

Issued by NMI Certin B.V.,
designated and notified by the Netherlands to perform tasks with respect to conformity modules mentioned in article 17 of Directive 2014/32/EU, after having established that the Measuring instrument meets the applicable requirements of Directive 2014/32/EU, to:

Manufacturer SAGEMCOM ENERGY & TELECOM SAS
250 route de l'Empereur
92848 RUEIL MALMAISON CEDEX
France

Measuring instrument A static **Active Electrical Energy Meter**

Type	: CX1000-3
Reference voltage	: 230 V
Reference current	: 5 or 10 A
Destined for the measurement of	: electrical energy, in a - single-phase two-wire network
Accuracy class	: A or B
Environment classes	: M1 / E2
Temperature range	: -40 °C / +70 °C

Further properties are described in the annexes:
- Description T10043 revision 19;
- Documentation folder T10043-14.

Valid until 21 December 2026

Remark This revision replaces the earlier versions, including its documentation folder.

Issuing Authority

NMI Certin B.V., Notified Body number 0122
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C. Oosterman
Head Certification Board

1 General information about the instrument

All properties of the static active electrical energy meter, whether mentioned or not, shall not be in conflict with the legislation.

1.1 Essential parts

Description	Document	Remarks
measuring sensor	10043/0-05 or 10043/1-02 or 10043/2-01	
printed circuit board	10043/0-06 or 10043/1-03 or 10043/2-02 or 10043/4-02 or 10043/5-01 or 10043/6-02 or 10043/7-01 or 10043/11-01 or 10043/13-01 or 10043/19-01 10043/0-07 or 10043/2-03 or 10043/4-03 or 10043/5-02 or 10043/6-03 or 10043/11-02 or 10043/12-01 or 10043/13-02 or 10043/19-02	All parts of the printed circuit boards are essential, except the components which are related to parts as described in paragraph 1.4 or 1.6.

1.2 Essential characteristics

- 1.2.1 See EU type-examination Certificate T10043 revision 19 and the characteristics mentioned below.
- 1.2.2 Approved meter types : CX1000-3 BASE, TI, CLK, CLK TI and RCB
 An explanation of all type designations is presented in document no. 10043/4-01, section 2.2.
- 1.2.3 Frequency : 50 Hz
- 1.2.4 Meter constant : 1000 imp./kWh
- 1.2.5 Number of registers : max. 6
- 1.2.6 Error messages : via the status word, see document no. 10043/4-01, section 3.8.
- 1.2.7 Export energy : the meter is capable of measuring energy in 2 directions.
- 1.2.8 Software specification (refer to WELMEC guide 7.2):
- Software type P;
 - Risk Class C;
 - Extensions L, D, S and T are not applicable.

Software version	Identification number (checksum)	Remarks	
1.05	FE22 (BASE & TI version) 8E8A (CLK_Low version) 4ECE (CLK_High version)	The software version is displayed at start-up and in the display sequence	
1.09	6E40 (BASE & TI version) 41B9 (CLK_Low version) B53D (CLK_High version)		
1.14	8c24 (BASE & TI version) F7B6 (CLK_Low version) 2607 (CLK_High version)		
2.04	50C1 (BASE & TI version) FC25 (CLK_Low version) B186 (CLK_High version)		
6.04	0A0A (CLK TI High version) FA87 (CLK TI Low version)		
1.19	3499 (BASE TI version) 2155 (CLK High version) 33D3 (CLK Low version)		
1.20	D41A (CLK High version)		
2.07	CB23 (CLK High version) 10A0 (CLK Low version) 02CE (BASE TI version)		
6.13	8C84 (CLK TI High version) AE34 (CLK TI Low version)		
7.06	7C39 (CLK High version) 2CAA (CLK Low version)		
12.01	9DF3 (BASE TI version)		
2.30	0x5559 (CLK High version) 0x2E43 (CLK Low version)		
2.50	0x2540 (CLK High version) 0x0027 (CLK Low version)		
4.30	5A6A0A (RCB version)		
14.05	0x9F5E (CLK High version)		
16.00	0x68C7 (CLK High version) 0xF4DE (CLK Low version)		
1.21	0x0AE7 (CLK High version)		
1.22	0x6456 (CLK High version)		The software version and checksum are displayed at start-up and in the display sequence

1.3 Essential shapes

- 1.3.1 The nameplate is bearing at least, good legible, the information as mentioned in the regulations on energy meters. An example of the markings is shown in document no. 10043/0-03, 10043/3-01 and 10043/18-01.
- 1.3.2 Sealing: see chapter 2.
- 1.3.3 The registration observation is executed by means of an LED.

1.4 Conditional parts

- 1.4.1 Terminal block
The connections for the current cables on the terminal block have a diameter of at least 7 mm. The cables are connected with the terminal block via 2 screws.
- 1.4.2 Housing
The meter has got a dustproof housing, which has sufficient tensile strength. The cover is made of synthetic material, as described in document no. 10043/16-01.
- 1.4.3 Terminal cover
The terminal cover is made of synthetic material.
- 1.4.4 Register
The quantity of measured energy is presented by means of a display with at least 5 elements. The way of presentation is described in document no. 10043/4-01, section 5.1 and 5.2 (8 digits display) or document no. 10043/6-01 (7 digits display).
- 1.4.5 Tariff control
When the meter is provided with more than one register, a tariff control is available by means of tariff inputs (TI version) or integrated ripple control receiver (RCB version), whereby the EMC-requirements are fulfilled as described in Annex V of Directive 2014/32/EU, or by means of an internal clock (CLK version).
- 1.4.6 Partial counter
For test purposes an indication with a least significant element of at least 0,01 kWh, can be arranged via a partial counter. Starting from software version 7.06 a least significant element of 0,01 kWh can be arranged via a 6+2 display mode.
- 1.4.7 Communication
When the meter is provided with a communication module (optical, M-bus, RS-485, RS-232), EMC-requirements as described in Annex V of Directive 2014/32/EU have to be fulfilled. No legal data can be altered via the communication modules.

1.4.8 No power reading / REED function (optional)

The meter can be optionally provided with the possibility to use the display in case no power is connected to the terminals. In that case an extra internal PCB with a battery and a REED contact is connected to the main printed circuit board, whereby the EMC-requirements are fulfilled as described in Annex V of Directive 2014/32/EU.

Starting with PCB 253318617A, the electronic function is placed on the main board (including the reed contact) but the battery is connected to the main PCB like in previous version. Starting with PCB 253364531 (and also 253423848), the battery is directly on the main PCB

The REED contact can be switched via a magnet outside the meter or the power supply to use the display is switched on by the push button (the main function of the push button is selection of displayed menus).

1.4.9 Battery option board

Optionally a battery board can be mounted, as indicated in document no. 10043/2-04.

1.5 Conditional characteristics

1.5.1 Maximum current:

smaller than or equal to 80 A (DIN terminal block) or 100 A (BS terminal block), and at least 5 times higher than the reference current.

1.5.2 Minimum current: 0,25 A ($I_{ref} = 5 \text{ A}$) or 0,5 A ($I_{ref} = 10 \text{ A}$)

1.6 Non-essential parts

1.6.1 Pulse output

1.6.2 Tamper defect

1.6.3 Relay output

2 Seals

Both screws of the meter cover are sealed.

An example of the sealing is presented in document no. 10043/0-04.

3 Conditions for conformity assessment according to module D or F

The influence factors for temperature, frequency and voltage, which are necessary to perform the conformity assessment according to module D or F, are presented in Annex 1, belonging to this EU type-examination certificate.

Based on the WELMEC Guide 11.1, section 2.5.6, the sum of the square values is presented.

Influence factors for temperature, frequency and voltage

During the type approval examination the influence factors for temperature, frequency and voltage are determined per load point. The values depicted in the table below present the root sum square values per load point, determined via the following formula:

$$\delta e(T, U, f) = \sqrt{\delta e^2(T, I, \cos \varphi) + \delta e^2(U, I, \cos \varphi) + \delta e^2(f, I, \cos \varphi)}$$

with:

- $\delta e(T, I, \cos \varphi)$ = the additional percentage error due to the variation of the temperature at a certain load;
- $\delta e(U, I, \cos \varphi)$ = the additional percentage error due to the variation of the voltage at the same load;
- $\delta e(f, I, \cos \varphi)$ = the additional percentage error due to the variation of the frequency at the same load.

Up to $I_{\max} = 60A$

Current	Power factor	-40°C [%]	-25°C [%]	-10°C [%]	+5°C [%]	+23°C [%]	+40°C [%]	+55°C [%]	+70°C [%]
I_{\min}	1	0,6	0,4	0,4	0,3	0,3	0,4	0,6	0,9
I_{tr}	1	0,5	0,4	0,4	0,1	0,1	0,3	0,6	0,9
	0,5 ind. 0,8 cap.	0,5 0,5	0,4 0,5	0,4 0,4	0,2 0,1	0,2 0,1	0,3 0,3	0,6 0,6	0,9 0,9
10 I_{tr}	1	0,5	0,5	0,4	0,0	0,0	0,3	0,6	1,0
	0,5 ind. 0,8 cap.	0,5 0,5	0,4 0,5	0,3 0,4	0,1 0,0	0,1 0,0	0,3 0,3	0,6 0,6	0,9 1,0
I_{\max}	1	0,4	0,4	0,3	0,0	0,0	0,3	0,6	0,9
	0,5 ind. 0,8 cap.	0,4 0,4	0,4 0,4	0,3 0,3	0,1 0,0	0,1 0,0	0,3 0,3	0,6 0,5	0,9 0,9

Up to $I_{\max} = 100 A$

Current	Power factor	-40°C [%]	-25°C [%]	-10°C [%]	+5°C [%]	+23°C [%]	+40°C [%]	+55°C [%]	+70°C [%]
I_{\min}	1	0,5	0,6	0,3	0,2	0,1	0,4	0,6	1,0
I_{tr}	1	0,6	0,5	0,3	0,2	0,1	0,3	0,6	1,0
	0,5 ind. 0,8 cap.	0,5 0,6	0,5 0,7	0,3 0,4	0,2 0,2	0,1 0,1	0,4 0,2	0,6 0,6	1,0 0,9
10 I_{tr}	1	0,6	0,5	0,4	0,2	0,0	0,3	0,6	0,9
	0,5 ind. 0,8 cap.	0,5 0,6	0,4 0,6	0,4 0,4	0,3 0,2	0,1 0,0	0,4 0,3	0,6 0,6	1,0 0,9
I_{\max}	1	0,5	0,4	0,3	0,2	0,1	0,3	0,5	0,9
	0,5 ind. 0,8 cap.	0,3 0,4	0,7 0,2	0,4 0,3	0,3 0,2	0,1 0,0	0,3 0,3	0,5 0,6	0,9 0,8