

# LoRaWAN™ TEMPERATURE-HUMIDITY-LUX SENSOR

The TEMPERATURE-HUMIDITY-LUX sensor is a self-powered LoRaWAN™ wireless sensor device that measures and transmit over long distance temperature and humidity.

## APPLICATIONS

- HVAC (Heating, Ventilating and Air Conditioning)
- Building management
- Food cold chain traceability
- Logistic / storage
- Data center / IT server room

## BENEFITS & KEY FEATURES

- LoRaWAN™, Class A
- Easy to use and deploy
- Self powered via solar cell harvesting energy
- Up to 3 month autonomy without any light energy
- Temperature and Humidity measure
  - ✓ Range : -20°C / +50°C ; 0%rH / 100%rH
  - ✓ Accuracy: <+/-0,5°C from 0°C to 65°C  
<3%rH from 20%rH to 80%rH
  - ✓ Resolution: 1/100°C ; 4%rH
- Ambient luminosity indicator
- Data compression for batch report



## QUALITY & RELIABILITY

- RoHS compliant
- CE Compliant
- FCC Compliant

The TEMPERATURE-HUMIDITY-LUX sensor from nke Watteco is self powered, easy-to-use wireless sensor operating from any wireless network using the LoRaWAN™ protocol.

Wherever there is light, even at low level of 200 lux, tiny solar cells harvest the light energy to power the wireless sensor. In absence of light the device is powered by lithium battery that enables to maintain operation up to 3 months assuming 24 measurements and 1 transmission per day.

The measured temperature, humidity, luminosity and voltage battery parameters can be locally stored, concatenated and compressed. This unique batch mechanism significantly reduce the amount of data transmission.

## NKE WATTECO, YOUR PARTNER IN SMART SENSORS & ACTUATORS

We are a European leader in designing and manufacturing highly reliable and low power consumption smart sensors, actuators and multiprotocol remote data solutions.

nke Watteco is an adopter member of the LoRa® Alliance

© nkeWatteco - Head Quarter: rue Gutenberg, ZI Kerandré , 56700 Hennebont, France - Tel: 33 (0)2 97 36 10 12

Paris Office: 33, rue Pierre Marin, 91270 Vigneux sur Seine, France - Tel +33(0)1 69 52 28 31

For further information, please contact us: [info.watteco@nke.fr](mailto:info.watteco@nke.fr) - [www.nke-watteco.com](http://www.nke-watteco.com)

## TECHNICAL CHARACTERISTICS

RF TRANSCEIVER	
Frequency (MHz)	EU: 863-870 ; US: 902-928
Transmit Power (dBm)	+14
Receiver Sensitivity (dBm)	-140
FIRMWARE	
Protocol	LoRaWAN™, Class A
Transmission cycles	10mn, 1h, 12h or defined by network
Activation method	Activation by Personalization (ABP) Over-The-Air Activation (OTAA)
Data encryption	AES128
TEMPERATURE MEASURE	
Accuracy (°C)	< +/-0.5 from 0° to +65°C < +/-1 from -30°C to 0°C and from +65°C to +90°C < +/-2 below -30°C and above +90°C
Resolution (°C)	1/100
Range (°C)	-20 / +50
HUMIDITY MEASURE	
Accuracy (%)	< +/- 3 from 20%rH to 80%rH < +/- 5 below 20%rH and above 80%rH
Resolution (%)	4
Range (%rH)	0 / 100
LUMINOSITY	
Indicator of luminosity level in %	
POWER	
Power supply	3,6V / 1100mAh lithium battery Solar cell energy harvesting
Autonomy within a +10°C to +25°C temperature range	3 month without any light and for 24 measurements & 1 transmission per day
INTERFACE	
LED Indicator	Network pairing & configuration
Switches	Reset, ON/OFF
MECHANICAL FEATURES	
Dimension (mm)	81x73x20
ENVIRONMENTAL	
Operating temperature (°C)	-20 / +50
Storage	-10°C / +30°C ; +20%rH / +60%rH
DIRECTIVES & STANDARD	
EN, 61000-4-2 EN 300-220-1 V2-4-1, EN 301 489 V1-6-1 CE, FCC part 15.247 subpart C, RoHS recommendation compliant	



## ORDERING INFORMATION

REFERENCE	MODEL DESCRIPTION
50-70-007	LoRaWAN™ TEMPERATURE HUMIDITY LUX SENSOR