HIGH/LOW TEMPERATURE ALARM & MONITOR

Item #107722

INSTRUCTION MANUAL

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DESCRIPTION

The IMS Hi-Lo Alarm & Monitor is a temperature monitor
that displays the temperature from any type-J
thermocouple or any device with a type-J thermocouple
output.

If the temperature goes below the programmable low
temperature setpoint or above the programmable high
temperature setpoint, the following occurs:

- An alarm goes into effect.
- A loud horn sounds.
- An alarm-condition light flashes.
- The low alarm or high alarm indicator light goes
  on, to indicate which setpoint has been passed.

PREPARATION FOR USE

Refer to Figure 1 on page 9 for parts identification.

1. Early models have holes cut in bottom panel.
    Install plugs in those holes. Plugs are shipped in
    plastic bag with monitor.

2. To hang monitor temporarily on vertical surface:

    Hang monitor on screw with a 1/4" head and 1/8"
    shank. Use key-shaped slot on back of monitor.

3. To mount monitor permanently:

    a. Remove two screws from front panel. Swing
        panel open as shown in Figure 2 on page 10.

    b. Use provided screws run through holes in back
        panel to secure unit to any flat surface.

    c. Close front panel. Reinstall screws.

4. To use monitor as a free-standing unit:

    Install stand on bottom. To do this, remove 2
    screws from bottom of monitor. Put stand in place
    and install screws through holes in stand.

PREPARATION FOR USE (continued)

5.   Install miniature, type-J thermocouple plug onto leads from an iron/constantan, type-J thermocouple. White is positive and red is negative.

-   Any leads or extensions must be iron/constantan, or reading will not be accurate. Always connect iron to iron (white to white) and constantan to constantan (red to red). Use 26 gauge or larger wire (the lower the gauge, the larger the wire).

-   Insulate wires from each other at all connections. This is because iron and constantan wires act as a thermocouple junction any time they join. The monitor always reads the signal from the junction closest to the monitor.

-   Plugs, lead wire and various thermocouples are available from IMS. See Optional Equipment list on page 8 for details.

4.   Insert thermocouple plug into receptacle on side of monitor.

OPERATION AND ADJUSTMENT

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WARNING

This Alarm & Monitor uses electrical power that could
cause electrocution or shock. Use extreme caution when
adjusting, calibrating or servicing this device with
the front panel off. Those procedures must be done only
by qualified electrical technicians.

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1.   Power Up.

Plug monitor into 3-prong, grounded, 115V, 60 hz,
single-phase receptacle.

a.   Digital Display will show temperature from
thermocouple.

b.   High or low alarm may go off when monitor is
first powered up. Press alarm silencing
button to stop alarm horn while you adjust
monitor.

c.   Allow three minutes for monitor to warm up
before taking any critical measurements.

2.   Set Alarm Setpoints.

NOTE

If you do not need to use the low alarm, set it well
below the lowest temperature that your process will
reach. If you do not need to use the high alarm, set it
well above the highest temperature that your process
will reach.

a.   While pressing low alarm setpoint button,
turn low alarm setpoint adjusting screw until
setpoint you want is on digital display.

OPERATION AND ADJUSTMENT (continued)

b.   While pressing high alarm setpoint button,
     turn high alarm setpoint adjusting screw
     until setpoint you want is on digital
     display.

c.   If you cannot get setpoint where you need it
     by using adjusting screws, make coarse
     adjustment as follows:

     (1) Unplug monitor.

     (2) Remove two screws on front of panel, and
          swing panel off to side.

     (3) Slightly turn coarse adjusting screw of
          the alarm that needs to be brought into
          range. Turning clockwise will raise the
          range. Counterclockwise will lower it.

     (4) Close front panel. Plug monitor in. Try
          again to set alarm setpoint.

     (5) Repeat steps 1 through 4 until you are
          able to set both alarm setpoints where
          you need them.

     (6) Re-install screws in front of panel.

3.   Single-Point Calibration.

     Monitor is two-point calibrated at factory, using
     sensors traceable to National Bureau of Standards.
     It should be much more accurate than any
     thermocouple or sensor you use.

     You can single-point-calibrate monitor to make up
     for any inaccurracy in thermocouple, sensor or
     connections. Procedure is on following page.

OPERATION AND ADJUSTMENT (continued)

a. Unplug monitor.

b. Insert thermocouple or sensor into area in
which temperature is known. Most accurate
would be insulated cup of warm water with
body-temperature thermometer in it.

If using monitor for much higher
temperatures, insert thermocouple into area
that is close to temperature range in which
it will be used.

Calibration will be as accurate as
thermometer or temperature measuring device
used during calibration.

c. Remove two screws on front of panel, and
swing panel off to side.

d. Plug monitor in. Let it run for 3 or 4
minutes to warm up. If digital display does
not show correct temperature, slowly turn
zero screw until display is correct.

e. Unplug monitor. Reinstall front panel and
screws.

4. Adjusting Delay Time.

This device can be adjusted for a delay of 1
second, 30 seconds or 60 seconds from the time the
temperature passes the alarm limit until the alarm
horn and light go off.

To make the adjustment:

a. Unplug monitor.

b. Remove two screws on front panel and swing
panel off to side.

c. For HI side and for LO side, put time delay
jumper across 1 sec, 30 sec, or 60 sec posts.
Delay does not have to be same for high and
low alarms.

d. Close panel and reinstall screws.

OPERATION AND ADJUSTMENT (continued)

5.   Normal Operation.

      a.   Digital display will show thermocouple
            temperature.

      b.   If temperature goes over high alarm setpoint
            or under low alarm setpoint, the following
            will occur:

            -     Alarm horn will sound.

            -     Alarm warning indicator will flash.

            -     Low alarm or high alarm indicator will
                  light.

      c.   Press alarm silencing button to turn off
            alarm horn and alarm warning indicator.

            Low alarm or high alarm indicator will remain
            lit until temperature comes back within alarm
            limits.

TROUBLESHOOTING

1. Symptoms of open T/C, T/C leads or T/C plug:

    -   Display rises fast.

    -   Alarm is triggered.

    -   Display settles on single digit "1" in far
        left position of display.

2. Symptoms of reversed T/C, T/C leads or T/C plug:

    -   While actual temperature is 150°F or more,
        display shows below 0°F.

    -   While actual temperature is about +50°F,
        display shows about 100°F.

    -   Display may still be fairly accurate at
        actual temperature of about 70°.

OPTIONAL EQUIPMENT

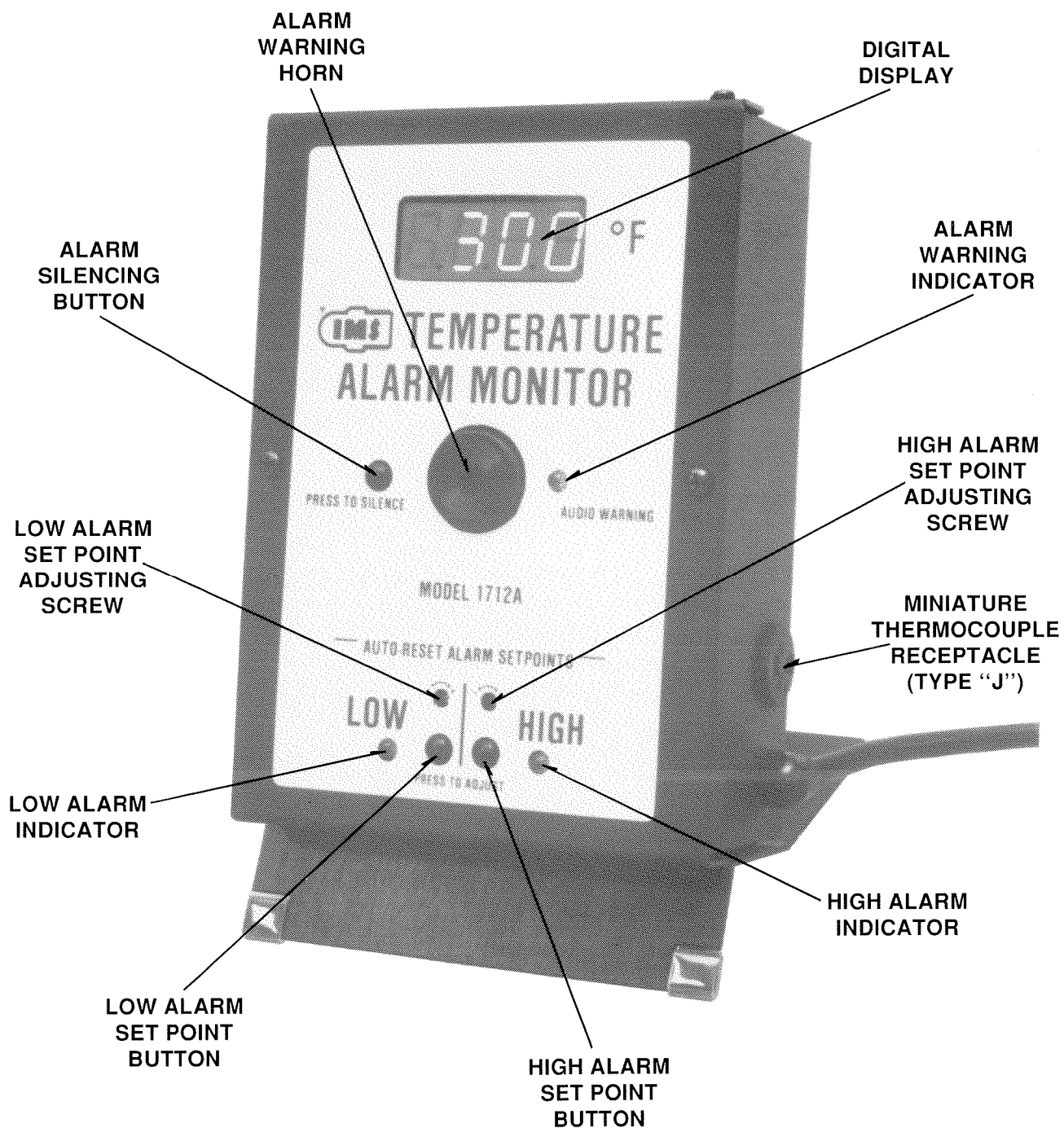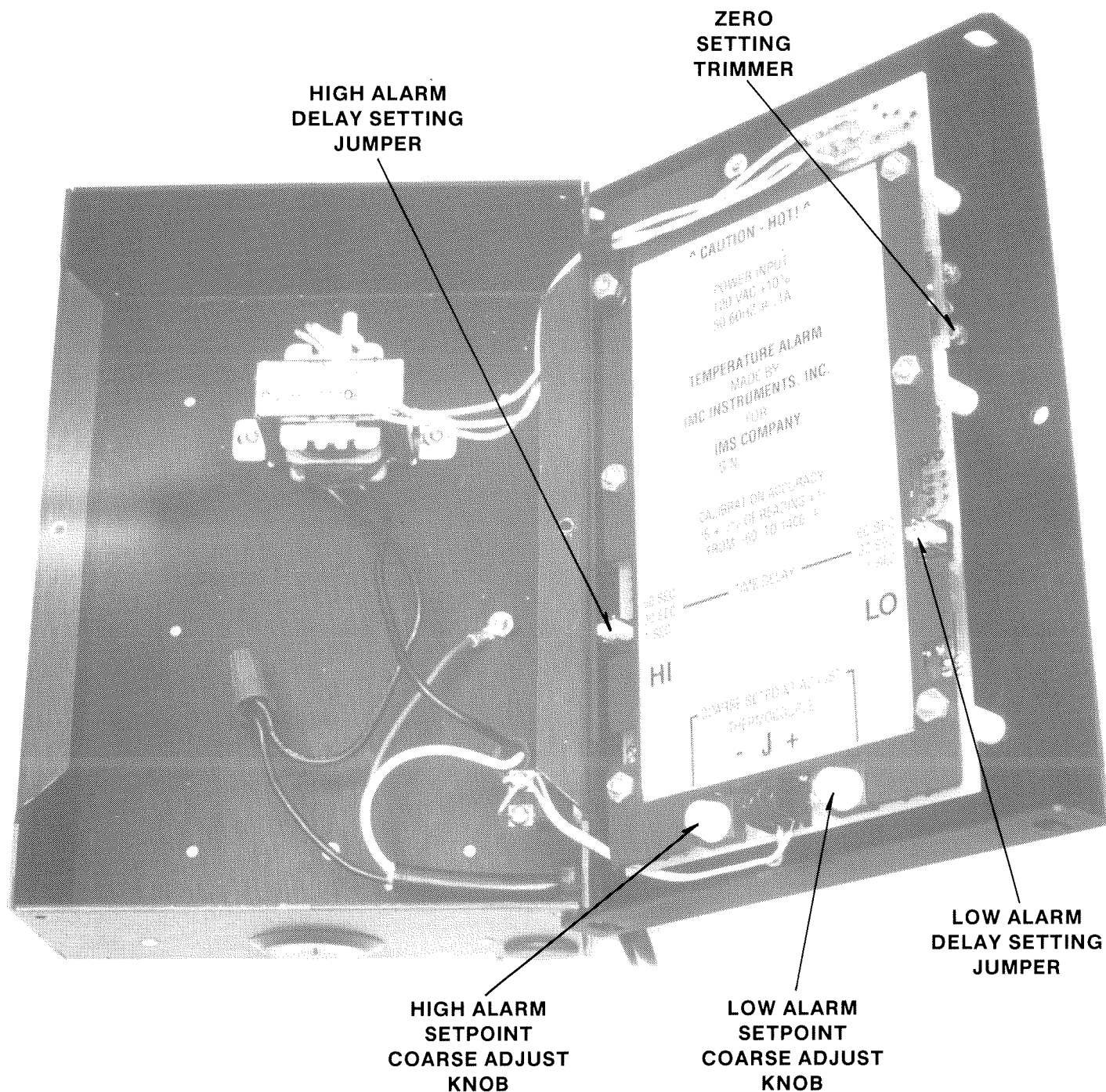| Description	Part No.
Mini Male Plug, Type-J	TCXX-MP1260
Mini Cable Clamp	TCXX-CC1280
Mini Female Jack, Type-J	TCXX-FJ1210
Thermocouples	Large selection; Ask IMS sales engineer
Thermocouple Lead Wire	Large selection; Ask IMS sales engineer
IR-Type Temperature Sensor	Ask IMS sales engineer

FIG. 1

ALARM
WARNING
HORN

DIGITAL
DISPLAY

ALARM
WARNING
INDICATOR

ALARM
SILENCING
BUTTON

HIGH ALARM
SET POINT
ADJUSTING
SCREW

LOW ALARM
SET POINT
ADJUSTING
SCREW

MINIATURE
THERMOCOUPLE
RECEPTACLE
(TYPE "J")

LOW ALARM
INDICATOR

HIGH ALARM
INDICATOR

LOW ALARM
SET POINT
BUTTON

HIGH ALARM
SET POINT
BUTTON

FIG. 2

ZERO
SETTING
TRIMMER

HIGH ALARM
DELAY SETTING
JUMPER

LOW ALARM
DELAY SETTING
JUMPER

HIGH ALARM
SETPOINT
COARSE ADJUST
KNOB

LOW ALARM
SETPOINT
COARSE ADJUST
KNOB

SERVICE RECORD
AND NOTES