



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

Schneider Electric India PVT. Ltd.

44P Electronics City
East Phase
Hosur Road
Bangalore
Kamataka 560100
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

EC Directive 2004/22/EC

on Measuring Instruments Annex 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 MI-003 of EC Directive 2004/22/EC

This certificate must be used in conjunction with a certificate covering the product verification as required in Annex D or Annex F.

This certificate is valid for 10 years from 17th October 2013 until 16th October 2023
Issue 4


Certification is based on report number(s)
EMA18014/MID Issue 5 Issued 13th March 2014

Authorised Signature

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1. Technical Data

Manufacturer	Schneider Electric
Meter Type	PM51/53*1
Voltage Rating (<i>Un</i>)	63.5/110-277/480V
Current Rating (<i>I_{min}</i> – <i>I_{ref}</i> (<i>I_{max}</i>))	0.05-5(6)A
Frequency (<i>F_n</i>)	50Hz
Active Accuracy Class (<i>kWh</i>)	C(kWh)
Type of circuit	3P4W, 3P3W
Temperature Range	-25°C to +70°C
Software/ Firmware Version No	RS485 (PM5111, PM5331) OS v1.2.1 / v1.2.2 RS v1.0.5 / v1.0.6 Ethernet (PM5341) OS v1.2.2 RS v1.0.3 / v1.0.5 Language version: 1.0.3 (common for all)
Identification Location	LCD
Bill Of Materials Numbers	PM5111 Power Supply - HRB46840 Controller – HRB47633 or EAV69955 PM5331 Power Supply - HRB46838 Controller – HRB44401 or EAV69954 PM5341 Power Supply - HRB46838 Controller – EAV69953
IP Rating	IP51 Front Display Meter body not rated, must be fitted in an IP51 Enclosure
Insulation Protective Class	Class II
LED Pulse Constant	10000 imp/ kWh
Impulse Voltage Rating	6kV
AC Voltage Rating	4kV
Main Cover Sealing Type	Wire & Crimp
Integrity of meter	Inaccessible without breaking seals
Intended Location of the Meter	Indoor
Type of Register	LCD

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2. Photographs of Meter



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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 presents 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	-10	5	30	40	55	70
Imin	1.0	0.42	0.28	0.16	0.18	0.26	0.36	0.38
Itr	1.0	0.42	0.27	0.16	0.19	0.28	0.40	0.46
10ltr	1.0	0.32	0.20	0.14	0.19	0.24	0.31	0.32
Imax	1.0	0.31	0.20	0.14	0.19	0.25	0.32	0.49
Itr	0.5ind	0.62	0.43	0.29	0.29	0.44	0.68	0.84
10ltr	0.5ind	0.61	0.41	0.27	0.30	0.42	0.60	0.76
Imax	0.5ind	0.60	0.40	0.27	0.30	0.41	0.61	0.76
Itr	0.8cap	0.42	0.22	0.13	0.18	0.24	0.30	0.30
10ltr	0.8cap	0.21	0.13	0.12	0.16	0.19	0.20	0.16
Imax	0.8cap	0.21	0.13	0.12	0.16	0.19	0.20	0.16
Line 1								
Itr	1.0	0.43	0.33	0.17	0.19	0.31	0.37	0.46
10ltr	1.0	0.36	0.24	0.20	0.23	0.28	0.34	0.35
Imax	1.0	0.34	0.21	0.17	0.21	0.23	0.34	0.34
Itr	0.5ind	0.64	0.42	0.36	0.29	0.36	0.59	0.82
10ltr	0.5ind	0.60	0.37	0.30	0.34	0.41	0.56	0.75
Imax	0.5ind	0.62	0.37	0.26	0.28	0.40	0.60	0.72
Line 2								
Itr	1.0	0.46	0.22	0.18	0.18	0.26	0.36	0.46
10ltr	1.0	0.23	0.16	0.13	0.18	0.23	0.27	0.29
Imax	1.0	0.27	0.17	0.14	0.19	0.25	0.31	0.29
Itr	0.5ind	0.63	0.34	0.23	0.33	0.40	0.71	0.78
10ltr	0.5ind	0.56	0.37	0.22	0.24	0.37	0.54	0.68
Imax	0.5ind	0.57	0.35	0.23	0.25	0.31	0.55	0.72
Line 3								
Itr	1.0	0.35	0.22	0.13	0.23	0.25	0.44	0.52
10ltr	1.0	0.41	0.24	0.17	0.21	0.30	0.37	0.38
Imax	1.0	0.38	0.23	0.14	0.20	0.26	0.32	0.36
Itr	0.5ind	0.66	0.48	0.26	0.33	0.53	0.81	1.09
10ltr	0.5ind	0.73	0.47	0.37	0.39	0.53	0.76	0.86
Imax	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).

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