



# **Open Metering System Specification**

**OMS-Data Point List**

**Annex B to  
Volume 2: Primary Communication  
Issue 4.4.2**

**RELEASE E (2021-12)**

## Document History

Version	Date	Comment	Editor
A 0.1.0	2013-09-25	Generation of first Draft	U.Pahl
A 0.2.0	2013-10-16	Update of OMS-DPL	U.Pahl
A 0.2.1	2013-10-17	Correction T.Banz	U.Pahl
A 0.2.2	2013-10-18	Foot note 15 for Heat/cooling	U.Pahl
A 0.2.3	2013-10-21	Bugfix	U.Pahl
A 0.3.0	2014-01-17	Changes according final vote	U.Pahl
A 0.3.1	2014-01-25	Rename VIF-Type->VIB-Type Release A	U.Pahl
B 0.4.0	2014-11-07	Add encryption requirements Add symbols $\Theta$ and $\epsilon$	U.Pahl
B 4.1.0	2016-06-22	Add alternative optional description	Thomas Banz
C 4.2.0	2019-10-28	Add declaration of "No Data", "C", "C", "Ox", "Empty"; Footnote 16 and 17; Device type "Breaker / Valve"; MB-Tag Section "DC- Disconnecter Control", "YD-Descriptors"; MB- Tag "DC1!", "MM8!", "VM4!", "VM5!", "YD1!", "YD1!T", "YD2!P", "YD3!P"; VIB-Type section "CL-Control", "YD-Descriptor"; VIB-Types "MM07", "MM08", "MM09", "MM09", "MM10", "MM11", "VM07", "VM08", "VM09", "VM10", "YD01", "YD02", "YD03", "YD04", "YD05", "YD06", "YD07"	Thomas Banz
D 4.3.0	2020-06-03	Changed headline for B.2.2 New chapter B.2.3 Add conditions from OMS-S2, Annex M to "DC1!", "DT1!", "DT2!D", "EJ1!", "EJ1!T", "EJ2!", "EJ1!D", "EJ1!DT", "EJ2!D", "EW1!", "EW1!D", "EW1!T", "EW1!DT", "EW1!R", "EW1!RT", "EW2!D", "HC1!", "HC1!D", "MM2!", "MM3!", "TC1!", "TC2!", "VM1!", "VM1!D", "VM1!DT", "VM2!", "VM3!" Editorial changes	Thomas Banz, Achim Reissinger
D 4.3.1	2020-06-04	Editorial changes in B.2.3	Thomas Banz, Achim Reissinger
D 4.3.2	2020-06-04	Editorial changes	Uwe Pahl, Achim Reissinger
D 4.3.3	2020-06-05	Editorial changes	Thomas Banz, Achim Reissinger
D 4.3.4	2020-07-07	Updated title page Add VIB-Types CL02, HC02 Add group CT Add tags CT1!, XCL2!	AG1, Achim Reissinger
D 4.3.5	2020-07-09	Wording changed for CT, CT1!, XCL2!	Achim Reissinger
D 4.3.6	2020-09-24  and  2020-09-29  and  2020-10-02	Editorial changes  Add "O1" in Col. Breaker for DT1! And DT2! Add two new MB-Tags: <ul style="list-style-type: none"> <li>ID7! "Initial DIN address" with VarLen, T=0;F=0;X=0;FD=no and VIB Type=ID01</li> <li>ID8! "Current DIN address" with VarLen, T=0;F=0;X=0;FD=no and VIB Type=ID02</li> </ul>	Achim Reissinger    Uwe Pahl, Thomas Banz
D 4.3.7	2020-10-13	List of MB-Command-Tags: <ul style="list-style-type: none"> <li>Add new group "Compliance Test Command"</li> <li>Change VIB Type Reference form CL02 to CT01</li> <li>Change to XCL to XDC change Headline top "Disconnecter Control Command"</li> </ul>	Thomas Banz

Version	Date	Comment	Editor
		<ul style="list-style-type: none"> <li>Change XCL1! To XDC1!</li> </ul> <p>List of VIB-Types:</p> <ul style="list-style-type: none"> <li>Add new group "Compliance Test"</li> <li>Move CL02 to CT01</li> <li>Add CL02</li> </ul>	
D 4.3.8	2020-10-19	Release	Achim Reissinger
E 4.4.0	2021-10-21	<p>Add B.2.3 for sensors Update B.2.1, B.2.2, B.2.4 and B.3.1 for sensors</p> <p>Release candidate</p>	AG1, AG1 TF Sensors, Thomas Banz, Achim Reissinger
E 4.4.1	2021-12	<p>List of MB-Data-Tags:</p> <ul style="list-style-type: none"> <li>Term for "temperature" corrected for TC1!, TC2!, TC3!</li> <li>Condition removed for VM1!DT</li> </ul> <p>Release</p>	AG1, Thomas Banz  Achim Reissinger

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## B.1 Overview about the OMS-Data Point List

### B.1.1 General

The OMS-Data Point List (OMS-DPL) list all harmonised M-Bus-Tags. An M-Bus Tag is an abstract description of one or several M-Bus data points, which may differ in scaler or resolution or data type (according to [EN13757-3:2018], Table 4).

The OMS-DPL consists of two lists:

- VIB-Type List (VTL)
- M-Bus Tag List (MBTL)

### B.1.2 The VIB-Type List

A VIB-Type describes a physical unit with a scaler and an optional VIF property like direction of flow. Each VIB-Type in the VIB-Type-List is associated with one unique combination of VIF and VIFE.

Example "EW02" means energy in Watt with special scaler  $10^5$  to  $10^6$  used only for imported energy.

### B.1.3 The M-Bus Tag List

Each MB-Tag listed in the OMS-DPL is associated with a unique combination of Tarif "T", Function "F", Storage number "X", the final DIFE "FD" and a set of VIB-Types. The set of VIB-Types has always the same VIF-properties, the same physical unit, but may be different scalers or different data types. One MB-Tag can be used by different device types (e.g. EW1! – Energy in Watt is in use for Electricity, Heat and Cooling meters).

Example: MB-Tag EW1!R describes a recent value of energy used for billing. This MB-Tag declares

- a historical (recent) value by a set FD
- a register (declared by Storage number X)
- an instantaneous value (declared by function F=0)
- applies no tariff (T=0)
- Unit is always Watt (declared by the VIB-Type)
- The scaler has a range of  $10^{-6}$  to  $10^{+6}$  (declared by the VIB-Types EW01, EW02 and EW03)

Such a MB-Tag could be coded as shown in Table 1.

**Table 1: Example of MB-Tag EW1!R**

Example	DIF/DIFE	VIF/VIFE	Value
12,3 MWh (in register 5)	C2h 82h 00h	FBh 00h	7Bh 00h
12300 kWh (in register 5)	CBh 82h 00h	06h	00h 23h 01h

## B.2 M-Bus Tag List

### B.2.1 Legend and Notes

#### *Legends M-Bus*

##### Data Field:

INT = Integer (8 Bit - 64 Bit) refer to [EN13757-3:2018], Table 4  
8INT = 8 Bit Integer/Binary refer to [EN13757-3:2018], Table 4  
64INT = 64 Bit Integer/Binary refer to [EN13757-3:2018], Table 4  
BCD = Binary Coded Decimal refer to [EN13757-3:2018], Table 4  
8BCD = 4 Byte BCD refer to [EN13757-3:2018], Table 4  
VarLen = variable length refer to [EN13757-3:2018], Table 4  
Type F = Compound CP32: Date and Time refer to [EN13757-3:2018], Annex A  
Type G = Compound CP16: Date refer to [EN13757-3:2018], Annex A  
Type I = Year down to second refer to [EN13757-3:2018], Annex A  
Type J = Time of day refer to [EN13757-3:2018], Annex A  
No Data = No Data refer to [EN13757-3:2018], Table 4

M = Mandatory (These data objects have to be specified)

Ax = Alternatively (One of the with "A" and identical number marked data objects are mandatory)

O = Optional (These data objects do not need to exist)

Ox = Optional alternatively (Only one of the with 'O' and identical number marked data objects are allowed in the datagram)

C = Conditional (Mandatory if condition applies). If condition does not apply, optional 'O' is valid.

C Ox = Conditional or optional alternatively (mandatory if condition applies). If condition does not apply, optional alternatively 'Ox' is valid.


Empty = An empty field indicates that this MB-Tag is not applicable to this device type.

S = MB-Sensor-Tag, see chapter "List of MB-Sensor-Tags".


##### Encryption

The column "type" also shows the encryption requirements according to the selected security profile [OMS-S2], 9.1. In the headline of each value group a respective symbol can be found which is valid for each M-Bus-Tag below in this group. Only in case of exceptions a separate symbol is shown directly after the type definition of this single M-Bus-Tag (e.g. ID6!).

##### Symbols:

 = Encryption is mandatory required

  = Encryption is not required but can be used optionally

 = Encryption is not allowed

For data points that are not listed in the M-Bus Tag List encryption is optional. This includes manufacturer specific data. However, it is strongly recommended to encrypt all consumer relevant data.

The letters and numbers in front of the alert sign "!" declare the supported combination of VIB-Types. The letters after the alert sign are optional and declare additional conditions. Every letter after alert sign is used once only)

*Declaration of Measurement condition (F)*

- \* [ ] instant
- \* [A] maximum
- \* [I] minimum
- \* [E] Error condition

*Declaration of Time point (S and final DIFE)*

- \* [ ] current value
- \* [D] due date value (X=1)
- \* [P] periodical values (X=8..99)
- \* [R] Recent value (X=0..99 + final DIFE)
- \* [C] cumulative value of a maximum/minimum
- \* [Xn] Sporadic event, where n is the value of used Storage number (X = 3..31) e.g. 'X3'

*Declaration of Tarif-Register*

- \* [ ] No tarif
- \* [T] Tariff 1..15

**Table footnotes**

<sup>10</sup> This MB-Tag is several times used. The description for this MB-Tag depends on the Device Type of the transmitting device.

<sup>11</sup> Recent values are always coded with a final DIFE with the value 00h. The number of DIFEs is variable. For downward compatibility reasons and for realization of constant data record length it is allowed to use more DIFEs (between the DIF and the final DIFE = 00h) than necessary.

<sup>12</sup> Depending on Data field: Identification number (8BCD) or Application Layer Address (64INT)  
Order of Application Layer Address (ALA) according [EN13757-7:2018], Table 12.

<sup>14</sup> Refer to [EN13757-3:2018], Annex E.1

<sup>15</sup> For device type comb. Heat/Cooling the tariff 1 is allowed only!

<sup>16</sup> According to [EN13757-3:2018], Annex C.3, subunit must be 1 if the disconnecter is integrated into a meter.

<sup>17</sup> The subunit of the subunit descriptor shall be >0

<sup>18</sup> DIB of command can be different


<sup>19</sup> VarLen with a 14 characters ASCII string (LSB first) according to [EN13757-3:2018], Table 5. For example, the address in [OMS-S2], Table 5 is coded as: 0D 78 0E 34 34 33 33 32 32 31 31 31 30 53 44 51 37

<sup>21</sup> Mandatory for static datagrams, see OMS-S2, 4.3.2.4 NOTE: Therefore static datagrams are mandatory for this device type.

<sup>22</sup> VarLen with binary value range (E0h – EFh)










## B.2.2 List of MB-Data-Tags

Type / Encryption	MB-Tag	Description	Data field	Tariff [T]	Function [F]	Storage [X]	Final DIFE [FD] 11	VIB-Type Reference	Electricity (02h)	HCA (08h)	Cooling (0Ah;0Bh)	Comb. Heat/Cooling (0Dh)	Heat (04h;0Ch)	Gas (03h)	Cold Water (07h;16h)	Hot Water (06h;15h)	Breaker / Valve (20h; 21h)	Sensor Device
	<b>AD</b>	<b>Alarm Devices</b>																
Sensor reading	AD4!	Number of dismounts / removal counter	INT, BCD	0	0	4	no	AD04										S
Sensor reading	AD5!	Number of test button operated counter	INT, BCD	0	0	5	no	AD05										S
Sensor reading	AD6!	Number of alarms	INT, BCD	0	0	6	no	AD06										S
Sensor reading	AD7!	Number of alarm mute switch operated counter	INT, BCD	0	0	7	no	AD07										S
Sensor reading	AD8!	Number of obstacle detected counter	INT, BCD	0	0	8	no	AD08										S
Sensor reading	AD9!	Number of smoke entries blocked	INT, BCD	0	0	9	no	AD09										S
Sensor reading	AD10!	Number of smoke chamber defects	INT, BCD	0	0	10	no	AD10										S
Sensor reading	AD11!	Number of self-test failed counter	INT, BCD	0	0	11	no	AD11										S
Sensor reading	AD12!	Number of sounder defect counter	INT, BCD	0	0	12	no	AD12										S
Sensor reading	AD13!	Chamber Pollution Level	INT,	0	0	13	no	AD13										S



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Time, date of reading <sup>10</sup>	DP1!	Run time difference between measurement of current value and transmission <i>Condition: See CEN/TR 17167:2018 Annex C.2</i>	INT, BCD	0	0	0	no	DP01	C	C	C	C	C	C	C	C	C		
Time integral <sup>10</sup>	DP2!	Averaging duration for actual value	INT, BCD	0	0	0	no	DP02	O		O	O	O	O	O	O	O		
Transmission interval	DP3!	Nominal period of synchronous transmission	INT, BCD	0	0	0	no	DP03	O	O	O	O	O	O	O	O	O		
-	DP4!	Valid only until OMS-S2 V4.1.2. => Replaced by YD2!P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Run time of device	DP5!	Operating Time	INT, BCD	0	0	0	no	DP05											S
Run time of device	DP6!	On Time	INT, BCD	0	0	0	no	DP06											S
 	DT	<b>Date / Time (Time stamp)</b>																	
Date/Time of device <sup>10</sup>	DT1!	Current date/time at time of transmission <i>Condition: See OMS-S2 Annex M OMS-UC-04</i>	Type F,I	0	0	0	no	DT01	C	C	C	C	C	C	C	C	C	C	S
Time, date of reading <sup>10</sup>	DT1!R	Local date at time of recent meter value	Type F,I	0	0	0..99, 101..124	yes	DT01	O2					O2					
Date, time of max. 	DT1!A	Point of time of actual maximum of active power import (+P), current value, total	Type F,I	0	1	0	no	DT01	O3										
Date, time of max. 	DT1!AR	Point of time of actual maximum of active power import (+P). recent value, total	Type F,I	0	1	0..99, 101..124	yes	DT01	O5										
Date, time of max. 	DT1!AT	Point of time of actual maximum of active power import (+P), current value, tariff 1..15	Type F,I	1..15	1	0	no	DT01	O4										
Date, time of max. 	DT1!ART	Point of time of actual maximum of active power import (+P). recent value, tariff 1..15	Type F,I	1..15	1	0..99, 101..124	yes	DT01	O6										
Date, time of event 	DT1!Xn	Date / Time of related sporadic event	Type F,I	0	0	3..31	no	DT01											S
Date of reading <sup>10</sup>	DT2!R	Local date at time of recent meter value	Type G	0	0	0..99, 101..124	yes	DT02	O2					O2					
Date of device <sup>10</sup>	DT2!	Current date at time of transmission	Type G	0	0	0	no	DT02	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	S












Date of reading <sup>10</sup>	DT2!D	Local date at due date <i>Condition - 1: See OMS-S2 Annex M OMS-UC-07</i> <i>Condition - 2: See OMS-S2, 8.4.5.1</i>	Type G	0	0	1	no	DT02		M	C	C	C		C	C		
Date of max.	DT2!A	Point of time of actual maximum of active power import (+P), current value, total	Type G	0	1	0	no	DT02	O3									
Date of max.	DT2!AR	Point of time of actual maximum of active power import (+P), recent value, total	Type G	0	1	0..99, 101..124	yes	DT02	O5									
Date of max.	DT2!AT	Point of time of actual maximum of active power import (+P), current value, tariff 1..15	Type G	1..15	1	0	no	DT02	O4									
Date of max.	DT2!ART	Point of time of actual maximum of active power import (+P), recent value, tariff 1..15	Type G	1..15	1	0..99, 101..124	yes	DT02	O6									
Date of event	DT2!Xn	Date of related sporadic event	Type G	0	0	3..31	no	DT02										S
Date, time of max.	DT3!A	Point of time of actual maximum of active power export (-P), current value, total	Type F,I	0	1	0	no	DT03	O7									
Date, time of max.	DT3!AR	Point of time of actual maximum of active power export (-P), recent value, total	Type F,I	0	1	0..99, 101..124	yes	DT03	O8									
Date, time of max.	DT3!AT	Point of time of actual maximum of active power export (-P), current value, tariff 1..15	Type F,I	1..15	1	0	no	DT03	O9									
Date, time of max.	DT3!ART	Point of time of actual maximum of active power export (-P), recent value, tariff 1..15	Type F,I	1..15	1	0..99, 101..124	yes	DT03	O10									
Date of max.	DT4!A	Point of time of actual maximum of active power export (-P), current value, total	Type G	0	1	0	no	DT04	O7									
Date of max.	DT4!AR	Point of time of actual maximum of active power export (-P), recent value, total	Type G	0	1	0..99, 101..124	yes	DT04	O8									
Date of max.	DT4!AT	Point of time of actual maximum of active power export (-P), current value, tariff 1..15	Type G	1..15	1	0	no	DT04	O9									
Date of max.	DT4!ART	Point of time of actual maximum of active power export (-P), recent value, tariff 1..15	Type G	1..15	1	0..99, 101..124	yes	DT04	O10									
Time of device <sup>10</sup>	DT5!	Current time at time of transmission	Type J	0	0	0	no	DT01	O1									
	EJ	<b>Energy in Joule</b>																
Meter reading <sup>10</sup>	EJ1!	Energy import <i>Condition: See OMS-S2 Annex M OMS-UC-</i>	INT, BCD	0	0	0	no	EJ01, EJ02, EJ03			A1	A1	A1					

07																		
Meter reading <sup>15</sup>	EJ1!T	Energy import (2nd value for cooling), current value in Joule, total <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	1	0	0	no	EJ01, EJ02, EJ03,				A2						
Meter reading	EJ2!	Energy import (2nd value for cooling), current value in Joule, total <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	0	no	EJ04, EJ05, EJ06,				A2						
Meter reading <sup>10</sup>	EJ1!D	Energy import <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	1	no	EJ01, EJ02, EJ03			C O3	C O3	C O3					
Meter reading	EJ1!DT	Energy import (2nd value for cooling), due date value in Joule, total <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	1	0	1	no	EJ01, EJ02, EJ03,				C O5						
Meter reading	EJ2!D	Energy import (2nd value for cooling), due date value in Joule, total <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	1	no	EJ04, EJ05, EJ06,				C O6						
	<b>ER</b>	<b>Electrical Resistance</b>																
Sensor reading	ER1!	Electrical Resistance	INT, BCD	0	0	0	no	ER01										S
	<b>EW</b>	<b>Energy in Watt hour</b>																
Meter reading <sup>10</sup>	EW1!	(Active) energy import <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	0	no	EW01, EW02, EW03	A1		A1	A1	A1					
Meter reading <sup>10</sup>	EW1!D	Energy import <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	1	no	EW01, EW02, EW03			C O3	C O3	C O3					
Meter reading <sup>10</sup> <sub>15</sub>	EW1!T	(Active) energy import <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	1..15	0	0	no	EW01, EW02, EW03	O			A2						



Meter reading	EW1!DT	Energy import (2nd value for cooling), due date value in Watt, total <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	1	0	1	no	EW01, EW02, EW03				C O5							
Meter reading	EW1!R	Active energy import (+A), recent value for billing in Watt, total <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	0..99, 101..124	yes	EW01, EW02, EW03	C										
Meter reading	EW1!RT	Active energy import (+A), recent value for billing in Watt, tariff 1-15	INT, BCD	1..15	0	0..99, 101..124	yes	EW01, EW02, EW03	O										
Meter reading <sup>10</sup>	EW2!	energy <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	0	no	EW04, EW05, EW06	A1			A2							
Meter reading	EW2!D	Energy import (2nd value for cooling), due date value in Watt, total <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	1	no	EW04, EW05, EW06				C O6							
Meter reading	EW2!T	Active energy export (-A), current value in Watt, tariff 1-15	INT, BCD	1..15	0	0	no	EW04, EW05, EW06	O										
Meter reading	EW2!R	Active energy export (-A), recent value for billing in Watt, total	INT, BCD	0	0	0..99, 101..124	yes	EW04, EW05, EW06	O										
Meter reading	EW2!RT	Active energy export (-A), recent value for billing in Watt, tariff 1-15	INT, BCD	1..15	0	0..99, 101..124	yes	EW04, EW05, EW06	O										
Meter reading	EW3!	Active energy import (abs.(A)), current value in Watt, total	INT, BCD	0	0	0	no	EW07, EW08, EW09	A1										
Meter reading	EW3!T	Active energy import (abs.(A)), current value in Watt, tariff 1-15	INT, BCD	1..15	0	0	no	EW07, EW08, EW09	O										
Meter reading	EW3!R	Active energy import (abs.(A)), recent value for billing in Watt, total	INT, BCD	0	0	0..99, 101..124	yes	EW07, EW08, EW09	O										
Meter reading	EW3!RT	Active energy import (abs.(A)), recent value for billing in Watt, tariff 1-15	INT, BCD	1..15	0	0..99, 101..124	yes	EW07, EW08,	O										

EW09




	FR	Frequency																	
Meter reading	FR1!	Supply frequency, instantaneous value	INT, BCD	0	0	0	no	FR01	O										
	HC	Heat coast allocation units																	
Meter reading	HC1!	Unrated integral, current value <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	0	no	HC01, HC02	M										
Meter reading	HC1!D	Unrated integral, due date value <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	1	no	HC01	M										
	ID	Identification																	
Fabrication number	ID1!	Serial number (not changeable number assigned by the manufacturer)	8BCD	0	0	0	no	ID01	O	O	O	O	O	O	O	O	O	O	S
(Enhanced) identification <sup>12</sup>	ID2!	Identification number or full Application Layer Address	64INT, 8BCD	0	0	0	no	ID02	O	O	O	O	O	O	O	O	O	O	S
Primary address	ID3!	One byte Link Layer Address	8INT	0	0	0	no	ID03	O	O	O	O	O	O	O	O	O	O	S
Ownership number  	ID4!	Ownership number	INT, BCD, VarLen	0	0	0	no	ID04	O	O	O	O	O	O	O	O	O	O	S
Metering point ID  	ID5!	Identification of the metering point	INT, BCD, VarLen	0	0	0	no	ID05	O	O	O	O	O	O	O	O	O	O	S
Unique message identification 	ID6!	Unique message identification	INT	0	0	0	no	ID06	O	O	O	O	O	O	O	O	O	O	S
	DIN address	Initial DIN address	VarLen <sup>19</sup>	0	0	0	no	ID01	O	O	O	O	O	O	O	O	O	O	S
DIN address	ID8!	Current DIN address	VarLen <sup>19</sup>	0	0	0	no	ID02	O	O	O	O	O	O	O	O	O	O	S

OMS GROUP	16/40
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Sensor status	MM14!	Status bits for CO alarm devices	INT	0	0	0	no	MM14											S
Sensor status	MM15!	Status bits for smoke alarm devices	INT	0	0	0	no	MM15											S
Sensor status	MM16!	Status bits for "Door/Window Contact Sensor" and "Locked Door/Window Detector"	INT	0	0	0	no	MM16											S
	<b>MO</b>	<b>Moisture</b>																	
Sensor reading	MO1!	Moisture in %	INT, BCD	0	0	0	no	RH02											S
	<b>ND</b>	<b>Noise</b>																	
Sensor reading	ND1!	Noise	INT, BCD	0	0	0	no	ND01											S
	<b>PD</b>	<b>Phase in Degree</b>																	
Meter reading	PD1!	Angle between voltage on phase L1 and L2, instantaneous value	INT, BCD	0	0	0	no	PD01	O										
Meter reading	PD2!	Angle between voltage on phase L2 and L3, instantaneous value	INT, BCD	0	0	0	no	PD02	O										
Meter reading	PD3!	Angle between voltage on phase L3 and L1, instantaneous value	INT, BCD	0	0	0	no	PD03	O										
Meter reading	PD4!	Angle between voltage and current on phase L1, instantaneous value	INT, BCD	0	0	0	no	PD04	O										
Meter reading	PD5!	Angle between voltage and current on phase L2, instantaneous value	INT, BCD	0	0	0	no	PD05	O										
Meter reading	PD6!	Angle between voltage and current on phase L3, instantaneous value	INT, BCD	0	0	0	no	PD06	O										
	<b>PF</b>	<b>Pulse frequency</b>																	
Sensor reading	PF1!	Pulse frequency	INT, BCD	0	0	0	no	PF01											S
	<b>PH</b>	<b>pH value</b>																	
Sensor reading	PH1!	pH value	INT, BCD	0	0	0	no	PH01											S
	<b>PJ</b>	<b>Power in Joule per hour</b>																	

Power <sup>10</sup>	PJ1!	Power (energy flow) (P), average, current value <i>Condition: See CEN/TR 17167:2018 Annex C.2</i>	INT, BCD	0	0	0	no PJ01			O2	O2	O2					
Power	PJ1!T	Power (energy flow) (P), average, current value, tarif 1	INT, BCD	1	0	0	no PJ01				O4						
	<b>PR</b>	<b>Pressure</b>															
Base pressure	PR1!	defined Pressure, absolute, at base conditions (p <sub>b</sub> )	INT, BCD	0	0	0	no PR01, PR02						O				S
Pressure	PR2!	Defined pressure, absolute	INT, BCD	0	0	0	no PR03, PR04										S
Pressure	PR3!	Upper pressure threshold	INT, BCD	0	0	0	no PR05, PR06										S
Pressure	PR4!	Lower pressure threshold	INT, BCD	0	0	0	no PR07, PR08										S
	<b>PT</b>	<b>Particles</b>															
Sensor reading	PT1!	Particles as unspecific range [µg/m <sup>3</sup> ]	INT, BCD	0	0	0	no PT01										S
Sensor reading	PT2!	Particles as PM1 [µg/m <sup>3</sup> ]	INT, BCD	0	0	0	no PT02										S
Sensor reading	PT3!	Particles as PM1.5 [µg/m <sup>3</sup> ]	INT, BCD	0	0	0	no PT03										S
Sensor reading	PT4!	Particles as PM10 [µg/m <sup>3</sup> ]	INT, BCD	0	0	0	no PT04										S
Sensor reading	PT5!	Particles as unspecific range [1/m <sup>3</sup> *1e5]	INT, BCD	0	0	0	no PT05										S
Sensor reading	PT6!	Particles as PM1 [1/m <sup>3</sup> *1e5]	INT, BCD	0	0	0	no PT06										S
Sensor reading	PT7!	Particles as PM2.5 [1/m <sup>3</sup> *1e5]	INT, BCD	0	0	0	no PT07										S
Sensor reading	PT8!	Particles as PM10 [1/m <sup>3</sup> *1e5]	INT, BCD	0	0	0	no PT08										S
	<b>PW</b>	<b>Power in Watt</b>															




Meter reading <sup>10</sup>	PW1!	Active power, current value <i>Condition: See CEN/TR 17167:2018 Annex C.2</i>	INT, BCD	0	0	0	no	PW01	O		O2	O2	O2					
Meter reading	PW1!T	Power (energy flow) (P), average, current value, tariff1	INT, BCD	1	0	0	no	PW01				O4						
Meter reading	PW1!A	Actual maximum of active power import (+P), current value, total	INT, BCD	0	1	0	no	PW01	O									
Meter reading	PW1!AT	Actual maximum of active power import (+P), current value, tariff 1..15	INT, BCD	1..15	1	0	no	PW01	O									
Meter reading	PW1!AR	Actual maximum of active power import (+P), recent value for billing, total	INT, BCD	0	1	0..99, 101..124	yes	PW01	O									
Meter reading	PW1!ART	Actual maximum of active power import (+P), recent value for billing, tariff 1..15	INT, BCD	1..15	1	0..99, 101..124	yes	PW01	O									
Meter reading	PW3!	Active power export (-P), current value <i>Condition: See CEN/TR 17167:2018 Annex C.2</i>	INT, BCD	0	0	0	no	PW03	C									
Meter reading	PW3!A	Actual maximum of active power export (-P), current value, total	INT, BCD	0	1	0	no	PW03	O									
Meter reading	PW3!AT	Actual maximum of active power export (-P), current value, tariff 1..15	INT, BCD	1..15	1	0	no	PW03	O									
Meter reading	PW3!AR	Actual maximum of active power export (-P), recent value for billing, total	INT, BCD	0	1	0..99, 101..124	yes	PW03	O									
Meter reading	PW3!ART	Actual maximum of active power export (-P), recent value for billing, tariff 1..15	INT, BCD	1..15	1	0..99, 101..124	yes	PW03	O									
Meter reading	PW4!AC	Cumulative maximum of active power import (+P), total	INT, BCD	0	1	0	no	PW04	O									
Meter reading	PW4!ACT	Cumulative maximum of active power import (+P), tariff 1-15	INT, BCD	1..15	1	0	no	PW04	O									
Meter reading	PW6!AC	Cumulative maximum of active power export (-P), total	INT, BCD	0	1	0	no	PW06	O									
Meter reading	PW6!ACT	Cumulative maximum of active power export (-P), tariff 1-15	INT, BCD	1..15	1	0	no	PW06	O									

Meter reading	PW7!	Active power absolute ( P ), instantaneous value, total <i>Condition: See CEN/TR 17167:2018 Annex C.2</i>	INT, BCD	0	0	0	no	PW07, PW08	C									
Meter reading	PW8!	Active power absolute ( P ), instantaneous value, total	INT, BCD	0	0	0	no	PW09, PW10	O									
	<b>RE</b>	<b>Reactive Energy</b>																
Meter reading	RE1!	Reactive energy import (+R), current value, total	INT, BCD	0	0	0	no	RE01, RE02	O									
Meter reading	RE1!T	Reactive energy import (+R), current value, tariff 1-15	INT, BCD	1..15	0	0	no	RE01, RE02	O									
Meter reading	RE1!R	Reactive energy import (+R), recent value for billing, total	INT, BCD	0	0	0..99, 101..124	yes	RE01, RE02	O									
Meter reading	RE1!RT	Reactive energy import (+R), recent value for billing, tariff 1-15	INT, BCD	1..15	0	0..99, 101..124	yes	RE01, RE02	O									
Meter reading	RE2!	Reactive energy export (-R), current value, total	INT, BCD	0	0	0	no	RE03, RE04	O									
Meter reading	RE2!T	Reactive energy export (-R), current value, tariff 1-15	INT, BCD	1..15	0	0	no	RE03, RE04	O									
Meter reading	RE2!R	Reactive energy export (-R), recent value for billing, total	INT, BCD	0	0	0..99, 101..124	yes	RE03, RE04	O									
Meter reading	RE2!RT	Reactive energy export (-R), recent value for billing, tariff 1-15	INT, BCD	1..15	0	0..99, 101..124	yes	RE03, RE04	O									
	<b>RF</b>	<b>Rainfall</b>																
Sensor reading	RF1!	Rainfall	INT, BCD	0	0	0	no	DI01										S
	<b>RH</b>	<b>Relative Humidity</b>																
Sensor reading	RH1!	Relative Humidity in %	INT, BCD	0	0	0	no	RH01										S
	<b>RP</b>	<b>Reactive Power</b>																
Meter reading	RP1!	Reactive power import (+Q), current value	INT, BCD	0	0	0	no	RP01	O									
Meter reading	RP2!	Reactive power export (-Q), current value	INT,	0	0	0	no	RP02	O									

								BCD							
	<b>TB</b>	<b>Turbidity</b>													
Sensor reading	TB1!	Turbidity	INT, BCD	0	0	0	no	TB01							S
	<b>TC</b>	<b>Temperature in °C</b>													
Temperature <sup>10</sup>	TC1!	Flow temperature, current value <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	0	no	TC01		O	C	C	C		
Temperature <sup>10</sup>	TC2!	Return temperature, current value <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	0	no	TC02		O	C	C	C		S
Base temperature	TC3!	defined Temperature, absolute, at base conditions (T <sub>b</sub> ) or for conversion (T <sub>tc</sub> )	INT, BCD	0	0	0	no	TC03						O	
Sensor reading	TC4!	External Temperature	INT, BCD	0	0	0	no	TC04							S
Sensor reading	TC5!	Minimum temperature limit value	INT, BCD	0	2	0	no	TC05							S
Sensor reading	TC6!	Maximum temperature limit value	INT, BCD	0	1	0	no	TC05							S
	<b>TS</b>	<b>Tension</b>													
Sensor reading	TS1!	Tension	INT, BCD	0	0	0	no	TS01							S
	<b>VC</b>	<b>VOC Content</b>													
Sensor reading	VC1!	VOC Content [ppb]	INT, BCD	0	0	0	no	VC01							S
Sensor reading	VC2!	VOC Content [µg/m3]	INT, BCD	0	0	0	no	VC02							S
	<b>VF</b>	<b>Volume Flow</b>													
Flow rate <sup>10</sup>	VF1!	Flow rate <i>Condition: See CEN/TR 17167:2018 Annex C.2</i>	INT, BCD	0	0	0	no	VF01			O	O	O	O	O
Flow rate	VF1!T	Flow rate, average (Va/t), current value, tariff 1	INT, BCD	1	0	0	no	VF01			O				



Flow rate	VF2!	Flow rate <i>Condition: See CEN/TR 17167:2018 Annex C.2</i>	INT, BCD	0	0	0	no	VF02						C				
Flow rate	VF3!	Flow rate <i>Condition: See CEN/TR 17167:2018 Annex C.2</i>	INT, BCD	0	0	0	no	VF03						C				
	<b>VM</b>	<b>Volume in m<sup>3</sup></b>																
Meter reading <sup>10</sup>	VM1!	Volume, current value, total <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	0	no	VM01, VM02			O	O	O	A1	M	M		
Meter reading <sup>10</sup>	VM1!D	Volume (V), accumulated, total, due date value <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	1	no	VM01, VM02			O	O	O		C	C		
Meter reading <sup>10</sup> <sub>15</sub>	VM1!T	Volume, current value, tariff	INT, BCD	1..15	0	0	no	VM01, VM02				O		O				
Meter reading	VM1!DT	Volume (V), accumulated, due date value, tariff 1 (2nd value for cooling)	INT, BCD	1	0	1	no	VM01, VM02				O						
Meter reading	VM1!R	Volume (meter), temperature converted (V <sub>tc</sub> ), forward, absolute, recent value for billing, total	INT, BCD	0	0	0..99, 101..124	yes	VM01, VM02						O				
Meter reading	VM1!RT	Volume (meter), temperature converted (V <sub>tc</sub> ), forward, absolute, recent value for billing, tariff 1-15	INT, BCD	1..15	0	0..99, 101..124	yes	VM01, VM02						O				
Meter reading	VM2!	Volume (meter), measuring conditions (V <sub>m</sub> ), forward, absolute, current value, total <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	0	no	VM03, VM04						A1				
Meter reading	VM2!T	Volume (meter), measuring conditions (V <sub>m</sub> ), forward, absolute, current value, tariff 1-15	INT, BCD	1..15	0	0	no	VM03, VM04						O				
Meter reading	VM2!R	Volume (meter), measuring conditions (V <sub>m</sub> ), forward, absolute, recent value for billing, total	INT, BCD	0	0	0..99, 101..124	yes	VM03, VM04						O				

Meter reading	VM2!RT	Volume (meter), measuring conditions ( $V_m$ ), forward, absolute, recent value for billing, tariff 1-15	INT, BCD	1..15	0	0..99, 101..124	yes	VM03, VM04							O				
Meter reading	VM3!	Volume (meter), base conditions ( $V_b$ ), forward, absolute, current value, total <i>Condition: See OMS-S2 Annex M OMS-UC-07</i>	INT, BCD	0	0	0	no	VM05, VM06							A1				
Meter reading	VM3!T	Volume (meter), base conditions ( $V_b$ ), forward, absolute, current value, tariff 1-15	INT, BCD	1..15	0	0	no	VM05, VM06							O				
Meter reading	VM3!R	Volume (meter), base conditions ( $V_b$ ), forward, absolute, recent value for billing, total	INT, BCD	0	0	0..99, 101..124	yes	VM05, VM06							O				
Meter reading	VM3!RT	Volume (meter), base conditions ( $V_b$ ), forward, absolute, recent value for billing, tariff 1-15	INT, BCD	1..15	0	0..99, 101..124	yes	VM05, VM06							O				
Meter reading	VM4!	Volume, forward value	INT, BCD	0	0	0	no	VM07, VM08								O	O		
Meter reading	VM5!	Volume, backward value	INT, BCD	0	0	0	no	VM09, VM10								O	O		
	<b>VV</b>	<b>Voltage in Volt</b>																	
Meter reading	VV1!	Voltage at phase L1, instantaneous value	INT, BCD	0	0	0	no	VV01		O									
Meter reading	VV2!	Voltage at phase L2, instantaneous value	INT, BCD	0	0	0	no	VV02		O									
Meter reading	VV3!	Voltage at phase L3, instantaneous value	INT, BCD	0	0	0	no	VV03		O									
	<b>WS</b>	<b>Wind speed</b>																	
Sensor reading	WS1!	Wind speed	INT, BCD	0	0	0	no	WS01											S
	<b>YD</b>	<b>Descriptors</b>																	
Descriptor	YD1!	Subunit descriptor <sup>17</sup> <i>Condition: See OMS-S2 Annex K</i>	INT, BCD	0	0	0	no	YD01		C	C	C	C	C	C	C	C		
Descriptor	YD1!T	Tariff descriptor <i>Condition: See OMS-S2 Annex K</i>	INT, BCD	1..15	0	0	no	YD01		C	C	C	C	C	C	C	C		



Descriptor	YD2!P	Storage interval descriptor <i>Condition: See OMS-S2 Annex K</i>	INT, BCD	0	0	1..99	no	YD02, YD03, YD04	C	C	C	C	C	C	C	C	C		
Descriptor	YD3!P	Storage range descriptor <i>Condition: See OMS-S2 Annex K</i>	INT, BCD	0	0	1..99	no	YD05, YD06, YD07	C	C	C	C	C	C	C	C	C		



### B.2.3 List of MB-Sensor-Tags

Description	MB-Tag	Pressure Device (18h)	Smoke Alarm Device (1Ah)	CO Alarm Device	Humidity Sensor	Moisture Sensor	Temperature Sensor	Conductivity Sensor	Light Sensor	Rainfall Sensor	pH Sensor	Anemometer	Glass Break Detector	Door/Window Contact Sensor	Locked Door/Window Detector	Water Leakage Detector	Air Quality Sensor	CO2 Sensor	Turbidity Sensor	Heart Beat Sensor	Impedance Sensor
Number of dismounts / removal counter	AD4!		O	O																	
Number of test button operated counter	AD5!		O	O																	
Number of alarms	AD6!		O	O																	
Number of alarm mute switch operated counter	AD7!		O	O																	
Number of obstacle detected counter	AD8!		O	O																	
Number of smoke entries blocked	AD9!		O	O																	
Number of smoke chamber defects	AD10!		O	O																	
Number of self-test failed counter	AD11!		O	O																	
Number of sounder defect counter	AD12!		O	O																	
Chamber Pollution Level	AD13!		O	O																	
Obstacle check distance	AD14!		O	O																	
Carbon monoxide content	CC1!			M													O				
Carbon dioxide content	CC2!																O	M			
Electrical conductivity	CD1!							M						O	O						
Operating Time	DP5!	O	A1	A1	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

On Time	DP6!	O	A1	A1	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Current date/time at time of transmission Condition: See OMS-S2 Annex M OMS-UC-04	DT1!	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1
Date / Time of related sporadic event	DT1!Xn		O2	O2												O2	O2			
Current date at time of transmission	DT2!	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1	O1
Date of related sporadic event	DT2!Xn		O2	O2												O2	O2			
Electrical Resistance	ER1!													O	O					M
Serial number (not changeable number assigned by the manufacturer)	ID1!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Identification number or full Application Layer Address	ID2!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
One byte Link Layer Address	ID3!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Ownership number	ID4!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Identification of the metering point	ID5!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Unique message identification	ID6!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Initial DIN address	ID7!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Current DIN address	ID8!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Sub Device Types	ID9!	O	O	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Irradiance, Radiant flux density	IR1!							O												
Illuminance	LT1!							A1												
Luminous intensity	LT2!							A1												
Reception level	MM1!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Quality limit of reception level	MM1!I	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Noise level	MM1!E	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Error flags Condition: See OMS-S2 Annex M OMS-UC-06	MM2!	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

Error flags (standard) 14  
Condition: See OMS-S2 Annex M OMS-UC-06

Operator specific data (reserved for the operator)

Remaining battery lifetime

Battery status

Status bits for pressure sensor

Status bits for CO alarm devices

Status bits for smoke alarm devices

Status bits for "Door/Window Contact Sensor" and "Locked Door/Window Detector"

Moisture in %

Noise

Pulse frequency

pH value

defined Pressure, absolute, at base conditions (pb)

Defined pressure, absolute

Upper pressure threshold

Lower pressure threshold

Particles as unspecific range [ $\mu\text{g}/\text{m}^3$ ]

Particles as PM1 [ $\mu\text{g}/\text{m}^3$ ]

Particles as PM1.5 [ $\mu\text{g}/\text{m}^3$ ]

Particles as PM10 [ $\mu\text{g}/\text{m}^3$ ]

Particles as unspecific range [ $1/\text{m}^3 \cdot 1\text{e}5$ ]



Particles as PM1 [ $1/\text{m}^3 \cdot 1\text{e}5$ ]

Particles as PM2.5 [ $1/\text{m}^3 \cdot 1\text{e}5$ ]

MM3!	C	C	C	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
MM4!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
MM8!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	M	O
MM12!	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
MM13!	M																			
MM14!			M																	
MM15!		M																		
MM16!												M	M							
MO1!				M																
ND1!										A1										
PF1!																			M	
PH1!									M											
PR1!	A1																			
PR2!	A1																			
PR3!	M <sup>21</sup>																			
PR4!	M <sup>21</sup>																			
PT1!																O	O			
PT2!																O	O			
PT3!																O	O			
PT4!																O	O			
PT5!																O	O			
PT6!																O	O			
PT7!																O	O			

Particles as PM10 [1/m3*1e5]	PT8!																	O	O				
Rainfall	RF1!								M														
Relative Humidity in %	RH1!				M		O											O					
Turbidity	TB1!																			M			
Return temperature, current value Condition: See OMS-S2 Annex M OMS-UC-07	TC2!				O	O												O					
External Temperature	TC4!	O			O	O	M											O					
Minimum temperature limit value	TC5!		O	O			O																
Maximum temperature limit value	TC6!		O	O			O																
Tension	TS1!												A1										
VOC Content [ppb]	VC1!																	A1	O				
VOC Content [µg/m3]	VC2!																	A1	O				
Flow rate Condition: See CEN/TR 17167:2018 Annex C.2	VF1!								O								O						
Wind speed	WS1!											M											

## B.2.4 List of MB-Command-Tags

Type / Encryption	MB-Tag	Description	Data field	Tariff [T]	Function [F]	Storage [X]	Final DIFE [FD] <sup>11</sup>	VIB-Type Reference	Electricity (02h)	HCA (08h)	Cooling (0Ah;0Bh)	Comb. Heat/Cooling (0Dh)	Heat (04h;0Ch)	Gas (03h)	Cold Water (07h;16h)	Hot Water (06h;15h)	Breaker / Valve (20h; 21h)
	<b>XCT</b>	<b>Compliance Test Command</b>															
	XCT1!	Set test state of compliance test <i>Condition: See OMS-S2 Annex M OMS-UC-00</i>	INT, VarLen	0	0	0	no	CT01	C	C	C	C	C	C	C	C	C
	<b>XDC</b>	<b>Disconenctor Control Command</b>															
Command to device meter/actor	XDC1!	Set control state of breaker/valve <sup>16</sup> <i>Condition: See OMS-S2 Annex M OMS-UC-03</i>	INT	0	0	0	no	CL01	C					C	C	C	M
	<b>XID</b>	<b>Identification</b>															
	XID3!	Set one byte Link Layer Address <i>Condition: See OMS-S2 Annex M OMS-UC-09x</i>	8INT	0	0	0	no	ID03	C	C	C	C	C	C	C	C	C
	<b>XMM</b>	<b>Meter Management Command</b>															
Command to meter/actor	XMM2!	Masked clear binary coded error flag <i>Condition: See OMS-S2 Annex M OMS-UC-06</i>	INT	0	0	0	no	MM08	C	C	C	C	C	C	C	C	C



Command to meter/actor	XMM3!	Masked clear binary coded error flag (standard) <i>Condition: See OMS-S2 Annex M OMS-UC-06</i>	INT	0	0	0	no	MM07	C	C	C	C	C	C	C	C	C
Command to meter/actor	XMM4!	Clear all error flags (standard and manufacturer specific) <sup>18</sup> <i>Condition: See OMS-S2 Annex M OMS-UC-06</i>	No Data	0	0	0	no	MM11	C	C	C	C	C	C	C	C	C

## B.3 VIB-Type List

### B.3.1 Legend and Notes

n One or more Bits, according to tables 10, 12, 14, 15 of [EN 13757-3:2018].

#### *Table footnotes*

<sup>20</sup> 'Temperature converted value' is just applicable for device type 03h (gas). All other device types consider this data Point as 'normal value'.

### B.3.2 List of VIB-Types

VIB-Type Reference	VIF / VIFE	Scaler+Unit/Type	Remark
<b>AD Alarm Devices (CO and Smoke Alarm)</b>			
AD04	0111 1100 0000 0011 0100 1001 0101 0101 0010 0011	# number	Number of dismounts / removal counter (ASCII-Coding: "#UI", Number of Un-Installations)
AD05	0111 1100 0000 0011 0101 0100 0100 0110 0010 0011	# number	Number of test button operated counter (ASCII-Coding: "#FT", Number of Function Tests)
AD06	0111 1100 0000 0011 0100 1100 0100 0001 0010 0011	# number	Number of smoke / CO alarms (ASCII-Coding: "#AL", Number of Alarms)
AD07	0111 1100 0000 0011 0100 1101 0100 0001 0010 0011	# number	Number of alarm mute switch operated counter (ASCII-Coding: "#AM", Number of Alarm Muted)
AD08	0111 1100 0000 0011 0100 0100 0100 1111 0010 0011	# number	Number of obstacle detected counter (ASCII-Coding: "#OD", Number of Obstacle Detected)



AD09	0111 1100 0000 0011 0100 0010 0101 0011 0010 0011	# number	Smoke entries blocking cumulated counter (ASCII-Coding: "#SB", Number of Smoke entries Blocked)
AD10	0111 1100 0000 0100 0100 0100 0100 0011 0101 0011 0010 0011	# number	Smoke chamber defect cumulated counter (ASCII-Coding: "#SCD", Number of Smoke Chamber Defects)
AD11	0111 1100 0000 0011 0100 0110 0101 0011 0010 0011	# number	Number of self-test failed counter (ASCII-Coding: "#SF", Number of self-test Failed)
AD12	0111 1100 0000 0011 0100 0100 0101 0011 0010 0011	# number	Number of sounder defect counter (ASCII-Coding: "#SD", Number of Sounder Defect)
AD13	0111 1100 0000 0011 0101 0000 0100 0011 0010 0101	% percentage	Percentage of Chamber Pollution Level (ASCII-Coding: "%CP")
<b>CA Current [A]</b>			
CA01	1111 1101 1101 nnnn 1111 1100 0000 0001	A 10e-12 ... 10e+3	Curr_L1
CA02	1111 1101 1101 nnnn 1111 1100 0000 0010	A 10e-12 ... 10e+3	Curr_L2
CA03	1111 1101 1101 nnnn 1111 1100 0000 0011	A 10e-12 ... 10e+3	Curr_L3
CA04	1111 1101 1101 nnnn 1111 1100 0000 0100	A 10e-12 ... 10e+3	Curr_N
<b>CC Carbon Oxide Content</b>			
CC01	0111 1100 0000 0011 0011 0001 0100 1111 0100 0011	ppm 10e0	Carbon monoxide content (ASCII-Coding: "CO1" for Carbon Monoxide)
CC02	0111 1100 0000 0011 0011 0010 0100 1111 0100 0011	ppm 10e0	Carbon dioxide content (ASCII-Coding: "CO2" for Carbon Dioxide)
<b>CD Conductivity</b>			

CD01	0111 1100 0000 0011 0011 0001 0100 0100 0100 0011	µS/cm 10e0	electrical conductivity in µS/cm (ASCII-Coding: "CD1" for Conductivity 1)
<b>CL Control</b>			
CL01	1111 1101 0001 1111		disconnect control state
CL02	1111 1101 0001 1010		output state
<b>CT Compliance Test</b>			
CT01	1111 1101 1001 1111 0001 1101		compliance test
<b>DI Distances</b>			
DI01	0111 1100 0000 0010 0110 1101 0110 1101	mm	Distance (ASCII-Coding: "mm" for millimetre)
DI02	0111 1100 0000 0010 0110 1101 0110 0011	cm	Distance (ASCII-Coding: "cm" for centimetre)
<b>DP Duration/Period</b>			
DP01	0111 01nn	s, min, h, d	actuality dur.
DP02	0111 00nn	s, min, h, d	average dur.
DP03	1111 1101 0011 110n	s, min	Period of nominal transmission
DP04	Valid only until OMS-S2 V4.1.2. => Replaced by YD03		
DP05	0010 01nn	s, min, h, d	Operation time (Duration of accumulation)
DP06	0010 00nn	s, min, h, d	On time (Duration since power up)
<b>DT Date / Time (Duration and Time stamp)</b>			
DT01	0110 1101	Date+Time / Time	forward
DT02	0110 1100	Date	forward
DT03	1110 1101 0011 1100	Date+Time / Time	backward
DT04	1110 1100 0011 1100	Date	backward
<b>EJ Energy [GJ]</b>			
EJ01	0000 1nnn	GJ 10e-9 ... 10e-2	forward
EJ02	1111 1011 0000 100n	GJ 10e-1 ... 10e0	forward
EJ03	1111 1011 1000 100n 0111 1101	GJ 10e+2 ... 10e+3	forward
EJ04	1000 1nnn 0011 1100	GJ 10e-9 ... 10e-2	backward
EJ05	1111 1011 1000 100n 0011 1100	GJ 10e-1 ... 10e+0	backward

EJ06	1111 1011 1000 100n 1111 1101 0011 1100	GJ 10e+2 ... 10e+3	backward
<b>EW</b>	<b>Energy [kWh]</b>		
EW01	000 0nnn	kWh 10e-6 ... 10e+1	forward
EW02	1111 1011 0000 000n	kWh 10e+2 ... 10e+3	forward
EW03	1111 1011 1000 000n 0111 1101	kWh 10e+5 ... 10e+6	forward
EW04	1000 0nnn 0011 1100	kWh 10e-6 ... 10e+1	backward
EW05	1111 1011 1000 000n 0011 1100	kWh 10e+2 ... 10e+3	backward
EW06	1111 1011 1000 000n 1111 1101 0011 1100	kWh 10e+5 ... 10e+6	backward
EW07	1000 0nnn 1111 1100 0001 0000	kWh 10e-6 ... 10e+1	abs.
EW08	1111 1011 1000 000n 1111 1100 0001 0000	kWh 10e+2 ... 10e+3	abs.
EW09	1111 1011 1000 000n 1111 1101 1111 1100 0001 0000	kWh 10e+5 ... 10e+6	abs.
<b>FR</b>	<b>Frequency [Hz]</b>		
FR01	1111 1011 0010 11nn	Hz 10e-3 ... 10e0	
<b>HC</b>	<b>Heat Cost Allocation unit</b>		
HC01	0110 1110	HCA 10e+0	signed
HC02	1110 1110 1111 1100 0001 0001	HCA 10e+0	unsigned
<b>ID</b>	<b>Identification Numbers</b>		
ID01	0111 1000		Fabrication number
ID02	0111 1001		(Enhanced) identification
ID03	0111 1010		Primary address
ID04	1111 1101 0001 0001		Ownership number
ID05	1111 1101 0001 0000		Metering Point ID
ID06	1111 1101 0000 1000		Unique message identification
ID09	1111 1101 0000 1001	list of sensors types	See sub device type see [OMS-S2], Annex C table C.2
<b>IR</b>	<b>Irradiance</b>		
IR01	0111 1100 0000 0011 0011 0001 0101 0010 0100 1001	W/m <sup>2</sup> 10e0	radiant flux density (ASCII-Coding: "IR1" for Irradiance 1)
<b>LT</b>	<b>Light</b>		
LT01	0111 1100 0000 0010 0111 1000 0110 1100	lx 10e0	Illuminance (ASCII-Coding: "Ix" for lux)

LT02	0111 1100 0000 0010 0110 0100 0110 0011	cd 10e0	Luminous intensity (ASCII-Coding: "cd" for candela)
<b>MM</b>	<b>Meter Management</b>		
MM01	1111 1101 0111 0001	dBm	Reception or noise level
MM02	1111 1101 0001 0111	binary	Error flags
MM03	1111 1101 1001 0111 0001 1101	binary	Error flags (standard)
MM04	1111 1101 0010 1010		Operator specific data
MM05	Valid only until OMS-S2 V4.1.2. => Replaced by YD07		-
MM06	1111 1101 0110 0001	Register index	Cumulation Counter
MM07	1111 1101 1001 0111 1001 1101 0000 0110	binary	Masked clear error flags (standard)
MM08	1111 1101 1001 0111 0000 0110	binary	Masked clear error flags
MM09	1111 1101 0111 0100	days	Remaining battery life time
MM10	1111 1101 1111 1101 0000 0010	month(s)	Remaining battery life time
MM11	1111 1101 1001 0111 1001 1101 0000 0111	none	Clear error flags (standard and manufacturer specific)
MM12	0111 1100 0000 0011 0101 0011 0100 0010 0010 0101	% percentage	Percentage of Battery Status (ASCII-Coding: "%BS")
MM13	0111 1100 0000 0011 0011 0001 0101 0011 0100 0100	binary	Status bits for pressure device see [OMS-S2], Annex C table C.5 (ASCII-Coding: "DS1" for Device Status1)
MM14	0111 1100 0000 0011 0011 0010 0101 0011 0100 0100	binary	Status bits for CO alarm devices, see [OMS-S2], Annex C table C.4 (ASCII-Coding: "DS2" for Device Status 2)
MM15	0111 1100 0000 0011 0011 0011 0101 0011 0100 0100	binary	Status bits for smoke alarm devices, see [OMS-S2], Annex C table C.3 (ASCII-Coding: "DS3" for Device Status 3)

MM16 0111 1100 0000 0011 0011 0100 0101 0011 0100 0100 binary

Status bits for "Door/Window Contact Sensor" and "Locked Door/Window Detector", see [OMS-S2], Annex C table C.6 (ASCII-Coding: "DS4" for Device Status 4)

ND	Noise		
ND01	0111 1100 0000 0011 0100 0001 0100 0010 0110 0100	dBA 10e0	Decibel A-weighting (ASCII-Coding: "dBA")
PD	Phase in Degree [°]		
PD01	1111 1011 1010 1010 1111 1100 0000 0101	° 10e-1	Volt_L1-L2
PD02	1111 1011 1010 1010 1111 1100 0000 0110	° 10e-1	Volt_L2-L3
PD03	1111 1011 1010 1010 1111 1100 0000 0111	° 10e-1	Volt_L3-L1
PD04	1111 1011 1010 1011 1111 1100 0000 0001	° 10e-1	Curr_L1
PD05	1111 1011 1010 1011 1111 1100 0000 0010	° 10e-1	Curr_L2
PD06	1111 1011 1010 1011 1111 1100 0000 0011	° 10e-1	Curr_L3
PF	Pulse frequency		
PF01	0111 1100 0000 0011 0110 1101 0111 0000 0110 0010	bpm	beats per minute (ASCII-Coding: "bpm")
PH	pH value		
PH01	0111 1100 0000 0010 0100 1000 0111 0000	pH 10e-1	potential of hydrogen (ASCII-Coding: "pH")
PJ	Power [kJ/h]		
PJ01	0011 0nnn	kJ/h 10e-3 ... 10e+4	
PR	Pressure [bar]		
PR01	1110 10nn 0011 1110	bar 10e-3 ... 10e+0	base condition
PR02	1110 10nn 1111 0011 0011 1110	bar 10e-6 ... 10e-3	base condition
PR03	0110 10nn	bar 10e-3 ... 10e+0	
PR04	1110 10nn 0111 0011	bar 10e-6 ... 10e-3	
PR05	1110 10nn 0100 1000	bar 10e-3 ... 10e+0	upper limit
PR06	1110 10nn 1100 1000 0111 0011	bar 10e-6 ... 10e-3	upper limit
PR07	1110 10nn 0100 0000	bar 10e-3 ... 10e+0	lower limit
PR08	1110 10nn 1100 0000 0111 0011	bar 10e-6 ... 10e-3	lower limit

<b>PT Particles</b>			
PT01	0111 1100 0000 0011 0011 0001 0101 0100 0101 0000	µg/m³ 10e0	unspecific range (ASCII-Coding: "PT1")
PT02	0111 1100 0000 0011 0011 0010 0101 0100 0101 0000	µg/m³ 10e0	PM1 (ASCII-Coding: "PT2", Particles 2)
PT03	0111 1100 0000 0011 0011 0011 0101 0100 0101 0000	µg/m³ 10e0	PM2,5 (ASCII-Coding: "PT3", Particles 3)
PT04	0111 1100 0000 0011 0011 0100 0101 0100 0101 0000	µg/m³ 10e0	PM10 (ASCII-Coding: "PT4", Particles 4)
PT05	0111 1100 0000 0011 0011 0101 0101 0100 0101 0000	1/m³ 10e5	unspecific range (ASCII-Coding: "PT5", Particles 5)
PT06	0111 1100 0000 0011 0011 0110 0101 0100 0101 0000	1/m³ 10e5	PM1 (ASCII-Coding: "PT6", Particles 6)
PT07	0111 1100 0000 0011 0011 0111 0101 0100 0101 0000	1/m³ 10e5	PM2,5 (ASCII-Coding: "PT7", Particles 7)
PT08	0111 1100 0000 0011 0011 1000 0101 0100 0101 0000	1/m³ 10e5	PM10 (ASCII-Coding: "PT8", Particles 8)
<b>PW Power [W]</b>			
PW01	0010 1nnn	W 10e-3 ... 10e+4	forward
PW03	1010 1nnn 0011 1100	W 10e-3 ... 10e+4	backward
PW04	1111 1011 0111 1nnn	W 10e-3 ... 10e+4	cum. forward
PW06	1111 1011 1111 1nnn 0011 1100	W 10e-3 ... 10e+4	cum. backward
PW07	1010 1nnn 1111 1100 0001 0000	kW 10e-6 ... 10e+1	abs.
PW08	1111 1011 1010 100n 1111 1100 0001 0000	kW 10e+2 ... 10e+3	abs.
PW09	1010 1nnn 1111 1100 0000 1100	kW 10e-6 ... 10e+1	delta
PW10	1111 1011 1010 100n 1111 1100 0000 1100	kW 10e+2 ... 10e+3	delta
<b>RE Reactive Energy [kvarh]</b>			
RE01	1111 1011 0000 001n	kvarh 10e0 ... 10e+1	forward
RE02	1111 1011 1000 001n 0111 0nnn	kvarh 10e-6 ... 10e+2	forward
RE03	1111 1011 1000 001n 0011 1100	kvarh 10e0 ... 10e+1	backward
RE04	1111 1011 1000 001n 1111 0nnn 0011 1100	kvarh 10e-6 ... 10e+2	backward
<b>RH Relative Humidity [%]</b>			

RH01	1111 1011 0001 101n	% 10e-01 ... 10e0	
RH02	0111 1100 0000 0011 0011 0010 0100 1000 0101 0010	% 10e0	Moisture Level (ASCII-Coding: "RH2")
<b>RP Reactive Power [kvar]</b>			
RP01	1111 1011 0001 01nn	kvar 10e-3 ... 10e+0	forward
RP02	1111 1011 1001 01nn 0011 1100	kvar 10e-3 ... 10e+0	backward
<b>TB Turbidity</b>			
TB01	0111 1100 0000 0011 0101 0101 0100 1110 0100 0110	FNU 10e0	Formazin Nephelometric Units (ASCII-Coding: "FNU")
<b>TC Temperature [°C]</b>			
TC01	0101 10nn	°C 10e-3 ... 10e+0	flow
TC02	0101 11nn	°C 10e-3 ... 10e+0	return
TC03	1101 10nn 0011 1110	°C 10e-3 ... 10e+0	base condition
TC04	0110 01nn	°C 10e-3 ... 10e+0	
TC05	1111 1011 0111 01nn	°C 10e-3 ... 10e+0	Temperature Limit
<b>TS Tension</b>			
TS01	0111 1100 0000 0010 0100 1101 0100 1110	Nm/m <sup>2</sup>	tension of surfaces in Newton Meters (ASCII-Coding: "NM")
<b>VC VOC Content</b>			
VC01	0111 1100 0000 0011 0011 0001 0100 0011 0101 0110	ppb 10e0	(ASCII-Coding: "VC1" for VOC Content 1)
VC02	0111 1100 0000 0011 0011 0010 0100 0011 0101 0110	µg/m <sup>3</sup> 10e0	(ASCII-Coding: "VC2" for VOC Content 2)
<b>VF Volume Flow [m<sup>3</sup> / h]</b>			
VF01	0011 1nnn	m <sup>3</sup> /h 10e-6 ... 10e+1	normal / temp. Converted <sup>20</sup>
VF02	1011 1nnn 0011 1010	m <sup>3</sup> /h 10e-6 ... 10e+1	meas. condition
VF03	1011 1nnn 0011 1110	m <sup>3</sup> /h 10e-6 ... 10e+1	base condition
<b>VM Volume [m<sup>3</sup>]</b>			
VM01	0001 0nnn	m <sup>3</sup> 10e-6 ... 10e+1	normal / temp. Converted <sup>20</sup>

VM02	1001 0nnn 0111 1101	m <sup>3</sup> 10e-3 ... 10e+4	normal / temp. Converted <sup>20</sup>
VM03	1001 0nnn 0011 1010	m <sup>3</sup> 10e-6 ... 10e+1	meas. condition
VM04	1001 0nnn 1111 1101 0011 1010	m <sup>3</sup> 10e-3 ... 10e+4	meas. condition
VM05	1001 0nnn 0011 1110	m <sup>3</sup> 10e-6 ... 10e+1	base condition
VM06	1001 0nnn 1111 1101 0011 1110	m <sup>3</sup> 10e-3 ... 10e+4	base condition
VM07	1001 0nnn 0011 1011	m <sup>3</sup> 10e-6 ... 10e+1	forward volume
VM08	1001 0nnn 1111 1101 0011 1011	m <sup>3</sup> 10e-3 ... 10e+4	forward volume
VM09	1001 0nnn 0011 1100	m <sup>3</sup> 10e-6 ... 10e+1	backward volume
VM10	1001 0nnn 1111 1101 0011 1100	m <sup>3</sup> 10e-3 ... 10e+4	backward volume
<b>VV Voltage [V]</b>			
VV01	1111 1101 1100 nnnn 1111 1100 0000 0001	V 10e-9 ... 10e6	Volt_L1
VV02	1111 1101 1100 nnnn 1111 1100 0000 0010	V 10e-9 ... 10e6	Volt_L2
VV03	1111 1101 1100 nnnn 1111 1100 0000 0011	V 10e-9 ... 10e6	Volt_L3
<b>WS Wind speed</b>			
WS01	0111 1100 0000 0011 0011 0001 0101 0011 0101 0111	m/s 10e0	(ASCII-Coding: "WS1" for Wind Speed)
<b>YD Descriptor</b>			
YD01	1111 1101 0010 0011		Descriptor tariff and subunit
YD02	1111 1101 0010 01nn	s, min, h, d	Storage interval
YD03	1111 1101 0010 1000	month	Storage interval
YD04	1111 1101 0010 1001	years	Storage interval
YD05	1111 1101 0010 0000		First storage no. for cyclic storage
YD06	1111 1101 0010 0001		Last storage no. for cyclic storage
YD07	1111 1101 0010 0010		Size of storage block