

Cautions: Two outside temperature sensors are required in the observation of the degree of overheating and the degree of supercooling.

### **Maintenance and Service of Instrument:**

When the instrument does not use for a long time, it should take out the batteries to prevent the meter from damage.

When the instrument does not use, the connection thread should be capped to prevent the thread from damage.

The instrument is not suitable to any corrosive liquid, especially, ammonia and any ammoniated refrigerant.

Never open or close the valve with sudden force to prevent the sealing element from damage.

The hose is a wearing part. Check the hose for its aging condition and replace it promptly.

It is recommended to check the sealing condition of the instrument periodically.

Always store the instrument in a dry place to prevent it from moisture.

## **Digital Refrigerant Meter**

### **Operating Instructions**



Please read the Operating Instructions carefully before use.



## Safety in Use

- 1: Only the qualified technicians are allowed to use and operate this instrument.
- 2: Always wear protective clothing in use of this instrument!
- 3: Special care is necessary in operation because it is harmful if people contact the refrigerant directly!
- 4: A handful of refrigerant might be remained in the instrument and hose. Be careful in operation and try to recover the residual refrigerant as much as possible!
- 5: The connection between the instrument and the hose must be secured to prevent any leakage of refrigerant in case of disconnection of the joint!
- 6: Never discard wasted battery casually to prevent the environment from pollution!

## Replacement is required in following condition.

The replacement of the battery is required if the battery voltage is too low as the insufficient battery voltage will reduce the accuracy of measurement.

## Introduction:

It is a digital refrigerant meter which consists of high precision pressure sensor, digital temperature sensor and large scale integrated (LSI) circuit. As many as 36 refrigerant temperature parameters could be measured by this meter. It is mainly used for the maintenance and service of the refrigeration system for its obvious advantages. The

measurement of the pressure, condensation temperature and evaporation temperature of the refrigeration system are clear at a glance. The measurement of the pressure and temperature are accurate.

## The features are as follows:

- 1、Large screen display of pressure and temperature. Observation could be made in multiple angles and the data are clear at a glance.
- 2、The instrument housing is durable as it is protected by rubber.
- 3、As many as 36 refrigerant parameters are available for a convenient use.
- 4、Micro power consumption design for a longer battery service life.
- 5、Various measurements such as the pressure of high and low ends, evaporation temperature, condensation temperature and the temperature of high and low pressure piping.
- 6、Calculation of the degree of overheating and the degree of supercooling.
- 7、Inspection for leakage of piping.
- 8、Examination of vacuum.

## Technical Parameters:

PRESSURE	Pressure Measurement Channel	2
	Pressure Measurement Range	-0.1~4.2MPa (Gauge)
	Overload Pressure	125%
	Accuracy of Pressure	1%
	Unit of Pressure	psi、bar、MPa、kPa、inHg
TEMPERATURE	Temperature Measurement Channel	2
	Temperature Measurement Range	-55~125℃
	Accuracy of Temperature	±0.5℃(-10~85℃)
	Unit of Temperature	℃、°F
VALVE BODY	Material of Valve Body	铝
	Valve Body Connection	¼"M-Flare
ELECTRICAL PROPERTIES	Power Supply Voltage6V	6V (four AA batteries)
	Minimum Working Voltage	3.6V
	Service Life of Battery	Continuous working 120 h (backlight is excluded)
REFRIGERANT	Selectable Refrigerants	R12 R13 R14 R22 R424A R23 R114 R123 R134a R502 R290 R401A R401B R402A R427A R402B R404A R406A R407A R503 R407C R408A R409A R410A R434A R414A R416A R417A R420A R507 R421A R422A R422B R422D R437A R718

## Push-Buttons

Set

Setting the unit of pressure and the unit of temperature.

R  
Start 5100

Selection of refrigerant and inspection for leakage of piping.

Mode

Setting operating mode of instrument.

P=0

Clear off pressure drift value (Push down about 2 seconds)

⏻/⏻

Turn on or turn off the backlight. Turn on or turn off the instrument. (Push down about 2 seconds to turn on and turn off the instrument)

PgUp

PgDn

Page up and page down. Add 1 or subtract 1 in the setting of atmospheric pressure.

## Description of Symbols:

Unit of Temperature: ℃、°F

Unit of Pressure: MPa、kPa、bar、psi、inHg

Pabs、psia: Absolute Pressure

Prel、psig: Relative Pressure

Ev、to: Evaporation Temperature

Co、tc: Condensation Temperature

t<sub>cu</sub>、t<sub>oh</sub>、T2、T1: Measured Temperature at High and Low Pressure Ends

Δt<sub>oh</sub>、SH: Degree of Overheating

Δt<sub>cu</sub>、SC: Degree of Supercooling

hh: mm: Time of Leakage Detection

ΔP: Mode of Leakage and Leakage Pressure





vac: Mode of Vacuum



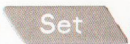


## Preparation Before Use

1、 Put four AA batteries into the battery pack with correct positive pole and negative pole. Turn on the instrument and check the battery voltage. If the battery voltage is too low to turn on the instrument, replace the batteries immediately! The instrument will indicate the symbol of shortage of power when the battery voltage is too low.

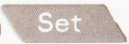


### 2、 Selection of Refrigerant

In the mode of cooling, push down the button  and the type of refrigerant starts to flicker. Then push down the button  or the button  to select the desired type of refrigerant. Push down the button , the flicker is ceased and the selection of refrigerant is completed.

### 3、 Setting Unit of Pressure and Unit of Temperature

Push down the button  and the button  or the button  to set the desired unit of pressure and the desired unit of temperature.

### 4、 Setting Local Atmospheric Pressure

Continue to push down the button  and the button  or the button  to set the desired local atmospheric pressure. You could use Absolute Pressure or Relative Pressure.

## 5、 Selection of Mode

Push down the button to set the operating mode of the instrument.

The available operating modes are: Cooling, Heating, Leakage Detection and Vacuum.

## Prompt:

The instrument indicates the symbol of shortage of power when the battery voltage is too low.

The prompt — — — indicates the over-range of pressure

The buzzer prompt tone is accompanied when any button is pushed down.

## Operating:

After the desired operating condition is set well and the instrument is connected with the related piping and equipment, the digital refrigerant meter could be put into operation. Connect the instrument with the refrigeration equipment. Turn on the instrument and the meter will enter the operator's last completed operating interface automatically. Push down the desired buttons and observe the refrigeration equipment pressure, the evaporation temperature, the condensation temperature, the measured temperature of the high pressure end, the measured temperature of the low pressure end, the degree of overheating and the degree of supercooling. Also, it will inspect the equipment for any leakage.