



Open Metering System Specification

**Communication profiles
for compliance with national regulations and
international associations**

**Annex E to
Volume 2 Primary Communication
Issue 4.2.1**

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Document History

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A 0.1.3	2014-01-27	Change reference to Main Version 4.0.2	Uwe Pahl
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E.1 Germany – Compliance with BSI TR-03109

The German law requires an approval for the operation of a Smart Meter Gateway in Germany. This approval confirms both the security and the interoperability of a Smart Meter Gateway. The [BSI TR03109] describes the requirements for such a Smart Meter Gateway.

Such a Smart Meter Gateway has to ignore an unsecure communication link to a smart meter. This Annex describes which services and security methods of the OMS-Specification shall be applied to comply with [BSI TR03109].

E.1.1 Smart Meter Gateway

E.1.1.1 Wireless M-Bus Interface of the Smart Meter Gateway

The requirements for a Smart Meter Gateway are specified in [BSI TR03109]. According to this technical guideline a Smart Meter Gateway shall always be support wireless interface. This wireless interface shall fulfil all requirements of Table E.1.1.

The Smart Meter Gateway shall support a collision avoiding according to Annex I).

The M-Bus Data point conversion shall base on Annex A.

Table E.1.1 – OMS-Requirements for the wM-Bus interface of a Smart Meter Gateway to comply with [BSI TR03109]

Layer	Wireless M-Bus
Physical Layer	Subclause 4.3 „Wireless Communication (wM-Bus)“, Modes S, T and C (Other Device to Meter) Annex I „Collision avoiding“ Annex L “Timing”
Data Link Layer	Subclause 5.2 “Wireless Communication (wM-Bus)” Subclause 5.3 “Extended Link Layer” (mandatory)
Authentication and Fragmentation Layer	Subclause 6 “Authentication and Fragmentation Layer” (mandatory) Message Counter C and C’ shall be according subclause 9.3.2; see also Annex J
Transport Layer	Subclause 7.2 “Common Part for all combined Transport/Application Layers” The Device Type 31h shall be used according subclause 2.3 Table 3 Subclause 9 “Communication security”, Security Profile B for unidirectional meter connection, Security Profile C for bidirectional meter connection
Application Layer	Subclause 8.1 “General requirements” Subclause 8.4 “M-Bus Application Protocol” together with Annex B Subclause 8.4.6 "OBIS-Code" The support of self-declared OBIS-declaration according to EN13757-3:2018 Annex H.3 is not allowed! Subclause 8.8 “Application Error Protocol”

Detailed information about additional mandatory wired and wireless interfaces can be found in [BSI TR03109-1] subclause 3.3.

E.1.1.2 Optional Wired M-Bus Interface of the Smart Meter Gateway

The requirements for a Smart Meter Gateway are specified in [BSI TR03109]. According to this technical guideline the support of a wired M-Bus interface by the Smart Meter Gateway is optional. But if it is present it shall follow the requirements of Table E.1.2.

The M-Bus Data point conversion shall base on Annex A.

Table E.1.2 – OMS Requirements for the optional M-Bus interface of a Smart Meter Gateway to comply with [BSI TR03109]

Layer	optional wired M-Bus
Physical Layer	Subclause 4.2 “Wired Communication (M-Bus)”
Data Link Layer	Subclause 5.1 “Wired Communication (M-Bus)”
Authentication and Fragmentation Layer	Subclause 6 “Authentication and Fragmentation Layer” (mandatory) Message Counter C and C’ shall be according subclause 9.3.2; see also Annex J
Transport Layer	Subclause 7.2 “Common Part for all combined Transport/Application Layers” Subclause 9 “Communication security”, Security Profile C only
Application Layer	Subclause 8.1 “General requirements” Subclause 8.4 “M-Bus Application Protocol” together with Annex B Subclause 8.4.6 "OBIS-Code" The support of self-declared OBIS-declaration according to EN13757-3:2018 Annex H.3 is not allowed! Subclause 8.8 “Application Error Protocol”

Detailed information about additional mandatory wired and wireless interfaces can be found in [BSI TR03109-1] subclause 3.3.

E.1.2 Meter

[BSI TR03109] does not impose directly any requirements on meters to interoperate with a BSI compliant Smart Metering Gateway in its LMN (Local Metrological Network). However, to ensure interoperability with such a Gateway the wireless or wired M-Bus interface of the meter shall fulfil the OMS-Specification with the following restrictions. If the meter applies other than allowed functionalities (e.g. usage of Security profile A) the Smart Metering Gateway will only accept allowed functionalities and ignore any other messages.

E.1.2.1 Wireless M-Bus Interface of the Meter

Table E.1.3 – OMS-Requirements for the wM-Bus interface of meters for interoperability with a Smart Meter Gateway

Layer	Unidirectional wM-Bus-meters	Bidirectional wM-Bus-meters
Physical Layer	Subclause 4.3 “Wireless Communication (wM-Bus)”, Modes S1 or T1 or C1 Annex L	Subclause 4.3 “Wireless Communication (wM-Bus)”, Modes S2 or T2 or C2 (Meter to Other Device) Annex I Annex L
Data Link Layer	Subclause 5.2 “Wireless Communication (wM-Bus)” Subclause 5.3 “Extended Link Layer” (mandatory)	
Authentication and Fragmentation Layer	Subclause 6 “Authentication and Fragmentation Layer” (mandatory) Subclause 9.3.2 Message Counter C and C’ shall be according Annex J	
Transport Layer	Subclause 7.2 “Common Part for all combined Transport/Application Layers”, Only Device Types listed in Table 2 of this [OMS-S2] Subclause 9 “Communication security”, Security Profile B only	Subclause 7.2 “Common Part for all combined Transport/Application Layers”, Only Device Types listed in Table 2 of this [OMS-S2] Subclause 9 “Communication security”, Security Profile C only, together with Annex F
Application Layer	Subclause 8.1 “General requirements” Subclause 8.4 “M-Bus Application Protocol” together with Annex B and Annex G Subclause 8.4.6 "OBIS-Code" The support of self-declared OBIS-declaration according to EN13757-3:2018 Annex H.3 is not allowed! Subclause 8.8 “Application Error Protocol” The support of subclause 8.7 "Clock Synchronisation Protocol" is not allowed!	

E.1.2.2 Wired M-Bus Interface of the Meter

**Table E.1.4 – OMS-Requirements for the M-Bus interface of meters
for interoperability with a Smart Meter Gateway**

Layer	wired M-Bus meter
Physical Layer	Subclause 4.2 “Twisted Pair Connection (M-Bus)”
Data Link Layer	Subclause 5.1 “Wired Communication (M-Bus)”
Authentication and Fragmentation Layer	Subclause 6 “Authentication and Fragmentation Layer” (mandatory) Subclause 9.3.2 Message Counter C and C’ shall be according to Annex J
Transport Layer	Subclause 7.2 “Common Part for all combined Transport/Application Layers” Subclause 9 “Communication security”, Security Profile C only
Application Layer	Subclause 8.1 “General requirements” Subclause 8.4 “M-Bus Application Protocol” together with Annex B and Annex G Subclause 8.4.6 "OBIS-Code" The support of self-declared OBIS-declaration according to EN13757-3:2018 Annex H.3 is not allowed! Subclause 8.8 “Application Error Protocol” The support of subclause 8.7 “Clock Synchronisation Protocol” is not allowed!

E.1.3 Actuator

The support of OMS actuators by the BSI compliant Smart Meter Gateway is currently not allowed.



E.2 Reserved for future use

E.3 References

Ref. Nr.	References
1.	[OMS-S2]: OMS Specification Volume 2, Version 4.2.1