This is controller ready for operation.

Contents
• Installation
• Operation
• Warning and Disclaimer

1. Safety Precautions

2. Model and Suffix Codes

3. How to Install

4. W arning and Disclaimer

Introduction
Thank you for purchasing the UT32A-D Digital Indicating Controller (Dual-loop, Panel mount type). This operation guide describes the basic operations of the UT32A-D. The guide should be provided to the end user of this product.

Be sure to read this operation guide before using the product in order to ensure correct operation.

For details of each function, refer to the electronic manual. Manuals can be downloaded and/or viewed at the following URL:
http://www.yokogawa.com/ns/ultim/

1. Safety Precautions

The following symbol is used on the instrument. It indicates the possibility of injury to the user or damage to the instrument, and signifies that the user must refer to the operation guide or user’s manual for special instructions. The same symbol is used in the operation guide and user’s manual on pages that the user needs to refer to, together with the term “WARNING” or “CAUTION.”

Calls attention to actions that could cause serious or fatal injury to the user, and indicates precautions that should be taken to prevent such occurrences.

WARNING

Calls attention to actions that could cause injury to the user or damage to the instrument or property and indicates precautions that should be taken to prevent such occurrences.

CAUTION

AC

AC/DC

The equipment wholly protected by double insulation or reinforced insulation.

Functional grounding terminals (Do not use the terminal as a protective grounding terminal).

Note

Identifies important information required to operate the instrument.

2. Model and Suffix Codes

Model

UT32A-D «Standard Code Model»

■ Safety, Protection, and Modification of the Product

(1) In order to protect the system controlled by this product and the product itself, and to ensure safe operation, observe the safety precautions described in the operation guide. Use of the instrument in a manner not prescribed herein may compromise the product’s functions and the protection features inherent in the device. We assume no liability for safety or responsibility for the product’s quality, performance or functionality should users fail to observe these instructions when using the product.

(2) Installation of protection and/or safety circuits with respect to a lightning protection product, or the selection of equipment for the system control- circuit product footprint (for suiciding or safe design of a product or using the system control product footprint) is the user’s responsibility. The design and installation of other protective and safety circuits are to be appropriately implemented as these are the user’s responsibility and have no liability.

(3) Be sure to use the spare parts approved by YOKOGAWA when replacing parts or consumables.

(4) This product is not designed or manufactured to be used in critical applications that effect or threaten human lives. Such applications include nuclear power equipment, devices using radioactivity, railway facilities, aviation equipment, or equipment not for general purposes, etc. If any use of this product is found, it is the user’s responsibility to incorporate the system additional protective and safety measures.

(5) Modification of the product is strictly prohibited.

This product is intended to be handled by appropriately qualified personnel for electrical devices.

(6) This product is UL Recognized Component. In order to comply with UL standards, accessory products are necessary to be designed by those who have knowledge of the requirements.

■ Power Supply

Ensure that the instrument’s supply voltage matches the voltage requirements described in “Specifications” to ensure proper operation.

Do Not Use in an Explosive Atmosphere

Do not operate the instrument in locations with combustible or explosive gases or steam. Operation in such environments constitutes an extreme safety hazard. Use of the instrument is environments with high concentrations of corrosive gas (H2S, SO2, Cl2, etc.) will result in failure of the instrument and may cause a failure.

Do Not Remove Internal Unit

The internal unit should not be removed by anyone other than YOKOGAWA’s service personnel. There are dangerous high voltage parts inside. Do not replace the fuse by yourself.

Damage to the Protective Construction

This instrument is an EMC class A product. In a domestic environment this product may cause radio interference in which case the user needs to take adequate measures.

■ Accessories (sold separately)

The following is an accessory sold separately.

- L50A Parameter Setting Software

■ Warning and Disclaimer

This is an explanation of how to dispose of this product based on Waste Electrical and Electronic Equipment (WEEE), Directive. This directive is only valid in the EU.

WEEE Compliance

This product complies with the WEEE Directive marking requirement. This marking indicates that you must not discard the electronic/product in your domestic household waste. The disposal of this product is your responsibility. When disposing of the product, contact your local Yokogawa Europe B.V. office.

Be sure to turn off the power supply to the controller before installing it on the panel to avoid an electric shock.

■ Mounting the Instrument Main Unit

Provide an instrument panel sheet steel of 1 to 10 mm thickness. After opening the mounting hole on the panel, follow the procedures below to install the controller:

1. Insert the controller into the opening from the front panel so that the terminal board is at the front side.

2. Set the brackets in place on the bottom and top of the controller as shown in the figure below, then tighten the screws of the brackets. Take care not to overtighten them.

■ External Dimensions and Panel Cutout Dimensions

UT32A

Unit (mm) [ex. for each panel]

Note

- “N” stands for the number of controllers to be installed.
- Measure the normal value supplied by NCS. (Sample value: sample code)
- Refer to “Specification” for the normal tolerance.

YOKOGAWA ELECTRIC CORPORATION

Network Solutions Business Division

Head office and for product sales

Distribution Headquarters

2 Dart Road, Neenog, Georgia 30265, USA

YOKOGAWA EUROPE B.V.

Headquarters

Eurne, 3835 HD Amstelveen, THE NETHERLANDS

www.yokogawa.com ns

All Rights Reserved. Copyright © 2015 Yokogawa Electric Corporation

IM SPK0031-11EN page 1/12
4. Hardware Specifications

This instrument is for Measurement Category No.1. Do not use if measurements falling under Measurement Categories No.2, No.3, and No.4.

**Input Specifications**

- **Universal Input (Equipped as standard)**
  - **Number of inputs:** 1
  - **Input type, instrument range, and measurement accuracy:** See the table below.

<table>
<thead>
<tr>
<th>Input Type</th>
<th>Instrument Range</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>0 V to ±1000 V DC</td>
<td>±0.1% or ±1 mV of reading</td>
</tr>
<tr>
<td>Voltage</td>
<td>0 V to ±1000 V AC</td>
<td>±0.1% or ±1 mV of reading</td>
</tr>
<tr>
<td>Frequency</td>
<td>0 Hz to 300 kHz</td>
<td>±0.1% or ±1 digit of range</td>
</tr>
<tr>
<td>Resistance</td>
<td>0 Ω to ±100 GΩ</td>
<td>±0.1% or ±1 digit of range</td>
</tr>
<tr>
<td>Current</td>
<td>0.1 μA to ±600 A</td>
<td>±0.1% or ±1 mV of current</td>
</tr>
<tr>
<td>Temperature</td>
<td>-200°C to +300°C</td>
<td>±0.1% or ±1 °C of reading</td>
</tr>
</tbody>
</table>

- **Input signal source resistance:**
  - TC or mV input: 250 Ω or less
  - Effects of signal source resistance: 0.1 Ω/Ω or less DC-voltage input: 2 Ω or less
  - Effects of signal source resistance: About 0.1% of D

- **Input frequency:**
  - Mains frequency: 50 or 60 Hz

- **Input noise ratio:**
  - Low noise: 10 dB or more (at 50Hz)

- **Input voltage/current:**
  - DC: ±10 Ω or less
  - AC: ±5 Ω or less

- **Power Supply Specifications and Isolation**
  - **Input power:** Rated voltage: 100–240 V AC (±15%–15%), 50/60 Hz
    - 24 V DC (±10%–15%) (for DC option)
  - **Power consumption:** 15 VA (24 V DC, 11 VA if DC option is specified)
  - **Data backup:** Nonvolatile memory
  - **Power supply:** 20 mA (for 100 V AC drive)
  - **Wattling voltage:** Between terminals and secondary terminals: 230 V AC for 1 minute (UL, CSA)
    - Between primary terminals and secondary terminals: 3000 V AC for 1 minute (CE)
  - **Auxiliary power supply terminals:**
    - Analog I/O signal terminals, contact input terminals, communication terminals, and functional grounding terminals
  - **Power terminals:** for 24 V AC/DC models are the secondary terminals.
  - **Insulation resistance:** Between power supply terminals and a grounding terminal 20 MΩ or more at 500 V DC
  - **Isolation specifications:**
    - No.1: 3000 V AC for 1 minute (UL, CSA)
    - No.2: 1500 V AC for 1 minute (UL, CSA)
    - No.3: 1500 V AC for 1 minute (UL, CSA)
  - **Power supply:** Rated output: ±0.05% of F.S. or less

- **Environmental Conditions**
  - **Operating ambient temperature:** -10°C to 50°C (solid-state mounting: -10°C to 40°C)
  - **Ambient humidity:** 0 to 90% RH (no condensation allowed)
  - **Magnetic field:** 400 A/m or less
  - **Continuous vibration:** at 5 to 6 Hz; Half amplitude of 1.5 mm or less, 1%G for 0.5 minutes and 1%G for 90 minutes each in the three axes directions
  - **Continuous vibration at 150 Hz: 4.9 mG or less, 1%G for 90 minutes each in the three axes directions
  - **Short-period vibration:** 14.7 mG or less, 1%G for 5 seconds or less
  - **Shock:** 38 mG or less, 1%G for 1 minute
  - **Altitude:** 2000 m or less above sea level
  - **Warm-up time:** 30 minutes or more after the power is turned on
  - **Start-up time:** Within 10 seconds
  - **Shock resistance:** The LCD panel is designed to withstand the impact that the display action becomes below the limit temperature. However, the control function is not affected.

- **Transportation and Storage Conditions:**
  - Temperature: -25°C to 70°C
  - Temperature change rate: 20°C/h or less
  - Humidity: 5 to 95% RH (no condensation allowed)

- **Effects of Operating Conditions**
  - **Effect of ambient temperature:**
    - Voltage: ±0.1% or ±0.01% of F.S., whichever is larger
  - **Current input:** ±0.01% of F.S.
  - **RTD input:** ±0.05% of ambient temperature or less
  - **Effect of power supply voltage fluctuation:**
    - Analog input: ±0.05% of F.S. or less
  - **Analog output:** ±0.05% of F.S. or less

- **Safety and EMC Standards**
  - **Safety:** Compliant with IEC 61010-1 (CE), IEC/EN 61010-2-050 (CE), IEC 61010-2-200 (CE), approved by CAN/CSA C22.2 No. 11010-1 (CSA), approved by UL 61010-1.
  - **Installation category:** II
  - **Pollution degree:** 2 (IEC 61010-2-050)
  - **Measurement category:** C1 (IEC 61010-2-050, GB 19391-2003, C1, and for measurement category of IEC 61010-2-030. This value is not necessarily a guarantee of instrument performance.
  - **EMC standards:**
    - Compliant with CE marking
      - EN 61326-1 Class A, Table 2 (For use in industrial locations).
      - EN 61326-2-3
      - EMC Regulatory Arrangement in Australia and New Zealand (for all model including UL/cUL)
      - EN 55011 Class A, Group 1
      - IC marking: Electromagnetic wave interference standard, electromagnetic wave protection standard-EMC standards
  - **Construction, Installation, and Wiring:**
    - Dual-proof and drip-proof: IP66 (for front panel) (Not available for side-by-side close mounting.)
    - Material: Poly-carbonate (Flame retardancy: UL94-V0)
    - Case color: White (Light grey) or Black (Light gray)
    - Weight: 0.5 kg or less
    - External dimensions (mm): 48 (W) x 86 (H) x 65 (depth from the panel face)
    - Panel cutout dimensions: 45 x 45 (mm) (±10%) (H)
    - Mounting altitude: Up to 3000 meters above the horizontal. No downwind tilting allowed.
    - Wiring: No screw terminal with square washer (for signal wiring and power wiring).

- **Alarm Relay Contact Specifications (OUT, OUT2)**
  - **Contact type and number of outputs (10 pairs):**
    - Contact type: Normally open (NO)
    - Number of contacts: 10 pairs
  - **Contact resistance:** 50 Ω or less

- **Alarm Break Alarm Specifications (for H/A option)**
  - **Number of inputs:** 2
  - **Input type:** Signal input (for contact input contact)
  - **Use:** Measures the heater current input using an external current transformer (CT) and generates a heater alarm break when the measured value is less than the break detection value.
  - **Current transformer input resistance:** About 9.4 Ω
  - **Current transformer input range:** 0.0 to 5.0 A (0.0 to 120 A (C+X) are also available)
  - **Power supply:** 300 V AC (0.1 to 300 Ω of range)
  - **Current transformer input current:** 500 mA or less
  - **Current transformer input range:** 0.1 to 1 A (300 Ω of range)
  - **Input resistance:** 5 Ω or more (for F.S. or less)
  - **Initial break detection:** 0.1% of the current transformer input range
  - **Break detection time:** 0.2 second (for time proportional output)
5. How to Connect Wires

- Wiring work must be carried out by a person with basic electrical knowledge and practical experience.
- Be sure to turn OFF the power supply to the controller before wiring to avoid an electric shock. Use a tester or similar device to ensure that no power is being supplied to a cable to be connected.
- For the wiring cable, the temperature rating is 75°C or more.
- As a safety measure, always install a circuit breaker (an IEC 60947-compliant product, 3, 100 V or 220 V AC in) in an easily accessible location near the instrument, provide indication that the switch is a device for turning off the power to the instrument.
- Install the power cable keeping a distance of more than 1 cm from other signal wires.
- The power cable is required to meet the IEC standards concerned or the wiring construction standards in countries or regions where wiring will be installed.
- When connecting two or more crimp-on terminal lugs to the single terminal block, bend the crimp-on terminal lugs before tightening the screw.

- When connecting two or more crimp-on terminal lugs to the single terminal block, bend the crimp-on terminal lugs before tightening the screw.

- Provide electricity from a single-phase power supply. If the power is noisy, install an isolation transformer on the primary side, and use a line filter on the secondary side. When measures against noise are taken, do not install the primary and secondary side, and use a line filter on the secondary side. When measures against noise are taken, do not install the primary and secondary side, and use a line filter on the secondary side. When measures against noise are taken, do not install the primary and secondary side, and use a line filter on the secondary side.

- Since the control panel is a device for turning off the power to the instrument, the terminal cover is recommended to use for the instrument.

- Recommended Crimp-on Terminal Lugs

| Model | Cable Specifications and Recommended Cables
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UT32A-D</td>
<td></td>
</tr>
</tbody>
</table>

- **Recommended Crimp-on Terminal Lugs**

- **Cable Specifications and Recommended Cables**

- **6. Terminal Wiring Diagrams**

- **Do not use an unassigned terminal as the relay terminal.**

- **When completing the wiring, the terminal cover is recommend to use for the instrument.**
1. Names and Functions of Display Parts
2. Setup Procedure
3. Quick Setting Function (Setting of Input and Output)

### 1. Names and Functions of Display Parts

- **PV display (light or dark)**: Displays PV or process variable when the power is on.
- **Status indicator**: Appears when an alarm occurs. Press the SET/ENTER key to switch to the Processing Display or to reset the alarm.
- **Operation display**: Displays the target and current values of the parameter setting levels (PV, setpoint, etc.).
- **Parameter display (unit indicator)**: Displays parameter names and units.
- **Status indicator (level)**: Indicates the status of the device (e.g., power on, status).
- **Input setting display**: Displays the current setting values of the parameters.

### 2. Setup Procedure

The following flowchart shows the setup procedure for UT32A-D.

1. **Install and wire the controller.**
   - Power On
   - NO

2. **Quick Setting start.**
   - NO

3. **Quick Setting Function (Setting of Input and Output)**
   - The quick setting function is a function to easily set the basic function of the controller.
   - On the controller to start the Quick setting function.
   - This function allows you to easily set the control type, input, and output, and quickly start the control action.

4. **Operation Display**
   - Displays the measured input value (PV) and the target setpoint (SP).
   - Displays the current and status of the controller.
   - Displays the alarm status.
   - Displays the current status of the controller.

5. **Operation Display**
   - Displays the measured input value (PV) and the target setpoint (SP).
   - Displays the current and status of the controller.
   - Displays the alarm status.
   - Displays the current status of the controller.

6. **Operation Display**
   - Displays the measured input value (PV) and the target setpoint (SP).
   - Displays the current and status of the controller.
   - Displays the alarm status.
   - Displays the current status of the controller.

7. **Operation Display**
   - Displays the measured input value (PV) and the target setpoint (SP).
   - Displays the current and status of the controller.
   - Displays the alarm status.
   - Displays the current status of the controller.

8. **Operation Display**
   - Displays the measured input value (PV) and the target setpoint (SP).
   - Displays the current and status of the controller.
   - Displays the alarm status.
   - Displays the current status of the controller.

9. **Operation Display**
   - Displays the measured input value (PV) and the target setpoint (SP).
   - Displays the current and status of the controller.
   - Displays the alarm status.
   - Displays the current status of the controller.

10. **Operation Display**
    - Displays the measured input value (PV) and the target setpoint (SP).
    - Displays the current and status of the controller.
    - Displays the alarm status.
    - Displays the current status of the controller.

11. **Operation Display**
    - Displays the measured input value (PV) and the target setpoint (SP).
    - Displays the current and status of the controller.
    - Displays the alarm status.
    - Displays the current status of the controller.

12. **Operation Display**
    - Displays the measured input value (PV) and the target setpoint (SP).
    - Displays the current and status of the controller.
    - Displays the alarm status.
    - Displays the current status of the controller.

---

**Contents**

1. Names and Functions of Display Parts
2. Setup Procedure
3. Quick Setting Function (Setting of Input and Output)
4. Setting Alarm Type
5. Setting Alarm Setpoint

---

**Quick (7) Key**

- **Contents**
  1. Names and Functions of Display Parts
  2. Quick Setting Function (Setting of Input and Output)
  3. Setting Alarm Type
  4. Setting Alarm Setpoint

---

**Names and Functions of Display Parts**

- **PV display (light or dark)**: Displays PV or process variable when the power is on.
- **Status indicator**: Appears when an alarm occurs. Press the SET/ENTER key to switch to the Processing Display or to reset the alarm.
- **Operation display**: Displays the target and current values of the parameter setting levels (PV, setpoint, etc.).
- **Parameter display (unit indicator)**: Displays parameter names and units.
- **Status indicator (level)**: Indicates the status of the device (e.g., power on, status).
- **Input setting display**: Displays the current setting values of the parameters.

---

**Quick (7) Key**

- **Contents**
  1. Names and Functions of Display Parts
  2. Quick Setting Function (Setting of Input and Output)
  3. Setting Alarm Type
  4. Setting Alarm Setpoint

---

**Names and Functions of Display Parts**

- **PV display (light or dark)**: Displays PV or process variable when the power is on.
- **Status indicator**: Appears when an alarm occurs. Press the SET/ENTER key to switch to the Processing Display or to reset the alarm.
- **Operation display**: Displays the target and current values of the parameter setting levels (PV, setpoint, etc.).
- **Parameter display (unit indicator)**: Displays parameter names and units.
- **Status indicator (level)**: Indicates the status of the device (e.g., power on, status).
- **Input setting display**: Displays the current setting values of the parameters.

---

**Quick (7) Key**

- **Contents**
  1. Names and Functions of Display Parts
  2. Quick Setting Function (Setting of Input and Output)
  3. Setting Alarm Type
  4. Setting Alarm Setpoint

---

**Names and Functions of Display Parts**

- **PV display (light or dark)**: Displays PV or process variable when the power is on.
- **Status indicator**: Appears when an alarm occurs. Press the SET/ENTER key to switch to the Processing Display or to reset the alarm.
- **Operation display**: Displays the target and current values of the parameter setting levels (PV, setpoint, etc.).
- **Parameter display (unit indicator)**: Displays parameter names and units.
- **Status indicator (level)**: Indicates the status of the device (e.g., power on, status).
- **Input setting display**: Displays the current setting values of the parameters.

---

**Quick (7) Key**

- **Contents**
  1. Names and Functions of Display Parts
  2. Quick Setting Function (Setting of Input and Output)
  3. Setting Alarm Type
  4. Setting Alarm Setpoint

---

**Names and Functions of Display Parts**

- **PV display (light or dark)**: Displays PV or process variable when the power is on.
- **Status indicator**: Appears when an alarm occurs. Press the SET/ENTER key to switch to the Processing Display or to reset the alarm.
- **Operation display**: Displays the target and current values of the parameter setting levels (PV, setpoint, etc.).
- **Parameter display (unit indicator)**: Displays parameter names and units.
- **Status indicator (level)**: Indicates the status of the device (e.g., power on, status).
- **Input setting display**: Displays the current setting values of the parameters.
4. Setting Alarm Type

The following operating procedure shows an example of changing the alarm-1 type (factory default: PV high low limit alarm) to PV low limit alarm (setpoint: 02).

1. Show the Operation Display.
   - Hold down the key for 3 seconds.

2. MODE menu is displayed.
   - Press the Right arrow key until ALRM menu appears.

3. ALRM menu is displayed.
   - Press the SET/ENTER key.

4. The parameter AL1 (alarm-1 type) is displayed.
   - Press the SET/ENTER key.

5. The last digit of the setpoint blinks.
   - Change the setpoint using the Up/Down arrow keys to increase and decrease the value and the Left/Right arrow keys to move between digits.

6. The alarm-1 type setpoint 02 (PV low limit) is registered.
   - After the setup is completed, press the DISP key once to return to the Operation Display.

   - Symbos: Stand-by action Energized/De-energized Latch action

   - To change the alarm type, change the last 2 digits of the 5-digit value.
   - Stand-by action and excitement are turned on or off by selecting 1 or 0. (See ‘Setting Display of Alarm Type’)
   - For the lach action, see User’s Manual (IM DSP08D31-01EN).

6. Setting Alarm Setpoint

The following operating procedure shows an example of setting the alarm-1 setpoint of group 1 to 100.

Before setting the alarm setpoint, check the alarm type.

To change the alarm type, see “3. Setting Alarm Type.”

1. Show the Operation Display.

2. Display MODE menu with the same procedure as described in Setting Alarm Type.
   - Press the Right arrow key.

3. -SP menu is displayed.
   - Press the SET/ENTER key.
   - Press the Down arrow key until A1 appears.

4. The parameter A1 is displayed.
   - A1 to A4 represent the alarm-1 to -4 setpoints.

   - Up/Down arrow keys: parameters
   - Left/Right arrow keys: groups

   - Display the parameter and group that need to be changed.
   - Press the SET/ENTER key.

5. The setpoint has been registered.
   - After the setup is completed, press the DISP key once to return to the Operation Display.

   - Initializing parameter values

Parameters that you have changed can be initialized to factory default values or user default values. For details, see “Parameter Initialization” in the User’s Manual (IM DSP08D31-01EN).

6. Changing the parameter display levels

This operation guide does not explain all the parameters. To display all the parameters, you need to change the parameter display level to professional setting mode.

For details, see “Setting Security Functions” in the User’s Manual (IM DSP08D31-01EN).
When the required value is displayed, press the SET/ENTER key.

4. Setting Target Setpoint (SP)

When the parameter AT (auto-tuning switch) is displayed.

5. Auto-Tuning

The parameter AT (auto-tuning switch) is displayed.

5. Setting Target Setpoint (SP)

The parameter AT (auto-tuning switch) is displayed.

5. Auto-Tuning

The parameter AT (auto-tuning switch) is displayed.

5. Setting Target Setpoint (SP)

The parameter AT (auto-tuning switch) is displayed.

5. Auto-Tuning

The parameter AT (auto-tuning switch) is displayed.

5. Setting Target Setpoint (SP)

The parameter AT (auto-tuning switch) is displayed.

5. Auto-Tuning

The parameter AT (auto-tuning switch) is displayed.

5. Setting Target Setpoint (SP)

The parameter AT (auto-tuning switch) is displayed.

5. Auto-Tuning

The parameter AT (auto-tuning switch) is displayed.

5. Setting Target Setpoint (SP)

The parameter AT (auto-tuning switch) is displayed.

5. Auto-Tuning

The parameter AT (auto-tuning switch) is displayed.

5. Setting Target Setpoint (SP)

The parameter AT (auto-tuning switch) is displayed.

5. Auto-Tuning

The parameter AT (auto-tuning switch) is displayed.
7. Switching between REM (Remote) and LCL (Local)
Remote and local switching can be performed using any of the following:
(1) Contact input, (2) Parameter, (3) Communication, and (4) User function key.

LCL (Local)
Control is performed using the target setpoint set on the controller.

REM (Remote)
Control is performed using a setpoint via communication for the target setpoint. This shows an example of switching from local to remote using the parameter. [Only in cases where the communication is specified]

8. Manipulating Control Output in Manual Mode
In this example of operating the Loop-1 control output, to operate the Loop-2 control output, use the OUT Display showing the LP2 lamp.

MAN lamp is lit

Up arrow key: increases control output.
Down arrow key: decreases control output.

9. Troubleshooting

■ Troubleshooting Flow
If the Operation Display does not appear after turning on the controller’s power, check the procedures in the following flowchart.
If a problem appears to be complicated, contact our sales representatives.

■ Remedies if Power Failure Occurs during Operations
  - Instantaneous power failure within 20 ms.
  - Power failure for less than 5 seconds, or for about 5 seconds or more.

  Affects the “settings” and “operation status.”
  For details, see User’s Manual (IM 05P08D31-01EN).
### SELECT Parameter

#### Menu symbol: "SP (SP)"

<table>
<thead>
<tr>
<th>Parameter symbol</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>A (A)</td>
<td>Target setpoint</td>
<td>0 to 100% or SP input range (P): value</td>
<td>50.0%</td>
<td>-</td>
</tr>
<tr>
<td>PT</td>
<td>B (B)</td>
<td>PV number selector</td>
<td>Set a PID group number to use 1 to 5 (0 indicates on the setup parameter PIDG settings)</td>
<td>1 to 5</td>
<td>Table</td>
</tr>
</tbody>
</table>

#### Parameter symbol: "SP (SP)"

- **Operation:** Press the PARA key for 3 sec. DISP key.
- **Operation:** Press the PARA key (the PARA key is held down for 3 sec).

**Note:**
- The parameter groups can be selected using the keys.
- Move to the Setup Parameter Setting Display. Hold down the PARA key and the soft key of the number simultaneously for 3 sec.

#### SP and Alarm Setpoint Setting Parameter

<table>
<thead>
<tr>
<th>Parameter symbol: &quot;SP (SP)&quot;</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>A (A)</td>
<td>Target setpoint</td>
<td>0 to 100% or SP input range (P): value</td>
<td>50.0%</td>
<td>-</td>
</tr>
<tr>
<td>PT</td>
<td>B (B)</td>
<td>PV number selector</td>
<td>Set a PID group number to use 1 to 5 (0 indicates on the setup parameter PIDG settings)</td>
<td>1 to 5</td>
<td>Table</td>
</tr>
</tbody>
</table>

#### Parameter symbol: "SP (SP)"

- **Operation:** Press the PARA key for 3 sec. DISP key.
- **Operation:** Press the PARA key (the PARA key is held down for 3 sec).

**Note:**
- The parameter groups can be selected using the keys.
- Move to the Setup Parameter Setting Display. Hold down the PARA key and the soft key of the number simultaneously for 3 sec.

### SP-related Setting Parameter

<table>
<thead>
<tr>
<th>Parameter symbol: &quot;SP (SP)&quot;</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>A (A)</td>
<td>Target setpoint</td>
<td>0 to 100% or SP input range (P): value</td>
<td>50.0%</td>
<td>-</td>
</tr>
<tr>
<td>PT</td>
<td>B (B)</td>
<td>PV number selector</td>
<td>Set a PID group number to use 1 to 5 (0 indicates on the setup parameter PIDG settings)</td>
<td>1 to 5</td>
<td>Table</td>
</tr>
</tbody>
</table>

#### Parameter symbol: "SP (SP)"

- **Operation:** Press the PARA key for 3 sec. DISP key.
- **Operation:** Press the PARA key (the PARA key is held down for 3 sec).

**Note:**
- The parameter groups can be selected using the keys.
- Move to the Setup Parameter Setting Display. Hold down the PARA key and the soft key of the number simultaneously for 3 sec.

### Operation Mode

#### Menu symbol: "SP (SP)"

<table>
<thead>
<tr>
<th>Parameter symbol: &quot;SP (SP)&quot;</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>A (A)</td>
<td>Target setpoint</td>
<td>0 to 100% or SP input range (P): value</td>
<td>50.0%</td>
<td>-</td>
</tr>
<tr>
<td>PT</td>
<td>B (B)</td>
<td>PV number selector</td>
<td>Set a PID group number to use 1 to 5 (0 indicates on the setup parameter PIDG settings)</td>
<td>1 to 5</td>
<td>Table</td>
</tr>
</tbody>
</table>

#### Parameter symbol: "SP (SP)"

- **Operation:** Press the PARA key for 3 sec. DISP key.
- **Operation:** Press the PARA key (the PARA key is held down for 3 sec).

**Note:**
- The parameter groups can be selected using the keys.
- Move to the Setup Parameter Setting Display. Hold down the PARA key and the soft key of the number simultaneously for 3 sec.

### Operation Parameters

#### Menu symbol: "SP (SP)"

- **Downloaded or viewed at the following URL:** http://www.yokogawa.com/ns/ut/im/
- **Note:**
  - The parameter groups can be selected using the keys.
  - Move to the Setup Parameter Setting Display. Hold down the PARA key and the soft key of the number simultaneously for 3 sec.

### Alarm Function Setting Parameter

#### Menu symbol: "SP (SP)"

<table>
<thead>
<tr>
<th>Parameter symbol: &quot;SP (SP)&quot;</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>A (A)</td>
<td>Target setpoint</td>
<td>0 to 100% or SP input range (P): value</td>
<td>50.0%</td>
<td>-</td>
</tr>
<tr>
<td>PT</td>
<td>B (B)</td>
<td>PV number selector</td>
<td>Set a PID group number to use 1 to 5 (0 indicates on the setup parameter PIDG settings)</td>
<td>1 to 5</td>
<td>Table</td>
</tr>
</tbody>
</table>

#### Parameter symbol: "SP (SP)"

- **Operation:** Press the PARA key for 3 sec. DISP key.
- **Operation:** Press the PARA key (the PARA key is held down for 3 sec).

**Note:**
- The parameter groups can be selected using the keys.
- Move to the Setup Parameter Setting Display. Hold down the PARA key and the soft key of the number simultaneously for 3 sec.

### PID Setting Parameter

#### Menu symbol: "SP (SP)"

<table>
<thead>
<tr>
<th>Parameter symbol: &quot;SP (SP)&quot;</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>A (A)</td>
<td>Target setpoint</td>
<td>0 to 100% or SP input range (P): value</td>
<td>50.0%</td>
<td>-</td>
</tr>
<tr>
<td>PT</td>
<td>B (B)</td>
<td>PV number selector</td>
<td>Set a PID group number to use 1 to 5 (0 indicates on the setup parameter PIDG settings)</td>
<td>1 to 5</td>
<td>Table</td>
</tr>
</tbody>
</table>

#### Parameter symbol: "SP (SP)"

- **Operation:** Press the PARA key for 3 sec. DISP key.
- **Operation:** Press the PARA key (the PARA key is held down for 3 sec).

**Note:**
- The parameter groups can be selected using the keys.
- Move to the Setup Parameter Setting Display. Hold down the PARA key and the soft key of the number simultaneously for 3 sec.

### Operation Setting

#### To select the parameter setting displayed as the initial value, press the Down arrow key to move to the next parameter.

#### To change and set the parameter setting, press the SET key to start the setpoint binding.

**Note:**
- There are some parameters which are not displayed during the model and suffix codes, control type (CMT); etc. The parameters for professional setting mode (LEVEL PRO) are not described in this manual. See User’s Manual (IM 05P08D31-01EN).

---

IM 05P08D31-01EN page 9/12
### Tuning Parameter

**Parameter table**

<table>
<thead>
<tr>
<th>Parameter Symbol</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial Value</th>
<th>Upper Limit</th>
<th>Lower Limit</th>
<th>Display Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>P (PV1)</td>
<td>Gain (autotune)</td>
<td>0.0 to 1000.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I (PV1)</td>
<td>Integral time</td>
<td>0.0 to 1000.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D (PV1)</td>
<td>Derivative time</td>
<td>0.0 to 500.0</td>
<td>20.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Function**

- **GPIB** (Disable)
  - Automatic gain tuning function (normal mode)
  - Manual gain tuning function (normal mode)
  - Enables or disables the software digital integration for the detected input.

- **GPIB** (Enable)
  - Automatic gain tuning function (normal mode)
  - Manual gain tuning function (normal mode)
  - Enables and disables the software digital integration for the detected input.

**Notes**

- **Gain (autotune)** displays the calculated gain value.
- **Integral time** and **Derivative time** are not displayed.

### P Parameter (for Ladder Program)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial Value</th>
<th>Upper Limit</th>
<th>Lower Limit</th>
<th>Display Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>P (PV1)</td>
<td>Gain (autotune)</td>
<td>0.0 to 1000.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I (PV1)</td>
<td>Integral time</td>
<td>0.0 to 1000.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D (PV1)</td>
<td>Derivative time</td>
<td>0.0 to 500.0</td>
<td>20.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Function**

- **GPIB** (Disable)
  - Automatic gain tuning function (normal mode)
  - Manual gain tuning function (normal mode)
  - Enables or disables the software digital integration for the detected input.

- **GPIB** (Enable)
  - Automatic gain tuning function (normal mode)
  - Manual gain tuning function (normal mode)
  - Enables and disables the software digital integration for the detected input.

**Notes**

- **Gain (autotune)** displays the calculated gain value.
- **Integral time** and **Derivative time** are not displayed.

### Setup Parameters

Hold down the PARA key and Left arrow key simultaneously for 3 seconds to move from the Operation Display or Operation Parameter Setting Display to the Setup Parameter Setting Display.

**Press the DSP key once to return to the Operation Display.**

**Operation for Setting**

- To select the parameter setting displayed as the initial value, press the Down arrow key to move to the next parameter.
- To change and set the parameter setting, press the SET/ENTER key to start the setpoint change. The blinking state shows that the change is being made. Use the Up/Down/Left/Right arrow keys to change the setpoint. Press the SET/ENTER key to register the setting.

**Note:**

There are some parameters which are not displayed depending on the Model and suffix codes, control type (CNT), etc. The parameters for professional setting mode (LEV, PRE) are not described in this manual. See User’s Manual (IM 05P08D31-01EN).

**Menu (LTD)l**

- **Control type**
  - **PID** (5 groups of 3 parameters)
  - **PI** (5 groups of 2 parameters)
  - **P** (5 groups of 1 parameter)

**Parameter table**

<table>
<thead>
<tr>
<th>Parameter Symbol</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial Value</th>
<th>Upper Limit</th>
<th>Lower Limit</th>
<th>Display Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>P (PV1)</td>
<td>PID ratio</td>
<td>0.0 to 1000.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I (PV1)</td>
<td>Integral time</td>
<td>0.0 to 1000.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D (PV1)</td>
<td>Derivative time</td>
<td>0.0 to 500.0</td>
<td>20.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

- **Gain (autotune)** displays the calculated gain value.
- **Integral time** and **Derivative time** are not displayed.

### PV Input Setting Parameter

**Parameter table**

<table>
<thead>
<tr>
<th>Parameter Symbol</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial Value</th>
<th>Upper Limit</th>
<th>Lower Limit</th>
<th>Display Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>P (PV1)</td>
<td>PID ratio</td>
<td>0.0 to 1000.0</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I (PV1)</td>
<td>Integral time</td>
<td>0.0 to 1000.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D (PV1)</td>
<td>Derivative time</td>
<td>0.0 to 500.0</td>
<td>20.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

- **Gain (autotune)** displays the calculated gain value.
- **Integral time** and **Derivative time** are not displayed.

---

**Note:**

- Temperature and current input scale are displayed for a digital input signal.

**Example:**

- **Temperature input scale**
  - Standard: 0.0 to 1000.0°C
  - Setpoint: 0.0 to 1000.0°C
  - Output: 0.0 to 1000.0V

- **Current input scale**
  - Standard: 0.0 to 1000.0A
  - Setpoint: 0.0 to 1000.0A
  - Output: 0.0 to 1000.0V

---

**For Zone control, set the setup parameter ZON (zone PID selection) to Zone PID selection.**

Use the following table to record the reference point setting value.

<table>
<thead>
<tr>
<th>Reference Deviation</th>
<th>Upper Limit</th>
<th>Lower Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>20%</td>
<td>200%</td>
<td>0%</td>
</tr>
<tr>
<td>30%</td>
<td>300%</td>
<td>0%</td>
</tr>
<tr>
<td>40%</td>
<td>400%</td>
<td>0%</td>
</tr>
</tbody>
</table>

---

**Operation**

- To select the parameter setting displayed as the initial value, press the Down arrow key to move to the next parameter.
- To change and set the parameter setting, press the SET/ENTER key to start the setpoint change. The blinking state shows that the change is being made. Use the Up/Down/Left/Right arrow keys to change the setpoint. Press the SET/ENTER key to register the setting.

**Note:**

There are some parameters which are not displayed depending on the Model and suffix codes, control type (CNT), etc. The parameters for professional setting mode (LEV, PRE) are not described in this manual. See User’s Manual (IM 05P08D31-01EN).
### PV2 Input Setting Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV2 input unit</td>
<td>No. of P</td>
<td>D</td>
<td>Degree Celsius</td>
<td>No. of P</td>
<td>D</td>
</tr>
<tr>
<td>PV2 input scale decimal point position</td>
<td>0-100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Minimum value of PV2 input range</td>
<td>0-100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Maximum value of PV2 input range</td>
<td>0-100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP input analog unit</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP input analog input</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP input analog input</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### RS-485 Communication Setting Parameter (E1-terminal Area)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-485 communication parameter in RS-485 PC</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loop select</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loop select</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RS-485 communication parameter in RS-485 PC</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loop select</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loop select</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Output Setting Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV2 output unit</td>
<td>No. of P</td>
<td>D</td>
<td>Degree Celsius</td>
<td>No. of P</td>
<td>D</td>
</tr>
<tr>
<td>PV2 output scale decimal point position</td>
<td>0-100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Minimum value of PV2 output range</td>
<td>0-100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Maximum value of PV2 output range</td>
<td>0-100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP output analog unit</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP output analog input</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP output analog input</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Heat Break Alarm Setting Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat breaker alarm-1 function selection</td>
<td>OFF</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Heat breaker alarm-2 current selection</td>
<td>OFF</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Heat breaker alarm-2 current selection</td>
<td>OFF</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Key Action Setting Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### SELECT Display Setting Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Key Lock Setting Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### DI Function Registration Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### DI Function Numbering Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LCD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Control PV Input Unit

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control PV input unit</td>
<td>No. of P</td>
<td>D</td>
<td>Degree Celsius</td>
<td>No. of P</td>
<td>D</td>
</tr>
<tr>
<td>Control PV input decimal point position</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Control PV input scale decimal point position</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Minimum value of control PV input range</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Maximum value of control PV input range</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP input analog unit</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP input analog input</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP input analog input</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### SP Limiter Setting Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control PV input unit</td>
<td>No. of P</td>
<td>D</td>
<td>Degree Celsius</td>
<td>No. of P</td>
<td>D</td>
</tr>
<tr>
<td>Control PV input decimal point position</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Control PV input scale decimal point position</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Minimum value of control PV input range</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Maximum value of control PV input range</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP input analog unit</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP input analog input</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MP input analog input</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### RS-485 Communication Setting Parameter (E1-terminal Area)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-485 communication parameter in RS-485 PC</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loop select</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loop select</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RS-485 communication parameter in RS-485 PC</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loop select</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loop select</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
**AL1-AL3 Function Registration Parameter**

<table>
<thead>
<tr>
<th>Parameter name (AL1-AL3)</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL1 function selection</td>
<td>Parameter selection</td>
<td>on/off</td>
<td>0</td>
<td>STD</td>
<td></td>
</tr>
<tr>
<td>AL2 function selection</td>
<td>Parameter selection</td>
<td>on/off</td>
<td>0</td>
<td>STD</td>
<td></td>
</tr>
<tr>
<td>AL3 function selection</td>
<td>Parameter selection</td>
<td>on/off</td>
<td>0</td>
<td>STD</td>
<td></td>
</tr>
<tr>
<td>DUT relay function selection</td>
<td>Parameter selection</td>
<td>on/off</td>
<td>0</td>
<td>STD</td>
<td></td>
</tr>
</tbody>
</table>

**Error and Version Confirmation Parameter (for display only)**

<table>
<thead>
<tr>
<th>Parameter name (AL1-AL3)</th>
<th>Name of Parameter</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter error status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select error status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AL1 converter error status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AL1 converter error status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PY input error status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PY input error status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ladder error status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**System Setting Parameter**

<table>
<thead>
<tr>
<th>Parameter name (AL1-AL3)</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistor mode</td>
<td>Parameter setting</td>
<td>0-1000 Ohm</td>
<td>560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistor filter</td>
<td>Parameter setting</td>
<td>0-1000 Ohm</td>
<td>560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input error preset output</td>
<td>Parameter setting</td>
<td>0-1000 Ohm</td>
<td>560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter frequency</td>
<td>Parameter setting</td>
<td>0-1000 Ohm</td>
<td>560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quick setting mode</td>
<td>Parameter setting</td>
<td>0-1000 Ohm</td>
<td>560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guide display language</td>
<td>Language setting</td>
<td>EN/ES/FR/DE</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistend setting</td>
<td>Parameter setting</td>
<td>0-1000 Ohm</td>
<td>560</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Parameter Display Level Parameter**

<table>
<thead>
<tr>
<th>Parameter name (AL1-AL3)</th>
<th>Name of Parameter</th>
<th>Setting Range</th>
<th>Initial value</th>
<th>User setting</th>
<th>Display level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter setting</td>
<td>Parameter selection</td>
<td>0-1000 Ohm</td>
<td>560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display setting</td>
<td>Parameter selection</td>
<td>0-1000 Ohm</td>
<td>560</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* For Professional setting mode, see User’s Manual (IM 05P08D31-11EN).

**Electronics Manual**
You can download the latest manuals from the following website:
URL: [http://www.yokogawa.com/na/sim/]

**General Specification**

- Authorised Representative in the EEA
Yokogawa Europe BV. (Address: Euroweg 2, 3825 HD Amersfoort, The Netherlands) is the Authorised Representative of Yokogawa Electric Corporation for the Product in the EEA.

- Printed Manuals
http://www.yokogawa.com/ns/ut/im/

- Electronic Manuals
You can download the latest manuals from the following website:
URL: [http://www.yokogawa.com/na/sim/]

- Trademarks
Our product names or brand names mentioned in this manual are the trademarks or registered trademarks of Yokogawa Electric Corporation.
Adobe, Acrobat, and Postscript are either registered trademarks or trademarks of Adobe Systems Incorporated.
Ethernet is a registered trademark of XEROX Corporation in the United States.
Motorola is a registered trademark of Motorola Electric.
PROFIBUS-DP is a registered trademark of PROFIBUS User Organization.
CC-Link is a registered trademark of Open DeviceNet Vendor Association.
CC-Link is a registered trademark of CC-Link Partner Association.
We do not use the TM or ® mark to indicate these trademarks or registered trademarks in this manual.
All other product names mentioned in this manual are trademarks or registered trademarks of their respective companies.