



Feature:

ALD-5404

- Selectable analog output
- Selectable Fahrenheit or Celsius scale
- Manual Night Set Back override
- Multi level lockable access menu
- Lockable Set point
- Selectable internal or external temperature sensor (10 K Ω)
- Selectable proportional control band

Technical Data	ALD-5404
Outputs	2 Analog Cooling outputs (0-10VDC)
	2 Analog Heating outputs (0-10VDC)
	0 or 22 VDC, TPM, (Time proportional modulation) 25 mA max.
Power supply	22 to 26 VAC 50/60Hz
Power consumption	2 VA
Set point range	10°C to +35°C [50°F to 95°F]
Control accuracy	Temperature: +/-0.2°C [0.4°F]
Proportional band	0.5 °C to 4°C [1 °C to 8°F] adjustable
Electrical connection	0.8 mm ² [18 AWG] minimum
Operating temperature	0°C to +50°C [32°F to +122°F]
Storage temperature	-30°C to +50°C [-22°F to +122°F]
Relative Humidity	5 to 95 % non condensing
Degree of protection of housing	IP 30 to EN 60529
Weight	85 g. [0.2 lb]

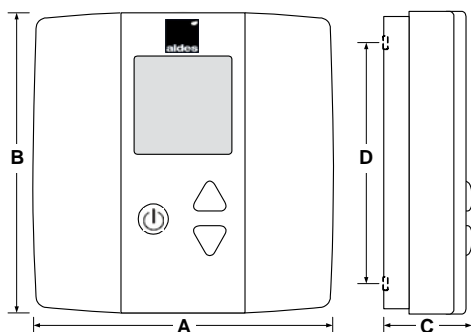
Presentation



Symbols on display

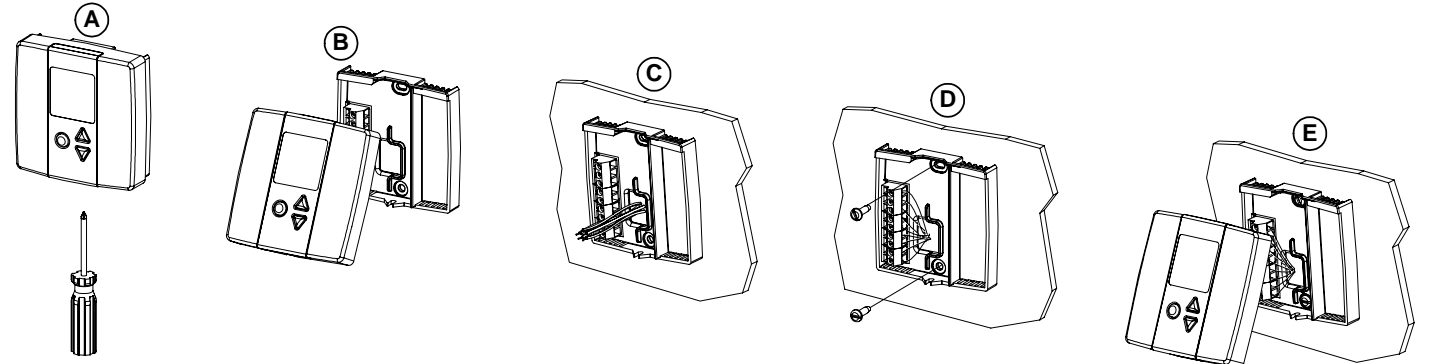
	Cooling ON A: Automatic		Menu set-up Lock ON
	Heating ON A: Automatic		Programming mode
	Energy saving mode ON		Minimum/Maximum set points
	°C: Celsius scale °F: Fahrenheit scale		

Dimensions



Dimension	Inches	Metric (mm)
A	3.00	78
B	3.00	78
C	1.00	24
D	2.36	60

Mounting Instructions



CAUTION: Risk of malfunction. Remove power prior to separate thermostat cover from its base.

A. Remove the screw (captive) holding the base and the front cover of the thermostat.

B. Lift the front cover of the thermostat to separate it from the base.


C. Pull wire through the base hole.

D. Secure the base to the wall using wall anchors and screws (supplied). Make the appropriate connections.

E. Mount the control module on the base and secure using the screw.

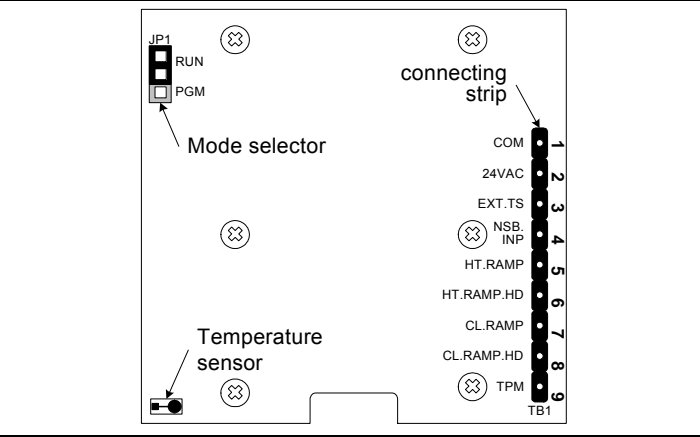
F. Thermostat should be installed 1.5m above ground level to a place that is neither exposed to sun light nor directly under supply cold air.

Terminal description



Terminals	ALD-5404
1	Common
2	24 VAC
3	External temperature sensor
4	Night set back input
5	Heating ramp
6	Heating ramp high demand
7	Cooling ramp
8	Cooling ramp high demand
9	TPM (time proportional modulation)

Settings on PC Board





Mode selector

Temperature sensor





connecting strip








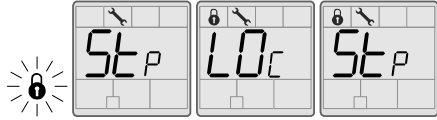



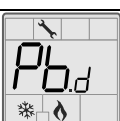



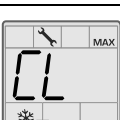



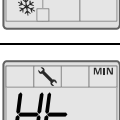
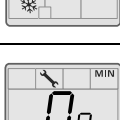
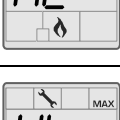
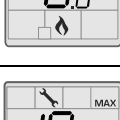
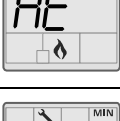

COM 1
24VAC 2
EXT.TS 3
NSB.INP 4
HT.RAMP 5
HT.RAMP.HD 6
CL.RAMP 7
CL.RAMP.HD 8
TPM 9
TB1

Mode Selection

 RUN PGM	<p>Jumper (JP1) on RUN: Thermostat is in operation mode. Thermostat must be set in this mode to operate properly. If not locked, set point and control mode (Heating & Cooling ON, Cooling only ON or Heating only ON) may be modified by end user.</p>
 RUN PGM	<p>Jumper (JP1) on PGM: Thermostat is set in Programming mode. Refer to following section about all settings description</p>

Programming mode

When in this mode this symbol  is displayed. Please press on  button to advance to the next program function and press on  or  to change value. You can leave the programming mode at any time, changed values will be recorded.

Step	Display	Description	Values
1		Internal temperature sensor Calibration: Display switches between "tS1" and temperature read by internal temperature sensor. You can adjust the calibration of the sensor by comparison with a known thermometer. For example if thermostat has been installed in an area where temperature is slightly different than the room typical temperature (thermostat place right under the air diffuser).	 Range : 5 to 45°C [41 to 99°F] (max. offset ± 5°C) Increment: 0.1°C [0.2°F] NOTE: This thermostat has been calibrated at factory
2		Minimum set point: Display switches between "Stp" and the minimum set point temperature. MIN symbol is also displayed. Please select the desired minimum set point temperature. The minimum value is restricted by the maximum value. (step #3)	 Minimum range 10 to 35°C [50 to 95°F] Increment: 0.5°C [1°F] Default value: 15°C [59°F]
3		Maximum set point Display switches between "Stp" and the maximum set point temperature. MAX symbol is also displayed. Please select the desired maximum set point temperature. The maximum value is restricted by the minimum value. (step #2)	 Maximum range 10 to 35°C [50 to 95°F] Increment: 0.5°C [1°F] Default value: 30°C [86°F]
4		Locking the set point : Display switches between "Loc" and "Stp". You can lock or unlock the set point adjustment by end user. If locked the lock symbol will appear.	 Default value: Unlocked
5		Adjust internal set point: Select the desired locked set point temperature; this one should be within the temperature range. Lock symbol will appear if the set point was locked at the previous step. Set point value is restricted by the minimum & maximum value.(step #2 & 3)	Set point range : 10 to 35°C [50 to 95°F] Increment: 0.5°C [1°F] Default value: 22.0°C [72°F]
6		Locking the control mode (cont'd): Display switches between "Ctl" and "Aut". Select which control mode you want to authorize: Automatic cooling and heating, heating only or cooling only.	 Default value: Cooling
7		Proportional band: Display switches between "Pbd" and the value of the proportional band. Cooling and heating symbols are also displayed. Please select the desired value of proportional band.	 Proportional band range : 0.5 to 5.0°C [1.0 to 10.0°F] Increment: 0.5°C [1.0°F] Default value: 2.0°C [4.0°F]
8A		Minimum voltage of 1st cooling ramp: Display switches between "CL" and the value of the minimum voltage of the 1st cooling ramp. MIN and cooling symbols are also displayed. Please select the desired value of the minimum voltage of the 1st cooling ramp. (This is the "zero" value) The minimum value is restricted by the maximum value. (step #8B)	 Range: 0.0 to 10.0 Volt. Increment: 0.1 Volt. Default value: 0.0 Volt
8B		Maximum voltage of 1st cooling ramp: Display switches between "CL" and the value of the maximum voltage of the 1st cooling ramp. MAX and cooling symbols are also displayed. Please select the desired value of the maximum voltage of the 1st cooling ramp. (This is the "span" value) The maximum value is restricted by the minimum value. (step #8A)	 Range: 0.0 to 10.0 Volt. Increment: 0.1 Volt. Default value: 10.0 Volt
8C		Minimum position of 1st cooling ramp: Display switches between "CLd" and the value of the minimum position of the 1st cooling ramp. MIN and cooling symbols are also displayed. Please select the desired value of the minimum position of the 1st cooling ramp. The minimum position is restricted by the maximum value. (step #8B)	 Range: 0.0 to max. cooling ramp. Increment: 0.1 Volt. Default value: 0.0 Volt
9A		Minimum voltage of 1st heating ramp: Display switches between "Ht" and the value of the minimum voltage of the 1st heating ramp. MIN and heating symbols are also displayed. Please select the desired value of the minimum voltage of the 1st heating ramp. (This is the "zero" value) The minimum value is restricted by the maximum value. (step #9B)	 Range: 0.0 to 10.0 Volt. Increment: 0.1 Volt. Default value: 0.0 Volt
9B		Maximum voltage of 1st heating ramp: Display switches between "Ht" and the value of the maximum voltage of the 1st heating ramp. MAX and heating symbols are also displayed. Please select the desired value of the maximum voltage of the 1st heating ramp. (This is the "span" value) The maximum value is restricted by the minimum value. (step #9A)	 Range: 0.0 to 10.0 Volt. Increment: 0.1 Volt. Default value: 10.0 Volt
9C		Minimum position of 1st heating ramp: Display switches between "Htd" and the value of the minimum position of the 1st heating ramp. MIN and heating symbols are also displayed. Please select the desired value of the minimum position of the 1st heating ramp. The minimum position is restricted by the maximum value. (step #9B)	 Range: 0.0 to max. heating ramp. Increment: 0.1 Volt. Default value: 0.0 Volt

Step	Display	Description	Values
10A		Internal/external temperature sensor selection: Display switches between "tS" and "in" or "out". Please select internal or external sensor.	 <i>Default value: Internal temperature sensor</i>
10B		External temperature sensor Calibration: Display switches between "tS2" and the temperature read by the external temperature sensor (if connected). You can adjust the calibration of the external sensor by comparison with a known thermometer.	 Range: 0 to 50°C [32 to 99.9°F] (max. offset ± 5°C) Increment: 0.1°C [0.2°F] 0.0°C [32.0°F], resistance will be infinite. 50.0°C [99.9°F], resistance will be short circuited.
11		Night set back derogation time : Display switches between "nSb" and the derogation time in minute. MIN and NSB symbol is also displayed. Please select the desired derogation time, if no derogation time is desired select "OFF".	 Range: OFF or 30 to 180min. Increment: 15min. <i>Default value: 120 min.</i>
12		Cooling Set point during Night set back: Display switches between "Stp" and the value of the cooling set point temperature during night set back. NSB symbol and cooling symbols are also displayed. Please select the cooling set point temperature during night set back.	 Range: 10 to 35°C [50 to 95°F] Increment: 0.5°C [1°F] <i>Default value: 28°C [83°F]</i>
13		Heating Set point during Night set back: Display switches between "Stp" and the value of the heating set point temperature during night set back. NSB symbol and heating symbols are also displayed. Please select the heating set point temperature during night set back.	 Range: 10 to 35°C [50 to 95°F] Increment: 0.5°C [1°F] <i>Default value: 16°C [61°F]</i>

Operation mode

Step	Description	Display
A	At powering up, thermostat will light display and activate all LCD segments during 2 seconds. Illuminating the LCD. To illuminate the LCD, you just have to push onto any of the 3 buttons. LCD will light for 8 seconds. Temperature display In operation mode, thermostat will automatically display temperature read. To change the scale between °C and °F, press on both Δ and ∇ for 3 seconds.	
B	Set point display and adjustment To display the set point, press two times onto any of the 3 buttons. Set point will be displayed during 5 seconds. To adjust set point, press on Δ or ∇ while the temperature set point is displayed. <i>Note: If set point adjustment has been locked, lock symbol will be displayed.</i>	
C	Night set back (NSB) : When thermostat is in night set back mode, NSB symbol is displayed, so set point for cooling and/or heating are increased as per the setting made in programming mode. If not locked, night set back can be derogated for a predetermined period by pressing onto any of the 3 buttons. During period of NSB derogation the NSB symbol will flash. If NSB does not flash, the derogation period is finished or the Night set back derogation has been locked in programming mode.	
D	On/Off selection : To set thermostat On/Off, press once onto the power button. Control mode will be displayed during 5 seconds. <ul style="list-style-type: none">✓ Cooling only / OFF✓ Heating only / OFF✓ Automatic Cooling & Heating / Cooling only / Heating only / OFF <i>Note: These selections can vary according to the choice made on step #6.</i>	

Recycling at end of life

	At end of life, please return the thermostat to your Aldes local distributor for recycling. If you need to find the nearest aldes authorized distributor, please consult www.aldes.ae .
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