

DIN EN 13757-4:2026-02 (E)

Communication systems for meters - Part 4: Wireless M-Bus communication

Contents		Page
European foreword		6
Introduction		7
1 Scope		9
2 Normative references		9
3 Terms and definitions		9
4 Symbols and abbreviated terms		11
4.1 Symbols		11
4.2 Abbreviated terms		11
5 General		12
5.1 Modes of operation		12
5.2 Meter communication types		13
5.3 Performance classes		15
6 Mode S		16
6.1 Channel properties		16
6.2 Transmitter		17
6.3 Receiver		18
6.4 Data encoding and preamble		18
6.4.1 Data encoding		18
6.4.2 Order of transmission of the encoded data		18
6.4.3 Preamble and synchronization pattern		18
7 Mode T		19
7.1 Channel properties		19
7.2 Transmitter		19
7.3 Receiver		20
7.4 Data encoding and preamble		21
7.4.1 General		21
7.4.2 Meter transmit, "3 out of 6" data encoding		21
7.4.3 Other Device transmit, Manchester encoding		23
8 Mode R2		23
8.1 Channel properties		23
8.2 Transmitter		23
8.3 Receiver		25
8.4 Data encoding and preamble		25
8.4.1 Data encoding		25
8.4.2 Order of transmission of the encoded data		25
8.4.3 Preamble and synchronization pattern		25
9 Mode C		26
9.1 Channel properties		26
9.2 Transmitter		26
9.3 Receiver		27
9.4 Data encoding and preamble		28
9.4.1 Encoding		28

9.4.2	Preamble and synchronization pattern	28
10	Mode N	28
10.1	Channel properties	28
10.2	Physical link parameters	30
10.3	Receiver sensitivity	32
10.4	Data encoding and preamble	32
10.4.1	Encoding	32
10.4.2	Preamble and synchronization pattern	33
11	Mode F	33
11.1	Channel properties	33
11.2	Physical link parameters	33
11.3	Receiver sensitivity	34
11.4	Data encoding and preamble	35
11.4.1	Data Encoding	35
11.4.2	Preamble and synchronization pattern	35
12	Data Link Layer	35
12.1	General	35
12.2	Order of multi byte fields	35
12.3	Frame format A	36
12.4	Frame format B	36
12.5	Field definitions	37
12.5.1	General	37
12.5.2	Multi byte fields	37
12.5.3	Length field (L-Field)	37
12.5.4	Control field (C-Field)	37
12.5.5	Manufacturer ID (M-field)	39
12.5.6	Address (A-field)	39
12.5.7	Cyclic redundancy check (CRC-field)	40
12.5.8	Control information field (CI-field)	40
12.6	Timing	40
12.6.1	Timing for installation messages	40
12.6.2	Synchronous transmissions of meter messages	41
12.6.3	Access timing	43
12.7	Repeated or duplicate messages	44
12.8	Forward error correction (FEC)	44
12.8.1	Overview	44
12.8.2	Datagram structure	44
12.8.3	FEC Algorithm	45
13	Connection to higher protocol layers	46
13.1	The Control information field (CI-field)	46
13.2	CI-fields for the Extended Link Layer	48
13.2.1	General	48
13.2.2	CI-field = 8Ch	48
13.2.3	CI-field = 8Dh	48
13.2.4	CI-field = 8Eh	49
13.2.5	CI-field = 8Fh	49
13.2.6	CI-field = 86h	49
13.2.7	Communication Control Field (CC-field)	50
13.2.8	Access Number Field (ACC-field)	52
13.2.9	Manufacturer ID 2 (M2-field)	52
13.2.10	Address 2 (A2-field)	52
13.2.11	Session Number Field (SN-field)	52
13.2.12	AES-128 Counter Mode Encryption	53
13.2.13	Run Time Delay field (RTD-field)	54
13.2.14	Reception Level field (RXL-field)	55
13.2.15	Payload Checksum Field (PayloadCRC-field)	56
13.3	CI-fields for the Transport Layer	57
13.3.1	General	57

13.3.2	Short Transport Layer	57
13.3.3	Long Transport Layer	57
14	Management functions for link control	57
14.1	General	57
14.2	Set Radio Parameters	61
14.2.1	General	61
14.2.2	Command	61
14.2.3	Response	64
14.3	Get Radio Parameters	67
14.3.1	General	67
14.3.2	Command	67
14.3.3	Response	67
14.4	Set limited radio parameters	69
14.4.1	General	69
14.4.2	Command	69
14.4.3	Response	71
14.5	Confirm Radio Parameters	71
14.5.1	General	71
14.5.2	Command	71
14.5.3	Response	72
14.6	Set manufacturer specific parameters	73
14.6.1	General	73
14.6.2	Command	73
14.6.3	Response	74
Annex A (informative) Frequency allocation and transmit power for the 868 MHz band		75
Annex B (informative) Frequency allocation for the 169 MHz band		76
B.1	Frequencies and allowed power levels	76
B.2	Frequencies and corresponding maximum duty cycles	76
Annex C (informative) Frame examples		78
C.1	Example of a frame from a meter in mode S	78
C.1.1	Conditions	78
C.1.2	Block content	78
C.1.3	Bit string	79
C.2	Example of a frame from a meter in mode T1	79
C.2.1	Condition	79
C.2.2	Block Content	80
C.2.3	Bit string	80
C.3	Example of a frame from a meter in mode C1	81
C.3.1	Conditions	81
C.3.2	Block content	81
C.3.3	Bit string	82
Annex D (informative) Example of predictive reception of synchronous messages		83
Annex E (informative) Timing diagrams		84
Annex F (informative) Counter Mode Flow		103
Bibliography		104