1 Channel Electronic Thermostat CAD-1DS
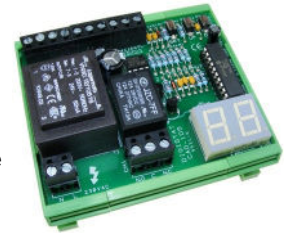
Description

The CAD-1DS is a DIN rail mountable single channel electronic thermostat compatible with Building Management Systems. The unit monitors air or liquid temperatures and controls one user programmable switching relay in response.

Features

● Wide temperature range
● Night setback input
● Heating or cooling function
● Digital LED display with temperature
● DIN rail mountable, small footprint

Technical Specification

Input Supply:	24Vac/dc ±15% 35mA max.
	230Vac 1VA
Sensor Type:	Any 10KΩ Type T sensor from our range
Temp. Range:	-5 °C to +95 °C
Differential:	1-10°C
Output Signal:	1 x C/O relay contact 10(5)A @ 240Vac
Mounting:	DIN rail carrier 91 x 82 x 51 mm
Terminals:	Rising clamp suitable for 0.5-2.5mm²
Ambient:	-20°C to +50°C

Order Codes

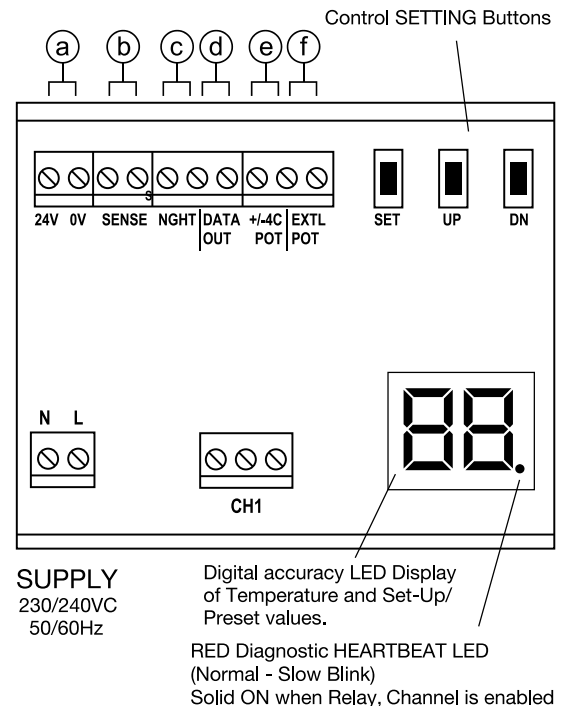|	
CAD-IDS	1 channel electronic thermostat
CAD-POT	Remote setpoint adjuster

Notes

● Min Sensor Cable 7/0.2mm. Keep away from power cables or sources of interference. Screened cable is recommended to eliminate electrical interference.
● Terminals 0.5-2.5mm2 with wire clamps. Max cable length is 100m.
● This module is designed for either LOW VOLTAGE isolated supply connection or 230/240vAC 50/60Hz Line. If connecting to DC supply, negative supply to 0v, positive supply to 24v.
● Both supplies can be connected simultaneously.
● Ambient Temp -20°C/+50°C dry bulb.

Diagnostic Codes

To aid installation and for your added convenience, a range of comprehensive diagnostic aids are built-in:

$5E$ **Sensor error–** The temperature sensor readings are outside acceptable parameters. Check (a) that the sensor is properly connected, or (b) that the sensor or it's cable is not short circuit or open circuit.

Lo **Temperature too low–** When displaying the temperature, shows when the temperature drops below -9°c and is unable to be displayed on the LED's.

Hi **Temperature too high–** When displaying the temperature, shows when the temperature rises above +99°c and is unable to be displayed on the LED's.

Er **System error–** This code is only displayed if an internal error is detected - call for assistance.

Wiring

Control SETTING Buttons

SUPPLY
230/240VC
50/60Hz

Digital accuracy LED Display of Temperature and Set-Up/ Preset values.

RED Diagnostic HEARTBEAT LED (Normal - Slow Blink) Solid ON when Relay, Channel is enabled

RELAY CHANNEL OUTPUTS

(a) **24V AC/DC SUPPLY–** If DC is used, then connect the negative rail to 0V, and positive to 24V terminal. The 24V Supply can be used in place of, or simultaneously with the 230/240VAC Supply (for failsafe dual supply)

(b) **SENSOR–** connect sensor to these two terminals only. Sensor type is CAD...

(c) **NIGHT SWITCH–** This must be a volt-free contact. Connect between centre and outer terminal as marked. When open, the *DIGISTAT* uses the DAY Set-Point. When closed, the NIGHT setpoint is used.

(d) **DATA OUT–** This is a digital data stream compatible with the *SamTalk* protocol. Connect remote displays or other protocol compatible devices to this port.

(e) **+/- 4°C POT–** Connect the POT between the centre and outer terminal. If fitted, allows +/-4°C adjustment away from the DAY setpoint. This allows the range of the *DIGISTAT* to be extended from -9°C to +99°C.

(f) **EXTL (External) POT–** Connect the POT between the centre and outer terminal. If fitted, allows the DAY setpoint to be over-ridden by the POT setting. Ensure the correct RANGE for the attached Pot is programmed into the *DIGISTAT* set-up presets (see Programming Section on page 2).

Programming

The CAD-1DS DIGISTAT is factory shipped with the following defaults preset

Day Set-Point	22°C	adjustment Range -5°C to +95°C
Night Set-Point	16°C	adjustment Range -5°C to +95°C
Differential	2°C	adjustment Range 1°C to 10°C
Heating/Cooling Mode	HEATING	select HEATING or COOLING
External Pot Range	LOW	Low Range covers -5°C to +45°C
		High Range covers +25°C to +95°C

These presets can be user reprogrammed with new settings:

SET

Depress and HOLD-DOWN the SET Button. This will cause the DIGISTAT to jump into Menu Set-Up Mode. (Note: Whilst in the Menu Mode, Temperature sensing and the Output Relay will be switched OFF).

The UP and DN (Down) Buttons enable you to change the displayed preset to a new value.

UP   DN

dy

The LED's display 'dy' to indicate DAY SET-POINT. Release the SET button, and the display will now change to show the current value in degrees Celsius. Use the UP and DN (Down) Buttons to change the value to your desired setting. Once complete, depress and hold SET once again. This will SAVE the new value and advance to the next preset item.

The DAY SET-POINT can be changed in the range -5°C to +95°C.

nt

The LED's now change to display 'nt' to indicate the NIGHT SET-POINT. Release the SET button, and again the display will now show the NIGHT value in degrees Celsius. Use UP and DN to change the value as required. Press and hold SET to save the value and continue to the next preset item.

The NIGHT SET-POINT can be changed in the range -5°C to +95°C.

dF

LED's show 'dF' for DIFFERENTIAL. Release the SET button, and again the display will now show the DIFFERENTIAL value in degrees Celsius. Use UP and DN to change the value as required. Press and hold SET to save the value and continue.

The DIFFERENTIAL can be changed in the range 1°C to 10°C.

HC

LED's show 'HC'. This is the selection for HEATING or COOLING. Releasing the SET Button will display either 'HE' (Heating) or "Co" (Cooling). HEATING is where the Relay switches ON when the temperature *drops* below your Set-Point minus the Differential. COOLING is where the Relay switches ON when the temperature rises above the Set-Point plus the Differential. Use the UP/DN Buttons to switch between Heating and Cooling function. Press SET to Save the value and continue.

The HEATING and COOLING Mode can be toggled between HE (Heating) and Co (Cooling).

rA

Finally, the LED's show 'rA' for RANGE. Release the SET Button and the LED's will display either 'Hi' (for High Range) or 'Lo' (for Low Range). This selects the scale of the External Pot that is connected (if any). Low Range has an External Pot with a scale between -5°C and 45°C, whilst High Range has an External Pot whose scale is between +25°C and +95°C. If no External Pot is connected, then this setting is not relevant.

The RANGE Mode for the External Pot can be switched between Lo (Low) and Hi (High).

The Low Range is between -5°C to +45°C.
The High Range is between +25°C and +95°C.

Pressing SET once more will save this final setting and return to Normal Operation. Note: If at any time the DIGISTAT is left in Menu Mode for more than 20 seconds without any Buttons being pressed, it will revert automatically to Normal Operation WITHOUT SAVING the current preset being edited.

Note, after returning to Normal Operation (or at initial Switch-On), the DIGISTAT will display current temperature for about 20 seconds. Thereafter the Heartbeat LED will periodically blink to indicate correct operation. Pressing either of the UP or DN Buttons will also cause the temperature to be displayed for about 20 seconds.