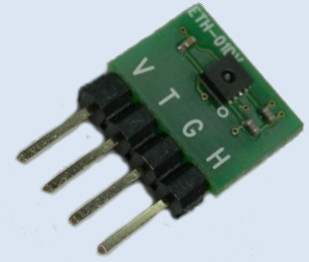


# ETH-01DV

Temperature & Humidity Sensor  
Analog output module (DIP)



## Features

- Fully calibrated, Linearized Temp compensated sensor module
- Wide input : 2.4~5.5V
- Low power consumption (217uA,2Hz)
- Ratiometric Vout (0.5~4.5V, 5V base)
- Easy install with 2.54mm Header

## Application

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

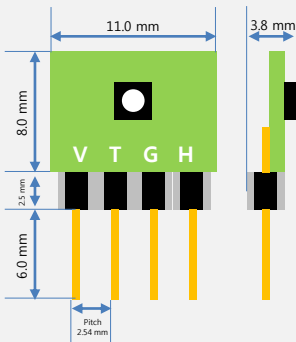
## Humi Specifications

Range	0~100%RH
Accuracy (@ 25°C)	±3.0%RH( 10 to 90%RH )
	±4.5%RH( Other Range )
Hysteresis	±0.8%RH @ 25°C
Resolution	14bit
Response time	time < 8s (τ63)

## Temp Specifications

Range	-40~125°C
Accuracy	±0.3°C ( 10 to 55°C )
	±1.3°C( Other Range )
Resolution	14bit
Response time	>2s (τ63)
Long term drift	< 0.03 °C/yr

## Dimension & Pin Fuction



PIN	FUNC
V	V+
T	Temp
G	GND
H	Humidity

## Formula (RH,T)

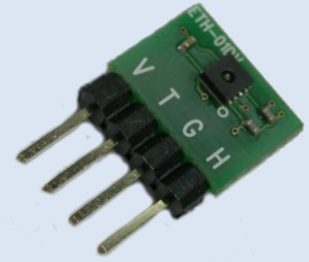
$$RH = -12.5 + 125 \times (V_{RHout} \div V_{DD})$$

$$T(^{\circ}C) = -66.875 + 218.75 \times (V_{Tout} \div V_{DD})$$

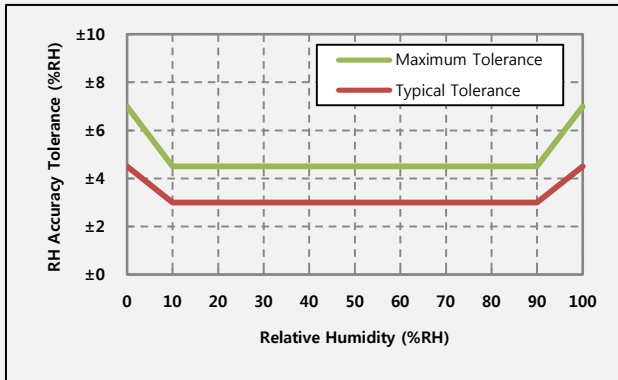
$$T(^{\circ}F) = -88.375 + 393.75 \times (V_{Tout} \div V_{DD})$$

# ETH-01DV

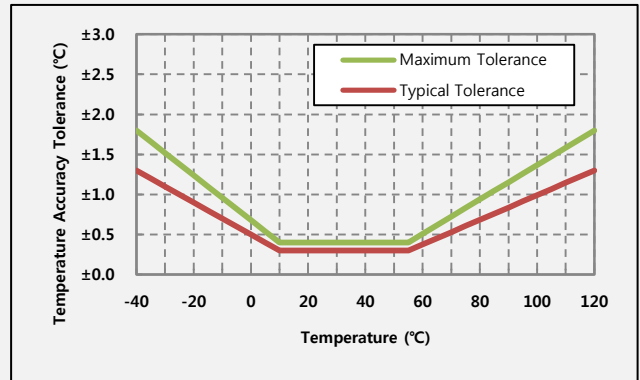
Temperature & Humidity Sensor  
Analog output module (DIP)



## Tolerance



Tolerance of Relative Humidity @ 25°C



Tolerance of Temperature

## Electrical Specifications

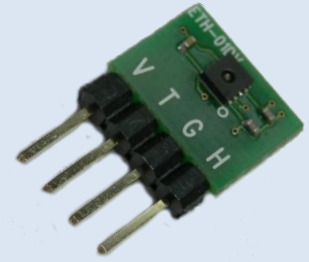
Parameters	Units	Min	Typ	Max
Supply Voltage	V	2.4	3.3	5.5
Supply Current	$\mu\text{A(Avr.)}$	-	217	-

## Environmental conditions

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

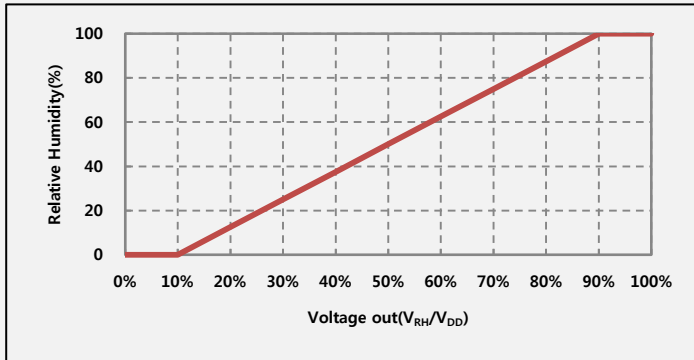
# ETH-01DV

Temperature & Humidity Sensor  
Analog output module (DIP)



## Output

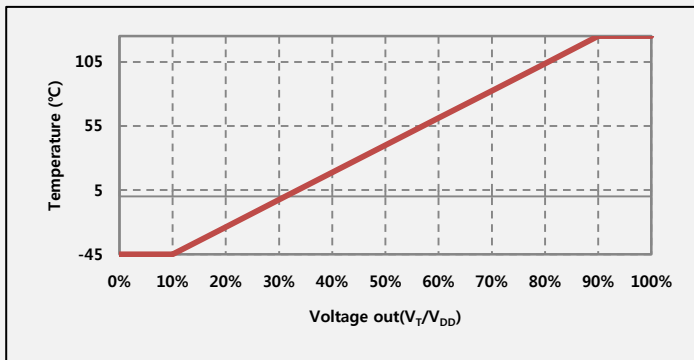
### 1) Relative Humidity output



$$RH[\%] = -\frac{10}{0.8} + \frac{100}{0.8} \times \frac{V_{RH}}{V_{DD}}$$

- RH : Relative Humidity (%)
- V<sub>RH</sub> = Relative Humidity Voltage Out
- V<sub>DD</sub> = Supply Voltage

### 2) Temperature output



$$T[^\circ\text{C}] = -45 - \frac{17.5}{0.8} + \frac{175}{0.8} \times \frac{V_T}{V_{DD}}$$

- T : Temperature (°C)
- V<sub>T</sub> = Temperature Voltage Out
- V<sub>DD</sub> = Supply Voltage

## Tip for HT-01DV user

Changing point	HT-01DV	ETH-01DV
Output Formula	$RH[\%] = (V_{RH} \div V_{DD}) \times 100$ $T[^\circ\text{C}] = (V_T \div V_{DD}) \times 165 - 40$	$RH[\%] = (V_{RH} \div V_{DD}) \times 125 - 12.5$ $T[^\circ\text{C}] = (V_T \div V_{DD}) \times 217.75 - 66.875$