INSTRUCTION MANUAL
LCD Panel Meter
MODEL AH-381 Series

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-381 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 new equipment.
A DC voltage of +5V can be used for meter drive. 10.2mm LCD display. Available unit display and have hold function.

2. SPECIFICATIONS

●DC Voltage Measurement

Model No. Range Code	Measring Range	Resolution	Input Impedance	Input Protection
AH-381-11	±199.9mV	100μV	100MΩ <	±5V
AH-381-12	±1.999V	1mV	100MΩ <	±5V

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

●Model Configuration

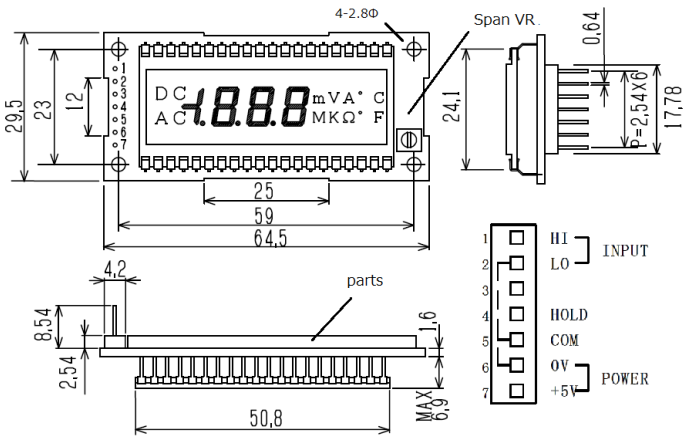
AH-381-□□
Range { 11. ±199.9mV
12. ±1.999V

3. COMMON SPECIFICATIONS

Measurement	:	DC voltage Measurement
Operating Method	:	Dual Slope A/D Conversion
Input Circuit	:	Single Ended
Conversion Rate	:	Approx. 2.5/sec
Noise Elimination	:	NMR 40dB(Typ.)
Display	:	LED, 14.2mm(RED)
Maximum Reading	:	1999
Overrange Indication	:	Display[1]or[-1],and then other digits flashes
Display	:	LCD 10.2mm height
Polarity Indication	:	A "-" is displayed automatically if the input signal becomes negative.
External Control	:	Hold short between HOLD(4) and COM(5)
Operating Temperature	:	0 to 50℃, 35 to 85% RH
Power Supply	:	DC 5V±5%
Power Consumption	:	3mA (Max.)
Dimensions	:	65mm(W)×29.5mm(H)×16.5mm(D)
Weight	:	Approx. 20g
Accessory	:	Instruction Manual

4. HANDLING

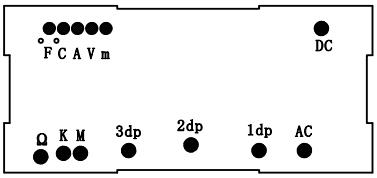
4.1 Dimentions



4.2 Connector Connection
1) Input Signal
Couple input signal across pins HI(+)and LO(-)
2) Hold
Short between Hold and COM
In addition, measurement starts when these terminals are opened (or level"1") at the necessary timing.
Level"1" 3.5 to 5V, Level "0" 0 to 1.5V,
Input current: -0.5mA
3) Power
Connected the power to connector terminals No. 7(+5V)and 6(0V)max. current 3mA.
(The input LO,COM and 0V are connecte inside)

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.

4.4 Decimal,Unit Display
Short solder jumper depend on your request.



5. MAINTENANCE AND INSPECTION

5.1 Caution for Maintenance
The storage temperature of this insterment should be within the range -10℃ to +70℃ 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 adjusument 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.

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