



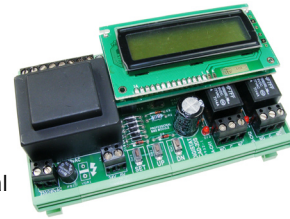
2/8 Channel Electronic Thermostat CAD-2DS

Description

The CAD-2DS is a DIN rail mountable single channel electronic thermostat compatible with Building Management Systems. The unit monitors air or liquid temperatures and controls up to eight user programmable switching relay in response.

Features

- Wide temperature range
- Night setback input
- Heating or cooling function
- Digital LED display with temperature
- Adjustable stage and inter-stage differential



Technical Specification

Input Supply:	24Vac/dc $\pm 15\%$ 150mA max. 230Vac 6VA
Sensor Type:	Any 10K Ω Type T sensor from our range
Temp. Range:	-5°C to +95°C
Differential:	1-10°C
Output Signal:	2 x C/O relay contact 10(5)A @ 240Vac 6 x optional plug-in relays
Mounting:	DIN rail carrier 136 x 82 x 60 mm
Terminals:	Rising clamp suitable for 0.5-2.5mm ²
Ambient:	-20°C to +50°C

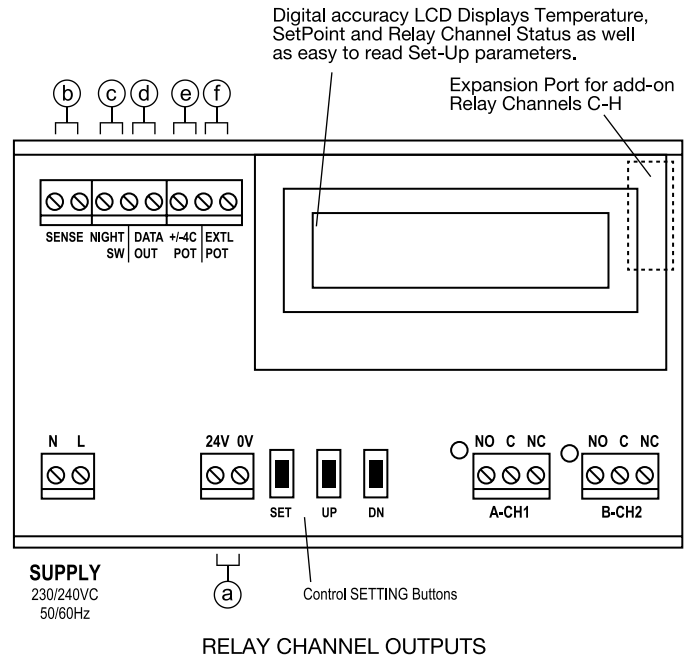
Order Codes

CAD-2DS	2/8 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, -ve supply to 0v, +ve supply to 24v. Both supplies can be connected simultaneously.
- Ambient Temp -20°C/+50°C dry bulb.

Wiring



- 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)
- Sensor**– Connect sensor to these two terminals only. Sensor type is CAD...
- Night Switch**– This must be a volt free contact. Connect between centre and outer terminal as marked. When open, the *DIGISTAT* uses DAY setpoint. When closed, the NIGHT setpoint is used.
- Data IN/OUT**– This is a digital data stream compatible with the *SamTalk* protocol. Connect remote displays or other protocol compatible devices to this port or a second CAD-2DS *DIGISTAT* for up to 16 channels
- +/-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.
- EXTL (External) POT**– Connect the POT between the Centre and Outer Terminal. If fitted, allows the DAY Set-Point to be over-riden 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).

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2/8 Channel Electronic Thermostat CAD-2DS

Programming

The CAD-2DS 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
Heating/Cooling Mode	ALL HEATING	Select any combination of Heating or Cooling
External Pot Range	LOW	Low Range covers -5°C to +45°C High Range covers +25°C to +95°C
Time Delay	1 SECOND	select from 0-250 seconds
Stage Differentials	2°C	adjustment Range 1°C to 10°C
Inter-Stage Differentials	2°C	adjustment Range 1°C to 50°C
Communications	OFF	OFF, Master, Slave TP and Slave TP+SP
LCD Contrast Level	2	select Levels 0 (darkest) to 5 (lightest)
Security PIN	Disabled (Spaces)	Any password up to 4 characters long



Depress and HOLD-DOWN the SET Button until the display blanks - (depending on what the DIGISTAT is doing this can take a few seconds). This will cause the DIGISTAT to jump into Menu Set-Up Mode. (Note: Whilst in the Menu Mode, Temperature sensing and the Output Relay Channels will be switched OFF).

Enter PIN: ****

If PIN (Password) protection has been set, you will need to enter a valid PIN to gain access to the SET-UP's. Use the Up/Down Buttons to scroll through selecting the individual character for each of the four possible characters making up the PIN. Press the SET button to advance from one character to the next. For security purposes, your previous character will change to a '*' for your protection. A successful PIN entry (pressing SET after the fourth character) will gain you access to the SET-UP's, otherwise you will be greeted with INVALID PIN ". If you have forgotten or lost your PIN, call your master distributor for assistance - a charge may be made for this service.

Set-Point Day

Allows setting of the DAY SET-POINT. Use the UP and DN (Down) Buttons to change the value to your desired setting. Once complete, depress SET once again. This will SAVE the new value and advance to the next preset item.

Set-Point Night

Allows setting of the NIGHT SET-POINT.

Cooling|Heating

Change the Cooling/Heating combination from HE=ABCDEFGH which is all eight stages HEATING, through to CO=ABCDEFGH which is all eight stages COOLING. The letters represent the individual Relay Channels. Stages always engage sequentially from the lowest channel for that mode, so if you select four channels Heating and four channels Cooling (CO=ABCD|HE=EFGH), then when Cooling the channels will sequence from A to B to C to D (and back down in reverse), and the Heating will sequence from E to F to G to H (and back down). The vertical bar '|' shows the Neutral Zone between the Heating and Cooling selections.

External Pot

Allows selection of the scale of the External Pot that is connected (if any). If no External Pot is connected, then this setting is not relevant.

Stage Time Delay

Allows entry of a TIME DELAY between any stage (Relay Channel) opening or closing. The main intention is to prevent nuisance switching but can also be used for delaying external devices such as Heaters from all switching on simultaneously and causing power overloads.

Differential a

This is the INDIVIDUAL STAGE DIFFERENTIAL for each stage (displayed A to H). See also the section Operational Maximum.

Differential a-b

Selects the DIFFERENTIAL BETWEEN STAGES (eg between stages A and B, B and C, C and D and so forth). Any Inter-Stage Differential within a Neutral Zone is ignored when the DIGISTAT is running (eg using our 4-Cooling and 4-Heating channel example CO=ABCD|HE=EFGH, the Inter-Stage Differential D-H within the Neutral Zone is ignored). See also the section Operational Maximum.

Communications

Switches the DIGISTAT into different communication modes. MASTER selects Talk (host) Mode, which allows that unit to talk to other devices such as Remote Displays or another DIGISTAT. SLAVE Mode allows a DIGISTAT operating in Master Mode to remotely pass the Temperature (Slave TP) and optionally also the Set-Point (Slave TP+SP) to the Slave unit. This allows two DIGISTAT's to operate with just one Sensor, Night-Switch, External Pot etc., or allows the Slave control over it's own Set-Point if required.

LCD Contrast

Changes the CONTRAST Setting of the LCD (as you make the adjustment). Press the SET button to make the setting permanent.

PIN Code:

Allows the setting of a User PIN (Password). Up to four characters can be entered which need not be numeric. The PIN is case sensitive, so 'abcd' is NOT the same as 'ABCD'. Do NOT forget any PIN that you set. A setting of 'all spaces' (blanks), disables the PIN.

OPERATIONAL MAXIMUM. If any combination of Stage and Inter-Stage Differentials cause a particular Relay Channel to exceed the operational maximums of the DIGISTAT, then that channel will be ignored and an 'x' will appear in that channels designated space on the LCD's STATUS line. The DIGISTAT's displayable maximum is -9°C to +99°C, however it's absolute operational maximum range is -20°C to +120°C.

Differentials Out of Sequence. If Differential stages are entered out of sequence, the DIGISTAT will resequence during it's Normal Operation so that the stages always sequence up and down in order.

Pressing SET after any Set-Up entry causes that entry to be saved and the user advanced to the next item. After saving the last item, (PIN Code), the DIGISTAT will 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 entry being edited.

Current Set-Point. SP indicates the DAY Set-Point, this changes to NP at Night (a DIGISTAT in Slave Mode always displays SP regardless).

Sensor Temperature

TP=17°C SP=22°C
Status=..|CD..xx

Channel Status:

Letters to the left of the Vertical Bar '|' are COOLING stages, whilst letters to the right are HEATING stages (the above example has stages AB cooling and CDEFGH Heating. Any displayed letters (C and D in above example) show those Channels that are currently ON. Channels that are OFF are represented by a period '.' Any channels whose differentials exceed the DIGISTAT's absolute maximum ratings will always be OFF and will be represented by an 'x' (in the above Figure, Heating stages G and H are invalid and so represented).

Figure 1. Example of DIGISTAT's LCD Display.

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