

SLOVENSKI STANDARD

SIST EN 50216-4:2016

01-februar-2016

Nadomešča:
SIST EN 50216-4:2002

Pribor za močnostne transformatorje in dušilke - 4. del: Osnovni pribor (ozemljitveni priključek, naprave za polnjenje in praznjenje, termometrski žep, kolesni sestav)

Power transformer and reactor fittings - Part 4: Basic accessories (earthing terminal, drain and filling devices, thermometer pocket, wheel assembly)

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Zubehör für Transformatoren und Drosselspulen -- Teil 4: Kleine Zubehörteile (Erdungsanschlussstück, Ablass- und Fülleinrichtungen, Thermometertasche, Rollen)

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Accessoires pour transformateurs de puissance et bobines d'inductance -- Partie 4: Accessoires de base (borne de terre, orifice de remplissage, vanne de vidange, doigt de gant, galets de roulement)

Ta slovenski standard je istoveten z: EN 50216-4:2015

ICS:

29.180 Transformatorji. Dušilke Transformers. Reactors

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en,fr,de

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EUROPEAN STANDARD
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English Version

Power transformer and reactor fittings - Part 4: Basic accessories (earthing terminal, drain and filling devices, thermometer pocket, wheel assembly)

Accessoires pour transformateurs de puissance et bobines d'inductance - Partie 4: Accessoires de base (borne de terre, orifice de remplissage, vanne de vidange, doigt de gant, galets de roulement)

Zubehör für Transformatoren und Drosselspulen - Teil 4: Grundzubehör (Erdungsklemme, Ablass- und Füllrichtungen, Thermometertasche, Radbaugruppe)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
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Foreword

This document (EN 50216-4:2015) has been prepared by CLC/TC 14, "Power transformers".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical standard or by endorsement (dop) 2015-12-15
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2017-12-15

This document supersedes EN 50216-4:2002.

The main technical changes compared to the first edition are the following:

- Earth terminal Type B3 added;
- Figure 7 updated;
- Clause 8 completely new.

EN 50216-4 is to be read in conjunction with EN 50216-1.

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1 Scope

EN 50216-4 specifies basic accessories of transformers / reactors, such as

- Thermometer pockets, to be used for liquid immersed transformers,
- Earth terminals; to be used for liquid immersed and dry-type transformers,
- Draining plugs, to be used for liquid immersed distribution transformers,
- Filling openings, to be used for liquid immersed distribution transformers,
- Rollers, choice and distance to be used for liquid immersed and dry-type transformers.

After agreement between purchaser and manufacturer, this part of EN 50216 Series may still be applicable either as a whole or in part to large power transformers or special transformers.

2 Normative references

Addition to EN 50216-1:

EN 50464	Series	<i>Three-phase oil-immersed distribution transformers 50 Hz, from 50 kVA to 2 500 kVA with highest voltage for equipment not exceeding 36 kV</i>
EN 50522		<i>Earthing of power installations exceeding 1 kV a.c.</i>
EN 50541	Series	<i>Three-phase dry-type distribution transformers 50 Hz, from 100 kVA to 3 150 kVA, with highest voltage for equipment not exceeding 36 kV</i>
EN 60076	Series	<i>Power transformers (IEC 60076 Series)</i>

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply:

3.1

thermometer pocket

a device, generally mounted (may be welded) on the transformer or reactor cover, intended to house a thermometer to measure the insulating liquid temperature (marking A)

3.2

earth terminal

a terminal placed on the dry-type transformer structure or on the liquid immersed transformer/reactor tank, for connection to an earthing system (marking B)

3.3

draining plug

a device intended to sample or remove the insulating liquid from a transformer tank (marking C)

3.4**filling openings**

a facility for filling a transformer tank with insulating liquid

3.5**roller**

the device equipped with wheels to be fixed at the bottom of the transformer for the positioning on final installation place (marking W)

3.6**wheel assembly**

the set of rollers used for scrolling the transformer on the beam (U) or rail track of the final installation place

4 Thermometer pockets to be used for liquid immersed transformers**4.1 General**

Clause 4 specifies the thermometer pockets for liquid immersed transformers in order to ensure the interchangeability of the accessories to this pocket.

The location and the method of fitting on the cover are not specified by this standard.

The transformer shall be in accordance with the EN 60076 series and EN 50464-1 for liquid immersed transformer.

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The opening shall be protected against the ingress of moisture and foreign bodies.

The pocket has to be filled with oil or other suitable medium to ensure transfer of heat.

4.2 Dimensions of thermometer pockets

The closure (like a bolt / gasket / cap to avoid get in dust and water) and the method of manufacturing is not specified by this standard.

Dimensions in millimetre

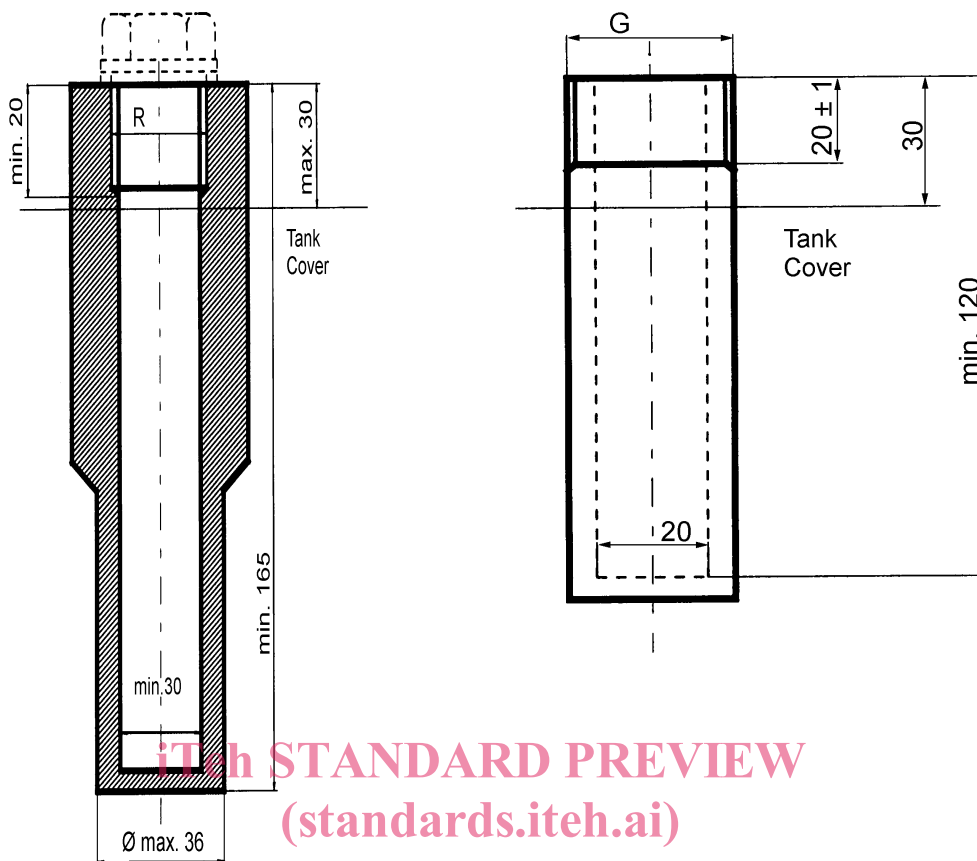


Figure 1 - Type A1 R=1" [SIST EN 50216-4:2016](https://standards.iteh.ai/catalog/standards/sist/ec8c6206-1761-4f62-9f27-0f041104ec8a/sist-en-50216-4-2016) Figure 2 - Type A2 G=3/4"

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5 Earth terminals to be used for liquid immersed and dry-type transformers

5.1 General

Clause 5 specifies the shape and dimensions of earth terminals for liquid immersed transformers, complying with the EN 60076 series and EN 50464 series for liquid immersed transformers and EN 50541 series for dry-type transformers.

The terminal shall ensure continuous electrical continuity and shall be capable of carrying a current calculated to EN 50522. Earth terminals with larger contact surface for higher fault current or duration of the fault can be designed according to EN 50522.

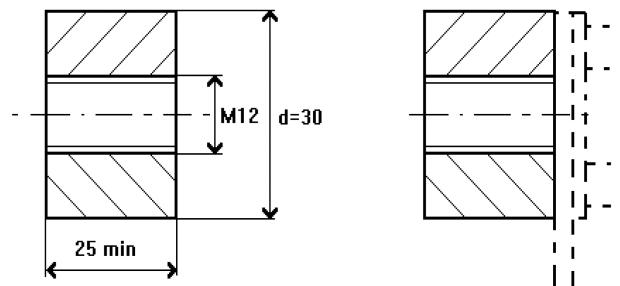
Three types are available with different current rating, according to the practice of different countries.

5.2 Dimensions of different earth terminals

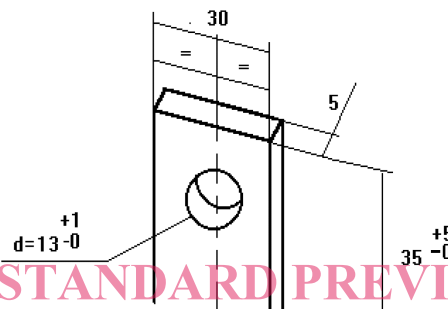
Material for all earth terminals should be Stainless steel or normal steel with tin- or zinc plated at the contact surface to protect against corrosion.

Dimensions in millimetre

Type B1



Type B2



Type B3 (length min 40mm / circular welding seam min 4mm in height)

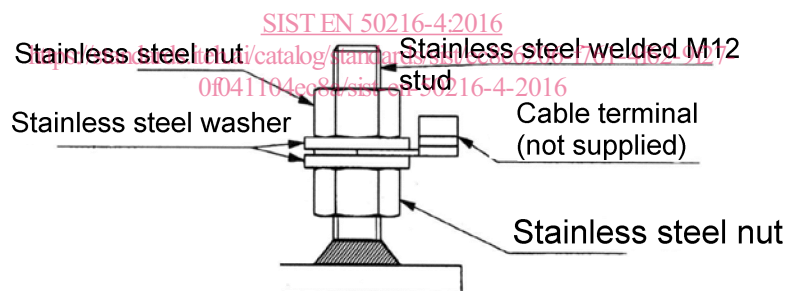


Figure 3 — Typical earth terminals used for transformers type B1, B2 and B3

Table 1 — Typical fault current for type B1, B2 and B3 (preferred solution for distribution transformers)

Type	Material	Initial Temp. (°C)	Final Temp. (°C)	Cross section (mm ²)	Duration of the fault current (s)	Calculated fault current (RMS value) (kA)
B1	steel	40	300	≈ 570	1	≈ 38
B2	steel	40	300	≈ 150	1	≈ 10
B3	steel	40	300	≈ 76	1	≈ 5

NOTE Type B3 was successful tested with a fault current of 6kA 1second.