

Communication systems for and remote reading of meters - Part 2: Physical and link layer

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13757-2:2005 sisaldab Euroopa standardi EN 13757-2:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 25.01.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13757-2:2005 consists of the English text of the European standard EN 13757-2:2004.</p> <p>This document is endorsed on 25.01.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This European Standard covers the physical and link layer parameters of baseband communication over twisted pair (M-Bus) for meter communication systems. It is especially applicable to heat meters, heat cost allocators, water meters and gas meters.</p>	<p>Scope: This European Standard covers the physical and link layer parameters of baseband communication over twisted pair (M-Bus) for meter communication systems. It is especially applicable to heat meters, heat cost allocators, water meters and gas meters.</p>
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ICS 33.200, 35.100.10, 35.100.20

Võtmesõnad: buildings, m, monitoring device, physical layers, power supplies, protection devices, protocols, remote control technology, remote monitoring, structure, telecontrol systems, teleprocessing, texture, transmission, transmission protocol, twisted, white layers

ICS 33.200; 35.100.10; 35.100.20

English version

Communication systems for and remote reading of meters - Part 2: Physical and link layer

Systèmes de communication et de télérelevé de compteurs
- Partie 2: Couches physique et couche de liaison

Kommunikationssysteme für Zähler und deren
Fernablesung - Physical und Link Layer

This European Standard was approved by CEN on 23 September 2004.

CEN 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 CEN 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 CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies 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.



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Foreword

This document (EN 13757-2:2004) has been prepared by Technical Committee CEN/TC 294 "Communication systems for meters and remote reading of meters", the secretariat of which is held by AFNOR.

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 May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

This standard consists of the following parts:

EN 13757-1, *Communication system for meters and remote reading of meters - Part 1: Data exchange.*

EN 13757-2, *Communication systems for and remote reading of meters - Part 2: Physical and link layer.*

EN 13757-3, *Communication systems for and remote reading of meters - Part 3: Dedicated application layer.*

prEN 13757-4, *Communication systems for meters and remote reading of meters - Part 4: Wireless meter readout.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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.

Introduction

The physical and link layer parameters for baseband communication over twisted pairs has first been described in EN 1434-3:1997 ("M-Bus") for heat meters. This standard is a compatible and interworking update of a part of EN 1434-3:1997 and includes also other measured media (water, gas, heat cost allocators), the master side of the communication and newer technical developments. It should be noted that the EN 1434-3:1997 covers also other communication techniques.

It can be used with various application layers especially the application layer of EN 13757-3.

1 Scope

This document covers the physical and link layer parameters of baseband communication over twisted pair (M-Bus) for meter communication systems. It is especially applicable to heat meters, heat cost allocators, water meters and gas meters.

NOTE It is usable also for other meters (like electricity meters) and for sensors and actuators.

For generic descriptions concerning communication systems for meters and remote reading of meters see EN 13757-1.

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.

EN 60870-5-2, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 2: Link transmission procedures (IEC 60870-5-2:1992)*.

EN 61000-4-4, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test – Basic EMV publication (IEC 61000-4-4:1995)*.

EN 61000-4-5, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity test (IEC 61000-4-5:1995)*.

3 Terms and definitions

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

3.1

unit load

one unit load ($1 U_L$) is the maximum mark state current of 1,5 mA

3.2

other definitions

for further definitions see 4.6 and annex C of EN 13757-1:2002