



**OIML Member State**  
Czech Republic

**OIML Certificate No.**  
R76/2006-A-CZ1-2020.02

**OIML CERTIFICATE ISSUED UNDER SCHEME A**

**OIML Issuing Authority**

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Czech Republic

Person responsible: Jan Kalandra

**Applicant**

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26-600 Radom  
Poland

**Manufacturer**

Name: RADWAG Wagi Elektroniczne Witold Lewandowski  
Address: 5 Toruńska Street  
26-600 Radom  
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**Identification of the certified type** (*the detailed characteristics will be defined in the additional pages*)

Non-automatic weighing instrument, type AS xxx.X2.yy PLUS and AS xxx.R2.yy PLUS

**Designation of the module** (*if applicable*)

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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): I

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-0004-20 dated 10 July 2020 that includes 9 pages
- Test report No. 6052-PT-CH015-20 issued by CMI dated 9 July 2020 that includes 52 pages including annexes

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

0511-UL-N082-19

**OIML Certificate History**

Revision No.	Date	Description of the modification
Addition 0	20 July 2020	Issuing certificate

**The OIML Issuing Authority**

RNDr. Pavel Klenovský  
Director General



Date: 20 July 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

Balance AS xxx.X2.yy PLUS and AS xxx.R2.yy PLUS series are models operating on basis of electromagnetic compensation of weighed load. This series features a measuring range to 310g and measuring resolution 0,01mg or 0,1mg or 1mg respectively. High resolution, repeatability and measuring range are maintained by highly stable electronic and mechanical components, as well as application of automatic internal adjustment system. The balances have full graphic display in case of X2 balances and LCD display in case of R2 balances, plastic casing cover, metal bottom casing, stainless steel plate, weighing chamber and automatic internal adjustment system. The type designation is AS xxx.X2.yy PLUS and AS xxx.R2.yy PLUS and symbol xxx stands for Max (g) and symbol yyy stands for special purpose of balance e.g. jewelry balance – CT. Additionally, xxx may stand for switching between resolutions indicated by division d like in balances AS 82/220 where resolution 0.01 mg is used up to 82 mg and 0.1 mg up to maximum capacity. Word PLUS is used to all balances of this type.

Description of the instrument:

Description	Drawing number
Schedule of balance working	AS.X2 PLUS sheet 1/4; sheet 2/4; sheet 3/4; AS.R2 PLUS sheet 1/4; sheet 2/4; sheet 3/4
Side view	Drawing 1, Drawing 2
Localization of nominal label and data plate; View with open case	AS.R2 PLUS sheet 4/4; AS 310 X2 PLUS sheet 4/4; Drawing 3, Drawing 4
Display	Drawing 5, Drawing 6

### Main metrological characteristic

Type	AS 82/220.X2 PLUS	AS 62.X2 PLUS	AS 160.X2 PLUS	AS 220.X2 PLUS	AS 310.X2 PLUS
Maximum capacity	220 g	62 g	160 g	220 g	310 g
Minimum capacity	1 mg or 10 mg		1 mg or 10 mg		
Resolution (d)	0.01/0.1 mg	0.1 or 0.01 mg	0.1 mg or 0.01 mg		
Verification interval (e)	1 mg				
Tare range (T)	- 220 g	- 62 g	- 160 g	- 220 g	- 310 g
Working temperature	+10 °C / +40 °C				
Supply	100 V – 240 VAC, 50-60 Hz / 12 – 16 VDC				
Accuracy class	I				

The above table includes exemplary models within the approved range of balances.

### Essential characteristics and devices

The instruments must be equipped with a level indicator with a sensitivity of at least 2 mm for a tilt of 2/1000.

Devices:

- Zero indicator
- Stability indicator
- Automatic span adjustment with internal calibration mass
- Checking the display
- Initial zero-setting
- Zero-tracking
- Data Storage Device (Alibi Memory)
- Service menu via switch on the main board
- USB
- Ethernet
- Weighing in carat units\*)
- Printer to be connected
- Additional display to be connected

\*) For instruments that are able to display in both units if the Max, Min and e values are on a label then they must be marked on the instrument in both units. If the values are shown on a display, then they can be switched.

### Data Storage Device (Alibi Memory)

Models of AS xxx.X2.yy PLUS and AS xxx.R2.yy PLUS balances are equipped with a Data Storage Device (Alibi memory) acting as a long term memory. It automatically saves weighing results in the internal flash memory. A program operates as a simple embedded software without any operating system which prevents from running any external application. The program allows to upload the content of the alibi memory to an external flash drive for archival purposes. The program does not allow to download the alibi memory content to the balance. Each measurement is identified by the following data:

- Measurement date
- Measurement time
- Measurement value (mass) - (display unit)
- Measurement value (mass) - (calibration unit)
- Tare value
- Operator (if logged on)
- Product (if chosen)

The memory size allows to save 100 000 weighing results in case of AS R2 balances or 500 000 weighing results in case of AS X2 balances. After the full capacity is reached the single records of the oldest data are overwritten by new data. Single records and the whole database are protected by checksums. Any corruption of data prevents them from viewing or printing.

### Interfaces

Interfaces used must comply with that fulfills requirements of OIML R76 (2006) paragraph 5.3.6 and do not need to be secured. Following interface is used: RS 232, USB 2.0, Ethernet 10/100Mbit. Optionally the balances may be equipped in wireless interfaces WiFi.

### Software

Instruments are equipped with embedded software that is used in a fixed hardware and software environment and cannot be modified or uploaded via any interface or by other means after securing and/or verification. Software identification by its version number is accessible after pressing ON/OFF key on the overlay.

**The valid software version is: 2.2.2** for AS xxx.X2.yy PLUS and **4.0.2** for AS xxx.R2.yy PLUS. These versions will not be changed until the next revision.

### Non-essential devices

When non-essential device is connected to an electronic instrument through an appropriate interface the metrological qualities of the instrument shall not be adversely influenced.

### Securing components and verification marks

To secure components that may not be dismantled or adjusted by the user, the non-automatic weighing instrument has to be secured in a suitable manner on the locations indicated in the relevant drawings.

### Marks and inscription

The marks, facilities for the marks and the inscriptions on the non-automatic weighing instruments must fulfill the requirements of the OIML R76 -1. The markings: Max..., Min..., e..., d..., if  $d \neq e$  shall also be shown near the display of result if they are not already located there.

### 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 OIML Evaluation Report No. 0511-ER-0004-20 and in the Test Report 6052-PT-CH015-20.

**Drawing 1 - Side view of AS X2**

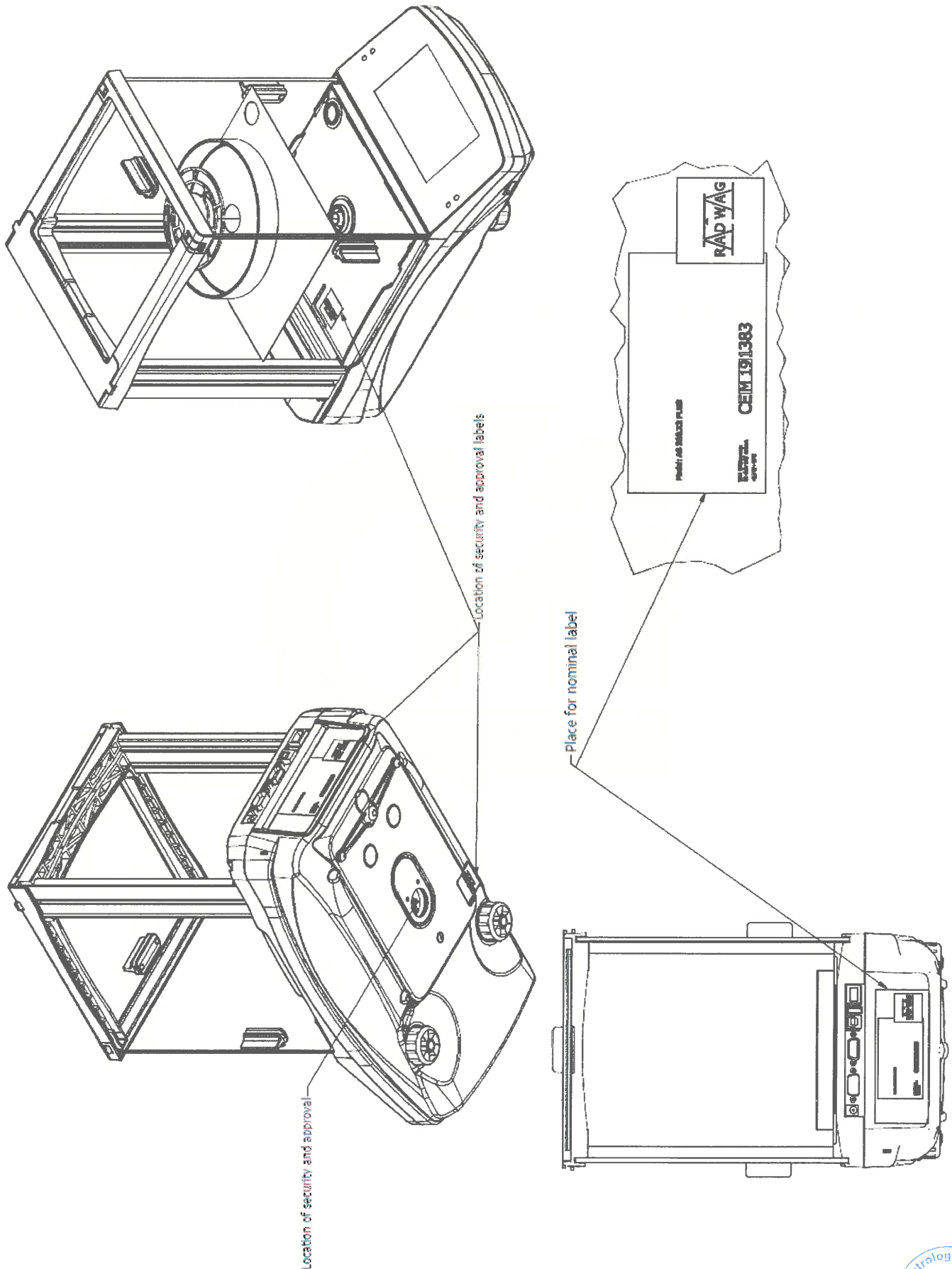


**Drawing 2 - Side view of AS R2**

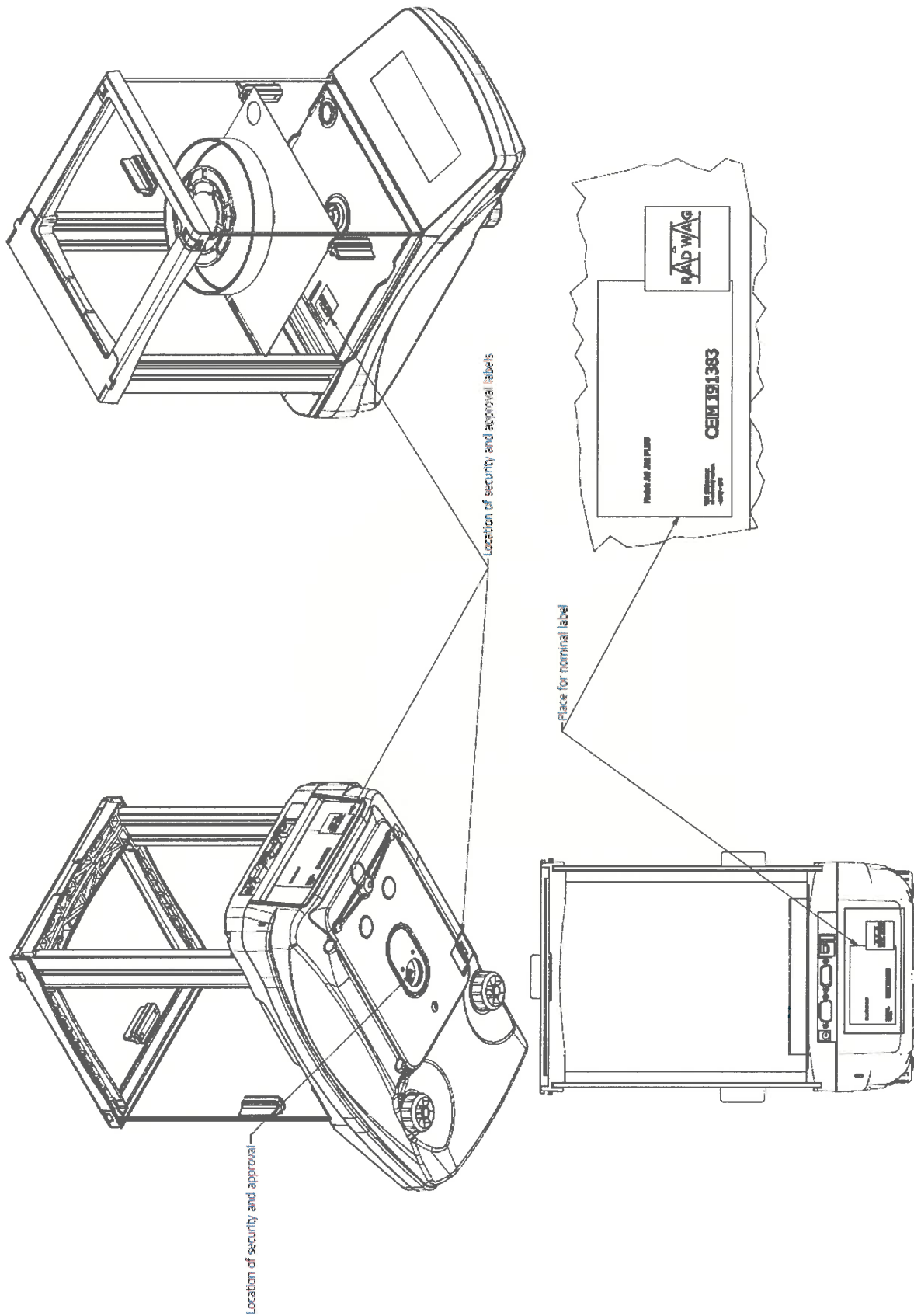




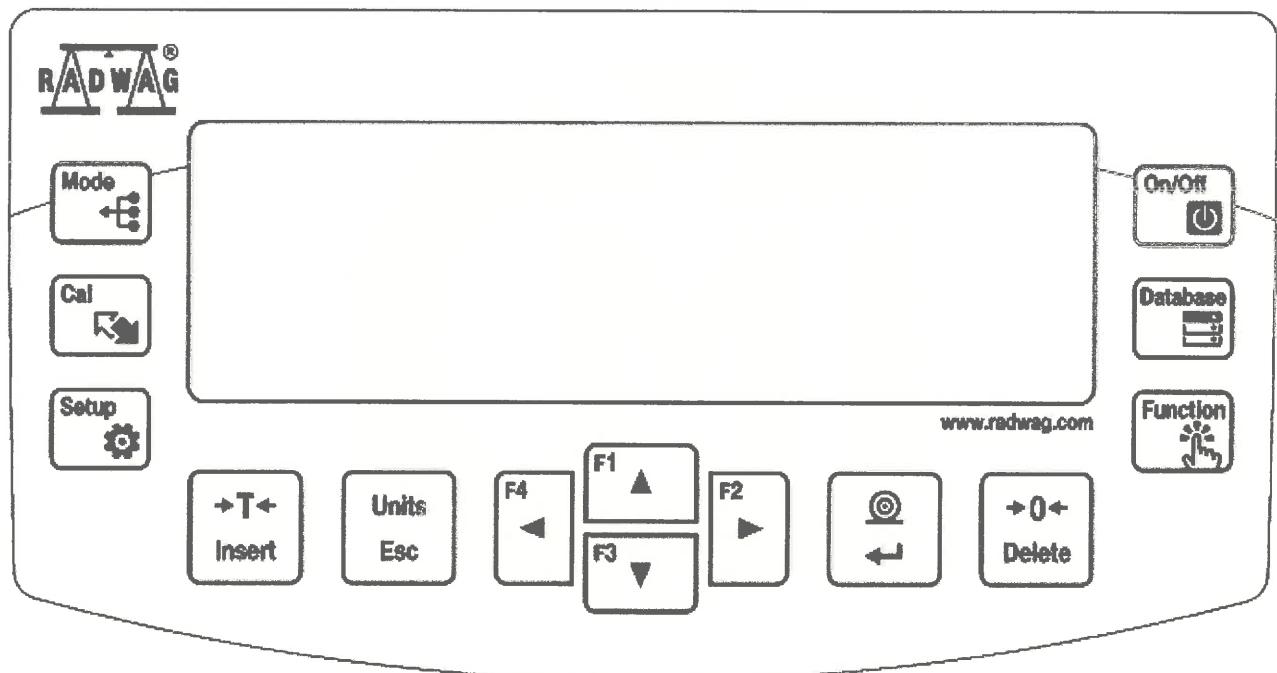
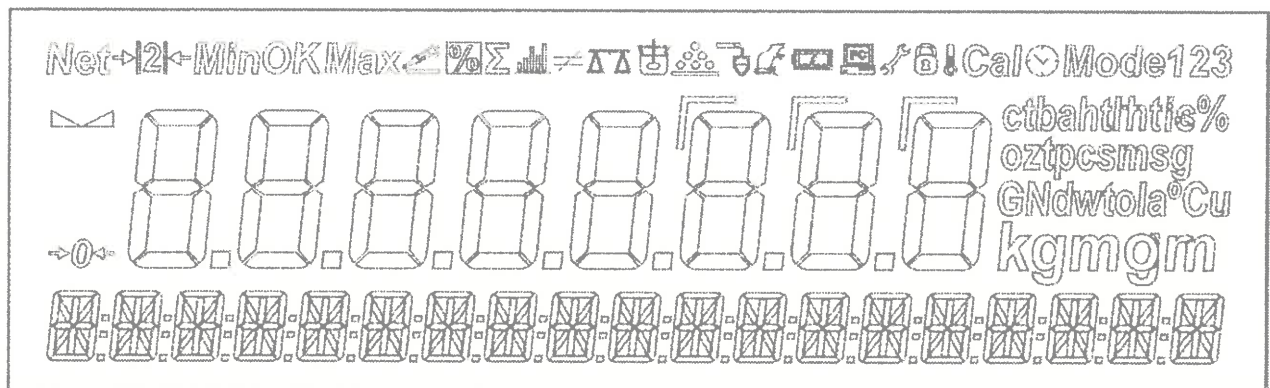
Drawing 3 - Main label position and legalization sign in AS X2



Drawing 4 - Main label position and legalization sign in AS R2



Drawing 5 – Display (LCD) and overlay of AS R2





Drawing 6 – Display (graphic) and overlay of AS X2

