



EU Type Examination Certificate Number: **0120/SGS0416**

Selec Controls Pvt Limited

EL-27/1, Electronic Zone,
TTC Industrial Area, MIDC, Mahape,
Navi Mumbai-400 710, Maharashtra,
India

Instrument Identification:
EM2M-1P-*-100A-MID

Single Phase, Active Import/Export kWh, DIN Rail, Electricity Meter

Instrument Traceable Number
0120/SGS0416

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 17th June 2028
Issue 1

Certification is based on report number(s) EMA252624/1 dated 15th June 2018
EMA252624/1/TR50579 15th June 2018
EMA265549

Authorised Signature


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	Issue Number: 1	Dated: 29 th March 2019


1. Technical Data

Manufacturer	Selec Controls Pvt Limited	
Meter Type's	EM2M-1P-C-100A-MID and EM2M-1P-MB-100A-MID	
Voltage Rating (U_n)	230V	
Current Rating ($I_{min} - I_{ref} (I_{max})$)	0.5-10(100)A,	
Frequency (F_n)	50Hz	
Active Accuracy Class (kWh)	B (kWh)	
Type of circuit	1p2w	
Temperature Range	-25°C to +55°C	
	EM2M-1P-C-100A-MID	EM2M-1P-MB-100A-MID
Software/ Firmware Version No's	V1.01 & V1.02	V1.01
CRC Checksum No's	V1.01: 36342 V1.02: 12988	V.01: 29022
Identification Location	LCD	LCD
Bill Of Materials No's	EM2M-1P-C-100A-MID-RoHS-RAYLEIGH-CN209	
IP Rating	Meter to be installed in a suitable IP rated enclosure as described in installation manual	
Insulation Protective Class	Class II	
LED Pulse Constant	1000imp/kWh	
Impulse Voltage Rating	6kV	
AC Voltage Rating	4kV	
Main Cover Sealing Type	Self-destructive label across the joint between base and side of case	
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	Nameplate & Documentation	

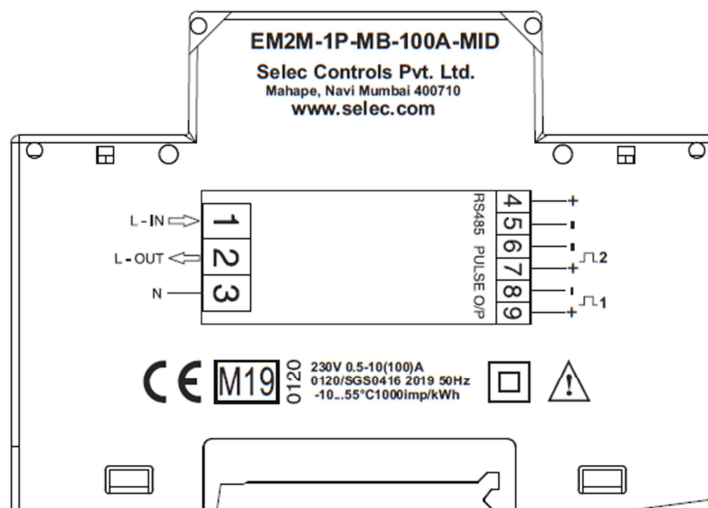
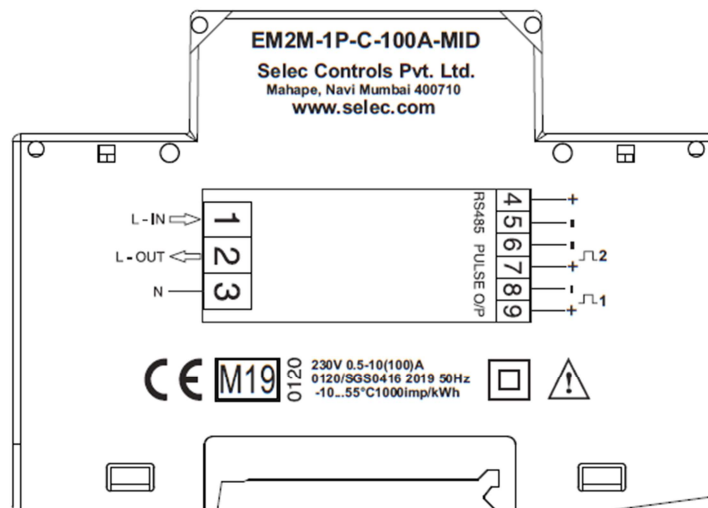
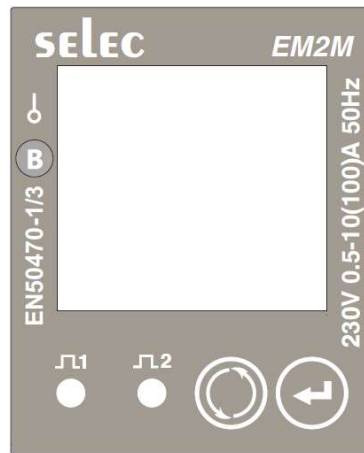
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2. Photograph of Meter and Sealing Plan



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3. Examples of Nameplates & Markings



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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. Frequency & Voltage					
Current	PF Cos	-25°C	-10°C	5°C	30°C	40°C	55°C
I _{min}	1.0	0.64	0.48	0.18	0.18	0.21	0.23
I _{tr}	1.0	0.44	0.29	0.21	0.13	0.17	0.28
10I _{tr}	1.0	0.51	0.30	0.17	0.10	0.18	0.30
I _{max}	1.0	0.48	0.24	0.22	0.10	0.10	0.18
I _{tr}	0.5ind	0.39	0.43	0.31	0.24	0.26	0.38
10I _{tr}	0.5ind	0.55	0.38	0.20	0.03	0.18	0.28
I _{max}	0.5ind	0.54	0.42	0.30	0.12	0.06	0.09
I _{tr}	0.8cap	0.53	0.46	0.24	0.16	0.16	0.25
10I _{tr}	0.8cap	0.50	0.33	0.16	0.11	0.17	0.30
I _{max}	0.8cap	0.45	0.33	0.19	0.03	0.05	0.17


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5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
EM2M-1P-C-100A-MID	Single Phase, Active Import/Export (kWh), Single Tariff, Two pulse outputs, RS485 Modbus communication
EM2M-1P-MB-100A-MID	Single Phase, Active Import/Export (kWh), Single Tariff, Two pulse outputs, RS485 Mbus communication

Modifications to the meter(s) described according to approval No.**0120/SGS0416** 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	29/03/2019	Initial Issue

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END OF CERTIFICATE