Programmable controller

PCD-33A

User focused functionality

Programmable controller

Max 9-patterns, 9-steps each, programmable

Simple time and temperature setting

Multi-point program control,
using the set value digital transmission

Alarm 1 (A1) Alarm 2 (A2)	A1 and A2 alarm types and status Energized/Deenergized can be selected by keypad operation. All alarm actions (except for Process high alarm and low alarm) are ±deviation setting from SV. If Energized is selected and when input is out of the range, the alarm output turns ON (If Deenergized is selected, the alarm output turns OFF). When input has a decimal point, the negative minimum value is −199.9 and the positive maximum value is 999.9. For DC input, input span is the same as scaling span, and input range minimum (or maximum) value is the same as the scaling low (or high) limit value. Setting accuracy-- The same as the indication accuracy Action---------- ON/OFF action Hysteresis--------- 0.1 to 100.0℃(˚F) For DC input, 1 to 1000 (The placement of the decimal point follows the selection.) Output---------- Relay contact 1a 3A 250V AC (resistive load), 1A 250V AC (inductive load cos ϕ =0.4), Electric life: 100,000 cycles

Alarm type	Setting range
No alarm action	
High limit alarm	−Input span to input span (Off when set to 0 or 0.0) (Deviation setting)
Low limit alarm	−Input span to input span (Off when set to 0 or 0.0) (Deviation setting)
High/Low limits alarm	0 to input span (Off when set to 0 or 0.0) (Deviation setting)
High/Low limit range alarm	0 to input span (Off when set to 0 or 0.0) (Deviation setting)
Process high alarm	Input range minimum value to input range maximum value
Process low alarm	Input range minimum value to input range maximum value
High limit alarm with standby	−Input span to input span (Off when set to 0 or 0.0) (Deviation setting)
Low limit alarm with standby	−Input span to input span (Off when set to 0 or 0.0) (Deviation setting)
High/Low limits alarm with standby	0 to input span (Off when set to 0 or 0.0) (Deviation setting)

Event output (EVT)	One output can be selected from 3 outputs (Time signal output, Pattern end output and RUN output) by front keypad operation. Time signal output : If time signal OFF time and time signal ON time are set, time signal is outputted within the total time taken for 1 pattern during program control. Pattern end output : Outputs signal for the set time after the program ends. RUN output : Outputs during program control. Output : Relay contact, 1a 3A 250V AC (resistive load), 1A 250V AC (inductive load cos ϕ =0.4), Electric life: 100,000 cycles
Supply voltage	100 to 240 V AC 50/60Hz(Allowable voltage fluctuation range: 85 to 264V AC), 24V AC/DC 50/60Hz(Allowable voltage fluctuation range: 20 to 28V AC/DC)
Power consumption	Approx. 8VA
Insulation resistance	If control output (OUT) is non-contact voltage output or DC current output, insulation tests must not be carried out between control output (OUT) terminal and external operation terminal, and between control output (OUT) terminal and communication terminal because they are not insulated from one another. Other combinations except the above: 10MΩ or more, at 500V DC
Dielectric strength	Between input terminal and ground terminal, between input terminal and power terminal--------- 1.5kV AC for 1 minute Between power terminal and ground terminal---------- 1.5kV AC for 1 minute Between output terminal and ground terminal, between output terminal and power terminal----- 1.5kV AC for 1 minute
Environment	Ambient temperature : 0 to 50℃ (32 to 122˚F), Ambient humidity : 35 to 85%RH (non-condensing)
Safety standard	UL: Power input rating 100-240V AC, 24V AC/DC File No. E159038
Material, Color	Material: Flame-resistant resin, Color: Light gray
Mounting method	Flush, Mounting brackets: Screw type Mountable panel thickness: 1 to 8mm
Dust-proof/Drip-proof	IP66 for front face
Setting method	Sheet key input
Weight	Approx. 370g
Attached function	Power failure countermeasures, Self diagnosis, Automatic cold junction temperature compensation (only for thermocouple), Sensor burnout alarm, Input burnout

■Program performance

Number of patterns	9 patterns
Number of steps	9 steps/pattern
External operation function	Program control can start/stop by opening/closing the external contact or open collector. Program control starts when the contact is switching from Open to Closed, and stops when the contact is switching from Closed to Open.
WAIT function	During program run, the program does not proceed to the next step until deviation between PV and SV when step ends enters the WAIT set value. Setting range------ Thermocouple, RTD (without decimal point): ±(0 to 100)℃(˚F) Thermocouple, RTD (with decimal point): ±(0.0 to 100.0)℃(˚F) DC input: 0 to 1000 (The placement of the decimal point follows the selection.)
HOLD function	Program control RUN time is held temporarily.
ADVANCE function	The step during program control RUN can be stopped and advanced to the next step.
Other functions	Step time unit selection (Hour:Minute or Minute:Second), Program control start type selection (PV start or SV start), Step temperature setting when starting program control
Program time range	0 to 99 hours 59 minutes/step, or 0 to 99 minutes 59 seconds/step
Time setting accuracy	Within ±0.5% of setting time
Setting resolution	Temperature: 1℃(1˚F) or 0.1℃(0.1˚F), Time: 1 minute or 1 second
Status after power is restored	Program starts to perform from the status before power failure. (Time error after power is restored: Max. 1 minute)

■Options

Serial communication [C5]	Each setting status change, set value reading and setting, etc. of PCD-33A can be operated from the external computer. (If C5 option is added, external operation function is not usable. The SVTC option and external operation function cannot be applied together.) Communication interface---------- EIA RS-485 Communication method---------- Half-duplex communication Synchronization method---------- Start-stop synchronization Communication protocol ---------- Shinko protocol/Set value digital transmission/Set value digital reception/Modbus ASCII mode/Modbus RTU mode Selectable by keypad (Default: Shinko protocol) Communication speed ---------- 2400/4800/9600/19200bps Selectable by keypad (Default: 9600bps) Parity ---------- Even/Odd/No parity Selectable by keypad (Default: Even) Stop bit ---------- 1 or 2 Selectable by keypad (Default: 1) Communication error detection ----- Dual-detection by parity and checksum Number of connectable units--- Max. 31 units per host computer
Insulated power output [P24]	Outputs 24V DC. This is used for the power of 2-wire transmitter such as a pressure transducer. (If the P24 option is applied, Alarm 2 (A2) is not usable.) Output voltage---------- 24V±3V DC (load current 30mA) Ripple voltage---------- Within 200mV DC (load current 30mA) Max. load current---------- 30mA DC

Alarm 1 (A1) Alarm 2 (A2)	A1 and A2 alarm types and status Energized/Deenergized can be selected by keypad operation. All alarm actions (except for Process high alarm and low alarm) are ±deviation setting from SV. If Energized is selected and when input is out of the range, the alarm output turns ON (If Deenergized is selected, the alarm output turns OFF).

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High/Low limits alarm with standby	0 to input span (Off when set to 0 or 0.0) (Deviation setting)

When input has a decimal point, the negative minimum value is −199.9 and the positive maximum value is 999.9.
For DC input, input span is the same as scaling span, and input range minimum (or maximum) value is the same as the scaling low (or high) limit value.

Setting accuracy-- The same as the indication accuracy
Action---------- ON/OFF action
Hysteresis--------- 0.1 to 100.0℃(˚F) For DC input, 1 to 1000 (The placement of the decimal point follows the selection.)
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Setting resolution	Temperature: 1℃(1˚F) or 0.1℃(0.1˚F), Time: 1 minute or 1 second
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