Thanks for the patronage read this instruction before using YF-160A to achieve best performance.

I. .Preface

YF-160A IS K(CA) NiAl / NiCr type thermocouple with high accuracy ,range of 58°F~1999°F(-50°C~1200°C) and alternative measuring by °C or °F.
It is suitable for electric engineering, freezing, air conditioning, food processing fields as well as surface temperature. Metal, steel, electricity, chemical, ship building, synthetic resin process and metal heat process or other temperature control /management fields.

II. Character

- Optional °F and °C display
- Data hold function.
- Semiconductor automatic cold joint compensation
- Automatic low battery (LO BAT) indication.
- Compact size for easy carry.

III. Specification

(1). General Specification:

- Display: 3 1/2 dig. LCD with max. reading of 1999.
- Polarity Indication: Automatic polarity "-" display.
- Low battery indication:"[- +]" appears on LCD while low battery.
- Sampling Rate: 2.5 times/sec.
- Power supply:006P 9V battery x 1pc.
- Battery life: 200hr for continuous use.
- Dimension: 143x74x34mm.Weight: 235g.
- Accessory: Instruction manual.006P 9V Battery x 1pc,Carrying case,TP-03 thermocouple.

(2).Electrical Specifications:

(Temp:23 ±5°C, Humidity:90% RH)

- Storage temp:-10°C~60°C,10°F~140°F.
- Max input voltage for thermocouple: DC60V, AC24V.
- Operating Humidith:0%~90% RH (0°C~35°C).
- Operating temp:0°C~50°C.32°F~122°F.

- Temp measurement (optional temp probe: CA type)

Function	Range		Accuracy
°C	-50°C~1300°C	0.1°C	-50°C~0°C:±(0.5%+ 1°C) 0°C~199.9°C:±(0.5%+ 1°C)
		1°C	-50°C~300°C:±(0.5%+ 1°C) 301°C~1000°C:±(0.3%+ 1°C 1001°C~1300°C:±(0.5%+ 1°C
°F	-58°F~1999°F	0.1°F	-58°F~199.9°F:± (0.3%+ 2°F)
		1°F	-58°F~1999°F:± (0.3%+ 2°F)
The tolerance of temp probe excluded.			

(3). Specification of Temp probes:

TYPE / ITEM	TP-01	TP-02	TP-03	TP-04
Thermo couple material	K (CA) NiCr/Ni Al Thermocouple			
Contact Type	Insulation Type	Ground Type	Exposed Type	Ground Type
Accuracy Classification	JIS C1602 Classification 0.75			
Size	3.2 Ø*150mm	10 Ø(Top)*150 mm	Bead	15 Ø*150mm
Max Temperature	1300°F/ 700°C		392°F/200°C	1300°F/700°C
Min Temperature	-58°F/ -50°C			
Compensating Lead-Wire	(-20 to 90°C) 1m approx		1m approx	(-20 to 90°C) 1m approx
Handhold	Max. Allowable Heat:150°C Size:12Ø x100mm			Max. Allowable Heat:150°C Size:12Ø x90mm

Sensor	K(CA)NiCr/NiAl alloyed thermocouple			
Accuracy degree	JIS C 1602 0.75 ±2.2℃			
Application	Available for liquid or gel	Available for front or plate	Available for complex or any place hard to enter	Available for precise surface
Shape	See Fig.1	See Fig.2	See Fig.3	See Fig.4

TP-03 is a K type thermocouple isolated by TEFLON Max. insulation temp. is 260℃,Accuracy is 2.2℃ or 0.75%.

Fig.1

Fig.2

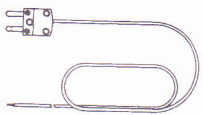


Fig.3

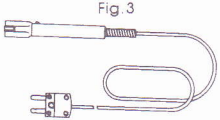
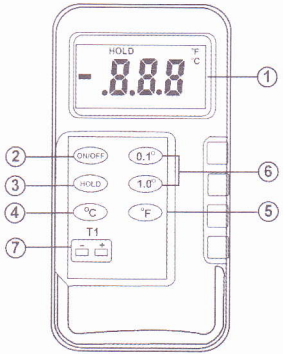


Fig.4

IV. Name of parts and function

- LCD: Display readings, polarity "-", low battery" [-+] " unit (℃, ℉)
- Power switch: ON/OFF switching.
- Data Hold: apply to the situation uneasy to read display, Date hold must be canceled before next measurement.
- ℃ switch: For measurements under ℃ unit.
- ℉ switch: For measurements under ℉ unit.
- Range selection switch: For selecting various ranges (resolutions)
- Temp measuring socket: input conjunction socket for measuring.



V. Inspection before using

- Make sure battery is connected well. Battery needs to be replaced while LCD displays" [-+] ".
- Make sure all function switch are in proper position. (Data hold in off status "HOLD" should not appear on LCD)
- Make sure plug of temp probe is plugged in socket well (terminal "+" to "+" "-" to "-")

VI. Measurement

- Select unit (℃ ℉) by function switch.
- Plug the plug of temp. probe to the temp socket.
- Apply sensor (thermocouple) to the measured place.

Note:

1. To secure accurate reading, please insert probe to the measured article about 15~20 times of O.D. of probe, while measuring internal temp. or liquid.(see Fig. 5).

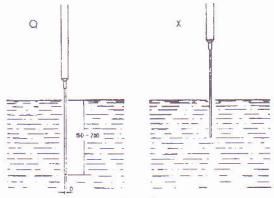


Fig.5

2.While measuring surface temp, touch the surface with tip of temp. Probe closely. (See Fig.6)

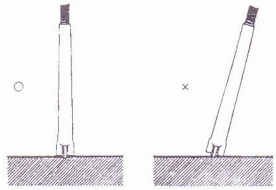


Fig.6

3.Calibration point and sequence:
VR1 for 0°C,VR2 for 0°F,VR3 for 165°F, VR4 for 952°F, VR5 for 511°C.

4.The OFFSET controls are set at the factory to al low for the variations found in standard thermocouples. By adjusting the OFFSET controls, your con optimizes measurement accuracy for a particular thermocouple at a particular temperature.

Adjusting for Accurate Measurements

1. Connect the thermocouple to the input connector and turn the thermometer ON, then press the 0.1° key to select the high display resolution.
2. Place the thermocouple in a known, stable temperature environment at or neat the temperature you with to measure, and allow the readings to stabilize.
3. Slowly adjust the OFFSET control so that the thermometer reading matches the temperature of the known environment. Leave sufficient time between adjustments to allow for measurement lag.
4. The calibration of the thermometer-thermocouple combination is now optimized for measurements near the temperature measured in step 2.

Resetting the OFFSET Control

To return the OFFSET Control to their factory setting without having to recalibrate the thermometer, perform the following procedure:

1. Connect a thermocouple that is in good working order to the input that is to be adjusted.
2. Place the thermocouple in an ice- water bath and allow the readings to stabilize.
3. Slowly adjust the OFFSET control until the thermometer reads 0°C (32) °F.

VII. Maintenance

4. Take off battery in long time storage.
5. Do not operate the meter under the environment with explosive gas (material), combustible gas (material) steam or filled with dust.
6. YF-160A is suitable for K (CA) type thermocouple only.
7. Avoid using in environments, which change fast. Do not store in high temp high humidity and strong violation.
8. Thermocouple may be oxidized reduced eroded polluted, steamed, diffused or affected by other metallic factors.
9. Move dust, oil, and coal to keep temp. probe clear

and avoid tolerance. Replace the probe while being eroded

10. Replace battery (as illustrated below)
11. Insert a "-" screwdriver to the hole of battery cover.
12. Insert the screwdriver deeper by pressing it down.

1.) Push the screwdriver forward to take off battery cover.