HTC SERIES *III*

dVe — Dual Voltage Enabled Controller ®

HTC– 5

2 Heat & 2 Cool TEMPERATURE CONTROLLER with LED ROOM TEMPERATURE DISPLAY

*The **HTC-5** temperature controller is primarily designed for the control of 2 Stage Heat and 2 Stage Cool Air-conditioning units.*
All output relays are voltage free, permitting use on either 240 V or 24 Volt circuitry.
Stage switch on points are adjustable with their ON/OFF status displayed via LED indicators.
*The **HTC-5** also incorporates a random time delay on the fan relay output enabling multiple A/C Unit startups using only one Time Clock or System Start Switch.*

Features

☐ Australian made and designed.

☐ Power Supply can be either 24v or 240v A.C dVe ®

☐ 10 AMP (resistive) Voltage free relay contacts.

☐ Large LED Temperature Display with 0.1 Degree Increments.

☐ Upgradeable via Plug in Auxiliary Cards. (Many options available.)

☐ Random time delay for Fan Relay Start.

☐ DIP Switch configurable for HEAT/COOL or COMP/RV type wiring.

☐ Wide compatibility to all packaged AC units and Heat Pumps.

AUTOMATED BUILDING SOLUTIONS

5 Phillips Street Thebarton SA 5031
ph : (08) 82442844 fax (08) 82442955
sales@automatedcontrols.com.au

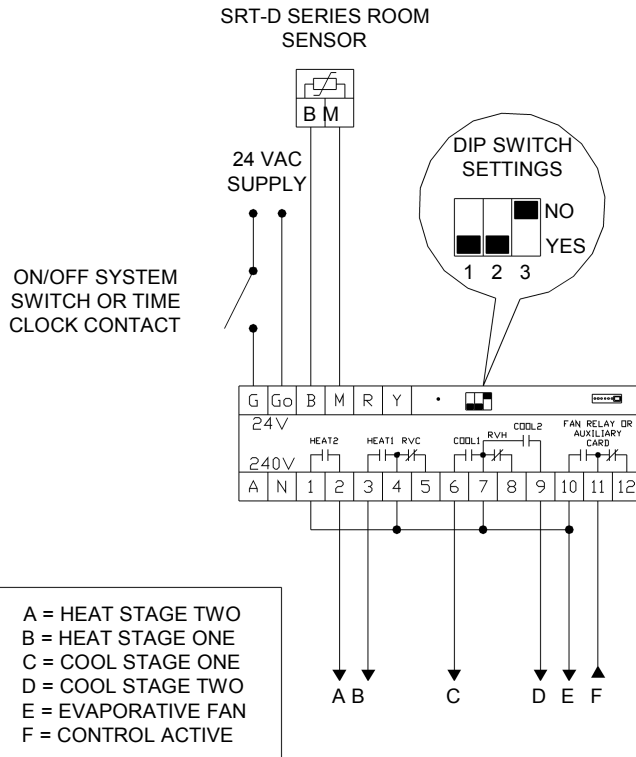|	
Power supply requirements	*24VAC or 240VAC*
Power consumption on 240 volts	*7 VA*
Power consumption on 24 volts	*1 VA*
Sensor Input	*NTC 4000 Ohms at 25 Degrees Centigrade*
Relay outputs	*240VAC 10 amp resistive or 3 amp inductive*
Temperature range (Factory Set to 22oC)	*16 to 28 Degrees Centigrade*
Switching differential for STAGE 1 (Switching Span)	*0.3 Degrees Centigrade (NON-Adjustable)*
Switching differential for STAGE 2	*0.7 Degrees Centigrade (NON-Adjustable)*
Stage dead zone adjustment range	*0.5 to 2.5 Degrees Celsius per Stage*
Stage dead zone (Factory Settings)	*1.0 oC per Stage*
Relay Output indication	*Green LED for Cooling (2 Off)* *Red LED for Heating (2 Off)*
Room temperature LED Indication	*10mm High RED 3 digit 7 segment display*
Room temperature LED Display Resolution	*0.1 Degrees Centigrade Increments*
Plug in Auxiliary Card Options	*Refer to data sheet HAX53 for specific details*
Dip Switch Configurations (Factory Default)	*Dip Switch 1 & 2 set to YES = Controller is configured for HEAT/COOL wiring.* *Dip Switch 3 set to NO = Remote Set point Feature is turned OFF*
Dip Switch Configurations for COMPRESSOR/RV	*Dip Switch 1 & 2 set to NO = Controller is configured for COMPRESSOR/RV wiring*
Dip Switch Configurations for REMOTE SETPOINT	*Dip Switch 3 set to YES = Remote Set point Feature is turned ON*
Fan Relay random time delay (Factory Preset)	*1 to 5 seconds (Not user adjustable)*
Mounting method	*35mm DIN rail (Not supplied)*

Terminal Designations

G	24 VOLT AC SUPPLY ACTIVE	**3**	HEATING STAGE 1 OUTPUT *OR* R/V FOR HEAT
Go	24 VOLT AC SUPPLY GROUND REFERENCE	**4**	(HEATING STAGE 1 & R/V FOR COOL) COMMON
B	SENSOR INPUT	**5**	REVERSING VALVE FOR COOLING OUTPUT
M	SENSOR INPUT COMMON	**6**	COOLING STAGE 1 OUTPUT
R	REMOTE SET POINT SHIFT	**7**	(COOLING STAGE 1 & 2 & R/V FOR HEAT) COMMON
Y	Y SIGNAL OUTPUT	**8**	REVERSING VALVE FOR HEATING OUTPUT
A	240 VOLT AC SUPPLY (ACTIVE)	**9**	COOLING STAGE 2 OUTPUT
N	240 VOLT AC SUPPLY (NEUTRAL)	**10**	FAN RELAY *OR* AUXILIARY CARD NORMALLY OPEN
1	HEAT STAGE 2 COMMON	**11**	FAN RELAY *OR* AUXILIARY CARD COMMON
2	HEATING STAGE 2 OUTPUT	**12**	FAN RELAY *OR* AUXILIARY CARD NORMALLY CLOSED

HTC-5 Electrical Connection Schematics (Page One)

Heat/Cool Type A/C Units utilizing the Internal Fan Relay

DEFAULT DRAWING

SRT-D SERIES ROOM SENSOR

B M

24 VAC SUPPLY

ON/OFF SYSTEM SWITCH OR TIME CLOCK CONTACT

DIP SWITCH SETTINGS

NO
YES

1 2 3

Installation notes

1. Supply voltage can be either 240 volts or 24 volts. The diagram to the left depicts a typical 24 volt connection.
2. Make sure dip switch settings are as shown, current settings are the factory default.
3. Terminal 10 has a random time delay anywhere between 1 to 5 seconds.

| G | Go | B | M | R | Y | · | | | | | | | |

24V

HEAT2 HEAT1 RVC COOL1 RVH COOL2 FAN RELAY OR AUXILIARY CARD

240V

| A | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

A B   C   D E F

A = HEAT STAGE TWO
B = HEAT STAGE ONE
C = COOL STAGE ONE
D = COOL STAGE TWO
E = EVAPORATIVE FAN
F = CONTROL ACTIVE

Diagram Reference: 5HC-FR

Compressor Reversing Valve Type A/C Units utilizing the Internal Fan Relay

OPTION ONE

SRT-D SERIES ROOM SENSOR

B M

24 VAC SUPPLY

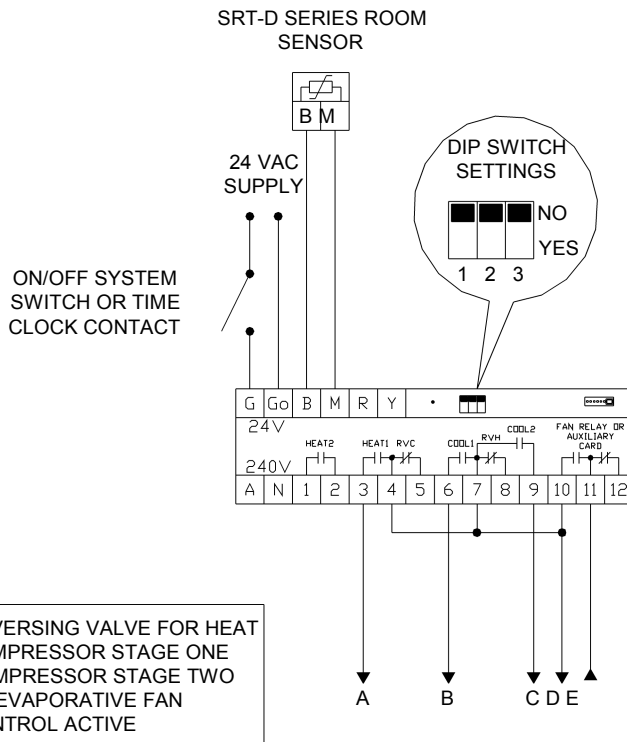ON/OFF SYSTEM SWITCH OR TIME CLOCK CONTACT

DIP SWITCH SETTINGS

NO
YES

1 2 3

Installation notes

1. Supply voltage can be either 240 volts or 24 volts. The diagram to the left depicts a typical 24 volt connection.
2. If the reversing valve energises for cooling use terminal 5 instead of terminal 3.
3. Make sure dip switch settings are as shown.
3. Terminal 10 has a random time delay anywhere between 1 to 5 seconds.

| G | Go | B | M | R | Y | · | | | | | | | |

24V

HEAT2 HEAT1 RVC COOL1 RVH COOL2 FAN RELAY OR AUXILIARY CARD

240V

| A | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

A   B   C D E

A = REVERSING VALVE FOR HEAT
B = COMPRESSOR STAGE ONE
C = COMPRESSOR STAGE TWO
D = TO EVAPORATIVE FAN
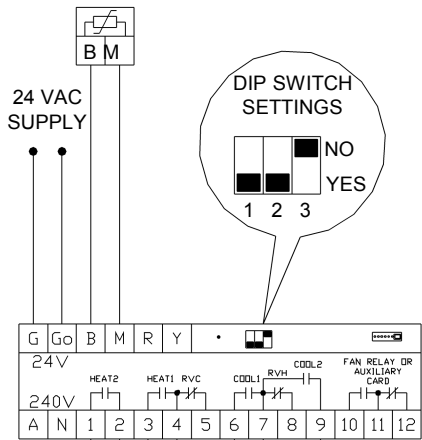E = CONTROL ACTIVE

Diagram Reference: 5CRV-FR

HTC-5 Electrical Connection Schematics (Page Two)

Heat/Cool Type A/C Units without using Internal Fan Relay

OPTION TWO

SRT-D SERIES ROOM
SENSOR

B M

24 VAC
SUPPLY

DIP SWITCH
SETTINGS

NO
YES
1 2 3

Installation notes

1. *Supply voltage can be either 240 volts or 24 volts. The diagram to the left depicts a typical 24 volt connection.*
2. *Make sure dip switch settings are as shown, current settings are the factory default.*

G Go B M R Y ·
24V

HEAT2   HEAT1 RVC   COOL1 RVH COOL2   FAN RELAY OR
240V   AUXILIARY CARD

A N 1 2 3 4 5 6 7 8 9 10 11 12

ON/OFF SYSTEM
SWITCH OR TIME
CLOCK CONTACT

A = HEAT STAGE TWO
B = HEAT STAGE ONE
C = COOL STAGE ONE
D = COOL STAGE TWO
E = EVAPORATIVE FAN
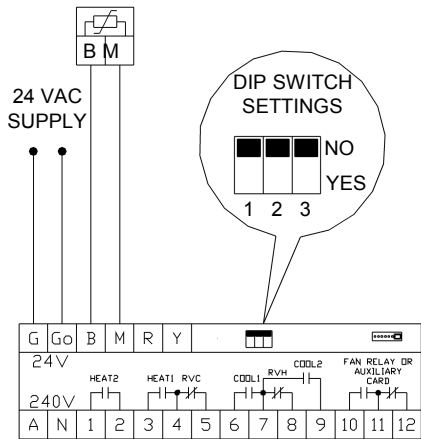F = CONTROL ACTIVE

A B   C   D E   F

Diagram Reference: 5HC

Compressor Reversing Valve Type A/C Units without using the Internal Fan Relay

OPTION THREE

SRT-D SERIES ROOM
SENSOR

B M

24 VAC
SUPPLY

DIP SWITCH
SETTINGS

NO
YES
1 2 3

Installation notes

1. *Supply voltage can be either 240 volts or 24 volts. The diagram to the left depicts a typical 24 volt connection.*
2. *If the reversing valve energises for cooling use terminal 5 instead of terminal 3.*
3. *Make sure dip switch settings are as shown.*

G Go B M R Y ·
24V

HEAT2   HEAT1 RVC   COOL1 RVH COOL2   FAN RELAY OR
240V   AUXILIARY CARD

A N 1 2 3 4 5 6 7 8 9 10 11 12

ON/OFF SYSTEM
SWITCH OR TIME
CLOCK CONTACT

A = REVERSING VALVE FOR HEAT
B = COMPRESSOR STAGE ONE
C = COMPRESSOR STAGE TWO
D = TO EVAPORATIVE FAN
E = CONTROL ACTIVE

A   B   C D   E

Diagram Reference: 5CRV

HTC-5 Remote Sensor & Auxiliary Card Schematics

Connecting a sensor with a Remote Set point Shift

SRT-DSP ADJUSTABLE
ROOM SENSOR

B M 1

DIP SWITCH
SETTINGS

NO
YES
1 2 3

G | Go | B | M | R | Y | · | | |
24V
HEAT2   HEAT1 RVC   COOL1 RVH COOL2   FAN RELAY OR AUXILIARY CARD
240V
A | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12

Installation notes

1.   DIP SWITCH 3 must be set to YES.
2.   The remaining DIP SWITCH Settings do not need to be altered.
3.   The controller set point must be set to 22 Degrees.

Diagram Reference: RSP

Connecting a Plug in Auxiliary Card

SRT-D SERIES ROOM
SENSOR

B M

REMOVE THIS
JUMPER

AUXILIARY
BOARD PLUG

G | Go | B | M | R | Y | · | | |
24V
HEAT2   HEAT1 RVC   COOL1 RVH COOL2   FAN RELAY OR AUXILIARY CARD
240V
A | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12

Installation notes

1.   Remove power from the controller before connecting the Auxiliary Card.
2.   Remove the shorting jumper as shown in the diagram.
3.   Plug in the new Auxiliary card and secure with the screw provided.
4.   Follow the Instructions provided with the Auxiliary Card for further information.
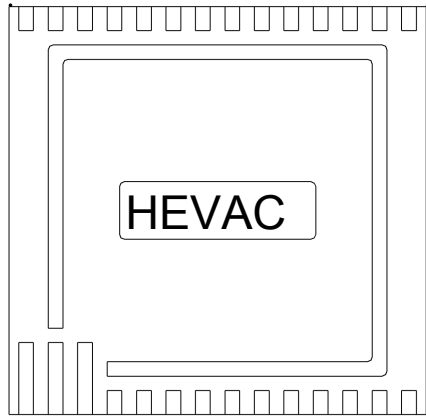5.   When using an ON/OFF type Auxiliary Card the fan relay output Terminals 10,11 & 12 are now used by the Card.

Dimensional Drawings

105.00
52.50   8.00
60.00
32.00
17.00
11.00
105.00   45.00
35.00 79.00
17.00
13.00

All Dimensions are
in millimetres.

Wall Mount Room Temperature Sensor (Non-Adjustable)

HEVAC

The **SRT-D** is a wall mount room temperature sensor and is suitable for use with all the **DIGITAL HTC** series range of temperature controllers. The sensor is non-adjustable, setpoint changes can only be made back at the **HTC** Controller.

Constructed from high impact ABS plastic, the housing is specifically designed with sensor sensitivity in mind making the **SRT-D** very responsive even in low airflow situations.

Cable entry is available from the rear with side entry knockouts for cable duct on three sides.

Technical Specifications

Control range	8 to 33 Degrees Centigrade
Time constant	3 Minutes
Thermistor characteristics	NTC 4000 ohms at 25 Degrees Centigrade
Wiring Considerations	Screened cable is recommended, earthed at the controller end only
Housing Colour	Cream
Enclosure	IP 31
Measuring Accuracy	+/- 0.3 Degrees Centigrade

Dimensions
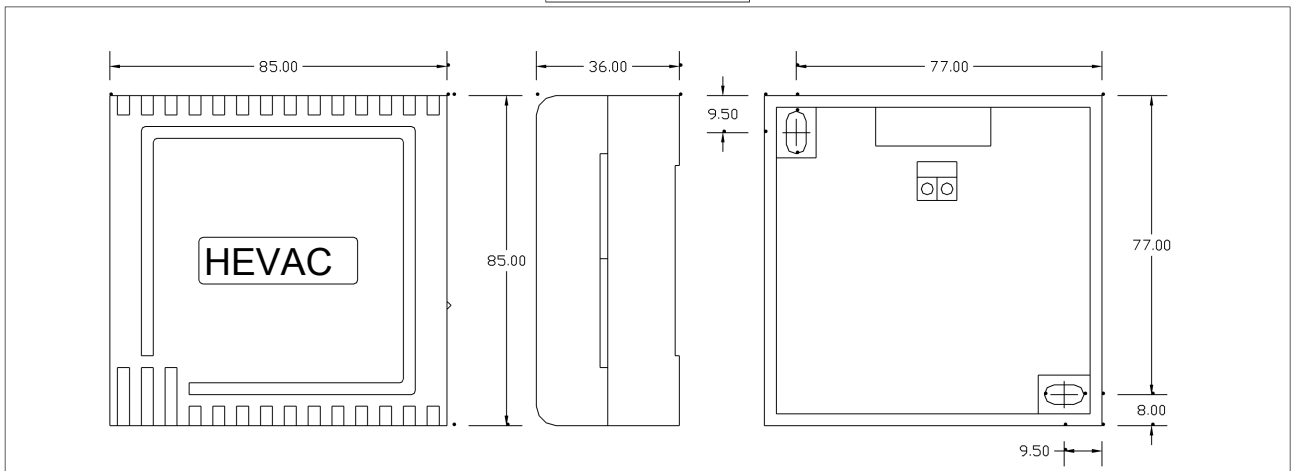
Thermistor Resistance Characteristics

Temp	Ohms	Temp	Ohms	Temp	Ohms	Temp	Ohms	Temp	Ohms	Temp	Ohms
10.00	5454	14.00	4970	18.00	4565	22.00	4222	26.00	3932	30.00	3684
11.00	5324	15.00	4862	19.00	4474	23.00	4145	27.00	3866	31.00	3628
12.00	5201	16.00	4759	20.00	4387	24.00	4071	28.00	3803	32.00	3574
13.00	5083	17.00	4660	21.00	4303	25.00	4000	29.00	3742	33.00	3522