



BSI Standards Publication

**Portable electrical apparatus
for the measurement of
combustion flue gas
parameters — Guide to
their use in the process of
commissioning, servicing
and maintaining gas fired
central heating boilers**

National foreword

This Published Document is the UK implementation of CLC/TS 50612:2013.

This Technical Specification has been prepared as a guide for CENELEC member countries that do not have similar guidance through existing national or local regulations or standards. Such existing national or local regulations or standards have precedence over this guidance.

Consequently, in the UK, the relevant parts of BS 7967 take precedence over this Technical Specification.

The UK participation in its preparation was entrusted by Technical Committee EXL/31, Equipment for explosive atmospheres, to Subcommittee EXL/31/1, Gas detectors.

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

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

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English version

**Portable electrical apparatus for the measurement of combustion flue gas parameters -
Guide to their use in the process of commissioning, servicing and maintaining gas fired central heating boilers**

Appareils électriques portatifs pour la mesure des paramètres des gaz de combustion dans les conduits d'évacuation -
Utilisation dans le processus de mise en service, entretien et maintenance des chaudières à gaz

Tragbare elektrische Geräte zur Messung von Verbrennungsparametern -
Einsatz für Inbetriebnahme, Wartung und Instandsetzung von gasbefeueerten Heizungsanlagen

This Technical Specification was approved by CENELEC on 2013-11-18.

CENELEC members are required to announce the existence of this TS in the same way as for an EN and to make the TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force.

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CENELEC

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

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Contents

Page

Foreword	3
Introduction.....	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
3.1 Type of equipment.....	5
3.2 Place of installation.....	6
3.3 Type of person.....	6
3.4 Action of the operative.....	6
3.5 Condition of the boiler	7
4 Competence	7
5 Selection of portable electrical combustion flue gas analyser	8
6 Care, use and maintenance of portable electrical combustion flue gas analyser.....	9
6.1 Before use	9
6.2 Sensor check	9
6.3 Safety warning	9
6.4 Inappropriate use	10
6.5 Sensor cross-sensitivity	10
7 Determination of the combustion performance of an appliance.....	10
7.1 General	10
7.2 Type B appliances	11
7.2.1 General	11
7.2.2 Boilers whose combustion products evacuation design incorporates a draught diverter.....	11
7.2.3 Boilers whose combustion products evacuation design do not incorporate a draught diverter	11
7.2.4 Appliances in compartments	11
7.3 Type C appliances	11
8 Measured combustion values above the action level (see 3.4.7).....	12
9 Procedure for use of a portable electrical combustion flue gas analyser at the time of commissioning, servicing or maintenance	13
9.1 General	13
9.2 Determination of the combustion performance at the time of commissioning	14
9.3 Determination of the level of servicing required and subsequent actions	14
9.4 Confirmation of satisfactory combustion following servicing in accordance with the appliance instructions (Figure 1).....	14
9.5 Confirmation of satisfactory combustion following maintenance (Figure 2)	16
10 Completion report	19
Annex A (informative) Portable electrical combustion flue gas analysers	20
Annex B (informative) Completion report.....	21
Bibliography.....	23

Foreword

This document (CLC/TS 50612:2013) has been prepared by CLC/TC 216 "Gas detectors" together with CEN/TC 109 "Central heating boilers using gaseous fuels".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

NOTE Commentary text is presented in *italic* type. It gives background information and does not constitute a normative element.

Introduction

This Technical Specification is intended as a guide for operatives who, in the course of their professional activities, are required to measure combustion parameters of gas-fired central heating boilers using combustion flue gas analysers during any or all of the commissioning, servicing and maintenance of such appliances.

It is intended to complement the following through a generic approach:

- a) the appliance commissioning, servicing and maintenance instructions, and/or
- b) national or local regulations or standards.

NOTE 1 A Technical Specification is announced and made available at national level, but conflicting national standards may continue to exist.

NOTE 2 Existing national or local regulations or standards conflicting with the guidance in this Technical Specification have precedence over this guidance.

It is not intended that a combustion gas analysis be used as a substitute for commissioning, servicing and/or maintenance carried out in accordance with the appliance instructions. It is to be regarded and used as a diagnostic tool to confirm satisfactory combustion to help in the process of carrying out these activities to ensure the safe and efficient operation of the boiler installation.

In the preparation of this Technical Specification, it has been assumed that the execution of its provisions will be entrusted to competent operatives, (see Clause 4) for whose use it has been produced.

1 Scope

This Technical Specification provides guidance on the selection, use and maintenance of portable electrical apparatus conforming to EN 50379-1 [4] and EN 50379-2 [5] or EN 50379-3 [6] designed to measure combustion flue gas parameters of Type B and Type C gas-fired central heating boilers (hereafter referred to as boilers) using 1st, 2nd or 3rd family gases in domestic premises as a diagnostic instrument to assist an operative:

- a) in confirming satisfactory combustion at the time of commissioning, in accordance with appliance instructions or national or local regulations or standards;
- b) in confirming satisfactory combustion at the time of servicing in accordance with national or local regulations or standards or following servicing in accordance with appliance instructions;
- c) in confirming satisfactory combustion following maintenance, in accordance with appliance instructions or national or local regulations or standards.

NOTE 1 Type B and Type C classification of gas-fired appliances are described in CEN/TR 1749 [1].

NOTE 2 Existing national or local regulations or standards conflicting with the guidance in this Technical Specification have precedence over this guidance.

NOTE 3 It is not the intention of this Technical Specification to suggest that portable electrical combustion flue gas analysers are to be used as a substitute for normal service and maintenance carried out in accordance with the appliance instructions. Clause 9 describes how analysers can be used in conjunction with the appliance instructions.

NOTE 4 EN 50379-1 [4] specifies general requirements for the construction, testing and performance of portable spot reading apparatus designed to check the combustion performance of heating appliances in domestic premises, using commercially available fuels.

NOTE 5 EN 50379-2 [5] is for apparatus intended to be used for statutory measurements. In several European countries, legal requirements exist for the performance of heating appliances (see informative Annex A of EN 50379-1:2012 [4]). Legal consequences resulting from performance measurements makes for strict requirements for the apparatus used (see normative Annexes B and C of EN 50379-1:2012 [4]).

NOTE 6 EN 50379-3 [6] is for apparatus intended to be used for non-statutory applications, which allows for reduced performance requirements for the portable electrical apparatus.

NOTE 7 This Technical Specification deals with the determination of levels of combustion gases such as carbon monoxide (CO) and carbon dioxide (CO₂) in combustion products from boilers. Combustion products from boilers will contain nitrogen oxides (NO_x), predominantly nitrogen monoxide (nitric oxide, NO) and nitrogen dioxide (NO₂). This Technical Specification does not deal with the measurement of combustion products such as NO_x and aldehydes.

2 Normative references

Not applicable.

3 Terms and definitions

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

3.1 Type of equipment

3.1.1

portable electrical combustion flue gas analyser

apparatus that will detect and measure the concentrations of components in combustion gases and clearly display the result

Note 1 to entry: Clause 5 and Annex A provide information on suitable portable electrical combustion flue gas analysers.