



Environmental I2C Sensor for StackableUSB™ I2C1610



Features

- ✓ I2C interface with user selectable addresses
- ✓ Ambient light sensing (1 to 65,535 lx)
- ✓ Temperature sensing (-40° to +85°C)
- ✓ Relative humidity sensing (0% to 100% RH)
- ✓ Absolute atmospheric pressure sensing (40 to 115 kPa)
- ✓ Small 1.85" x 1.74" board
- ✓ -40° to +85°C operation



The I2C1610 module provides engineers with the perfect mix of sensors for creating an environmentally-aware system. The on-board sensors have ideal sensing ranges and sensitivities for detecting the harshness of the surroundings from temperature and light to humidity and atmospheric pressure.

Designed with environmental-friendliness in mind, the I2C1610 is well-suited for applications confined to small, tight spaces where power conservation is fundamental. This RoHS compliant module requires only 10mA power—a figure small enough for battery-powered applications.

In a world where “green” technology is paramount, the I2C1610 is a valuable addition to any I2C-enabled StackableUSB system. The module supplies OEMs with a low-power, cost-effective solution for measuring the environment for any embedded application. The I2C1610 comes with sample software and full documentation.

The 1.85" x 1.74" module stacks onto the top or bottom of any I2C-enabled StackableUSB Host single board computer or microcontroller forming a small, rugged, embeddable system ideal for harsh environments. The I2C1610 can also be connected to other I2C enabled devices via a 4-pin Weidmuller connector.

Software/Driver Support

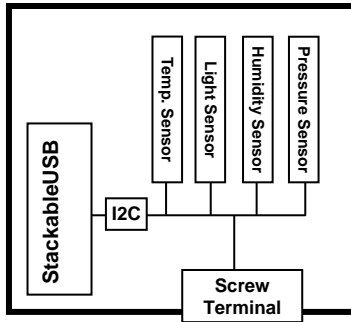
Example software for easy interfacing provided

Compatible Hardware

*I2C enabled StackableUSB Host single board computers and microcontrollers
I2C enabled StackableUSB Client devices
Any device with I2C Master serial interface*

Mounting/Packaging

¼-Size 104™ Form Factor Standoffs, STDOFFUSB



Specifications:

Mechanical:

- ❑ 1.85" x 1.74" StackableUSB
- ❑ ¼-Size 104™ Form Factor

Power Requirements:

- ❑ +5v ±5% at 10mA typical, 26mA max

Environmental:

- ❑ -40° to +85°C operating temp
- ❑ -40° to +85°C storage temp
- ❑ 5%-95% relative humidity, non-condensing

Ambient Light Sensor:

- ❑ Spectral responsibility is approximately human eye response (400nm to 850nm)
- ❑ Wide sensing range 1 to 65535 lx
- ❑ Two (2) user-selectable resolutions:
 - High 1 lx (120ms measurement time)
 - Low 4 lx (16ms measurement time)
- ❑ Two (2) user-selectable I2C addresses:
 - '101 1100'
 - '010 0011'

Temperature Sensor:

- ❑ Wide sensing range: -55° to +125°C
- ❑ Four (4) user-selectable resolutions:
 - 9-Bit (40ms conversion time)
 - 10-Bit (80ms conversion time)
 - 11-Bit (160ms conversion time)
 - 12-Bit (320ms conversion time)
- ❑ Accuracy:
 - ±0.5°typ, ±2.0°max from -25° to +85°C
 - ±1.0°typ, ±3.0°max from -55° to +125°C

- ❑ Three (2) user-selectable I2C addresses:

- '100 1010'
- '100 1000'
- '100 1001'

Relative Humidity Sensor:

- ❑ Sensing range: 0 to 100% RH
- ❑ Accuracy: ±3.5% RH
- ❑ Response time: 5s
- ❑ Sampling rate and resolution: *Refer to ADC characteristics*

Absolute Atmospheric Pressure Sensor:

- ❑ Input pressure range: 40 to 115 kPa
- ❑ Output voltage range: 0.1 to 4.85V
- ❑ Sensitivity: 53.3mV/kPa
- ❑ Response Time: 1.8ms
- ❑ Sampling rate and resolution: *Refer to ADC characteristics*

I2C Interface ADC:

- ❑ Input range: 0 to 5V
- ❑ Resolution: 12 bits
- ❑ Sampling rate: 14 ksp/s
- ❑ Nine (9) user-selectable I2C addresses:
 - '000 1000'
 - '000 1001'
 - '000 1010'
 - '000 1011'
 - '001 1000'
 - '001 1001'
 - '001 1010'
 - '001 1011'
 - '010 1000'

External Connectors:

- StackableUSB
- 4-pin right-angle Weidmuller header with retaining screws

Internal Electrical Interface:

- I2C

Development Kit:

- Base module
- Complete Cable Set
- Documentation, schematics, sample software

Ordering Information:

OEM Modules:

I2C1610-ST Environmental I2C
Sensor Board with
StackableUSB stack-
through connector

Related Products:

STDOFFUSB StackableUSB standoff kit

Development Board Kits*

DK1610-ST Environmental I2C Sensor
Board with StackableUSB
stack-through connector
development kit

**See Development Kit Specifications*