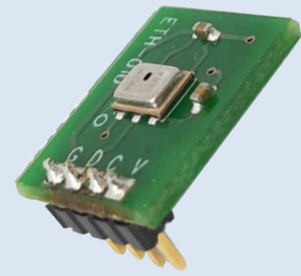


# ETH-01DL

Temperature & Humidity Sensor  
Digital(I<sup>2</sup>C) output module (DIP)



## Features

- Fully calibrated, Linearized Temp compensated sensor module
- Wide input : 1.8~5.5V
- Low power consumption (24.4uA)
- Digital I<sup>2</sup>C interface
- Easy install with 1.27mm Header

## Application

- HVAC
- Automotive
- Humidifiers
- Medical
- Automation
- Measurement
- Weather station
- Data Logger
- White Goods
- Consumer Goods

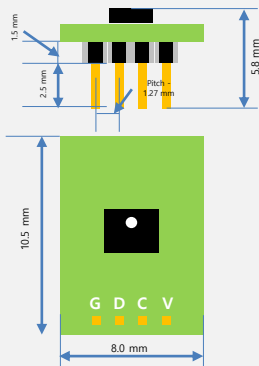
## Humi Specifications

Range	0~100%RH
Accuracy (@ 25°C)	±3.8%RH( 20 to 80%RH )
	±5.0%RH( Other Range )
Hysteresis	±1.0%RH @ 25°C
Resolution	14bit
Response time	time < 6s

## Temp Specifications

Range	-40~125°C
Accuracy	±0.3°C ( 0 to 70°C )
	±0.5°C( Other Range )
Resolution	14bit
Response time	>5s (τ63)

## Dimension & Pin Function



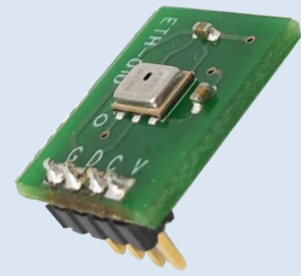
PIN	FUNC
G	GND
D	SDA
C	SCL
V	V+

## I<sup>2</sup>C protocol (RH,T)

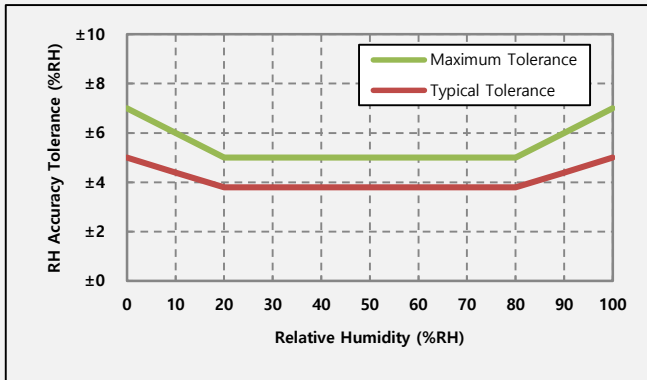
- I<sup>2</sup>C slave Default address : 0x44
- Support Data Rate upto : 400kHz
- Refer to Separate Datasheet for details

# ETH-01DL

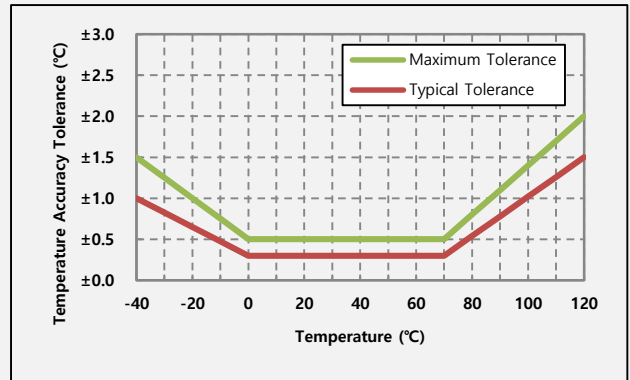
Temperature & Humidity Sensor  
Digital(I<sup>2</sup>C) output module (DIP)



## Tolerance



Tolerance of Relative Humidity @ 25°C



Tolerance of Temperature

## Electrical Specifications

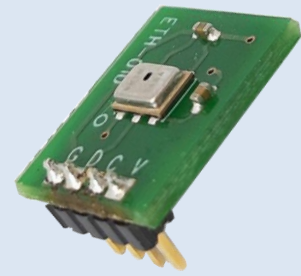
Parameters	Units	Min	Typ	Max
Supply Voltage	V	1.8	3.3	5.5
Supply Current (14bit)	uA(Avr.)	20.1	24.4	24.4
Sleep Current	uA		0.6	

## Environmental conditions

Parameters	Units	Ratings
Operating Temperature range	°C	-40 ~ 125
Storage Temperature range	°C	-55 ~ 150

# ETH-01DL

Temperature & Humidity Sensor  
Digital(I<sup>2</sup>C) output module (DIP)



## I<sup>2</sup>C Protocol

### Step 1

Initiation of measurement sequence

I2C slave address **0x44** (7bit)  
Data Rate upto 400kHz



I2C Address **0x44** = 1000100, Write = 0

### Step 2

Request for measurement data transfer



I2C Address **0x44** = 1000100, Read = 1

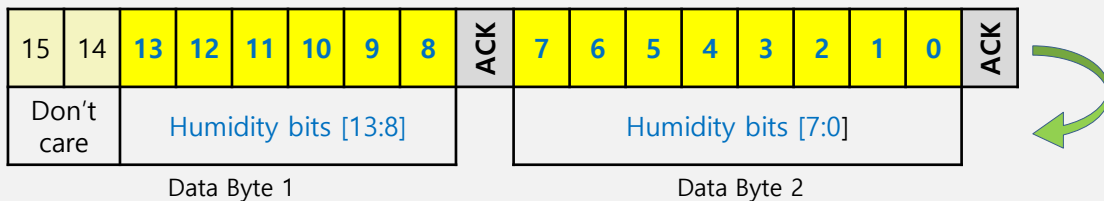
**S** Start bit from the master

**P** Stop bit from the master

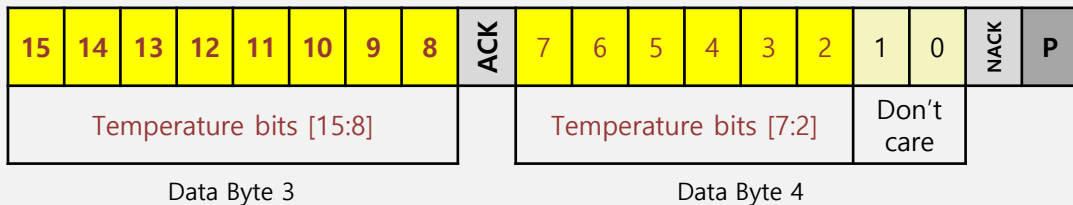
Bits generated by Master

Bits generated by Sensor

Relative Humidity data transfer



Temperature data transfer



### RH and Temp formula :

○ Humidity [%RH] = Humidity[13:0] ÷ (2<sup>14</sup>-1) × 100

○ Temperature [°C] = (Temperature [15:2] ÷ 4) ÷ (2<sup>14</sup>-1) × 165 - 40