



Australian Government

**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 14/2/57

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

GE Energy Model SGM3013 Class 1 Electricity Meter

submitted by GE Energy (Australia) Pty Ltd
 572 Swan Street
 Richmond VIC 3121

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI M 6-1 *Electricity Meters. Part 1: Metrological and Technical Requirements*, September 2011.

This approval becomes subject to review on 1/03/17, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern and variants 1 & 2 approved – certificate issued	29/02/12
1	Pattern and variants 1 & 2 (Test Procedure) amended – certificate issued	18/04/12
2	Variant 3 approved – certificate issued	31/05/13

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 14/2/57' and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates No S1/0/A or No S1/0B.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.

A handwritten signature in black ink, appearing to read 'Dr A Rawlinson', with a horizontal line underneath.

Dr A Rawlinson

TECHNICAL SCHEDULE No 14/2/57

1. Description of Pattern

approved on 29/02/12

A GE Energy model SGM3013 electronic single phase Class 1 direct connect static watt hour meter (Figures 1 & 2, and Table 1) used to measure electrical energy.

1.1 Field of Operation

The field of operation of the measuring system is determined by the following characteristics:

- Number of phases 1
- Number of wires 2
- Reference frequency 50 Hz
- Reference ambient temperature ranges:
 - specified range of operation -25 to 60°C
 - limit range of operation -40 to 70°C
- Rated voltage 220 to 240 V AC
- Rated currents:
 - Basic current, I_b 10 A
 - Maximum current, I_{max} 100 A
- Meter constant 1000 imp/kWh
- Accuracy index 1

1.2 Features/Functions

- One (1) element
- Electronic (LCD) digital indicator
- Optical interface
- Load profile memory
- 100 Amp disconnect relay
- 2 Amp and 40 Amp load control relays
- Both crystal and synchronous clocks
- Bottom connect type base

Note: Meters must be set so that clock adjustment across interval boundaries is NOT allowed.

1.3 Verification Provision

Provision is made for the application of a verification mark.

1.4 Sealing Provision

Provision is made for the instrument to be sealed by the application of one or more mechanical seals (Figure 2b).

1.5 Descriptive Markings

Instruments are marked with the following data, together in one location, in the form shown at right:

Manufacturer's name or mark	...
Model designation	...
Serial number	...
Pattern approval mark	NMI 14/2/57
Number of phases	...
Number of wires	...
Reference frequency	... Hz
Meter constant	...
Rated voltage	... AC
Rated currents:	I_b ... A
	I_{max} ... A
Accuracy index	Class 1

2. Description of Variant 1

approved on 29/02/12

Certain models of the GE Energy SGM30xx series of polyphase Class 1 direct connect meters (Figures 3 and 4) as listed in Table 1, which have similar features/functions to the pattern but have three (3) elements.

2.1 Field of Operation

The field of operation of the measuring system is determined by the following characteristics:

- Number of phases 3
- Number of wires 4
- Reference frequency 50 Hz
- Reference ambient temperature ranges:
 - specified range of operation -25 to 60°C
 - limit range of operation -40 to 70°C
- Rated voltage 220/380 to 240/415 V AC
- Rated currents:
 - Basic current, I_b 10 A
 - Maximum current, I_{max} 100 A
- Meter constant 1000 imp/kWh
- Accuracy index 1

3. Description of Variant 2

approved on 29/02/12

Certain other models of the GE Energy SGM30xx series of single phase Class 1 direct connect meters as listed in Table 1 including with two (2) elements.

4. Description of Variant 3

approved on 31/05/13

The GE Energy model SGM30C2 polyphase Class 0.5 current transformer (CT) operated meter (Figure 5) as listed in Table 1.

4.1 Field of Operation

The field of operation of the measuring system is the same as for the pattern except as listed below:

- Number of phases 3
- Number of wires 4
- Rated voltage 3 × 220/380 to 240/415 V AC
- Rated currents: Rated current, I_n 1.5 A
Maximum current, I_{max} 6 A
- Meter constant 6400 imp/kWh
- Accuracy index 0.5

4.2 Features/Functions

This variant has similar features/functions to variant 1.

TABLE 1

Model	Phases	Elements	100 A Mains Relay	40 A Load Control Relay	2 A Load Control Relay
SGM3011	1	1	Y	N	N
SGM3013	1	1	Y	Y	Y
SGM3022	1	2	Y	Y	N
SGM3023	1	2	Y	Y	Y
SGM3030	3	3	N	N	N
SGM3031	3	3	Y	N	N
SGM3033	3	3	Y	Y	Y
SGM30C2	3	3	N	N	Y (2)

The pattern (model SGM3013) is shown above in **bold** type.

TEST PROCEDURE No 14/2/57

Instruments tested for initial verification shall comply with the certificate of approval and technical schedule, and the maximum permissible errors for verifications at the operating conditions in effect at the time of verification.

Meters shall be verified in accordance with NITP 14 *National Instrument Test Procedures for Utility Meters*.

Evidence of verification shall be confirmed via the meter serial number and certificate of verification issued by a utility meter verifier in accordance with NITP 14.

NOTE: NMI reserves the right to vary this procedure. Any such variation shall be notified in writing by NMI.

FIGURE 14/2/57 – 1



GE Energy Model SGM3013 Electricity Meter

FIGURE 14/2/57 – 2



(a) Including sample markings



(b) Including typical mechanical sealing

GE Energy Model SGM3013 Electricity Meter

FIGURE 14/2/57 – 3



GE Energy Model SGM3033 Electricity Meter

FIGURE 14/2/57 – 4



Model SGM3033 Electricity Meter Including Sample Markings

FIGURE 14/2/57 – 5



Model SGM30C2 Electricity Meter Including Sample Markings

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