



MICRO THERMO TECHNOLOGIES™

023-0399 MT-IRFD

Specifications and Quick Install Guide

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SPECIFICATIONS

INPUT POWER:

- +24VDC nominal, range: 18 to 30VDC 1.0A DC Total Max.
- ~24VAC nominal, range: 15 to 24VAC 50/60HZ 1.0A AC Total Max.
- (IMPORTANT!: AC must not be grounded and must not come from MT500/MT700 power)

FUSE:

- F1 on Display Board: Polyswitch 1.6A
- F2 on Display Board: Polyswitch 50mA
- Polyswitch device resets after the fault is cleared and power to the circuit is removed

SENSOR:

- INFRARED FREON
- Refrigerant type configurable between R11, R22, R114, R123, R134A, R404A, R407C, R408A, R409A, R410A, R422A, R438A, R507A

OUTPUT SIGNAL:

- IR-FREON-D provides one channel 4-20 milliamp analog output or 2-10VDC analog output. The maximum output impedance is 600 ohms for 4-20mA output. The maximum current is 10 mA for 2-10VDC output.
- 3X SPDT RELAYS: 1.0A MAX. @30VDC (RESISTIVE LOAD) 0.3A MAX. @125VAC (RESISTIVE LOAD)

ENCLOSURE:

- IP 66 & NEMA 4, 4X, 12 & 13
- COVER SCREWS SHOULD BE TORQUED TO 2.5 lbs-in (30 cN-m)

OPERATING TEMPERATURE:

- 45 C TO 65 C

AMBIENT HUMIDITY:

- 5% TO 95% RH (Non-condensing)

STORAGE TEMPERATURE:

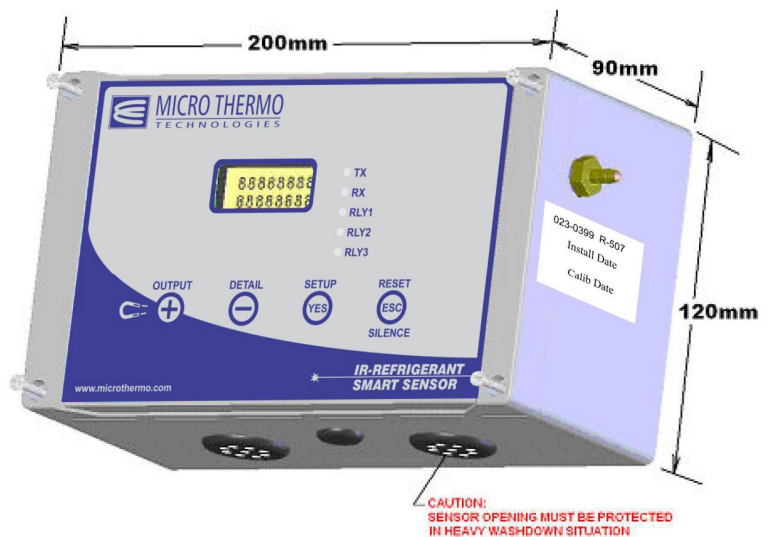
- 45 C TO 70 C

SIZE:

- W:200mm X H:120mm X D:90mm

WEIGHT:

- LESS THAN 1.5lbs (0.680 kg)



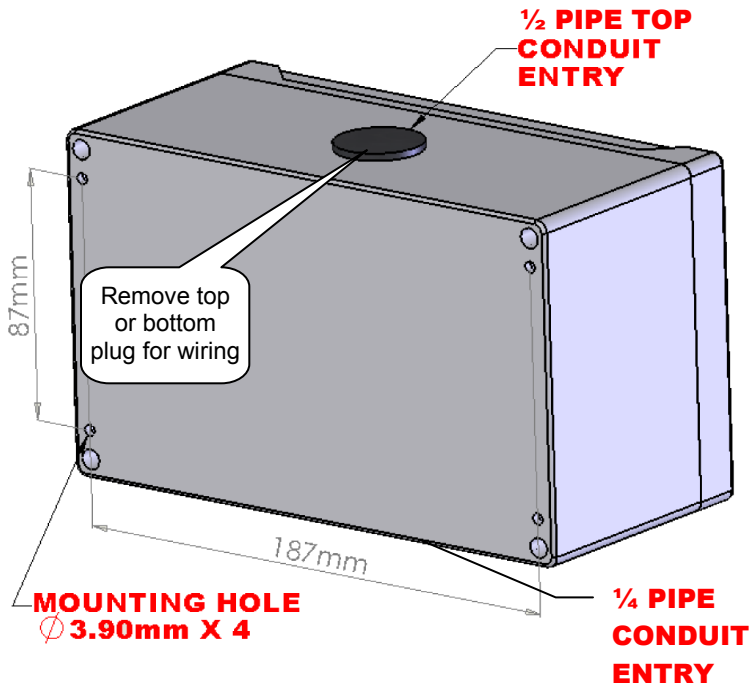
Installation instructions

Sensor Location:

Several factors should be considered when selecting locations to install sensors. The following general suggestions should be considered to assure the detection of the target gas. Select the most suitable location for each sensor.

1. Air Currents: If there are fans, winds, or others sources of air movement, gases may tend to rise to collect in certain areas of a facility. The local air currents should be assessed to aid in selecting the sensor location. In outdoor situations considerations such as prevailing winds should be accounted for. Air convection can often be more important in determining gas concentrated areas than factors of Vapor Density.
2. Vapor Density: R11, R22, R123 and R134a are heavier than air. Detecting location should be 9 - 18 inch (0.23m to 0.46m) above the floor.
3. Gas Emission Sources: As a rule, at least one sensor should be located in close proximity to each point where a leak is likely to occur. This is particularly important when a liquid having a low volatility is monitored.
4. Environmental Factors: Designed to rugged outdoor use. Consider the following in selecting locations. Install sensors where they will be protected from wind, dust, snow, water, vibration and shock.

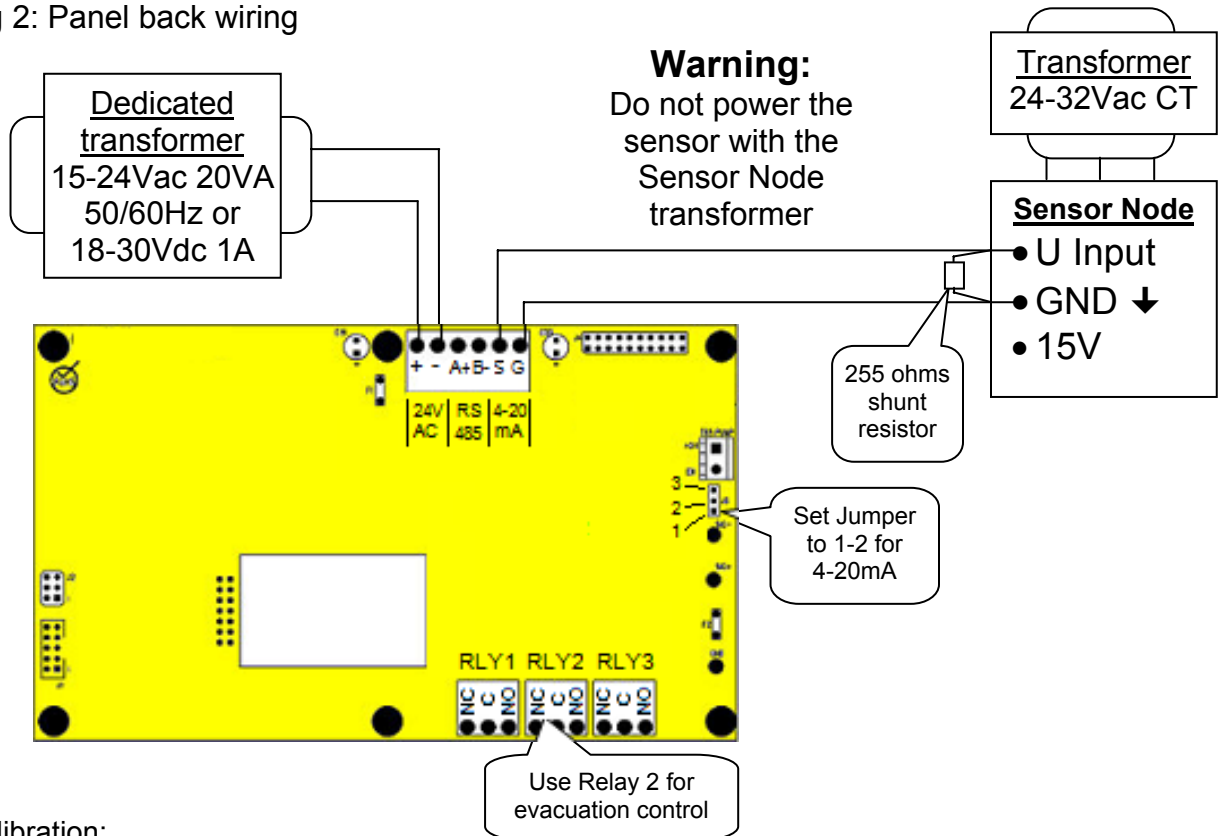
Installation instructions
 Fig 1: Holes dimension



Mounting brackets provided for wall installation



Fig 2: Panel back wiring



Calibration:

Use R507 calibration kit # 280-0004 if needed. Calibrate every 6 month (write Calibration Date on the label on the side of the sensor). See maintenance manual for more detail.

Unit configuration

To enter configuration mode put the magnet on (YES) for 3 seconds. Password **0000** then (YES).

You should see 1_SYSTEM SETTING. To change Gas type put magnet on (YES) (-) (-) (-) (-) (YES)

Chose refrigerant type listed in the Sensor specification section.

If you select another gas and do (YES) it may not be accepted (see manual for more configuration detail).

These values are factory settings

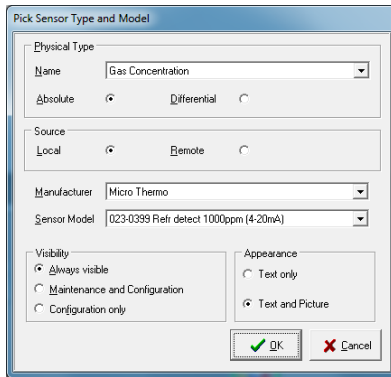
Buzzer database MTT values

Buzzer	Enabled	ACT-ON	ACT-OFF	ON-DLY	OFFDLY	FAULT	WINDOW	SOUND
1	Yes	100	90	0	0	ON	OFF	Beebeep
2	Yes	400	150	0	0	ON	OFF	Beeeeeep
3	No	750	720	0	0	ON	OFF	Continuous

Relays database MTT values

Relay	Enabled	NORMAL	LATCHING	ACT-ON	ACT-OFF	ON-DLY	OFFDLY	FAULT	WINDOW
1	Yes	De-energ	None	100	90	30	30	ON	OFF
2	Yes	De-energ	None	400	150	30	30	ON	OFF
3	Yes	De-energ	None	750	720	30	30	ON	OFF

Fig 3: MT Alliance installation



Pick (drag) and place a sensor on the selected view

Name: Gas Concentration

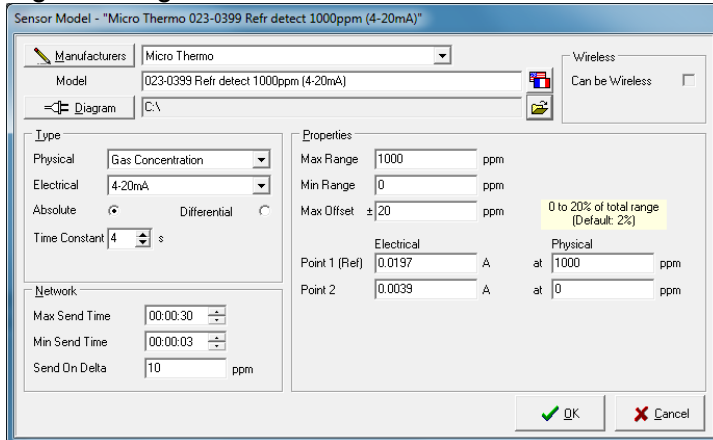
Manufacturer: Micro Thermo

Sensor Model: 023-0399

If 023-0399 model does not exist you can add this model in the **Sensor model** window in the

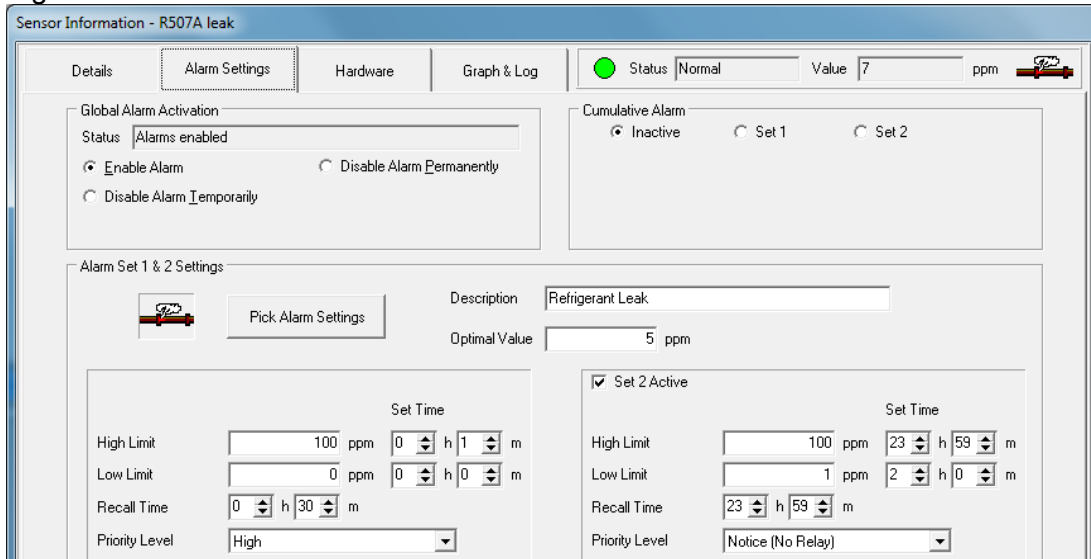
Configure menu (see Fig 4)

Fig 4: Configure Sensor Model



Click on the sensor icon then click on the **Alarm Settings** tab and make these settings.
 Connect relay of set 1 to high priority Alarm Company
 An alarm on set 2 means a repair is needed. Leave **Priority Level** to **Notice** and **Relay** to **None** to avoid nuisance alarms.

Fig 5



On the **Details** page add this note:
 "Readings between 1 and 10 ppm shows the sensor is powered".

Fig 6

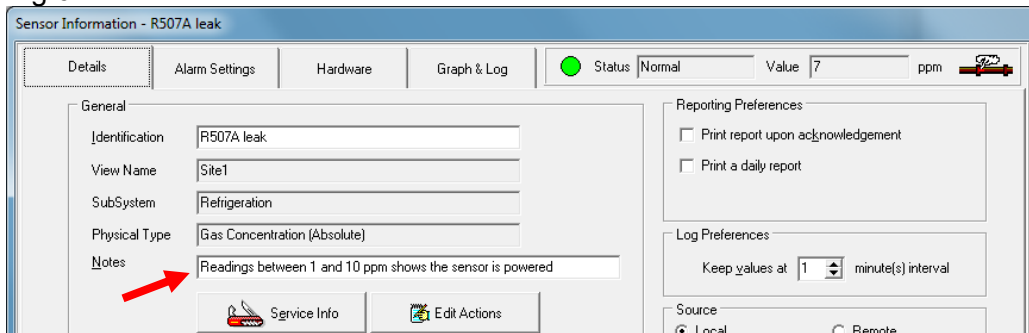


Fig 7: Normal reading (Non zero reading acts as a sensor heartbeat)

