

Global maritime distress and safety system (GMDSS) —

Part 1: Radar transponder — Marine search and rescue (SART) — Operational and performance requirements, methods of testing and required test results

The European Standard EN 61097-1:2007 has the status of a
British Standard

ICS 47.020.70

National foreword

This British Standard is the UK implementation of EN 61097-1:2007. It is identical to IEC 61097-1:2007. It supersedes BS EN 61097-1:1993 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/80, Maritime navigation and radiocommunication equipment and systems.

A list of organizations represented on this committee 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.

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

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2007

© BSI 2007

ISBN 978 0 580 57037 7

Amendments issued since publication

Amd. No.	Date	Comments

**Global maritime distress and safety system (GMDSS) -
Part 1: Radar transponder -
Marine search and rescue (SART) -
Operational and performance requirements,
methods of testing and required test results
(IEC 61097-1:2007)**

Système mondial de détresse
et de sécurité en mer (GMDSS) -
Partie 1: Répondeur radar -
Recherche
et sauvetage maritime (SART) -
Exigences opérationnelles
et de fonctionnement,
méthodes d'essai et résultats exigibles
(CEI 61097-1:2007)

Weltweites Seenot-
und Sicherheitsfunksystem (GMDSS) -
Teil 1: Radar-Transponder -
Seenotrettung (SART) -
Betriebs- und Leistungsanforderungen,
Prüfverfahren und geforderte
Prüfergebnisse
(IEC 61097-1:2007)

This European Standard was approved by CENELEC on 2007-08-01. 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 two official versions (English and 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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the 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

Foreword

The text of document 80/479/FDIS, future edition 2 of IEC 61097-1, prepared by IEC TC 80, Maritime navigation and radiocommunication equipment and systems, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61097-1 on 2007-08-01.

This European Standard supersedes EN 61097-1:1993.

The main changes with respect to EN 61097-1:1993 are listed below:

- some amendments to bring the standard up to date with newer IMO resolutions and ITU recommendations. In particular, in 1995, the IMO adopted new performance standards for the SART in resolution A.802 (19) which replaced those of resolution A.697 (17). This new resolution introduced a new requirement for the SART to be provided with a pole arrangement. In 2006, the ITU-R revised recommendation M.628 to permit the optional use of circular polarisation with the SART;
- the Introduction has been deleted as it was of historical interest only;
- Annex A, which contained details of the parts of the EN 61097 series of standards, has been deleted;
- Annex B, which contained a Bibliography, has been deleted and the information moved into the normative references.

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) | 2008-05-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2010-08-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61097-1:2007 was approved by CENELEC as a European Standard without any modification.

CONTENTS

1	Scope	5
2	Normative references	5
3	Performance requirements	6
3.1	General	6
3.2	Operational	6
3.3	Battery	6
3.4	Environment (temperature)	7
3.5	Antenna height	7
3.6	Antenna characteristics	7
3.7	Range performance	7
4	Labelling	7
5	Technical characteristics	7
5.1	Frequency	7
5.2	Polarisation	7
5.3	Sweep rate	7
5.4	Response signal	7
5.5	Form of sweep (sawtooth)	8
5.6	Pulse emission	8
5.7	E.i.r.p.	8
5.8	Effective receiver sensitivity	8
5.9	Duration of operation	8
5.10	Temperature range:	8
5.11	Recovery time following excitation	8
5.12	Effective antenna height	8
5.13	Delay between receipt of radar signal and start of transmission	8
5.14	Antenna vertical beamwidth	8
5.15	Antenna azimuthal beamwidth	8
6	Methods of testing and required test results	9
6.1	General	9
6.2	Operational requirements	9
6.3	Battery capacity	10
6.3.1	Method of measurement	10
6.3.2	Results required	10
6.4	Environment (temperature)	10
6.4.1	Dry heat cycle	10
6.4.2	Low temperature cycle	10
6.5	Antenna height	10
6.6	Antenna characteristics	10
6.6.1	Azimuthal and vertical beamwidths	11
6.6.2	Polarisation	11
6.7	Range performance	11
6.7.1	Method of measurement	11
6.7.2	Results required	11
6.7.3	Alternative method of measurement	11

6.7.4	Results required	11
6.8	Labelling	11
6.9	Technical characteristics	11
6.9.1	General	11
6.9.2	Functional test signals	12
6.9.3	Receiver sensitivity	12
6.9.4	Sweep characteristics	12
6.9.5	Radiated power	12
6.9.6	Antenna characteristics	13
6.9.7	Recovery time following excitation	13
6.9.8	Delay – Receipt of radar interrogation and SART transmission	13
6.9.9	Receiver front end protection	13
Annex ZA (normative) Normative references to international publications with their corresponding European publications.....		15
Figure 1 – Possible test set-up.....		14