# SLOVENSKI STANDARD
# SIST EN 13757-6:2008

**01-december-2008**

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**Komunikacijski sistemi za merilnike in daljinsko odļ itavanje - 6. del: Vodilo (Local bus)**

Communication systems for meters and remote reading of meters - Part 6: Local Bus

Kommunikationssysteme für Zähler und deren Fernablesung - Teil 6: Lokales Bussystem

Systemes de communication et de télérelevé des compteurs - Partie 6: Bus local



**Ta slovenski standard je istoveten z: EN 13757-6:2008**



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**ICS:**

| | | |
|---|---|---|
| 33.200 | Daljinsko krmiljenje, daljinske meritve (telemetrija) | Telecontrol. Telemetering |
| 35.100.10 | Fiziļ ni sloj | Physical layer |
| 35.100.20 | Podatkovni povezovalni sloj | Data link layer |

**SIST EN 13757-6:2008** **en**

EUROPEAN STANDARD

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# EN 13757-6

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ICS 33.200; 35.100.10; 35.100.20

English Version

# Communication systems for meters and remote reading of meters - Part 6: Local Bus

Systèmes de communication et de télérelevé de compteurs - Partie 6 : Bus local

Kommunikationssysteme für Zähler und deren Fernablesung - Teil 6: Lokales Bussystem

This European Standard was approved by CEN on 16 August 2008.

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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 CEN Management Centre has the same status as the official versions.



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# Foreword

This document (EN 13757-6:2008) 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 DS.

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of an identical text or by endorsement, at the latest by April 2009, and conflicting national standards shall be withdrawn at the latest by April 2009.

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.

EN 13757 consists of the following parts, under the general title "Communication systems for meters and remote reading of meters":

— *Part 1: Data exchange*

— *Part 2: Physical and link layer*

— *Part 3: Dedicated application layer*



— *Part 4: Wireless meter readout (Radio meter reading for operation in the 868 MHz to 870 MHz SRD band)*



— *Part 5: Wireless Relaying*



— *Part 6: Local Bus*

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

# Introduction

This Standard is part of a series of standards which covers communication systems for meters and remote reading of meters. Part 1 contains generic descriptions and a communication protocol, Part 2 contains the description of the physical and link layer of a universal twisted pair bus system (M-Bus), Part 3 contains a dedicated application layer, Part 4 describes wireless communication and Part 5 describes a relaying extension for the mode R2 of Part 4.

EN 13757-6 can be used with various link and application layers. Frequently, the application layer of EN 13757-3 (M-Bus) or the DLMS based application layer described in EN 13757-1 is used.

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

# 1 Scope

This standard specifies the physical layer parameters of a local meter readout system (“Local Bus”) for the communication with and the readout of a single meter or a small cluster of meters (max. 5) via a single battery powered readout device (“master”) which can be connected temporarily or stationary for the communication directly to a meter (i.e. local readout) or via a fixed wiring or a small bus (total cable length max. 50 m, i.e. local remote readout).

For generic descriptions concerning communication systems for meters and remote reading of meters, refer to 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 13757-2:2004, *Communication systems for and remote reading of meters – Part 2: Physical and link layer*

# 3 Physical Layer Specifications



The Local Bus is an alternative to the M-Bus. It is restricted to small installations (Minibus installation according to EN 13757-2:2004, Annex E.6.1 type E) and optimized for special battery-driven masters. Usually the readout frequency is limited by the meter. The Local Bus does not support meter power supply from the bus. Note that this meter interface is not compatible with M-Bus masters according to EN 13757-2. To facilitate the meter power management, the master shall switch the bus power on (i.e. enter the master mark send state) not more than 10 s before any meter communication.



NOTE Annex A shows a possible circuit diagram for implementing such an interface.

A meter equipped with a Local Bus interface shall meet the following requirements:

**Table 1 — Requirements meter**

| Parameter | Min. | Max. |
|---|---|---|
| Meter Voltage without damage | > ± 50 V | |
| Isolation from ground | > 1 MOhm | |
| Meter mark state receive | > ± (UAM - 1 V) | < ± 15 V |
| Meter space state receive | 0 V | < (UAM - 3 V) |
| Meter mark state send (IBM)<br><br>0,5 mA = 1 LUL (Local Bus unit load) | 0 mA | < ± 0,5 mA |
| Voltage compliance of IAM per LUL | | < ± 0,05 mA/V |
| Change of IBM over time per LUL | | < ± 50 uA/10 s |
| Total change of IBM per LUL | | < ± 250 uA |
| Meter space state send | > ± (IBM + 3 mA) | < ± (IBM + 6 mA) |
| Capacitance per meter | | < 0,5 nF |
| Start-up time after power loss of > 0,1 s or a step change of UAM | | < 3 s |



A Local Bus master shall meet the following requirements:

**Table 2 — Requirements master**

| Parameter | Min. | Max. |
|---|---|---|
| Master mark state send (UAM) | > 4,8 V | < 15 V |
| Master space state send | 0 V | < (UAM - 4 V) |
| Master mark state current | | IAM |
| Master mark state receive | | < IAM + 1 mA |
| Master space state receive | > IAM + 2 mA | |
| Master mark state time before communication | > 5 s | < 10 s |
| Max. number of unit loads (LULs) | | 6 |
| Max. baud rate | 2 400 baud | |

# Annex A
(informative)

## Schematic implementation of a meter interface

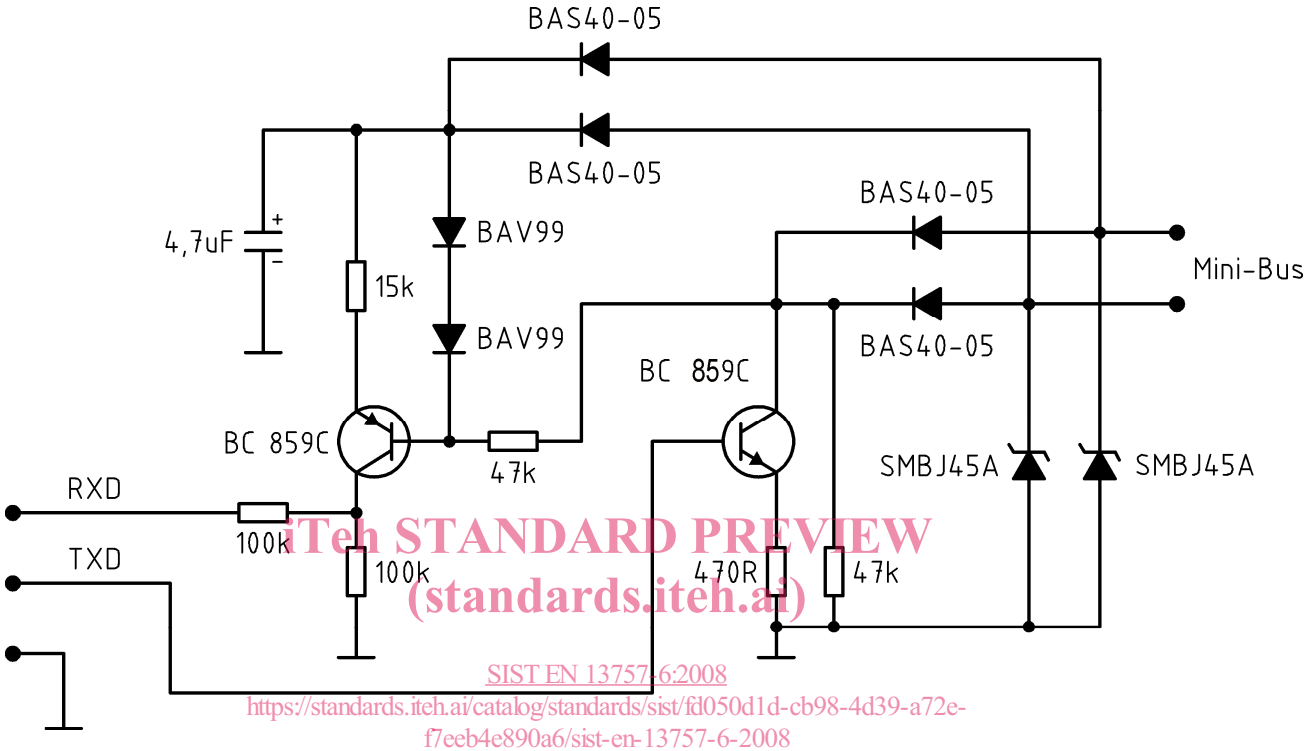




**Figure A.1 — Schematic implementation of a meter interface**