

MODEL AH-331 Series  
INSTRUCTION MANUAL



Caution

- (1) The application of voltage or current exceeding its maximum allowable value to the input terminals may result in instrument damage.
- (2) The supply of power out of its allowable range may cause fire, electric shock or instrument failure.
- (3) The content of this manual may subject to change without prior notice for product improvement.
- (4) This manual is carefully prepared. However, if any question arises, or any mistake, omission or suggestion is found in the content of this manual, contact your nearest our sales agent.
- (5) After read this manual, please keep it as anytime can see.

1. INTRODUCTION

This AH-331 Series panel meter is high reliable 3-1/2digit display meter based on a custom made LSI and will be very usefull in development of your new equipment.  
A DC voltage of +5V can be used for meter drive. In addition, it has hold function. (option)

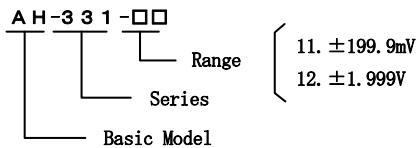
2. SPECIFICATIONS

●DC Voltage Measurement

Model No. Range Code	Measuring Range	Resolution	Input Impedance	Input Protection
AH-331-11	±199.9mV	100 μV	100MΩ	±100V
AH-331-12	±1.999V	1mV	100MΩ	±100V

Accuracy: ±(0.1% of rdg +1digit)(at 23°C±5°C, 35 to 85% RH)

●Model Configuration

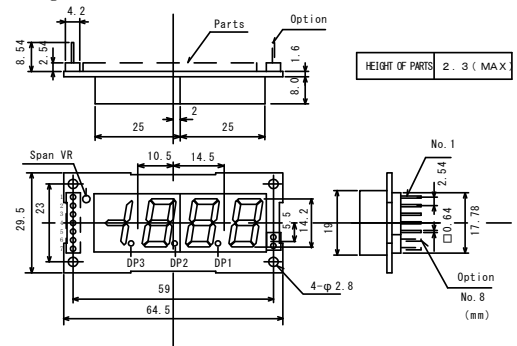


3. COMMON SPECIFICATIONS

- Measurement : DC voltage Measurement
- Operating Method : Dual Slope A/D Conversion
- Input Circuit : Single Ended
- Input Bias Current : 50pA(Typ.)
- Conversion Rate : Approx. 2.5/sec
- Noise Elimination : NMR 40dB(Typ.)
- Display : LED, 14.2mm(RED)
- Maximum Reading : 1999
- Overrange : Input signals exceeding maximum indication range will flicker 1999
- Polarity : Automatically indicated (-) when input signals negative
- External Control : Hold; (option)  
Short circuit between hold terminal and 0V terminal  
Decimal point;  
Can be set at a desired position
- Operating Temperature : 0 to 50°C, 35 to 85% RH
- Power Supply : 5V±5%
- Power Consumption : 80mA (Typ.)
- Dimensions : 65mm(W) × 29.5mm(H) × 18.14mm(D)
- Weight : Approx. 20g
- Accessory : Instruction Manual
- Option : Hold terminal

4. HANDLING

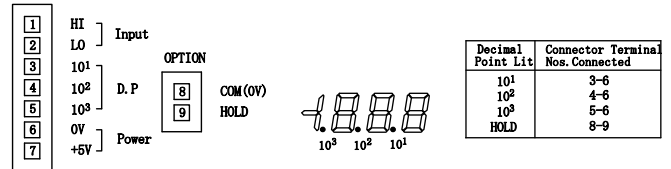
4.1 Mounting



4.2 Connector Connection

- 1) Input Connection  
Connect an Input Signal(DC Voltage) to terminals HI(No.1)and LO(No.2)
- 2) Decimal point setting  
The decimal point can be set any position when the following connector terminals are shorted.
- 3) Power Connection  
Connect power connector terminals No.6(0V) and 7(+5V) Power consumption is Typ. 80mA.
- 4) Hold (option)  
The displayed value can be held by shorting the HOLD (No.9)terminal with the COM(No.8) terminal, or by setting the HOLD terminal to level "0". Measurement also starts by opening these terminals or by setting the HOLD terminal to level "1" at the necessary timing.  
(Level "0" 0 to 1.5V, Level" 1" 3.5 to 5V)

\*Input(LO) and power supply (0V) terminal is internally connected.  
Connector Connection Diagram



4.3 Caution

For fixing the board, please use 2.6mm screw. When you use studs or spacers, please note no touching these parts with pattern.

5. MAINTENANCE AND INSPECTION

5.1 Caution for Maintenance

The storage temperature of this instrument should be within the range -10°C to +60°C with relative humidity not higher than 60%.

5.2 Calibration

- To maintain the initial accuracy of this instrument over an extened period, it is recommended that it be calibrated periodically by a standard reference device with an accuracy of 0.01%.
- Calibrate the meter by taking the following steps.
  - 1)Connect the power supply and after running for at least 20 minutes, start adjusting the instrument as instructed below.
  - 2)Zero adjustment  
Short input terminals HI and LO and check the display shows 000.
  - 3)Span adjustment  
Apply voltage with "+" polarity corresponding to the fullscale (1900) to the input terminals and turn the span adjusment VR to display 1900. Next apply Voltage With "-" polarity to check that the display shows -1900±(0.1% of rdg +1digit)

6. WARRANTY

This meter is warranted for a period of one year from date of delivery. Any defect which occurs in this period and is undoubtedly caused by Watanabe Electric Industry faults will be remedied free of charge.  
This warranty dose not apply to the meter showing abuse or damage which has been altered or repaired by others except as authorized by Watanabe Electric Industry.

7. AFTER-SALE DERVICE

This meter is delivered after being manufactured, tested inspected under strict quality control.  
However, if any problem does occur, contact your nearest Watanabe Electric Industry sales agent or Watanabe Electric Industry directly giving as much information on problem as possible.