HumiTherm-c Pro

Enhanced
'Temperature + Humidity' PID Controller

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

UTILITY PARAMETERS : PAGE-33

Parameters	Settings (Default Value)	
Compressor Control Strategy `CP.St`	`db.SP` Dry Bulb SP	
	`db.Pu` Dry Bulb PV	
	(Default : Dry Bulb SP)	
Input Type For Temperature `oC. In`	Refer Table 1 (Default : RTD)	

Signal Low For Temperature `oC.SL`

Input Type	Settings	Default
0 to 20 mA	0.00 to Signal High	0.00
4 to 20 mA	4.00 to Signal High	4.00
0 to 1.25 V	0.000 to Signal High	0.000
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

Signal High For Temperature `oC.Sh`

Input Type	Settings	Default
0 to 20 mA	Signal Low to 20.00	20.00
4 to 20 mA	Signal Low to 20.00	20.00
0 to 1.25 V	Signal Low to 1.250	1.250
0 to 5 V	Signal Low to 5.000	5.000
0 to 10 V	Signal Low to 10.00	10.00
1 to 5 V	Signal Low to 5.000	5.000

Parameters	Settings (Default Value)
DC Range Low For Temperature `oC.Lo`	-199.9 to 999.9 (Default : 0.0)
DC Range High For Temperature `oC.Hi`	-199.9 to 999.9 (Default : 100.0)
Offset For Temperature `oC.OF`	-25.0 to +25.0°C (Default : 0.0)
Digital Filter for Temperature `oC.Fi`	3.0 to 60.0°C (Default : 3.0)
Input Type For %RH `rh. In`	
Signal Low For %RH `rh.SL`	The above parameters are for %RH input and the descriptions are the same as their temperature counterparts.
Signal High For %RH `rh.Sh`	
DC Range Low For %RH `rh.Lo`	
DC Range High For %RH `rh.Hi`	

Notes :
(1) RTD Pt100 input selection is not available for %RH.
(2) The factory default input type is 0 -5 VDC with corresponding signal low, signal high, range low & range high default values.

Parameters	Settings (Default Value)
Offset For %RH `rh.OF`	
Digital Filter for %RH `rh.Fi`	

TEMPERATURE PARAMETERS : PAGE-10

Parameters	Settings (Default Value)
Temperature Alarm Band `oC.AL`	0.3 to 25.0°C (Default : 0.5 °C)
Temperature Alarm Hysteresis `oC.HY`	0.2 to 10.0°C (Default : 0.2 °C)
Temperature Proportional Band `oC.Pb`	0.1 to 999.9°C (Default : 5.0 °C)
Temperature Integral Time `oC. It`	0 to 1000 Seconds (Default : 100)
Temperature Derivative Time `oC.dt`	0 to 250 Seconds (Default : 25)
Temperature Cycle Time `oC.Ct`	0.5 to 25.0 Seconds (in steps of 0.5 secs.) (Default : 1.0)

RELATIVE HUMIDITY (% RH) PARAMETERS : PAGE-11

Parameters	Settings (Default Value)
%RH Alarm Band `rh.AL`	0.3 to 25.0% (Default : 2.0)
%RH Alarm Hysteresis `rh.HY`	0.2 to 10.0% (Default : 2.0)
%RH Proportional Band `rh.Pb`	0.1 to 999.9% (Default : 10.0)
%RH Integral Time `rh. It`	0 to 1000 Seconds (Default : 100)
%RH Derivative Time `rh.dt`	0 to 250 Seconds (Default : 25)
%RH Cycle Time `rh.Ct`	0.5 to 25.0 Seconds (in steps of 0.5 secs.) (Default : 1.0)

OP3 FUNCTION PARAMETERS : PAGE-13

Parameters	Settings (Default Value)	
Compressor Output Type `CP.tY`	`nonE` None	
Alarm Output Type `AL.tY`	`rLY` Relay	
	`SSr` SSR	
	(Default : For Compressor O/P Type : SSR / For Alarm O/P type : None)	
Compressor Setpoint `CP.SP`	0.0 to 50.0°C **or** 0.0 to 25.0°C (Default : 45.0 **or** 0.2)	
Compressor Hysteresis `CP.HY`	0.1 to 25.0°C (Default : 0.2)	
Compressor Time Delay `t.dLY`	0.00 to 10.00 Min. Sec (in steps of 5 Seconds) (Default : 00.00)	

SUPERVISORY PARAMETERS : PAGE-12

Parameters	Settings (Default Value)	
SP Adjustment on PAGE-0 `SP`	`dSbL` Disable	
	`EnbL` Enable	
	(Default : Enable)	
Self-Tune Command `tUnE`	`no` No	
	`YES` Yes	
	(Default : No)	
Water Level-low Detection Logic `Y.LLG`	`OPEn` Open	
	`CLOS` Close	
	(Default : Open)	
Slave Id `Id`	1 to 127 (Default : 1)	
Baud Rate `bAUd`	`4.8` 4800	
	`9.6` 9600	
	`19.2` 19200	
	(Default : 9600)	
Parity `PAri`	`nonE` None	
	`EuEn` Even	
	`Odd` Odd	
	(Default : Even)	

Parameters	Settings (Default Value)	
Communication Write Enable `ConE`	`no` No	
	`YES` Yes	
	(Default : Yes)	

COMPRESSOR OPERATION & POWER INDICATION : PAGE-1

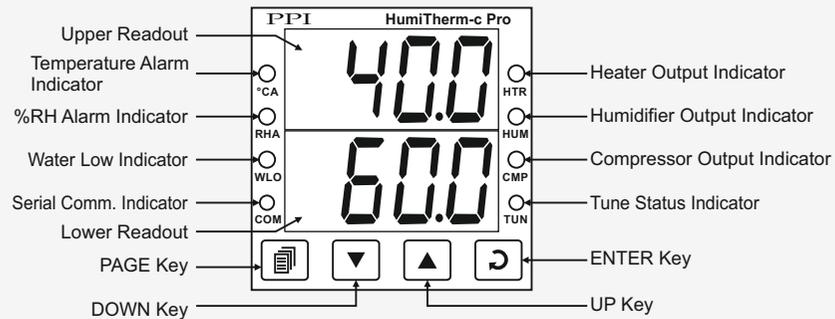| Parameters	Settings (Default Value)	
Compressor Operation Mode `CP.OP`	`On` On	
	`OFF` Off	
	`AUtO` Automatic	
	(Default : Auto)	
Output Power for Temperature Loop `OUt. 1`	0 to 100.0% (View Only - Non editable)	
Output Power for %RH Loop `OUt.2`	0 to 100.0% (View Only - Non editable)	

Table 1

Option	What it means	Range (Min. to Max.)
`rtd`	3-wire, RTD Pt100	-199.9 to 600.0°C / -199.9 to 999.9°F
`0-20`	0 to 20mA DC current	
`4-20`	4 to 20mA DC current	
`rESu`	Reserved (Don't Select)	Refer Parameters Signal Low Signal High Range Low Range High
`rESu`		
`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	

FRONT PANEL LAYOUT

Front Panel

Upper Readout
Temperature Alarm Indicator — °CA
%RH Alarm Indicator — RHA
Water Low Indicator — WLO
Serial Comm. Indicator — COM
Lower Readout

Heater Output Indicator — HTR
Humidifier Output Indicator — HUM
Compressor Output Indicator — CMP
Tune Status Indicator — TUN

PAGE Key
DOWN Key

ENTER Key
UP Key

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.

PV Error Indications

Message	PV Error Type
Or	Over-range (Dry-Bulb Temp. above Max. Range)
Ur	Under-range (Dry-Bulb Temp. below Min. Range)
OPEn	Open (Sensor open / broken)

ELECTRICAL CONNECTIONS
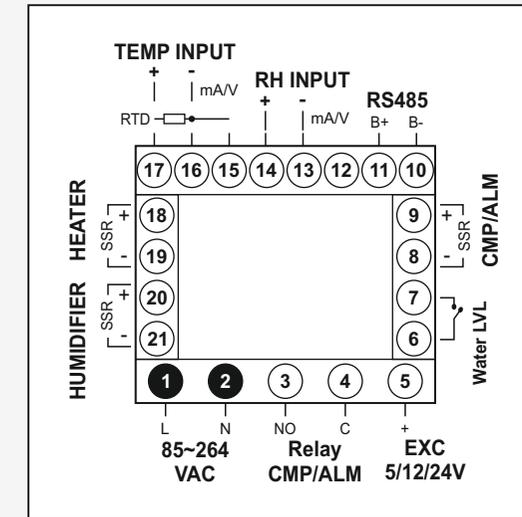
WIRING CONNECTION

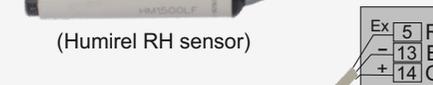### RH SENSORS

R=Red
G= Green
B=Black
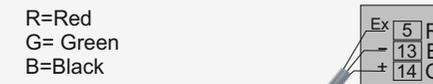
(Humirel RH sensor)

(IST RH sensor)

(Capacitance RH sensor)