

Data sheet

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## **Kamstrup Temperature and humidity sensor**

- Wireless M-Bus standard EN13757-4:2013
- OMS v4.0.2
- Support of both T1 OMS- and C1-mode
- Configurable transmission interval
- Up to 16 years battery lifetime
- 2 x replaceable AA cells
- Individual encryption



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## Applications

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The Kamstrup Temperature and humidity sensor can be integrated into an existing Wireless M-Bus REAdy Fixed network and provides reliable temperature measurement data. Thus, the air humidity and room temperature can be monitored wirelessly at any time. A further advantage of the sensor is its easy assembly. The configuration can be done via dip switches. The battery life is up to 16 years, depending on the transmission intervals set. 2 AA batteries are easily replaceable and have a reverse polarity protection.

## Installation

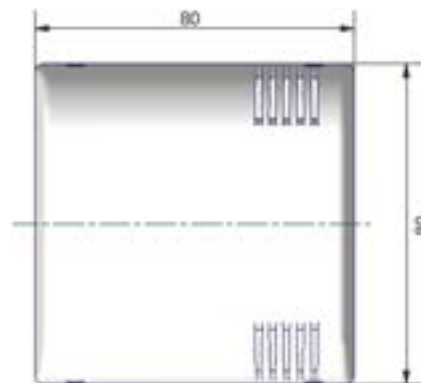
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The Kamstrup Temperature and humidity sensor should not be exposed to direct sunlight. The device is designed for wall mounting, however it should not be mounted on an outside wall, near to an outer door or at a distance of less than 1 m to a heater. The distance from the floor should be at least 1.5 m.

## Drawings

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Front view



Back plate



## Configuration

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	Switch number	
Encryption	1	
Enable	ON	
Disable	OFF	
Wireless M-Bus mode	2	
C1-mode	ON	
T1 OMS-mode	OFF	
TX interval	3	4
96 s	ON	ON
5 min.	OFF	ON
10 min.	ON	OFF
15 min.	OFF	OFF

## Technical data

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Frequency	868.950 MHz (EU license-free area 868-870 MHz)
Communication	Wireless M-Bus, T1 OMS- or C1-mode
Standard	EN13757-4:2013
Transmission interval	96 seconds/5/10/15 minutes
Transmission strength	25 mW
Battery lifetime	Up to 16 years
Range	Up to 300 m
Temperature range	-10°C...+ 55 °C ±0.3 °C
Humidity range	20...80 % ±2 %

## Mechanical data

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Dimensions (L x W x D)	80 x 80 x 40 mm
Weight	125 g, incl. 2 x AA cells

## Markings

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CE marking	
R&TTE	EN300-220 EN301-489

## Datagram

Byte No.	Name	Compact Frame SND_NR (C-Mode) Content	Example		Layer
			Bytes (hex)		
			no AES	with AES	
1	L-Field	Data length	1Dh	1Dh	Data Link Layer (DLL)
2	C-Field	44h = SND_NR	44h	44h	
3	M-Field	manufacturer LSB (Code = KAM)	2Dh	2Dh	
4	M-Field	manufacturer MSB	2Ch	2Ch	
5	A-Field	ID LSB	03h	03h	
6	A-Field	ID	00h	00h	
7	A-Field	ID	00h	00h	
8	A-Field	ID MSB	00h	00h	
9	A-Field	Version	99h	99h	
10	A-Field	Device type (room sensor, e.g. temperature or humidity)	1Bh	1Bh	
11	CI-Field	Extended link layer 8bytes	8Dh	8Dh	Extended Link Layer (ELL)
12	CC-Field	Unidirectional, synchron	20h	20h	
13	ACC-Field	Access number	00h	00h	
14	SN-Field	Session number field LSB	00h	00h	
15	SN-Field	Session number field	00h	00h	
16	SN-Field	Session number field	00h	00h	
17	SN-Field	Session number field MSB (Encryption)	00h	20h	
18	Payload CRC	CRC LSB	72h	B1h	
19	Payload CRC	CRC MSB	04h	9Ah	
20	CI-Field	CI-Field Transport Layer (RSP from device, compact frame, no data header)	79h	74h	Transport Layer (TPL)
21	Format-Signature	CRC LSB	EDh	70h	
22	Format-Signature	CRC MSB	FFh	1Bh	
23	Full-Frame-CRC	CRC LSB	EAh	77h	
24	Full-Frame-CRC	CRC MSB	AFh	23h	APL
25	DR1	Data LSB (temperature)	24h	ECh	
26	DR1	Data MSB	02h	B6h	
27	DR2	Data LSB (humidity)	55h	CEh	
28	DR2	Data MSB	03h	26h	DLL
29	CRC	CRC LSB	DAh	EFh	
31	CRC	CRC MSB	F8h	2Bh	

## Datagram

Byte No.	Name	Full Frame SND_NR (C-Mode) Content	Example		Layer
			Bytes (hex)		
			no AES	with AES	
1	L-Field	Data length	1Eh	1Eh	Data Link Layer (DLL)
2	C-Field	44h = SND_NR	44h	44h	
3	M-Field	manufacturer LSB (Code = KAM)	2Dh	2Dh	
4	M-Field	manufacturer MSB	2Ch	2Ch	
5	A-Field	ID LSB	03h	03h	
6	A-Field	ID	00h	00h	
7	A-Field	ID	00h	00h	
8	A-Field	ID MSB	00h	00h	
9	A-Field	Version	99h	99h	
10	A-Field	Device type (room sensor, e.g. temperature or humidity)	1Bh	1Bh	
11	CI-Field	Extended link layer 8bytes	8Dh	8Dh	Extended Link Layer (ELL)
12	CC-Field	Unidirectional, synchron	20h	20h	
13	ACC-Field	Access number	00h	00h	
14	SN-Field	Session number field LSB (no encryption)	00h	00h	
15	SN-Field	Session number field	00h	00h	
16	SN-Field	Session number field	00h	00h	
17	SN-Field	Session number field MSB	00h	20h	
18	Payload CRC	CRC LSB	00h	C3h	
19	Payload CRC	CRC MSB	CDh	53h	
20	CI-Field	CI-Field Transport Layer (RSP from device, full frame, no data header)	78h	75h	Transport Layer (TPL)
28	DR1	DIF (BCD 4 digits)	0Ah	97h	APL
29	DR1	VIF	66h	82h	
30	DR1	Data LSB (temperature)	24h	B9h	
31	DR1	Data MSB	02h	8Eh	
32	DR2	DIF (BCD 4 digits)	0Ah	C2h	
33	DR2	VIF	FBh	4Fh	
34	DR2	VIFE	1Ah	81h	
35	DR2	Data LSB (humidity)	55h	70h	
36	DR2	Data MSB	03h	26h	
37	CRC	CRC LSB	85h	C7h	DLL
38	CRC	CRC MSB	FBh	04h	

## Ordering

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<b>Description</b>	<b>Order No.</b>
Kamstrup Temperature and humidity sensor	6696 040

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