



OIML Member State
Czech Republic

OIML Certificate No.
R76/2006-A-CZ1-2020.03

OIML CERTIFICATE ISSUED UNDER SCHEME A

OIML Issuing Authority

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Applicant

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Manufacturer

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Address: 5 Toruńska Street
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Identification of the certified type *(the detailed characteristics will be defined in the additional pages)*

Indicator, type PUE 7.1

Designation of the module *(if applicable)*

Indicator for non-automatic weighing instruments

This OIML Certificate attests the conformity of the above identified type (represented by the sample(s) identified in the OIML type evaluation report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

OIML R 76

Edition (year): 2006

For accuracy class (if applicable): III

This OIML Certificate relates only to metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML Recommendation identified above.

This OIML Certificate does not bestow any form of legal international approval.

The conformity was established by the results of tests and examinations provided in the associated reports:

- OIML type evaluation report No. 0511-ER-0003-20 dated 10 July 2020 that includes 9 pages
- Test report No. 6052-PT-P0014-20 issued by CMI dated 9 July 2020 that includes 55 pages including annexes

The technical documentation relating to the identified type is contained in documentation file:

0511-UL-N104-19

OIML Certificate History

Revision No.	Date	Description of the modification
Addition 0	19 August 2020	Issuing certificate

The OIML Issuing Authority

RNDr. Pavel Klenovský
Director General

Date: 19 August 2020



Important note: Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate is issued, partial quotation of the Certificate and of the associated OIML type evaluation report(s) is not permitted, although either may be reproduced in full.

General information and basic characteristics

Electronic indicator for non-automatic weighing instruments of accuracy class III.

Maximum number of verification scale intervals: $n \leq 6000$

The indicator can be used for multi range weighing instruments.

The temperature range is $-10^{\circ}\text{C} / +40^{\circ}\text{C}$.

Weighing indicators PUE 7.1 can be used as terminals according to point T.2.2 of OIML R76 (2006). When PUE 7.1 is used as a terminal, external weighing modules are connected via a digital interface using existing communication protocols. The weighing module uses the display for showing weighing results, the keypad and touch panel for operating a weighing instrument. In such a case the accuracy class of the weighing instrument is determined by the connected weighing module and not limited to the class of weighing indicator, provided the weighing instrument does not use the measuring function of the indicator. The indicator has a plastic housing, 5.7" TFT displays with resistive touch panels. For the basic construction see pictures 1 to 5.

Essential parts are described in the following documentation

The construction and assembly of essential parts are described in the service manual Radweg of PUE 71 and in the documentation given in the table below.

PUE 7.1	
Description	Drawing number
Mechanical assembly	PUE-71-02-zatw
	PUE -71-03-zatw
	PUE -71-04-zatw
Electrical assembly	TT0053, BT0065, RDE-19-001, 002, 003; RDE-09-008/1

Metrological characteristics

PUE 7.1	
Accuracy class	III
Maximum input signal	19,5mV
Maximum voltage per verification scale interval	3,25 μ V
Minimum voltage per verification scale interval	0,4 μ V
Minimum load cell impedance	50 Ω
Maximum load cell impedance	1200 Ω
Load cell excitation voltage	5V
Load cell connections	4 or 6 wires plus shield
Maximum number of connected platforms	2 (standard 1)
Temperature range	$-10^{\circ}\text{C} / +40^{\circ}\text{C}$
Power supply	Adapter 100 ÷ 240 V AC 50-60Hz / 6,5 ÷ 28VDC
Power consumption	21W
Optional power supply	External 12 – 24 V DC
Display	5.7" colour
Casing	Plastic
Interface	2 x RS232; 2 x USB; Ethernet; digital inputs/outputs 4 x IN, 4 x OUT; Wi-Fi®

Devices and functions

- multi range
- determination of stability of equilibrium
- indication of stable equilibrium
- zero indicator
- initial zero setting $\leq 20\%$ Max
- zero tracking $\leq 4\%$ Max
- automatic zero setting



- semi-automatic zero setting
- semi-automatic tare balancing (subtractive)
- calibration and set-up mode via switch on the main board
- gravity factor set up
- alibi memory

Memory module (Alibi memory)

The indicator PUE 7.1 can be equipped with a Memory module (Alibi memory) used as a database system acting as a long-term memory realized in a micro SD flash card. It saves automatically weighing results according to WELMEC 2.5 guideline. The record of weighing holds all relevant information required i.e. net and tare values together with units, date and time record as an identifier, platform number as the load receptor designation and some other that are not relevant but useful for other applications.

Protection against unintentional changes with common software tools has been achieved through designing closed shell system with no possibility to start any external programs. The only program that can be run is the one that is saved in the internal flash memory. It is loaded to the RAM memory after powering up the device. Then it is executed. Here the general protection rules, applied by the operating system for files allocation, are applicable. If files are corrupted or there are any other file-reading problems the system generates some exceptions or errors which are handled by software.

Weighings in DSD are identified by date and time which is one of fields in the relevant part of the weighing record. It is saved in the Windows or Linux date format standard that allows to present dates in format yyyy-mm-dd, hh:mm:ss.

Weighings are saved automatically. Measurements are initiated by pressing the print/enter button or by automatic measurement triggering after fulfilling some conditions (e.g. results between MIN and MAX or over LO) depending on the device configuration.

Each stored weighing can be printed and/or shown on the main display. The printer is not the part of DSD.

Interface

The indicator is equipped with following interfaces: RS232, USB, Ethernet, 4IN/4OUT that fulfills requirements of OIML R76 (2006) paragraph 5.3.6 and do not need to be secured, WiFi and 5.7" TFT displays with resistive touch panels. An additional platform can be attached to them.

Data plate

The data plate shall be secured against removal by sealing or will be destroyed when removed.

Following information shall be on data plate:

- number of the Evaluation Certificate
- manufactures name or mark
- temperature range
- accuracy class
- other descriptions required by OIML R76 (2006)

Software

The valid programs are embedded software version holding metrologically relevant functions is **2.0.0** and closed shell software version **171001** (standard) or **1.2.2 P** (interactive terminal) working under Windows Embedded Compact 7 operating system.

Other valid programs are embedded software version holding metrologically relevant functions is **3.0.0 P** and closed shell software version **191001** (standard) or **2.0.0 P** (interactive terminal) working under Linux operating system.

Software identification is possible after pressing the ON/OFF button.



Securing

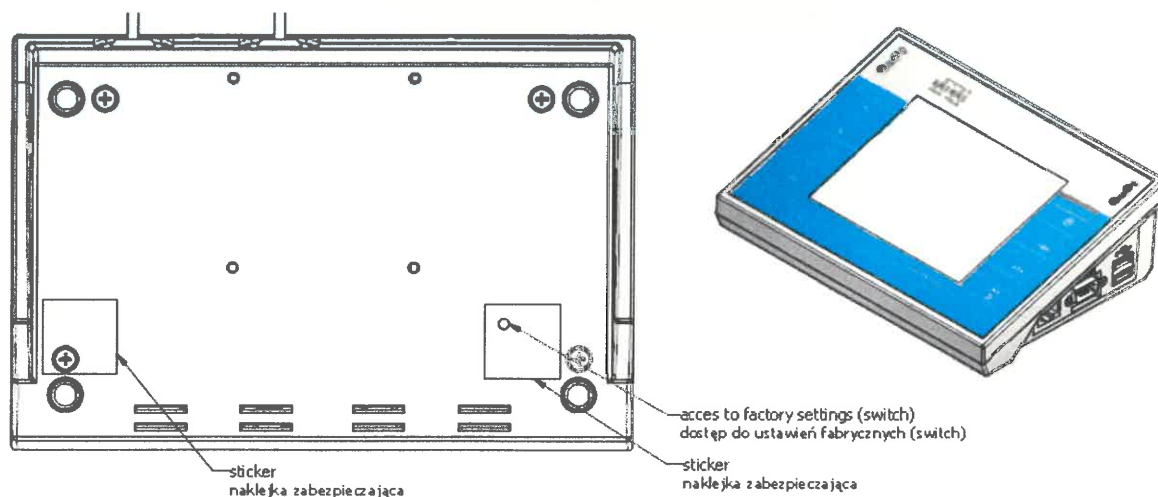
Components that may not be dismantled or adjusted by the user shall be secured by suitable manner on the locations indicated in Figures 1 to 5 lower. Calibration and set-up mode are assessable via switch on the main board.

Tests and evaluation

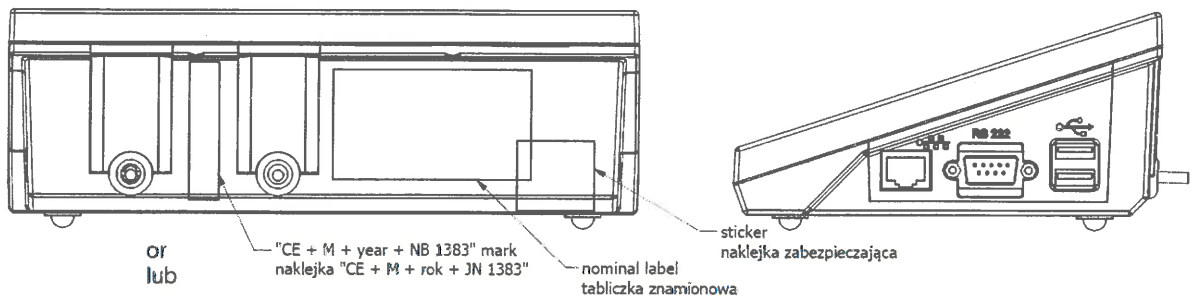
Tests and evaluation were carried out according to OIML R 76 (2006). The tests and evaluation carried out are stated in the Test Evaluation Report No. 6052-PT-VN014-20 and in the Test Report 6052-PT-CH014-20.

Tests carried out

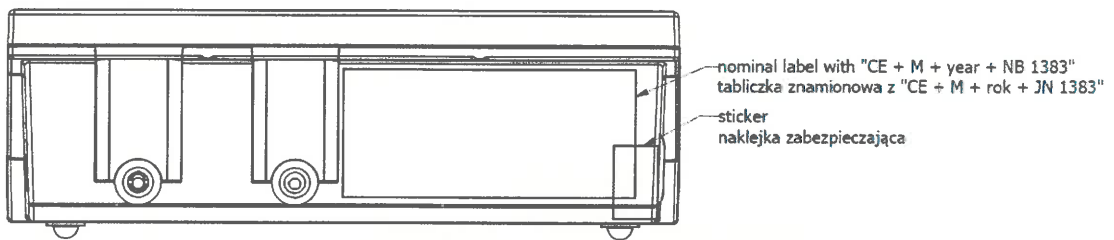
Static temperature (20, 40, -10, 5 and 20 °C)
Temperature effect on no load indication (20, 40, -10, 5 and 20 °C)
Damp heat steady state
Repeatability
Warm-up time
Span stability
Cable length between the indicator and load cell
Voltage variations
Short time power reductions and interruptions
Electrical bursts
Electrostatic discharges
Immunity to radiated electromagnetic fields
Immunity to radiated electromagnetic fields up to 2 GHz
Electrical surge
Immunity to conducted radio-frequency fields



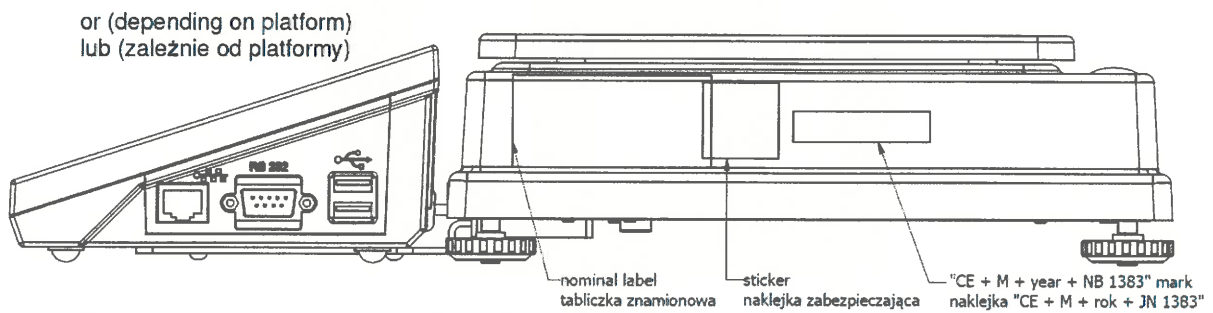
Picture 1 PUE 71 securing



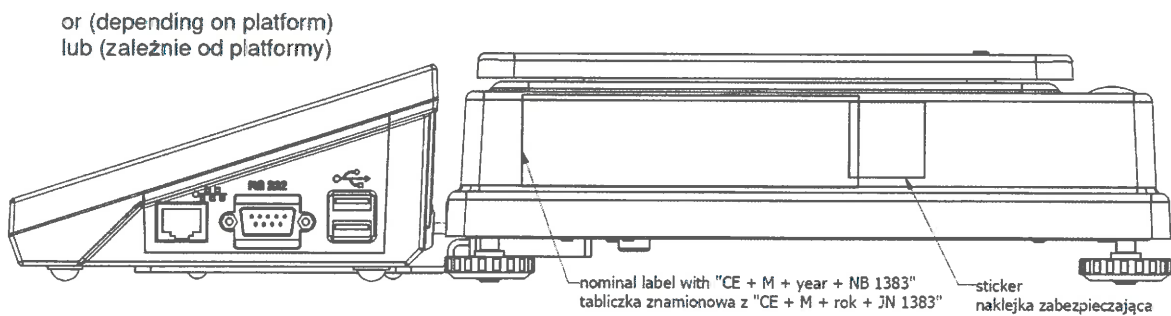
Picture 2 PUE 7.1 securing for a scale



Picture 3 PUE 7.1 securing for a scale



Picture 4 Exemplary securing of a scale with PUE 7.1



Picture 5 Exemplary securing of a scale with PUE 7.1