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PANEL MOUNTED EQUIPMENT – ELECTRICAL MEASURING INSTRUMENTS – DIMENSIONS FOR PANEL MOUNTING

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61554 has been prepared by IEC technical committee 85: Measuring equipment for electrical and electromagnetic quantities.

It cancels and replaces IEC 60473, published in 1974.

The text of this standard is based on the following documents:

FDIS	Report on voting
85/204/FDIS	85/208/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

The committee has decided that this publication remains valid until 2010. At this date, in accordance with the committee's decision, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition; or
- amended.

Annex A is for information only.

PANEL MOUNTED EQUIPMENT – ELECTRICAL MEASURING INSTRUMENTS – DIMENSIONS FOR PANEL MOUNTING

1 Scope

This International Standard defines a system of dimensions for panel mounting of equipment. It is applicable to electrical and electrically operated indicating, recording and control instruments.

It applies to the following types of instruments with protruding bezels:

– instruments with square housing;
– instruments with rectangular housing with lateral orientation;
– instruments with rectangular housing with upright orientation;
– instruments with round housing and square bezel;
– instruments with round housing and rectangular bezel.

The purpose of this standard is to establish dimensional interchangeability between instruments made by different manufacturers. To fulfil this requirement, a defined set of dimensions has been chosen. Using these dimensions, it should be easy to combine instruments of different sizes on the same panel making good use of the available panel space and to produce a satisfactory layout.

2 Definitions

For the purpose of this International Standard the following definitions apply:

2.1
cut-out
the hole in the panel into which the instrument or group of instruments is inserted

2.2
bezel
the front projecting surface or rim around the housing of the instrument

2.3
instrument size
the overall maximum width and height of the bezel

3 Requirements

3.1 General

The instrument size serves as a basis for defining the various dimensions which permit interchangeability of the instrument.

Only positive tolerances are allowed for cut-out dimensions and only negative tolerances for the instrument size.

The dimensions of the housings of the instruments are not specified in this standard. The only exception to this is instruments with round housing which are covered in annex A.

Instruments that are mounted together in a common cut-out are shown as mounted without any gaps between them. The method for determining the dimensions of the common cut-out is specified below.

In the tables and drawings included in this standard, the following symbols are used:

*A*1 bezel width;

*A*2 bezel height;

*L*1 cut-out width;

*L*2 cut-out height.

3.2 Instrument size designation

The size designation of instruments complying with the requirements of this standard shall be as follows:

IEC 61554 – $A1 \times A2$

3.3 Dimensions

In general, the dimensions shall allow easy central mounting of the instrument into the cut-out.

On each side, the housing of the instrument shall have a clearance of at least 0,2 mm against the cut-out 48 mm or at least 0,5 mm for all other instrument. The maximum value of this clearance shall be such that it shall still allow the instrument to find a position where the cut-out is not visible.

3.4 Individual cut-out mounting

The nominal instrument sizes and the corresponding cut-out sizes and maximum tolerances for the different shapes of instruments shown in figures 1, 2 and 3 are given in table 1.

The series of nominal instrument sizes and cut-out sizes can be extended according to the logical sequence of values. Values for the corresponding upper tolerances shall be in accordance with the relevant ISO tolerance range.

3.5 Common cut-out mounting

Instruments with square and rectangular housing are often mounted closely together in a group in a common cut-out. In such instances the dimensions of the cut-outs depend upon the number and sizes of the instruments and upon the overhang of the bezels of the instruments at either end of the group.

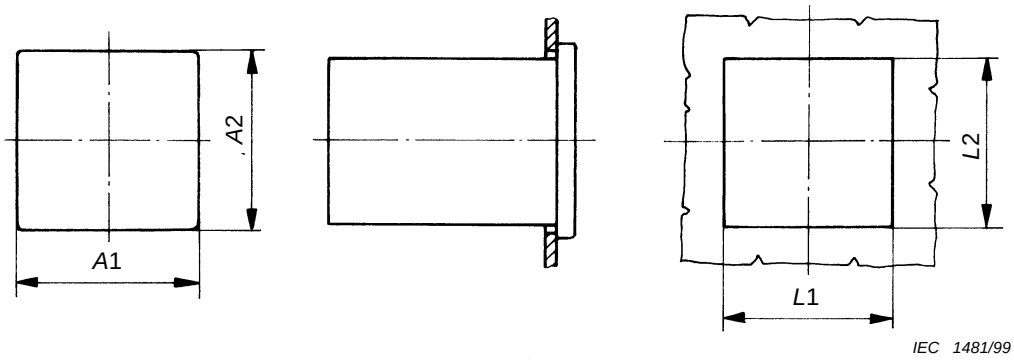
A formula is given below for calculating the overall size of the common cut-out.

When mounting a group of instruments in a row in a common cut-out, as shown in figure 4, the overall cut-out width *Lc* shall be calculated as the sum of the widths *A*1 of the individual instruments in the group, minus 3 mm. This formula does not apply to instruments with a width *A*1 less than 36 mm.

The tolerance for a common cut-out width is the same as the tolerance for the smallest instrument to be mounted in the common cut-out.

The same principles shall be used for calculating the cut-out size when mounting a group of instruments in a single column in a common cut-out.

NOTE – Instruments to be mounted in rows or columns should have fixing points on all four sides of the housing.

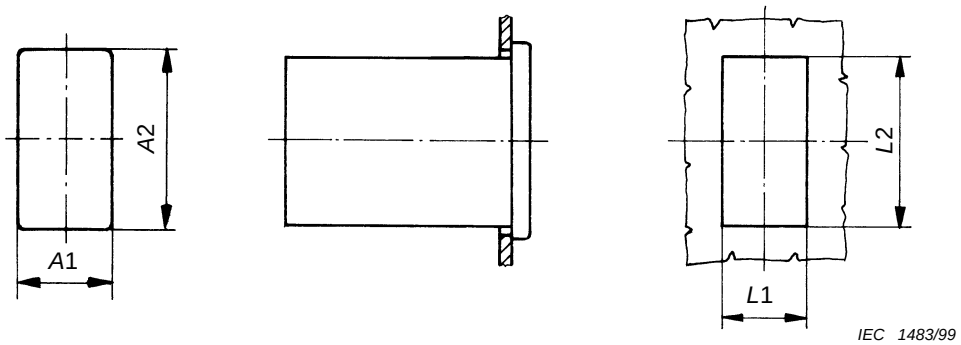


Dimensions in millimetres

Figure 1 – Square housing

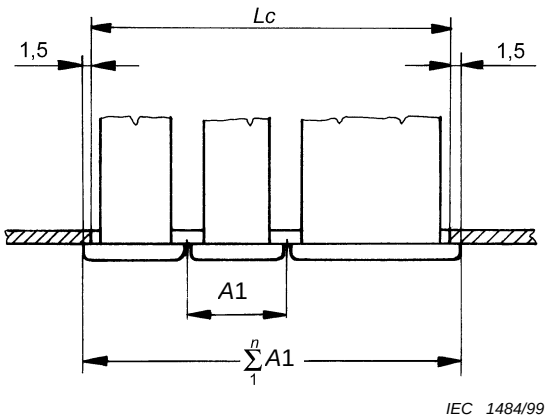
Dimensions in millimetres

Figure 2 – Rectangular lateral housing



Dimensions in millimetres

Figure 3 – Rectangular upright housing



$$Lc = \sum_{1}^{n} A1 - 3$$

Dimensions in millimetres

Figure 4 – Common cut-out mounting