



EU Type Examination Certificate Number: **0120/SGS0412**

## **Selec Controls Pvt Limited**

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

Instrument Identification:  
**MRJ385-C-G-MID**

**Active Import/Export (kWh), Transformer Operated Electricity Meter Self-Supplied not with  
Auxiliary Power Supply**

Instrument Traceable Number  
**0120/SGS0412**

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 3<sup>rd</sup> September 2027  
Issue 2

Certification is based on report number(s) TCM 221/17 – 5466  
EMA265549

Authorised Signature


SGS United Kingdom Limited, Notified Body 0120  
Unit 202B Worle Parkway, Weston-super-Mare, BS22 6WA, UK  
t +44 (0)1934 522917 f +44 (0)1934 522137 [www.sgs.com](http://www.sgs.com)

Contact Address  
SGS United Kingdom Limited, Units 12A & 12B, South Industrial Estate, Bowburn, Durham, DH6 5AD, UK  
t +44 (0)191 377 2000 f +44 (0)191 377 2020 [www.sgs.com](http://www.sgs.com)

	EU-Type Examination Certificate Number:	
	<b>0120/SGS0412</b>	
	Issue Number: 2	Dated: 7 <sup>th</sup> April 2020


## 1. Technical Data

<b>Manufacturer</b>	Selec Controls Pvt Limited
<b>Meter Type</b>	MRJ385-C-G-MID
<b>Voltage Rating (<math>U_n</math>)</b>	3x100/173V, 3x240/415V
<b>Current Rating (<math>I_{min} - I_{ref} (I_{max})</math>)</b>	0.01-1(1.2)A
<b>Frequency (<math>F_n</math>)</b>	50Hz
<b>Active Accuracy Class (kWh)</b>	B (kWh)
<b>Type of circuit</b>	3p4w
<b>Temperature Range</b>	-10°C to +55°C
<b>Software/ Firmware Version No</b>	V1.00
<b>CRC Checksum</b>	26232
<b>Identification Location</b>	LCD
<b>Bill Of Materials Number</b>	DDCAD RIF300-G-C
<b>IP Rating</b>	IP54
<b>Insulation Protective Class</b>	Class II
<b>LED Pulse Constant</b>	100imp/kWh
<b>Impulse Voltage Rating</b>	6kV
<b>AC Voltage Rating</b>	4kV
<b>Main Cover Sealing Type</b>	4 clips, one of which is covered by a self-destructive label. A self destructive label is also present across the joint between base and side of case.
<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>	Nameplate and Associated Documents

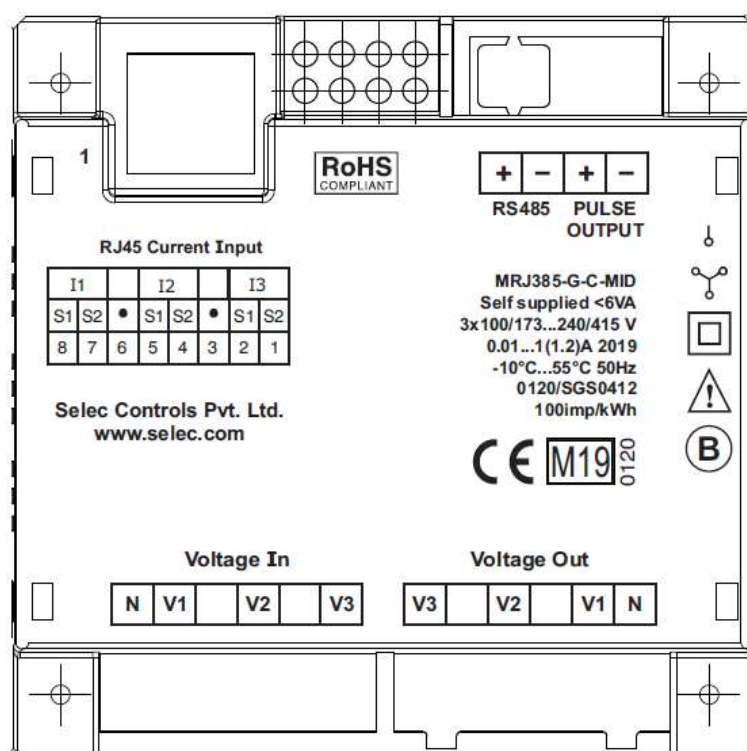
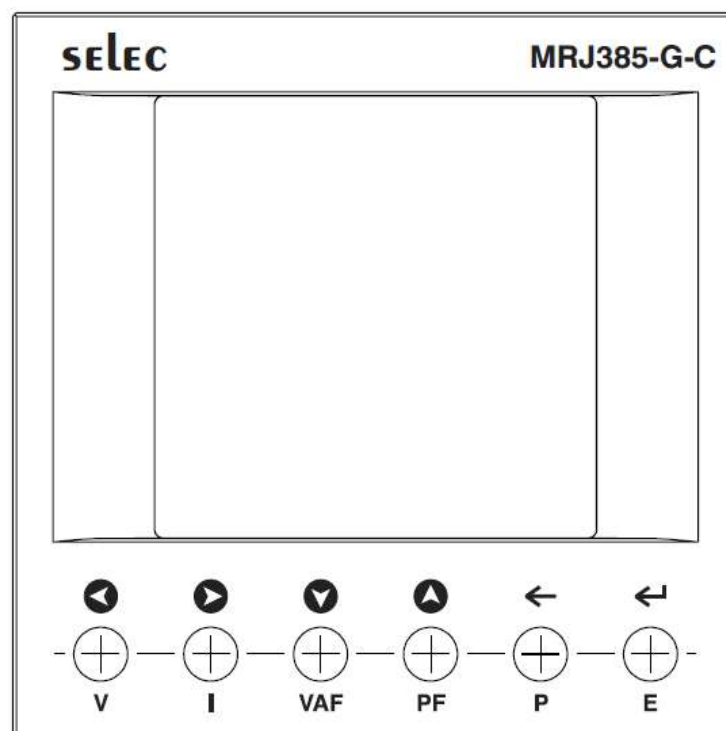
	EU-Type Examination Certificate Number:	
	<b>0120/SGS0412</b>	
	Issue Number: 2	Dated: 7 <sup>th</sup> April 2020


## 2. Photograph of Meter and Sealing Plan



	EU-Type Examination Certificate Number:	
	<b>0120/SGS0412</b>	
	Issue Number: 2	Dated: 7 <sup>th</sup> April 2020

### 3. Examples of Nameplates



	EU-Type Examination Certificate Number:	
	<b>0120/SGS0412</b>	
	Issue Number: 2	Dated: 7 <sup>th</sup> April 2020


#### 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

	EU-Type Examination Certificate Number:	
	<b>0120/SGS0412</b>	
	Issue Number: 2	Dated: 7 <sup>th</sup> April 2020

		Influence Factors for Temperature. Frequency & Voltage				
Current	PF Cos	-10°C	5°C	30°C	40°C	55°C
I <sub>min</sub>	1.0	0.19	0.10	0.07	0.14	0.21
I <sub>tr</sub>	1.0	0.08	0.04	0.00	0.01	0.02
10I <sub>tr</sub>	1.0	0.14	0.07	0.01	0.03	0.04
I <sub>max</sub>	1.0	0.22	0.11	0.09	0.19	0.27
I <sub>tr</sub>	0.5ind	0.11	0.06	0.03	0.05	0.06
10I <sub>tr</sub>	0.5ind	0.10	0.05	0.01	0.02	0.04
I <sub>max</sub>	0.5ind	0.19	0.10	0.10	0.20	0.30
I <sub>tr</sub>	0.8cap	0.11	0.05	0.00	0.01	0.02
10I <sub>tr</sub>	0.8cap	0.09	0.05	0.02	0.03	0.04
I <sub>max</sub>	0.8cap	0.23	0.12	0.07	0.17	0.26
L1						
I <sub>tr</sub>	1.0	0.06	0.03	0.01	0.04	0.06
10I <sub>tr</sub>	1.0	0.10	0.05	0.00	0.01	0.01
I <sub>max</sub>	1.0	0.22	0.11	0.08	0.18	0.27
I <sub>tr</sub>	0.5ind	0.14	0.07	0.02	0.05	0.09
10I <sub>tr</sub>	0.5ind	0.10	0.05	0.00	0.01	0.01
I <sub>max</sub>	0.5ind	0.18	0.09	0.09	0.19	0.29
L2						
I <sub>tr</sub>	1.0	0.00	0.00	0.01	0.02	0.03
10I <sub>tr</sub>	1.0	0.04	0.02	0.01	0.03	0.05
I <sub>max</sub>	1.0	0.18	0.09	0.10	0.23	0.35
I <sub>tr</sub>	0.5ind	0.04	0.02	0.00	0.02	0.03
10I <sub>tr</sub>	0.5ind	0.09	0.05	0.01	0.03	0.04
I <sub>max</sub>	0.5ind	0.19	0.10	0.09	0.20	0.29
L3						
I <sub>tr</sub>	1.0	0.13	0.06	0.01	0.03	0.05
10I <sub>tr</sub>	1.0	0.13	0.06	0.01	0.03	0.05
I <sub>max</sub>	1.0	0.25	0.12	0.08	0.17	0.26
I <sub>tr</sub>	0.5ind	0.14	0.07	0.03	0.07	0.10
10I <sub>tr</sub>	0.5ind	0.12	0.06	0.01	0.03	0.05
I <sub>max</sub>	0.5ind	0.22	0.11	0.10	0.23	0.33


	EU-Type Examination Certificate Number:	
	<b>0120/SGS0412</b>	
	Issue Number: 2	Dated: 7 <sup>th</sup> April 2020

## 5. Annex of Variants

Product Variant Identification Details:

Type Designation	Description of meter
MRJ385-C-G-MID	Three Phase, Active Import/Export (kWh), Single Tariff, RS485 Modbus communications and pulse output, grey casing

Modifications to the meter(s) described according to approval No.**0120/SGS0412** must be notified to the issuing body to confirm the meter(s) continuing compliance to the relevant pattern approval standard(s).

	EU-Type Examination Certificate Number:	
	<b>0120/SGS0412</b>	
	Issue Number: 2	Dated: 7 <sup>th</sup> April 2020

## 6. Document Revision History

Issue	Date	Comments
1	29/03/2019	Initial Issue
2	07/04/2020	Amendment to manufacturers address and description

This document is issued by the Company subject to its General Conditions for Certification Services, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested *and such sample(s) are retained for 28 days only*.

**END OF CERTIFICATE**