BRITISH STANDARD

BS EN
62053-52:2005

Electricity metering equipment (AC) — Particular requirements —

Part 52: Symbols

The European Standard EN 62053-52:2005 has the status of a British Standard

ICS 17.220.20; 91.140.50

BSI
British Standards

National foreword

This British Standard is the official English language version of EN 62053-52:2005. It is identical with IEC 62053-52:2005. It supersedes BS EN 60387:1993 which is withdrawn.

The CENELEC common modifications have been implemented at the appropriate places in the text. The start and finish of each common modification is indicated in the text by tags ⟦C⟩ ⟨C⟧. Where a common modification has ben introduced by amendment, the tags carry the number of the amendment. For example, the common modifications introduced by CENELEC amendment A11 are indicated by ⟦C11⟩ ⟨C11⟧.

The UK participation in its preparation was entrusted to Technical Committee PEL/13, Electricity meters, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled "International Standards Correspondence Index", or by using the "Search" facility of the *BSI Electronic Catalogue* or of British Standards Online.

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 does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 17 and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 January 2006

ISBN 0 580 47584 0

Amendments issued since publication

Amd. No.	Date	Comments

EUROPEAN STANDARD **EN 62053-52**

NORME EUROPÉENNE

EUROPÄISCHE NORM December 2005

ICS 17.220.20; 91.140.50 Supersedes EN 60387:1992

English version

Electricity metering equipment (AC) - Particular requirements Part 52: Symbols

(IEC 62053-52:2005)

Equipement de comptage de l'électricité (CA) - Exigences particulières Partie 52: Symboles (CEI 62053-52:2005)

Wechselstrom-Elektrizitätszähler - Besondere Anforderungen Teil 52: Symbole (IEC 62053-52:2005)

This European Standard was approved by CENELEC on 2005-11-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 62053-52:2005 E

Foreword

The text of document 13/1343/FDIS, future edition 1 of IEC 62053-52, prepared by IEC TC 13, Equipment for electrical energy measurement and load control, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62053-52 on 2005-11-01.

This European Standard supersedes EN 60387:1992.

The main changes with respect to EN 60387:1992 are as follows:

- the document has been brought in line with standards established recently by TC 13;
- a few new symbols have been added.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2006-08-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2008-11-01

Annex ZA has been added by CENELEC.

_____

Endorsement notice

The text of the International Standard IEC 62053-52:2005 was approved by CENELEC as a European Standard without any modification.

_____

CONTENTS

INTRODUCTION

The symbols in this part of IEC 62053 may be substituted for the markings given in the different national languages. They have the advantage of explaining the necessary technical characteristics irrespective of the country for which the meter is intended.

ELECTRICITY METERING EQUIPMENT (AC) – PARTICULAR REQUIREMENTS –

Part 52: Symbols

1 Scope

This part of IEC 62053 applies to letter and graphical symbols intended for marking on and identifying the function of electromechanical or static a.c. electricity meters and their auxiliary devices.

The symbols specified in this standard shall be marked on the name-plate, dial plate, external labels or accessories, or shown on the display of the meter as appropriate.

2 Normative references

The following referenced documents are indispensable for the application 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.

IEC 60211, *Maximum demand indicators, Class 1.0*

IEC 60417-DB:2002[1], *Graphical symbols for use on equipment*

IEC 62052-11, *Electricity metering equipment (a.c.) – General requirements, tests and test conditions – Part 11: Metering equipment*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62052-11, together with the following, apply.

3.1
excess energy meter
energy meter intended to measure the excess energy when the power exceeds a pre-determined value

[IEV 313-06-07]

3.2
meter with maximum demand indicator
energy meter fitted with a means to indicate the highest average value of the power during successive time intervals of equal duration

[IEV 313-06-08]

3.3
bidirectional meter
meter intended to measure the energy in both directions

---

1) "DB" refers to the IEC on-line database.

3.4
primary register
register of an instrument transformer-operated meter which takes into account the ratios of all the transformers (voltage and current transformers) to which the meter is connected

NOTE The value of the energy on the primary side of the transformers is obtainable from the direct reading of the register.

3.5
half-primary register
register of an instrument transformer-operated meter which takes into account either the ratio(s) of the current transformer(s) or the ratio(s) of the voltage transformer(s), but not both

NOTE The value of the energy on the primary side of the transformer(s) is obtainable from the reading of the register multiplied by an appropriate factor.

3.6
secondary register
register of an instrument transformer-operated meter which takes no account of the transformer ratio(s)

NOTE The value of the energy on the primary side of the transformer(s) is obtainable from the reading of the register multiplied by an appropriate factor.

3.7
name-plate of a meter
easily readable plate, placed either inside or outside the meter, carrying the necessary information for the identification and installation of the meter and for the interpretation of the measurement results. In case of static meters, some of these elements may be shown on the display

NOTE IEC 62052-11 defines the information to be borne by the name-plate.

3.8
dial
part of the indicating device carrying the scale or scales [=VIM 4.27]

NOTE In general the dial also carries other information characterizing the instrument.

[IEV 314-01-03]

3.9
reading factor C of a maximum demand indicator
factor by which it is necessary to multiply the reading in units of power (active or reactive) in order to obtain the value of the corresponding power expressed in the same units

NOTE Factor C depends on the voltage and current transformer ratio.

3.10
constant K of a maximum demand indicator
coefficient by which the reading must be multiplied to obtain the value of the corresponding power (active or reactive)

NOTE For examples, see 9.3 and 9.4.

4 Symbols for the measuring elements

In the following symbols, which are given as examples, each voltage circuit is represented by a line and each current circuit by a small circle.

At the end of each line representing a voltage circuit, a circle(s) is (are) placed to represent (a) current circuit(s), arranged to have a point of common connection with that voltage circuit.

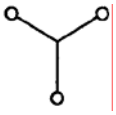
If a current circuit and a voltage circuit having such a common point of connection are not part of the same measuring element, the circle representing the current circuit is joined to the mid-point of the line representing the voltage circuit by means of a guideline not more than half the thickness of the first line.

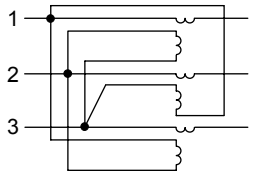
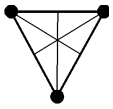
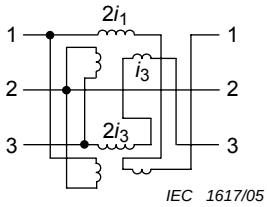
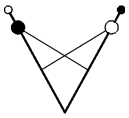
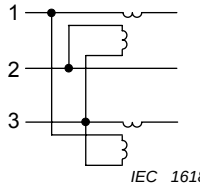
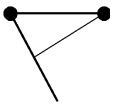
If a measuring element carries two current circuits whose number of turns are in the ratio 1/k, the diameters of the representative circles shall be in approximately the same ratio.

The angle between two lines of a symbol represents the phase angle between the corresponding voltages provided the positive direction be accepted as that going towards the common point in two-line symbols (for example, symbols 4.9 and 4.10), and in the trigonometrical direction in the case of triangular symbols (for example, symbol 4.8).

In order to distinguish the direction of the voltage acting on each current, a current influenced by a positive direction of voltage shall be indicated by a black circle, and a current influenced by a negative direction of voltage shall be indicated by a white circle.

Table 1 – Symbols for measuring elements

No.	Designation	Symbol
4.1	Watt-hour or var-hour meter with one measuring element, having one current circuit and one voltage circuit (for one-phase two-wire circuits)	
4.2	Watt-hour or var-hour meter with one measuring element, having one voltage circuit and two current circuits (for one-phase, two- or three-wire circuits, when the voltage circuit is connected across the outer conductors)	
4.3	Watt-hour or var-hour meter with two measuring elements, each having a voltage circuit and a current circuit, each of which is connected in the outers of a one-phase three-wire circuit, the corresponding voltage circuits being connected between the outers and the mid-wire	
4.4	Watt-hour or var-hour meter with two measuring elements, each having a voltage circuit and a current circuit, the latter being inserted in a phase conductor of a three-phase circuit, the voltage circuit of each measuring element being connected between the neutral and the phase conductor in which its current circuit is inserted	
4.5	Watt-hour or var-hour meter with two measuring elements, each having a voltage circuit and a current circuit, and connected for the two-wattmeter method (for three-phase three-wire circuits)	
4.6	Watt-hour or var-hour meter with three measuring elements, each having a voltage circuit and a current circuit, and connected for the three-wattmeter method (for three-phase four-wire circuits)	
4.7	Watt-hour or var-hour meter with two measuring elements, each having a voltage circuit and a current circuit, and connected in the two-phase conductors of a two-phase three-wire circuit	

No.	Designation	Symbol
4.8	Var-hour meter with three measuring elements, each having a voltage circuit and a current circuit, each of which is arranged to have a common point with the voltage circuits of the two other measuring elements. The voltage circuit of each measuring element is fed by the voltage between the phase conductors which do not contain its current circuit As can be seen, symbol 4.8 corresponds to Figure 1 and is applicable to three-phase three- or four-wire circuits  IEC 1616/05 **Figure 1 – Cross-phase connection of a var-hour meter with three measuring elements in three-phase three- or four-wire circuits**	
4.9	Var-hour meter with two measuring elements, each having a voltage circuit and two current circuits with a number of turns in the ratio 1:2 (n and $2n$ turns); each circuit of n turns has a common point with the voltage circuit of the same measuring element, whilst each current circuit of $2n$ turns has a common point with the voltage circuit of the other measuring element The circuit of n turns of one of the measuring elements and that of $2n$ turns of the other are subject to positive voltages in contrast to the circuit of $2n$ turns of the first and that of n turns of the second, which are subject to negative voltages As can be seen, symbol 4.9 corresponds to Figure 2 and is applicable to three-phase three-wire circuits  IEC 1617/05 **Figure 2 – Cross-phase connection of a var-hour meter with two measuring elements and split current circuits in three-phase three-wire circuits**	
4.10	Var-hour meter with two measuring elements, each having a voltage circuit and a current circuit, one of the current circuits having a common point with the voltage circuit of the other measuring element, whilst the current circuit of the latter has a common point with the voltage circuits of the two measuring elements As can be seen, symbol 4.10 corresponds to Figure 3 and is applicable to three-phase three-wire circuits  IEC 1618/05 **Figure 3 – Cross-phase connection of a var-hour meter with two measuring elements in three-phase three-wire circuits**	

5 Symbols of principal units used for meters

Table 2 – Symbols of principal units used for meters

No.	Designation	Symbol
5.1	Ampere	A
5.2	Volt	V
5.3	Watt	W
5.4	Watt-hour	Wh
5.5	Var	var
5.6	Var-hour	varh
5.7	Volt-ampere	VA
5.8	Volt-ampere-hour	VAh
5.9	Hertz	Hz
5.10	Volt squared hour	V^2h
5.11	Ampere squared hour	A^2h
5.12	Hour	h
5.13	Minute	min
5.14	Second	s
5.15	Degree Celsius	°C

6 Marking of the measured quantity

The symbols of principal units in accordance with Clause 5, together with the applicable scalers (for example, k, M, G) shall be marked conspicuously on the name-plate or the dial of the meter. If the meter is capable of measuring several different quantities, then the units with the appropriate scalers shall be shown on the display. Other appropriate symbols may be marked on the name-plate, the dial or shown on the display, provided that they do not hinder the clear reading of the measured quantity(ies).

When the meter is intended for special conditions and/or for a different power-factor range, the appropriate symbol shall be used.

If an electromechanical meter for reactive energy is adjusted to measure under leading power-factor conditions only, or lagging power-factor conditions only, the direction of normal rotation of the rotor, viewed from the front of the meter, shall be from left to right, and the register shall be marked with  or  as appropriate. If the meter is adjusted to measure under both leading and lagging power-factor conditions, the direction of rotation of the rotor, viewed from the front of the meter, under lagging conditions shall be from left to right. The two registers shall be marked with  or  respectively, close to each register.

If the meter is intended to measure apparent energy with determined limiting values of power factor, these values shall be marked in brackets after the symbol for the measuring unit.

Table 3 – Marking of the measured quantity (examples)

No.	Designation	Symbol
6.1	Watt-hour meter	kWh
6.2	Var-hour meter	kvarh
6.3	Inductive and capacitive var-hour meter with two registers	kvarh 
6.4	Volt-ampere-hour meter	kVAh
6.5	Volt-ampere-hour meter for limited cos φ range Example: cos φ = 0,5 . . . 0,9 ind	kVAh (0,5…0,9) 
6.6	Working range of var-hour meter	

7 Symbols indicating the accuracy class, the meter constant and the insulating class

Table 4 – Symbols indicating the accuracy class, the meter constant and the insulating class (examples)

No.	Designation	Symbol
7.1	Accuracy class Example: class 1	 or Cl. 1
7.2	Meter constant for electromechanical meters Example: 500 revolution per kilowatt-hour, or 2 Wh per revolution	500 r/kWh or 2 Wh/r
7.3	Meter constant for static meters Example: 500 pulses per kilowatt-hour, or 2 Wh per pulse	500 imp/kWh or 2 Wh/imp
7.4	Insulating encased meter of protective class II	 IEC 60417-5172 (DB:2003-02): Class II equipment

8 Symbols for transformer-operated meters

Where the meter is fed via instrument transformers, the transformer ratios shall be marked as follows.

Those transformer ratios, which are taken into account by the register shall be marked on the name-plate or on the dial of the meter (for primary registers, the ratios of all the transformers; for half-primary registers, that ratio which is taken into account by the register).

Those transformer ratios which are not taken into account by the register shall be marked on a supplementary plate located on the cover of meters fitted with half-primary or secondary registers (for secondary registers the ratios of all the transformers, for half-primary registers that ratio which is not taken into account by the register).

The transformer symbol as shown in examples 8.1 to 8.3 and 8.5 shall be marked on the name-plate or on the dial of the meter fitted with half-primary or secondary registers. This symbol means that the meter is intended to be operated in assembly with instrument transformer(s) the ratio(s) of which is (are) not taken into account by the register. The value of the energy on the primary side of the transformer(s) is in such cases obtainable from the reading of the register multiplied by an appropriate factor.

That factor by which the reading of the register is to be multiplied to obtain the value of the energy on the primary side of the transformers shall be marked on the supplementary plate of meters fitted with half-primary or secondary registers.

Table 5 – Symbols for transformer-operated meters (examples)

No.	Designation	Marking to be placed on	
		the name-plate or dial	a supplementary plate
8.1	Meter with secondary register (the nominal value of both the primary current and the primary voltage is variable)	 5 A 100 V	50/5 A 10 000/100 V or $\frac{50}{5}$ A, $\frac{10\,000}{100}$ V Multiplying factor = 1 000
8.2	Meter with half-primary register (the nominal value of the primary current is variable)	 10 000/100 V, 5 A or $\frac{10\,000}{100}$ V, 5 A	500/5 A or $\frac{500}{5}$ A Multiplying factor = 100
8.3	Meter with half-primary register (the nominal value of the primary voltage is variable)	 100 V, 50/5 A or 100 V, $\frac{50}{5}$ A	10 000/100 V or $\frac{10\,000}{100}$ V Multiplying factor = 100
8.4	Meter with primary register	10 000/100 V 50/5 A or $\frac{10\,000}{100}$ V, $\frac{50}{5}$ A	—
8.5	Meter with half-primary register (the nominal value of the primary current is variable)	 3 × 230/400 V 5 A	500/5 A or $\frac{500}{5}$ A Multiplying factor = 100

NOTE In view of the lack of space on the name-plate, only one symbol is given - IEC 60417-5156 (DB:2003-08): Transformer.

9 Tariff device symbols

a) Multi-rate meters

There is no special symbol for multi-rate meters, but the respective rates shall be marked beside the appropriate set of dials or register.

Examples: I day 

II or night or 

III peak 

NOTE The marking of more than three-rate registers should be the subject of the purchase contract.

b) Excess energy meters

The register recording *excess energy* shall be marked beside the register with the symbol Δ.

The value of the power over which excess-load energy is registered shall be marked beside the symbol in terms of a suitable unit, either permanently or, preferably, on a supplementary plate, which can be changed when the value of the excess power is adjusted.

c) Maximum demand meters

A meter with maximum demand indicator fitted with one pointer does not require any symbol. The markings to be shown are those recommended in IEC 60211.

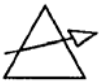
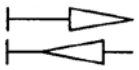
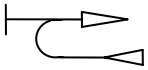
If the meter is of the indicator type with a cumulative maximum indicator, the cumulative register shall be marked with the appropriate unit of power.

Maximum demand indicators shall be marked beside the register with the maximum value of the average power measured and the appropriate symbol. The cumulative register, if any, shall be marked with the unit of the quantity to be registered.

d) Bidirectional meters

If the meter is designed to register energy received and energy supplied, it shall be possible to identify the energy direction with an arrow pointing in the appropriate direction. The arrow shall be placed on the name-plate or the dial next to the respective register(s) or shown on the display together with the appropriate values.

Table 6 – Symbols for tariff devices (examples)

No.	Designation	Symbol
9.1	Excess energy meter The number beside the triangle indicates the power at which the excess energy register starts to operate Example: 800 W NOTE For meters with two fixed operating limits of power, changeable by means of a relay, both operating limits should be marked.	 800 W
9.2	Excess energy meter in which the excess level is adjustable	
9.3	Drum-type maximum demand indicator Example: Multiplier for maximum demand indicator 0,2 kW, integration period 15 min, detent time 9 s	 K 0,2 kW/div 15 min/9 s
9.4	Pointer-type or drum-type maximum demand indicator, fitted with warning device Example: Multiplier for maximum demand indicator 0,2 kW, integration period 15 min, detent time 9 s	 K 0,2 kW/div 15 min/9 s
9.5	Bidirectional meter Energy received at the measuring point (for example, import) Energy supplied at the measuring point (for example, export)	
9.6	The instantaneous (actual) value of the average demand value	P_{inst}
9.7	The highest average demand value for the present cumulation (billing) period	P_{max}
9.8	The cumulated maximum demand value	P_{cum}
9.9	Integration period	t_m
9.10	Detent time	t_o
9.11	Bidirectional meter with always positive register (the meter always counts the energy as import energy, irrespective of the real energy direction)	
NOTE The symbols 9.6 to 9.10 are intended for use on electronic tariff devices. It is preferred to use the standard identification codes as they are defined in IEC 62056-61 and IEC 62056-62.		

10 Symbols for auxiliary devices

Table 7 – Symbols for auxiliary devices (examples)

No.	Designation	Symbol
10.1	Meter supplied with pulse transmitter The marking gives the number of pulses per kWh or the number of Wh per pulse Example: 10 imp/kWh or 100 Wh/imp	10 imp/kWh or 100 Wh/imp
10.2	Meter supplied with rotor clamp	
10.3	Auxiliary supply voltage for a static energy meter (when separated from the measuring voltage) Example: 100 V a.c.	U_x = 100 V 50 Hz
10.4	Nature and value of auxiliary voltage of the relay of a multi-rate meter (shown on the connection diagram) Example: 60 V d.c.	 60 V —
10.5	Reversal preventing device (mechanical or electronic)	

A proposal for the marking of signal ports is given in Annex A.

11 Symbols for details of the suspension of the moving element

Table 8 – Symbols for details of the suspension of the moving element

No.	Designation	Symbol
11.1	Double jewel lower bearing	
11.2	Magnet for partial relief of the pressure of the rotor against the bottom bearing	
11.3	Moving element with magnetic suspension or support	

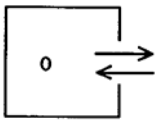
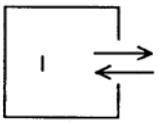
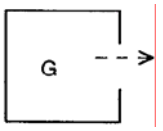
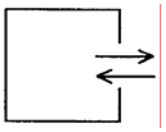
12 Warning symbol

Any reference to a separate document shall be marked on the name-plate by the symbol  .

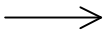
Annex A
(normative)

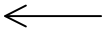
Symbols for communication ports (examples)

Table A. 1 – Symbols for communication ports (examples)

No.	Designation	Symbol
A.1	Optical port, bidirectional	
A.2	Inductive port, bidirectional	
A.3	Galvanical port, unidirectional	
A.4	Port in accordance with a specific standard, for example, IEC 62056-21, Mode C, IEC 62056 DLMS/COSEM, etc.	

NOTE Directions of communication:

 output (for example, reading)

 input (for example, programming)

 continuous connection

 connection on demand only (for example, password, switch)

Bibliography

IEC 60050-300:2001, *International Electrotechnical Vocabulary (IEV) – Electrical and electronic measurements and measuring instruments – Part 311: General terms relating to measurements – Part 312: General terms relating to electrical measurements – Part 313: Types of electrical measuring instruments – Part 314: Specific terms according to the type of instrument*

IEC 62056 (all parts), *Electricity metering – Data exchange for meter reading, tariff and load control*

〖C〉 NOTE Harmonized in EN 62056 series (not modified).〈C〗

IEC 62056-21, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 21: Direct local data exchange*

〖C〉 NOTE Harmonized as EN 62056-21:2002 (not modified). 〈C〗

IEC 62056-61, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 61: Object identification system (OBIS)*

〖C〉 NOTE Harmonized as EN 62056-61:2002 (not modified). 〈C〗

IEC 62056-62, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 62: Interface objects*

〖C〉 NOTE Harmonized as EN 62056-62:2002 (not modified). 〈C〗

———————

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

NOTE Where an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60211	- [1)]	Maximum demand indicators, Class 1.O.	-	-
IEC 60417	data-base	Graphical symbols for use on equipment	-	-
IEC 62052-11	- [1)]	Electricity metering equipment (AC) - General requirements, tests and test conditions Part 11: Metering equipment	EN 62052-11	2003 [2)]

[1)] Undated reference.

[2)] Valid edition at date of issue.

BSI — British Standards Institution

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover. Tel: +44 (0)20 8996 9000. Fax: +44 (0)20 8996 7400.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

Buying standards

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services. Tel: +44 (0)20 8996 9001. Fax: +44 (0)20 8996 7001. Email: orders@bsi-global.com. Standards are also available from the BSI website at http://www.bsi-global.com.

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Library and its Technical Help to Exporters Service. Various BSI electronic information services are also available which give details on all its products and services. Contact the Information Centre. Tel: +44 (0)20 8996 7111. Fax: +44 (0)20 8996 7048. Email: info@bsi-global.com.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration. Tel: +44 (0)20 8996 7002. Fax: +44 (0)20 8996 7001. Email: membership@bsi-global.com.

Information regarding online access to British Standards via British Standards Online can be found at http://www.bsi-global.com/bsonline.

Further information about BSI is available on the BSI website at http://www.bsi-global.com.

Copyright

BSI
389 Chiswick High Road
London
W4 4AL