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I.S. EN 13757-3:2013

Communication systems for and remote reading of meters - Part 3: Dedicated application layer

I.S. EN 13757-3:2013

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Communication systems for and remote reading of meters - Part 3: Dedicated application layer

Systèmes de communication et de télérelevé de compteurs
- Partie 3: Couche d'application spéciale

Kommunikationssysteme für Zähler und deren
Fernablesung - Teil 3: Spezielle Anwendungsschicht

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Foreword

This document (EN 13757-3:2013) 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 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of an identical text or by endorsement, at the latest by November 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.

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

This document supersedes EN 13757-3:2004.

It shall be noted that the following significant technical changes compared to the previous edition have been incorporated in this European Standard:

- Extension of existing frames formats for different data protocols to support various wireless transmission schemes (harmonisation with EN13757-4).
- Adding an annex with a Smart Metering profile based on the requirements of the "Smart Meter Coordination Group" of the ESO's.
- Adding an annex to have a unique translation of M-Bus-data points to OBIS-Codes.
- Update of the encryption methods to the state of the art.
- Enhancement of data points for electricity meter.

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

EN 13757, *Communication systems for meters and remote reading of meters* consists of the following parts:

- *Part 1: Data exchange*
- *Part 2: Physical and link layer*
- *Part 3: Dedicated application layer*
- *Part 4: Wireless meter readout*
- *Part 5: Wireless relaying*
- *Part 6: Local bus*

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This document belongs to a series of parts of EN 13757, which covers communication systems for meters and remote reading of 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 13757-4 describes wireless communication (often called wireless M-Bus or wM-Bus). EN 13757-5 describes the wireless network used for repeating, relaying and routing for the different modes of EN 13757-4. EN 13757-6 describes a twisted pair local bus for short distance (Lo-Bus).

This dedicated application layer (M-Bus-Protocol) 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. This dedicated application layer has been optimised for minimum battery consumption of meters, especially for the case of wireless communication to ensure long battery lifetimes of the meters. Secondly, it is optimised for minimum message length to minimise the wireless channel occupancy and hence the collision rate. Thirdly, it is optimised for minimum requirements towards the meter processor regarding requirements of RAM size, code length and computational power.

An overview of communication systems for meters is given in EN 13757-1, which also contains further definitions.

This standard 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.

To facilitate common communication systems for CEN-meters (e.g. gas, heat, water meters and heat cost allocators) and for electricity meters, in this standard occasionally electricity meters are mentioned. All these references are for information only and are not standard requirements. The definition of communication standards for electricity meters (possibly by a reference to CEN standards) remains solely in the responsibility of CENELEC.

NOTE 1 Annex L describes how parts of this standard and of EN 13757-2 and EN 13757-4 can be used to implement smart meter functionalities. Similar functionalities could also be implemented using other physical and link layers.

NOTE 2 For information on installation procedures and their integration in meter management systems, see Annex M.

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