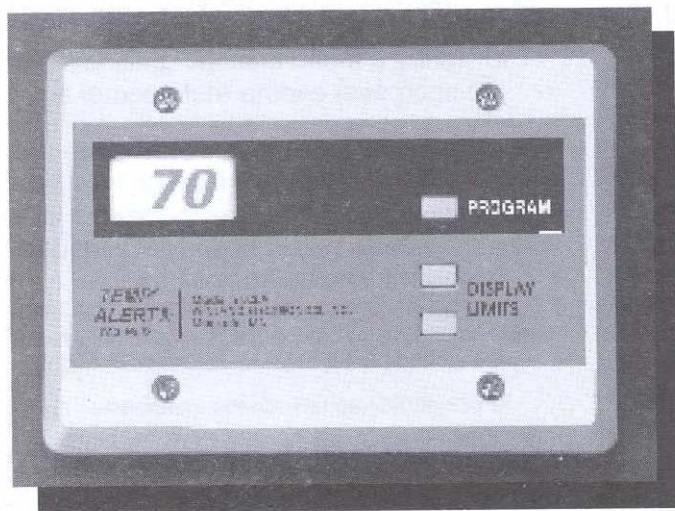


ELECTRONIC TEMP°ALERT°

Model: TA-2HLD / TA-3HLD

*Single zone unit with built-in
or remote sensing.*



Installation/ Operation Instructions

Note: The TA-2HLD & TA-3HLD have been enhanced to include additional features such as 12 or 24 VAC or VDC power input, tamper proof limit lock-out, and a new adjustable offset programming feature.

Winland Electronics, Inc.
Mankato, Minnesota, U.S.A.
PN # D-011-0003 Rev D

TABLE OF CONTENTS

SYSTEM OVERVIEW.....	1
INSTALLATION.....	3 - 7
TROUBLE SHOOTING.....	6 - 7
SPECIFICATIONS.....	8
ACCESSORIES.....	9
WARRANTY.....	10

Thank you for purchasing Winland's Temp°Alert® models TA-2HLD or TA-3HLD. Both include a built-in temperature sensor with a range of +32° to 130° F. For lower or higher temperatures or remote sensing, Winland offers a variety of optional temperature probes (see page 9).

If temperatures in the monitored area rise or fall outside your preset limits, both units will provide a relay contact change which can activate an alarm panel, telephone dialer, wireless security system, etc. Additional Features include:

- Built-in **Time Delay Module** which is adjustable from 0 seconds to 99 minutes. Use for defrost cycles, etc.
- Built-in Temperature sensor. Range +32° to 130° F.
- Built-in Audible Alarm with Silence Feature - Turns off audible alarm for 10 min. when the "UP" button is pressed. Relays unaffected. **TA-3HLD only.**
- 12 V, 24 V AC/DC powered. Limits retained if power is lost. Sensor lines up to 500' away from control console.
- Display will flash to indicate a high or low alarm.
- Two "Form C" SPDT relays for high & low. Relay outputs can "energize" on alarm or "de-energize on alarm."
- Sensor Calibration adjustment provides maximum temperature accuracy in any application.

STEP 1 - Select a site for the console. Sensor cable lengths & power source locations should be considered. Max. cable length for the temperature sensors is 500 ft.

Option #1 Surface Mounting Without Mounting Box

It is possible to install the console on a soft wall (sheet rock, paneling, etc.) without the use of a mounting box. This is the fastest mounting method and it gives the control console a nice looking low profile. In selecting a site to mount the console keep in mind that it must be placed in a secure, dry location with an ambient temperature of +32° to 130° F. For this option, drill a 1/2" diameter hole in the wall which will be opposite the wiring terminal strip on the console. This hole will provide access for all wiring. Next, carefully mark the location of the four corner screw holes on the console. Then drive four wall anchors into the proper locations and complete by attaching the console to the wall.

Option #2 Surface Mounting

In areas where no hollow interior walls are available, the surface mounting box (part #1110 3 gang electric box & part #I-018-0001 off white back box) can be secured to any wall.

FIGURE 2

Important: Before applying power make sure the shorting jumper is in the proper position.

J1 = 24 VAC / DC, 12VAC

J9 = 12 VDC

12, 24V AC / DC Input

{ Power (+)
Power (-)
N.C.
Com Lo Lmt
N.O.
N.C.
Com Hi Lmt
N.O.

{ Ext. Buzzer (+)
Ext. Buzzer (-)
Sensor (+)
Sensor (-)

Winland's optional ext. buzzer - PN # 1175

Important: When connecting a external temp. probe move J3 & J5 to the "UP" position

JUMPER J6

"UP" = LIMIT LOCK "OFF"

"DOWN" = LIMIT LOCK "ON"

JUMPER J4

"UP" = °C

"DOWN" = °F

JUMPERS J3 & J5

"UP" = REMOTE PROBE

"DOWN" = BUILT-IN SENSOR

JUMPER J2

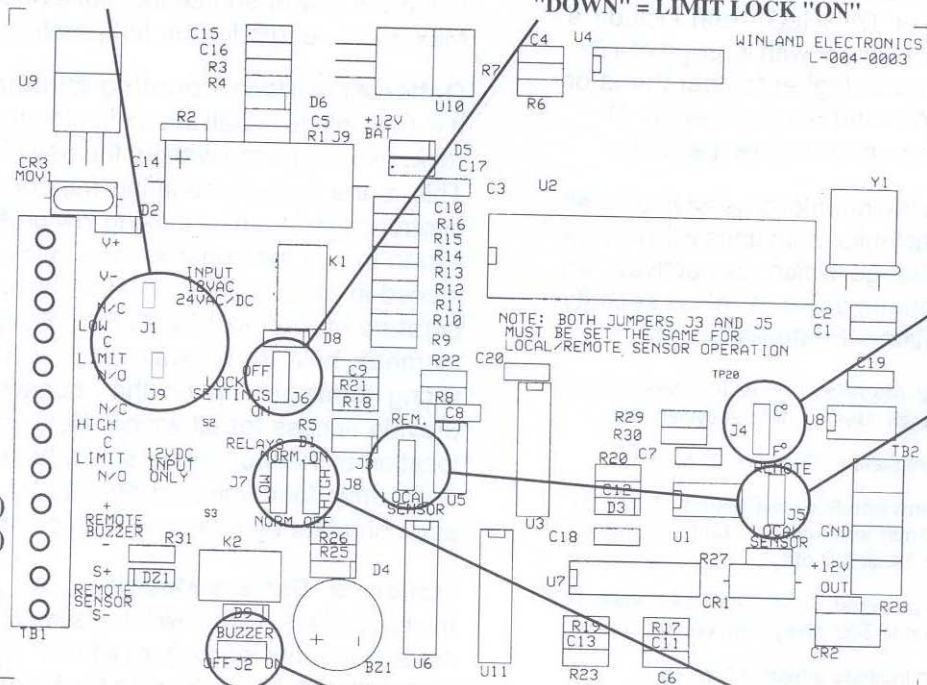
"LEFT" = BUILT-IN BUZZER "OFF"

"RIGHT" = BUILT-IN BUZZER "ON"

JUMPERS J7 & J8

"UP" RELAYS DE-ENERGIZE IN ALARM

"DOWN" RELAYS ENERGIZE IN ALARM



INSTALLATION - POWER AND SENSOR CONNECTIONS

STEP 2

POWER CONNECTIONS

The TA-2HLD/3HLD will operate on 12V, 24V AC/DC. Refer to **Figure 2** for proper connection. Before applying power set the shorting jumper to J1 if the input is 12VAC or 24V AC/DC. Set the shorting jumper to J9 if the input is 12 VDC only. Connect the positive wire to the +V position and the negative wire to the V- position (see Figure 2).

Note: Be sure the bare wires do not short from terminal to terminal or to other components.

STEP 3 -SELECTING DISPLAY MODE (°F OR °C)

To select °F or °C set jumper J4 to the proper position. To display temperatures in °F J4 should be in the "DOWN" position (factory default) and for °C J4 should be in the "UP" position.

STEP 4 -SELECTING BETWEEN LOCAL & REMOTE TEMPERATURE MONITORING

The TA-2HLD/3HLD both include a built-in temperature sensor (for local temp. sensing) with a range of +32° to 130°F. For extended range, coolers & freezers, or remote sensing Winland offers four types of optional sensors (see page 9 for more info.)

Important: If you connect a remote temperature probe to either Temp°Alert you must also move Jumpers J3 and J5 to the UP or "remote" position (see Figure #2).

Important: Only one sensor can be connected to a unit. Always observe polarity when connecting a sensor probe. Connect red wire to S+ & the black wire to S-

Refer to Figure 2 for proper connection. The sensor can be extended up to 500 feet away from the console by using a twisted pair cable, 22 AWG minimum. Be sure the splice maintains proper polarity and does not allow any dirt or moisture to contaminate the connection.

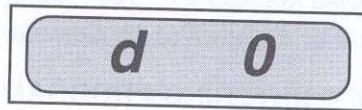
STEP 5: ENTERING PROGRAM MODE: TIME DELAY, HI & LO LIMIT

After power is applied to the unit wait 6-10 seconds for the unit to stabilize. The LCD should automatically display the correct temperature reading. The temperature being displayed depends on whether the remote or local sensor is used. For connecting optional remote temperature probes refer to Step # 4.

INSTALLATION - PROGRAMMING

To enter the programming mode press and release the Program button (If the LCD display does not change try it again but press and release the program button more slowly). You will know when you are in the program mode because the LCD will prompt you for the time delay setting by illuminating a small case letter "d" and a corresponding number anywhere from 0 to 99. The default value is zero. This number represents the amount of time in minutes the control unit will wait before going into alarm condition once either the high or low temperature set points are exceeded.

Example: Time Delay set to a value of zero minutes.

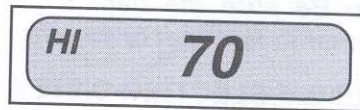


If you wish to simply accept this value press the program button again to move onto the next stage of the programming sequence. To select a time value other than zero press and hold the UP or DOWN button until the value appears on the LCD screen. This feature is helpful when monitoring difficult applications requiring alarm delays such as freezers with defrost cycles.

Setting the High Temperature Alarm Set Point

When you have completed entering or skipping the time delay value press the program button again and release. The LCD display will prompt you to enter the value for the High temperature set point by illuminating the letters "HI" and a number showing the current setting (If the LCD display does not change try it again but press & release the program button more slowly).

Example: Display indicates the High temp. limit is 70°



Setting the Low Temperature Alarm Set Point

When you have completed entering the high temperature set point press the program button again & release. The LCD display will prompt you to enter the value for the Low temperature set point by illuminating the letters "LO" & a number showing the current setting (If the LCD display does not change try it again but press & release the program button more slowly).

Example: Display indicates the LO temp. limit is 40°



To **save your settings** and exit programming mode you must now press and release the program button once more. If you do not exit programming mode correctly the unit will auto exit after one minute and your new settings will be lost. The LCD should now display the current temperature. Now to check the HI limit setting simply press the UP button and to check the LOW limit setting press the DOWN button.

Note: For tamper proof settings lock out the program button by moving Jumper J6 to the down position.

Note: The TA2 / 3HLD will produce an alarm condition when the actual temperature has met or exceeded the limit. The unit will go out of alarm when the actual temperature has gone 2° within the limits.

STEP 6 - ALARM RELAY CONNECTIONS

The TA-2HLD/3HLD has separate FORM C (SPDT) relays for both the high and low alarm outputs. In addition, each relay can be independently selected to operate in one of two modes: A) The relay is normally off and energizes when an alarm condition is present (jumpers J7 & J8 in the "DOWN"

position) or B) relay is normally energized and turns off when an alarm condition is present (Jumpers J7 & J8 in the "UP" position).

With the relays normally energized the unit will automatically provide a relay trip if power is ever cut to the control console. The unit is preset at the factory so that the relays will energize when an alarm condition occurs.

Note: J7 is for the low alarm relay & J8 is for the high alarm relay. Both jumpers operate independently so it is possible to have the upper limit relay operate the opposite of the lower limit relay. See Figure #2.

When relays are set to energize only during an alarm condition (J7 & J8 in the "DOWN" position) a short exists between COM and NC and an open exists between COM & NO. When the relays are set to de-energize during an alarm condition (J7 & J8 in the "UP" position) a short exists between COM & NO and an open exists between COM and NC. *In either case the NO & NC terminals never make contact to each other.*

STEP 7 - OPTIONAL BUZZER CONNECTION

Both the TA-2HLD/3HLD are capable of driving an external 12 VDC buzzer (Winland model BZ-1, Part # 1175). Connect it to the terminal block as per Figure 2.

INSTALLATION - AUDIBLE ALARM FEATURES & TROUBLE SHOOTING

The TA-3HLD has a built-in audible alarm. For an audible alarm in a second location it can also be connected to the #1175. The optional remote buzzer may be disabled for a 10 minute period by pressing the UP button. The display and relay outputs will still produce an alarm condition.

Caution: Use only the BZ-1 buzzer due to the units extremely low current draw. Using another buzzer may affect the performance of the TA-2HLD/3HLD.

Note: Do not use remote buzzer output if voltage input is 24 VAC.

STEP 8 - BUILT-IN AUDIBLE ALARM FEATURES (For the TA-3HLD Model Only)

The TA-3HLD has a built in audible alarm which will sound on an alarm condition. This audible alarm can be disabled for a 10 minute period by pressing the UP button. If the audible alarm is silenced the display and the relays will still be in alarm condition. If the built in audible alarm is not needed it may be disabled by moving Jumper J2 to the "LEFT" switch position. Note: Jumper J2 does not effect the remote buzzer operation but only effects the built-in buzzer.

Problem: Console reading room temperature but you have a remote sensor attached.

Possible Cause: Check to see if you moved Jumpers J3 and J5 to the "Remote Probe" position.

Problem: Console displays a "Er", -120°F or -85°C.

Possible Cause: Check to see if you moved Jumpers J3 and J5 to the "Remote Probe" position.

Problem: Console displays a "Er2".

Possible Cause: Open sensor, bad connection on remote probe. Check all connections & verify connections have correct polarity.

Problem: Console displays a "Er1".

Possible Cause: Shorted sensor, shorted wire on remote probe. Check all sensor connections.

Problem: Program button is not operational. Limits cannot be adjusted.

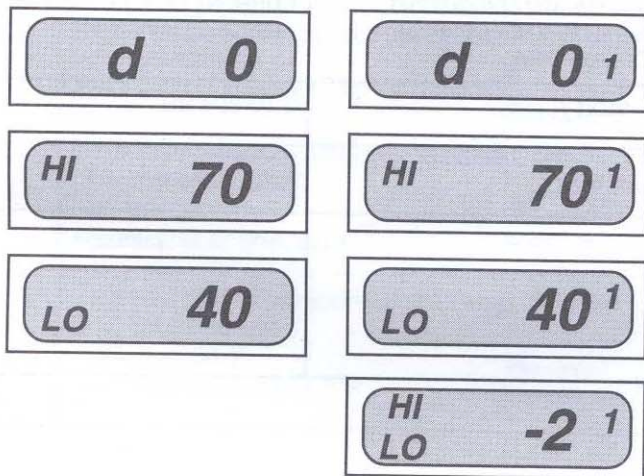
Possible Cause: Jumper J6 is set to the tamper proof limit lock out position. Move this jumper to the off position.

TROUBLE SHOOTING CONTINUED

Problem: Console displays a reading which is slightly off of reference thermometer.

Possible Cause: The display should be within $\pm 2^{\circ}\text{F}$ with a remote sensor and within $\pm 3^{\circ}\text{F}$ with the built-in sensor. If the TA2/TA3HLD must match a reference temperature the following offset procedure may be used.

NORMAL PROGRAM MODE OFFSET PROGRAM MODE



With display showing the actual temperature and allowed to stabilize for several minutes. Press and hold down the "DOWN" button and momentarily press and release the Program button. A "1" will appear on the far side of the LCD display. If the "1" fails to appear repeat the step several times if necessary and hold the Program button down longer until "1" does appear. Release the down button after the "1" appears.

Now press the program button several times (if necessary) until both the "HI" and "LO" LCD messages appear. Then press the up or down buttons until the desired offset is obtained. Example: Setting an offset of "- 2" will lower an initial temperature reading of 76° to 74° . To exit the offset program mode use the same method as to enter it or else turn off power to the unit for several seconds. When unit is re-powered, all settings will be retained.

To insure proper operation test unit weekly

SPECIFICATIONS

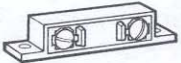



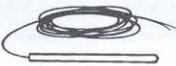
DIMENSIONS	6.55" X 4.7" X 1.0" (166 cm X 119 cm X 25 cm)
WEIGHT	1/2 lb. (.45 kg.)
MOUNTING	Can be flush mounted without a mounting box. Optional box available for mounting.
INPUT VOLTAGE (including alarm conditions)	12 VDC (11-14 V) \leq 100 mA 24 VDC (16-28 V) \leq 100 mA 12 VAC(10-14 VMRS) \leq 200 mA RMS 24 VAC(14-28 VRMS) \leq 200 mA RMS
LO & HI ADJUST RANGE	-120° to +300° F (-85 to +150° C)
TEMPERATURE SENSOR(S)	Linear Temp. Transducer
TEMP. RANGE & ACCURACY WITH REMOTE PROBES	$\pm 1.8^{\circ}$ F ($\pm 1^{\circ}$ C)
MINIMUM TEMP. SPAN BETWEEN HI & LO LIMITS	4°

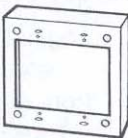
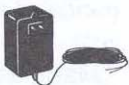
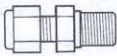
MAX. # OF SENSORS	1
CONSOLE TEMP. RANGE WITH BUILT-IN TEMP. SENSOR CONSOLE ACCURACY	+32° TO 130° F (0° TO 54° C) $\pm 3^{\circ}$ F
TEMPERATURE RESPONSE TIME	SENSOR DEPENDENT
ALARM RELAY OUTPUTS (2)	SPDT RELAYS(1 Amp@ 30 VDC/AC)
REMOTE BUZZER OUTPUT (Use for 12 VAC / DC, or 24 VDC input only)	CURRENT DRAW - 25 mA (Max.)
HUMIDITY	0 TO 85% RH
WARRANTY	1 Year Limited

ACCESSORIES

***Important: For remote sensing, the TA-2HLD / TA-3HLD requires a purchased sensor.**

The sensors and other accessories shown below may be ordered from your distributor or Winland Electronics. To order directly from Winland, call 1-800-635-4269 (outside MN) or 1-507-625-7231 (in State).

PART#	DESCRIPTION
1106	Standard Temperature Sensor (cable not included) -10° to +220°F Accuracy: Max. error $\pm 1.8^{\circ}\text{F}$ 
1107	Low Temperature Sensor (15 ft. cable included) -67° to +220°F Accuracy: Max. error $\pm 1.8^{\circ}\text{F}$ 
1108	High Temperature Sensor (6 ft. cable included) -67° to +300°F Accuracy: Max. error $\pm 1.8^{\circ}\text{F}$ 
1109	Liquid Temperature Sensor Stainless Steel (3 ft. cable included) -67° to +300°F Accuracy: Max. error $\pm .5^{\circ}\text{F}$ 
1109A	1/2 NPT S.S. Threaded Liquid Temp. Sensor (3 ft. cable included) -67° to +300°F Accuracy: max. error $\pm .5^{\circ}\text{F}$ 

PART#	DESCRIPTION
1110 & L-018-0001	3 Gang Surface Mounting Box (7"x5"x1 3/4") Off White Back Box (6 1/4"x4 1/2"x3/4") 
1111	110 VAC - 12 VDC regulated 400 mA wall transformer with 8 foot cable. 
1128	Humid Alert (HA-3) 5 to 95%RH Accuracy: Max. error $\pm 5\%\text{RH}$
1117	Compression Fittings — Stainless steel 
1193	TDL-120 Time Delay Module (one required per zone)
1175	BZ-1 Remote Buzzer
W1004	Sensor Extension Cable (22 gauge solid twisted pair — <u>no connectors</u>) <i>Specify length</i>

Recalibration service for the TA-2HLD & TA-3HLD is available for a minimal fee.

ONE YEAR LIMITED WARRANTY

Winland Electronics, Inc. warrants that each product of its manufacture is free from defects in material and factory workmanship, when properly installed and operated under normal conditions according to the manufacturer's instruction.

Manufacturer's obligation under this warranty is limited to correcting, without charge, at its factory any part or parts thereof which shall be returned to the factory, by the original retail purchaser, transportation charges prepaid, within one year after purchase and which upon examination shall disclose to the manufacturer's satisfaction to have been originally defective. Correction of such defects by repair to, or supplying of replacements for defective parts shall constitute fulfillment of all obligations to purchaser. Repair service performed by the manufacturer after one year from date of purchase will be for a reasonable service charge.

This warranty shall not apply to any of the manufacturer's products which have been subject to misuse, negligence or accident or which shall have been repaired or altered outside of the manufacturer's factory. Warranty is void if housing or cover is removed.

Manufacturer shall not be liable for loss, damage, or expense directly or indirectly from the use of its product or from any other cause.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE ARE EXCLUDED, AS ARE ALL OTHER REPRESENTATIONS TO THE USER — PURCHASER, AND ALL OTHER OBLIGATIONS OR LIABILITIES, INCLUDING LIABILITY FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES, ON THE PART OF THE MANUFACTURER OR THE SELLER.

No person, agent or dealer is authorized to give any warranties on behalf of the manufacturer nor to assume for the manufacturer any other liability in connection with any of its products.

Mfg. in the U.S.A. by:



1950 Excel Drive, Mankato, MN., 56001

Outside MN Phone: 1-800-635-4269

Phone: (507) 625-7231 FAX: (507) 387-2488

© Winland Electronics, Inc. 1997