

Controllers with analogue signals for use in industrial-process control systems —

Part 2: Guidance to inspection and routine testing

The European Standard EN 60546-2:1993 has the status of a
British Standard

UDC 621.3-51:681.5:620.1

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Industrial-process Measurement and Control Standards Committee (PCL/-) to Technical Committee PCL/1, upon which the following bodies were represented:

- British Coal Corporation
- British Gas plc
- British Pressure Gauge Manufacturers' Association
- Department of Energy, Gas and Oil Measurement Branch
- Department of Trade and Industry, National Weights and Measures Laboratory
- Energy Industries' Council
- Engineering Equipment and Materials Users' Association
- GAMBICA (BEAMA Ltd).
- Health and Safety Executive
- Institution of Gas Engineers

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- British Steel Corporation
- British Valve Manufacturers' Association Ltd.
- Department of Trade and Industry, National Engineering Laboratory
- Department of Trade and Industry, National Physical Laboratory
- Electricity Supply Industry in England and Wales
- Engineering Industries' Association
- Institute of Metals
- Sira Ltd.

This British Standard, having been prepared under the direction of the Industrial-process Measurement and Control Standards Committee, was published under the authority of the Board of BSI and comes into effect on 28 February 1989

© BSI 01-2000

First published as BS 5558 February 1978
First revision in Parts February 1989

The following BSI references relate to the work on this standard:
Committee reference PCL/1
Draft for comment 85/29157 DC

ISBN 0 580 16948 0

Amendments issued since publication

Amd. No.	Date of issue	Comments
7547	February 1993	
7862	July 1993	Indicated by a sideline in the margin

Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
Foreword	2
1 Scope	3
2 Object	3
3 Sampling for test	3
4 Symbols and definitions	3
5 Performance tests	3
Figure 1 — Basic signals to/from an idealized controller	5
Figure 2 — Arrangement for open loop or closed loop tests	6
Figure 3 — Recorded characteristics of proportional action	7
Figure 4 — Recorded characteristics of integral action	8
Figure 5 — Recorded characteristics of derivative action	9
Publications referred to	Inside back cover

National foreword

This Part of BS 5558 has been prepared under the direction of the Industrial-process Measurement and Control Standards Committee. It is identical with IEC Publication 546-2:1987 “*Controllers with analogue signals for use in industrial-process control systems — Part 2: Guidance for inspection and routine testing*” published by the International Electrotechnical Commission (IEC). This British Standard supersedes BS 5558:1978 which is withdrawn. BS 5558-1 has been published simultaneously with this Part and gives methods of evaluating the performance of the controllers. This Part of BS 5558 implements HD 530.2 S1 published by the European Committee for Electrotechnical Standardization (CENELEC).

In 1993 the European Committee for Electrotechnical Standardization (CENELEC) accepted IEC 546-2:1987 as European Standard EN 60546-2:1993. As a consequence of implementing the European Standard this British Standard is renumbered as BS EN 60546-2 and any reference to BS 5558-2 should be read as a reference to BS EN 60546-2. EN 60546-2:1993 supersedes HD 530.2 S1:1989.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

Cross-references

International Standard	Corresponding British Standard
IEC 381	BS 5863 <i>Analogue signals for process control systems</i> (Identical)
	BS 5558 <i>Controllers with analogue signals for use in industrial-process control systems</i>
IEC 546-1:1987	Part 1:1989 <i>Methods for evaluating performance</i> (Identical)

The Technical Committee has reviewed the provisions of IEC 382:1971, referred to in clause 1, and IEC 410:1973, referred to in clause 3, and has decided that they are acceptable for use in conjunction with this standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their 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, pages i and ii, the EN title page, pages 2 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Descriptors: Controller, controller with analogue signal, control system, inspection testing, routine testing, acceptance testing, testing after repair

English version

Controllers with analogue signals for use in industrial-process control systems Part 2: Guidance for inspection and routine testing

(IEC 546-2:1987)

Régulateurs à signaux analogiques utilisés
pour les systèmes de conduite des processus
industriels
Deuxième partie: Guide pour les essais
d'inspection et les essais individuels de série
(CEI 546-2:1987)

Regler mit analogen Signalen für die
Anwendung in Systemen der industriellen
Prozeßtechnik
Teil 2: Anleitung für die Abnahme- und
Betriebsuntersuchung
(IEC 546-2:1987)

This European Standard was approved by CENELEC on 1993-03-09. 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, 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