BS 7856:2017

BSI Standards Publication

Specification for special design and other features of alternating current watthour meters for active energy for use in the UK (Accuracy Classes A and B)

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Contents

Summary of pages
This document comprises a front cover, and inside front cover, pages i to iv, pages 1 to 26, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 July 2017. It was prepared by Technical Committee PEL/13, *Electricity meters*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 7856:2013, which is withdrawn.

Relationship with other publications

The standard specifies several conditions which are more stringent than currently exist within other European metering standards, reflecting the differences in working practices that exist between the United Kingdom and other European Union member states. It is, however, important to note that this British Standard is intended to augment the provisions of certain European standards (see Clause 2, "Normative references") and so, in instances where this document is non-prescriptive, the provisions of these other standards prevail and are therefore to be taken into account.

Information about this document

This standard has been revised to take account of the introduction of the IEC standard for electricity meter safety (IEC 62052-31) and developments in the UK metering market, principally the roll-out of smart metering to the residential market. The decision to further revise the standard came about because of:

- the incorporation of a supply control switch in every meter, particularly with regard to design considerations related to appropriate utilization categories, switch life (endurance) concerns and the thermal stresses placed upon such switches during overcurrent episodes. Furthermore, to give advice relating to supply control switches within polyphase meters in order to avoid issues due to partial switching arising from fault conditions;
- the inadequacies of some forms of service fusing as a means of providing protection to metering equipment and the need to align the overload requirements with British national specifications e.g. 1.45 I_{max};
- the need to ensure that the provisions for installation sealing arrangements continue to meet the national specifications within the MOCOPA [N1].

In addition, legacy sections relating to meters of older design have been removed. Reference to current transformer operated metering has also been removed as the majority of the standard no longer applies to such metering equipment. However, at the time of writing, consideration is being given to additional work to incorporate current transformer operated metering in an additional standard.

The decision has also been taken to convert BS 7856 from a Code of Practice to a Specification as some of the new requirements relating to the national specifications are normative and safety related.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. "organization" rather than "organisation").

Requirements in this standard are drafted in accordance with *Rules for the structure and drafting of UK standards*, subclause **G.1.1**, which states, "Requirements should be expressed using wording such as: 'When tested as described in Annex A, the product shall ...'". This means that only those products that are capable of passing the specified test will be deemed to conform to this standard.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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1 Scope

This British Standard specifies requirements for special design and other features of newly manufactured directly connected alternating current watthour meters with ratings up to and including 100 A I_{max} for installation in domestic and small commercial/industrial premises.

This standard is principally aimed at the UK market, although it might also be of use to other markets. Within the UK the standard is aimed at manufacturers who intend to design and market meters, meter operators engaged in meter installation activities and those involved in meter procurement, such as energy suppliers and meter asset providers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document, including any amendments, applies.

Standards publications

BS 6004:2012, *Electric cables — PVC insulated and PVC sheathed cables for voltages up to and including 300/500 V, for electric power and lighting*

BS EN 50470-1:2006, *Electricity metering equipment (a.c.) — Part 1: General requirements, tests and test conditions — Metering equipment (Class indexes A, B and C)*

BS EN 50470-2:2006, *Electricity metering equipment (a.c.) — Part 2: Particular requirements — Electromechanical meters for active energy (Class indexes A and B)*

BS EN 50470-3:2006, *Electricity metering equipment (a.c.) — Part 3: Particular requirements — Static meters for active energy (Class indexes A, B and C)*

BS EN 60947-1:2007+A2:2014, *Low-voltage switchgear and controlgear — Part 1: General rules*

BS EN 62052-11, *Electricity metering equipment (AC) — General requirements, tests and test conditions — Part 11: Metering equipment*

BS EN 62052-31:2016, *Electricity metering equipment (AC) — General requirements, tests and test conditions — Part 31: Product safety requirements and tests*

IEC 60502-1, *Power cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV) — Part 1: Cables for rated voltages of 1 kV (U_m = 1,2 kV) and 3 kV (U_m = 3,6 kV)*

Other publications

[N1] MOCOPA, *Meter Operation Code of Practice Agreement*, www.mocopa.org.uk

[N2] WELMEC, *Guide for sealing of Utility meters*, WELMEC 11.3 Issue 1 May 2012

3 Terms and definitions

For the purposes of this British Standard the terms and definitions given in BS EN 50470 (all parts):2006, BS EN 62052-11, BS EN 62052-31, IEC 60502-1 and the following apply.

