



EU Type Examination Certificate Number: **0120/ SGS0137**

Schneider Electric India Pvt. Ltd

Hosur Main Road
12A, Attibele Industrial Area
Neralur (PO), Bangalore -562107
India

Instrument Identification

PM53/51*1

Polyphase, Active Import/ Export (kWh), Transformer Operated, Electricity Meter

Instrument Traceable Number

0120/ SGS0137

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 16th October 2023
Issue 10


Certification is based on report number(s)

EMA180141/MID Issue 6 Issued 18th November 2014, EMA223584/1 Issued 7th June 2016
EMA225834/1/PM5341 Issued 21st June 2016

Authorised Signature


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	Issue Number: 10	Dated: 9 th September 2018

1. Technical Data

Manufacturer	Schneider Electric
Meter Type	PM51/53*1
Voltage Rating (U_n)	63.5/110-277/480V
Current Rating ($I_{min} - I_{ref} (I_{max})$)	0.05-5(6)A
Frequency (f_n)	50Hz
Active Accuracy Class (kWh)	C(kWh)
Type of circuit	3P4W, 3P3W
Temperature Range	-25°C to +70°C
Software/ Firmware Version No's	<p>For HW Ver. A1 (Not in production)</p> <p>Model: PM5111 OS - New: v1.6.5 (Checksum 0x13 E1); Earlier: 1.6.4 / 1.6.2 / 1.6.0 / 1.4.7 / 1.2.2 / 1.2.1</p> <p>Model: PM5331 OS - New: v1.6.5 (Checksum 0x CB 6B); Earlier: 1.6.4 / 1.6.2 / 1.6.0 / 1.4.7 / 1.2.2 / 1.2.1</p> <p>Model: PM5341 OS - New: v1.6.5 (Checksum 0x D0 6F); Earlier: 1.6.4 / 1.6.2 / 1.6.0 / 1.4.7 / 1.2.2</p> <p>For HW Ver. B1 (In production)</p> <p>Model: PM5111 OS - New: v2.2.2 (Checksum 0x 82 71); Earlier: 2.2.1 / 2.2.0</p> <p>Model: PM5331 OS - New: v2.2.2 (Checksum 0x 50 7D); Earlier: 2.2.1 / 2.2.0</p> <p>Model: PM5341 OS - New: v2.2.3 (Checksum 0x 8C C8); Earlier: 2.2.1 / 2.2.0</p>
Identification Location	LCD
Bill Of Materials No's	<p>PM5111</p> <p>Power Supply - HRB46840 or NVE50463</p> <p>Controller – HRB47633 or EAV69955 or NVE50496</p> <p>PM5331</p> <p>Power Supply - HRB46838 or NVE50412</p> <p>Controller – HRB44401 or EAV69954 or NVE50494</p> <p>PM5341</p> <p>Power Supply - HRB46838 or NVE50412</p> <p>Controller – EAV69953 or NVE50488</p>
IP Rating	IP51 Front Display Meter body not rated, must be fitted in an IP51 Enclosure
Insulation Protective Class	Class II
LED Pulse Constant	10,000imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Tamper evident self-locking rivet
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	Associated Documents


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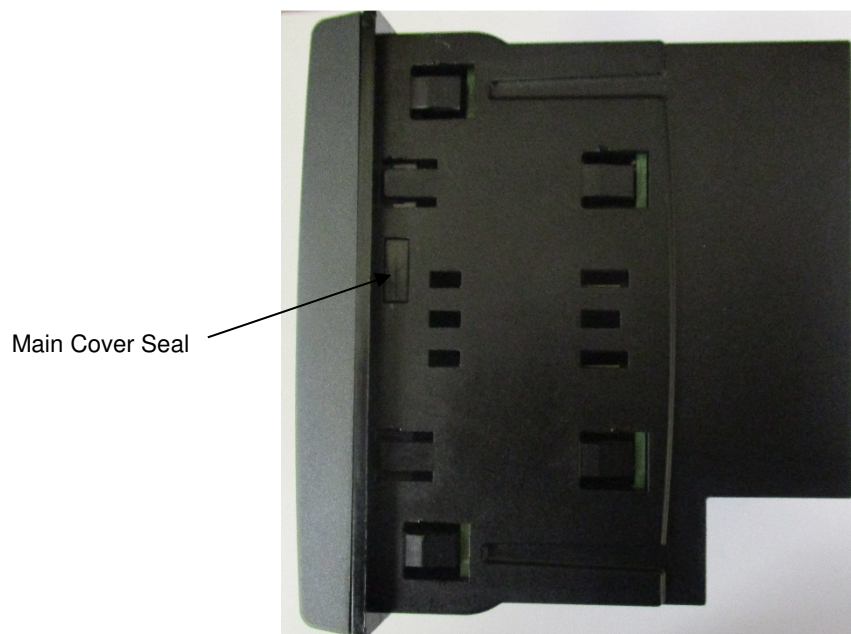
2. Photograph of Meter and Sealing Plan




Voltage Terminal
Cover Sealing
Point

Current Terminal
Cover Sealing
Point

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3. 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	70°C
I _{min}	1.0	0.42	0.28	0.16	0.18	0.26	0.36	0.38
I _{tr}	1.0	0.42	0.27	0.16	0.19	0.28	0.40	0.46
10I _{tr}	1.0	0.32	0.20	0.14	0.19	0.24	0.31	0.32
I _{max}	1.0	0.31	0.20	0.14	0.19	0.25	0.32	0.49
I _{tr}	0.5ind	0.62	0.43	0.29	0.29	0.44	0.68	0.84
10I _{tr}	0.5ind	0.61	0.41	0.27	0.30	0.42	0.60	0.76
I _{max}	0.5ind	0.60	0.40	0.27	0.30	0.41	0.61	0.76
I _{tr}	0.8cap	0.42	0.22	0.13	0.18	0.24	0.30	0.30
10I _{tr}	0.8cap	0.21	0.13	0.12	0.16	0.19	0.20	0.16
I _{max}	0.8cap	0.21	0.13	0.12	0.16	0.19	0.20	0.16
Line 1								
I _{tr}	1.0	0.43	0.33	0.17	0.19	0.31	0.37	0.46
10I _{tr}	1.0	0.36	0.24	0.20	0.23	0.28	0.34	0.35
I _{max}	1.0	0.34	0.21	0.17	0.21	0.23	0.34	0.34
I _{tr}	0.5ind	0.64	0.42	0.36	0.29	0.36	0.59	0.82
10I _{tr}	0.5ind	0.60	0.37	0.30	0.34	0.41	0.56	0.75
I _{max}	0.5ind	0.62	0.37	0.26	0.28	0.40	0.60	0.72
Line 2								
I _{tr}	1.0	0.46	0.22	0.18	0.18	0.26	0.36	0.46
10I _{tr}	1.0	0.23	0.16	0.13	0.18	0.23	0.27	0.29
I _{max}	1.0	0.27	0.17	0.14	0.19	0.25	0.31	0.29
I _{tr}	0.5ind	0.63	0.34	0.23	0.33	0.40	0.71	0.78
10I _{tr}	0.5ind	0.56	0.37	0.22	0.24	0.37	0.54	0.68
I _{max}	0.5ind	0.57	0.35	0.23	0.25	0.31	0.55	0.72
Line 3								
I _{tr}	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10I _{tr}	1.0	0.35	0.22	0.13	0.23	0.25	0.44	0.52
I _{max}	1.0	0.41	0.24	0.17	0.21	0.30	0.37	0.38
I _{tr}	0.5ind	0.38	0.23	0.14	0.20	0.26	0.32	0.36
10I _{tr}	0.5ind	0.66	0.48	0.26	0.33	0.53	0.81	1.09
I _{max}	0.5ind	0.73	0.47	0.37	0.39	0.53	0.76	0.86
I _{max}	0.5ind	0.70	0.36	0.30	0.32	0.39	0.69	0.87


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4. Annex of Variants

Product Variant Identification Details:

Type Designation		Description of meter
Model	-	Description
PM5111	-	Polyphase, Active Import/ Export (kWh), Transformer Operated, RS485 with 1 Digital Output
PM5331	-	Polyphase, Active Import/ Export (kWh), Transformer Operated, RS485 with 2 Digital Outputs, 2 Digital Inputs, 2 Electromechanical Relays
PM5341	-	Polyphase, Active Import/ Export (kWh), Transformer Operated, RS485 with 2 Digital Outputs, 2 Digital Inputs, 2 Electromechanical Relays, Ethernet

Modifications to the meter(s) described according to approval No.**0120/ SGS0137** 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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5. Document Revision History

Issue	Date	Comments
1	16/10/2013	Initial Issue
2	05/11/2013	Amended BOM numbers
3	22/11/2013	Amended meter model types description from PM5**1 to PM51/53*1
4	13/03/2014	Ethernet model PM5341 added to approval
5	18/11/2014	Minor firmware updates, non metrology
6	27/04/2015	Minor firmware updates, non metrology
7	07/06/2016	Microprocessor, and PCB version change. Firmware and software version updates.
8	08/03/2017	Firmware versions update. CRC checksum numbers added.
9	04/04/2018	Reissued in accordance with EU Directive 2014/32/EU
10	09/09/2018	Firmware and CRC checksum number added

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