



EU Type Examination Certificate Number: **0120/SGS0379**

Eetarp Engineering Pte. Ltd

11 Woodlands Close
#08-13 Woodlands 11
Singapore 737853

Instrument Identification:
GEM630-CT Series

Poly Phase, Active Import/Export, Indoor, Multi-Function, Transformer Operated, Electricity Meter

Instrument Traceable Number
0120/SGS0379

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 9th March 2024
Issue 1

Certification is based on report number(s) EMA174647/1/MID dated 30th January 2014
EMA257887

Authorised Signature


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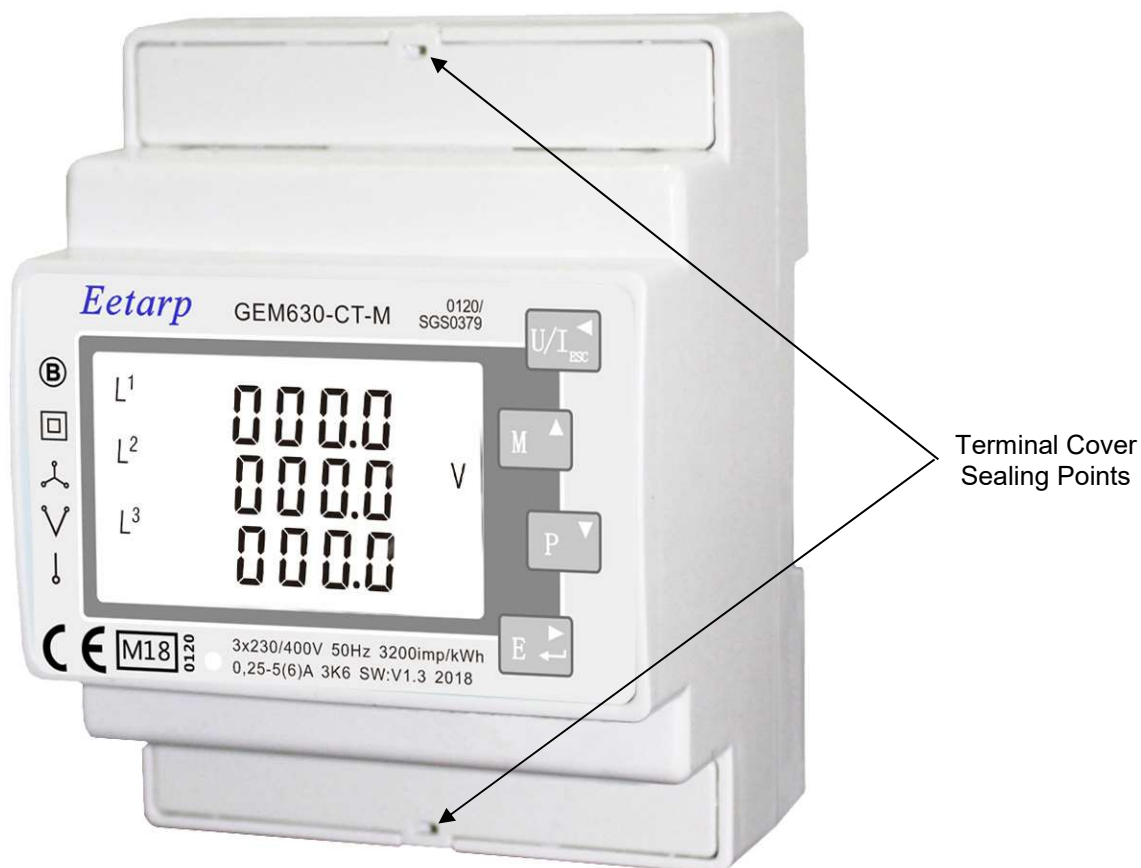
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	Issue Number: 1	Dated: 24 th August 2018


1. Technical Data

Manufacturer	Eetarp Engineering Pte. Ltd
Meter Type	GEM630-CT-M, GEM630-CT-MB, GEM630-CT
Voltage Rating (U_n)	3x230/400V
Current Rating (I_{min} – I_{ref} (I_{max}))	0.25-5(6)A
Frequency (F_n)	50Hz
Active Accuracy Class (kWh)	A or B (kWh)
Type of circuit	3p4w, 3p3w, 1p2w
Temperature Range	-25°C to +55°C
Software/ Firmware Version No	GEM630-CT-M: V1.3 GEM630-CT: V1.4 GEM630-CT-MB: V1.5
CRC Checksum	GEM630-CT-M: 0x0000D5C8 GEM630-CT: 0x0000D279 GEM630-CT-MB: 0x00001516
Identification Location	Nameplate
Bill Of Materials Number	GEM630-CT-M: DH-JS-150046-1.4 GEM630-CT-MB: DH-JS-160008-1.4 GEM630-CT: DH-JS-160004-1.4
IP Rating	IP51
Insulation Protective Class	Class II
LED Pulse Constant	3200imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	2 x Wire & Crimp
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	Side of meter

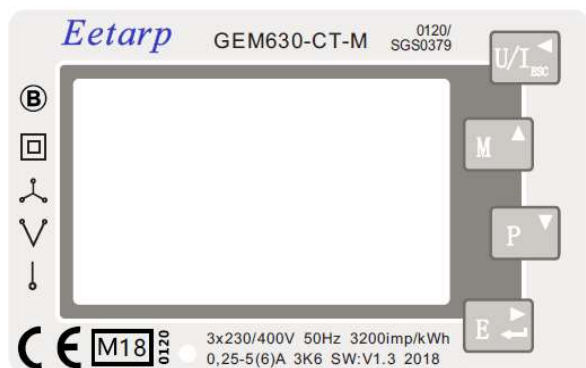
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2. Photograph of Meter and Sealing Plan



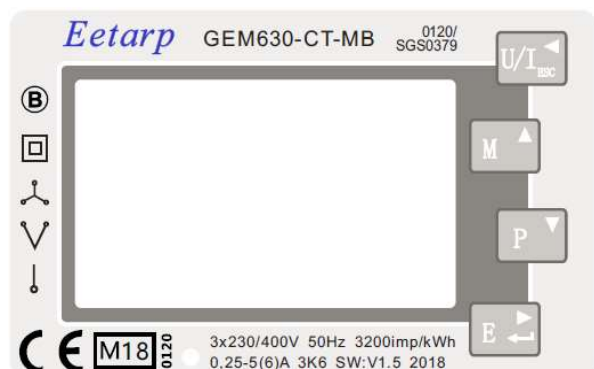
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3. Examples of Nameplates



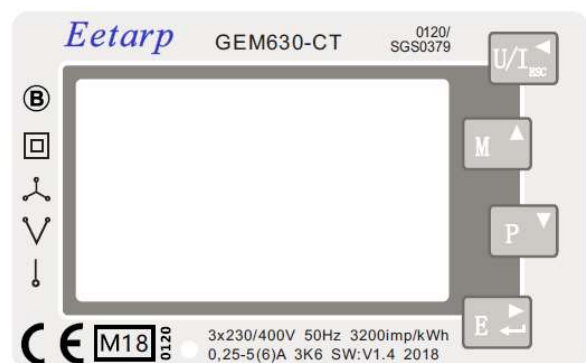
Model: GEM630-CT-M
Art. Number: GEMXMC532XX1
Measurement range: 1/5A CT connection
Port: RS485 Protocol: Modbus
Accuracy: MID Class B

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Model: GEM630-CT-MB
Art. Number: GEMXMM532XX1
Measurement range: 1/5A CT connection
Port: M-BUS Protocol: M-BUS
Accuracy: MID Class B

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Model: GEM630-CT
Art. Number: GEMXMC532221
Measurement range: 1/5A CT connection
2 Tariff Port: RS485 Protocol: Modbus
Accuracy: MID Class B

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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

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		Influence Factors for Temperature. Frequency & Voltage					
Current	PF Cos	-25°C	-10°C	5°C	30°C	40°C	55°C
I _{min}	1.0	0.39	0.30	0.71	0.16	0.25	0.39
I _{tr}	1.0	0.33	0.27	0.28	0.18	0.25	0.47
10I _{tr}	1.0	0.35	0.31	0.24	0.22	0.29	0.49
I _{max}	1.0	0.36	0.31	0.25	0.21	0.28	0.47
I _{tr}	0.5ind	0.26	0.25	0.36	0.16	0.23	0.44
10I _{tr}	0.5ind	0.38	0.34	0.29	0.27	0.34	0.52
I _{max}	0.5ind	0.42	0.38	0.32	0.30	0.36	0.52
I _{tr}	0.8cap	0.31	0.42	0.43	0.32	0.37	0.50
10I _{tr}	0.8cap	0.32	0.27	0.21	0.17	0.26	0.45
I _{max}	0.8cap	0.34	0.28	0.21	0.15	0.24	0.43
L1							
I _{tr}	1.0	0.37	0.39	0.44	0.14	0.28	0.35
10I _{tr}	1.0	0.34	0.30	0.24	0.20	0.27	0.47
I _{max}	1.0	0.33	0.30	0.23	0.21	0.28	0.47
I _{tr}	0.5ind	0.41	0.56	0.96	0.14	0.15	0.16
10I _{tr}	0.5ind	0.49	0.46	0.42	0.38	0.43	0.62
I _{max}	0.5ind	0.49	0.46	0.42	0.39	0.44	0.60
L2							
I _{tr}	1.0	0.25	0.20	0.12	0.18	0.31	0.51
10I _{tr}	1.0	0.38	0.32	0.23	0.19	0.28	0.45
I _{max}	1.0	0.38	0.32	0.23	0.21	0.28	0.47
I _{tr}	0.5ind	0.12	0.12	0.13	0.25	0.38	0.59
10I _{tr}	0.5ind	0.36	0.33	0.25	0.25	0.32	0.49
I _{max}	0.5ind	0.39	0.35	0.28	0.27	0.34	0.49
L3							
I _{tr}	1.0	0.32	0.27	0.21	0.19	0.27	0.46
10I _{tr}	1.0	0.32	0.28	0.22	0.21	0.30	0.50
I _{max}	1.0	0.33	0.30	0.23	0.22	0.30	0.50
I _{tr}	0.5ind	0.32	0.32	0.24	0.20	0.29	0.53
10I _{tr}	0.5ind	0.34	0.29	0.23	0.23	0.33	0.54
I _{max}	0.5ind	0.35	0.31	0.25	0.13	0.33	0.53


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5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
GEM630-CT-M	0.25-5(6)A – Polyphase, Active Import/Export kWh, Multifunction, Transformer Operated (Terminal 7 and 8 used as power output for next meter in daisy connection)
GEM630-CT	0.25-5(6)A – Polyphase, Active Import/Export kWh, Multifunction, Transformer Operated (Terminal 7 and 8 is used as signal input for two tariff shifting)
GEM630-CT-MB	0.25-5(6)A – Polyphase, Active Import/Export kWh, Multifunction, Transformer Operated, Mbus communication

Modifications to the meter(s) described according to approval No.**0120/SGS0379** 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	24/08/2018	Initial Issue

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END OF CERTIFICATE