Before using the controller, check that the model and suffix codes match your order. Make sure that all of the precautions are strictly adhered to. Yokogawa Electric Corporation assumes no liability for any accident or damage occurring from the incorrect installation. For single-loop control mode, it is recommended that you refer to these user’s manuals to understand [1] installation, [2] initial settings, [3] program settings, and [4] operation of programming.

The following summarizes the contents of the installation, parameter map, program parameters, program creation, recording, and troubleshooting.

### Installation

1. Safety Precautions
2. Model and Suffix Codes
3. How to Install
4. How to Connect Wires
5. How to Use the Manuals

#### Installation Position

- The controller should be horizontal with the front panel facing upward. Do not install it facing the rear, as the products and terminal/L panel should be made of either 304 or 316 stainless steel.

#### External Dimensions and Panel Cutout Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>mm</td>
<td>220</td>
</tr>
<tr>
<td>Height</td>
<td>mm</td>
<td>70</td>
</tr>
<tr>
<td>Depth</td>
<td>mm</td>
<td>122</td>
</tr>
</tbody>
</table>

#### How to Use the Manuals

- Manuals for Single-loop Control: ....................................................... 7 (A2 size)
- Unit label: ....................................................................................................... 1

#### Parameter Map

- DO7, cooling-side output: terminals 46
- CO17, heating-side output: terminals 48

#### Program Parameters

- DI8 DO5

#### Program Creation

- Recording
- Operation of programming

#### Troubleshooting

- Troubleshooting

### Program Parameters

- DI8 DO5
- PV Input Signals
- Control Output
- Analog Output
- Voltage pulse output

### Conclusion

- Installation height: Height above sea level of 2000 m or less
- Operations used to carry out control other than single-loop control.

#### Environmental Conditions

- Ambient temperature: 5 to 50°C
- Humidity: 5 to 95% RH (no condensation allowed)

#### Construction, Installation, and Wiring

- Panel cutout dimensions: 150.0 x 75.0 x 150.0 mm
- Panel mounting holes: 4<br>10.0 mm diameter, 90° out of phase
- Panel mounting holes: 4<br>10.0 mm diameter, 90° out of phase
- Panel cutout dimensions: 150.0 x 75.0 x 150.0 mm
- Panel mounting holes: 4<br>10.0 mm diameter, 90° out of phase
- Panel mounting holes: 4<br>10.0 mm diameter, 90° out of phase

#### Loop Power Supply Specifications

- Nominal input voltage: 24 V DC, 50 Hz
- Maximum output current: 1.5 A
- Protection against overvoltage: 27 V DC or more
- Protection against overcurrent: 2.5 A or less
- Protection against short circuit: 1000 V DC or more
- Protection against transient overvoltage: 2 times the nominal input voltage for 500 ms or less

#### Signal Transmissions

- Analog input signals: 4-20 mA, 0-10 V
- Analog output signals: 4-20 mA, 0-10 V
- Voltage pulse output: 0-10 V
- Relay contact output: 250 V AC, 3 A
- Contact inputs: 250 V AC, 3 A
- Contact outputs: 250 V AC, 3 A

#### Power Specifications

- AC input: 230 V AC, 50 Hz
- DC input: 24 V DC, 50 Hz
- Maximum output power: 10 W
- Protection against overvoltage: 1000 V DC or more
- Protection against overcurrent: 5 A or less
- Protection against short circuit: 1000 V DC or more
- Protection against transient overvoltage: 2 times the nominal input voltage for 500 ms or less

#### Contact Inputs

- Type: NPN, PNP
- Voltage: 24 V DC
- Maximum output: 3 A
- Protection against overvoltage: 1000 V DC or more
- Protection against overcurrent: 5 A or less
- Protection against short circuit: 1000 V DC or more
- Protection against transient overvoltage: 2 times the nominal input voltage for 500 ms or less

#### Contact Outputs

- Type: NPN, PNP
- Voltage: 24 V DC
- Maximum output: 3 A
- Protection against overvoltage: 1000 V DC or more
- Protection against overcurrent: 5 A or less
- Protection against short circuit: 1000 V DC or more
- Protection against transient overvoltage: 2 times the nominal input voltage for 500 ms or less
1. Names and Functions of Front Panel Parts

1. Display
2. Function key
3. PV input 1 range high
4. Status indicator
5. Light indicator lamps
6. Initializing Parameters
7. PT.No key
8. RUN key
9. SET/ENT key
10. MODE key
11. DISP key
12. and keys
13. PT.No key

2. Setting PV Input Type (Setting First at Power-on)

NOTE

Example of Temperature Input

Example of Voltage Input

How to return to a menu

Press the key once during parameter setting. This lets you return to the parameter menu.

The following operating procedure describes an example of setting a K-type thermocouple (-200.0 to 500.0 °C) and a new analog input range of 0 to 10 V (0 -10 V).  (Note2)

Programs can be used to set the PV Input Type (IN1) to OFF.  If the PV Input Type is set to OFF, the PV input is turned off and the PV input is not used in the control.  See "5. Calibrating Valve Position."  The PV input scale (SL1), the PV input decimal point position (SDP1), the maximum value of PV input scale (SH1) or the minimum value of PV input scale (SL1) may be changed.

The figure below shows an example of setting a K-type thermocouple (-200.0 to 500.0 °C) and a new analog input range of 0 to 10 V.  (Note2)

YOKOGAWA
Yokogawa Electric Corporation

User's Manual
Model UP550
Program Controller

User's Manual for Single-loop Control

Initial Settings

Contents

1. Names and Functions of Front Panel Parts
2. Setting PV Input Type (Setting First at Power-on)
3. Changing PV Input Type
4. Setting Control Output Type (except for a Proportional Proportional Controller)
5.Initializing Parameters
6. Initializing Parameters

1. Display

1. Display
2. Function key
3. PV input 1 range high
4. Status indicator
5. Light indicator lamps
6. Initializing Parameters
7. PT.No key
8. RUN key
9. SET/ENT key
10. MODE key
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The figure below shows an example of setting a K-type thermocouple (-200.0 to 500.0 °C) and a new analog input range of 0 to 10 V.  (Note2)
3. Changing PV Input Type

In steps 2 and later, illustrations of the LCD are cited to explain the procedure.

4. Setting Control Output Type (except for a Position Proportional Controller)

If the type of input is voltage, also configure the PV Input Terminal Point Position (SPPT), Terminal Setting (V.AT), Heater-OFF Time (HOT), and Wiring Diagram (GT) parameters that follow this step.

5. Calibrating Valve Position (for a Position Proportional Controller Only)

For detailed settings, refer to pages 51 and 52 of the manual. In steps 2 and later, illustrations of the LCD are cited to explain the procedure.

6. Initializing Parameters

For detailed settings, refer to pages 51 and 52 of the manual. In steps 2 and later, illustrations of the LCD are cited to explain the procedure.

List of Control Output Types

<table>
<thead>
<tr>
<th>Number</th>
<th>Name of Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OT1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Caution:

The operations described here are not output types. They are settings on the equipment's parameters. Before changing the parameters, be sure to check that the new settings are appropriate.
1. Overview of Program Patterns

Programming Overview

1. Program the controller to start program operation at 27°C and reset the temperature up to 35°C in 20 minutes.
2. When the temperature reaches 35°C, output the alarm for 10 minutes.
3. Finally, lower the temperature to 27°C in 20 minutes.

Event output

- Set a duration of 2°C for both the positive and negative peaks of a program example to allow the controller to detect an event signal if the temperature goes beyond the specified range.
- Let the controller output an event signal when the temperature stabilizes to 80°C and above.

Example of Creating Program Pattern

Temperature

Start of program operation

Target setpoint

PV event 1

Time event 1

Not used in this example.

The output is off after 10 minutes have elapsed since the start of program operation. Then, it turns off after 100 minutes have elapsed from the start of program operation.

2. Example of Program Pattern Setup Charts

Initialize the program and set the initial parameters for the controller. Use the parameter map included in "Initial Settings User Manual" to set the parameters for the controller.

3. Creating Program Patterns

Example of Drawing Program Patterns

Then, it turns off after 100 minutes have elapsed from the start of program operation.

Events: On event 1, define an event that is triggered by a temperature event if the temperature goes beyond the deviation range.

Example of Source Code:

\[ \text{PV event 1} \]

Example of PV Input Unit Setup:

\[ \text{PV input unit: Setpoint of the "PV Input Unit (UNI1)" setup parameter} \]

Example of Parameters:

\[ \text{Minimum value of PV input range (RL1): Setpoint of the "Minimum Value of PV Input Range (RL1)" setup parameter} \]

Example of Time Setup:

\[ \text{Segment time for segment 2: 80 min.} \]

Example of Program Patterns:

4. Changing Program Patterns

Example of Example of Program Pattern Setup Charts:

The programming example given in this manual includes the following steps.

- Steps 46 to 48 configure the Segment Time (TIME) parameter for segment 3.
- Steps 29 to 31 configure the Segment Time (TIME) parameter for segment 2.
- Step 28 configures the Final Target Setpoint (TSP1) parameter for segment 2 (not changed in this example).
- Steps 7 to 9 configure the parameter Starting Target Setpoint (SSP1) (so that the program starts from 25°C).
- Step 5 selects the program pattern number (PTN).

Example of Input Information:

- Step 28 configures the Final Target Setpoint (TSP1) parameter for segment 2.
- Step 24 to 25 configures the Segment Time (TIME) parameter for segment 1.
- Step 16 to 17 configures the Segment Time (TIME) parameter for segment 0.

Example of Complete Setup Chart:

Complete the following setup chart before setting programs in the controller. Filling in the chart makes it easier for you to input parameter values.
1. Program Pattern Setup Charts

You can register as many as 30 program patterns with the UP550 controller. Create as many copies of the chart as necessary.

1. Program Pattern Setup Charts
2. Program Parameter Map
3. Lists of Program Parameters
4. Explanation of Program Fundamentals

Parameters of program pattern 1

Program name
Program No.
System name
Program time unit (TMU)

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program pattern 1

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 2

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 3

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 4

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 5

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 6

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 7

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 8

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 9

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 10

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 11

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 12

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 13

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 14

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 15

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 16

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 17

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 18

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 19

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 20

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 21

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 22

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 23

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 24

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 25

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 26

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 27

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 28

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 29

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 30

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 31

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 32

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 33

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 34

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 35

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 36

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 37

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 38

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 39

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 40

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 41

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 42

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 43

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 44

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 45

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 46

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 47

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 48

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 49

Maximum value of PV input range (RH1)

Minimum value of PV input range (RH1)

Program Pattern 50
3. Lists of Program Parameters

- Local Setpoint Parameters
  - PID
  - Segment time
  - Temperature

- Remote Setpoint Parameters
  - Local setpoint
  - Event
  - Time

- Program Parameters
  - For Setting the Final Target Setpoints and Segment Times
  - For Setting the Event Action
  - For Setting the Conditions of Program Operation
  - FC

- Local Mode Parameters
  - Program Pattern Setup Charts

- Parameters relating to PV or PV constants should be set as in Table 3-1. For example, an automatic switching between different groups of PID constants is set in the Table 3-1.  

- Program Parameters (For Setting the Final Target Setpoints and Segment Times)

- Program Parameters (For Setting the Event Action)

- Program Parameters (For Setting the Conditions of Program Operation)

4. Explanation of Program Functions

- Programming

- Selection of PID Constants when the Control Range Is Split into Three Zones

- Controller Behavior at the Start of Program Operation

- Retaining the End-of-Program State (Hold-end Mode)

- Suspending the Progress of a Program (Wait Function)

- PID Switching (Zone PID)

- Local Mode Parameters
  - Program Pattern Setup Charts

- The user setting values in the table below are provided for the customer to record setpoints.

- The target time in "Segment timing" is either "on" or "off". To create programs with a ramp grade, change the response of the RTD amplifier or the temperature response of the controller to always be "off".

- When creating a program, the controller uses the 1st group of PID constants if the 1st group of setpoints is enabled. If the 1st group of setpoints is disabled, the controller uses the 2nd group of PID constants.

- When changing the setpoint linearly over a minute, 0.0% of PV input range.

- PV/SP alarm: 0.0% of PV input range.

- PV/SP high limit alarm: 100.0% of PV input range.

- PV/SP low limit alarm: 0.0% of PV input range.

- PV event setpoint: PV/SP alarm: -100.0 to 100.0% of PV input range.

- When creating a program for the first time, the controller is factory-set to the "hour and minute" time unit. To create programs using the "minute and second" time unit, change the setup parameter accordingly.

- The controller selects the time setting defined for segment 1.

- The program operation begins from point C1 (ignore the starting target setpoint) and progresses to point D1 (the program operation begins).

- When changing the setpoint linearly over a minute, the maximum value of the setpoint linearly over a minute is 1.00.

- When changing the setpoint linearly over a minute, the minimum value of the setpoint linearly over a minute is -1.00.

- The program operation begins from point C1 (ignore the starting target setpoint) and progresses to point D1 (the program operation begins).
Operating Displays for Single-loop Heating/Cooling Control

- **Display**
  - On the Section display (LCD), the controller displays the current output (SP), the program pattern number (PTNo), and the program pattern name using an optional parameter setting tool (model: LL100-E1).
  - On the Target section display (LCD), the controller displays the program pattern number of the selected program pattern, the selected program pattern, the remaining time of the segment for which operation is in progress, the current number of the selected program pattern, and the selected program pattern number (PTNo). For monitoring only.

- **Target display**
  - On the Section display (LCD), the controller displays the current output (SP), the program pattern number (PTNo), and the program pattern name using an optional parameter setting tool (model: LL100-E1). For monitoring only.

- **PID display**
  - On the Section display (LCD), the controller displays the current output (SP), the program pattern number (PTNo), and the program pattern name using an optional parameter setting tool (model: LL100-E1). For monitoring only.

- **OUT display**
  - On the Section display (LCD), the controller displays the current output (SP), the program pattern number (PTNo), and the program pattern name using an optional parameter setting tool (model: LL100-E1). For monitoring only.

- **Deviation Trend display**
  - On the Section display (LCD), the controller displays the current output (SP), the program pattern number (PTNo), and the program pattern name using an optional parameter setting tool (model: LL100-E1). For monitoring only.

- **Pattern display**
  - On the Section display (LCD), the controller displays the current output (SP), the program pattern number (PTNo), and the program pattern name using an optional parameter setting tool (model: LL100-E1). For monitoring only.

- **Event display**
  - On the Section display (LCD), the controller displays the current output (SP), the program pattern number (PTNo), and the program pattern name using an optional parameter setting tool (model: LL100-E1). For monitoring only.
1. Controller behavior and control output manipulation when the dead band is negative

The following is an example when the HLD parameter is set to 10%. If the control output is 50% or above, the controller will not output a value over 50%. If the control output is below 50%, the controller will not output a value below 50%.

2. Operating procedures for disabling the hold mode

The following operating procedures is an example of setting program operation in the hold mode.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press the RUN/STOP key for two seconds during hold-mode operation. In this case, the controller resumes program operation.</td>
</tr>
<tr>
<td>2.</td>
<td>To change the target setpoint of the corresponding segment of operation program or the parameter settings, use the RUN/STOP key to enter the hold mode. The controller maintains the current status and displays the current program operation and setpoint.</td>
</tr>
<tr>
<td>3.</td>
<td>When the program operation is completed or the parameter settings are changed, the controller resumes program operation and displays the current program operation and setpoint.</td>
</tr>
</tbody>
</table>

3. Other operating procedures for disabling the hold mode

The following are other operating procedures for disabling the hold mode:

- Press the RUN/STOP key once to register the setpoint.
- Press the SET/ENT key once to display the HOLD:OFF mode parameter.
- Press the SET/ENT key once to display the HOLD:ON mode parameter.

4. Changing Program Setpoints when in Hold Mode

The controller is in hold mode when the control output is 50% or above. The control output can only be changed when the controller is in the MAN mode. The following are the steps for changing program setpoints when in hold mode.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press the RUN/STOP key to display the current program operation.</td>
</tr>
<tr>
<td>2.</td>
<td>Press the SET/ENT key to change the setpoint.</td>
</tr>
<tr>
<td>3.</td>
<td>Press the SET/ENT key to display the HOLD:OFF mode parameter.</td>
</tr>
<tr>
<td>4.</td>
<td>Press the SET/ENT key to display the HOLD:ON mode parameter.</td>
</tr>
</tbody>
</table>

5. Possible Errors during Operation

The following shows possible errors occurring during operation.

<table>
<thead>
<tr>
<th>Error</th>
<th>Possible Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error 1</td>
<td>Power failure of more than about 2 seconds</td>
</tr>
<tr>
<td>Error 2</td>
<td>Power failure of less than about 2 seconds</td>
</tr>
<tr>
<td>Error 3</td>
<td>Power failure of about 2 seconds</td>
</tr>
</tbody>
</table>

6. Summary

The controller can be operated in two modes:

- **Hold Mode**: The controller maintains the current status and displays the current program operation and setpoint. The control output can only be changed when the controller is in the MAN mode.
- **Program Mode**: The controller displays the current program operation and setpoint.

7. Troubleshooting

When the Controller Fails to Operate Correctly

If the control output is not sufficient, check the point function and parameter settings before concluding the controller to be faulty. The following shows examples of operations that should be carried out to check the possibility of other errors.

- **If the controller does not show the correct measured input (PV)**:
  - The UP550 controller has a universal output. The control output can only be changed when the controller is in the MAN mode. The following shows effects caused in measurement output.
  - Normal action: Check the control output to ensure the controller is operating properly. The control output can only be changed when the controller is in the MAN mode.
  - If the control output is not sufficient, check the preset parameters and controller wiring before concluding the controller to be faulty.

- **If the controller does not show the correct measured input (PV)**:
  - The control output can only be changed when the controller is in the MAN mode. The following shows effects caused in measurement output.
  - Normal action: Check the control output to ensure the controller is operating properly. The control output can only be changed when the controller is in the MAN mode.
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8. Troubleshooting

When the Controller Fails to Operate Correctly

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- **If the controller does not show the correct measured input (PV)**:
  - The control output can only be changed when the controller is in the MAN mode. The following shows effects caused in measurement output.
  - Normal action: Check the control output to ensure the controller is operating properly. The control output can only be changed when the controller is in the MAN mode.
  - If the control output is not sufficient, check the preset parameters and controller wiring before concluding the controller to be faulty.
This manual contains a parameter map as a guideline for setting parameters.

1. Determine PV input type first. Setting errors are displayed: -  1. Setting PV input type.

2. PV input type is set to "OFF" when stopped.

3. After PV input type (IN1), input/output returns you to the operating display.

4. A numerical value is changed by using the \text{SET/ENT} \text{key}.

5. To change from the operating parameter setting display to the operating parameter menu, press the \text{DISP} \text{key}.

6. Pressing the \text{DISP} \text{key} for more than 5 seconds brings you to the operating parameter setting display.

7. Pressing the \text{DISP} \text{key} in the operating parameter setting display for more than 3 seconds brings you back to the main menu.

8. Operating Display for Heating/cooling Control

9. Operating Display

10. Operating Parameter Setting Display

11. Pattern display

12. Displays a menu of operating parameter in alphabetical order of the term "operating parameter".
### PID-related Parameters

<table>
<thead>
<tr>
<th>Name of Parameter</th>
<th>Setting Range and Description</th>
<th>Initial Value</th>
<th>User Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td></td>
<td>0.0% to 100.0% of PV input range</td>
<td>0%</td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>0.0% to 100.0% of PV input range</td>
<td>0%</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>0.0% to 100.0% of PV input range</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Instrument Alarm Setting Parameters

<table>
<thead>
<tr>
<th>Name of Parameter</th>
<th>Setting Range and Description</th>
<th>Initial Value</th>
<th>User Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument Alarm-1</td>
<td></td>
<td>1.0% to 100.0% of PV input range</td>
<td>0%</td>
</tr>
<tr>
<td>Instrument Alarm-2</td>
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### Operation Mode Parameters

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<tr>
<th>Name of Parameter</th>
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<th>Initial Value</th>
<th>User Setting</th>
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### Instrument Alarm Setting Parameters

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### Operation Mode Parameters

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### Analog Input Computation Parameters

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### Retransmission Output Parameters

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### Deviation Trend Parameters

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