

# ADTECH

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## RESISTANCE BULB ALARMS MODEL NOS. RBA 174 SINGLE RBA 175 DUAL

THE ADTECH RBA SERIES TEMPERATURE ALARMS ACCEPT ALL STANDARD 2, 3, & 4 WIRE RESISTANCE BULB SENSORS, SUCH AS PLATINUM, NICKEL, AND COPPER, AND PROVIDE RELAY CONTACT OUTPUTS.

DIFFERENTIAL TEMPERATURE MEASUREMENT IS PROVIDED AT NO ADDITIONAL COST. THE BASIC INPUT RANGE IS 1.5 TO 1,000 OHM RESISTANCE SPANS AND THE OUTPUT CONTACTS ARE RATED AT 10 AMPS, 30 VDC, OR 250 VAC RESISTIVE.

WHEN TEN-TURN SETPOINT DIALS ARE UTILIZED, SENSOR LINEARIZATION FOR PLATINUM AND NICKEL SENSORS IS PROVIDED AS AN EXCLUSIVE FEATURE. THIS PROVIDES PRECISE ADJUSTMENT(S) 0-100% TO ACTUAL TEMPERATURE SPAN.

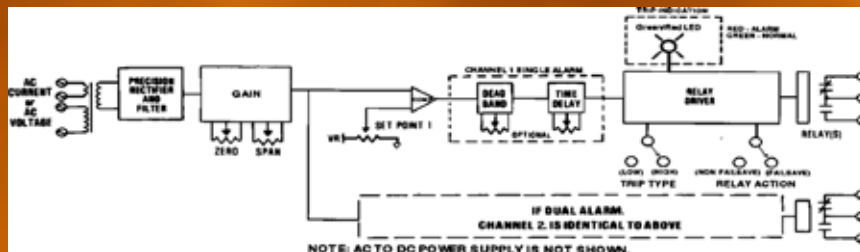
THE RBA 174 SINGLE ALARM HAS A DPDT OUTPUT. THE RBA 175 DUAL ALARM HAS A SPDT OUTPUT PER EACH SETPOINT AND AN OPTIONAL DPDT OUTPUT PER SETPOINT.

INTEGRAL DUAL COLOR LEDs PROVIDE GREEN INDICATION FOR NORMAL CONDITIONS AND RED INDICATION ON ALARM PER SETPOINT, INDEPENDENT OF RELAY COIL POWER.

THE ALARMS ARE FURNISHED AS STANDARD WITH THE RELAY POWER FAIL-SAFE (I.E., RELAY COIL ENERGIZED) REGARDLESS OF HIGH-AND/OR LOW-ALARM CONFIGURATIONS. YOU MAY SPECIFY THE RELAYS TO BE NON-FAIL-SAFE (I.E., RELAY COIL DE-ENERGIZED) ANY COMBINATION AT NO EXTRA COST AND ARE MOUNTED IN THE "WIDE-LINE" (2.75" WIDE) ENCLOSURE.

THE RBA 174 AND RBA 175 ARE SUPPLIED WITH A FIXED DEAD BAND OF 0.5% OF SPAN AS STANDARD. THEY ARE OPTIONALLY SUPPLIED WITH ADJUSTABLE DEAD BAND OF 1 TO 100% OF INPUT SPAN. TEN-TURN CALIBRATED DIALS ARE OFFERED AS AN OPTION FOR BOTH THE SETPOINT AND DEAD BAND AT A NOMINAL EXTRA COST.

AN ADJUSTABLE TIME DELAY OF 1-30 SECONDS MAY ALSO BE PROVIDED AS AN OPTION. THIS IS USEFUL TO PREVENT FALSE ALARMS DUE TO SIGNAL TRANSIENT NOISE INTERFERENCE.

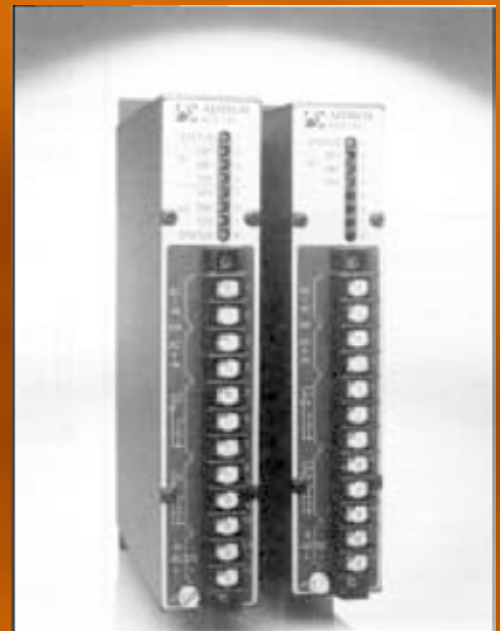


### TYPICAL APPLICATIONS

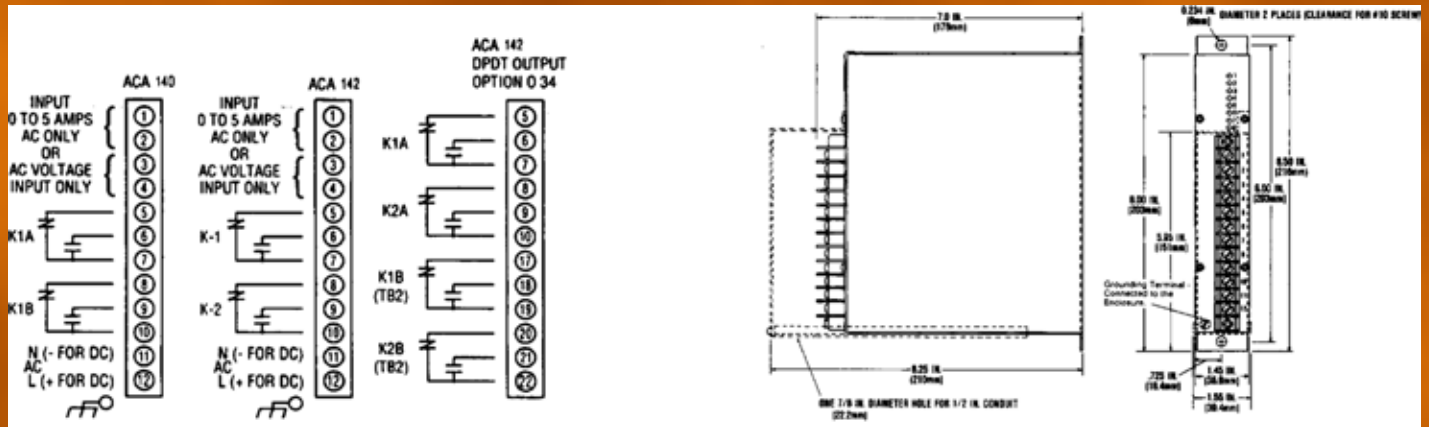
- DIRECT CONTACT INPUT(S) TO ANNUNCIATORS
- MACHINERY AND PROCESS TEMPERATURE ALARM/PROTECTION
- LEVEL ALARM USING RESISTOR TAPES
- ON/OFF TEMPERATURE CONTROL
- SENSOR INTERFACE TO COMPUTER PROGRAMMABLE CONTROLLERS
- HIGH/LOW TEMPERATURE ALARM
- HVAC APPLICATIONS
- DIFFERENTIAL TEMPERATURE DEFECTOR ALARM

### FEATURES

- DIRECT RESISTANCE BULB INPUTS: PLATINUM, NICKEL, COPPER: TWO, THREE OR FOUR WIRE
- INPUT SPANS: 1.5 OHMS TO 1,000 OHMS-STANDARD
- LEAD WIRE COMPENSATION: THREE AND FOUR-WIRE-TYPE SENSORS: CONSTANT CURRENT EXCITATION
- REPEATABILITY:  $\pm 0.1\%$  OF SPAN
- UNIVERSAL RELAY ACTION: FAIL-SAFE OR NON-FAIL-SAFE FOR HIGH AND LOW TRIP
- CONTACT STATUS: LED INDICATION: GREEN-NORMAL, RED-ALARM
- ADJUSTABLE DEAD BAND: 1-100% OF INPUT SPAN-OPTIONAL
- ADJUSTABLE TIME DELAY: 1-30 SECONDS-OPTIONAL
- CALIBRATED SET POINT AND DEAD BAND: TEN-TURN-OPTIONAL



# CONNECTIONS / DIMENSIONS



## INPUT/OUTPUT

### INPUT SIGNALS

\*RESISTANCE BULB SENSOR: TWO, THREE, OR FOUR WIRE TYPES AND DIFFERENTIAL SENSORS.

\*1.5 TO 1,000 OHMS RESISTANCE SPAN: STANDARD  
PLATINUM, NICKEL, AND COPPER RTDS

\*ZERO SUPPRESSION ELEVATION TO 85% OF SPAN

### OUTPUT SIGNALS

STANDARD: RBA 174 ONE SET DPDT CONTACT\*\*  
RBA 175 TWO SPDT CONTACTS\*\*

\*\* RATED 10 AMPS AT 30 VDC  
OR 250 VAC RESISTIVE

OPTIONAL: DPDT DUAL ALARMS: (OPTION O 34).  
HERMETICALLY SEALED 2 AMP AT 28 VDC OR 115  
VAC RESISTIVE: (OPTION O 40 SINGLE, OPTION O 41 DUAL).  
NOTE: WITH OPTION O 34, THE "WIDE-LINE" (2.75" WIDE)  
HOUSING IS SUPPLIED.

## PERFORMANCE

REPEATABILITY:  $\pm 0.1\%$  OF SPAN  
TRIP POINT STABILITY: ZERO AND SPAN  
 $\pm 0.0040\%/^{\circ}\text{F}$  TYPICAL,  $\pm 0.01\%/^{\circ}\text{F}$  MAXIMUM  
FOR A  $50^{\circ}\text{F}$  CHANGE FROM AMBIENT  
\*TRIP ADJUSTMENT: 0-100% OF SPAN  
CONTINUOUSLY ADJUSTABLE; BLIND SET:  
INFINITE RESOLUTION.  
FIXED DEAD BAND: FACTORY SET AT 0.5% OF  
SPAN

\* ADJUSTABLE DEAD BAND: 1-100% OF SPAN  
CONTINUOUSLY ADJUSTABLE; BLIND SET: INFINITE  
RESOLUTION.

POWER SUPPLY EFFECT:  $\pm 0.05\%$  FOR A  
 $\pm 10\%$  POWER VARIATION  
ISOLATION: INPUT/OUTPUT/POWER 1,500 VAC,  
50/60 HZ, FOR AC & ISOLATED DC POWERED UNITS  
RESPONSE TIME: LESS THAN 200 MILLISECONDS  
TEMPERATURE RANGE:  $0^{\circ}$  TO  $140^{\circ}\text{F}$  ( $-18^{\circ}$  TO  $60^{\circ}\text{C}$ )  
OPERATING:  $-40^{\circ}$  TO  $185^{\circ}\text{F}$  ( $40^{\circ}$  TO  $85^{\circ}\text{C}$ ) STORAGE

NOTE: ALL ACCURACIES ARE GIVEN AS A PERCENTAGE OF SPAN.

\*TEN-TURN DIALS:  $\pm 0.5\%$  ACCURACY,  $\pm 0.05\%$  RESOLUTION

## POWER

115 VAC: 50/60 HZ, 0.7 PF (STANDARD)  
12 VDC: ISOLATED (OPTION P8)  
24 VDC: NON-ISOLATED (OPTION P1)  
24 VDC: ISOLATED (OPTION P2)

48 VDC: ISOLATED (OPTION P3)  
125 VDC: ISOLATED (105-140 VDC) (OPTION P4)  
230 VAC: 50/60 HZ, 0.7 PF (OPTION P5)

NOTE: ALL UNITS 3 WATTS MAXIMUM, AND A  $\pm 10\%$  POWER VARIATION UNLESS NOTED

## MECHANICAL

ELECTRICAL CLASSIFICATION: GENERAL PURPOSE

CONNECTION: BARRIER TERMINAL STRIP (3/8" SPACING, NO.6 SCREWS)

CONTROLS: MULTITURN TRIP SET CONTROL(S), OPTIONAL DEAD BAND & TIME DELAY CONTROLS & INTERNAL  
ZERO & SPAN CONTROLS

MOUNTING: SURFACE MOUNTING STANDARD. SEE HOUSINGS SECTION FOR OPTIONS.

WEIGHT: NET UNIT: 2.6 POUNDS (1.18 KILOGRAMS); SHIPPING: 3.0 POUNDS (1.36 KILOGRAMS)

## OPTIONS

### Ordering Information

- Model number
- Input sensor type and temperature coefficient
- Input temperature range (Degrees "F" or degrees "C")
- Differential or non-differential
- Linearized or non-linearized
- High- and/or low-relay action
- Input/output/control(s) options
- Prime power with option no.
- Housing and miscellaneous options

Please refer to the Housing and/or Option Section for more specific and detailed information.

### OPTION NUMBER

O 26 & O 28  
O 27 & O 29  
O 30 & O 31  
O 34  
O 40 & O 41  
O 46S & O 46D  
H 10 & H 11  
H 13B, H 14B, H 15B

### DESCRIPTION

SETPOINT TEN-TURN CALIBRATED DIALS: SINGLE AND DUAL  
DEAD BAND TEN-TURN CALIBRATED DIALS: SINGLE AND DUAL  
ADJUSTABLE TIME DELAY: SINGLE AND DUAL  
DPDT OUTPUT: DUAL  
HERMETICALLY SEALED RELAYS: SINGLE AND DUAL  
ADJUSTABLE DEAD BAND: SINGLE AND DUAL  
THIN-AND WIDE-LINE CONDUIT MOUNTING PLATE AND TERMINAL COVER  
NEMA 4, 7, AND 12 ENCLOSURES