



# Product Manual

## PID CONTROLLER

### PID 4203-1C



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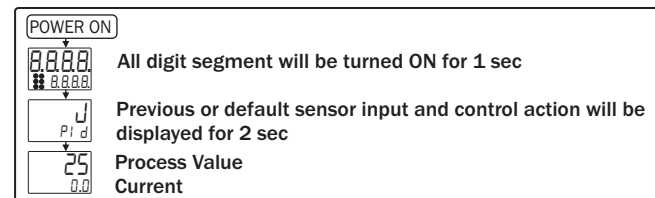


### Technical Specification

Model	PID-4203-1C
Display	UPPER:- 4 Digit 7 seg 0.56", White LED Display LOWER:- 4 Digit 7 seg 0.33", green LED Display
Size (mm)	48 (H) X 48 (W) X 95 (D) mm
Panel Cutout	45 X 45 mm
Input	J ,K ,PT,PT.1
Range	Temperature:J type: 0 to 600°C/ K type: 0 to 1200°C PT-100: -99 To 400 °C /PT.1:- -99.9 to 400.0 C Ampere : 0.0 to 30.0 A (1 CT)
Control Action	PID/ ON-OFF (selectable)
Output	1 S.S.R. + 2 Relay, 1C/O Contact,5A, 230V AC , 12V DC approx,30mA DC 1 S.S.R-For Heating PID/ON-OFF Selection 2Relay-For Blower TP/ON-OFF Selection 3Relay- For Alarm
Power Supply	100 to 250V AC,50/60 Hz, Approx 3VA
Protection Level	IP-65 (Front side) As per IS/IEC 60529 : 2001
Operating Temperature	0°C To 55°C
Relative Humidity	Up to 95% RH Non Condensing

### Note:-

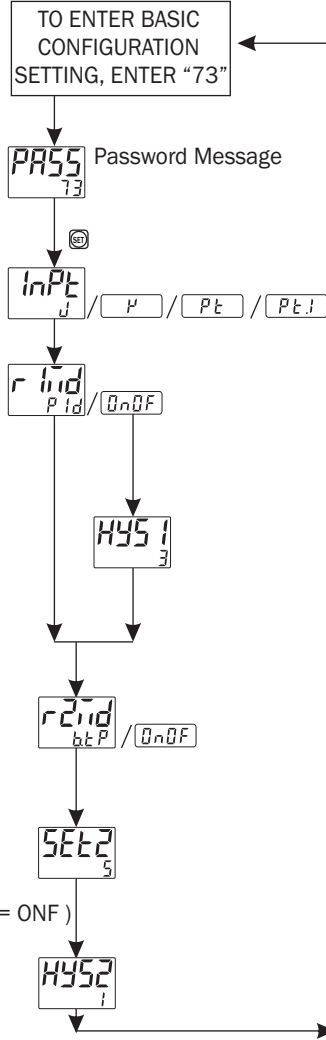
- 1) If Sensor Connection is reverse, Display will show "5rE" message.
- 2) If Sensor is not connected, Display will show "OPEN" message.
- 3) Set 2 is relative to Set 1.
- 4) Press (V) key to see current on lower display (H1,H2,H3 & Total Current).  
- On pressing (V) key for 4 sec, it changes from Scroll to Hold and vice-versa.  
- During Scroll mode, every 2 sec all the individuals currents and total current gets scrolled.  
- And during Hold mode, it holds the total current & by each press of (V) key individual currents can be seen and after 10 sec it automatically jumps to total current.
- 5) For Heater Break Indication, if any phase Heater breaks down than upper display will indicate HBR and Lower display will indicate corresponding heater H1,H2,H3 blink for 2 sec.
- 6) Every time the instrument is turn ON, following pattern will be displayed.



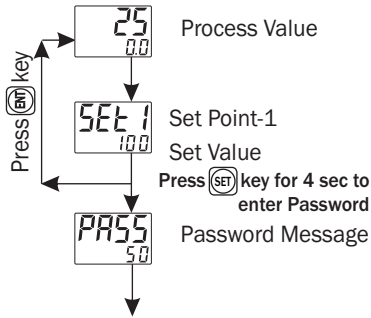
## Key Operation

- 1) Press **SET** key to go parameter setting.
- 2) Press **▲** or **▼** key to change value or to select option.
- 3) Press **SET** key to save change in setting
- 4) Press **▲** key for 6 sec to start/stop PID AUTO TUNING
- 5) Press **▲** + **▼** key for 3 sec to go to factory setting mode.

## Basic Configuration

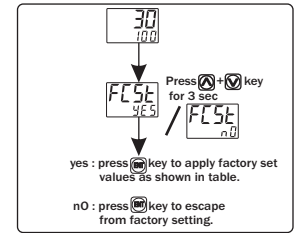


## Set Point Setting



30 °C  
PV  
0.0 Current

**PID AUTO-TUNING**  
Press **▲** key for 6 sec to start/stop PID auto-tuning



## Factory Setting

SR	PARAMETER	VALUES
1	PB	20.0
2	IT	300
3	DT	75
4	CT	15 SEC.
5	MR	0°C
6	OFFSET	0°C
7	HYSTERESIS	3°C
8	HYSTERESIS-2	1°C
9	ALARM TIME	5 Sec
10	HYSTERESIS-3	30

## Control Parameter

TO ENTER CONTROL PARAMETER SETTING, ENTER "37"

(If R1MD = PID)

Pid PR-R

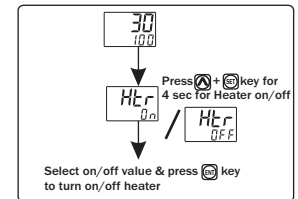
Pb 20.0

It 300

Dt 75

Ct 15

Mr 0



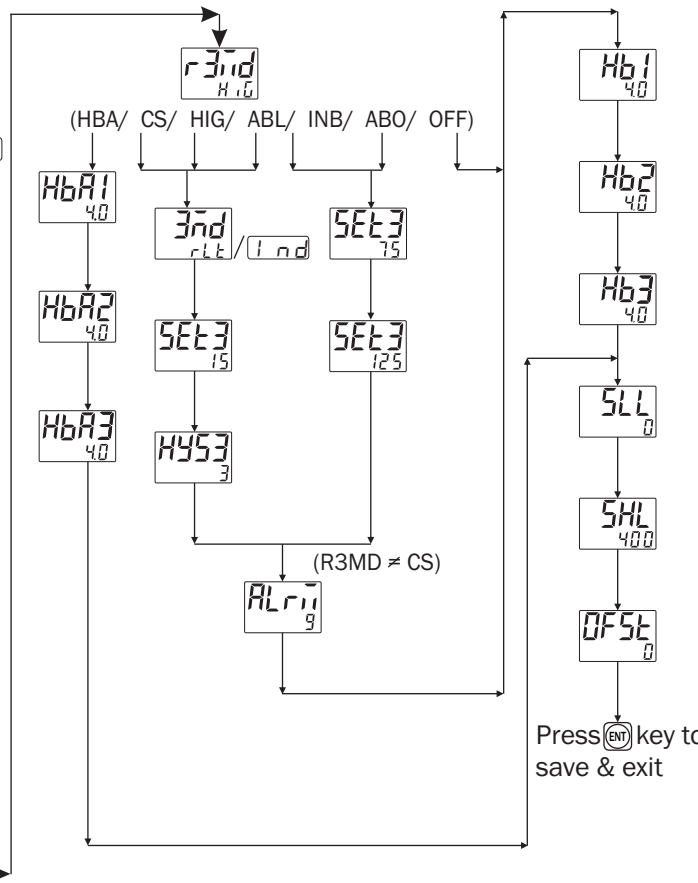
(If R2MD = B.TP)

Pb2 4

Ct2 12

Mr2 0

Press **ENT** key to save & exit



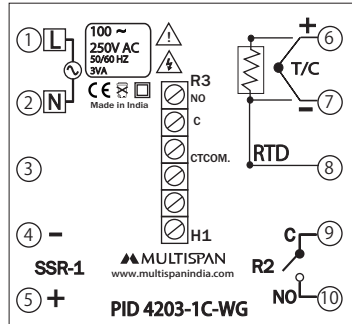
Sr.	Parameter	Description
1	<i>Input</i>	Input
2	<i>J</i>	J
3	<i>K</i>	K
4	<i>PT</i>	PT
5	<i>PT.1</i>	PT.1
6	<i>Relay 1 Mode</i>	Relay 1 Mode
7	<i>HEAT</i>	Heating
8	<i>PID</i>	PID Action
9	<i>ONOFF</i>	ON-OFF Action
10	<i>HYS 1</i>	Hysteresis 1
11	<i>Relay 2 Mode</i>	Relay 2 Mode
12	<i>COOL</i>	Cooling
13	<i>BLTP</i>	Blower TP Action
14	<i>HYS2</i>	Hysteresis 2
15	<i>Relay 3 Mode</i>	Relay 3 Mode
16	<i>ALARM</i>	Alarm
17	<i>HbA</i>	Heater Break Alarm
18	<i>CS</i>	Cold Start Alarm
19	<i>HIGH</i>	High Alarm
20	<i>AbLd</i>	Absolute Low Alarm
21	<i>In-b</i>	In Band Alarm
22	<i>Ab-O</i>	Absolute Outband Alarm
23	<i>ALt<sub>in</sub></i>	Alarm Time
24	<i>HbA 1</i>	Heater Break Alarm Set Point For Heater 1
25	<i>Hb 1</i>	Heater Break Indication Set Point For Heater 1/2/3
26	<i>Htr</i>	Heater
27	<i>On</i>	ON
28	<i>OFF</i>	OFF
29	<i>Pb</i>	Proportional Band for PID Action
30	<i>It</i>	Integral Time for PID Action
31	<i>dt</i>	Derivative Time for PID Action
32	<i>Ct</i>	Cycle Time for PID Action

33	<i>Pb2</i>	Proportional Band 2 for B.TP Action
34	<i>Ct2</i>	Cycle time 2 for B.TP Action
35	<i>Mr2</i>	Manual Reset for B.TP Action
36	<i>PARA</i>	Parameter
37	<i>PASS</i>	Password

#### Range of the parameter

Sr	Parameter	Range for J,K , PT		
1	PB	0.0 to 999.9		
2	IT	0 to 9999		
3	DT	0 to 9999		
4	CT	4 sec to 99 sec		
5	MR	-9 to +9		
6	Pb2	2 C to 20°C		
7	Ct2	4 C to 99 Sec		
8	Mr2	-9 to +9°C		
9	Alarm Time	0 Sec to 99 Sec		
10	Hysteresis-1	1°C To 100°C		
11	Hysteresis-2	1°C To 50°C		
12	Hysteresis-3	1°C To 100°C		
13	Set 2	1°C To 30°C		
14	Off-set correction	-20°C To 20°C		
15	HBAL/HBI H1	0.0 To 30.0A		
16	Set 3	R3MD = CS	S3MD = RLT	-50 to 0
			S3MD = IND	0 to set1
17	Set 3 Low	R3MD = HIG/	S3MD = RLT	-50 to 50
		ABL	S3MD = IND	SLL to SHL
18	Set 3 HIGH	SET3 LOW To SHL		

## Connection Diagram



## Safety Precautions

All safety related codifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument.

If all the equipment is not handled in a manner specified by the manufacturer, it might impair the protection provided by the equipment.

=> Read complete instructions prior to installation and operation of the unit.

**WARNING** : Risk of electric shock.

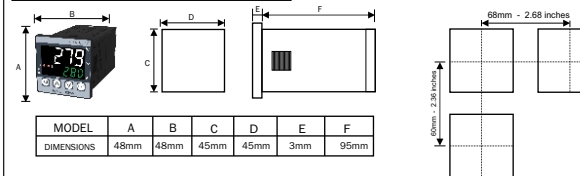
## Warning Guidelines

- 1) To prevent the risk of electric shock power supply to the equipment must be kept OFF while doing the wiring arrangement. Do not touch the terminals while power is being supplied.
- 2) To reduce electro magnetic interference, use wire with adequate rating and twists of the same of equal size shall be made with shortest connection.
- 3) Cable used for connection to power source, must have a cross section of  $1\text{mm}^2$  or greater. These wires should have insulations capacity made of at least 1.5kV.
- 4) When extending the thermocouple lead wires, always use thermocouple compensation wires for wiring for the RTD type, use a wiring material with a small lead resistance (5Ω max per line) and no resistance differentials among three wires should be present.
- 5) A better anti-noise effect can be expected by using standard power supply cable for the instrument.

## Installation Guidelines

- 1) This equipment, being built-in-type, normally becomes a part of main control panel and such in case the terminals do not remain accessible to the end user after installation and internal wiring.
- 2) Do not allow pieces of metal, wire clippings, or fine metallic fillings from installation to enter the product or else it may lead to a safety hazard that may in turn endanger life or cause electrical shock to the operator.
- 3) Circuit breaker or mains switch must be installed between power source and supply terminal to facilitate power 'ON' or 'OFF' function. However this mains switch or circuit breaker must be installed at convenient place normally accessible to the operator.
- 4) Use and store the instrument within the specified ambient temperature and humidity ranges as mentioned in this manual.

## Mechanical Installation



- 1) Prepare the panel cutout with proper dimensions as show above.
- 2) Fit the unit into the panel with the help of clamp given.
- 3) The equipment in its installed state must not come in close proximity to any heating source, caustic vapors, oils steam, or other unwanted process by products.
- 4) Use the specified size of crimp terminal (M3.5 screws) to wire the terminal block. Tightening the screws on the terminal block using the tightening torque of the range of 1.2 N.m.
- 5) Do not connect anything to unused terminals.

## Maintenance

- 1) The equipment should be cleaned regularly to avoid blockage of ventilating parts.
- 2) Clean the equipment with a clean soft cloth. Do not use isopropyl alcohol or any other cleaning agent.
- 3) Fusible resistor must not be replaced by operator.

Product improvement and upgrade is a constant procedure. So for more updated operating information and support, Please contact our helpline : +91-9978991474/76/82 or Email at service@multispanindia.com Ver: 1911