

TPM-001 DIGITAL TEMPERATURE CONTROLLER MODULE (DISPLAY UNIT)



คุณสมบัติทั่วไป

- อุปกรณ์แสดงผลและตั้งค่าการใช้งานของ TPM-002 ผ่าน RS485
- เก็บข้อมูลของ TPM-002
- สื่อสาร โดย RS485 Modbus RTU

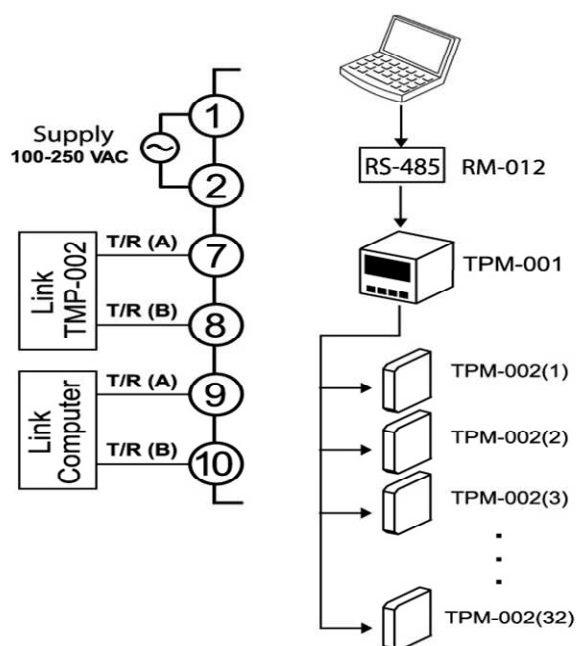
ข้อมูลทางเทคนิค

แรงดันไฟเลี้ยง	100-250 VAC	
การแสดงผล	PV (Process value)	7-Segment 4 หลัก สีเขียว
	SV (Setting value)	7-Segment 4 หลัก สีแดง
	Address	7-Segment 2 หลัก สีเขียว
อุณหภูมิในการใช้งาน	0 to +50°C	
อุณหภูมิในการเก็บรักษา	-40 to +75°C	
มาตรฐานการป้องกัน	IP44	
การติดต่อสื่อสารกับ TPM-002	Protocol	RS485 Modbus Protocol
	Baud rate	9600
	Data	8-n-1
การติดต่อสื่อสารกับคอมพิวเตอร์	Protocol	RS485 Modbus RTU
	Address	1-127
	Baud rate	1200, 2400, 4800, 9600, 19200
	Data	8-n-1

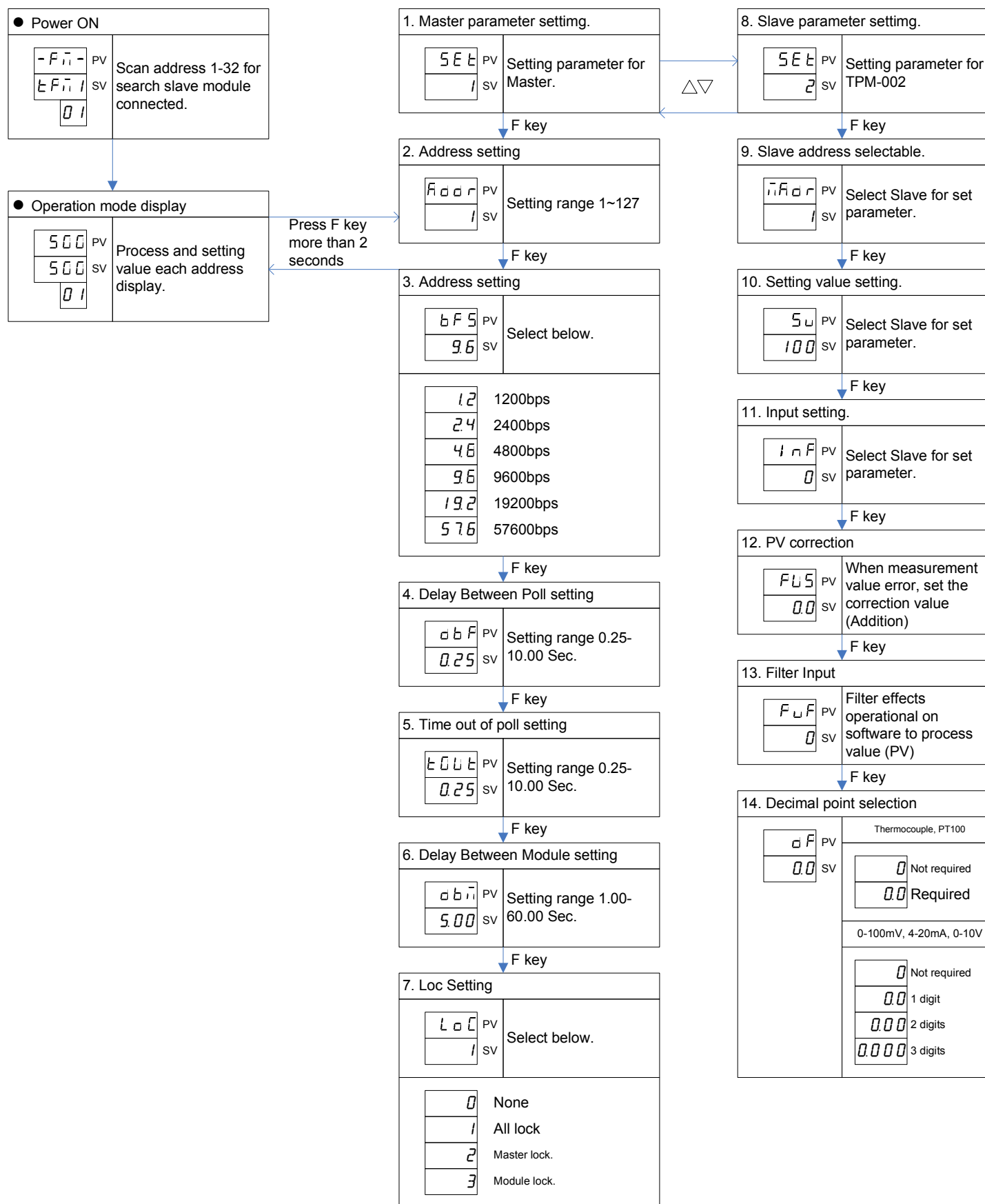
Table 1. Select input sensors and setting range.

Symbol	Input Type	Setting Range/Display Range	
		Non-decimal point	Decimal point
0	Thermocouple Type K	-200~1372 °C	-199.9~999.9 °C
		-328~2501 °F	-199.9~999.9 °F
1	Thermocouple Type J	-200~1200 °C	-199.9~999.9 °C
		-328~2192 °F	-199.9~999.9 °F
2	Thermocouple Type R	-50~1768 °C	-
		-58~3214 °F	-
3	Thermocouple Type T	-200~400 °C	-199.9~400.0 °C
		-328~752 °F	-199.9~752.0 °F
4	Thermocouple Type N	-200~1300 °C	-199.9~999.9 °C
		-328~2372 °F	-199.9~999.9 °F
5	Thermocouple Type S	-50~1768 °C	-
		-58~3214 °F	-
6	Thermocouple Type E	-200~1000 °C	-199.9~999.9 °C
		-328~1832 °F	-199.9~999.9 °F
7	DC 0-100mV	-1999~9999 °C/°F	-199.9~999.9 °C/°F
			-1.999~9.999 °C/°F
8	Pt100	-200~850 °C	-199.9~850.0 °C
		-328~1526 °F	-199.9~999.9 °F
11	DC 4-20mA	-1999~9999 °C/°F	-199.9~999.9 °C/°F
			-1.999~9.999 °C/°F
12	DC 0-10V	-1999~9999 °C/°F	-199.9~999.9 °C/°F
			-1.999~9.999 °C/°F

ไดอะแกรมการต่อใช้งาน



OPERATION FLOW AND SETTING MENU



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15. SV/PV Display
 Select temperature unit (°C or °F).
 F key

16. SV high limit setting
 Sets scaling high limit value. Refer to Table 1.
 F key

17. SV low limit setting
 Sets scaling low limit value. Refer to Table 1.
 F key

18. Control type setting
 Selectable below control modes.
 F key

19. Change of normal or reverse for output 1.
 Switchable below control output actions.
 Reverse (Heating)
 Normal (Cooling)
 F key

20. Setting for PID tuning type
 Select Output for Auto-Tuning.
 Auto-tuning output 1
 Auto-tuning output 2
 F key

21. Auto-tuning Coefficient setting.
 Coefficient is multiplied by proportional band value at auto-tuning.
 F key

22. Manipulated value for output 1 (%)
 Show control output value (0.0~100.0%)

23. High limit setting of manipulated value for output 1
 For setting of manipulated high limit value. (output 1) (%)
 F key

24. Low limit setting of manipulated value for output 1
 For setting of manipulated low limit value. (output 1) (%)
 F key

25. Proportional band setting for output 1
 Adjusts proportional band for output 1 (% per SLL~SLH)
 F key

26. Integral time setting for output 1
 Adjusts integral time for output 1 0~3600 (seconds)
 F key

27. Deviative time setting for output 1
 Adjusts Deviative time for output 1 0~3600 (seconds)
 F key

28. Proportional cycle setting for output 1
 Adjusts proportional cycle time for output 1 1~120 (seconds)
 F key

29. Manual reset setting
 For shifting proportional band. 0.0-100.0 (%)
 F key

30. Control sensitivity setting for output 1
 Adjusts control sensitivity of ON/OFF control for output 1.

31. OFF position setting for output 1
 For setting OFF position for output 1.

32. Function setting for Alarm 1
 Select below functions.
 PV Alarm functions:
 0: None
 1: Deviation high and low limit
 2: Deviation high limit
 3: Deviation low limit
 4: Deviation high and low limit range
 5: Absolute value high and low limit
 6: Absolute value high limit
 7: Absolute value low limit
 8: Absolute high and low limit range
 Additional Alarm functions:
 0: None
 1: Alarm output hold
 2: Stand-by sequence
 3: Stand-by sequence & hold

33. High limit setting for Alarm 1
 Set high limit value for alarm 1.
 F key

34. Low limit setting for Alarm 1
 Set low limit value for alarm 1.
 F key

35. Control sensitivity setting for Alarm 1
 Set sensitivity when required.
 F key

36. Abnormal setting for Alarm 1
 For outbreak of sensor and heater abnormal.
 PV Alarm functions:
 0: None
 1: PV abnormal (sensor break)
 2: Heater abnormal
 3: PV+Heater abnormal
 Additional Alarm functions:
 0: None
 1: Hold (Power reset)

37. Abnormal current value of heater for Alarm 1
 Setting for current value when heater is abnormal. 0.1~60 A
 F key

38. CT input Monitor for Alarm 1
 Monitor current value of heater current detector. 1~60 A

39. Manipulated value for output 2 (%)
 Show control output value (0.0~100.0%)

40. High limit setting of manipulated value for output 2
 For setting of manipulated high limit value. (output 2) (%)

41. Low limit setting of manipulated value for output 2
 For setting of manipulated low limit value. (output 2) (%)

42. Proportional band setting for output 2
 Adjusts proportional band for output 2 (% per SLL~SLH)

43. Integral time setting for output 2
 Adjusts integral time for output 2 0~3600 (seconds)

44. Deviative time setting for output 2
 Adjusts Deviative time for output 2 0~3600 (seconds)

45. Proportional cycle setting for output 2
 Adjusts proportional cycle time for output 2 1~120 (seconds)
 F key

46. Control sensitivity setting for output 2
 Adjusts control sensitivity of ON/OFF control for output 2.
 F key

47. OFF position setting for output 2
 For setting OFF position for output 2.
 F key

48. Dead band setting
 For heating and cooling control (°C).

49. Function setting for Alarm 2
 Select below functions.
 PV Alarm functions:
 0: None
 1: Deviation high and low limit
 2: Deviation high limit
 3: Deviation low limit
 4: Deviation high and low limit range
 5: Absolute value high and low limit
 6: Absolute value high limit
 7: Absolute value low limit
 8: Absolute high and low limit range
 Additional Alarm functions:
 0: None
 1: Alarm output hold
 2: Stand-by sequence
 3: Stand-by sequence & hold

50. High limit setting for Alarm 2
 Set high limit value for alarm 2.
 F key

51. Low limit setting for Alarm 2
 Set low limit value for alarm 2.

52. Control seneivity setting for Alarm 2
 Set sensitivity when required.

53. Abnormal setting for Alarm 2
 For outbreak of sensor and heater abnormal.
 PV Alarm functions:
 0: None
 1: PV abnormal (sensor break)
 2: Heater abnormal
 3: PV+Heater abnormal
 Additional Alarm functions:
 0: None
 1: Hold (Power reset)

54. CT input Monitor for Alarm 2
 Monitor current value of heater current detector. 1~60 A
 F key

55. Abnormal current value of heater for Alarm 2
 Setting for current value when heater is abnormal. 0.1~60 A

ALARM OUTPUT

ALARM OUTPUT : Process value (PV) to be used as Alarm Output.

PV abnormal : Input indicates "Over" or "Under" by the cut-off of wire and short circuit, alarm output turn on.

Stand-by sequence : After starting operation of step, alarm output does not turn on unless the process value reach the value of OFF position of alarm output.

Alarm output hold : Alarm output holds "ON" unless altering setting of additional function or resetting the power.

