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Communication systems for meters - Part 4: Wireless M-Bus communication

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

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See Eesti standard EVS-EN 13757-4:2025 sisaldab Euroopa standardi EN 13757-4:2025 ingliskeelset teksti.	This Estonian standard EVS-EN 13757-4:2025 consists of the English text of the European standard EN 13757-4:2025.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 10.12.2025.	Date of Availability of the European standard is 10.12.2025.
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ICS 33.200

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13757-4

December 2025

ICS 33.200

Supersedes EN 13757-4:2019

English Version

Communication systems for meters - Part 4: Wireless M-Bus communication

Systèmes de communication pour compteurs - Partie 4 : Communication sans fil M-Bus

Kommunikationssysteme für Zähler - Teil 4: Drahtlose M-Bus-Kommunikation

This European Standard was approved by CEN on 10 November 2025.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 13757-4:2025) has been prepared by Technical Committee CEN/TC 294 “Communication systems for meters”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2026, and conflicting national standards shall be withdrawn at the latest by June 2026.

This document supersedes EN 13757-4:2019.

EN 13757-4:2024 includes the following significant technical changes with respect to EN 13757-4:2019:

— Update of referenced standards to the most recent versions;

— Including of sensors and actuators used as a part of providing metering services;

— Removal of Lowest Transmitter Class L_T and Lowest Receiver Class L_R, see 5.3, 6.3, 7.3, 8.3, 9.3 and 10.3;

— Removal of Digital bit jitter, see 6.2, 7.2 and 8.2;

— Explanatory note on addressing, see 12.5.6;

— Extension of installation messages schemes, see 12.6.1;

— Introduction of FAC transmission delay, see 14.2.2, 14.3.3 and 14.4.2;

— Introduction of Error2 reporting, see 14.2.3 and 14.4.3;

— SF2 field is populated, see 14.3.3.3;

— Updated frequency allocation for the 868 MHz band, align format with Annex B see Annex A.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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Introduction

This document belongs to the EN 13757 series, which covers communication systems for meters.

EN 13757-1 contains generic descriptions and a communication protocol.

EN 13757-2 contains a physical and a link layer for twisted pair based Meter-Bus (M-Bus).

EN 13757-3 describes the Application Layer protocols (often called M-Bus).

EN 13757-5 describes the wireless network used for repeating, relaying, and routing for the different modes of EN 13757-4.

EN 13757-7 describes transport and security services.

EN 13757-8 describes the Adaptation Layer to be applied for wireless communication other than wireless M-Bus

These upper M-Bus protocol layers can be used with various physical layers and with link layers and network layers, which support the transmission of variable length binary transparent messages. Frequently, the physical and link layers of EN 13757-2 (twisted pair) and EN 13757-4 (wireless) as well as EN 13757-5 (wireless with routing function) or the alternatives described in EN 13757-1 are used.

The different parts of this standard are complemented by CEN/TR 17167, which provides examples and supplementary information related to EN 13757-2, EN 13757-3 and EN 13757-7.

These upper M-Bus protocol layers have been optimized for minimum battery consumption of meters, especially for the case of wireless communication, to ensure long battery lifetimes of the meters. Secondly, it is optimized for minimum message length to minimize the radio channel occupancy and hence the collision rate. Thirdly, it is optimized for minimum requirements towards the meter processor regarding requirements of RAM size, code length and computational power.

This document concentrates on the meter communication. The meter communicates with one (or occasionally several) fixed or mobile communication partners which again might be part of a private or public network. These further communication systems might use the same or other Application Layer protocols, security, privacy, authentication, and management methods.

This document is not affected by any of the requirements in Directive 2004/22/EC as it only covers the basic transmission of information from the meter to an external entity. This document ensures that data transmitted cannot be modified without it being detected. Confidentiality, integrity, and authenticity are provided by the capabilities specified in other parts of the EN 13757 series of standards. This document does not specify any of the metering capabilities of the meter nor the metrological capabilities of the meter.

This document enables encrypted transfer data either directly or as specified in other parts of the EN 13757 series of standards. The encryption ensures the confidentiality of any personal data.

This document provides capabilities of interoperability of meters as requested in M/441 which can be used to improve the customer awareness of actual consumption.

European Committee for Standardization (CEN) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning forward error correction (FEC) given in 12.8.

CEN takes no position concerning the evidence, validity, and scope of this patent right. The holder of this patent right has ensured CEN that they are willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with CEN. Information may be obtained from:

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1 Scope

This document specifies the requirements of parameters for the physical and the link layer for systems using radio to remotely read meters. The primary focus is to use the Short Range Device (SRD) unlicensed bands. This document encompasses systems for walk-by, drive-by and fixed installations. As a broad definition, this document can be applied to various Application Layers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 13757-1, *Communication systems for meters - Part 1: Data exchange*

EN 13757-3:2025, *Communication systems for meters - Part 3: Application protocols*

EN 13757-7:2025, *Communication systems for meters - Part 7: Transport and security services*

EN 60870-5-1, *Telecontrol equipment and systems - Part 5: Transmission protocols - Section 1: Transmission frame formats(IEC 60870-5-1)*

EN 60870-5-2, *Telecontrol equipment and systems - Part 5: Transmission protocols - Section 2: Link transmission procedures(IEC 60870-5-2)*

ETSI EN 300 220-1, V3.1.1:2017-02, *Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz — Part 1: Technical characteristics and methods of measurement*

ETSI EN 300 220-2, *Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz — Part 2: Harmonised Standard for access to radio spectrum for non specific radio equipment*

ETSI EN 300 220-4, *Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz — Part 4: Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU; Metering devices operating in designated band 169,400 MHz to 169,475 MHz*

CCSDS 131.0-B-5, *TM Synchronization and Channel Coding,* Consultative Committee for Space Data Systems (CCSDS), Issue-5, September 2023

ERC/REC 70-03, Relating to the use of Short Range Devices (SRD), issued by the European Conference of Postal and Telecommunications Administrations (CEPT), Electronics Communications Committee on 2024-06

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

3.1
BER
bit error rate

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