



EU Type Examination Certificate Number: **0120/SGS0392**

# Jiangsu Sfere Electric Co.,Ltd.

No. 1 Dongding Road  
Jiangyin  
Jiangsu  
China

Instrument Identification:  
**DTS1946-4M, DTSF1946-4M**

**Multi-phase, Active Import/Export kWh, Direct Connected, Smart, Electricity Meter**

Instrument Traceable Number  
**0120/SGS0392**

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 for 10 years from 27<sup>th</sup> March 2020 until 27<sup>th</sup> March 2030  
Issue 1

Certification is based on report number(s) SHES 180901038101 dated 27<sup>th</sup> March 2020, EMA27599/1/TR50579 dated 23<sup>rd</sup> March 2020  
EMA275999/1

Authorised Signature


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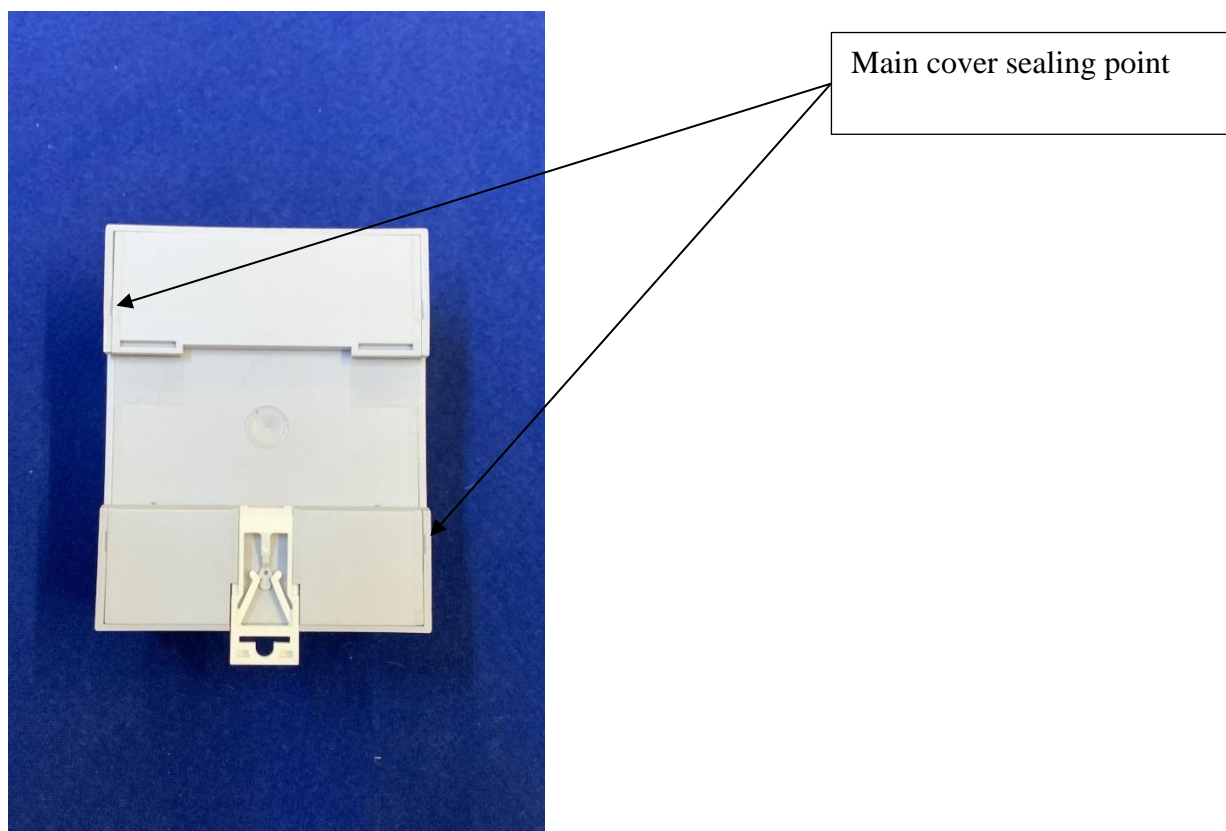
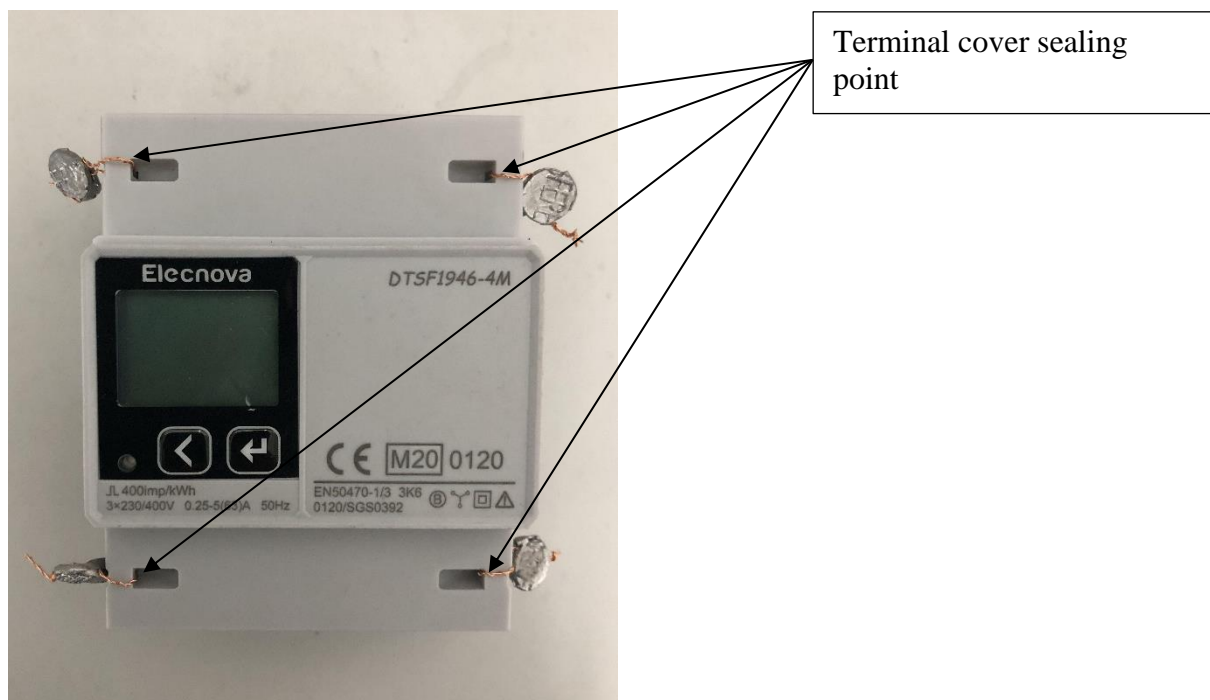
	EU-Type Examination Certificate Number:	
	<b>0120/SGS0392</b>	
	Issue Number: 1	Dated: 27 <sup>th</sup> March 2020


## 1. Technical Data

<b>Manufacturer</b>	Jiangsu Sferic Electric Co., Ltd.
<b>Meter Type</b>	DTSF1946-4M DTS1946-4M
<b>Voltage Rating (<math>U_n</math>)</b>	3*230/400V
<b>Current Rating (<math>I_{min} - I_{ref} (I_{max})</math>)</b>	0.25-5(63)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
<b>Temperature Range</b>	-25°C to +55°C
<b>Software/ Firmware Version No</b>	DTS4.1010.
<b>CRC Checksum</b>	0x1E450267
<b>Identification Location</b>	LCD
<b>Bill Of Materials Number</b>	DTS1946-4M: 1KY010010; DTSF1946-4M: 1KY010000.
<b>IP Rating</b>	IP51
<b>Insulation Protective Class</b>	Class II
<b>LED Pulse Constant</b>	400 imp/ $kWh$
<b>Impulse Voltage Rating</b>	6kV
<b>AC Voltage Rating</b>	4kV
<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>Terminal Arrangement(s)</b>	DIN
<b>Location of Manufacturers Address</b>	Associated Documents

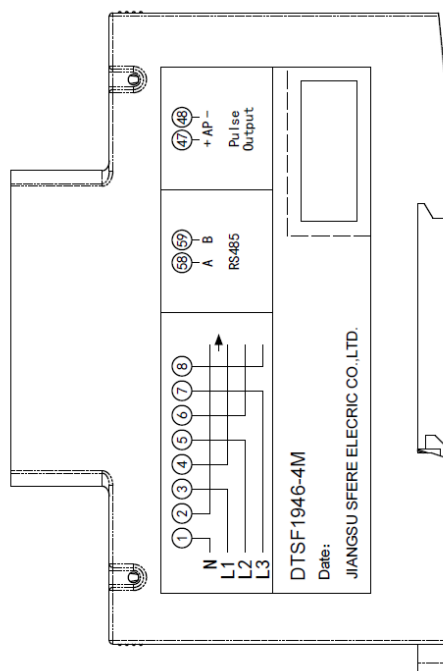
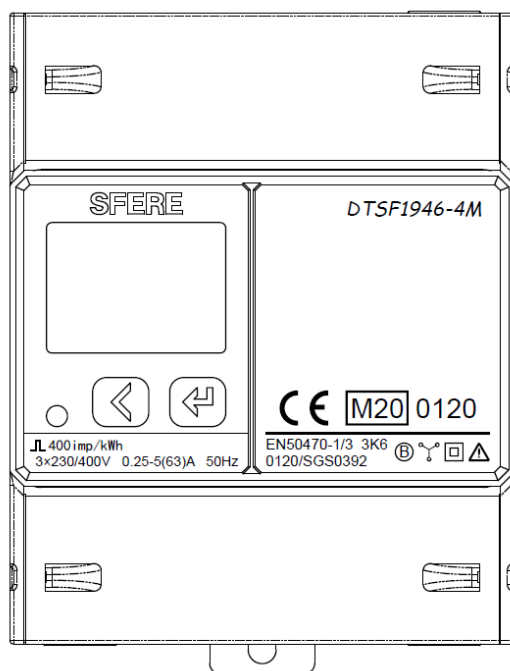
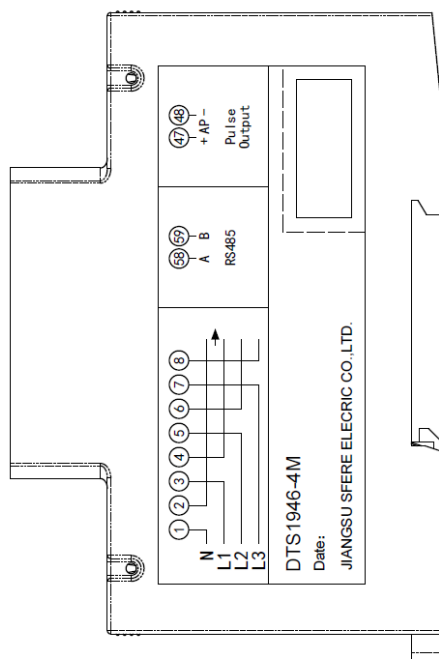
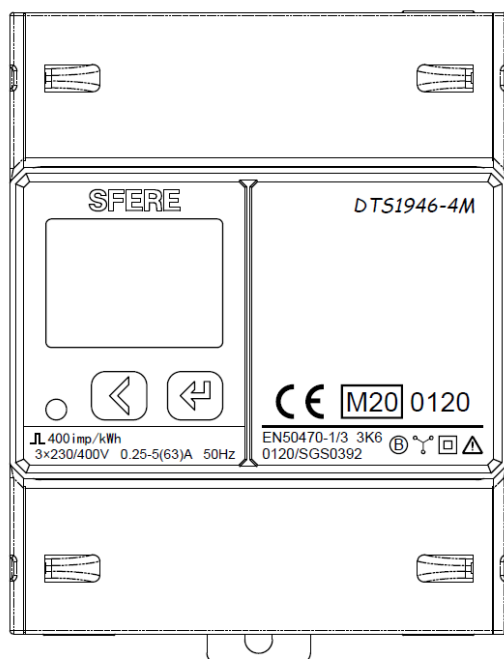
	EU-Type Examination Certificate Number:	
	<b>0120/SGS0392</b>	
	Issue Number: 1	Dated: 27 <sup>th</sup> March 2020


## 2. Photograph of Meter and Sealing Plan

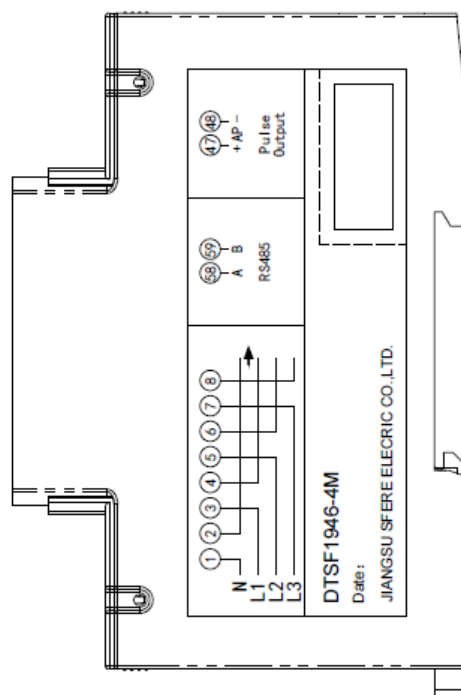
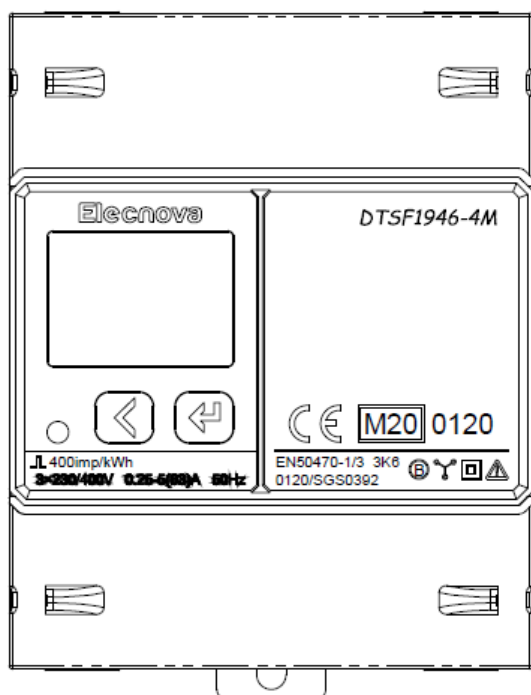
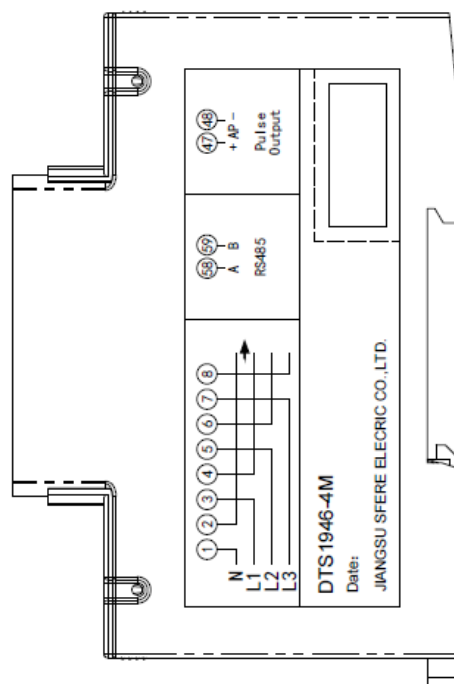
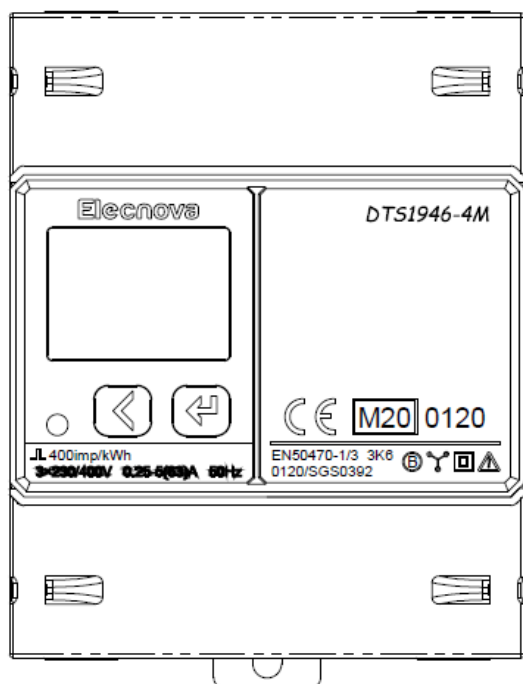



	EU-Type Examination Certificate Number:	
	<b>0120/SGS0392</b>	
	Issue Number: 1	Dated: 27 <sup>th</sup> March 2020

### 3. Examples of Nameplates



	EU-Type Examination Certificate Number:	
	<b>0120/SGS0392</b>	
	Issue Number: 1	Dated: 27 <sup>th</sup> March 2020



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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

		Influence Factors for Temperature, Voltage & Frequency					
Current	PF Cos	-25°C	-10°C	5°C	30°C	40°C	55°C
I <sub>min</sub>	1.0	0.14	0.14	0.14	0.14	0.14	0.14
I <sub>tr</sub>	1.0	0.08	0.08	0.08	0.08	0.08	0.08
10I <sub>tr</sub>	1.0	0.02	0.02	0.02	0.02	0.02	0.02
I <sub>max</sub>	1.0	0.03	0.03	0.03	0.03	0.03	0.03
I <sub>tr</sub>	0.5ind	0.14	0.14	0.14	0.14	0.14	0.14
10I <sub>tr</sub>	0.5ind	0.04	0.04	0.04	0.04	0.04	0.04
I <sub>max</sub>	0.5ind	0.14	0.20	0.27	0.34	0.40	0.47
I <sub>tr</sub>	0.8cap	0.09	0.09	0.09	0.09	0.09	0.09
10I <sub>tr</sub>	0.8cap	0.07	0.10	0.14	0.17	0.20	0.24
I <sub>max</sub>	0.8cap	0.13	0.15	0.17	0.18	0.19	0.20


	EU-Type Examination Certificate Number:	
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## 5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
DTSF1946-4M	3*230/400V, 0.25–5(63)A, Active Import/Export kWh, Multi-rate
DTS1946-4M	3*230/400V, 0.25–5(63)A, Active Import/Export kWh, Multi-rate

Modifications to the meter(s) described according to approval No.**0120/SGS0392** 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	27/03/2020	Initial Issue

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**END OF CERTIFICATE**