

# HumiTherm-cS Pro

Advanced 'Temperature + Humidity'  
Programmable Controller with  
Alarm & Retransmission Outputs

# Operation Manual

This brief manual is primarily meant for quick reference to wiring connections  
and parameter searching. For more details on operation and application;  
please log on to [www.ppiindia.net](http://www.ppiindia.net)

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## OPERATOR PAGE AND PARAMETERS : PAGE 0

Parameters	Settings (Default Value)
Standby Stby	none None both Both OC Temp rh Humidity (Default : None)
Select Channel SEL	OC Temp rh Humidity (Default : Temp)
Control Setpoint CnSP	Setpoint Low Limit to Setpoint High Limit (Default : 0.0)
Temperature or RH Alarm-1 Setpoint A1SP	
Temperature or RH Alarm-2 Setpoint A2SP	

## ALARM PARAMETERS : PAGE-10

Parameters	Settings (Default Value)
Select Channel SEL	OC Temp rh Humidity (Default : Temp)
Alarm-1 Type A1ty	none None P_Lo Process Low P_Hi Process High dE Deviation Band bAnd Window Band (Default : None)
Alarm-1 Hysteresis A1HY	0.2 to 99.9 (Default : 2.0)
Alarm-1 Inhibit A1ih	no No YES Yes (Default : Yes)
Alarm 2 Type A2ty	The parameter descriptions and settings are the same as that for Alarm-1.
Alarm-2 Hysteresis A2HY	
Alarm-2 Inhibit A2ih	

## CONTROL PARAMETERS : PAGE 11

Parameters	Settings (Default Value)
Select Channel SEL	OC Temp rh Humidity (Default : Temp)
Control Action CAct	OnOff On-Off PID PID (Default : PID)
Output Type OPty	For Control Output Relay / SSR rLY Relay SSr SSR (Default : Relay) For Control Output mA / V 0-20 0 - 20mA 4-20 4 - 20mA 0-5 0 - 5V 0-10 0 - 10V (Default : 4 - 20mA)
Control Mode tYPE	dhun De-hum hun Hum (Default : Hum)
Setpoint Low Limit SPLo	Temp = -199.9°C to SP.Hi RH = 0.0% to SP.Hi (Default : 0)
Setpoint High Limit SPHi	Temp = SP.Lo to 600.0°C RH = SP.Lo to 100.0% (Default : 100)
Heat/humidification Power Low Limit PL	0.0% to Power High Limit (Default : 0.0)
Heat/humidification Power High Limit PH	Power Low Limit to 100.0% (Default : 100.0)
Proportional Band (Cool Pre-dominant Zone) PbC	For Temp = 0.1 to 999.9°C For RH = 0.1 to 999.9% (Default : 50.0)
Integral Time (Cool Pre-dominant Zone) ItC	1 to 3600 Seconds (Default : 100 sec.)
Derivative Time (Cool Pre-dominant Zone) dEtC	1 to 600 Seconds (Default : 16 sec.)
Proportional Band (Heat Pre-dominant Zone) Pb	For Temp = 0.1 to 999.9°C For RH = 0.1 to 999.9% (Default : 50.0)
Integral Time (Heat Pre-dominant Zone) It	1 to 3600 Seconds (Default : 100 sec.)

Parameters	Settings (Default Value)
Derivative Time (Heat Pre-dominant Zone) dEt	1 to 600 Seconds (Default : 16 sec.)
Cycle Time Ct	0.5 to 100.0 Seconds (in steps of 0.5 secs.) (Default : 10.0 sec.)
Hysteresis HYSt	0.1 to 999.9 (Default : 2.0)

## INPUT CONFIGURATION PARAMETERS : PAGE 12

Parameters	Settings (Default Value)																					
Select Channel SEL	OC Temp rh Humidity (Default : Temp)																					
Input Type inPt	Refer Table 1 (Default) For Temp. : RTD, For RH : 0 to 5.0)																					
Signal Low SLo	<table border="1"> <thead> <tr> <th>Input Type</th> <th>Settings</th> <th>Default</th> </tr> </thead> <tbody> <tr> <td>0 to 20mA</td> <td>0.00 to Signal High</td> <td>0.00</td> </tr> <tr> <td>4 to 20mA</td> <td>4.00 to Signal High</td> <td>4.00</td> </tr> <tr> <td>0 to 1.25 V</td> <td>0.00 to Signal High</td> <td>0.00</td> </tr> <tr> <td>0 to 5 V</td> <td>0.000 to Signal High</td> <td>0.000</td> </tr> <tr> <td>0 to 10 V</td> <td>0.00 to Signal High</td> <td>0.00</td> </tr> <tr> <td>1 to 5 V</td> <td>1.000 to Signal High</td> <td>1.000</td> </tr> </tbody> </table>	Input Type	Settings	Default	0 to 20mA	0.00 to Signal High	0.00	4 to 20mA	4.00 to Signal High	4.00	0 to 1.25 V	0.00 to Signal High	0.00	0 to 5 V	0.000 to Signal High	0.000	0 to 10 V	0.00 to Signal High	0.00	1 to 5 V	1.000 to Signal High	1.000
Input Type	Settings	Default																				
0 to 20mA	0.00 to Signal High	0.00																				
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Signal High SHi	<table border="1"> <thead> <tr> <th>Input Type</th> <th>Settings</th> <th>Default</th> </tr> </thead> <tbody> <tr> <td>0 to 20mA</td> <td>20.00 to Signal Low</td> <td>20.00</td> </tr> <tr> <td>4 to 20mA</td> <td>20.00 to Signal Low</td> <td>20.00</td> </tr> <tr> <td>0 to 1.25 V</td> <td>1.250 to Signal Low</td> <td>1.250</td> </tr> <tr> <td>0 to 5 V</td> <td>5.000 to Signal Low</td> <td>5.000</td> </tr> <tr> <td>0 to 10 V</td> <td>10.00 to Signal Low</td> <td>10.00</td> </tr> <tr> <td>1 to 5 V</td> <td>5.000 to Signal Low</td> <td>5.000</td> </tr> </tbody> </table>	Input Type	Settings	Default	0 to 20mA	20.00 to Signal Low	20.00	4 to 20mA	20.00 to Signal Low	20.00	0 to 1.25 V	1.250 to Signal Low	1.250	0 to 5 V	5.000 to Signal Low	5.000	0 to 10 V	10.00 to Signal Low	10.00	1 to 5 V	5.000 to Signal Low	5.000
Input Type	Settings	Default																				
0 to 20mA	20.00 to Signal Low	20.00																				
4 to 20mA	20.00 to Signal Low	20.00																				
0 to 1.25 V	1.250 to Signal Low	1.250																				
0 to 5 V	5.000 to Signal Low	5.000																				
0 to 10 V	10.00 to Signal Low	10.00																				
1 to 5 V	5.000 to Signal Low	5.000																				
Range Low rLo	-199.9 to 999.9 (Default : 0.0)																					
Range High rHi	-199.9 to 999.9 (Default : 100.0)																					
Offset OFSt	-50.0 to 50.0 (Default : 0.0)																					
Filter Filt	0.5 to 60.0 Seconds (in steps of 0.5 Seconds) (Default : 2.0 sec.)																					

## SUPERVISORY PARAMETERS : PAGE 13

Parameters	Settings (Default Value)
Tune Command tUnE	no No YES Yes (Default : No)
Standby Selection Permission Stby	dSbL Disable EnbL Enable (Default : Disable)
Control / alarm Set-point Adjustment Permission SPoP	dSbL Disable EnbL Enable (Default : Disable)
Digital Input Function diFC	none None LLOy Water Level ARcH Alarm ACK (Default : None)
Water Level Logic yLLo	OPeN Open as Low CLoS Close as Low (Default : Open as Low)
Device Slave ID id	1 to 127 (Default : 1)
Baud Rate bAUD	4.8 4800 9.6 9600 19.2 19200 (Default : 9.6)
Parity PARi	none None EveN Even Odd Odd (Default : Even)
Serial Write Permission CoNt	no No YES Yes (Default : No)

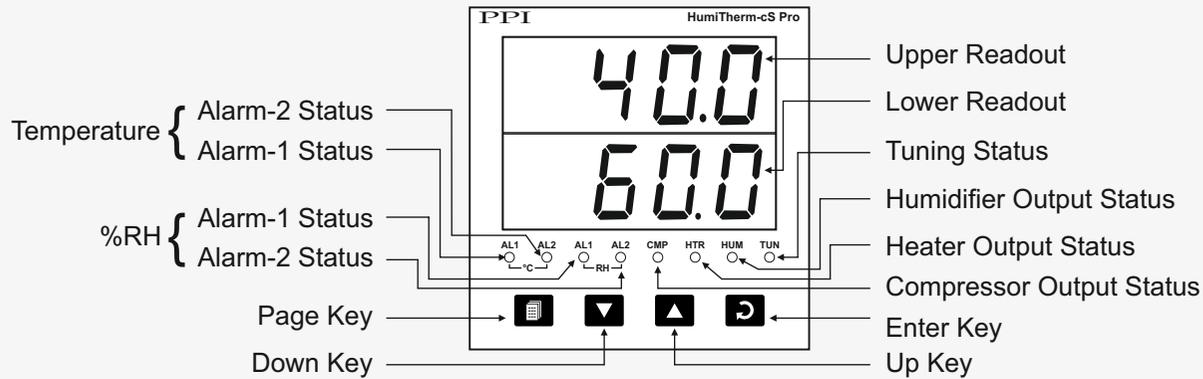
## RETRANSMISSION PARAMETERS : PAGE 15

Parameters	Settings (Default Value)
Select Channel SEL	OC Temp rh Humidity (Default : Temp)
Retransmission Output Type rEt.o	0-20 0 - 20mA 4-20 4 - 20mA 0-5 0 - 5 V 0-10 0 - 10 V (Default : 4 - 20mA)
Retransmission Low rEt.L	Input Type Minimum Range to Input Type Maximum Range (Default : 0.0)
Retransmission High rEt.H	Input Type Minimum Range to Input Type Maximum Range (Default : 100.0)

## COMPRESSOR SETTING PARAMETERS : PAGE 17

Parameters	Settings (Default Value)
Compressor Output Mode CPoP	OFF OFF On ON AUTO AUTO (Default : Auto)
Compressor Strategy CPSt	SPoC Dry Bulb SP PuPC Dry Bulb PV Purh %RH PV (Default : Dry Bulb SP)
Boundary Set-point bSP	Temp. SP Low Limit to Temp. SP High Limit (Default : 45.0)
Compressor Set-point CPSP	0.0 to 50.0 (Default : 0.2)
Compressor Hysteresis CPHY	0.1 to 25.0 (Default : 0.2)
Compressor Time Delay tDLy	0.00 to 10.00 Min (in steps of 5 secs.) (Default : 0 Sec.)

# FRONT PANEL LAYOUT



## Keys Operation

Symbol	Key	Function
	PAGE	Press to enter or exit set-up mode.
	DOWN	Press to decrease the parameter value. Pressing once decreases the value by one count; keeping pressed speeds up the change.
	UP	Press to increase the parameter value. Pressing once increases the value by one count; keeping pressed speeds up the change.
	ENTER	Press to store the set parameter value and to scroll to the next parameter on the PAGE.

## ELECTRICAL CONNECTIONS

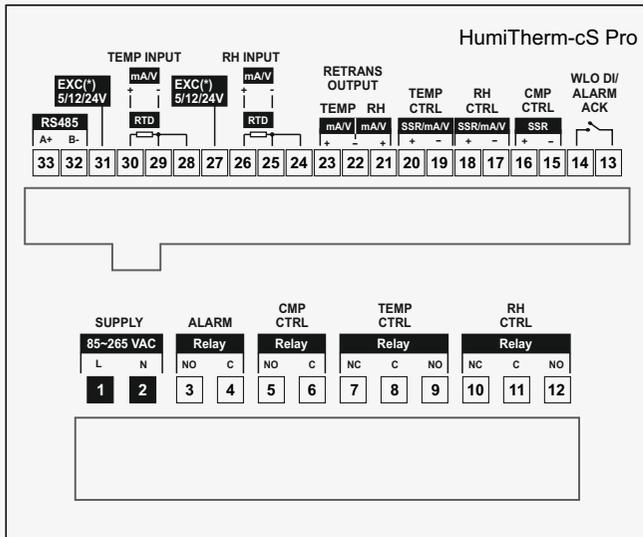


TABLE- 1

Option	Range (Min. to Max.)	Resolution
rtd 3-wire, RTD Pt100	-199.9 to +600.0°C	0.1°C
0-20 0 to 20mA DC current		
4-20 4 to 20mA DC current		
rE5.1 rE5.2 Reserved (Default : 0 to 20mV)	-199.9 to 999.9 units	0.1 units
1.25 0 to 1.25V DC voltage		
5.0 0 to 5.0V DC voltage		
10.0 0 to 10.0V DC voltage		
1-5 1 to 5.0V DC voltage		

## PV Error Indications for Dry Bulb Temperature

Message	Error Type
Dr	Over-range Dry Bulb Temp. above Max. Range
Ur	Under-range Dry Bulb Temp. below Min. Range
Open	Sensor Open Dry Bulb Sensor (RTD) Broken / Open

## PV Error Indications for Relative Humidity (RH)

Message	Error Type	Cause
Dr	Over-range	Wet Bulb Temperature above Max. Range
Ur	Under-range	Wet Bulb Temperature below Min. Range
Open	Sensor Open	Wet Bulb Sensor (RTD) Broken / Open
rhEr	RH Error	This error is indicated in the following cases : <ul style="list-style-type: none"> <li>Dry Bulb Temperature above 102.0°C.</li> <li>Dry Bulb Temperature below -20.0°C.</li> <li>Wet Bulb depression beyond:                      50.0°C for Dry Bulb Temperature above 0°C                      5.6°C for Dry Bulb Temperature below 0°C</li> </ul>
1000	Display Freezes To 100.0%	This error is indicated in the following cases : <ul style="list-style-type: none"> <li>Wet-Bulb Temperature exceeds Dry-Bulb Temperature.</li> <li>Computed % RH above 100.0%.</li> </ul>
0.0	Display Freezes To 0.0%	Computed % RH is below 0.0%.