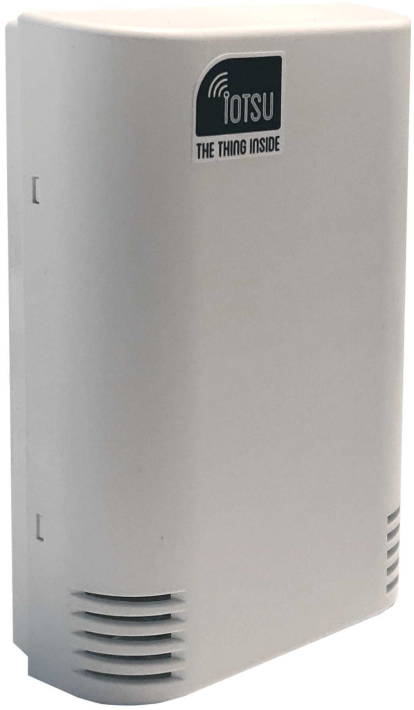
PRODUCT FEATURES AND TECHNICAL SPECIFICATIONS

IOTSU® AIR QUALITY PRODUCTS: IOTSU_L2_AQ03

VOC, TEMPERATURE & HUMIDITY

INTRODUCTION

IOTSU® is a perfect solution for wireless air quality control. The devices are maintenance-free, have excellent coverage and have a battery life of several years. IOTSU® is easily integrated into other systems and processes. Intelligent, adjustable remote monitoring allows, for example, optimisation of energy consumption and moisture damage prevention.



IOTSU® VOC sensor is a compact wireless indoor device that measures air quality as concentration of volatile organic compounds (VOC), temperature and humidity.

IOTSU® is easy to integrate into IOTSU® smart platform to visualise and analyse the results. The smart platform can be configured to alert the user if the concentration of carbon dioxide exceeds a configurable use-specific threshold value. Transmission and measurement cycles can be adjusted according to the need. This affects the battery life.

IOTSU® smart platform supports configurable SMS and email alarms. The smart platform is also straightforward to integrate into other systems and processes. The device can be mounted on any surface within the monitored building. Installation of this maintenance-free device is quick and easy. IOTSU® uses LoRaWAN network connection. There is no need for external power supply.

BENEFITS AND FEATURES

- → EASY TO INTEGRATE INTO OTHER SYSTEMS AND PROCESSES
- → EASY TO PLUG & PLAY AND MAINTENANCE-FREE
- → LONG LIFE-TIME (SEVERAL YEARS BATTERY LIFE)
- → EXCELLENT COVERAGE
- → MEASUREMENT DATA EASILY AVAILABLE FOR ANALYSIS
- → ADJUSTABLE REMOTE MONITORING OPTION WITH CONFIGURABLE SMS AND EMAIL ALERTS
- → ROBUST DESIGN

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Product by SMALL DATA GARDEN

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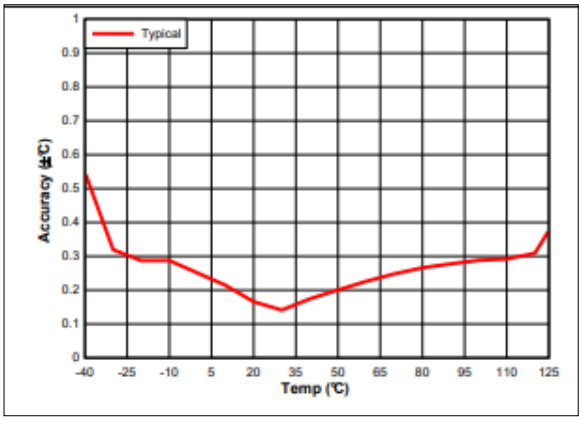
IOTSU BRINGS IOT TO LIFE

MEASUREMENT RANGES

Range and resolution of the measurements depends on sensor physics and data transfer structure. To ensure the long battery life of IOTSU, data packets sent over wireless networks are optimized. Only relevant accuracy is used and only vital data is sent. If special range or resolution is needed, please contact the device manufacturer.

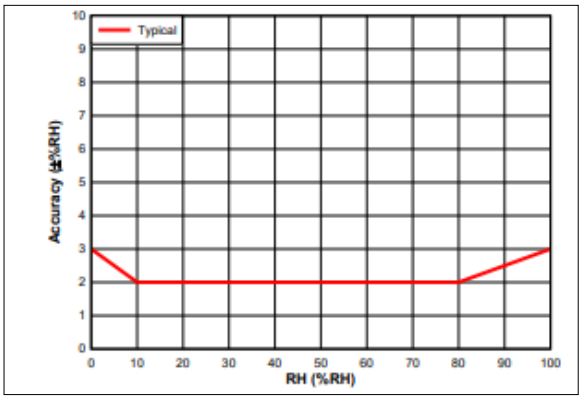
Temperature:

Sensor model: Texas Instruments HDC2080
Resolution: 0.1C
Range: 0 - +50 C
Accuracy: typical +-0.2C, max +-0.4C



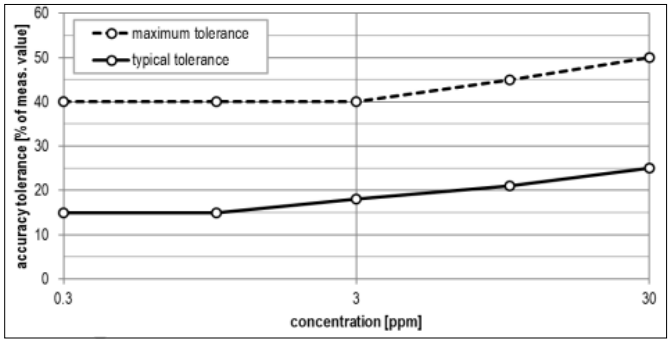
Humidity:

Sensor model: Texas Instruments HDC2080
Resolution: 1% RH
Range: 0-100% RH, non-condensing
Accuracy: typical +-2%, max +-3%



tVOC:

Sensor model: Sensirion SGPC3
Resolution: 0-2007 1ppb
2008-11110 6ppb
11111-60000 32ppb
Range: 0-60000ppb
Accuracy: @ 25 C RH50%



TECHNICAL SPECIFICATIONS

DIMENSIONS (LxWxH): 80 x 120 x 35 mm
WEIGHT: 170g with battery
SENSORS: VOC, Temperature, Humidity
TRANSMISSION CYCLE: 2h, adjustable
MEASUREMENT CYCLE: Transmission cycle /4
CONNECTIVITY: LoRaWAN
BATTERY: C, 3.6V, lifetime with default settings
5 years, replaceable
IP CLASS: IP30
OPERATING CONDITIONS: 0°C to +50°C,
Relative humidity ≤85% (Non-condensing)
TYPICAL ACCURACY:
Temperature: ±0.2°C
Humidity: ±2%
tVOC: ±15%
CERTIFICATIONS: CE
MOUNTING: Screws, adhesive tape

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CALIBRATION

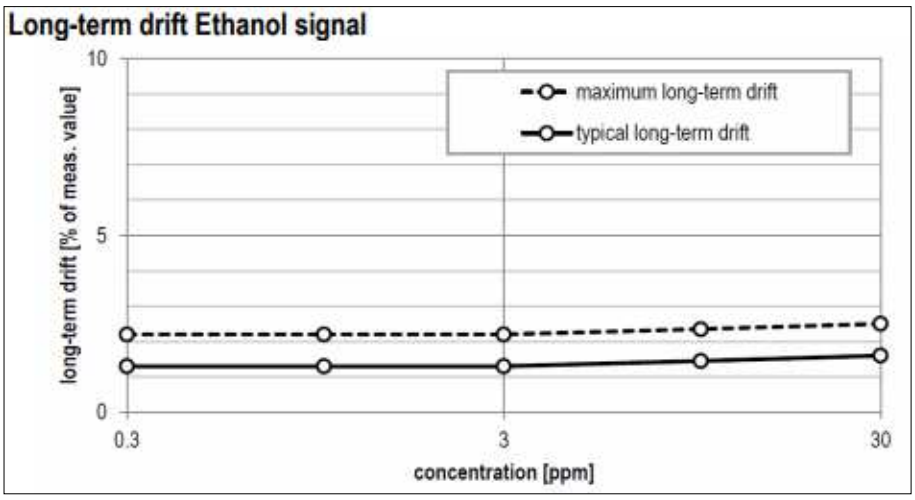
The IOTSU® device has been configured to periodically perform automatic reference calibration to any onboard sensors that require it. The following describes the calibration methods for each sensor:

Temperature and humidity sensor Texas Instruments HDC2080

Factory calibrated. No long-term drift in temperature. Relative humidity long-term drift +-0.25%/year. No possibility for re-calibration.

tVOC sensor Sensirion SGPC3

Typical long-term drift 1.3% of measured value @ 25 °C 50 %rH (pic X). The sensor has an automatic calibration cycle with baseline correction. There is
no need or possibility for forced calibration.



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INSTALLATION AND ORIENTATION

IOTSU® can be wall mounted with adhesive tape or screws. Please note during installation that IOTSU® uses radio signals for cloud communication and because of that large metal objects such as metal walls and enclosures near the device may negatively impact the radio performance of the device.

HANDLING

The device contains optical measurement components that cannot tolerate shocks or hits and are sensitive to touch. Clean the outer surface of the device with a moist cleaning cloth if any visible dust is present. Do not use solvents or powerful cleaning agents. Inspect the inside surfaces of the device when replacing the battery. Carefully blow any visible dust away with compressed air if necessary. Do not touch the circuit board (PCB) with bare hands. Always ensure that the cover of the device is fully closed after cleaning or inspecting the device.

WARM UP TIME

IOTSU® performs a self-diagnostic cycle every time a battery is inserted to the device. The LED light on top of the PCB shines when diagnostic cycle is being performed. After the cycle is completed successfully the LED is switched off and the device starts normal operation. Any errors found during diagnostic period are indicated by the constant blinking of the LED light. If an error occurs the battery should be removed from the device for one minute and reinserted. If the error persists, please contact manufacturer support services.

The device is immediately ready for use after a successful start. Please note that the accuracy of some of the gas sensors is not in the target level for some time after starting the device. The device automatically calibrates the sensors to reach high accuracy levels. The calibration time depends on the configuration parameters of the device.

BATTERY

Battery voltage is measured before each transmission and included in the payload. With 3.6V Li-SOCl2 batteries, nominal voltage without load is around 3.7V. In most conditions the voltage will significantly drop only when most of the capacity has been used. Please note that the battery voltage also depends on other environmental variables such as ambient temperature.

Suggested battery type: Fanso ER26500M

The device can operate with other comparable IEC size C 3.6V Lithium (Li-SOCL2) batteries but the performance of the device cannot be guaranteed.

BATTERY CHANGE INSTRUCTIONS

Please see the document:
”Battery change instructions”

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