

Data Storage Device

# EM310

## INSTRUCTION MANUAL

Thank you for purchasing HANYOUNG product.  
Please check whether the product is the exactly same as you ordered. Before using the product, please read this instruction manual carefully.



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## Safety Information

Please read safety information carefully before use and then use this product properly. Safety information described in this manual contains important contents related with safety. So please follow the instructions accordingly. Safety information is composed of DANGER, WARNING and CAUTION.

### ! Danger

Do not touch or contact the input/output terminals because it may cause electric shock.

### ! Warning

- Please supply proper power voltage in accordance with the rating to prevent deletion or malfunction of the product.
- Please do not supply the power until wiring is completed to prevent electric shock or malfunction of the product.
- Please do not use the product at any place with flammable or explosive gas because the product is not an explosion-protective structure.
- Do not decompose, modify, revise or repair the product by yourself. It may cause malfunction, electric shock or fire.
- Assemble or disassemble the product while power is off. Otherwise it may cause electric shock, malfunction.
- If you use the product with methods other than specified by the manufacture, body injuries or property damage might be happened.
- Due to the danger of electric shock, please use the product installed onto a panel while an electric current is applied.

### ! Caution

- The contents of instruction manual are subject to change without prior notice.
- Please check the product whether it has any problem during delivery.
- Usable ambient temperature is 0~50°C (In case of a close installation, max is 40°C) and humidity is 35~85% R.H (No condensation)
- Do not use the product at any place with corrosive (especially noxious gas or ammonia) or flammable gas.
- Do not use the product at any place with direct vibration or impact.
- Do not use the product at any place with liquid, oil, medical substances, dust, salt, or iron gas (Use at Pollution Level 1 or 2)
- Do not polish the product with organic solvents such as alcohol or benzene (Please use neutral detergents)
- Do not use the product at any place with excessive induction trouble, static electricity or magnetic noise.
- Do not use the product at any place with possible thermal accumulation by means of direct sunlight or heat radiation.
- Please use the product at the place under 2000 m in altitude.
- When the product gets wet, inspection is essential to avoid the danger of an electric leakage or fire.
- Input wires should be used separate from the power wire and load wire to avoid inductive noise.
- Delicate wiring of power line will be effective against noise.
- Do not connect anything to the non-used terminals.
- After checking the polarity of terminal, please connect wires at the correct position.
- Regular maintenance is recommend to use the product continuously and safely.
- Some parts of the product have limited life span. Life span of others is different in accordance of their usage.
- The warranty period of the product including parts is ONE year in case the product is properly used.

## Specification

Model	EM310
Dimension	72(W) x 36(H) mm (Panel Installation)
Power Supply Voltage	24 V d.c, 500 mA
Communication Method	Asynchronous Serial Communication(RS232C)
Communication Speed	38400 bps
Communication Distance	Max. 5 m
How to set	Operate the front switch
Storage Medium	Memory stick (USB MEMORY STICK)
File System	FAT16, 32
Inner Memory	32 Mbyte (nonvolatile)

## Feature

### ■ EM310

– After connection through RS232, you can store data on the USB memory stick in real time. Also data could be stored on the inner nonvolatile memory in rotation without USB memory.

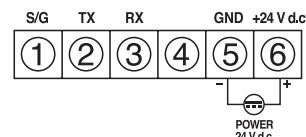
## Name of Front Part & Function

No.	Name	Explanation
1	USB	The place where insert USB Stick
2	POWER	Red LED for displaying power supply
3	ACT	Green LED for displaying data storage(Flickering when recording)
4	DUMP	Copy button (When touching DUMP button, data on inner memory will be copied to USB memory stick.)
5	CLEAR	Inner memory delete button (When touching CLEAR button more than 3 min, data on inner memory will be deleted.)

### ※ Caution

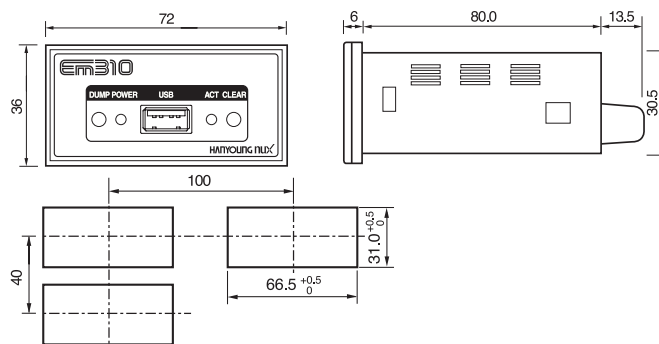
- In case the inner nonvolatile memory is stored fully, the oldest block data will be deleted and new data will be stored. So please store important data on the USB memory stick in advance or stop storing data on the inner nonvolatile memory.
- Please use the dump clear function within the state where saving function is being stopped.

## Connection



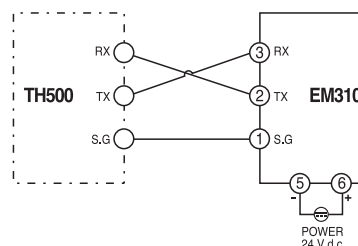
## Dimension & Panel Cutout

[Unit : mm]



### ※ Example of Use

#### ■ Connection between TH500 and EM310



#### ■ Data file storage location of EM310 and data transfer range

- Data recorded in real time is stored on the ROOT directory of the USB memory stick and it will be saved as "dchmmss.DAT"  
Ex) 07103025.DAT → Storage begins at 25 sec 30 min 10 hours 7h day
- Data which was transferred from inner memory to USB memory stick through DUMP function will be stored on EM310 folder and it will be stored as EMxxx.DAT in regular order.  
Ex) EM001.DAT, EM002.DAT
- Data transfer range of DUMP is always from the starting block of inner memory to current data block before stored data exceeds inner memory capacity. In case stored data exceeds inner memory capacity and data is stored back to the starting block, currently storing data will be located at the one after the next block. It means that the following block of deleted block will be the data transfer starting location.

### ※ Caution

- Basically all USB memory sticks are available to use.
- Depend on the using capacity of USB memory stick or in case capacity is more than 2GB, little bit problem might be happened such as storage speed etc.
- If possible, please use USB memory stick after FORMAT.
- Data will not be stored or damaged in case of virus.
- Please insert USB memory stick after connecting power supply.