

Second edition
2016-05-01

Corrected version
2016-08-15

**Resistance welding equipment —
Transformers — Integrated
transformers for welding guns**

*Matériel de soudage par résistance — Transformateurs —
Transformateurs incorporés pour pinces à souder*

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[ISO 10656:2016](https://standards.iteh.ai/catalog/standards/sist/ec18916f-87af-4221-82c8-6312 added57899/iso-10656-2016)

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Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Dimensions and characteristics of transformers	1
4 Additional equipment	6
4.1 Grounding provision	6
4.2 Thermal protection	6
4.3 Output current sensing coil	6
5 Marking	7
5.1 General	7
5.2 Rating plate	7
5.3 Colour of exterior finish	7
6 Designation	8
7 Test conditions	8
7.1 Type tests	8
7.1.1 Mechanical strength	8
7.1.2 Dynamic behaviour of the output terminals	8
7.2 Thermal test (type test)	9
Annex A (informative) Secondary current and duty cycle	10
Bibliography	11

<https://standards.iteh.ai/catalog/standards/sist/ec18916f-87af-4221-82c8-6312 added57899/iso-10656-2016>
 ISO 10656:2016
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 44, *Welding and allied processes*, Subcommittee SC 6, *Resistance Welding and allied mechanical joining*.

This second edition cancels and replaces the first edition (ISO 10656:1996), which has been technically revised. It also incorporates the Technical Corrigendum ISO 10656:1996/Cor. 1:2000.

This corrected version of ISO 10656:2016 incorporates the following corrections:

- the example of a designation in [Clause 6](#) has been dated with the year of publication;
- a key has been added to [Figure A.1](#).

Requests for official interpretations of any aspect of this International Standard should be directed to the Secretariat of ISO/TC 44/SC 6 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

Resistance welding equipment — Transformers — Integrated transformers for welding guns

1 Scope

This International Standard specifies additional requirements to those given in ISO 5826 for single-phase transformers used in AC welding. It is intended to be used in conjunction with ISO 5826, whose requirements it amends.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5826:2014, *Resistance welding equipment — Transformers — General specifications applicable to all transformers*

IEC 60417-DB, *Graphical symbols for use on equipment*¹⁾

3 Dimensions and characteristics of transformers

The dimensions and characteristics of transformers shall be in accordance with

- [Table 1](#) for 50 Hz transformers,
- [Table 2](#) for 60 Hz transformers,
- [Figures 1](#) and [2](#) for type H transformers, and
- [Figures 3](#) and [4](#) for type J transformers.

The cooling water flow rate, Q , shall be 4 l/min.

The transformers are suitable for duty cycles up to 20 % (see [Annex A](#)).

1) See the ISO Online browsing platform: available at <http://www.iso.org/obp>

Table 1 — 50 Hz transformer types, lengths and electrical characteristics

Type ^a	AC no-load voltage U_{20} V	Overall length l_{1max} mm	Mounting hole spacing l_2 mm	Minimum permanent output current I_{2p} kA	Mass (approximate) m kg
H	4,5	245	170	4	18
H	5,6	270	170	4	23
J	6,3	275	190	5,4	26
J	7,1	295	190	5,4	29
J	8	310	230	5,4	32
J	10	370	260	5,4	39
J	13,5	460	350	5,4	52

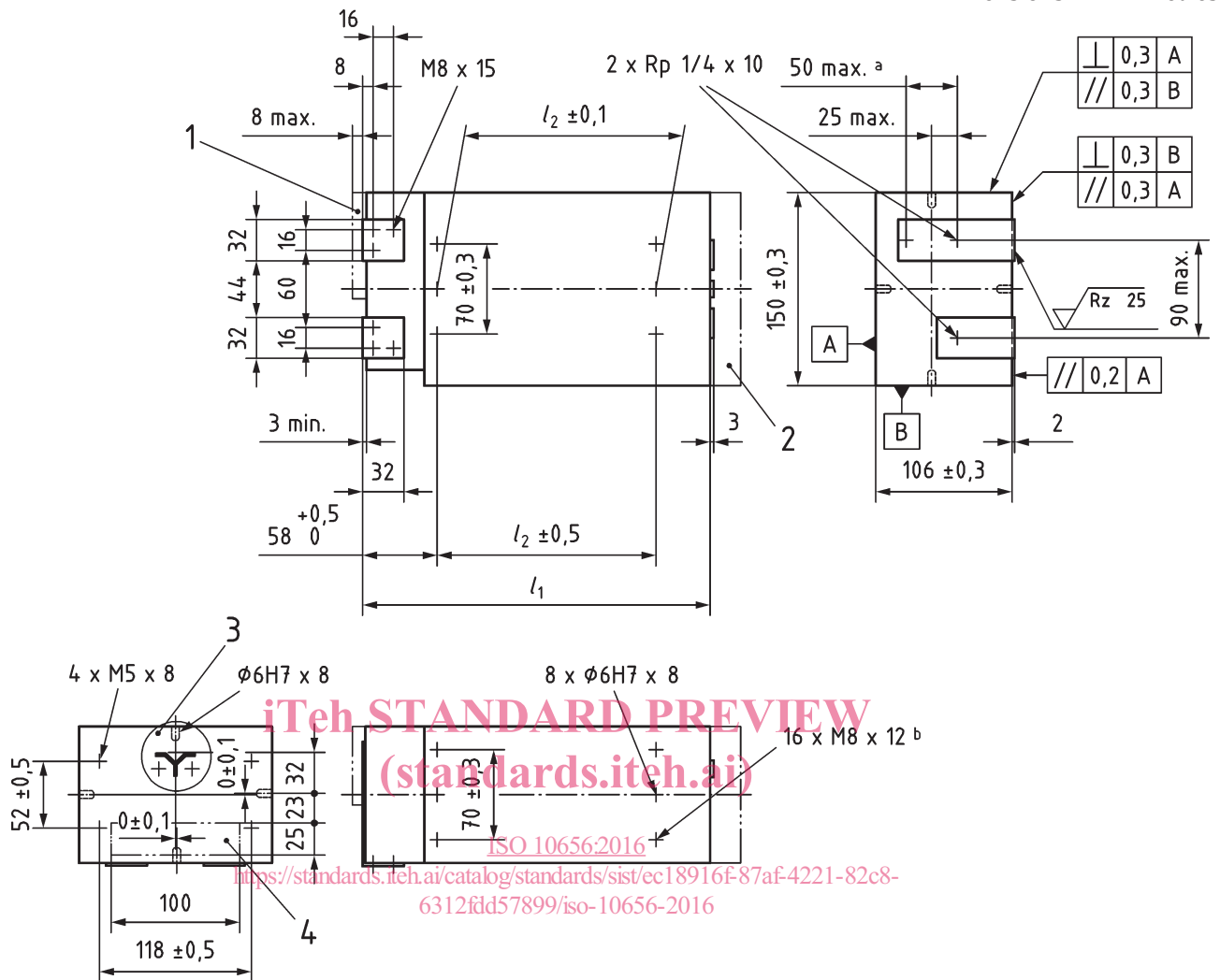
^a See ISO 5826:2014, Annex D.

Table 2 — 60 Hz transformer types, lengths and electrical characteristics

Type ^a	AC no-load voltage U_{20} V	Overall length l_{1max} mm	Mounting hole spacing l_2 mm	Minimum permanent output current I_{2p} kA	Mass (approximate) m kg
H	5,4	245	170	4	18
H	6,7	270	170	4	23
J	7,6	275	190	5,4	26
J	8,5	295	190	5,4	29
J	9,6	310	230	5,4	32
J	12	370	260	5,4	39
J	16,2	460	350	5,4	52

^a See ISO 5826:2014, Annex D.

Dimensions in millimetres

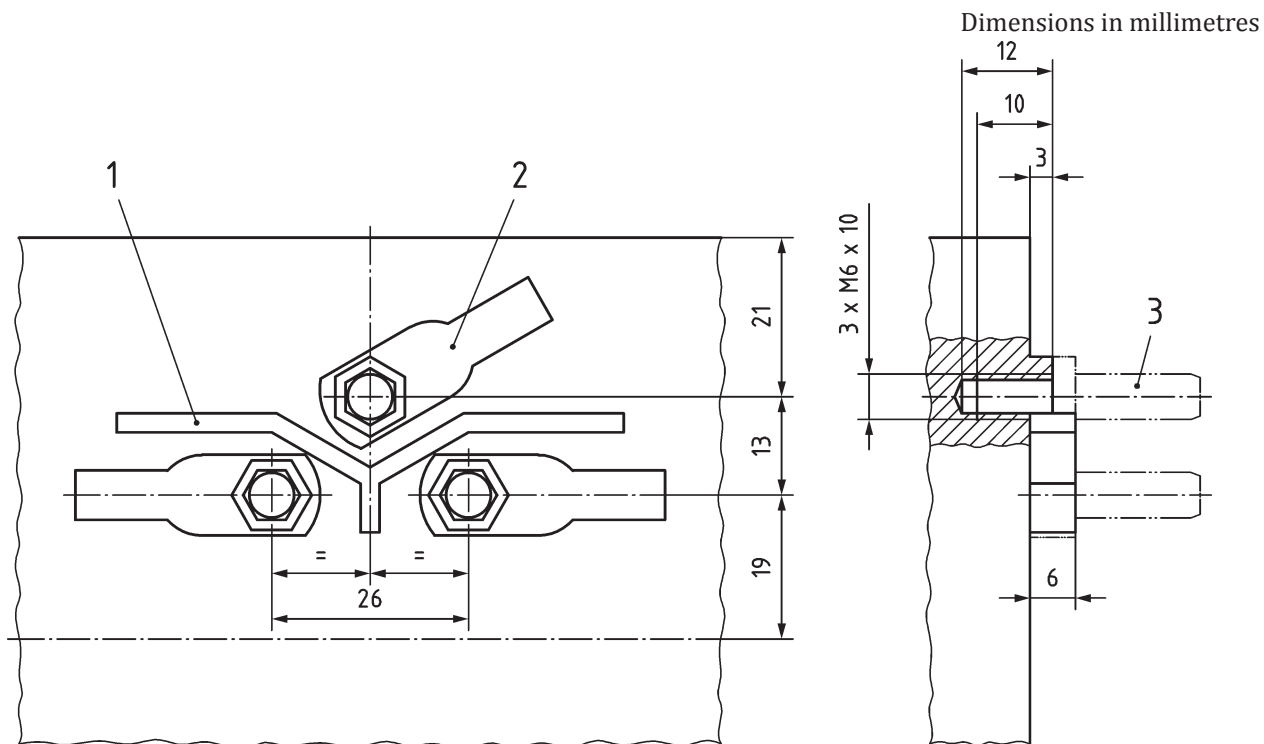


Key

- 1 maximum permissible protuberance for measuring coil
 - 2 connection box
 - 3 for detailed view, see [Figure 2](#)
 - 4 output area for M and T
- l_1, l_2 see [Tables 1](#) and [2](#)
- a Water holes can be positioned anywhere along this dimension.
 - b Fitted with steel inserts — wire type inserts are not acceptable.

NOTE For marking, see [Clause 5](#).

Figure 1 — Dimensions of type H transformers



Key

- 1 insulating barrier
- 2 $\varnothing 6$ lug, 10 mm² cable
- 3 $\varnothing 6$ contact pin

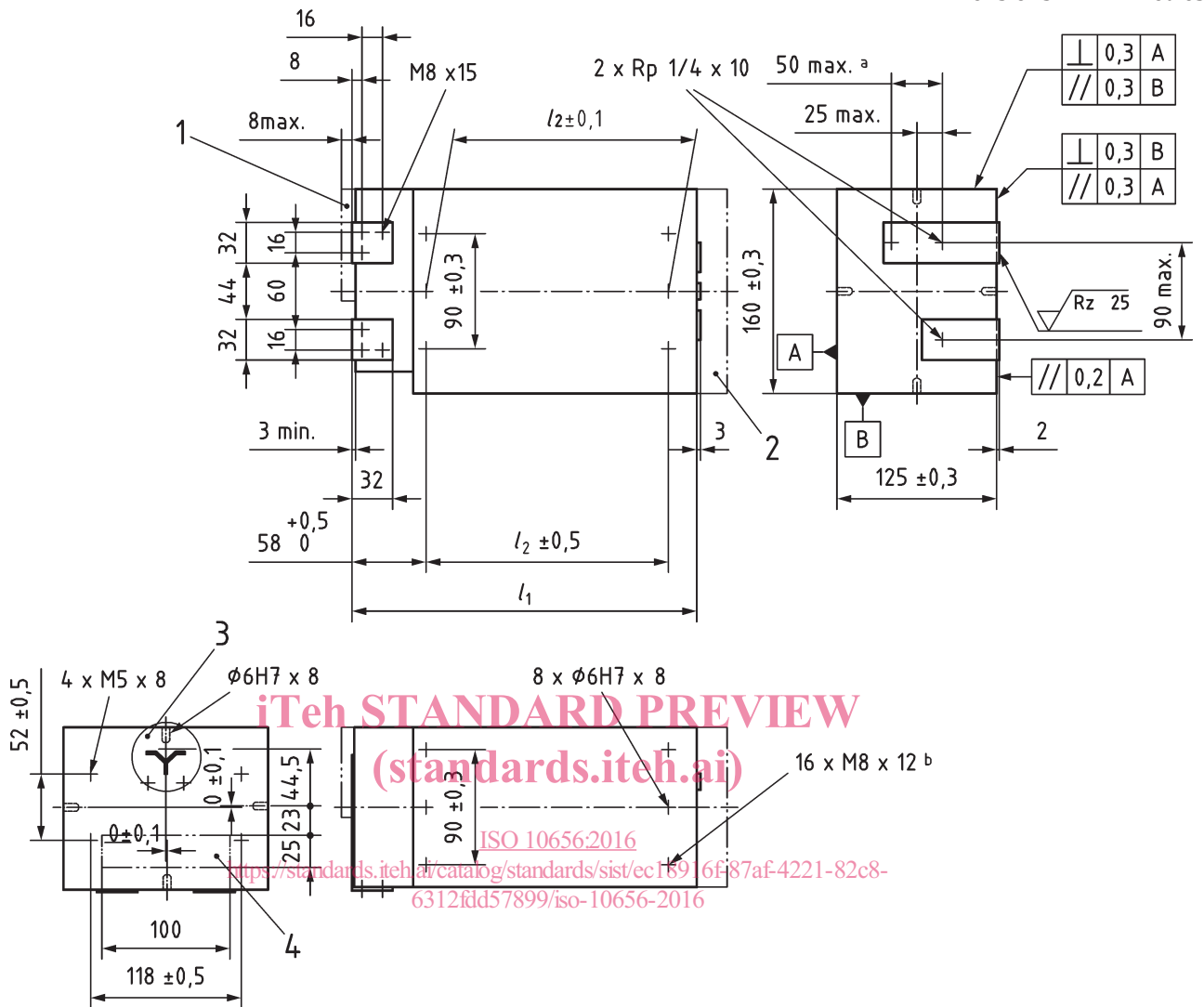
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NOTE This is a detailed view of [Figure 1](https://standards.iteh.ai/catalog/standards/sist/ec18916f-87af-4221-82c8-6312fdd57899/iso-10656-2016).

Figure 2 — Size and location of the three M6 holes intended for supply connection of type H transformers

Dimensions in millimetres



Key

- 1 maximum permissible protuberance for measuring coil
- 2 connection box
- 3 for detailed view, see [Figure 4](#)
- 4 output area for M and T

l_1, l_2 see [Tables 1](#) and [2](#)

^a Water holes can be positioned anywhere along this dimension.

^b $16 \times M10 \times 15$ for $U_2 = 13,5 \text{ V}$ only: fitted with steel inserts — wire type inserts are not acceptable.

NOTE For marking, see [Clause 5](#).

Figure 3 — Dimensions of type J transformers