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INSTALLATION MANUAL

LAN-WMBUS-SMK-1

Document Revision

Rev	Date	Issued by	Changes
1.0	2017-05-17	Martin Hallberg	First Revision
1.1	2018-06-01	Martin Hallberg	Added DR3 in data format. Changed label to V3. Changed to version 3 in data. Updated battery lifespan. From 8 to 8-10 years. Removed OMS version.
1.2	2018-07-04	Martin Hallberg	Updated the Mbus protocol added more information. Status State and Smoke status. Added information regarding automatic manual test.

1.3	2018-10-07	Martin Hallberg	Updated the product image.

1 Information

This documentation described the general performance of the LAN-WMBUS-SMK-1. In particular the radio and battery performance as well as the transmitted data. For mounting and handling of the LAN-WMBUS-SMK-1 please refer the user manual of the LAN-WMBUS-SMK-1

1.1 *Manufacturer*

Lansen Systems AB
Skallebackavägen 3
302 41 Halmstad, Sweden

2 Description

The Lansen LAN-WMBUS-SMK-1 main purpose is warn with the siren if smoke is present in the area. The device is also used in a wireless MBUS/ OMS compatible system for monitoring the performance and function of the smoke detector.

The device uses photoelectric technology and has an aesthetically appealing professional design and function. The design allows for discrete integration in home environment. Fully supervised for low battery and malfunction.
Manual test button helps to verify battery status and alarm operation.
The device is automatically powered on when mounted in the
sealing for fast and efficient installation. The device is also automatically powered off when removed from the installation. The manual test DR3 field shows the number of minutes since manual test was performed. If is set to 0 every time manual test is done. If the manual test have NOT been performed for 28 days, an automatic manual test is performed by the device. During this test a short sound could be heard. If the manual test fails the malfunction bit will be set in the status information bytes.

Note: *Since the Wireless MBUS protocol does not guarantee delivery of information in a network. The radio of the device should not be used as a reliable way of transmitting smoke alarms, but only for monitoring the performance and functionality of the smoke-detector.*

2.1 *Radio performance*

Frequency	868,95
MBUS mode	T
Encryption	YES OMS mode 5
Transmission interval	13 minutes typical
Maximum Output Radio Power	12 dBm

2.2 *Current consumption and battery lifetime*

The battery lifetime of the device is stated as with one manual test every week.

POWER SUPPLY	Sealed non replaceable lithium battery
BATTERY	CR17450E-R/FDK battery, 2400 mAh
VOLTAGE	DC 3V
LIEFSPAN	8-10 years typical
STANDBY CURRENT	17 uA
RADIO TRANSMITTING	35 mA

2.3 *Warnings and indications*

BATTERY	Low battery
SMOKE	Smoke present
END OF LIFE	Device is ending its max service time of 10 years
MALFUNCTION	Malfunction warning
NO CONNECTION	No working connection between the radio and smoke detector.
MANUAL TEST	Manual test performed
HARDWARE ERROR	Hardware error smokedetector.

2.4 *Standards*

The device complies with the following standards

EN 14604:2005/AC:2008
ETSI EN 300 220-1 V3.1.1
ETSI EN 300 220-2 V3.1.1
EN 13757-3/4:2013

2.5 *Performance*

TEMPERATURE	0 to +49 gr C
SOUND LEVEL	Min. 85 dB/3m
SENSITIVITY	0,091~0,149 dB/m
RELATIVE HUMIDITY	None condensing
COLOR	White
SIZE (W x H x D)	120 x 120 x 49 mm
MATERIAL	ABS

2.6 *Serial number*

All LAN-WMBUS-SMK-1 have their unique serial number. The serial number is written on a label placed on the device, please refer the following pictures.

The following information is available on the label according to the Wireless MBUS protocol:

LAS: Manufacture code for Lansen Systems AB.
00000001: The serial number of the device, this number is unique for every device.
1A: Type, Smoke detector.
03: Version

Note: the LAS.xxxxxxxx.1A.03 is the radio serial number of the device and the number that is transmitted in the MBUS data.

2.7 MBUS data protocol

The data transmitted by the LAN-WMBUS-SMK-1 is according to the Wireless MBUS standard and is described below:

Art nr.	LAN-WMBUS-SMK-1
Version	3
DR1	Smoke status.
DR2	Unique message number for asynchronous message
DR3	Minutes since last manual test.

Byte No	Field Name	Content	Byte data	
1	L-Field	Length	0x26	Linklayer (DLL)
2	C-Field	SND-NR	0x44	
3	M-Field	Meter Manufacturer code(LAS)	0x33	
4	M-Field	Meter Manufacturer code (LAS)	0x30	
5	A-Field	Serial NO BCD (LSB)	0x67	
6	A-Field	Serial NO BCD	0x00	
7	A-Field	Serial NO BCD	0x01	
8	A-Field	Serial NO BCD (MSB)	0x00	
9	A-Field	Version	0x03	
10	A-Field	Smoke detector	0x1A	
11	CI-Field	Short header	0x7A	NWK header
12	Access no.	Transmission counter.	0x07	
13	Status	Sate contents errors and alerts.	0x00	
14	Configuration	Enrypted blocks (2 block)	0x20	
15	Configuration	Data is encrypted (OMS mode 5)	0x05	

				AES encrypted	Application layer (APL)
16	AES-Verify	Encryption Verification	0x2F		
17	AES-Verify	Encryption Verification	0x2F		
18	DR1	DIF field (2 byte integer)	0x02		
19	DR1	VIF Extension table	0xFD		
20	DR1		0x97		
21	DR1	VIFE Error flags binary 16 bits	0x1D		
22	DR1	Smoke Status (LSB)	0x00		
23	DR1	Smoke Status (MSB)	0x00		
24	DR2	DIF (32-bitinteger/binary	0x04		
25	DR2	VIF-Field, VIFE extension used	0xFD		
26	DR2	VIFE Message identification number (2062)	0x08		
27	DR2	Unique number counter (LSB)	0x0E		
28	DR2	Unique number counter	0x08		
29	DR2	Unique number counter	0x00		
30	DR2	Unique number counter (MSB)	0x00		
31	DR3	DIF (32-bitinteger/binary	0x04		
32	DR3	VIF extension	0xFD		
33	DR3	VIF Dimensionless	0x3A		
34	DR3	Value (LSB)	0x00		
35	DR3	Value	0x00		
36	DR3	Value	0x00		
37	DR3	Value (MSB)	0x00		
38	AES-Filler	Filler byte due to AES	0x2F		
39	AES-Filler	Filler byte due to AES	0x2F		
40	AES-Filler	Filler byte due to AES	0x2F		
41	AES-Filler	Filler byte due to AES	0x2F		
42	AES-Filler	Filler byte due to AES	0x2F		
43	AES-Filler	Filler byte due to AES	0x2F		
44	AES-Filler	Filler byte due to AES	0x2F		
45	AES-Filler	Filler byte due to AES	0x2F		
46	AES-Filler	Filler byte due to AES	0x2F		
47	AES-Filler	Filler byte due to AES	0x2F		

Status Sate contents errors and alerts.	
Bit	
0 (0x01)	X
1 (0x02)	X
2 (0x04)	1 Low battery
3 (0x08)	1 Malfunction
4 (0x10)	1 Smoke sensor EOL
5 (0x20)	1 No connection to smoke sensor
6 (0x40)	1 Alarm
7 (0x80)	1 Manual Test

Smoke Status	
Bit	
0 (0x01)	X
1 (0x02)	Low Battery
2 (0x04)	Alarm
3 (0x08)	Manual Test
4 (0x10)	Malfunction
5 (0x20)	No connection to smoke sensor
6 (0x40)	X
7 (0x80)	X
8 (0x100)	Smoke sensor EOL