.79	0.82	0.92	0.93
10I _{tr}	0.5ind	1.58	1.03	0.88	0.78	0.74	0.78	0.88	1.03
I _{max}	0.5ind	1.24	1.02	0.92	0.92	0.83	0.87	0.94	1.08



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5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
SDM72D	3x230/400V, 0.5-10(100)A or 0.5-10(80)A 1000imp/kWh or 100imp/kWh Shows only total active energy, without resettable kWh
SDM72DR	3x230/400V, 0.5-10(100)A or 0.5-10(80)A 1000imp/kWh or 100imp/kWh Shows total active energy, resettable kWh, total active power
SDM72D-M-1	230V or 3x230/400V, 0.5-10(100)A or 0.5-10(80)A 1000imp/kWh or 100imp/kWh Shows total active energy, total active power, import and export energy, resettable import and export energy. RS485 communication.
SDM72D-M-2	230V or 3x230/400V, 0.5-10(100)A or 0.5-10(80)A 1000imp/kWh or 100imp/kWh Shows total active energy, total active power, import and export energy, resettable import and export energy, voltage, current, power factor, frequency and demand values. RS485 communication.
SDM72Bi	3x230/400V, 0.5-10(100)A or 0.5-10(80)A 1000imp/kWh or 100imp/kWh Shows total active energy, total active power, import and export energy, resettable import and export energy
SDM72D	3x230/400V, 0.5-10(100)A or 0.5-10(80)A 1000imp/kWh or 100imp/kWh Shows only total active energy, without resettable kWh

Modifications to the meter(s) described according to approval No. **0120/SGS0213** 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	21/04/2016	Initial Issue
2	18/07/2016	Revised BOM numbers
3	26/03/2018	Model SDM72D-M added to approval
4	07/05/2019	Additional variants 0.5-10(80)A added to approval
5	07/08/2019	Meter constant 100imp/kWh variant added to approval
6	08/04/2021	Replace meter variant SDM72D-M with SDM72D-M-1 & SDM72D-M-2 Update. BOM number and Software number for these two variants. Temperature range updated to -40°C to +70°C. Change of notified body reference.
1	12/07/2022	Issue 1 for SGS Fimko NB 0598 The original approval certificate issued 21/04/2016 The modifications listed above were made prior to the transfer to SGS Fimko 1P2W wiring configuration option for SDM72-M-1 and SDM72-M-2
2	27/04/2023	Minor firmware change for serial output. Software version V1.3 remains the same. New CRC number 0388

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END OF CERTIFICATE