



EU Type Examination Certificate Number: 0120/SGS0753

F&F Filipowski sp.k.

ul. Konstytucyjna 79/81, 95-200 Pabianice,
Poland.

Instrument Identification:

LE-03MQ-CT-2T v.2, LE-03MQ-CT-MT v.2, LE-03MQ-CT v.2 LE-03MB-CT-2T v.2,
LE-03MB-CT v.2, LE-03MQ-CT-E v.2, LE-03MQ-CT-DI v.2, LE-03LR-CT v.2,
LE-03ETH-CT

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

Instrument Traceable Number

0120/SGS0753

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 13th June 2034

Issue 1

Certification is based on report number(s): SHES240100078801 Dated 7th June 2024, SHES240100078802 Dated 7th June 2024
SHES240100078801 issue 2 Dated 11th July 2024, SHES240100078802 issue 2 Dated 11th July 2024
EMA325963/1

Authorised Signature

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	EU-Type Examination Certificate Number:	
	0120/SGS0753	
	Issue Number: 1	Dated: 20 th September 2024

1. Technical Data

Manufacturer	F&F Filipowski sp.k.
Meter Type(s)	LE-03MQ-CT-2T v.2, LE- 03MQ-CT-MT v.2, LE-03MQ-CT v.2, LE-03MB-CT-2T v.2 LE-03MB-CT v.2, LE-03MQ-CT-E v.2 LE-03MQ-CT-DI v.2, LE-03LR-CT v.2 LE-03ETH-CT
Voltage Rating (<i>Un</i>)	3x230/400V
Current Rating (<i>I_{min}</i> – <i>I_{ref}</i> (<i>I_{max}</i>))	0.05-5(6)A
Frequency (<i>Fn</i>)	50/60Hz
Active Accuracy Class (<i>kWh</i>)	A or B or C (kWh)
Type of circuit	1p2w, 3p3w, 3p4w
Temperature Range	-40°C to +70°C
Software/ Firmware Version No's	V01.04
CRC Checksum No's	LE-03MQ-CT-2T v.2: 84EDA549 LE- 03MQ-CT-MT v.2: 1A47DD5E LE-03MQ-CT v.2: 84EDA549 LE-03MB-CT-2T v.2: 0EFC9E7E LE-03MB-CT v.2: 14BF1CC5 LE-03MQ-CT-E v.2: BDDC493C LE-03MQ-CT-DI v.2: 0AC5AA6F LE-03LR-CT v.2: 3444F9A5 LE-03ETH-CT: EED7CC01
Identification Location	Nameplate
Bill of Materials No's	LE-03MQ-CT-2T v.2: DH-JS-230051 V1.0 LE- 03MQ-CT-MT v.2: DH-JS-230061 V1.0 LE-03MQ-CT v.2: DH-JS-230062 V1.0 LE-03MB-CT-2T v.2: DH-JS-230063 V1.0 LE-03MB-CT v.2: DH-JS-230064 V1.0 LE-03MQ-CT-E v.2: DH-JS-230065 V1.0 LE-03MQ-CT-DI v.2: DH-JS-230066 V1.0 LE-03LR-CT v.2: DH-JS-230067 V1.0 LE-03ETH-CT : DH-JS-230068V1.0
IP Rating	IP51 Front Display. Meter body not rated. Must be installed in a suitable IP rated enclosure
Insulation Protective Class	Class II
LED Pulse Constant	3200imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
	Main cover laser welded.



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0120/SGS0753

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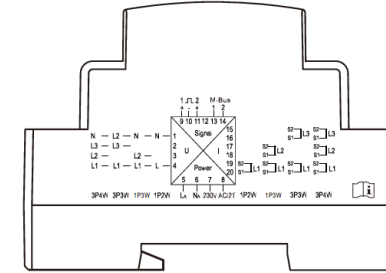
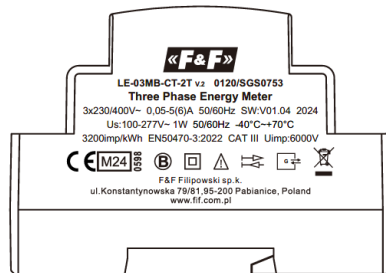
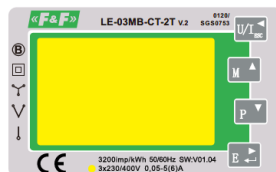
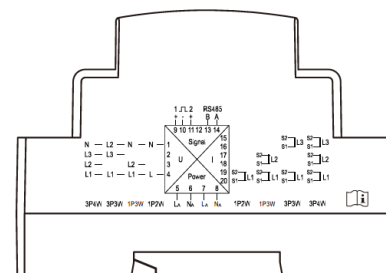
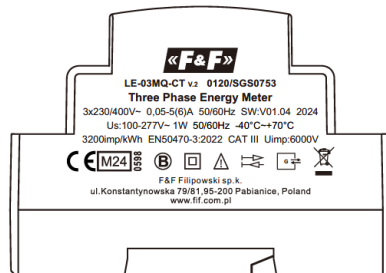
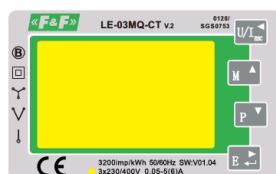
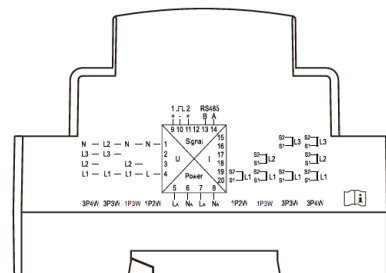
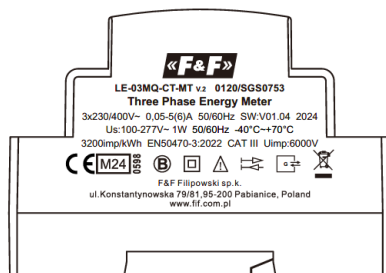
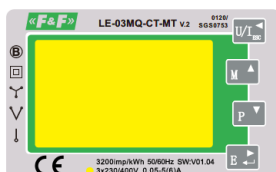
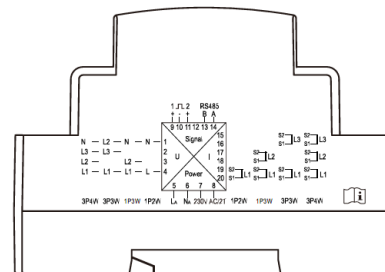
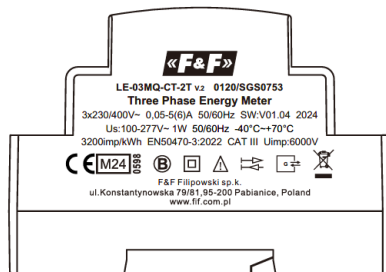
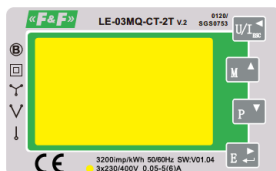
Main Cover Sealing Type	Sealed with tamper proof security label
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD

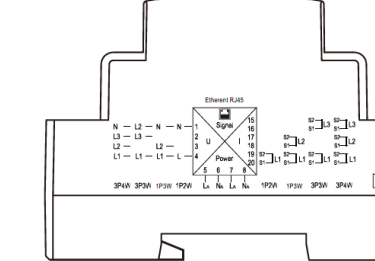
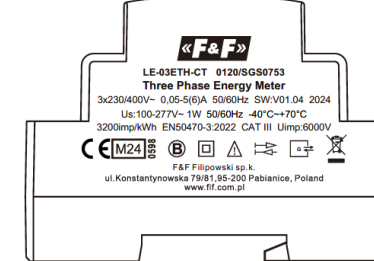
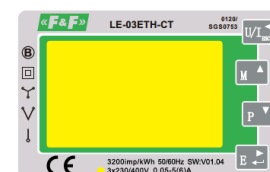
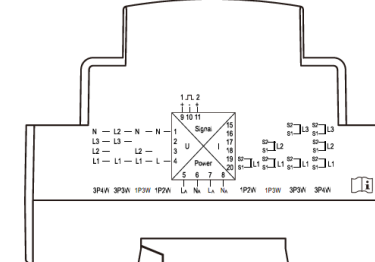
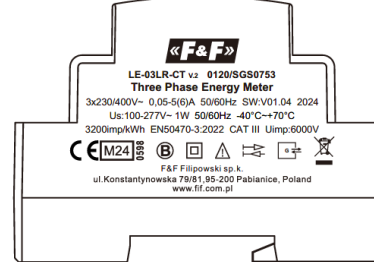
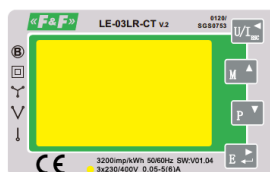
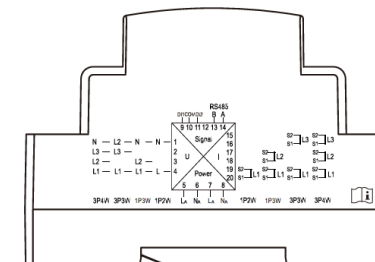
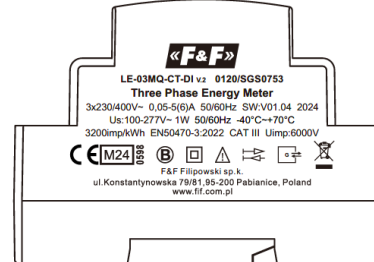
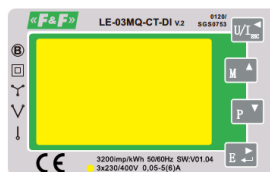
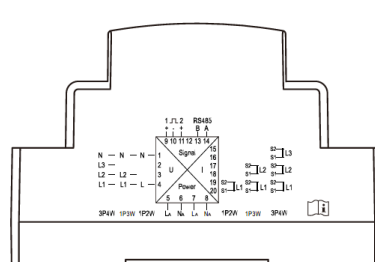
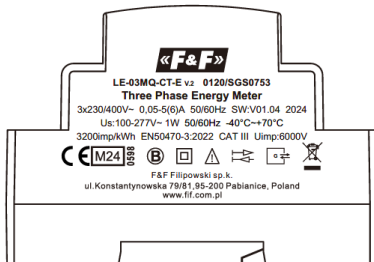
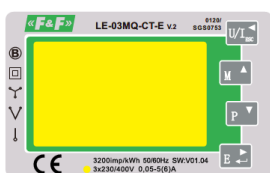
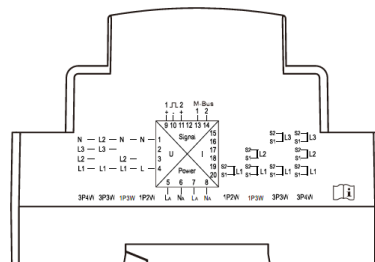
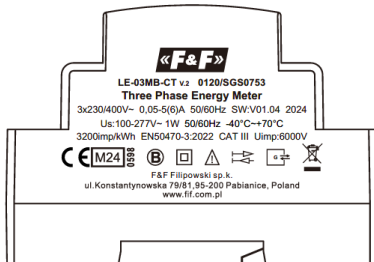
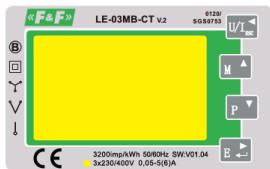
2. Photograph of Meter and Sealing Plan



Terminal Cover Sealing Points

3. Examples of Nameplates







EU-Type Examination Certificate Number:

0120/SGS0753

Issue Number: 1

Dated: 20th September 2024**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:-

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

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
 $\delta e(f, I, \cos\varphi)$ = Additional error due to variation of the frequency at the same load



EU-Type Examination Certificate Number:

0120/SGS0753

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		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
I _{min}	1.0	0.45	0.38	0.13	0.08	0.09	0.10	0.21	0.43
I _{tr}	1.0	0.48	0.39	0.24	0.13	0.13	0.17	0.28	0.45
10I _{tr}	1.0	0.39	0.31	0.14	0.08	0.08	0.09	0.18	0.34
I _{max}	1.0	0.37	0.36	0.20	0.08	0.09	0.08	0.16	0.31
I _{tr}	0.5ind	0.30	0.19	0.09	0.12	0.10	0.12	0.28	0.55
10I _{tr}	0.5ind	0.35	0.26	0.11	0.04	0.04	0.08	0.23	0.44
I _{max}	0.5ind	0.30	0.27	0.15	0.15	0.16	0.13	0.18	0.35
I _{tr}	0.8cap	0.67	0.68	0.74	0.80	0.82	0.79	0.75	0.70
10I _{tr}	0.8cap	0.43	0.34	0.16	0.05	0.03	0.07	0.16	0.33
I _{max}	0.8cap	0.41	0.37	0.21	0.06	0.04	0.06	0.16	0.31
L1									0.00
I _{tr}	1.0	0.41	0.23	0.08	0.06	0.05	0.09	0.21	0.43
10I _{tr}	1.0	0.39	0.20	0.08	0.07	0.07	0.09	0.21	0.42
I _{max}	1.0	0.38	0.22	0.08	0.04	0.04	0.09	0.17	0.43
I _{tr}	0.5ind	0.40	0.24	0.08	0.06	0.07	0.15	0.31	0.60
10I _{tr}	0.5ind	0.32	0.16	0.13	0.16	0.14	0.13	0.21	0.44
I _{max}	0.5ind	0.28	0.15	0.12	0.15	0.14	0.12	0.17	0.41
L2									
I _{tr}	1.0	0.60	0.39	0.24	0.17	0.18	0.23	0.33	0.51
10I _{tr}	1.0	0.44	0.25	0.13	0.13	0.13	0.12	0.19	0.35
I _{max}	1.0	0.44	0.26	0.13	0.12	0.12	0.11	0.18	0.35
I _{tr}	0.5ind	0.36	0.17	0.08	0.09	0.08	0.14	0.30	0.58
10I _{tr}	0.5ind	0.40	0.32	0.33	0.36	0.35	0.32	0.32	0.43
I _{max}	0.5ind	0.41	0.35	0.37	0.41	0.40	0.36	0.35	0.43
L3									
I _{tr}	1.0	0.48	0.26	0.10	0.05	0.05	0.07	0.19	0.37
10I _{tr}	1.0	0.49	0.27	0.11	0.06	0.06	0.07	0.16	0.34
I _{max}	1.0	0.50	0.27	0.10	0.03	0.03	0.06	0.16	0.33
I _{tr}	0.5ind	0.42	0.22	0.11	0.09	0.14	0.22	0.45	0.75
10I _{tr}	0.5ind	0.45	0.24	0.11	0.06	0.07	0.13	0.30	0.51
I _{max}	0.5ind	0.46	0.25	0.11	0.05	0.04	0.13	0.27	0.49



EU-Type Examination Certificate Number:

0120/SGS0753

Issue Number: 1

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5. Annex of Variants

Product Variant Identification Details:

Model No	Measurement	Output	Tariff
LE-03MQ-CT-2T v.2	Multi-parameters: Voltage(V), frequency(Hz),Current(A), Power(kW/kVA/kVAR), import, export and total energy(kWh/kVArh) Maximum demand of current and power.	Pulse & RS485	2 Tariffs (Dual source)
LE-03MQ-CT-MT v.2		Pulse & RS485	4 Tariffs
LE-03MQ-CT v.2		Pulse & RS485	Single Tariffs
LE-03MB-CT-2T v.2		Mbus	2 Tariffs (Dual source)
LE-03MB-CT v.2		Mbus	Single Tariffs
LE-03MQ-CT-E v.2		Pulse & RS485	Single Tariffs
LE-03MQ-CT-DI v.2		RS485	Single Tariffs
LE-03LR-CT v.2		Pulse	Single Tariffs
LE-03ETH-CT		Ethernet TCP	Single Tariffs

Modifications to the meter(s) described according to approval No.**0120/SGS0753** 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	20/09/2024	Initial Issue

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