EU-type examination certificate

Issued by	NMi Certin B.V., designated and notified by the Netherlands to perform tasks with respect to conformity assessment procedures 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	Lovato Electric S.p.A. Via Don E. Mazza, 12 Gorle (BG) Italy

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

Type	:	DMED311MID7
		DMED341MID7
		DMED341MID7E
		DMED341MID7ER
Manufacturer's mark or name	:	Lovato Electric S.p.A.
Reference voltage	:	3x230/400 V
Reference current	:	15 A
Destined for the measurement of	:	electrical energy, in a - three-phase four-wire network
Accuracy class	:	A or B
Environment classes	:	M1 / E2
Temperature range	:	-25 °C / +70 °C

Further properties are described in the annexes:
– Description T12526 revision 1;
– Documentation folder T12526-2.

Valid until	24 August 2033
Initially issued	24 August 2023
Remark	This revision replaces the earlier version, including its documentation folder.

Issuing Authority   **NMi Certin B.V., Notified Body number 0122**
2 November 2023

Certification Board

PRODUCTS
RvA C 681

Description

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: - CT sensor	12526/0-07, 12526/0-08	Alternative CT sensors: - Malio: 33400096-A 2243 - Hongfa: HDCT406-1
Top Board: A0321B1 - DMED311MID7 - DMED341MID7 - DMED341MID7E - DMED341MID7ER	12526/0-13, 12526/0-15, 12526/0-16 12526/0-14, 12526/0-17, 12526/0-18 12526/1-12, 12526/1-14, 12526/1-15 12526/0-13, 12526/1-16, 12526/1-17	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.
Bottom Board: A0321A1 - DMED311MID7	12526/0-19, 12526/0-20, 12526/0-21, 12526/0-22	
Bottom Board: A0321D0 - DMED341MID7 - DMED341MID7E - DMED341MID7ER	12526/0-23, 12526/0-24, 12526/0-25, 12526/0-26 12526/1-18, 12526/1-19, 12526/1-22, 12526/1-23 12526/1-20, 12526/1-21, 12526/1-24, 12526/1-25	
Display board: A0321B1 - DMED311MID - DMED341MID7 - DMED341MID7E - DMED341MID7ER	12526/0-27	

1.2 Essential characteristics

1.2.1 See EU-type examination certificate T12526 revision 1 and the characteristics mentioned below.

1.2.2 Approved meter types : DMED311MID7, DMED341MID7, DMED341MID7E and DMED341MID7ER. An explanation of all type designations is presented in document no. 12526/0-04.

1.2.3 Frequency : 50 Hz

1.2.4 Meter constant : 2.000 imp./kWh

1.2.5 Number of registers : Up to 2 registers

1.2.6 Error messages : Errors are indicated with an error symbol (Err). See document no. 12526/0-12.

1.2.7 Registration method : The following registration methods are allowed: measurement of import and export energy by means of summation by sign (sum of import energy per phase and sum of export energy per phase)

1.2.8   Phase sequence   : the meter is not sensitive to the direction of the applied phase
                                  sequence.

1.2.9   Export energy   : the meter is capable of measuring energy in 2 directions.
                                  The meter can also be used with 2 phases loaded with import
                                  energy and 1 phase loaded with export energy.

1.2.10   Software specification (refer to WELMEC 7.2):

- Software type P;
- Risk Class C;
- Extension L, T, I3 while extensions O, D and S are not applicable.

Software version	Identification number (checksum)	Remarks
00	CSH3DF1 CSL20EE	DMED311MID7
00	CSHBE38 CSL4FC9	DMED341MID7
00	CSH B53D CSL B300	DMED341MID7E
00	CSH D3AC CSL 533C	DMED341MID7ER

The software version (Obis code: 96,90,2) is displayed 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. 12526/0-05,12526/0-06, 12526/1-05, 12526/1-06, 12526/1-07, 12526/1-08, 12526/1-09 and
12526/1-10.

1.3.2   Sealing: see chapter 2.

1.3.3   The registration observation is executed by means of a 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 1 screw. See document no.
12526/0-01, 12526/0-02,12526/0-03 and 12526/0-09.

1.4.2   Housing
The meter has got a dustproof housing, which has sufficient tensile strength. The cover is made of synthetic material. An example of the housing is presented in document no. 12526/0-01, 12526/0-02, 12526/0-03, 12526/1-01, 12526/1-02,12526/1-03 and 12526/1-04.

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 6 elements. The way of presentation is described in document no. 12526/0-11.
For test purposes an indication with a least significant element of at least 0,01 kWh, can be arranged via loop button Icon on the meter.

1.4.5   Tariff control
When the meter (DMED311MID7) is provided with more than one register, a tariff control is available by means of tariff inputs, whereby the EMC-requirements are fulfilled as described in Annex V of Directive 2014/32/EU.

1.5   Conditional characteristics

1.5.1   Maximum current:
smaller than or equal to 80 A, and at least 5 times higher than the reference current.

1.5.2   Minimum current: 0,75 A

1.6   Non-essential parts

1.6.1   Pulse output

2   Seals

Both screws of the meter cover are sealed.
An example of the sealing is presented in document no. 12526/0-10 and 12526/1-11.

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 11.1, section 2.4.6, 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.

Current	Power factor	-25°C [%]	-10°C [%]	+5°C [%]	+23°C [%]	+40°C [%]	+55°C [%]	+70°C [%]
Imin	1	0,3	0,2	0,1	0,0	0,1	0,2	0,4
Itr	1	0,3	0,2	0,1	0,0	0,1	0,2	0,4
	0,5 ind.	1,3	0,8	0,5	0,2	0,4	0,4	0,5
	0,8 cap.	1,0	0,6	0,3	0,1	0,3	0,5	0,7
Itr phase R	1	0,2	0,2	0,1	0,0	0,1	0,2	0,3
	0,5 ind.	0,4	0,3	0,2	0,2	0,3	0,3	0,4
Itr phase S	1	0,3	0,2	0,1	0,0	0,1	0,2	0,4
	0,5 ind.	1,4	0,9	0,5	0,2	0,4	0,5	0,6
Itr phase T	1	1,3	0,8	0,4	0,0	0,3	0,4	0,5
	0,5 ind.	1,3	0,8	0,4	0,2	0,3	0,4	0,5
10 Itr	1	0,3	0,2	0,1	0,0	0,1	0,2	0,3
	0,5 ind.	1,3	0,8	0,4	0,2	0,4	0,5	0,6
	0,8 cap.	0,9	0,6	0,3	0,1	0,3	0,5	0,8
10 Itr phase R	1	0,2	0,2	0,1	0,0	0,1	0,2	0,3
	0,5 ind.	0,4	0,3	0,2	0,2	0,2	0,3	0,4
10 Itr phase S	1	0,3	0,2	0,1	0,0	0,1	0,2	0,4
	0,5 ind.	1,4	0,9	0,4	0,2	0,4	0,6	0,7
10 Itr phase T	1	1,3	0,8	0,4	0,0	0,3	0,5	0,5
	0,5 ind.	1,3	0,8	0,4	0,2	0,3	0,5	0,5
Imax	1	0,3	0,2	0,1	0,0	0,1	0,2	0,4
	0,5 ind.	1,4	0,9	0,4	0,2	0,4	0,6	0,6
	0,8 cap.	1,0	0,6	0,3	0,1	0,4	0,6	0,8
Imax phase R	1	0,2	0,2	0,1	0,0	0,1	0,2	0,3
	0,5 ind.	0,4	0,3	0,3	0,3	0,3	0,4	0,5
Imax phase S	1	0,3	0,2	0,1	0,0	0,1	0,2	0,4
	0,5 ind.	1,4	0,9	0,4	0,3	0,4	0,6	0,6
Imax phase T	1	0,0	0,1	0,2	0,0	0,4	0,5	0,8
	0,5 ind.	1,3	0,8	0,4	0,2	0,4	0,5	0,5