Temperature & Humidity Sensor (Sensor Module)

HTX25 series

User Manual

DOTECH INC.

6F, JOONGANG-ILBO B/D, 30, Dongsan-ro, Danwon-gu,
Ansan-si, Gyeonggi-do, KOREA TEL +82-31-495-3767

www.dotech21.com

Cautions

1. This product is for 5 Vdc only. Supply power within the rated range (4.75 ~ 5.25 V).
2. Do not connect or disconnect the connector while power is applied.
3. This product should be installed in a fixed place such as a panel or rack.
4. Use under the following conditions: ① Indoor ② Pollution Degree 2 ③ Altitude 2000 m or below
5. Do not block the sensor vent or touch the filter membrane. Keep solvents, paint and sprays away.
6. Do not install where condensation occurs or where water or oil may splash.
7. If this product is dismantled or modified, after-sales service cannot be provided.
8. To prevent inductive noise, keep wiring away from high-voltage and power lines.
9. Avoid places with strong magnetism, noise, severe vibration or impact.
10. Do not extend the sensor wire unnecessarily. I2C models: do not exceed the supplied cable length.
11. Avoid using near devices generating strong high-frequency noise (high-frequency welders, radio transmitters, high-capacity SCR controllers, etc.).
12. Damage outside the manufacturer's warranty conditions is not our responsibility.
13. When used to control equipment that may affect human life or property, install a fail-safe device.

※ Failure to observe these precautions may cause a product breakdown.
※ Specifications and dimensions are subject to change for improvement without notice.

1. Overview



※ Features

- Same housing & mounting holes as HTX20
- 3 digital (I2C) models, 1 analog voltage
- Up to ±1.0 %RH · ±0.1 °C (HTX25-450)
- Reverse-polarity, miswiring & ESD protection
- Filter-membrane sensors (350 · 400 · 450)
- 5-pin connector cable

※ Applications

- Constant temp./humidity units
- HVAC equipment
- Control panels
- Automation equipment
- Humidifiers · dehumidifiers
- Data loggers

: Specifications

Item		HTX25-300	HTX25-350	HTX25-400	HTX25-450
Measures		Temp.	Temp. & RH	Temp. & RH	Temp. & RH
Output		I2C	I2C	Voltage, 2 ch	I2C
Humidity	Range	-	0 ~ 100 %RH	0 ~ 100 %RH	0 ~ 100 %RH
	Accuracy	-	±1.5 %RH	±2.5 %RH	±1.0 %RH
	Response τ63	-	8 s	4 s	4 s
Temp.	Range	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C
	Accuracy	±0.2 °C	±0.1 °C	±0.3 °C	±0.1 °C
	Response τ63	> 2 s	> 2 s	2 s	-
I2C address		0x4A (B: 0x4B)	0x45 (B: 0x44)	-	0x44

Power supply	5 Vdc, ±5%
Current	Max. 2 mA (design value)
Protection	Reverse polarity · 24 Vdc miswiring · ESD ±8 kV (design target)
Connector	5-pin connector (2.5 mm pitch)
Dimensions	66.5(W)mm X 62.4(H)mm X 16(D)mm
Operating	0 ~ 60 °C, 95 %RH or less (non-condensing)
Storage	-20 ~ 85 °C (non-condensing)
Material	PC-ABS
Weight	Approx. 16 g (without cable)

※ Temp. accuracy range: 300 at 0 ~ 65 °C, 350 at 20 ~ 60 °C. Design values are confirmed after testing.

: Ordering Information

HTX25 - ① ②

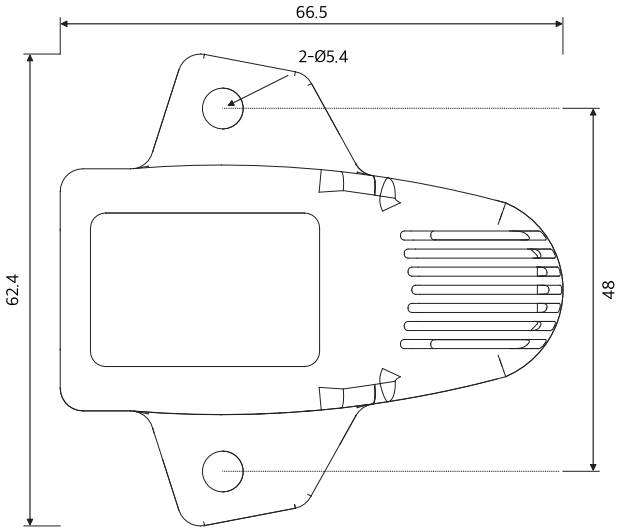
Type	Description
①	Sensor / output (300 / 350 / 400 / 450)
②	Address type (none = default, B = alternate)

Basic	Series	Type		Description
HTX	25			HUMITRON® HTX25 Series Sensor Modules
		- 300		Temperature / I2C
		- 350		Temperature & humidity / I2C
		- 400		Temperature & humidity / analog voltage
		- 450		Temperature & humidity / I2C (highest accuracy)
			B	Alternate address (300B = 0x4B, 350B = 0x44)

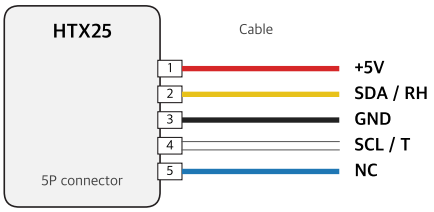
※ Cable supplied as standard

2. Installation

: Dimensions



: Wiring



: Pin Functions

No.	Wire	300 · 350 · 450	400	Description
1	RED	+5V	+5V	Power input +5 Vdc
2	YELLOW	SDA	RH	I2C data / humidity output
3	BLACK	GND	GND	Ground
4	WHITE	SCL	T	I2C clock / temperature output
5	BLUE	NC	NC	Not used (insulate)

: Installation

- Fix with two M5 screws (holes Ø5.4, 48 mm apart).
- Do not install with the sensor vent (round end) facing up.
- Keep away from heat sources (transformers, power supplies, etc.).
- Push the connector in fully until it clicks.
- Do not connect to legacy HTX20 controllers (FX3DH · FX3H): different signals.

3. Signal Output

: I2C Specifications (300 · 350 · 450)

Item	Description
Interface	I2C (read by the master)
Signal level	5 V (converted inside the module)
Clock	100 kHz recommended (max. 400 kHz)
Pull-up	Pull SDA · SCL up at the master side, 4.7 ~ 10 kΩ
CRC	CRC-8 (polynomial 0x31, init 0xFF)
Shared bus	Allowed if addresses differ (e.g. 350 + 300 + 300B)

: Analog Output (400)

Item	Description
Output	Voltage, 2 ch (10 ~ 90 % of supply, 0.5 ~ 4.5 V at 5 V)
Humidity	RH = -12.5 + 125 × V_RH / VDD [%RH]
Temperature	T = -66.875 + 218.75 × V_T / VDD [°C]
Load	1 kΩ or more, 100 nF or less
Note	Ratiometric output: calculate with the actual supply (VDD).

: Measurement Command · Conversion

Model	Addr.	Command	Wait	Read	Conversion (S = 16-bit raw value)
HTX25-300	0x4A	0x24 0x00	16 ms	3 byte	T = -45 + 175 × S_T / 65535
HTX25-350	0x45	0x24 0x00	16 ms	6 byte	T = -45 + 175 × S_T / 65535, RH = 100 × S_RH / 65535
HTX25-450	0x44	0xFD	10 ms	6 byte	T = -45 + 175 × S_T / 65535, RH = -6 + 125 × S_RH / 65535

※ Read order: temperature 2 byte + CRC (+ humidity 2 byte + CRC). Clip humidity to 0 ~ 100 %RH.

: Connecting to Myot365

Model	Port	Setting
HTX25-300	PJ-01 ~ 04 (I2C)	1 tag (temperature)
HTX25-350	PJ-01 ~ 04 (I2C)	2 tags (temperature · humidity)
HTX25-400	PJ-05 ~ 07 (analog)	Input 0~5V, CH1 humidity · CH2 temperature
HTX25-450	PJ-01 ~ 04 (I2C)	2 tags (temperature · humidity)