BS EN 13757-6:2015

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Communication systems for meters

Part 6: Local Bus

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National foreword

This British Standard is the UK implementation of EN 13757-6:2015. It supersedes BS EN 13757-6:2008 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PEL/894, Remote Meter Reading.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

Communication systems for meters - Part 6: Local Bus

Systèmes de communication pour compteurs - Partie 6: Bus local

Kommunikationssysteme für Zähler - Teil 6: Lokales Bussystem

This European Standard was approved by CEN on 27 September 2015.

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European foreword

This document (EN 13757-6:2015) 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of an identical text or by endorsement, at the latest by June 2016, and conflicting national standards shall be withdrawn at the latest by June 2016.

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This document supersedes EN 13757-6:2008.

The following significant editorial changes compared to the previous edition have been incorporated in this European Standard:

a) update of the standards title; and

b) update of normative references to EN 13757-2.

EN 13757 consists of the following parts, under the general title "Communication systems for 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 SRD bands)*

— *Part 5: Wireless M-Bus relaying*

— *Part 6: Local Bus*

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Introduction

This European Standard is part of a series of standards 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 the description of the physical and link layer of a universal twisted pair bus system (M-Bus),

— EN 13757-3 contains higher protocol layers like transport or application layer,

— EN 13757-4 specifies wireless communication and

— EN 13757-5 specifies a relaying extension of EN 13757-4.

This European Standard 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 European 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 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 (i.e. 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 documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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, *Communication systems for meters 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 (Mini 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 total cable length is limited to 50 m. 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 requirements of Table 1.

Table 1 — Requirements meter

Parameter	Min.	Max.
Meter Voltage without damage	> ± 50 V	
Isolation from ground	> 1 MΩ	
Meter mark state receive	> ± (UAM - 1 V)	< ± 15 V
Meter space state receive	0 V	< (UAM - 3 V)
Meter mark state send (IBM) 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 requirements of Table 2.

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 shows an example of a schematic simple implementation of a local bus meter interface.

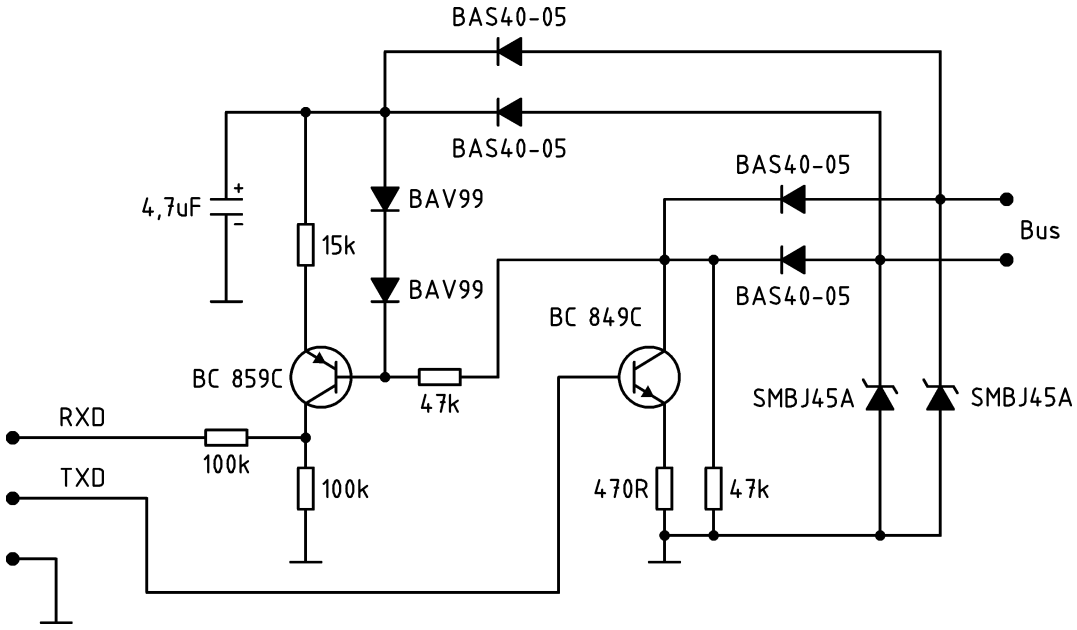

Figure A.1 — Schematic implementation of a meter interface

Bibliography

[1] EN 1434-3, *Heat Meters — Part 3: Data exchange and interfaces*

[2] EN 13757-1, *Communication systems for meters — Part 1: Data exchange*

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

[4] EN 13757-4, *Communication systems for meters and remote reading of meters — Part 4: Wireless meter readout (Radio meter reading for operation in SRD bands)*

[5] EN 13757-5, *Communication systems for meters and remote reading of meters — Part 5: Wireless relaying*

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