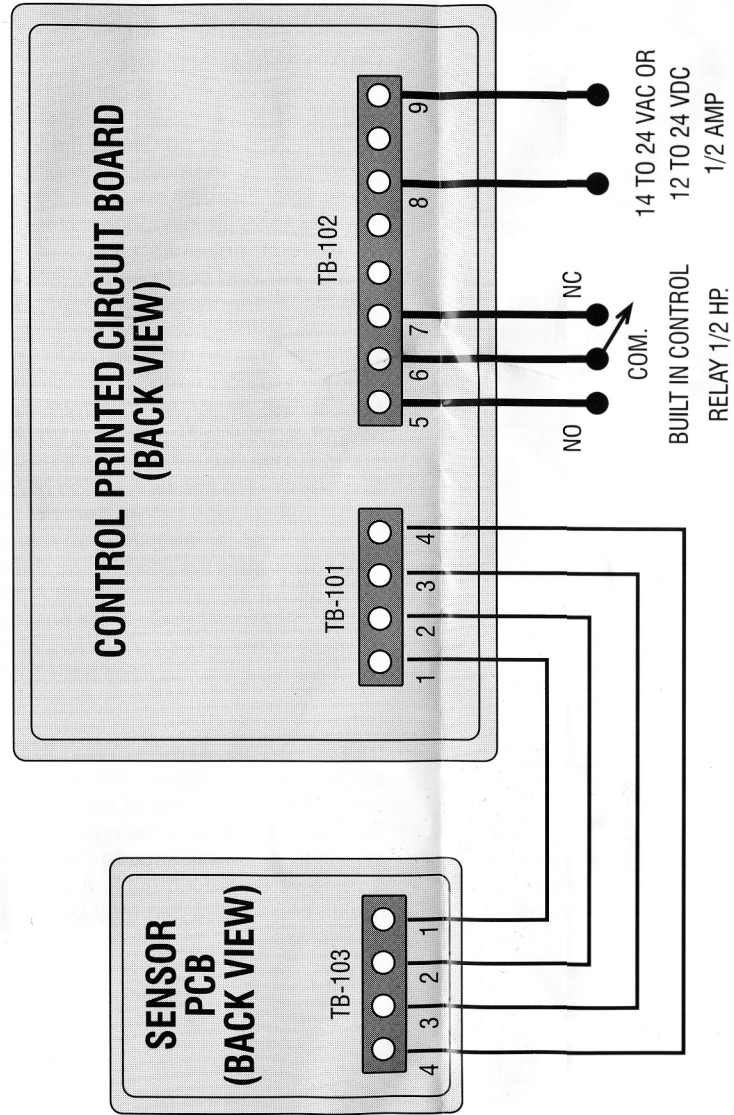


# WIRING DIAGRAM



## WARRANTY AND REPAIR POLICY

CPS® guarantees that all instruments are free of manufacturing and material defects. If an instrument should fail during the guarantee period it will be repaired or replaced (at our option) at no charge. This guarantee does not apply to instruments that have been altered, misused, or returned solely in need of field service maintenance. All repaired instruments will carry an independent 90-day warranty. This repair policy does not include instruments that are determined to be beyond economical repair. An instrument being returned to CPS® for repair must be accompanied by an original bill of sale and customer contact information.



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# 70-403 Rev.C

# cps® RM SERIES REFRIGERANT LEAK MONITOR



## INSTALLATION, OPERATING INSTRUCTIONS & WIRING DIAGRAM

## SPECIFICATIONS

### ACCURACY:

Over the temperature range of 32° F at a relative humidity between 40% and 95%, the accuracy of the alarm set point as indicated by the selector dip switches, is  $\pm 3\%$  of the setting or  $\pm 25\text{ppm}$ , whichever is greater. At relative humidity's below 40%, the accuracy is altered by 1ppm for every % RH below 40%, that is, if the alarm set point is 100ppm as indicated by the dip switches, and the ambient RH is 20%, the corrected alarm set point is 120ppm ( $40\% - 20\% = 20\text{ppm}$ ). The accuracy of this set point is still  $\pm 3\%$  of this setting or  $\pm 25\text{ppm}$ , whichever is greater.

### ENVIRONMENTAL:

The unit will operate according to specification between 32° F and 150° F at relative humidity ranging from 10% to 95%, non-condensing. Please observe the accuracy provisions of the above paragraph when operating below 40% RH.

### CONTROL UNIT POWER REQUIREMENTS:

14 to 24 VAC or 12 to 24 VDC, at 1/2 Amp.

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## OPERATION

### SENSOR INSTALLATION:

The CFC remote zone sensor is a rugged solid state device. Some precautions must be observed when installing the element. Since refrigerants are 3 to 5 times denser than air, the sensor should be located no higher than 12 inches from floor level. The sensor should be installed close to the area being monitored, but caution should be observed not to install the sensor in the air stream of the ventilation system. The accuracy of the internally heated sensor element in the RM is strongly affected by air currents and should always be mounted in such a manner as to protect it from air stream. The sensor enclosure can be mounted in a variety of ways but the meshed portion of the sensor should face down to protect it from dust and water spray. To mount the enclosure, double sided adhesive tape can be used or the box can be screwed to a wall or stud using the hardware provided. When wiring the sensor, cut a small cross in the blind rubber grommet covering the access opening in the sensor box. Pass the wiring through this cut in the grommet to ensure an adequate environmental seal.

### CONTROL BOX INSTALLATION:

The monitor control box should be installed in a place easily accessible by service personnel and protected from excessive humidity and dust. Do not allow water to splash the control box. Power connections are made to the terminal block inside the control box in the same manner as indicated above for the sensor. The dry contacts of the control relay are accessible at the same terminal block. Please refer to the wiring instructions.

### WIRING:

The RM requires a power source of either 14 to 24 VAC or 12 to 24 VDC at 0.5 Amp. Connection to the power source and to the sensor can be made with solid or stranded copper wire using 22 AWG (0.64mm dia.) wire for runs up to 100 feet (30.5 meters) and 18 AWG (1.02mm dia.) for runs up to 200 feet (61

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## OPERATION

meters). Standard thermostat wire can be used for most jobs. Shielded cable is normally not needed unless the sensor cable is run around rotating machinery or fluorescent lamps. Remove the four screws that fasten the lid of the sensor box to gain access to the sensor PCB. Locate terminal block TB-101 and TB-102 on the Control PCB and terminal block TB-103 in the sensor PCB.

### TEST THE SENSOR ONCE POWER IS APPLIED:

The voltage between 1 and 2 on TB-101 should read very close to 2.5V and the voltage between 3 and 4 on TB-101 should read very close to 5V.

#### WIRING OF THE SENSOR:

Control PCN TB-101		Sensor PCB TB-103
1	Connected to	1
2	Connected to	2
3	Connected to	3
4	Connected to	4

#### WIRING OF AC POWER:

Control PCB TB-102		AC Power Source Terminal
8	Connected to	Terminal
9	Connected to	Terminal

#### WIRING OF DC POWER:

Control PCB TB-102		DC Power Source Negative Terminal Positive Terminal
8	Connected to	Negative Terminal
9	Connected to	Positive Terminal

#### WIRING OF CONTROL RELAY:

Control PCB TB-102		Control Relay Relay Normally Open Common Normally Closed
5	Connected to	Normally Open
6	Connected to	Common
7	Connected to	Normally Closed

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## OPERATION

### USING THE MONITOR:

After the sensor and the control boxes are mounted and wired, apply power to the control circuitry. Note that there is no ON/OFF switch and, consequently, the power is applied by energizing the breaker or other disconnect feeding the control box. If a separate disconnect is used for the control relay circuit, power should not be applied at this time to the load controlled by this relay since it will activate during the following turn on sequence. As soon as power is applied, the SENSOR FAILURE light will come on and stay on for a period of about 30 seconds after which time it will turn off. This will be followed by the ALARM light, the control relay and the audible alarm coming on. At this point, wait about a minute and depress the RESET button to turn off all of the above. A period of about 15 minutes should be allowed before the final trip point setting is made to allow the sensor to stabilize.

**On the initial installation or if the sensor has been off for an extended time:** A 30 minute period should be allowed before the final trip point setting is made to allow the sensor to stabilize. After the 30 minute period, depress the RESET button.

### SETTING THE ALARM TRIP POINT:

Locate the 10 position "dip" switch S-102 near the upper left hand corner of the control PCB. Push all the switches towards the right (OFF). Push only the switch that corresponds to the desired trip point level towards the left (ON). A small screwdriver, pencil or ballpoint pen may be used for this operation.

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