

# Annex to application for conformity assessment of a Load cell to a weighing instrument in accordance with Welmec 8.8

*This is Annex No. 1*

Dated:

To application dated:

Company

Signed


## Documentation required (to be completed by applicant) for testing of a Load cell built into a weighing instrument

Applicable guidance document for testing and examination is Welmec 2.4

Note: All documentation must be equipped with date and or revision, which is to be updated in case of a new version.

Numbers in slashes /.../ refer to OIML R60 ed 2000.

### 1 General characteristics /7.1/

	<u>Reference</u>	<u>RISE note</u>
1.1. Designation of type (name)		
1.2. Marking of/where to find/ type designation		
1.3. Marking of /where to find/ test certificate number		
1.4. Direction of loading (tension, compression, beam, universal)		
1.5. Accuracy class /4.2/		
1.6. Maximum number of verification scale intervals, nmax /2.3.7/		
1.7. Value of the fractional error pi /2.4.2/		
1.8. Maximum capacity, Emax /2.3.5/		
1.9. Minimum capacity, Emin /2.3.8/		
1.10. Ratio of minimum LC verification interval (Y=Emax/vmin) /2.3.14/ (or minimum load cell verification interval, vmin) /2.3.10/		
1.11. Ratio of minimum dead load output return (Z=Emax/(2*DR)) /2.3.13/		
1.12. Safe load limit, Lim		
1.13. Temperature range /5.5.1/.		

### 2 Characteristics of the load cell interface

	<u>Reference</u>	<u>RISE note</u>
2.1. Excitation power supply (voltage, AC (frequency) or DC)		
2.2. Sensitivity (mV/V)		
2.3. Minimum input voltage per verification scale interval (µV/e)		
2.4. Input impedance (Ω)		

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### 3 Characteristics of the load cell cable

	<i>Reference</i>	<i>RISE note</i>
3.1. Type (4 or 6 wire system etc.)		
3.2. Sort (ground wire, screen etc.)		
3.3. Cross section of individual wires (mm <sup>2</sup> )		
3.4. Length (m), (or length/mm <sup>2</sup> )		

### 4 Conceptual designs, drawings and plans of components, sub-assemblies, electric circuits etc., in particular of

	<i>Reference</i>	<i>RISE note</i>
4.1. The load cell (with dimensions and material specified)		
4.2. Electrical connection elements, for connection the load cell to an indicator		
4.3. Documentation relative to software in accordance with 4.3.1-below (if appropriate) /D 31, 6.1.1 / <i>Appropriate if the following point is applicable: 7.1 3rd draft second paragraph; In addition, if the software modifies load cell performance, not exceeding the functions of analog to digital conversion and the linearization of the load cell output, then that software shall be evaluated under the terms in this recommendation and in accordance with OIML D31 Edition 2008(E) [8] Any weighing instrument function shall be evaluated under other appropriate Recommendations for weighing instruments</i>		
4.3.1. List of software modules that belong to the legally relevant part (Annex B)		
4.3.2. Declaration that all legally relevant functions are included in the description of software modules that belong to the legally relevant part (Annex B)		
4.3.3. Description of the software interfaces of the legally relevant software part and of the commands and data flows via this interface including a statement of completeness (Annex B)		
4.3.4. Description of the generation of the software identification		
4.3.5. List of parameters to be protected and description of protection means		
4.3.6. A description of suitable system configuration and minimal required resources (see 5.2.4)		
4.3.7. A description of security means of the operating system (password, etc. if applicable);		
4.3.8. A description of the (software) sealing method(s);		

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**Conceptual designs, drawings and plans of components, sub-assemblies, electric circuits etc., in particular of (continued)**

	<u>Reference</u>	<u>RISE note</u>
<b>4.3</b> Documentation relative to software (continued)		
<b>4.3.9.</b> An overview of the system hardware, e.g. topology block diagram, type of computer(s), type of network, etc. Where a hardware component is deemed legally relevant or where it performs legally relevant functions, this should also be identified		
<b>4.3.10.</b> A description of the accuracy of the algorithms (e.g. filtering of A/D conversion results, price calculation, rounding algorithms, etc.)		
<b>4.3.11.</b> A description of the user interface, menus and dialogues		
<b>4.3.12.</b> The software identification and instructions for obtaining it from an instrument in use		
<b>4.3.13.</b> List of commands of each hardware interface of the measuring instrument / electronic device / sub-assembly including a statement of completeness		
<b>4.3.14.</b> List of durability errors that are detected by the software and if necessary for understanding, a description of the detecting algorithms		
<b>4.3.15.</b> A description of data sets stored or transmitted		
<b>4.3.16.</b> If fault detection is realized in the software, a list of faults that are detected and a description of the detecting algorithm		
<b>4.3.17.</b> the operating manual		
<b>4.4.</b> Drawing of the marking plate		
<b>4.5.</b> Presentation of the load cell (drawing or photo) showing where verification and securing marks are to be applied		
<b>4.6.</b> Marking requirements /4.6, 4.7 (Form D9)/		

### **5 Information concerning special cases**

	<u>Reference</u>	<u>RISE note</u>
<b>5.1.</b> Reaction of the software to significant fault /6.1.1 /.		
<b>5.2.</b> Any other special information.		

### **6 Conceptual designs, drawings and plans of components, sub-assemblies, electric circuits etc., in particular of**

	<u>Reference</u>	<u>RISE note</u>
<b>6.1.</b> Flow diagram		
<b>6.2.</b> Samples of all intended print-outs		