HEVAC

Microprocessor Based Multistage Temperature Controller   HTC– DIGITAL

Features

- Australian Made and designed
- Power Supply can be either 24V or 240V AC
- 5 Fully Programmable 2 Amp (Resistive) Relays
- Large LED Temperature Display
- LED Indication of all Outputs
- Two 0-10VDC Analogue Outputs
- Selectable Pre-set Inbuilt Programs
- Mounts in most M.C.B din rail enclosures
- Compatibility to a vast range of AC Units & Heat Pumps

Use

The HTC-DIGITAL is a fully programmable microprocessor based Temperature Controller.
This controller is intended for use in applications where the control of On/Off Stages of Heating and Cooling and/or sequencing of modulating actuators is required.
The Controllers five relays can each be assigned individual functions and a multitude of characteristics, and the two Analogue Output signals can also be programmed individually for Start & Range.

Made in Australia
100% Australian Owned Company

General Specifications

Operating Voltage		24 Volts AC or 240 Volts AC
Power Consumption		
At 240 Volts	7 VA	
At 24 Volts	1 VA	
Switching Capacity of Relays		
Voltage	AC 0….250 Volts	
Current	2.0 (0.75) Amps	
Set point Setting Range		8….33 oC in 0.1 oC Increments
Relay Switch ON Points (Dead band)		0.1….9.9 oC
Relay Hysteresis (Switching Differential)		0.3….9.9 oC
Relay to Energise Time Delay		0.1….9.9 Minutes
Yh/Yc Output Voltage Range		0….10VDC
Yh/Yc Start Point (Dead band)		0.1….9.9 oC
Yh/Yc Range (Proportional Band)		0.1….9.9 oC
Remote Setpoint Shift RSP1 Terminal R1 (Potentiometric)		10k POT Programmable Authority of + or - 0….9.0 oC
Remote Setpoint Shift RSP2 Terminal R2 (Voltage)		0...10VDC Programmable Authority of + or - 0….9.0 oC
Unoccupied Economy Mode added Dead band		1….9.0oC added to both the Heat & Cool Dead band Settings
Terminal YB Slave Output		0….5VDC over programmable temperature deviation from setpoint
Terminal YB Range		-9.9….+9.9 oC
Output Indication		
Heating On/Off Stages	5 x Red LED	
Cooling On/Off Stages	5 x Green LED	
System ON Indication	1 x Yellow LED	
Programming Display	10mm Red 7 Segment Display	
Display Resolution	0.1 Increments	
Terminal YX Output		RS485 Output to PC for remote monitoring and programming Uses HEVAC Specific Protocol

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Environmental Conditions	Operation	
	Ambient Temperature	0...45oC
	Humidity	< 85 % RH (Non Condensing)
	Storage and Transport	
	Ambient Temperature	-5...65oC
	Humidity	< 90 % RH (Non Condensing)
Product Standards	C-tick	N10842
Weight	Including Packaging	600 grams
Housing	Colour	Grey
	Material	ABS POLYCARB
	UV Stabilised	YES
	Fire Retardant	YES
	Size	L105mm x W105mm x D60mm
	Mounting Method	35mm Din Rail Mountable

Terminal Designations

G	24 Volt AC Supply Active
Go	24 Volt AC Supply Ground Reference
YH	0-10 VDC Modulating Heating Output
YC	0-10 VDC Modulating Cooling Output
M	Sensor Input Common
B	Sensor Input
R1	10 k Ohms Remote set Point Shift
XU	Unoccupied Economy Mode input
XT	(Not Used)
YB	Y Signal Output (For HRC DIG Slave Relay ONLY)
R2	0-10 VDC Remote set Point Shift
YX	RS485 Communications Port
A	240 Volt AC Supply Active
N	240 Volt AC Supply Neutral
1	Relay 1 Common
2	Relay 1 Normally Open
3	Relay 2 Normally Open
4	Relay 2 Common
5	Relay 2 Normally Closed
6	Relay 3 Normally Open
7	Relay 3 Common
8	Relay 1 Normally Closed
9	Relay 4 Common
10	Relay 4 Normally Open
11	Relay 5 Common
12	Relay 5 Normally Open

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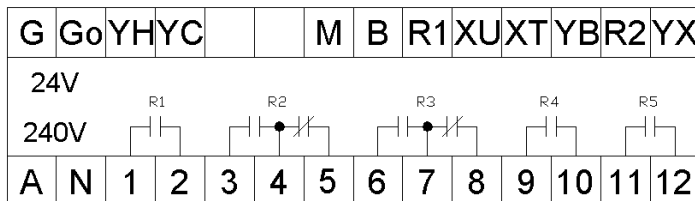
Pre Loaded Programs

Abbreviations & Definitions	DB	Dead Band in Degrees Celsius
	SD	Switching Differential in Degrees Celsius
	PB	Proportional band in Degrees Celsius
	TD	Time Delay 0.1 = 10 Seconds 1.0 = 1 Minute
	MODE	S1 to S5 = Stage 1,2,3,4 & 5
		H1 to H5 = Heating Stages 1,2,3,4 & 5
		C1 to C5 = Cooling Stages 1,2,3,4 & 5

Program PR1
Test program 4 Heat/4 Cool

OUTPUT	MODE	DB	SD	PB	TD
R1	S1	1.0	0.3	-	0.1
R2	S2	2.0	0.3	--	0.2
R3	S3	3.0	0.3	-	0.3
R4	S4	4.0	0.3	-	0.4
YH	-	-	-	0.5	-
YC	-	-	-	0.5	-

Program PR2
1 Heat/1 Cool

OUTPUT	MODE	DB	SD	PB	TD
R2	H1	1.0	0.5	--	1.0
R3	C1	1.0	0.5	-	1.0

Program PR3
(Factory setting) 2 Heat/2 Cool

OUTPUT	MODE	DB	SD	PB	TD
R1	H2	2.0	0.7	-	2.0
R2	H1	1.0	0.5	--	1.0
R3	C1	1.0	0.5	-	1.0
R4	C2	2.0	0..7	-	2.0

Program PR4
2 Heat/2 Cool + YC Economy Cycle

OUTPUT	MODE	DB	SD	PB	TD
R1	S1	1.0	0.3	-	0.1
R2	S2	2.0	0.3	--	0.2
R3	S3	3.0	0.3	-	0.3
R4	S4	4.0	0.3	-	0.4
YC	-	-	-	0.5	-

Program PR5
2 Stage Reverse Cycle A/C Unit
+ YC Economy Cycle
+ 1 Stage Electric Element

OUTPUT	MODE	DB	SD	PB	TD
R1	H3	3.0	1.0	-	3.0
R2	H1	1.0	0.5	--	1.0
R3	C1	1.0	0.5	-	1.0
R4	S2	2.0	0..7	-	2.0
YC	-	0.1	-	1.0	-
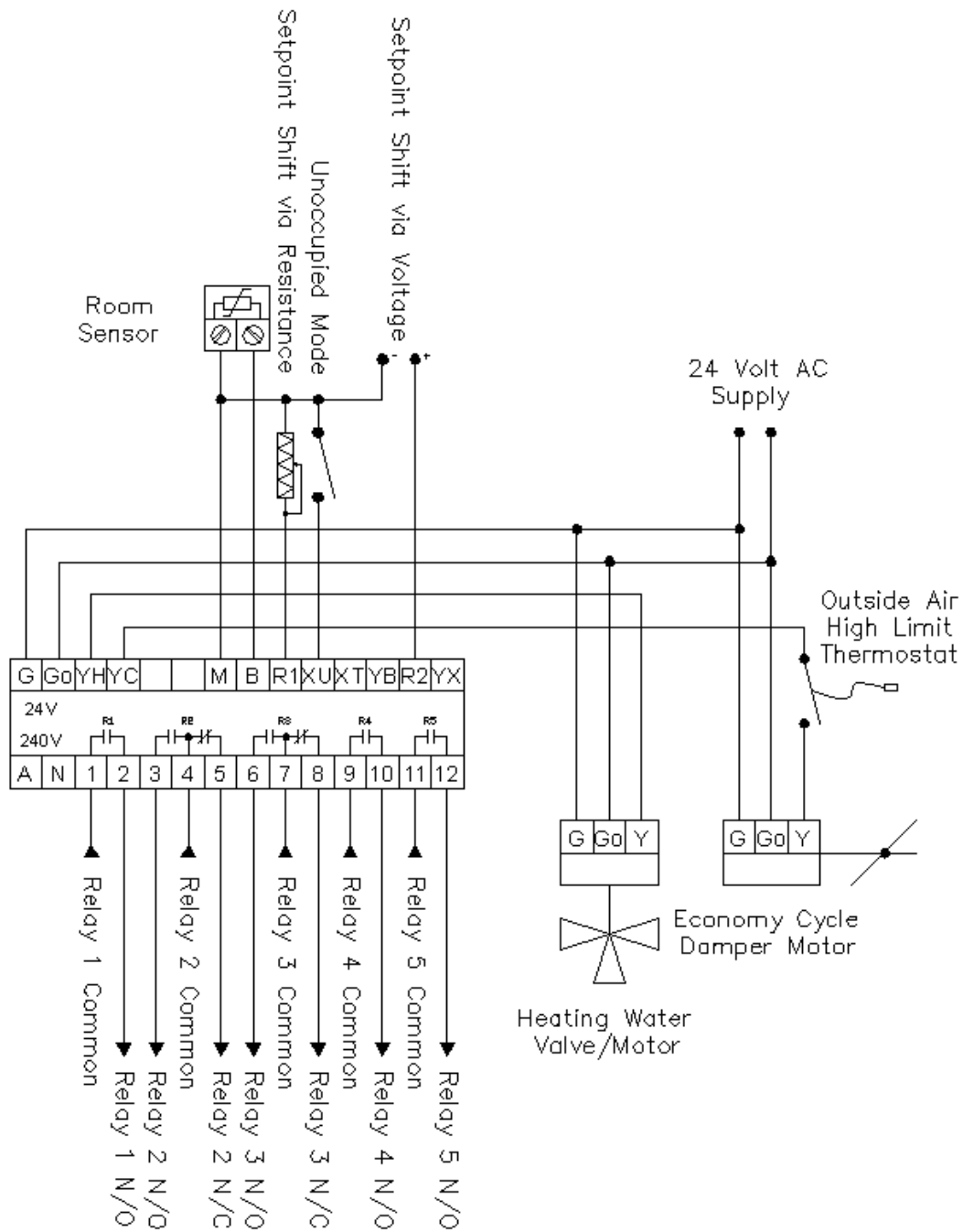
Wiring Considerations

Supply Voltage	The Controller requires either a 240Volt AC or 24 Volt ACV Supply. This diagram assumes a 24 Volt AC connection
Warnings	Use ONE Supply Voltage Only either 240 or 24 Volts AC
Cabling Requirements	Its is recommended to connect remote input devices using either twisted pair or screened cable. If using screened cable the shield should be grounded to a good Earth at the controller end only

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