Next-Generation Production Environment Sensors

EQUO™ Series

OMRON

Precision Thermo-Humidity Logger

ZN-THS-S (Sensor head)
ZN-THX11-SA (Logger)

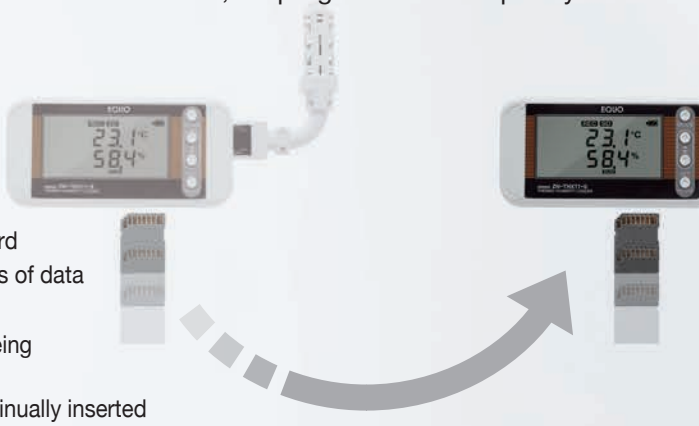
Easy temperature and humidity control with an SD Card

realizing

Meeting the need for “easier management of temper

Omron Precision Thermo-Humidity Loggers use sensors with the highest precision in their class and the first SD Card
This enables precise control of temperature and humidity at multiple points along the manufacturing line and more
The logger has alarm output providing immediate alerts when trouble occurs, helping meet strict quality control

SD Card system makes data collection more efficient



- Data can be collected only when needed by simply inserting an SD Card
- Thermo-Humidity Logger memory can store up to approx. 8,500 pieces of data
- Measured data is transferred to CSV format and stored in an SD Card
- Data continues to be recorded in built-in memory even while data is being collected onto SD Card
- Store data up to maximum memory capacity by keeping SD Card continually inserted
  (approx. 17 million pieces of data per 1GB. Store up to five years of data when measurements are made every 10 seconds)

Compact body with useful features!

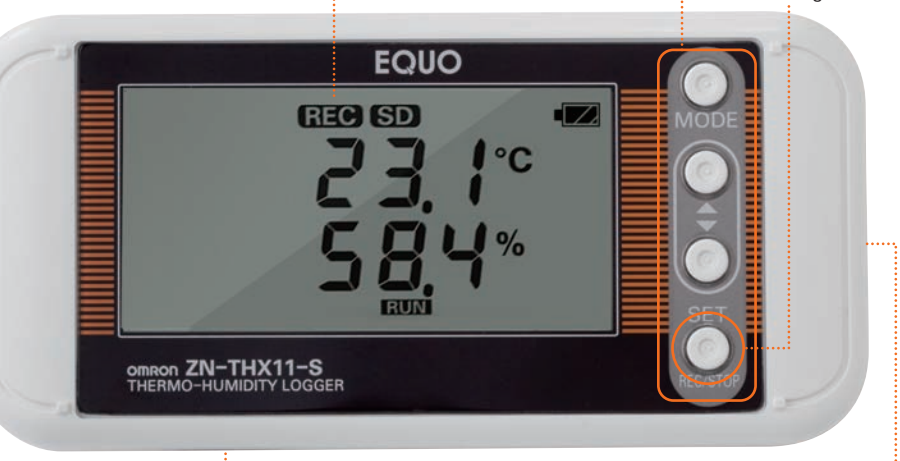
∗ Photo shows actual size

Large, easy to read characters!

Large, easily legible LCD display has two rows of five characters.

Easy operation similar to portable gaming device

Start recording with the touch of a single button!



Runs for approx. 1 year on two commercial AAA batteries

With built-in backup feature, stored data won’t be lost even if batteries run out

∗ In sleep mode. Battery life may vary depending on production environment and battery type / battery performance.
∗ Manganese batteries cannot be used.

Can also be used with DC voltage input or AC adaptor

Easy to hang on wall as well

Back side features two types of holes, for wall-hanging and for anchoring

SD Card slot

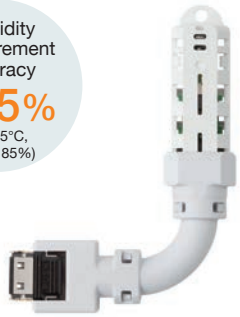
Alarm output terminal

Remarkably high measurement accuracy

Temperature measurement accuracy **±0.3°C** (at 25°C)

Humidity measurement accuracy **±2.5%** (at 25°C, 10 to 85%)

Temperature resolution **0.1°C**



Precision measurement ensures a temperature resolution of 0.1°C and humidity accuracy of plus/minus 2.5%.
This enables more precise control of temperature and humidity, which contributes to improvement in product quality.

Specifications

Sensor head

Item \ Model		ZN-THS17-S	ZN-THS17C-S∗	ZN-THS11-S	ZN-THS11C-S∗
Appearance		Sensor head: Anchored type		Sensor head: 1.5 m type	
Temperature	Measurement range *1	0 to 60°C		–25 to 60°C	
	Measurement precision *3	±0.3°C (at 25°C)			
	Resolution	0.1°C			
	Long-term drift *4	0.1°C or less / year			
Relative humidity	Measurement range *2	20 to 85%		0 to 99%	
	Measurement precision *3	±2.5% (at 25°C, 10 to 85%)			
	Resolution	0.1%			
	Long-term drift *4	1.0% or less / year			
Recommended storage temperature range *5		10 to 50°C (with no condensation or icing)			
Recommended storage humidity range *5		20 to 60% (with no condensation or icing)			
Weight (packaged)		Approx. 300 g			
Accessories		Mounting screw (M3 x 8) x 1 Caps to secure cable (one for each, front and rear)		Mounting screw (M3 x 8) x 1	

∗ Please choose this form when you buy it with the calibration certificate.
∗1. Condensation may occur if the device is transferred quickly between locations with significant temperature differences. The device may not be able to measure humidity accurately if condensation occurs. If the product becomes wet due to condensation, allow the product to dry in a dry, room-temperature environment before use.
∗2. The device may not be able to measure humidity accurately if moisture is present on the sensor surface after being exposed to high humidity for an extended period. In this situation, allow the product to dry in a dry environment at room temperature and humidity before use.
∗3. Measurement precision may deteriorate due to the adhesion of impurities, contaminants, organic chemical substances, or other environmental matter on the sensor surface during use. Periodic calibration is recommended to check the measurement precision.
∗4. Long-term drift values are based on continuous usage or storage at a temperature of 25°C and a humidity of 20 to 60% within the warranty period of the product. Continuous usage or storage in an environment that exceeds these conditions may result in a drift value greater than the stated value.
∗5. Measurement precision deterioration may occur while the product is in storage. To maintain the original product performance, ensure a storage environment within the recommended temperature and humidity ranges. Storage in an environment that exceeds the specified conditions may cause deterioration of the measurement precision.

ature and humidity data”

data collection system.
efficient data collection.
standards.

Quick and easy data collection with a single SD Card!

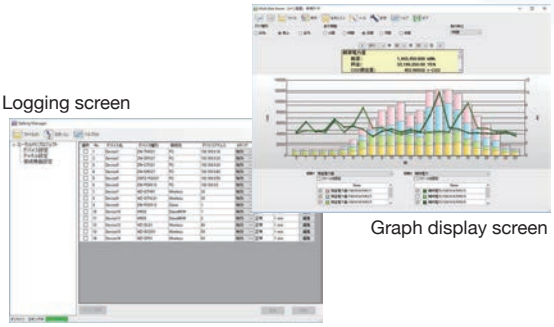
Stunningly simple!
No need to detach the unit itself.
No need for PC or other collection equipment.

Alarm output for immediate response when trouble occurs

Example: When temperature exceeds threshold value, an error indicator lights up

The logger has an alarm output. Unusual temperature and humidity are made visible, enabling you to make a quick response and to make it easy to systemize manufacturing lines.

Easy-to-use data visualization software available



Insert the SD card containing collected data into a PC, and simply designate the drive in order to manage and graph the recorded data. Measurement data is stored in CSV format, allowing for easy temperature and humidity data management.

Note: Download the PC Software Multi Data Viewer Light from the following OMRON website (http://www.fa.omron.co.jp/multi-d-v-e).

Logger

Item \ Model	ZN-THX11-SA
Appearance	
Sensor that can be connected	Thermo-Humidity Sensor Head (ZN-THS1□□-S)
Display	LCD 7-segment 5-digit 2-step display, auxiliary information indicator display
Measurement interval	10 s, 20 s, 30 s, 1 min, 2 min, 5 min, 10 min, 20 min, 30 min, 1 h
Calculation function	Instantaneous value, maximum value, minimum value, average value
Operating mode	Normal mode, sleep mode*1
Recording mode	Continue*2, ring*3
Alarm signal output*4	Output to photocoupler (External power supply: 12 to 24 VDC, Load current: Max. 45 mA) Alarm hold setting is possible.*5
Internal storage device	Internal memory: Approx. 8,500 data items
External storage device	SD card (measured value saving/set value saving and reading), Recommended SD card: HMC-SD292 (2GB) and HMC-SD492 (4GB) (manufactured by OMRON)*8
Power supply voltage	DC input: 24 VDC±10% Battery: 2 AAA batteries*5
Battery life*	Approx. 1 year*6 (sleep mode, measurement interval of 10 minutes with 2 AAA nickel metal hydride batteries, with SD card not inserted)
Operating temperature range	0 to 60°C
Operating humidity range	20 to 85% (no condensation)
Weight (packaged)	Approx. 500 g
Accessories	Instruction Sheet, Startup1 Guide, Alarm output connector*7, DC cable (straight type)

Calibration service

Subject to calibration	Content	Model
Sensor head Anchored type	Certificate of Calibration, Test Transcript Traceability chart	ZN-THS17-CAL
Sensor head 1.5 m type	Certificate of Calibration, Test Transcript Traceability chart	ZN-THS11-CAL

• As the sensor head and station are digitally connected, this calibration service is available only for the sensor head.
• It is necessary to ship the product back to OMRON in Japan.

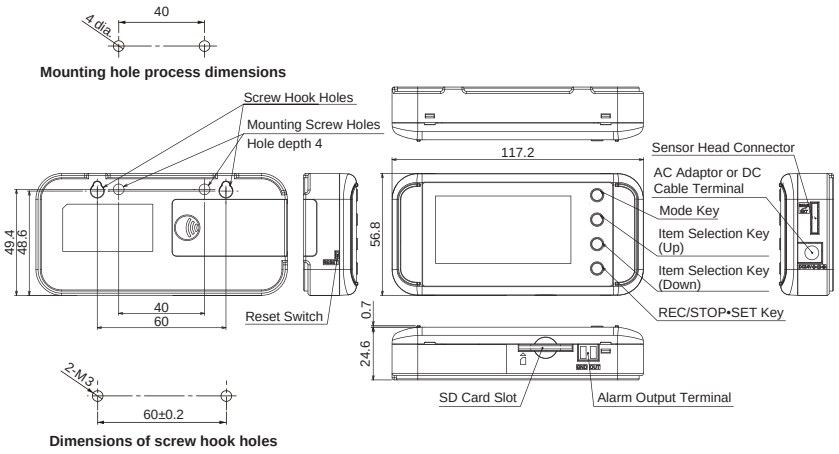
Accessaories (Order separately)

Item		Model
Mounting Magnet*		ZN9-EM01-S
DC cable (ZN9-ED01-S comes with ZN-THX11-SA)	Straight type	ZN9-ED01-S
	Right angle type	ZN9-ED02-S
AC Adaptor for ZN-□□X-S 100 to 240 VAC/50 to 60 Hz Operating temperature range: 0 to 40°C	PSE, CE, UL STD/A-type plug	ZN9-ACP01-S

* When the magnet is used, the vibration resistance becomes 55 Hz or less. (Two logger installation screws are attached.)
*1 Power saving mode. The indicator is always OFF in default setting. (Turns ON with button operation.)
*2 Automatically writes data to the SD card when reaching the upper limit of the internal memory and keeps recording until the capacity limit of the SD card. If the SD card is not inserted when the internal memory reaches the upper limit, recording stops. (Data can be output to the SD card by pressing the button after inserting the SD card.)
*3 This mode always records the latest measured values for the upper limit of the internal memory. (When the measured values exceed the upper limit of the internal memory, the data items will be deleted beginning with the oldest data item.)
*4 An alarm is shown when exceeding the upper limit value or lower limit value that has been set in threshold setting mode.
*5 Nickel hydride battery and alkaline battery can be used. Manganese batteries cannot be used.
*6 Battery life differs depending on measurement environment, sampling, operating mode, battery type, or performance.
*7 The connector is type XW4B-02B1-H1, made by OMRON.
*8 When using a third party SD card, it is recommended to use a reliable and durable industrial SD card (SD standard or SDHC standard (not compliant with SDXC standard), Class 4 or higher, flash memory type SLC or MLC type). You must confirm the operation of the SD card yourself.

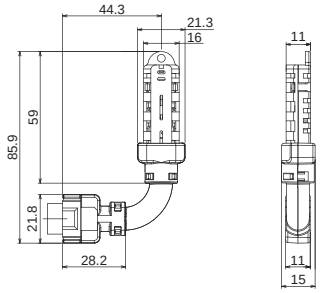
Dimensions (unit: mm)

[Logger] ZN-THX11-SA

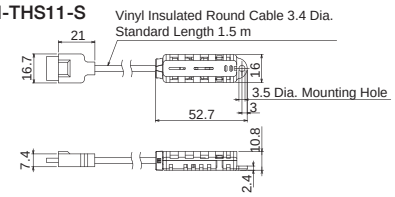


[Sensor Head]

ZN-THS17-S



ZN-THS11-S



In addition to Thermo-Humidity Logger…

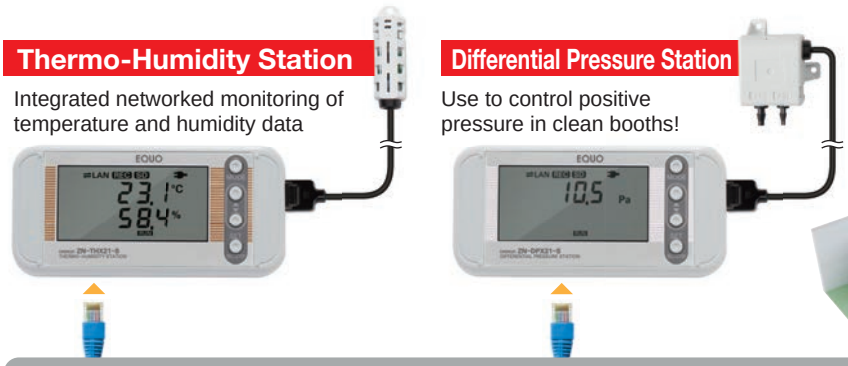
LAN Connection models also available

Thermo-Humidity Station

Integrated networked monitoring of temperature and humidity data

Differential Pressure Station

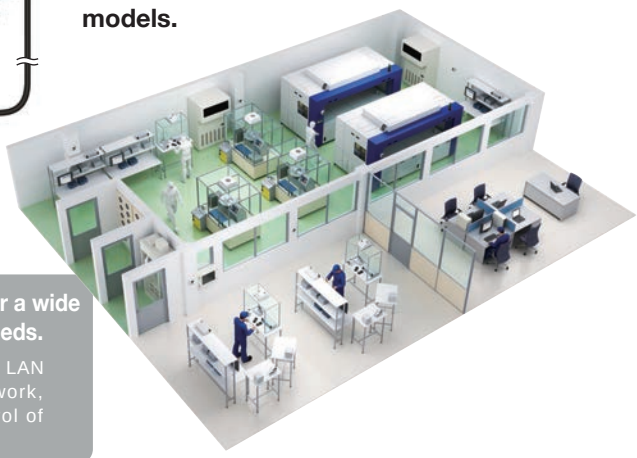
Use to control positive pressure in clean booths!



LAN connection models are ideal for a wide variety of continuous-monitoring needs.

LAN connection models feature a built-in LAN port. Data can be retrieved via a network, allowing for efficient, integrated control of equipment and production environment.

Continuous monitoring of production environments is easy with LAN-connection models.



Clearly visualize your entire production environment including temperature, humidity, airborne particles, dust fallout, and differential pressure!

∗ Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

Note: Do not use this document to operate the Unit.

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