

## Allow min, max e and d to be exclusively shown on electronic display

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The European legislation relating to non-automatic weighing instruments obliges the maximum capacity (Max), minimum capacity (Min), verification scale interval (e) and where relevant, the scale interval (d) to be marked on the weighing instrument. In light of digital developments there are weighing instruments on the market where this information is shown exclusively on the primary display. This is generally allowed in the majority of EU Member States, but there are a limited number of authorities that believe this should be indicated on the data plate as well as the primary display. CECIP, the European weighing industry association, is of the opinion this is not required and this position paper aims to provide a rationale for this position.

### 1. Legal framework

The requirements for non-automatic weighing instruments (NAWI) are defined in the EU Directive 2014/31/EU (NAWID). The directive is transposed in national legislation in the different EU Member States. The requirements are underpinned by the harmonised standard EN 45501 (2015) "Metrological aspects of non-automatic weighing instruments.

**What does Directive 2014/31/EU (NAWID) say about displaying min, max and e?**

#### Annex III 1.1 -Mandatory requirements

Annex III outlines the mandatory requirements as respects inscriptions. Equipment used in commercial transactions must bear the inscriptions specified in Annex III 1.1 in a clearly visible, legible and indelibly manner.

#### Annex III 1.2 -Details for affixing marks

The Annex III 1.2 creates a requirement for "adequate facilities" for the affixing of marks without clarifying what constitutes adequate facilities .

*Those instruments shall have **adequate facilities for the affixing** of the conformity marking and **inscriptions**. These shall be such that **it shall be impossible to remove** the conformity marking and inscriptions without damaging them, and that the conformity marking and inscriptions shall be visible **when the instrument is in its regular operating position**.*

Paragraph III 1.2 is split into two sentences. The first sentence requires the facilities for affixing to be adequate without restricting the method of affixing . The second sentence creates a requirement for protection against manipulation which adds clarity to the term

indelible. It also makes a requirement as to visibility in that any marking must be visible in the regular operating position. It does not clarify the term legible

It is contended by CECIP that these requirements of III 1.2 are fulfilled by an appropriately secured indication of max, min e and d on a display

**Annex III 1.3** sets out the additional requirements to be observed when using a data plate.

*Where a data plate is used it shall be possible to seal the plate unless it cannot be removed without being destroyed. If the data plate is sealable it shall be possible to apply a control mark to it.*

If a data plate is used, these requirements must be met. It is clear that this requirement does not create an obligation for a data plate to be used but offers it as an option amongst other potential solutions to meet the criteria of annex III.1.1 and annex III 1.2

**Annex III 1.4** specifies that the parameters Max, Min, e and d must be placed near the weight indicator.

*The inscriptions Max, Min, e, and d shall also be shown near the display of the result if they are not already located there.*

This requirement creates an obligation to show the inscriptions max, min e and d near the display if they are not already located there. It therefore follows that if they are already located there this requirement is not affected and there is no requirement to show them near the display. It is contended by CECIP that if the max, min, e and d are indicated in the display they are therefore not required to be repeated near the display

### **What are the requirements in German national legislation?**

Requirements from Directive 2014/31/EC are in Germany set in the so-called MessEG and MessEV. Markings on measuring instruments are generally required by the MessEG § 6 (5). Reference is made in this document to a legislative degree.

The MessEV provides further details in § 13 and § 15.

§ 13 (1) stipulates:

*Kennzeichnungen und Aufschriften müssen gut sichtbar, lesbar und dauerhaft<sup>1</sup> auf dem Messgerät oder dem sonstigen Messgerät angebracht sein; sie müssen klar, unauslöschlich, eindeutig und nicht übertragbar sein. Für Kennzeichnungen und Aufschriften müssen lateinische Buchstaben und arabische Ziffern verwendet werden. Andere Buchstaben oder Ziffern dürfen zusätzlich verwendet werden.*

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<sup>1</sup> „In the official versions of the directive (and MessEV § 13 (1)) , the word "indelible" is translated with "dauerhaft" (permanent). However, indelible translates in German as "unauslöschbar" or "unabwischbar".

*Non-official translation:*

*Markings and inscriptions shall be clearly visible, legible and indelible on the measuring instrument or on the other measuring instrument; they shall be clear, indelible, unambiguous and non-transferable. The markings and inscriptions shall be in Latin characters and Arabic numerals. Other letters or figures may be used in addition.*

The specifications for markings on NAWIs are set out in § 15 (3). Max, Min, e and d are named. It is specifically stipulated for these values that they must be affixed near the weight display.

*Die Höchstlast, die Mindestlast, der Eichwert und der Teilungswert müssen in der Nähe der Gewichtsanzeige angebracht sein ....*

*Non-official translation:*

*The maximum load, minimum load, verification scale interval and scale interval must be located near the weight indicator ...*

In this respect, MessEG and MessEV implement the requirements of Directive 2014/31/EU (NAWID).

### **What requirements are included in the harmonised standard EN 45501:2015?**

Requirements for displaying min, max and e are also included in section 7 of EN45501(2015). It is very important to note that the requirements of Annex III of the Directive are not part of the essential requirements outlined in Annex I and are not be harmonised for the purposes of the Directive. Section 7 of EN45501 should be seen as important and significant guidance on how to meet the requirements of Annex III, but a failure to meet the requirements of section 7 of the standard will not necessarily mean that the obligation of the Directive are not met

#### **Section 7.1.1 (Table 15)**

This section contains a table showing, inter alia, the Max, Min, e and d. These shall be permanently shown in at least one place, either at or near the display (reference to 7.1.2 of EN 45501).

It is also clarified that Max, Min, e and d may be displayed simultaneously by a software solution

#### **7.1.2 Presentation of markings and inscriptions**

*The markings and inscriptions shall be indelible and of a size, shape and clarity allowing easy reading.*

*They shall be located in clearly visible places and fixed permanently to the instrument, or on a non-removable part of the instrument itself. In case of a plate or sticker which is not destroyed when removed, a means of securing shall be provided, e.g. a control mark that can be applied.*

*As an alternative all applicable markings in column 5 of Table 15 may be simultaneously displayed by a software solution either permanently or on manual command. In this case the markings are considered as device-specific parameters (see T.2.8.4, 4.1.2.4 and 5.5).*

*The markings: Max ...,*

*Min ...,*

*e = ..., and*

*d = ... if  $d \neq e$*

*shall be shown at least in one place and permanently either on the display or near to the display in a clearly visible position and need not be repeated elsewhere.*

**Acceptable solutions:**

*a) Marking of Max, Min, e ... and d if  $d \neq e$ :*

*These values are permanently and simultaneously shown on the display of the weighing result as long as the instrument is switched on.*

*They may be automatically scrolled (displayed alternating one after each other) in one display. Automatically scrolling (but not on manual command) is considered as "permanently".*

**2 Interpretation by certain German authorities**

According to data collected from the market the majority of authorities in Europe are of the opinion that only displaying the min, max and e on an electronic display meets the requirements of Annex III of 2014/31. However, it seems that certain verification authorities in Germany are of the opinion that a display is not sufficient, basing their argument on the meanings of the terms "visible", "legible" and "indelible" as respects the inscriptions required by annex III. This is not only specified in the standard, but also in the directive. Chapter 7 of EN 45501 requires the same wording for the attachment of inscriptions. This becomes first apparent from Table 15 of 7.1.1 of the standard (see columns for maximum capacity, minimum capacity, e). From the point of view of the authorities, an inscription is clearly required here (column four) and only at the same time (i.e. in addition to the inscription) a display by a software solution is permitted.

No contrary statements are made under 7.1.2 of the standard either. Paragraph 2 of 7.1.2 requires that the inscriptions must be permanently attached to the measuring instrument. Para. 3 of clause 7.1.2 then specifies an alternative, namely a permanently affixed inscription and at the same time (compare wording of Table 15 to 7.1.1 column 5) the display by means of a software.

In addition, Article 12 of the Directive states that harmonised standards shall only refer to the essential requirements set out in Annex I to the Directive. Accordingly, statements on the technical implementation of inscriptions in EN 45501 would have no legal significance, as these are not described in Annex I, but in Articles 15 ff and Annex III.

## **2. CECIP's Position**

CECIP's position is that an exclusive representation of the values Max, Min, e and d in the display is sufficient.

Annex I defines the essential requirements for NAWIs. The Directive refers to this in Art. 12 and states that harmonised standards published in the Official Journal of the EU give a presumption of conformity with these essential safety requirements. The inscriptions regulated in Annex III are not regarded as essential requirements under the Directive and the specifications have therefore been made in a separate Annex.

Annex III of the Directive lays down general requirements for inscriptions and requires that adequate facilities shall be provided. Annex III leaves room for technical solutions and does not exclude the indication on the display. A data plate is not explicitly required. However, if a data plate is used, requirements are specified for it.

The opposite view of the authorities creates a broad definition of the term "inscription" and ignores above all the "open-technology" requirements of the directive. In addition, it ignores the fact that the acceptable solution in clause 7.1.2 of EN 45501 allows for a display indication. Although section EN 45501 does not create a presumption of conformity in accordance with Art 12 of the Directive with regard to the inscription requirements of Annex III, clause 7.1. 2 should be seen as a strong indication that not only the technical authors who formulated the content of EN 45501, but also the EU Commission, which ultimately approved the text as a harmonised standard, explicitly assumed the possibility of display, especially since the two factual requirements "indelibly" and "visible" (as well as the meaning and purpose of the mandatory information) are fully met here.

### **Justification**

The harmonised standard EN 45501 is based on the international standard OIML R76. The EN 45501 was developed in a European expert committee with the following core objectives:

- Formalisation of the requirements of the Directive 2014/31 (conformity with the directive)
- Harmonisation of requirements for NAWIs in Europe
- The requirements are largely consistent with OIML R 76 and thus harmonised as far as possible worldwide
- Ensuring freedom for product innovation

Directives and harmonised standards must always be considered in conjunction with each other. The standard formalises and specifies the requirements of the Directive, with a legal

presumption of conformity as in relation to Annex I of the Directive (see Art. 12): With regard to the requirements of Annex III, this binding presumption of conformity does not formally apply, but this does not alter the fact that the European Standard is also meaningful with regard to the possibility of (harmonising) compliance with these requirements, particularly as there is no conflict with the requirements of the text of the directive. In this respect, EN 45501 should be seen as helpful in "harmonising" the requirements of Annex III of the directive.

EN 45501 expressly permits exclusive indication on the display:

The term "simultaneously" in the current DIN EN 45501 is unfortunately misinterpreted (misleading) by the interpretation of the authorities criticised here. It is the view of CECIP that is unreasonable that the term be interpreted in such a way that the indication in the display is required in addition to the application of a marking on the terminal (display). CECIP would be of the view that the term "simultaneously" thus refers to the coherence of the markings. It would appear consistent that if it was intended that there be a requirement for the indication to be marked twice the term "additionally" rather than "simultaneously" would have been used.

What is expressly required here "at the same time" is the display of all mandatory information<sup>2</sup>.

Taking this into account, the comments in clause 7.1.2 of EN 45501 should be read as follows:

Third paragraph:

- So "alternative" does not just mean "additional". This should be self-evident already after the literal meaning of "alternative".
- "Simultaneously" also refers to the various prescribed contents of the inscriptions - and not to "simultaneously" in the sense of "in addition" to the sign!

Fourth paragraph:

- The phrase "Markings ... need not be repeated elsewhere." provides an explicit argument that duplication is not required

Acceptable solutions: (a) first paragraph:

- The requirement that "These values are permanently and simultaneously shown on the display of the weighing result..." also means that all the above information shall be shown on the display<sup>1)</sup> at the same time - and not that it should be shown there in addition to the corresponding information on the label

This is also the correct understanding of various Notified Bodies: Also in numerous type examination certificates the representation on the display is approved as conforming, example

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<sup>2</sup> According to EN 45501, "Simultaneously" also means that the values on a display device are automatically scrolled (displayed alternately one after the other). Automatic scrolling (i.e. not on manual command) is considered "indelibly".

*The inscriptions Max, Min, e as, as required by Directive 2014/31/EU Annex III point 1.4 are presented in the display by software or on a label near the display.*

## **Conclusion**

The sole purpose of the regulation on mandatory parameters is to ensure that they are actually applied to the weighing instrument in a clearly visible place, completely and indelibly (i.e. cannot be tampered with), so that the authorised field of application of the weighing instrument is clearly and unambiguously indicated. For this purpose, it is irrelevant whether this information is provided in the form of an "inscription" or by means of an indication on the display<sup>3</sup> which is permanently and completely visible during use of the weighing instruments). What is significant is the permanent and complete indication. This is guaranteed for the display as well as for the other inscriptions.

The display data Max, Min, e and d are unchangeable parameters of the weighing instrument. They are stored in the verifiable memory of the weighing instrument and cannot be changed. Access to these data is only possible after the verification seal has been destroyed. This means that the weighing instrument loses its validity for verification. The security of this data is therefore higher than when a label is affixed.

Neither the Directive nor German national legislation (MessEG or MessEV) require that the values Max, Min, e and d are shown both on the display and on the label (or any other label affixed to the balance).

The harmonised standard EN 45501 specifies the requirements of the directive and explicitly permits an exclusive indication on the display. This does not mean an inadmissible deviation from the requirements of the directive, because: The directive does not explicitly state otherwise and, according to the meaning and purpose of the mandatory information, it is sufficient that it is available once to provide information about the permitted area of use.

The term "simultaneously" does not refer to the simultaneous presence of a physical label and the presentation of information on the display. It rather refers to the simultaneous display of the prescribed values (!) Max, Min, e and d, i.e. the information itself.

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<sup>3</sup> According to EN 45501, "Simultaneously" also means that the values on a display device are automatically scrolled (displayed alternately one after the other). Automatic scrolling (i.e. not on manual command) is considered "indelibly".