WMBUS DATA FORMAT

TEMP/HUMIDITY DEVICE (FX-WMBUS-CX-TH)

Verify correct device and version

This document applies to the device FX-WMBUS-C-TH with protocol version 9. There are two ways of finding out the protocol version of the device; either by looking at the label on the device or by looking at the data packets sent out by the device. See chapters Error! Reference source not found. and Error! Reference source not found. for more information.

Protocol version in data packets

If it is possible to check the information in the data packets sent out by the device, then the protocol version is included in the data field called *A-Field* with content *Protocol version*. For more information, see chapter Error! Reference source not found..

Protocol version in label

The protocol version can be found by scanning the QR-code on the label (shown below). Only the serial number of the device is shown in clear text. By scanning the QR-code, the information about the device is shown as LAS.02011166.1B.09, where

- **Manufacturer code**: LAS
- **Serial number**: 02011166
- **Device type**: 0x1B (27)
- **Protocol version**: 0x09 (09)

WMBUS-data format

Art nr.	FX-WMBUS-CX-TH
Version	09 (0x09)
Information	Message is sent typically every 2 minutes (default value) using C-mode with frame format A according to OMS 4
DR1	Temperature: Last measured value
DR2	Temperature: Average last hour value
DR3	Temperature: 24-hour average value
DR4	Humidity: Last measured value
DR5	Humidity: Average last hour value
DR6	Humidity: 24-hour average value
DR7	Days active since poweron.

Byte No	Field Name	Content	Info	Byte data	
1	L-Field	Length		0x2E	Linklayer
2	C-Field	SND-NR		0x44	
3	M-Field	Meter Manufacturer code	LAS	0x33	
4	M-Field	Meter Manufacturer code		0x30	
5	A-Field	Meter serial number (LSB)	**Example**: 0001067	0x67	
6	A-Field	Meter serial number		0x00	
7	A-Field	Meter serial number		0x01	
8	A-Field	Meter serial number (MSB)		0x00	
9	A-Field	Protocol version		0x07	
10	A-Field	Meter type	Room sensor	0x1B	
11	CI-Field	Short header		0x7A	Networklayer
12	Access no.	Transmission counter	**Example**: 7	0x07	
13	Status	Device status (error/alarms)	Refer to **Table 1** for possible values	0x00	
14	Configuration	Number of encrypted blocks	**Example**: 3	0x03	
15	Configuration	Encryption	**Encryption mode 5 + Synchronized**: 0x25	0x25	
16	AES-Verify	Encryption Verification		0x2F	DATA blocks
17	AES-Verify	Encryption Verification		0x2F	
18	DR1	DIF	16-bit integer	0x02	
19	DR1	VIF	External temperature 0.01°C	0x65	
20	DR1	Value (LSB)	**Example**: 0x1122	0x22	
21	DR1	Value (MSB)		0x11	
22	DR2	DIF	16-bit integer + Storage 1	0x42 = Value OK 0x72 = Not enough values	
23	DR2	VIF	External temperature 0.01°C	0x65	
24	DR2	Value (LSB)	**Example**: 0x001C	0x1C	
25	DR2	Value (MSB)		0x00	
26	DR3	DIF	16-bit integer + Extension	0x82 = Value OK 0xB2 = Not enough values	
27	DR3	DIFE	Storage 2	0x01	
28	DR3	VIF	External temperature 0.01°C	0x65	
29	DR3	Value (LSB)	**Example**: 0x08A9	0xA9	
30	DR3	Value (MSB)		0x08	
31	DR4	DIF	8-bit integer	0x01	
32	DR4	VIF	Extension table	0xFB	
33	DR4	VIFE	Relative humidity 1%RH	0x1B	
34	DR4	Value (LSB)	**Example**: 0x0A	0x0A	
35	DR5	DIF	8-bit integer + Storage 1	0x41 = Value OK 0x71 = Not enough values	
36	DR5	VIF	Extension table	0xFB	
37	DR5	VIFE	Relative humidity 1%RH	0x1B	
38	DR5	Value	**Example**: 0x2C	0x2C	
39	DR6	DIF	8-bit integer + Extension	0x81 = Value OK 0xB1 = Not enough values	
40	DR6	DIFE	Storage 2	0x01	
41	DR6	VIF	Extension table	0xFB	
42	DR6	VIFE	Relative humidity 1%	0x1B	
43	DR6	Value	**Example**: 0x0D	0x0D	
44	DR7	DIR	16-bit unsigned integer	0x02	
45	DR7	VIF	One time days	0x23	
46	DR7	Value (LSB)	Example: 0x0022	0x22	
47	DR7	Value (MBS)		0x00	

Table 1: Status byte with errors and alerts

Bit	Info
0 (0x01)	X
1 (0x02)	X
2 (0x04)	Low battery
3 (0x08)	Permanent error/Sabotage enclosure
4 (0x10)	X
5 (0x20)	X
6 (0x40)	Sabotage enclosure
7 (0x80)	X

Version history

Version	Date	Name	Info
9.1	11.11.2022	Juha Rajanen	First version of the document.
9.2	23.11.2022	Juha Rajanen	Byte No 33 corrected from 0x1A to 0x1B