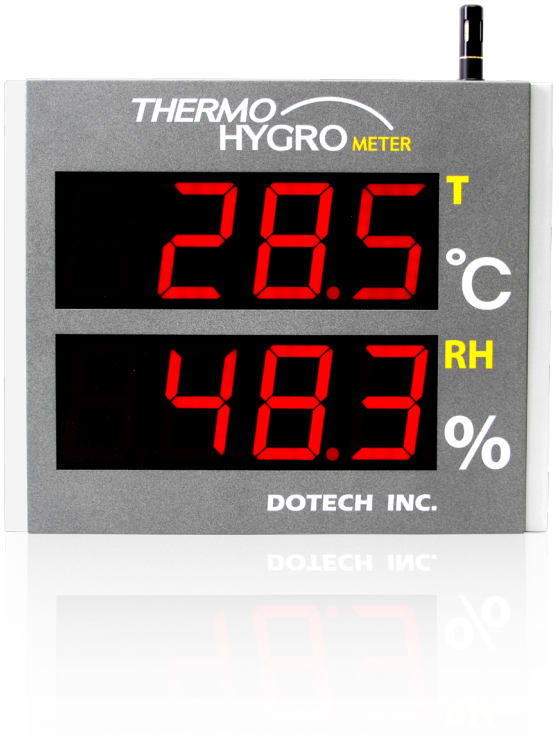
High-end Thermo hygro meter

HTD1000 Series

User's Manual



Features

- 3 inch FND Display
- Compact, Slim
- Selest the Input model Included Sensor or External sensor (Communication or Analog)
- RS485 or 4-20mA Analog Output
- Stainless steel housing for pharmaceutical, hospital and clean room environments

Applications

- Air Conditioning System
  (Clean room, dehumidifier, humidifier, thermo-hygrostat, building automation, botanical garden (farm), laboratory, museum, exhibition hall)
- Industrial
  (Semiconductor, metro, train, pharmaceutical, food, factory automation, rotation room)
- Environmental monitoring system
  (Weather, roads, mobile base stations)

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⚠ Cautions for safety

Please read cautions for safety carefully before use the product.

Cautions for safety shall be observed because such cautions are to use the product safely and correctly in order to prevent accident or danger in advance.

- When this product is used for controlling of device which may affect life or property (such as controlling of nuclear power, medical instrument, vehicle, railroad, aviation, burner, entertainment device or safety device), double safety devices must be installed before use.
- Do not connect lines or check or repair when power is applied.
- For power connection, verify the terminal number before connection.
- Do not modify product by unauthorized person other than our service technician.
- Do not use this product at outdoor. Product life time may be shortened.
- In wire connection, tighten the terminal screw with sufficient torque.
- Use this product within its rated/performance range. Product life time may be shortened.
- Do not use a load that exceeds the rated switching capacity of the relay contacts. It may cause insulation failure, contact melting and contact failure.
- Do not use water or organic solvents for cleaning. Use a dry, dry towel.
- Do not use in locations with flammable, explosive gas, moisture, direct sunlight, radiant heat, vibration or shock.
- Do not inflow dust or wire dregs into the unit.
- When connecting the sensor, check the polarity of the terminal and connect the wires correctly.

Warranty Information

The warranty statement for the purchaser of the product or license.

Warranty Terms

The warranty period for the product is one year, within which you can receive support for problems with the product itself.
The company shall not be responsible for product damage caused by the following cases:

- when used without considering the installation instructions and digital input / output rating specified in the product manual.
- When the product has an abnormality caused by external human factors or environmental factors in which the product is installed.

If a product problem is raised by the original purchaser within the warranty period, we will diagnose the product problem in the buyer's area or send the product to us for confirmation and support repair and replacement service. If the purchased product exceeds the warranty period or the product problem is not covered by the support conditions, the original purchaser shall bear the related costs for repair / replacement and delivery.
The original purchaser for any claims, warranties, torts [including negligence and gross negligence] —in any case, with legal requirements and claims—with or without contract—unless the stated limitations on the fulfillment of the warranty terms do not violate current application law. Samsung shall not be liable for any consequential damages or losses arising from special, indirect, incidental, legal, or organizational arrangements for purchased products, including business disruption, loss of use, and revenue problems.

Warranty Terms and Conditions Restrictions

Except for the customer's requirement for non-compliance of warranty terms, we shall not be liable for any claims claimed by the original purchaser, its associates, agents, or contractors for any loss, damage, or expense incurred or incurred from the sale.
The above warranty conditions are the exclusive rights of the original purchaser. In addition to the warranty terms, the Company rejects the performance of any other warranty conditions, expressed or implied, including, but not limited to, modification of the product for a particular purpose, implied warranty conditions on the sale of the product, and warranty conditions without legal infringement.

The fulfillment of warranty conditions does not exactly follow the instructions for the operation and maintenance of the product, and does not apply to product problems caused by replacement, accident, misuse, abuse, or carelessness. Technical assistance provided by personnel and agents in the buyer's system design is a suggestion and not a recommendation. The buyer is responsible for determining the implementation of the proposal and should be tested by the buyer. It is the buyer's responsibility to determine the suitability of the product for its purpose and its use.
The terms and conditions set forth in the warranty terms apply in effect and the dealer, company or individual or employee has no right to amend, modify or extend the terms of the warranty for any reason.

▣ Technical data

Temp.	
Measuring range	-40 ~ 80°C
Accuracy	±0.3℃ @25℃
Repeatability	±0.1°C
Responsiveness	Max. 30sec

Humidity	
Measuring range	0 ~ 100% (Non-condensation)
Accuracy	±2%RH @ 20~80%RH
Repeatability	±0.1%RH
Responsiveness	Max. 15sec

Spec.	
Power supply	24Vdc ±10%
Current consumption	Max. 300mA @24Vdc
RS485	Modbus RTU, 9600, 8, N, 1
Analog ouput	2-CH 4-20mA
Size (W×H×Dmm)	360x300x55, Cable grand, Exept probe
Operating temperature	-20 ~ 50 ℃
Storage temperature	-20 ~ 60 ℃ (Non condenced)

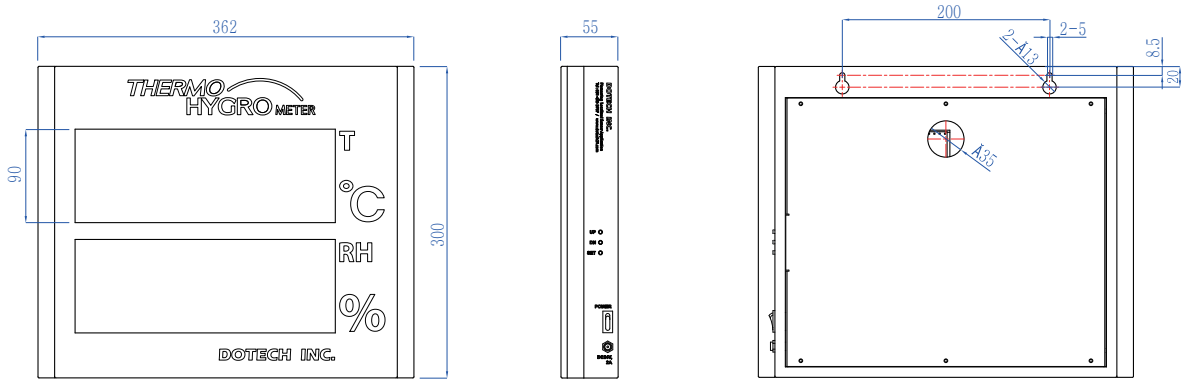
※ Product specifications are subject to change without notice.

▣ Odering Guide

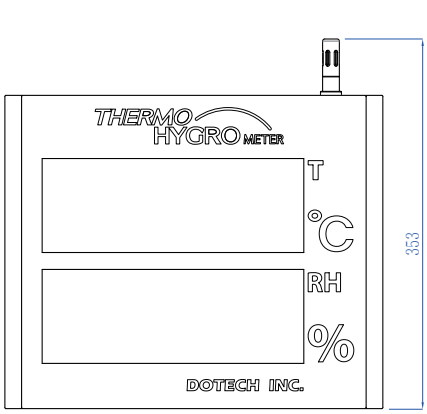
HTD1000 - TH - 00 - S

series	1000	Model that receives and displays sensor value from RS485 from outside
	1000A	Model that receives and displays sensor value as 4-20mA from outside
	1000M	Model that receives and displays sensor value from RS485 from outside(ModubusMaster)
	1200CW	Wall-type Sensor built-in model
	1200CR	Remote-type Sensor built-in model(Sensor cable 2M)
Display	TH	Temperature, relative humidity value display
	TD	Temperature and dew point temperature value display
Input/Output	00	Display only
	10	4-20mA output
	01	RS485 modbus output(HTD1000 Exclude Model)
	11	RS485 modbus output + 4-20mA ouput(HTD1000 Exclude Model)
Housing material	Nil	EGI +
	S	SUS304 Hairline
	L	SUS316L Hairline

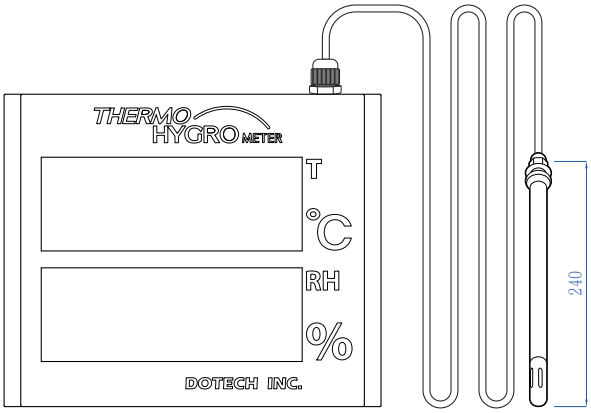
▣ Dimensions



HTD1000

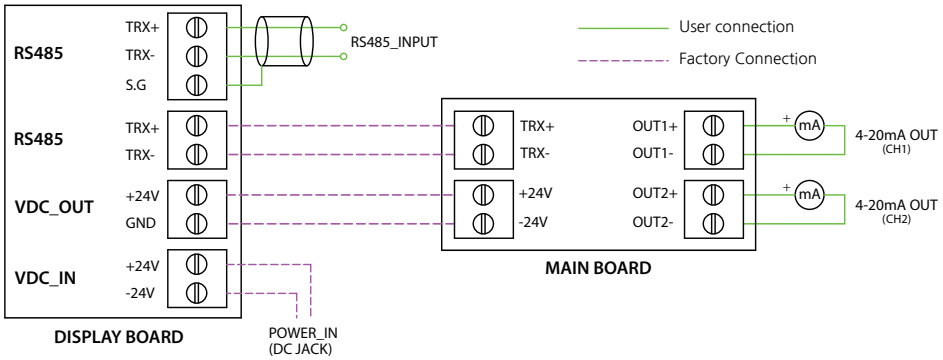


HTD1200CW (Wall type)

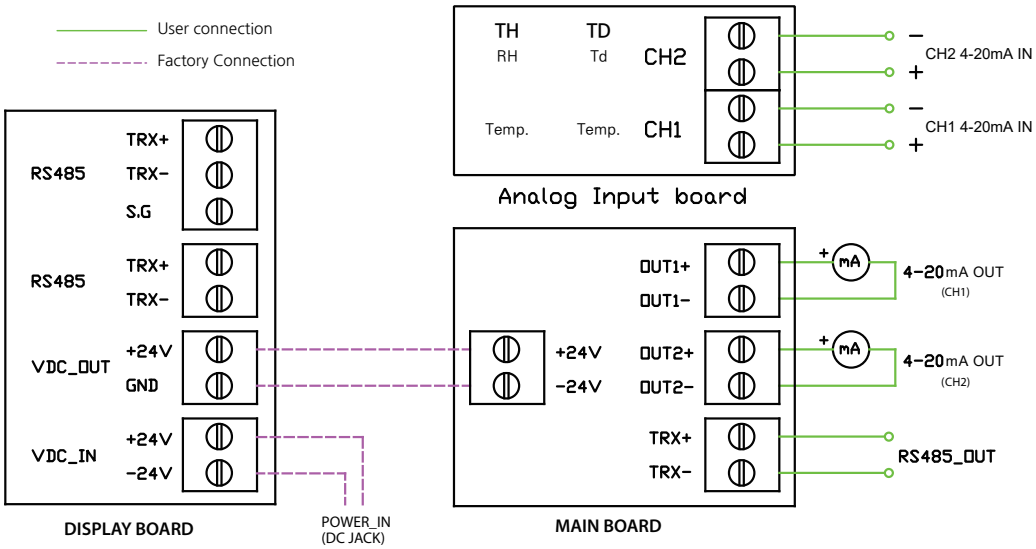


HTD1200CR (Remote type)

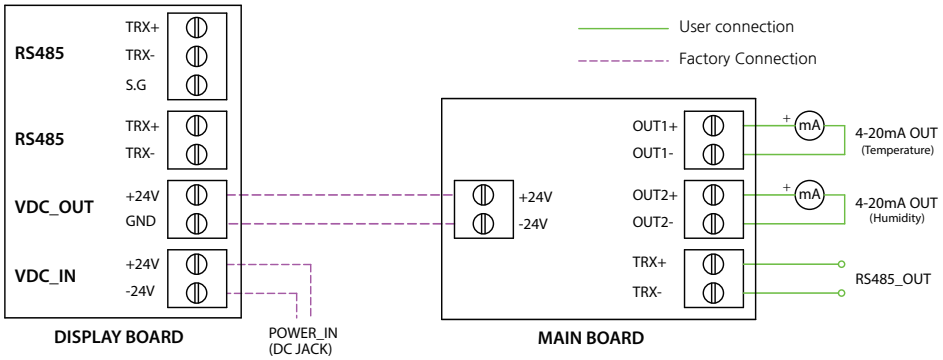
▣ Wiring



HTD1000 Connection Diagram



HTD1000A Connection Diagram



HTD1200C Connection Diagram

▣ Parameter List

Item	Name Of Parameter	Name Of Parameter	Setting Range (Description)	Initial Value	User Setting Value
40001	1.oFS	CH1 offset value	-10.0 ... +10.0	0.0	
	1.Adr	CH1 sensor address value	1 ... 9999	22	Only HTD1000M
40002	1.SCH	CH1 Max. transmission (at 20mA)	-1999 ...9999	100	
40003	1.SCL	CH1 Min. transmission (at 4mA)	-1999 ...9999	0	
40004	1.0oF	CH1 Transmission Current Offset Value	-3.00 ... + 3.00 mA	0.00 mA	
40005	2.oFS	CH2 offset value	-10.0 ... +10.0	0.0	
	2.Adr	CH2 sensor address value	1 ... 9999	23	Only HTD1000M
40006	2.SCH	CH2 Max. transmission (at 20mA)	-1999 ...9999	100	
40007	2.SCL	CH2 Min. transmission (at 4mA)	-1999 ...9999	0	
40008	2.0oF	CH2 Transmission Current Offset Value	-3.00 ... + 3.00 mA	0.00 mA	
40009	C.Adr	RS485 ID	1 ... 64	1	
40010	C.Pro	RS485 Protocol	0 : MODBUS RTU 1 : MODBUS RTU2 2 : MODBUS RTU3	0	
40011	C.bPS	RS485 bps	0 : 600, 1 : 1200 2 : 2400, 3 : 4800 4 : 9600, 5 : 19200 6 : 38400	4 : 9600 bps	
40012	C.Pr1	RS485 Parity bit	0 : None 1 : Even 2 : Odd	0 : None	
40013	C.StP	RS485 Stop bit	1 : 1-bit 2 : 2-bit	1 : 1-bit	
40014	C.dLn	RS485 Data bit	7 : 7-bit 8 : 8-bit (fixed)	8 : 8-bit	
40016	1.20A	CH1 Max. range (HTD1000A only)	-1999 ...9999	100	
40017	1.04A	CH1 Min. range (HTD1000A only)	-1999 ...9999	0	
40018	2.20A	CH2 Max. range (HTD1000A only)	-1999 ...9999	100	
40019	2.04A	CH2 Min. range (HTD1000A only)	-1999 ...9999	0	

Operation Sequence and Parameter map