
**Komunikacijski sistemi za števce - 2. del: Žične komunikacije po M-vodilu -
Dopolnilo A1**

Communication systems for meters - Part 2: Wired M-Bus communication

Kommunikationssysteme für Zähler - Teil 2: Drahtgebundene M-Bus-Kommunikation

Systèmes de communication pour compteurs - Partie 2 : Communication M-Bus filaire

Ta slovenski standard je istoveten z: EN 13757-2:2018/prA1

ICS:

33.200	Daljinsko krmiljenje, daljinske meritve (telemetrija)	Telecontrol. Telemetry
35.100.10	Fizični sloj	Physical layer

SIST EN 13757-2:2018/oprA1:2023 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

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English Version

Communication systems for meters - Part 2: Wired M-Bus communication

Systèmes de communication pour compteurs - Partie 2
: Communication M-Bus filaire

Kommunikationssysteme für Zähler - Teil 2:
Drahtgebundene M-Bus-Kommunikation

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 294.

This draft amendment A1, if approved, will modify the European Standard EN 13757-2:2018. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents		Page
European foreword		3
1	Modification to Clause 3, “Terms and definitions”	4
2	Modification to 5.6, “Datagram abort on collision”	4
3	Modification to 5.7.3, “Datagram structure”	4
4	Modification to 5.7.3.1, “Normalization”	5
5	Deletion of 5.7.3.4, “Status request”	5
6	Addition of 5.7.3.5, “Unsupported communication types”	5
7	Modification to 5.7.6, “Link layer time schedule”	5
8	Modification to 5.7.7, “Datagram sequencing”	5
9	Modification to Figures 1 to 7	6

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<https://standards.iteh.ai/catalog/standards/sist/bf584455-965a-442c-9b54-cd0c50c34e04/sist-en-13757-2-2018-opra1-2023>

European foreword

This document (prEN 13757-2:2018/prA1:2023) has been prepared by Technical Committee CEN/TC 294 “Communication systems for meters”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will amend EN 13757-2:2018.

During the review of the standard four areas of improvement were identified which are addressed in this amendment.

In comparison with EN 13757-2:2018, the following technical modifications have been made:

- a) addition of abbreviations,
- b) clarification 5.7.3.1 “Normalization” regarding the FBC modification,
- c) deletion of 5.7.3.4 “Status request”,
- d) new 5.7.3.5 “Unsupported communication types” for handling of unsupported communication types,
- e) handling of exceeded time limit in 5.7.6 “Link layer time schedule”
- f) clarification of 5.7.7. “Datagram sequencing”,
- g) modification of Figures 1 to 7.

EN 13757, *Communication systems for meters*, is currently composed of the following parts:

- Part 1: Data exchange
- Part 2: Wired M-Bus communication
- Part 3: Application protocols
- Part 4: Wireless M-Bus communication
- Part 5: Wireless M-Bus relaying
- Part 6: Local Bus
- Part 7: Transport and security services
- Part 8: Adaptation layer

EN 13757-2:2018/prA1:2023 (E)**1 Modification to Clause 3, “Terms and definitions”**

Rename the clause from “Terms and definitions” to “Terms, definitions and abbreviations”.

Add a subclause “3.1 Terms and definitions”, renumber the term 3.1 to 3.1.2, and add the following new term entry:

“

3.1.1**communication type**

frame type as defined in EN 60870-5-2:1993 and identified by the function code

Note 1 to entry: Other parts of EN 13757 also use the term message type as an equivalent.

“.

Add another subclause “3.2 Abbreviations” after the new 3.1.2. In the new subclause “3.2 Abbreviations” add the following:

“Abbreviation	Term
FCB	frame count bit
FCV	frame count valid bit”.

2 Modification to 5.6, “Datagram abort on collision”

Replace

“If a slave detects at the end of a mark level send bit a (voltage) space signal from its master it shall terminate its send datagram as soon as possible. A received continuous space signal from the master for > 11 bit times (break signal) shall stop the datagram send of a slave not later than 24 bit times after the start of such a break signal. For a software implementation of the byte transmission this requirement can be met by testing the received signal state either at the end of each mark state send bit or before the beginning of each start bit send. For a hardware implementation of the byte reception (UART) one can utilize the break status of such devices to detect such a state. For further details see Annex D.”

with

“If a slave detects at the end of a mark level send bit a (voltage) space signal from its master it shall terminate its send datagram as soon as possible. A received continuous space signal from the master for > 11 bit times (break signal) shall stop the datagram send of a slave not later than 24 bit times after the start of such a break signal. For further details see Annex D.

NOTE For a software implementation of the byte transmission this requirement can be met by testing the received signal state either at the end of each mark state send bit or before the beginning of each start bit send. For a hardware implementation of the byte reception (UART) one can utilize the break status of such devices to detect such a state.”.

3 Modification to 5.7.3, “Datagram structure”

Replace the title

“Datagram structure”

with

“Communication types”.

4 Modification to 5.7.3.1, “Normalization”

Replace “last received FCB bit” with “last received FCB”.

Add after the note:

“The FCB may also be modified by a SELECT command (see EN 13757-7 and CEN/TR 17167).”.

5 Deletion of 5.7.3.4, “Status request”

Delete 5.7.3.4, “Status request”, renumber the following subclauses and adjust the corresponding cross-references.

6 Addition of 5.7.3.5, “Unsupported communication types”

After the newly renumbered subclause 5.7.3.4, “Data send master to slave”, add the following new subclause:

“5.7.3.5 Unsupported communication types

Communication types not listed in 5.7.3 are unsupported communication types. They should be ignored by master and slave.”.

7 Modification to 5.7.6, “Link layer time schedule”

Add after the end of the last sentence:

“If the master does not receive an answer within this time limit it interprets the lack of a reply as a fault and repeats the same telegram up to two times. When slaves send faulty or corrupt replies, three attempts are also made.”.

8 Modification to 5.7.7, “Datagram sequencing”

Replace

“For the administration of long multi datagram messages and for acknowledged data transmission with incremental consequences (in contrast to the transmission of static values and parameters) the link layer protocol supports via a FCB Bit (frame count bit) the administration of valid transfers of a datagram. For simple one datagram communication and absolute data contents (e.g. switch on) without incremental datagrams (e.g. toggle switch) the slave may simply ignore the FCB bit of the master datagrams. For slaves with multiple primary addresses and FCB administration a “last FCB” bit shall be administered for each primary address separately. The same holds true for slaves which support both a primary address and addressing through a secondary address via address = 253 (FDh). Any valid SND NKE to a given address shall clear this internal “last FCB” bit for this address. Note that the support of multi datagram messages for both SND UD datagrams and for RSP UD datagrams requires separate internal “last FCB” bits for each direction. Note that for REQ UD2 datagrams a set FCV bit and for a SND NKE datagram a cleared FCV bit and a cleared FCB bit is required.”

with

“The link layer protocol supports retransmission of data readout via a FCB (frame count bit). This is used for the administration of long multi datagram responses (see EN 13757-3:2018, 6.5 and 7.5) from the slave to the master using REQ-UD2 and for the retransmission of REQ-UD1 or REQ-UD2 from the master to the slave. It is not used for the SND-UD/SND-UD2. Such datagrams shall be forwarded to upper protocol layer processing independently of the value of the FCB.

Slaves with multiple primary addresses shall store the “last FCB” for each primary address separately. This rule also applies for slaves that support addressing through a secondary address via the primary address 253. The “last FCB” is related to the primary address and is therefore not affected by the potential

EN 13757-2:2018/prA1:2023 (E)

support of multiple secondary addresses using primary address 253 (see also CEN/TR 17167:202X, A.7.2). The broadcast address 255 does not require a “last FCB” as it does not support any response (according to 5.7.5). The test address 254 shares the “last FCB” with the primary address of the response.

The “last FCB” is shared among all communication types from the master to the slave.

Readout of multi datagram responses cannot be continued after an interruption of the readout sequence. Any change of the communication type from the master to the slave during such readout will interrupt the current readout sequence. To continue the previous readout after such interruption the master needs to restart the readout sequence (e.g. by transmitting a SND-UD datagram).

According to EN 60870-5-2 for REQ-UD1 and REQ UD2 datagrams a set FCV is required and for a SND-NKE datagram a cleared FCV and a cleared FCB is required. A SND-UD is specified by a set FCV and a SND-UD2 is specified by a cleared FCV.

Slaves neither supporting multi datagram responses nor retransmission of a REQ-UD1 datagram can ignore the FCB of received datagrams.

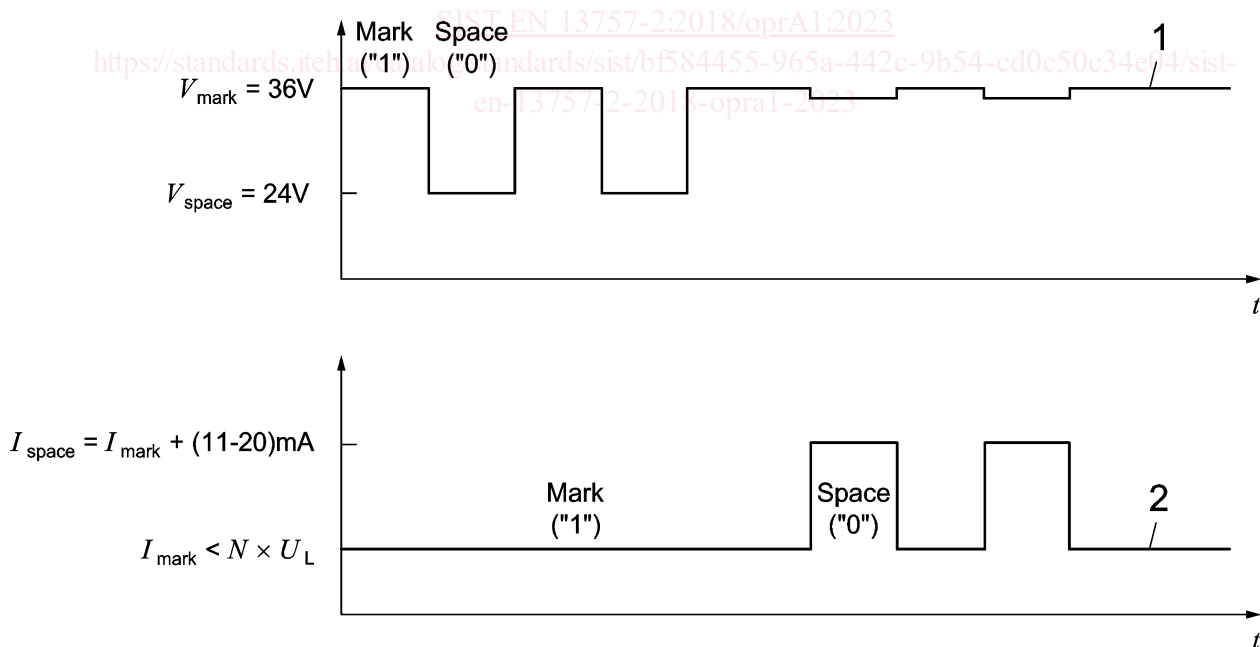
See CEN/TR 17167:202X, A.7 for an implementation guideline of the FCB handling of a slave.

NOTE This revision of the standard enables a single output buffer implementation of the slave. Previous revisions of this standard applied separate handling of the FCB for SND-UD and REQ-UD1/REQ-UD2 datagrams. The state of the output buffer of the meter after an interruption of a readout of a multi datagram response is ambiguous between standard revisions. To avoid backward compatibility issues the master therefore needs to comply with the interruption rules defined in this section.”.

9 Modification to Figures 1 to 7

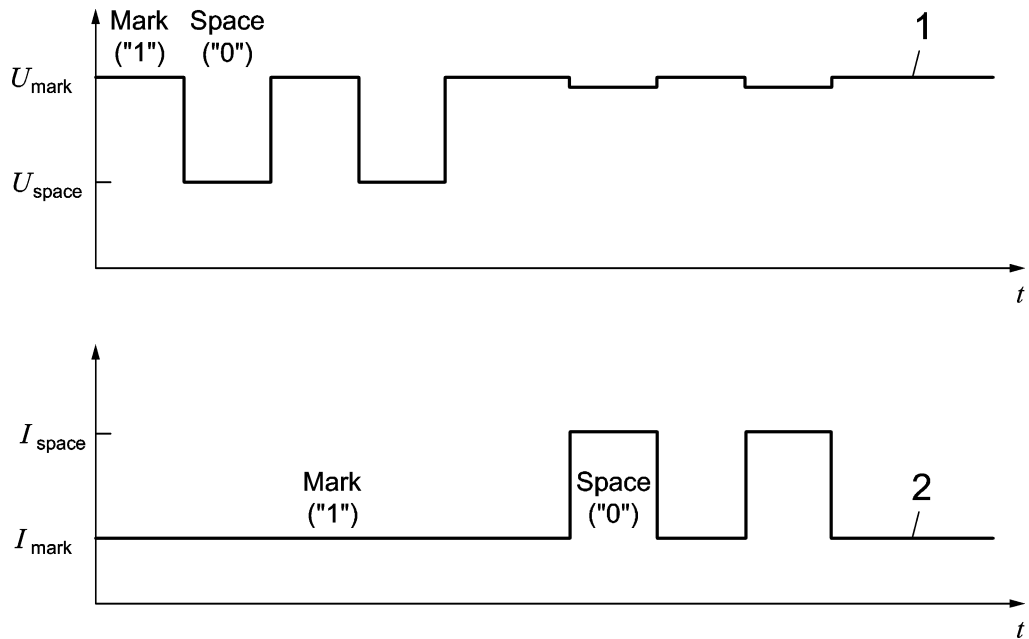
Replace the image of Figure 1

“



with the following:

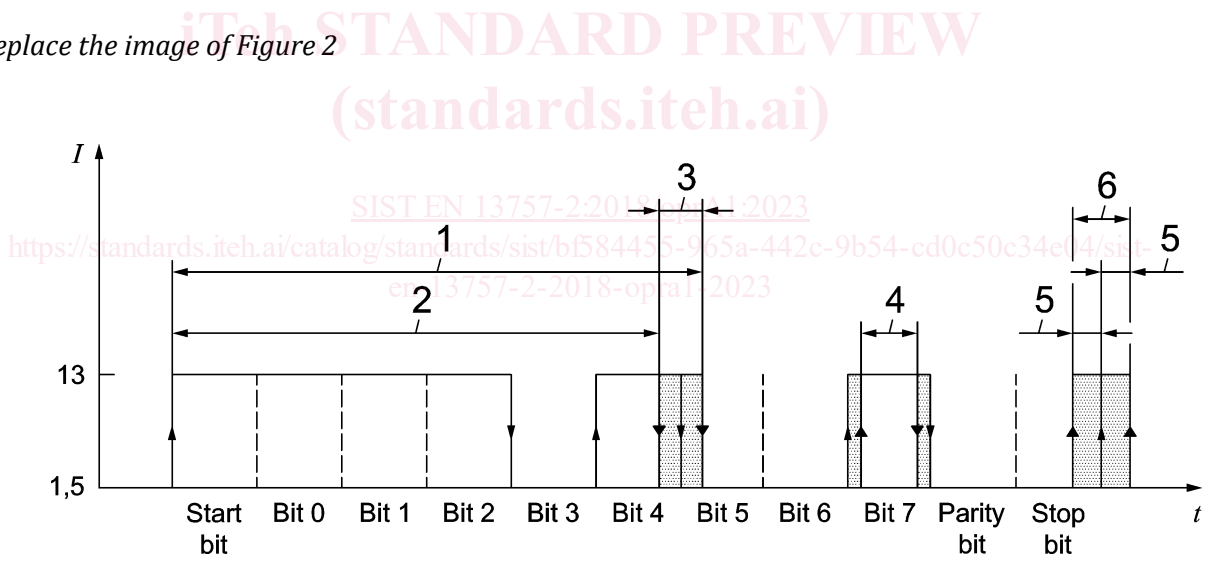
“



“

Replace the image of Figure 2

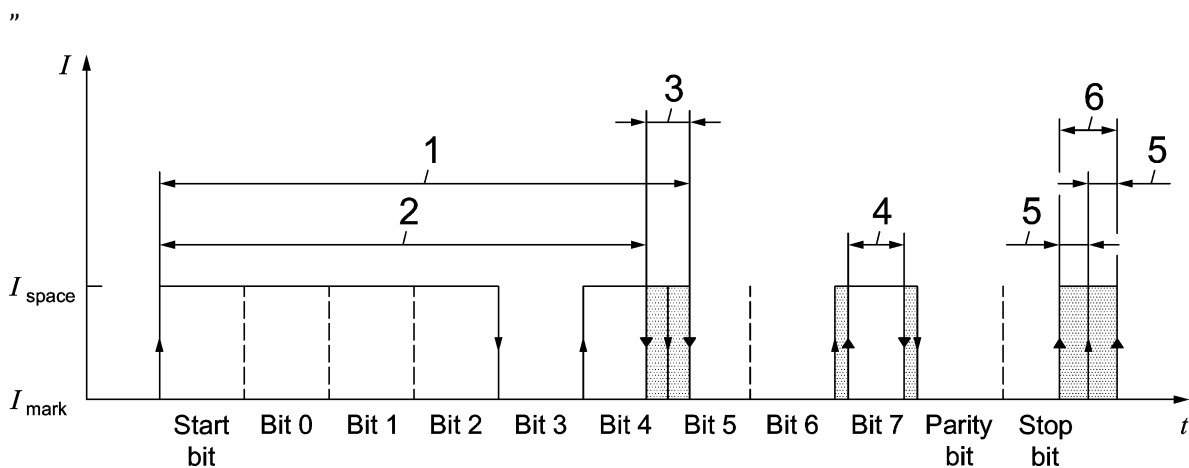
“



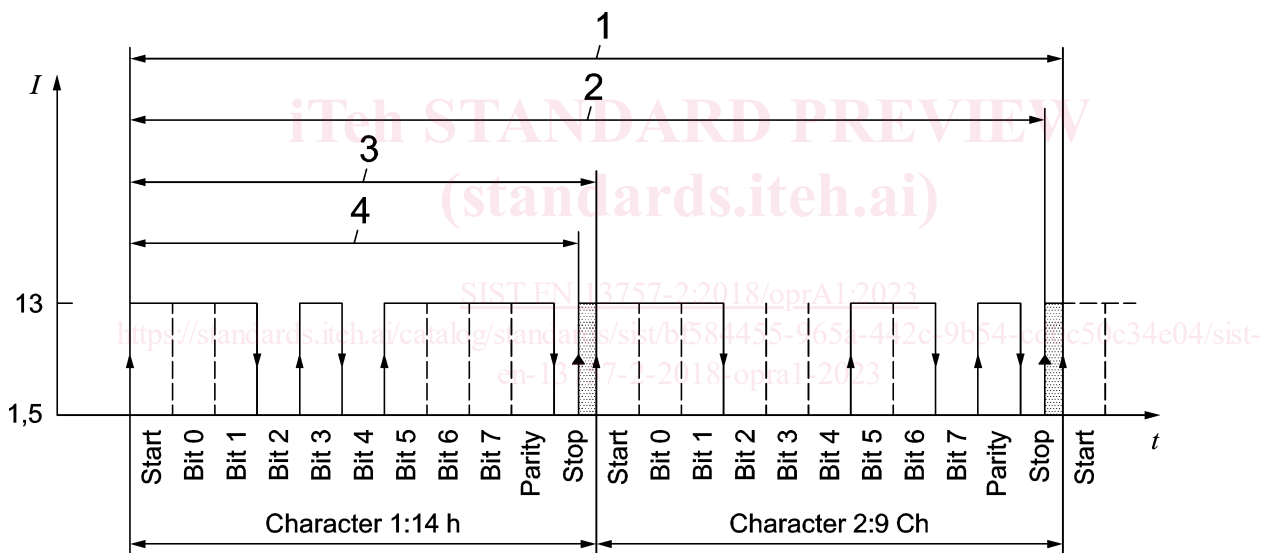
“

with the following:

EN 13757-2:2018/prA1:2023 (E)



Replace the image of Figure 3



with the following: