

Honeywell

THE C773 IS A PLATINUM FILM SENSOR WHICH HAS A POSITIVE TEMPERATURE COEFFICIENT. ON A RISE IN AMBIENT TEMPERATURE THE RESISTANCE OF THE SENSOR INCREASES.

- C773A contains a single sensor for storage tank or solar collector mounting.
- C773B contains a double sensor for storage tank or solar collector applications.
- C773C contains a single sensor with a flattened end and mounting hole for easy solar collector installation.
- C773D contains a double sensor with a flattened end and mounting hole for easy solar collector installation.
- Available with a medium or high ambient temperature range (specify when ordering).
- Immersion well and remote sensor wiring compartment available separately.

R.L.
10-77 (.03)

ELECTRONIC TEMPERATURE SENSORS

C773A-D

Form Number

60-2330 1

SPECIFICATIONS

IMPORTANT

THE SPECIFICATIONS GIVEN IN THIS PUBLICATION DO NOT INCLUDE NORMAL MANUFACTURING TOLERANCES. THEREFORE, THIS UNIT MAY NOT MATCH THE LISTED SPECIFICATIONS EXACTLY. ALSO, THIS PRODUCT IS TESTED AND CALIBRATED UNDER CLOSELY CONTROLLED CONDITIONS, AND SOME MINOR DIFFERENCES IN PERFORMANCE CAN BE EXPECTED IF THOSE CONDITIONS ARE CHANGED.

TRADELINE MODELS AVAILABLE:

C773A Temperature Sensor. Single sensor mounts in storage tank using immersion well or on collector with mounting clip.

C773B Temperature Sensor. Double sensor mounts in storage tank using immersion well or on collector with mounting clip.

C773C Temperature Sensor. Single sensor has flattened end with mounting hole for collector installation.

C773D Temperature Sensor. Double sensor has flattened end with mounting hole for collector installation.

LEADWIRE:

C773A,C—two black 18 inch [457.2 mm], No. 22, NEC Class 1.

C773B,D—two black, two white, 18 inch [457.2 mm], No. 22 stranded, NEC Class 1.

TEMPERATURE RANGE: Minus 50 to plus 450 F [minus 46 to plus 232 C].

DIMENSIONS: See Figs. 2 and 3.

ACCESSORIES:

Immersion Well—for mounting sensor in storage tank. See Table 1 and Fig. 1.

Remote Sensor Wiring Compartment—for wiring storage tank sensor, Part No. 111892F.

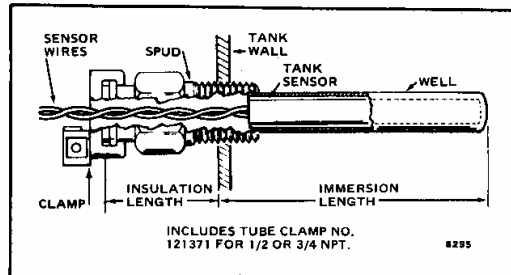


FIG. 1—TANK SENSOR INSERTED IN IMMERSION WELL.

TABLE 1—IMMERSION WELL TABLE

IMMERSION LENGTH		INSULATION LENGTH		SELECT WELL MATERIAL AND ORDER NUMBER BELOW			
in.	mm	in.	mm	COPPER		STAINLESS STEEL	
				1/2 NPT	3/4 NPT	1/2 NPT	3/4 NPT
3-3/8	85.7	1-1/2	38.1	121731A	121371B	121371E	121371F
3-3/8	85.7	1-1/2	38.1	—	121371K ^a	—	—
3-3/8	85.7	3	76.2	121371L	121371M	—	—
3-3/8	85.7	4	101.6	122554A ^a	122555A ^a	—	—
5-3/8	136.5	4	101.6	122554B ^a	122555B ^a	—	—
6	152.4	1-1/4	31.8	112620BB	—	—	—

^aHas plastic sleeve on insertion well.

continued on page 3

ORDERING INFORMATION

WHEN PURCHASING REPLACEMENT AND MODERNIZATION PRODUCTS FROM YOUR TRADELINE WHOLESALE OR YOUR DISTRIBUTOR, REFER TO THE TRADELINE CATALOG OR PRICE SHEETS FOR COMPLETE ORDERING NUMBER, OR SPECIFY—

1. Order number.
2. Accessories (immersion well remote sensor wiring compartment).

IF YOU HAVE ADDITIONAL QUESTIONS, NEED FURTHER INFORMATION, OR WOULD LIKE TO COMMENT ON OUR PRODUCTS OR SERVICES, PLEASE WRITE OR PHONE:

1. YOUR LOCAL HONEYWELL RESIDENTIAL DIVISION SALES OFFICE (CHECK WHITE PAGES OF PHONE DIRECTORY).

2. RESIDENTIAL DIVISION CUSTOMER SERVICE
 HONEYWELL INC., 1885 DOUGLAS DRIVE NORTH
 MINNEAPOLIS, MINNESOTA 55422 (612) 542-7500

(IN CANADA—HONEYWELL CONTROLS LIMITED, 740 ELLESMERE ROAD, SCARBOROUGH, ONTARIO M1P 2V9)
 INTERNATIONAL SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD.

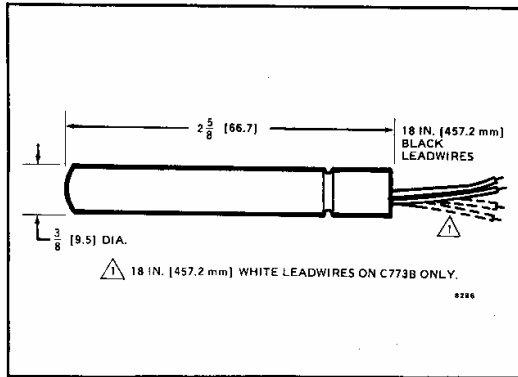


FIG. 2—C773A,B DIMENSIONS IN INCHES [MILMETRES IN BRACKETS].

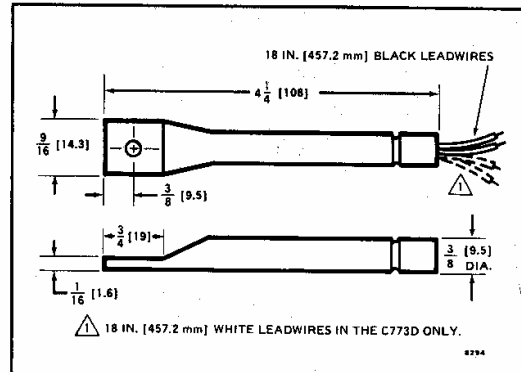


FIG. 3—C773C,D DIMENSIONS IN INCHES [MILMETRES IN BRACKETS].

INSTALLATION

CAUTION

1. Installer must be trained and experienced.
2. Disconnect power supply before connecting wiring to prevent electrical shock or equipment damage.
3. Always conduct a thorough checkout as outlined in the instructions with the primary control when installation is complete.

LOCATION

Follow the system manufacturer's recommendations for the best location of the sensor. Each sensor should be located so that it experiences the most useful temperature for proper system operation.

MOUNTING SENSOR

Mount C773A,B as a storage tank sensor using an immersion well as follows:

1. Drain system fluid to a point below the sensor fitting.
2. Screw the well into the threaded fitting. Use an approved pipe dope or Teflon tape to seal the threads.
3. Refill system and check for leaks.
4. Insert the sensor probe into the immersion well until it bottoms. See Fig. 1.
5. Attach retainer clamp over groove on well spud. Fit wires in clamp groove and lightly tighten screw. Do not overtighten.

Install C773A,B as a collector sensor using the mounting clip provided and No. 8 screw. Mount C773C,D as a collector sensor using the flattened end with mounting hole and a No. 8 or 10 screw.

Temperatures in excess of 450 F [232 C] will damage the sensor. Shield the sensor against possible overtemperature conditions prior to system operation. Do not mount collector sensor to collector fluid channels.

WIRING

WARNING

1. Shield the sensor against possible overtemperature conditions prior to system operation.
2. On unglazed collectors mount the sensor with leadwires down to keep sensor from accumulating water.
3. Wire additions to the leadwires must be capable of withstanding a temperature of 450 F [232 C].

All wiring must comply with applicable codes and ordinances. The C773 can be used for numerous applications in solar energy systems. Fig. 4 shows the sensors wired to an R7412 Differential Temperature Controller.

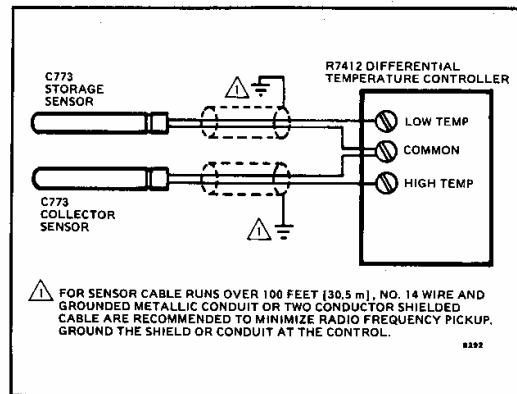


FIG. 4—WIRING C773 TO R7412 DIFFERENTIAL TEMPERATURE CONTROLLER.

For the C773B and C773D Temperature Sensors, the two black leadwires belong to one sensor and the two white leadwires belong to the other sensor.

If the amount of sensor cable used exceeds 100 feet [30.5 m], use No. 14 wire and grounded metallic conduit or two conductor shielded cable. Connect the shield or conduit to ground at the controller. Grounded metallic

conduit or shielded cable (such as Belden 8762 or equivalent) minimizes possible radio frequency signal interference.

Remote Sensor Wiring Compartment (Part No. 111892F) is available for tank sensor wiring (see Accessories).

OPERATION AND CHECKOUT

OPERATION

The C773 is a platinum film sensor packaged in a copper capsule. The sensor has a positive temperature coefficient; on a rise in ambient temperature the resistance of the sensor increases (Fig. 5).

CHECKOUT

Make certain that each sensor is securely mounted. When observing the system in operation, check that the sensors are correctly located. Each sensor should be located so that it experiences the most useful temperature for proper system operation.

To determine the temperature which the sensor is experiencing, use a high resistance ohmmeter (20,000 ohm/volt or greater) to measure the resistance of the sensor. This measurement may be converted to a temperature reading using Fig. 5. Check a variety of temperature locations to insure that the sensor reading is providing the most accurate temperature for proper system operation.

If the sensors are not providing correct temperature readings because of location, change the location and mount properly.

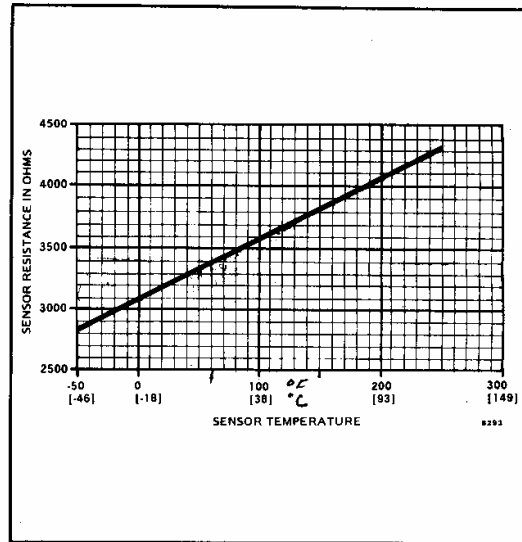


FIG. 5—CONVERTING SENSOR RESISTANCE INTO DEGREES F [C].

$$4.07K = 200F$$

$$3.67K = 117F$$