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http://www.yokogawa.com/ns/reg/
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Foreword

Thank you for purchasing the YS1000 series single-loop controller (hereinafter referred to as “YS1000”).

This manual describes the basic functions and operation methods of the YS1350/YS1360. Please read through this user’s manual carefully before using the product.

Note that the manuals for the YS1350/YS1360 comprise the following five documents:

- **Printed manual**
  - [YS1350/YS1360 Operation Guide](IM01B08E02-01EN)
    - This manual describes the basic operation methods.
  - [Precautions on the Use of the YS1000 Series](IM01B08B02-91EN)
    - This manual is always delivered even if 'without manuals' was selected.

- **Electronic manuals**
  - [YS1350/YS1360 Operation Guide](IM01B08E02-01EN)
    - This is identical to the printed manual.
  - [YS1350/YS1360 User’s Manual](IM01B08E02-02EN)
    - This manual describes the detailed functions and setting items. It does not contain the communication functions.
  - [YS1000 Series Communication Interface User’s Manual](IM01B08J02-01EN)
    - This manual describes how to use YS1000 in Ethernet, serial, and DCS-LCS communications.
  - [YS1000 Setting Software/YS1300 Programmable Function User’s Manual](IM01B08K02-02EN)
    - This manual describes how to use YS1000 and YS1700’s programmable function.
  - [YS1000 Series Replacement Manual](IM01B08H02-01EN)
    - This manual describes the compatibility of installation and wiring with YS100, YS80, EBS, I, EK, HOMAC, and 100 line.

Precautions on the Use of the YS1000 Series

This manual is always delivered even if ‘without manuals’ was selected.

User’s manuals for YS1000 are available on the following web site: www.yokogawa.com/ns/ys/im/

You need Adobe Reader 7.0 or later (but the latest version is recommended) installed on the computer in order to open and read the manuals.

The printed versions of the electronic manuals are available for purchase. Contact your nearest YOKOGAWA dealer for details.

- **General Specifications**
  - **General Specification Name**
    - YS1350 Manual Setter for SV Setting/YS1360 GS 01B08E02-01EN
  - **GS Number**
    - IM 01B08E02-01EN

  * The last two characters of the manual number and general specification number indicate the language in which the manual is written.

- **Notice**
  - The contents of this manual are subject to change without notice as a result of continuing improvements to the instrument’s performance and functions.
  - Every effort has been made to ensure accuracy in the preparation of this manual. Should any errors or omissions come to your attention, however, please inform YOKOGAWA Electric’s sales office or sales representative.
  - Under no circumstances may the contents of this manual, in part or in whole, be transcribed or copied without our permission.

---

**Trademarks**

- Our product names or brand names mentioned in this manual are the trademarks or registered trademarks of YOKOGAWA Electric Corporation (hereinafter referred to as YOKOGAWA).
- Microsoft, MS-DOS, Windows, Windows XP, and Windows NT are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Adobe, Acrobat, and Postscript are either registered trademarks or trademarks of Adobe Systems Incorporated.
- Ethernet is a registered trademark of XEROX Corporation.
- We do not use the TM or ® mark to indicate these trademarks or registered trademarks in this user’s manual.
- All other product names mentioned in this user’s manual are trademarks or registered trademarks of their respective companies.

**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 this Product in the EEA.

**Revisions**

1st Edition: June 2014

**Safety Precautions**

The following contents are for the suffix codes "-C0", and "-C2".

This instrument is a product of Installation Category II, of IEC/EN61010-1, IEC/EN61010-2-201 and IEC/EN61010-2-030 Safety Standards and Class A (use in commercial and industrial areas) of EN61326-1, EN50501 (EMC Standards) (use a ferrite core and an arrester to comply with the standards).

**CAUTION**

This instrument is a class A product (use in commercial and industrial areas). In a domestic environment this product may cause radio interference in which case the user needs to take adequate measures.

This instrument is designed to be used within the scope of Measurement Category O (other) and is dedicated for indoor use.

* Measurement Category O (other)

This category applies to electric equipment that measures a circuit connected to a low-voltage facility and receives power from stationary equipment such as electric switchboards.

To use the instrument properly and safely, observe the safety precautions described in this user’s manual when operating it. Use of the instrument in a manner not prescribed herein may compromise protection features inherent in the device. We assume no liability for or warranty on a fault caused by users’ failure to observe these instructions.

This instrument is an FM Non-incendive or CSA Non-incendive Standard certified product.

- **FM nonincidence**: Class 3600:2011
  - Class 3611:2004
  - Class 3810:2005
  - Locations: Class I, Division 2, Groups A,B,C and D
  - Class I, Zone 2, Groups II C
  - Temperature Code: T4

- **CSA nonincidence**: C22. 2 No. 213-M1987
  - CAN/CSA-C22.2 No. 0-10
  - CAN/CSA-C22.2 No. 0-4-04
  - Locations: Class I, Division 2, Groups A,B,C and D
  - Temperature Code: T4
Safety, Protection, and Modification of the Product

The following symbols are used in the product and user's manuals to indicate safety precautions:

- “Handle with Care” (This symbol is attached to the part(s) of the product to indicate that the user’s manual should be referred to in order to protect the operator and the instrument from harm.)
- Protective grounding terminal
- Functional grounding terminal (Do not use this terminal as a protective grounding terminal.)
- Alternating current
- Direct current

- In order to protect the system controlled by this product and the product itself, and to ensure safety operation, observe the safety precautions described in this user’s manual. 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 operating the product.
- Installation of protective and/or safety circuits with respect to a lightning protector; protective equipment for the system controlled by the product and the product itself; foolproof or failsafe design of a process or line using the system controlled by the product or the product itself; and/or the design and installation of other protective and safety circuits are to be appropriately implemented as the customer deems necessary.
- Be sure to use the spare parts approved by YOKOGAWA when replacing parts or consumables.
- This product is not designed or manufactured to be used in critical applications that directly affect or threaten human lives. Such applications include nuclear power equipment, devices using radioactivity, railway facilities, aviation equipment, air navigation facilities, aviation facilities, and medical equipment. If so used, it is the user's responsibility to include in the system additional equipment and devices that ensure personnel safety.
- Modification of the product is strictly prohibited.

Power Supply
Ensure that the instrument's supply voltage matches the voltage of the power supply before turning ON the power.

Protective Grounding
To prevent electric shock, always confirm that protective grounding is connected before turning ON the instrument's power supply.

Necessity of Protective Grounding
Do not cut off the internal or external protective grounding wire or disconnect the wiring of the protective grounding terminal. Doing so renders the protective functions of the instrument invalid and poses a potential shock hazard.

Defects in Protective Functions
If protective functions such as grounding are suspected to be defective, do not operate the instrument. Ensure that all protective functions are in working order before operating the instrument.

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 in environments with high concentrations of corrosive gas (H₂S, SOₓ, etc.) for extended periods of time 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.

External Connection
Ensure that protective grounding is connected before connecting the instrument to the device under measurement or to an external control circuit.

Damage to the Protective Construction
Operation of the instrument in a manner not specified in this user’s manual may damage its protective construction.

Warning and Disclaimer
- YOKOGAWA makes no warranties regarding the product except those stated in the WARRANTY that is provided separately.
- The product is provided on an “as is” basis. YOKOGAWA assumes no liability to any person or entity for any loss or damage, direct or indirect, arising from the use of the product or from any unpredictable defect of the product.

Notes on Software
- YOKOGAWA makes no warranties, either expressed or implied, with respect to the software's merchantability or suitability for any particular purpose, except as specified in the terms of the separately provided warranty.
- This software may be used on one specific machine only.
- To use the software on another machine, the software must be purchased again separately.
- It is strictly prohibited to reproduce the product except for backup purposes.
- Store the software CD-ROM (the original medium) in a safe place.
- All reverse-engineering operations, such as reverse compilation or the reverse assembly of the product are strictly prohibited.
- No part of the product's software may be transferred, converted, or sublet for use by any third party, without prior written consent from YOKOGAWA.

Handling Precautions for the Main Unit
- The instrument comprises many plastic components. To clean it, wipe it with a soft, dry cloth. Do not use organic solvents such as benzene or thinner for cleaning, as discoloration or deformation may result.
- Keep electrically charged objects away from the signal terminals. Not doing so may cause the instrument to fail.
- Do not apply volatile chemicals to the display area, operation keys, etc. Do not leave the instrument in contact with rubber or PVC products for extended periods. Doing so may result in failure.
- If the equipment emits smoke or abnormal smells or makes unusual noises, turn OFF the instrument's power switch immediately and unplug the device. In such an event, contact your sales representative.

Regarding the LCD
A small number of missing or steady-on LCD pixels and minor variations in brightness uniformity is a normal display characteristic and not a malfunction.

Protection of Environment

Waste Electrical and Electronic Equipment (WEEE), Directive
Applicable models: YS1350-10x, -12x
YS1360-10x, -12x, -20x, -22x
However, except the option /A08.
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.

- Marking
This product complies with the WEEE Directive marking requirement. This marking indicates that you must not discard this electrical/electronic product in domestic household waste.

- Product Category
With reference to the equipment types in the WEEE directive, this product is classified as a “Small equipment” product. Do not dispose in domestic household waste. When disposing products in the EU, contact your local Yokogawa Europe B.V. office.
Checking the Contents of the Package

Unpack the box and check the contents before using the product. If the product is different from that which you have ordered, if any parts or accessories are missing, or if the product appears to be damaged, contact your sales representative.

YS1350/YS1360 Main Unit

The YS1350 and YS1360 main units have nameplates affixed to the tops of the terminals. Check the model and suffix codes inscribed on the nameplate to confirm that the product received is that which was ordered.

No. (Instrument number)

When contacting your sales representative, inform them of this number too.

Model and Suffix Codes

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Optional Code</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>YS1350</td>
<td>0</td>
<td>Manual Setter for SV Setting</td>
<td></td>
</tr>
<tr>
<td>YS1360</td>
<td>0</td>
<td>Manual Setter for MV Setting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-1</td>
<td>YS1350: Always “-1”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-2</td>
<td>YS1360: Without hard manual unit</td>
<td></td>
</tr>
</tbody>
</table>

Type

<table>
<thead>
<tr>
<th>Power supply</th>
<th>0</th>
<th>100 V AC, 24 V DC common power</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>220 V AC power</td>
</tr>
</tbody>
</table>

Direct input (*3)

<table>
<thead>
<tr>
<th>Direct input</th>
<th>/A01</th>
<th>mV input</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>/A02</td>
<td>Thermocouple input</td>
</tr>
<tr>
<td></td>
<td>/A03</td>
<td>RTD input</td>
</tr>
<tr>
<td></td>
<td>/A04</td>
<td>Potentiometer input</td>
</tr>
<tr>
<td></td>
<td>/A05</td>
<td>Isolator</td>
</tr>
<tr>
<td></td>
<td>/A06</td>
<td>Two-wire transmitter input (isolated)</td>
</tr>
<tr>
<td></td>
<td>/A07</td>
<td>Two-wire transmitter input (non-isolated)</td>
</tr>
<tr>
<td></td>
<td>/A08</td>
<td>Frequency input (*10)</td>
</tr>
<tr>
<td></td>
<td>/DF</td>
<td>Direct input with Fahrenheit temperature function (*4)</td>
</tr>
</tbody>
</table>

Communication

| Communication | /A31 | RS-485 communication (PC-link, Modbus, and YS protocol communication) (*5) |
|              | /A32 | DCS-LCS communication (*6) |
|              | /A34 | Ethernet communication (Modbus/TCP) (*7) |

Certification

| Certification | /FM | FM nonincendive approved (FM Class I, Div 2) (*8) |
|              | /CSA | CSA nonincendive approved (CSA Class I, Div 2) (*9) |

Customized Product

/S#: /Z: Customized product; details in FX1-XJYS1700.xxx*

* Contact your supplier in case your instrument has option /S# (where ‘#’ is a number), and you are not in the possession of FX1-XJYS1700.xxx. (where “xxx” is a unique document number and option /S# or /Z is identified by the cover page of that document.)

Accessories

The product is provided with the following accessories according to the model and suffix codes (see the table below). Check that none of them are missing or damaged.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item Name</th>
<th>Part Number/Model</th>
<th>Q’ty</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Metal clamps</td>
<td>L4041RA</td>
<td>2</td>
<td>For YS13x0-C100</td>
</tr>
<tr>
<td></td>
<td>E9760RJ</td>
<td></td>
<td>2</td>
<td>For YS13x0-C120</td>
</tr>
<tr>
<td></td>
<td>E9760RN</td>
<td></td>
<td>2</td>
<td>For YS13x0-C140</td>
</tr>
<tr>
<td></td>
<td>E9760RJ</td>
<td></td>
<td>1</td>
<td>For YS13x0-C160</td>
</tr>
<tr>
<td></td>
<td>E9760RP</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tag plate seals</td>
<td>L4041UA</td>
<td>4</td>
<td>50 × 3.5 mm</td>
</tr>
<tr>
<td>3</td>
<td>Range entry seals</td>
<td>L4041UA</td>
<td>4</td>
<td>34 × 2 mm</td>
</tr>
<tr>
<td>4</td>
<td>RJC sensor</td>
<td>L3501RA</td>
<td>1</td>
<td>Supplied with products with optional code /A02. (*1)</td>
</tr>
<tr>
<td>5</td>
<td>Ferrite core</td>
<td>A179MN</td>
<td>1</td>
<td>For direct input cable (Supplied with products with optional code /A03.)</td>
</tr>
<tr>
<td>6</td>
<td>YS1350/YS1360 Operation Guide</td>
<td>–</td>
<td>1</td>
<td>This user’s manual, A4 size</td>
</tr>
</tbody>
</table>

*1: For the RJC mounting, see the chapter “Installation and Wiring” in this manual or the YS1000 Series Replacement Manual.
Accessories (sold separately)
The following lists accessories that are sold separately. When ordered, check that none of them are missing or damaged. To inquire about the accessories or about how to place an order, contact your sales representative.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item Name</th>
<th>Model</th>
<th>Sales Unit</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>120 Ω terminating resistor (*1)</td>
<td>YS020</td>
<td>1</td>
<td>For RS-485 communication</td>
</tr>
<tr>
<td>2</td>
<td>250 Ω shunt resistor</td>
<td>YS021</td>
<td>1</td>
<td>For a built-in 24 V transmitter power supply</td>
</tr>
</tbody>
</table>

*1 The instrument has a built-in terminating resistor, which can be selected for use by setting the relevant parameter. If a terminating resistor is used in another device at the termination of the same communication system, an external terminating resistor needs to be provided to match the terminating resistance of the YS1000's built-in terminating resistor.

Symbols Used in This Manual

This 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 user’s manual for special instructions. The same symbol is used in the user’s manual on pages that the user needs to refer to, together with the term “WARNING” or “CAUTION.”

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

**CAUTION**
Calls attention to actions or conditions 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.

**Note**
Identifies important information required to operate the instrument.

**Indicates related operations or explanations for the user’s reference.**

**[ ]**
Indicates a character string displayed on the display.

**Setting Display**
Indicates a setting display and describes the keystrokes required to display the relevant setting display. Perform the operations in chronological order. This section describes the procedure under the assumption that these steps are being taken for the first time. There are cases where not all of the steps are required, depending on the required operation.

**Setting Details**
Provides the descriptions of settings.

**Description**
Describes restrictions, etc. regarding a relevant operation.

About an Electronic Manual
User’s manuals for YS1000 are available on the following web site: www.yokogawa.com/ns/ys/im/
You need Adobe Reader 7.0 or later (but the latest version is recommended) installed on the computer in order to open and read the manuals.
YS1350 is a manual setter for SV setting that manually outputs a setpoint signal to a controller. YS1360 is a manual setter for MV setting that manually outputs a manipulation signal to a final control element.

**Features**

- **Color LCD display**
  The monitoring and operation display is provided in color, and input and output values, various constants, and incorporated functions can be set freely using key switches on the front panel. The monitoring displays include LOOP Display, TREND Display, ALARM Display, and METER Display which provides information in much the same way as analog meters.

- **Failsafe function**
  Two CPUs are configured to provide manual operations and displays even if one of the CPUs becomes faulty. Moreover, because the instrument incorporates a hard manual circuit independent of the digital circuit, it can continue to generate manipulated output variables even if the digital circuit that includes the CPUs fails.

- **AC/DC-common power supply with wide operating voltage range.**
  The instrument can be powered by either AC (100 V AC) or DC (24 V DC).

- **The front panel is dust- and water-proof (conforming to IP54).**

- **Abundant communication functions**
  The instrument can incorporate Ethernet (Modbus/TCP) communication, serial communication (Modbus, PC-link, and YS protocol), and DCS-LCS communication.

**Definition of Terms**

- **PV:** Process variable input from process
- **SV:** Setpoint regarded as a control target
- **MV:** Manipulated variable for operating control elements such as valves.
- **M mode:** Mode in which internal setpoints or manipulated output variables are operated manually.
- **C mode:** Mode in which external setpoints (YS1350) or manipulated output variables (YS1360) are output.
### Front Panel Part Names

- **1** Color LCD display: 120 × 320 dots
- **2** FAIL lamp (LED: red)
- **3** ALM lamp (LED: yellow)
- **4** C mode key, M mode key, and LED indicators (C: green, M: yellow)
- **5** SV increase key
- **6** SV decrease key
- **7** Page key
- **8** SHIFT key
- **9** Software-key operation Key
- **10** TAG label (recommended position to attach label)

For the functions of each part: see "Monitoring and Control of Regular Operations (Operation Display)" in this manual.

### Swinging the Front Panel Up and Down

**Swinging up the front panel**

1. Press upwards in the center of the bottom of the front panel. You can draw the front panel toward you until you feel a slight resistance and the movement of the front panel will stop.
   (You can swing up the front panel more smoothly if hold the top and bottom of the front panel.)
2. Swing the front panel up and out from that position.
Swinging down the front panel
Push down on the center of the top of the front panel. When you feel a slight sense of resistance, stop pushing. Slide it forward from that position. It will click into place, indicating that it is locked.

Part Names of the Internal Panel Seen with the Front Panel Swung up

(1) Connector for connection to a PC (PROGRAMMER)
   This is a communication cable connector for downloading, uploading, or monitoring parameters set using the YSS1000 Setting Software.
   ► YSS1000: YSS1000 Setting Software/YS1700 Programmable Function User’s Manual
(2) Internal unit release lever
(3) An internal unit fixing screw
(4) Metal lever. Used only for YS1360.
   Touch the metal lever to discharge static electricity. Before you connect the cable to the YS110 connector, touch the metal lever.
(5) Connector for YS110 standby manual station (MANUAL STA) : Used only for YS1360. For YS1350, do not connect anything to this connector.
(6) Hard manual operation wheel (HARD MANUAL) : Only for YS1360. YS1350 does not have this wheel.
   An operation wheel to manipulate an output
(7) MV balance lamp (BAL) (Color: green) : Only for YS1360. YS1350 does not have this lamp.
   Lights up when a manipulated output variable and the hard manual unit’s output value agree with each other.
(8) Hard manual selector switch (ON/OFF) : Only for YS1360. YS1350 does not have this switch.
   The switch used to switch to a manipulated variable (MV) set using the hard manual operation wheel.
(9) LED and switch for repair
   Contact us for repair.
   ► Regarding items (4), (5), (6), (7), and (8): see “Backup Operation in the Event of Instrument Failure” in this manual.

Note
For products with suffix code -2xx, there are no hard manual unit-related parts ((6), (7), and (8)).

WARNING
Do not remove the internal unit from the instrument case. Contact YOKOGAWA’s sales office or sales representative when removing the internal unit, as safety standard inspection is required.
Explosion hazard.
Do not remove or insert the internal unit in explosive atmospheres.

CAUTION
Products with optional code /FM or /CSA cannot satisfy the explosion protection standards if the internal unit is removed.
YS1350/YS1360 Operating Procedure

When using the instrument for the first time, proceed according to the following sequence:

1. Unpack the instrument and check the specifications
   - Checking the Contents of the Package (p.5)
2. Installation
   - Installation and Wiring (p.32)
3. Turn ON power supply
4. Set up engineering constants
   - Operating the Engineering Displays (from p.30)
5. Start tuning/operation
   - Operating the Tuning Displays (from p.24)
6. Regular operation
   - Monitoring and Control of Regular Operations (from p.16)

Tuning/operations can be set using the YSS1000 Setting Software.
- YSS1000 Setting Software/YS1700 Programmable Function User’s Manual

Figure 3.1
Basic Operations

Overview of Display Switching and Operation Keys

The YS1000 has the following three display groups:

(1) Operation Display Group
Includes the LOOP Display (YS1350) used to switch the operation mode during operation or set SV, LOOP Display (YS1360) used to manipulate MV, TREND Display that displays trends of PV and SV (YS1350) or MV (YS1360), ALARM Display that displays detailed alarm information, and METER Display that displays PV and SV (YS1350) or MV (YS1360) on a meter scale using a pointer.

(2) Tuning Display Group
Includes the Display and Setting Display for tuning parameters and Monitor Display for input/output signals.

(3) Engineering Display Group
Includes the display used to set functions as a manual setter for SV setting (YS1350) or a manual setter for MV setting (YS1360), Input Specification Setting Display, and Password Setting Display.

Selecting a Display

The flow of display selecting operations is as follows:

1. When the instrument’s power is turned ON, the Operation Display appears.
2. Each time the Page key (Page) is pressed with the SHIFT key (SHIFT) held down, the display is switched.
   The display changes in the order of Operation Display, Tuning Menu Display, and Engineering Menu Display, after which the Operation Display reappears.

Note
Operation of the SHIF T key + Page key (a two key keystroke) implies that you should press the Page key with the SHIFT key held down. Doing so in the opposite order does not switch the display.
Software keys
Software keys are keys displayed on the LCD. The functions of the software keys are assigned to the operation keys on the right of the display.

In the figure at the left, the \( \uparrow \) (UP) software key corresponds with the \( \downarrow \) mode key.

Figure 4.2
Basic Operations

Display Switching (factory setting)

- **Operation Display group**: The turning ON/OFF of each Operation Display and the initial Operation Display which appears when the power is turned on can be set.

- **Tuning Display group**: To the LOOP 1, TREND 1, or METER 1 Display.

- **Engineering Display group**: To the LOOP 1, TREND 1, or METER 1 Display.

---

**Power ON**

- **Loop Display**: METER 1 Display → TREND 1 Display → TREND 3 Display → ALARM Display

- **Tuning Menu Display**
  - [SETTING] Setting Display
  - [I/O DATA] Input and Output Data Display

- **Engineering Menu Display 1**
  - [CONFIG1] Function Setting Display 1
  - [CONFIG2] Function Setting Display 2
  - [CONFIG3] Function Setting Display 3
  - [SC MAINT] Input Specification Setting Display
  - [PASSWORD] Password Setting Display

- **Engineering Menu Display 2**
  - [DISPLAY] Setting Display for Operation Display
  - [LCD] LCD Setting Display
  - [COMM] Communication Setting Display
  - [LCD MAINT] LCD Maintenance Display

---

*Figure 4.3*
Registering a Tag

Setting Display

Setpoint changing procedure (example of setting a tag):

1. Press the [↓] software key to select and zoom in on [SET INHB].
2. Press the [↑] software key to change to [SET ENBL].
3. Press the [↓] software key to select and zoom in on tag number 1 [TAG1].
4. Press the [↓] or [↑] software key to move the cursor over the position where the tag is registered.
5. Press the [△] or [▼] software key to change the character (setting is made on a character basis).
6. Repeat steps (4) and (5) to register the tag.
7. Press the Page key to return to the Engineering Menu Display.
8. Press the SHIFT + Page keys to return to the Operation Display.

This completes the setting procedure.

Setting Details

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Names</th>
<th>Setting Range</th>
<th>Factory Default</th>
</tr>
</thead>
</table>
| TAG1       | Tag number | 12 digits of alphanumeric characters | For YS1350: ---YS1350---  
|            |        |               | For YS1360: ---YS1360--- |

Description

The tag is displayed in the top line of the LCD. The settable ASCII codes are as shown below:

```
Space | ! | " | # | $ | % | & | ' | ( | ) | * | + | , | - |
. | / | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 | : | ; | < | = |
> | ? | @ | A | B | C | D | E | F | G | H | I | J | K | L |
M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | [ |
\| | ] | ^ | _ | a | b | c | d | e | f | g | h | i | j |
\| | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y |
z | { | | | | | | | | | | | | | | | | |
```
Monitoring and Control of Regular Operations
(Operation Display)

Monitoring and Operating the LOOP Display

<table>
<thead>
<tr>
<th>No. in Figure</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Tag number</td>
<td>A tag number combining alphanumeric characters and symbols having a maximum of 12 digits is displayed.</td>
</tr>
<tr>
<td>(2)</td>
<td>Display title</td>
<td>The title of the display being shown is indicated.</td>
</tr>
<tr>
<td>(3)</td>
<td>PV digital display</td>
<td>A PV value is displayed in engineering units in a digital value of five significant digits (seven digits including a sign and decimal point).</td>
</tr>
<tr>
<td>(4)</td>
<td>PV bar</td>
<td>A PV value is displayed in a bar. The bar display is in 200 dots at full scale (100%) and increases/decreases on a dot (0.5%) basis.</td>
</tr>
<tr>
<td>(5)</td>
<td>PH, PL pointers</td>
<td>PH values (high limit alarm setpoints for PV) and PL values (low limit alarm setpoints for PV) are indicated with triangular pointers.</td>
</tr>
<tr>
<td>(6)</td>
<td>PV underflow and PV overflow</td>
<td>A PV underflow is displayed if a PV value is below 0%, while a PV overflow is displayed if it exceeds 100%.</td>
</tr>
<tr>
<td>(7)</td>
<td>SV digital display (YS1350)</td>
<td>An SV value is displayed in engineering units in a digital value of five significant digits (seven digits including a sign and decimal point).</td>
</tr>
<tr>
<td>(8)</td>
<td>SV pointer (YS1350)</td>
<td>SV values are indicated with triangular pointers. The pointer display moves up and down with a resolution of 0.5%.</td>
</tr>
<tr>
<td>(9)</td>
<td>MV digital display (YS1360)</td>
<td>An MV value is displayed in a digital value of four significant digits (six digits including a sign and decimal point, with the number of decimal places fixed to one digit) in a % display.</td>
</tr>
<tr>
<td>(10)</td>
<td>MV bar, MV scale (YS1360)</td>
<td>An MV value is displayed in a bar. The bar display is in 80 dots (100%) at full scale, divided into 20 blocks (5%) for display. It increases/decreases on a dot (1.25%) basis. A scale divided into 10 (10% segments) is also displayed.</td>
</tr>
<tr>
<td>(11)</td>
<td>MH and ML pointers (YS1360)</td>
<td>MH values (high limit setpoints for MV) and ML values (low limit setpoints of MV) are indicated with triangular pointers.</td>
</tr>
<tr>
<td>(12)</td>
<td>MV underflow and MV overflow (YS1360)</td>
<td>An MV underflow is displayed if an MV value is below 0%, while an MV overflow is displayed if it exceeds 100%.</td>
</tr>
<tr>
<td>(13)</td>
<td>MV valve direction (YS1360)</td>
<td>MV valve direction is displayed as [C] (closed) or [O] (open).</td>
</tr>
<tr>
<td>(14)</td>
<td>Engineering unit</td>
<td>Engineering units (UNIT) are displayed in a maximum of seven digits.</td>
</tr>
<tr>
<td>(15)</td>
<td>PV bar scale</td>
<td>The PV bar scale is displayed divided into a maximum of 10 segments (10% segments).</td>
</tr>
</tbody>
</table>
Table 5.2

<table>
<thead>
<tr>
<th>No. in</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(16)</td>
<td>0% value of scale, 100% value of scale</td>
<td>0% value of scale (SCL) and 100% value of scale (SCH) are displayed in engineering units in a digital value of five significant digits (seven digits including a sign and decimal point).</td>
</tr>
<tr>
<td>(17)</td>
<td>Alarm generation display, Control status display</td>
<td>The controller operation status is displayed.</td>
</tr>
<tr>
<td></td>
<td>Operation status display</td>
<td>When the instrument is in the C mode, a cascade input value is displayed in engineering units in a digital value of five significant digits (seven digits including a sign and decimal point).</td>
</tr>
<tr>
<td>(18)</td>
<td>Operation status display</td>
<td>Alarm and control statuses are displayed in abbreviations. See Table 5.3.</td>
</tr>
<tr>
<td>(19)</td>
<td>Cascade input value</td>
<td>Alarm and control statuses are displayed in abbreviations. See Table 5.3.</td>
</tr>
<tr>
<td>(20)</td>
<td>Key LOCK status display</td>
<td>The controller operation status is displayed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Display</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[POWER DOWN]</td>
<td>Power down is being detected. (1)</td>
</tr>
<tr>
<td>[H.MAN]</td>
<td>Hard manual selector switch has been activated. (2)</td>
</tr>
<tr>
<td>(No indication)</td>
<td>The instrument is operating.</td>
</tr>
<tr>
<td>[STOP]</td>
<td>Operation stopped (such as while setting a function on the Engineering Display, etc.) (3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS-ALM</td>
<td>A system alarm occurred.</td>
</tr>
<tr>
<td>ALARM-1</td>
<td>A loop 1 process alarm occurred.</td>
</tr>
<tr>
<td>CAS</td>
<td>Remote operation being conducted in response to external setpoint input</td>
</tr>
<tr>
<td>DDC</td>
<td>Remote operation being conducted in response to SV (YS1350)/MV (YS1360) from a high-level device</td>
</tr>
<tr>
<td>BUM</td>
<td>Transition to backup manual status</td>
</tr>
<tr>
<td>EXT-MAN</td>
<td>Transition to manual control in response to external digital input</td>
</tr>
</tbody>
</table>

Table 5.3 Meaning of Display Abbreviations

Operating the LOOP Display

This section describes keystrokes for performing various settings and operations on the LOOP Display.

1. Switching the operation mode
- M mode key: Switches the operation mode to manual control (M mode).
- C mode key: Switches the operation mode to cascade setting automatic control (C mode).

Moreover, the LED inside the operation mode key corresponding to the current operation mode lights up.

Note
If a cascade input signal is −6.3% or less or 106.3% or more, the operation mode cannot be switched to C mode.

2. SV setting operation (YS1350)
The SV setting key changes the setpoint (SV).

This key is enabled when the operation mode is in the M mode.
- SV increase key: Increases an SV value.
- SV decrease key: Decreases an SV value.

3. MV operation (YS1360)
The MV operation key is used to manually operate a manipulated output variable (MV). This key is enabled when the operation mode is in the M mode.
- MV increase key: Increases an MV value.
- MV decrease key: Decreases an MV value.

Moreover, pressing an MV operation key with the (fast-change key/SHIFT key) held down accelerates the MV-value increase/decrease speed.
Monitoring and Operating the METER Display

Table 5.4

<table>
<thead>
<tr>
<th>No. in Figure</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Tag number</td>
<td>As on the LOOP Display, a tag number appears here.</td>
</tr>
<tr>
<td>(2)</td>
<td>Display title</td>
<td>The title of the display being shown is indicated.</td>
</tr>
<tr>
<td>(3)</td>
<td>PV, SV, and MV digital display</td>
<td>PV, SV (YS1350), and MV (YS1360) digital values are displayed here.</td>
</tr>
<tr>
<td>(4)</td>
<td>PV meter scale</td>
<td>The PV meter scale displays main scale and subscale marks, a numerical scale, a scale factor, and engineering units.</td>
</tr>
<tr>
<td>(5)</td>
<td>Main scale marks, subscale marks</td>
<td>The main scale marks and subscale marks are determined by setting the variables to the 0% value of scale (SCL) and to the 100% value of scale (SCH), which causes the scale to be automatically divided into divisions based on those values.</td>
</tr>
<tr>
<td>(6)</td>
<td>Scale factor</td>
<td>The scale range is clearly represented in the range of the number of numerical scale digits using the power of 10 (× 10ⁿ). It is possible to set the value of the power, however it can also be automatically determined from the 0% value of scale (SCL) and 100% value of scale (SCH).</td>
</tr>
<tr>
<td>(7)</td>
<td>Numerical scale</td>
<td>The numerical scale is automatically determined from the 0% value of scale (SCL) and 100% value of scale (SCH), and is displayed centered and to the right of the main scale marks. The number of digits to be displayed is three (or four digits if there is no decimal point).</td>
</tr>
<tr>
<td>(8)</td>
<td>PV pointer</td>
<td>A PV value is indicated by two pointers (at the left and right sides of the scale). The pointer display moves up and down with a resolution of 0.5%.</td>
</tr>
<tr>
<td>(9)</td>
<td>SV pointer (YS1350)</td>
<td>An SV value is indicated with a pointer. The pointer display moves up and down with a resolution of 0.5%.</td>
</tr>
<tr>
<td>(10)</td>
<td>Engineering units</td>
<td>Engineering units (UNIT) are displayed in a maximum of seven digits.</td>
</tr>
<tr>
<td>(11)</td>
<td>PH and PL pointers</td>
<td>PH values (high limit alarm setpoints for PV) and PL values (low limit alarm setpoints for PV) are indicated with triangular pointers.</td>
</tr>
<tr>
<td>(12)</td>
<td>MV meter scale (YS1360)</td>
<td>Scale marks are displayed on the MV meter scale. The mark at the far left is the 0% position and the mark at the far right is the 100% position. Each scale division is 5%.</td>
</tr>
<tr>
<td>(13)</td>
<td>MV pointer (YS1360)</td>
<td>MV values are indicated with a pointer. Since the scale’s full scale is 80 dots (100%), the MV pointer increases and decreases in a resolution of 1.25%.</td>
</tr>
<tr>
<td>(14)</td>
<td>MH and ML pointers (YS1360)</td>
<td>MH values (high limit setpoints for MV) and ML values (low limit setpoints for MV) are indicated with triangular pointers.</td>
</tr>
<tr>
<td>(15)</td>
<td>MV valve direction (YS1360)</td>
<td>The MV valve direction is displayed as [C] (closed) or [O] (open).</td>
</tr>
<tr>
<td>(16)</td>
<td>Operation status display</td>
<td>The controller operation status is displayed.</td>
</tr>
<tr>
<td></td>
<td>Display</td>
<td>Description</td>
</tr>
<tr>
<td></td>
<td>[POWER DOWN]</td>
<td>Power down is being detected.</td>
</tr>
<tr>
<td></td>
<td>[H.MAN]</td>
<td>Hard manual selector switch has been activated.</td>
</tr>
<tr>
<td></td>
<td>(No indication)</td>
<td>The instrument is operating.</td>
</tr>
<tr>
<td></td>
<td>[STOP]</td>
<td>Operation stopped (such as while setting a function on the Engineering Display, etc.)</td>
</tr>
</tbody>
</table>
### Table 5.5

<table>
<thead>
<tr>
<th>No. in Figure</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(17)</td>
<td>Key LOCK status display</td>
<td>The key LOCK status is displayed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Display</strong></td>
</tr>
<tr>
<td></td>
<td>[ALLK]</td>
<td>[●], and [●] keys, SV increase and decrease ([●], [●]) keys, and MV increase and decrease ([●], [●]) keys are disabled.</td>
</tr>
<tr>
<td></td>
<td>[MDLK]</td>
<td>[●], and [●] keys are disabled.</td>
</tr>
<tr>
<td></td>
<td>[SVLK]</td>
<td>SV increase and decrease ([●], [●]) keys are disabled.</td>
</tr>
<tr>
<td></td>
<td>[MVLK]</td>
<td>MV increase and decrease ([●], [●]) keys are disabled.</td>
</tr>
</tbody>
</table>

(18) Control status display
Control status is displayed in abbreviations. See Tables 5.6.

### Table 5.6: Meaning of Display Abbreviations

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>Remote operation being conducted in response to external setpoint input</td>
</tr>
<tr>
<td>DDC</td>
<td>Remote operation being conducted in response to SV (YS1350) /MV (YS1360) from a high-level device</td>
</tr>
<tr>
<td>BUM</td>
<td>Transition to backup manual status</td>
</tr>
<tr>
<td>EXT-MAN</td>
<td>Transition to manual control in response to external digital input</td>
</tr>
</tbody>
</table>

### Operating the METER Display

The following three operations can be conducted on the METER Display.

1. Operation mode switching operation
2. SV setting operation (YS1350)
3. MV operation (YS1360)

The operation methods are the same as those of the LOOP Display.
Monitoring and Operating the TREND Display

The TREND Display provides trend displays of PV, SV (YS1350), MV (YS1360) in addition to the LOOP Display functions.

The TREND 1 Display can provide trend displays of PV1, SV1 (YS1350), and MV1 (YS1360) and the TREND 3 Display can show those of any four data selected from PV1, SV1 (YS1350), MV1 (YS1360), X1, X2, Y1 (YS1360) and Y2. TREND Display also enables display data to be turned ON/OFF. It does not display control statuses and alarms that have occurred.

**Table 5.7**

<table>
<thead>
<tr>
<th>No. in Figure</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Tag number</td>
<td>A tag number combining alphanumeric characters and symbols having a maximum of 12 digits is displayed.</td>
</tr>
<tr>
<td>(2)</td>
<td>Display title</td>
<td>The title of the display being shown is indicated.</td>
</tr>
<tr>
<td>(3)</td>
<td>Digital display</td>
<td>PV, SV (YS1350), and MV (YS1360) digital values are displayed. For TREND 3 Display, data selections 1 to 4 are indicated.</td>
</tr>
<tr>
<td>(4)</td>
<td>Trend display</td>
<td>The time span of the set trend display is divided into 60 partitions, and PV, SV (YS1350) and MV (YS1360) values in the period of one time partition are displayed with the smallest and largest values of selected data in the vertical line of one element. Trend display is clipped and displayed at 0% if a relevant value is below 0% or at 100% if it exceeds 100%.</td>
</tr>
<tr>
<td>(5)</td>
<td>Trend data pointers</td>
<td>PV, SV (YS1350), and MV (YS1360) values and selected data are indicated with triangular pointers. The pointer display moves up and down with a resolution of 0.5%.</td>
</tr>
<tr>
<td>(6)</td>
<td>Operation status display</td>
<td>The controller operation status is displayed.</td>
</tr>
<tr>
<td></td>
<td>Display</td>
<td>Description</td>
</tr>
<tr>
<td></td>
<td>[POWER DOWN]</td>
<td>Power down is being detected.</td>
</tr>
<tr>
<td></td>
<td>[H.MAN]</td>
<td>Hard manual selector switch has been activated.</td>
</tr>
<tr>
<td></td>
<td>[No indication]</td>
<td>The instrument is operating.</td>
</tr>
<tr>
<td></td>
<td>[STOP]</td>
<td>Operation stopped (such as while setting a function on the Engineering Display, etc.)</td>
</tr>
<tr>
<td>(7)</td>
<td>Engineering units</td>
<td>Engineering units (UNIT) are displayed in a maximum of seven digits.</td>
</tr>
<tr>
<td>(8)</td>
<td>0% value of scale, 100% value of scale</td>
<td>The 0% value of scale (SCL) and the 100% value of scale (SCH) of PV are displayed in digital values of five significant digits (seven digits including a sign and decimal point).</td>
</tr>
<tr>
<td>(9)</td>
<td>Scale marks</td>
<td>A scale divided into a maximum of 10 divisions (10% segments) is displayed. Moreover, horizontal lines corresponding to the scale marks are indicated in dotted lines.</td>
</tr>
</tbody>
</table>
Table 5.8

<table>
<thead>
<tr>
<th>No. in Figure</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(10)</td>
<td>Time span scale</td>
<td>The time span scale (a vertical line) is displayed by a dotted line at the 60-line positions. If the scale marks are divided into 4 divisions or more, the time span scale is also displayed at the 30-line positions.</td>
</tr>
<tr>
<td>(11)</td>
<td>Trend display time span</td>
<td>The trend display time span setpoint is displayed. The trend display span is 90 lines, but it represents the time span for 60 lines. Trend display is provided such that the 0-line position is the current time, while the 90-line position is the maximum past time. Changing the trend display time span causes data that has been displayed up to that time to be cleared.</td>
</tr>
<tr>
<td>(12)</td>
<td>MV display (YS1360)</td>
<td>The MV bar, MV scale, MH pointer, ML pointer, MV underflow, MV overflow, and MV valve direction are displayed. The display contents are the same as those of the LOOP Display.</td>
</tr>
</tbody>
</table>

(13) Key LOCK status display

<table>
<thead>
<tr>
<th>Display</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ALLK]</td>
<td>, and keys, SV increase and decrease (, ) keys, MV increase and decrease (&lt;, &gt;) keys are disabled.</td>
</tr>
<tr>
<td>[MDLK]</td>
<td>, and keys are disabled.</td>
</tr>
<tr>
<td>[SVLK]</td>
<td>SV increase and decrease (, ) keys are disabled.</td>
</tr>
<tr>
<td>[MVLK]</td>
<td>MV increase and decrease (&lt;, &gt;) keys are disabled.</td>
</tr>
</tbody>
</table>

Operating the TRENDS Displays

The following operations can be conducted on the TREND 1 Display:
(1) Operation mode switching of the loop displayed
(2) SV setting operation of the loop displayed (YS1350)
(3) MV operation of the loop displayed (YS1360)

The following operations can be conducted on the TREND 3 Display:
(1) MV operation (YS1360)

The operation methods are the same as those of the LOOP Display.
Monitoring and Operating the ALARM Display

The ALARM Display collectively indicates detailed information when alarm(s) occurs. It allows the user to acknowledge unacknowledged alarms and events.

Table 5.9

<table>
<thead>
<tr>
<th>No. in Figure</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Tag number</td>
<td>The tag number combining alphanumeric characters and symbols having a maximum of 12 digits is displayed.</td>
</tr>
<tr>
<td>(2)</td>
<td>Display title</td>
<td>The title of the display being shown is indicated.</td>
</tr>
<tr>
<td>(3)</td>
<td>Item title</td>
<td>Alarms and events that have occurred or been generated are displayed on a type basis. They are classified into the following three types:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Display</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[PROCESS]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[SYSTEM]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[EVENT]</td>
</tr>
<tr>
<td>(4)</td>
<td>Alarm item</td>
<td>There are two types of display formats for alarm items as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red backlit display of items: An alarm(s) is currently being generated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Normal display of items: Indicates that an alarm(s) was generated in the past, but the situation has now recovered</td>
</tr>
<tr>
<td></td>
<td></td>
<td>► For causes of alarms that have occurred and actions to be taken: see “Troubleshooting” in this manual.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The alarm items to be displayed are as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Process Alarms</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Display</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[PH1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[PL1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>System Alarms</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Display</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[X1] to [X2]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Y1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[COMM]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ETHER]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[DATA]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[CALR]</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Event indication</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Display</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[EVENT1] to [EVENT5]</td>
</tr>
</tbody>
</table>
Table 5.10

<table>
<thead>
<tr>
<th>No. in Figure</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5)</td>
<td>Unacknowledged alarm marks</td>
<td>For unacknowledged alarms, [*] is indicated in front of alarm items.</td>
</tr>
<tr>
<td>(6)</td>
<td>Alarm lamp</td>
<td>Lights up if a process alarm or system alarm occurs.</td>
</tr>
<tr>
<td>(7)</td>
<td>Software key function display</td>
<td>The [ALM CLR] software key, [EVT ON] software key, [↑] key, and [EVT CLR] software key functions are assigned to the relevant operation keys at the right of the display. For operation: see the following “Operating the ALARM Display.”</td>
</tr>
<tr>
<td>(8)</td>
<td>MV display (YS1360)</td>
<td>MV bar, MV scale, MH pointer, ML pointer, MV underflow, MV overflow, and MV valve direction are displayed. The display contents are the same as those of the LOOP Display.</td>
</tr>
</tbody>
</table>

**Operating the ALARM Display**

The following operations can be conducted on the ALARM Display:

1. MV operation (the same as that of the LOOP Display) (YS1360)
2. Acknowledgement of unacknowledged alarms/events
3. Re-display of event indication

- **Acknowledging unacknowledged alarms/events**
  The Alarm [ALM CLR] software key is used to acknowledge that an alarm has occurred. When this key is pressed, the “*” mark that indicates that the alarm concerned has not yet been acknowledged, and that indicates currently not occurring alarms will be erased, implying that the alarm(s) has been acknowledged.
  The Event [EVT CLR] software key is used to acknowledge an event. When this key is pressed, the “*” mark that indicates that the event concerned has not yet been acknowledged, and that indicates events currently not generated will be erased, implying that the event(s) has been acknowledged.

- **Re-displaying event indication**
  Browse through the event lines using the [↑] software key to select an event you wish to see (displayed in blue) and then press the [EVT ON] software key. This causes the event to be re-displayed.

![Select an event.](0505E.ai)

Select a generated event using the [↑] software key then press the [EVT ON] software key. This causes the generated event status (*) to be displayed.

Select a generated event using the [↑] software key then press the [EVT CLR] software key. This clears the selected generated event status (*)

**Switching of Operation Modes**

**Switching by Keystroke**

The operation mode can be switched by pressing the relevant key in the table below. This causes the light inside the key corresponding to the selected operation mode to light up. Note that on the ALARM Display, the operation mode cannot be switched.

<table>
<thead>
<tr>
<th>Key</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>M mode key</td>
<td>Press this key to change to manual operation.</td>
</tr>
<tr>
<td>C</td>
<td>C mode key</td>
<td>Press this key to change to control to set a setpoint value or manipulated output variable from an external analog signal or communication as a cascade setting.</td>
</tr>
</tbody>
</table>

**Note**

If the operation mode switching function is allocated to digital input, there may be cases where the operation mode cannot be switched by keystrokes. In such cases, check the allocation of the digital input function.

**Switching in Response to Digital Input**

No function is allocated to digital input when shipped from the factory. To switch the operation mode in response to digital input, the operation mode switching function needs to be allocated to digital input.

Operating the Tuning Displays

There are displays for setting and displaying tuning parameters and a display for monitoring input/output signals. To set tuning parameters, proceed according to the setting examples below, and refer to “Overview of Display Switching and Operation Keys” and “List of Parameters”.

► For displaying and setting parameters: see “List of Parameters” in this manual.

**Note**
YS1000 has a password function as a security function. If the password has been set up, enter it and then change parameters.


**Setting SV1 (YS1350)**

**Setting Display**

Operation Display > [ ] + [ ] keys (to the Tuning Menu Display) > [SETTING] software key (Setting Display)

**Setpoint changing procedure** (example of changing SV1):

1. Press the [ ] software key to select and zoom in on setpoint value 1 [SV1 50.0].
2. Press the [ ] or [ ] software key to change the setpoint. Holding it down accelerates the value increase/decrease speed.
3. Press the Page key to return to the Tuning Menu Display.
4. Press the SHIFT + Page keys twice to return to the Operation Display.

This completes the setting procedure.

**Setting Details**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Names</th>
<th>Setting Range</th>
<th>Factory Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV1</td>
<td>Setpoint value 1</td>
<td>Equivalent to -6.3 to 106.3% in the engineering unit (*1)</td>
<td>0.0</td>
</tr>
</tbody>
</table>

*1: Engineering unit set using the engineering parameters SCH1, SCL1, and SCDP1.
Displaying the Operation Display While the Tuning Display is being Shown

Pressing the [OPE] software key while setting a tuning parameter returns you to the Operation Display.
Setting the High and Low Limit Setpoints of MV (YS1360)

Setting Display

Setting Display

Operation Display  
key (to the Tuning Menu Display) > [SETTING] software key (Setting Display)

Setpoint changing procedure

1. Press the [↓] software key to select and zoom in on high limit setpoint of MV1 [MH1].
2. Press the [↑] or [↓] software key to change the setpoint. Holding it down accelerates the value increase/decrease speed.
3. Press the [↑] software key to select and zoom in on low limit setpoint of MV1 [ML1].
4. Set ML1 in the same way as (2).
5. Press the Page key to return to the Tuning Menu Display.
6. Press the SHIFT + Page keys twice to return to the Operation Display.

This completes the setting procedure.

Setting Details

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Name</th>
<th>Setting Range</th>
<th>Factory Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH1</td>
<td>High limit setpoint of MV1</td>
<td>-6.3 to 106.3%</td>
<td>106.3</td>
</tr>
<tr>
<td>ML1</td>
<td>Low limit setpoint of MV1</td>
<td>-6.3 to 106.3%</td>
<td>-6.3</td>
</tr>
</tbody>
</table>

Description

The high and low limit setpoints of MV1 function only in the C mode (cascade mode or computer mode based on an external analog signal) (they do not function in the M mode).

Set the MH1 high limit setpoint of MV1 to a value greater than the ML1 low limit setpoint of MV1.
Setting Alarms

Setting Display

Operation Display > [SETTING] key (to the Tuning Menu Display) > [SETTING] key (Setting Display)

Setpoint changing procedure

1. Press the [↓] software key to select and zoom in on high limit alarm setpoint for PV1 [PH1].
2. Press the [◄] or [►] software key to change the setpoint. Holding it down accelerates the value increase/decrease speed.
3. Press the [▲] software key to select and zoom in on low limit alarm setpoint for PV1 [PL1].
4. Set PL1 in the same way as (2).
5. Press the Page key to return to the Tuning Menu Display.
6. Press the SHIFT + Page keys twice to return to the Operation Display.

This completes the setting procedure.

(The figure at the left shows YS1360. The setpoint changing procedure and parameters are the same as those of YS1350.)

Setting Details

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Name</th>
<th>Setting Range</th>
<th>Factory Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH1</td>
<td>High limit alarm setpoint for PV 1</td>
<td>Engineering units equivalent to −6.3 to 106.3% (*1)</td>
<td>106.3</td>
</tr>
<tr>
<td>PL1</td>
<td>Low limit alarm setpoint for PV 1</td>
<td>Engineering units equivalent to −6.3 to 106.3% (*1)</td>
<td>-6.3</td>
</tr>
<tr>
<td>HYS1</td>
<td>Alarm hysteresis</td>
<td>Engineering units equivalent to 0.0 to 20.0% (*1)</td>
<td>2.0</td>
</tr>
</tbody>
</table>

*1: Engineering unit set using the engineering parameters SCH1, SCL1, SCDP1.
Description

If the high limit alarm setpoint for PV is set to the maximum values, no alarm is generated.
If the low limit alarm setpoint for PV is set to the minimum values, no alarm is generated.
Alarm hysteresis HYS1 acts on PH1, PL1 collectively.

The following figure shows an example of actions of the high limit alarm for PV, low limit alarm for PV, and alarm hystereses.

For an example in the figure above, the contact type is such that the contact opens if an event occurs (factory default).
Confirming Input and Output Data

Setting Display

Operation Display > [→] + [↔] keys (to the Tuning Menu Display) > [IO DATA] software key (Input and Output Data Display)

The input and output values of each terminal can be displayed.

1. Press the ↓ software key to select and zoom in on parameter.
2. Press the Page key to return to the Tuning Menu Display.
3. Press the SHIFT + Page keys twice to return to the Operation Display.

This completes the operation.

Setting Details

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>Analog input 1</td>
</tr>
<tr>
<td>X2</td>
<td>Analog input 2</td>
</tr>
<tr>
<td>Y1</td>
<td>Analog output 1 (YS1360)</td>
</tr>
<tr>
<td>Y2</td>
<td>Analog output 2</td>
</tr>
<tr>
<td>DI01</td>
<td>Digital input 1</td>
</tr>
<tr>
<td>DI02</td>
<td>Digital input 2</td>
</tr>
<tr>
<td>DO01</td>
<td>High limit alarm output</td>
</tr>
<tr>
<td>DO02</td>
<td>Low limit alarm output</td>
</tr>
<tr>
<td>DO04</td>
<td>C/M status output</td>
</tr>
</tbody>
</table>
Operating the Engineering Displays

There is a display for setting up functions as Manual Setter for SV Setting (YS1350)/Manual Setter for MV Setting (YS1360), the Input Specification Setting Display, and the Password Setting Display. To set engineering parameter settings, proceed according to the setting examples below, and refer to the “Overview of Display Switching and Operation Keys” and “List of Parameters.”

► For displaying and setting parameters: see “List of Parameters” in this manual.

**CAUTION**

There is a SET parameter in the engineering parameters to prevent accidental changes to settings. Unless this parameter setting is changed from INHB (setting inhibited) to ENBL (setting enabled), parameters on the same display cannot be changed. Be aware that changing the setting to ENBL causes YS1000’s control action and input/output to be changed.

**Note**

YS1000 has a password function as a security function. If the password has been set up, enter it and then change parameters.


Setting the Scale and Decimal Point Position for Process Variables

**Setting Display**

Operation Display ➔ keys (to the Tuning Menu Display) ➔ keys (to the Engineering Menu Display) ➔ [CONFIG2] software key (Configuration Display 2)

Setpoint changing procedure (example of changing scale):

1. Press the [↓] software key to select and zoom in on [SET INHB].
2. Press the [↑] software key to change to [SET ENBL].
3. Press the [↓] software key to select and zoom in on the 100% value of scale 1 [SCH1].
4. Press the [↑] or [↓] software key to change the setpoint. Holding it down accelerates the value increase/decrease speed.
5. Press the [↑] software key to select and zoom in on the 0% value of scale 1 [SCL1].
6. Set SCL1 in the same way as (4).
7. Press the [↓] software key to select and zoom in on decimal point position 1 [SCDP1 ####.#].
8. Press the [↑] or [↓] software key to change the setpoint.
9. Press the Page key to return to the Engineering Menu Display.
10. Press the SHIFT + Page keys to return to the Operation Display.

This completes the setting procedure.

**Setting Details**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Names</th>
<th>Setting Range</th>
<th>Factory Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCH1</td>
<td>100% value of scale</td>
<td>-80000 to 80000</td>
<td>1000</td>
</tr>
<tr>
<td>SCL1</td>
<td>0% value of scale</td>
<td>-80000 to 80000</td>
<td>0</td>
</tr>
<tr>
<td>SCDP1</td>
<td>Decimal point position</td>
<td># # # # # # # # ...</td>
<td># # # # # # # # # # # #</td>
</tr>
</tbody>
</table>
Description

The figure below shows an example of setting the 100% value of scale to 1000, the 0% value of scale to 0, and the decimal point position to one decimal place (#####.#). Process variables and setpoints are displayed on the scale that is set here.

Note: If a wide scale span (100% to 0% value of scale) is specified, the value less than 0.1% of PV may fluctuate.
Installation and Wiring

For the following, see the YS1000 Series Replacement Manual.
- Installation and wiring for YS1350/YS1360-2, -3, -4, and -5
- Connection of the RJC sensor provided with the product with optional code /A02

Installation Location

**WARNING**

For products with optional code /FM or /CSA:
1) Devices must be installed by professionally trained personnel.
2) In case of option code /FM, install devices according to NEC (National Electrical Code: ANSI/NFPA-70).
   In case of option code /CSA, all wiring shall comply with Canadian Electrical Code Part I and local electrical codes.

The instrument should be installed in indoor locations meeting the following conditions:

- **Instrumented panel**
  This instrument is designed to be mounted in an instrumented panel. Mount the instrument in a location where its terminals will not inadvertently be touched.

- **Well ventilated locations**
  Mount the instrument in well ventilated locations to prevent the instrument’s internal temperature from rising. To mount multiple indicating controllers, see the external dimensions/panel cutout dimensions which follow. If mounting other instruments adjacent to the instrument, comply with these panel cutout dimensions to provide sufficient clearance between the instruments.

- **Locations with little mechanical vibration**
  Install the instrument in a location subject to little mechanical vibration.

- **Horizontal location**
  Mount the instrument horizontally and ensure that it is level, with no inclination to the right or left.

**Note**

If the instrument is moved from a location with low temperature and low humidity to a place with high temperature and high humidity, or if the temperature changes rapidly, condensation will result. Moreover, in the case of thermocouple inputs, measurement errors will result. To avoid such a situation, leave the instrument in the new environment under ambient conditions for more than 1 hour prior to using it.

Do not mount the instrument in the following locations:

- **Outdoors**
- **Locations subject to direct sunlight or close to a heater**
  Install the instrument in a location with stable temperatures that remain close to an average temperature of 23°C. Do not mount it in locations subject to direct sunlight or close to a heater. Doing so adversely affects the internal unit.

- **Locations with substantial amounts of oily fumes, steam, dust, or corrosive gases**
  The presence of oily fumes, steam, dust, or corrosive gases adversely affects the instrument. Do not mount the instrument in locations subject to any of these substances.

- **Areas near electromagnetic field generating sources**
  Do not place magnets or tools that generate magnetism near the instrument. If the instrument is used in locations close to a strong electromagnetic field generating source, the magnetic field may cause measurement errors.

- **Locations where the display is difficult to see**
  The instrument uses an LCD for the display unit, and this can be difficult to see from extremely oblique angles. Mount the instrument in a location where it can be seen as much as possible from the front.

- **Areas close to flammable articles**
  Absolutely do not place the instrument directly on flammable surfaces. If such a circumstance is unavoidable and the instrument must be placed close to a flammable item, provide a shield for it made of 1.43 mm thick plated steel or 1.6 mm thick unplated steel with a space of at least 150 mm between it and the instrument on the top, bottom and sides.

- **Areas subject to being splashed with water**
Mounting Method

Mounting the Instrument Main Unit

Provide an instrumented panel steel sheet of 2.3 to 25 mm thickness.

(1) For mounting single unit
1. Using a screwdriver, loosen the screws of the two provided metal clamps in advance.
2. Insert the main unit of the instrument from the front side of the instrumented panel.
3. Install one of the metal clamps on top of the main unit and tighten the screw into the rear face of the panel. Repeat the procedure with the second clamp at the bottom of the unit.

To remove the instrument from the panel, reverse the above procedure.

- Tighten the screws with appropriate tightening torque within 0.3 - 0.6 Nm. Otherwise it may cause the case deformation or the bracket damage.
- Ensure that neither tools nor foreign matter enter the inside of the instrument through the holes for fitting the metal clamps.
- Mounting attitude: Up to 75 degrees above the horizontal. No downward tilting allowed.

(2) For mounting units side-by-side
1. According to the arrangement order, mount the other main units side by side in the panel, keeping them in close contact with each other.
2. Mount the individual controllers as above in item (1).
External Dimensions/Panel Cutout Dimensions

**Trigonometry**

Unit: mm

General tolerance = \( \pm \left( \text{value of tolerance class IT18 based on JIS B 0401-1998} \right) / 2 \)

Note 1: If a nameplate, etc. is installed within 60 mm above the instrument, the thickness of the nameplate, etc. must be 30 mm or less from the panel surface.

Note 2: To ensure good air ventilation, allow space of 100 mm or more at the top and bottom of the panel.

**Figure 8.5**
**Wiring**

**Wiring Precautions**

1) Be sure to turn OFF the power supply 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.

2) As a safety measure, always install a circuit breaker (an IEC 60947-compatible product, 5 A, 100 V or 220 V AC) in an easily accessible location near the instrument. Moreover, provide indication that the switch is a device for turning off the power to the instrument.

3) Wiring work must be carried out by a person with basic electrical knowledge and practical experience.

4) For the wiring cable, the temperature rating is 60 °C or more.

---

**WARNING**

For products with optional code /FM or /CSA:

1) Devices must be wired by professionally trained personnel.

2) In case of option code /FM, install devices according to NEC (National Electrical Code: ANSI/NFPA-70).

   In case of option code /CSA, all wiring shall comply with Canadian Electrical Code Part I and local electrical codes.

---

**CAUTION**

1) 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 (recommended product: ZAC2205-00U, TDK) on the secondary side. When measures against noise are taken, do not install the primary and secondary power cables close to each other.

2) For thermocouple inputs, wire the thermocouple using shielded compensating lead wire. Moreover, for RTD input, use shielded wires with low conducting resistance and no resistance difference between the three wires.

3) If there is a risk of external lightning surges, use a lightning arrester, etc.

---

**Note**

Please wire from the central terminals.
Terminal Diagrams of YS1350

Digital Inputs and Outputs

High limit alarm output
DO1

Low limit alarm output
DO2

CM status output
DO4

If the terminals concerned are used as digital output, an external power supply is required.

For digital output wiring: see “Wiring for Digital Input/Output and FAIL Output” described later.

LCD backlight off input
DI2

<Factory default> No function

Operation mode switching input
DI1

<Factory default> No function

Analog Inputs

Number of connection: 2

10BASE-T/100BASE-TX
RJ45 connector

Measurement input 1

Voltage input
X1
10 Mbps
RS-485 Communication

Baud rate LED (left side)
Color/state: Contents
Yellow/Lit: 100 Mbps

Unit: 10 Mbps

Voltage

Digital Outputs

DO1

DO2

DO4

DO1F

DO2F

Analog Outputs

Setpoint value output
Y2

Voltage output (1-5 V DC)

Link/Active LED (right side)
Color/state: Contents
Green/Lit: Link
Green/Blink: Active

Unlit

Note: Do not use unassigned terminals as relay terminals.

Option code /A34

FAIL Output

ON in normal condition
FAIL output requires external power supply.

For direct input connection: see “Direct Input Wiring” described later.

For FAIL output wiring: see “Wiring for Digital Input/Output and FAIL Output” described later.

Connection of Transmitter Supply Power

24 V DC

The figure above shows an example of the wiring for analog input 1. Analog input 2 can also be connected in the same way.

For connecting two transmitters: see “Transmitter Supply Power Wiring” described later.

Connection of Transmitter Supply Power

24 V DC

supply voltage

Figure 8.6

Installation and Wiring
Digital input hardware specifications:
- When voltage is present:
  - ON: 0.5 to 1 V DC
  - OFF: 4.5 to 30 V DC
- For no voltage:
  - ON: resistance of 200 Ω or less
  - OFF: resistance of 100 kΩ or more

Digital output hardware specifications:
- Rating: 30 V DC
- 200 mA or less (resistive load)

Digital input function can be set using D1F, D2F engineering parameters.

**Power Supply**

<table>
<thead>
<tr>
<th>Supply voltage (AC)</th>
<th>Supply voltage (DC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 to 120 V AC (±10%)</td>
<td>100 mA or less (resistive load)</td>
</tr>
<tr>
<td>100 to 120 V DC (±10%)</td>
<td>200 mA or less (resistive load)</td>
</tr>
<tr>
<td>100 to 120 V AC (±10%)</td>
<td>100 kΩ or more (resistive load)</td>
</tr>
<tr>
<td>100 to 120 V DC (±10%)</td>
<td>100 kΩ or more (resistive load)</td>
</tr>
</tbody>
</table>

**RS-485 Communication**

<table>
<thead>
<tr>
<th>Device</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG</td>
<td>SDA(-)</td>
</tr>
<tr>
<td>SDB(+)</td>
<td>RDA(-)</td>
</tr>
<tr>
<td>RDB(+)</td>
<td>LCS(-)</td>
</tr>
</tbody>
</table>

**DCS-LCS Communication**

<table>
<thead>
<tr>
<th>Device</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCS(+)&lt;br&gt;(/A01)</td>
<td>SDA(-)&lt;br&gt;(/A02)</td>
</tr>
<tr>
<td>RDA(-)&lt;br&gt;(/A03)</td>
<td>LCS(-)&lt;br&gt;(/A05)</td>
</tr>
</tbody>
</table>

**Digital Inputs and Outputs**

- Number of connections: 2
- Ethernet Communication
- High limit alarm output
- Measurement input 1
- 10BASE-T/100BASE-TX
- RJ45 connector
- X1
- Baud rate LED (left side)
- DO1
- Voltage
- +1<br>−28<br>(1-5 V DC)

**Analog Inputs**

- Measurement input 2
- Link/Active LED (right side)
- DO2
- Voltage
- +24<br>−4<br>(1-5 V DC)
- Green/Lit
- +30<br>Green/Blink<br>−31<br>(1-5 V DC)

**Analog Outputs**

- Link fail<br>×<br>FAIL output requires<br>See "Wiring for Digital Input/Output and FAIL Output" described later.
- Digital output hardware specifications:
  - Rating: 30 V DC
  - 200 mA or less (resistive load)
- Direct Input Signal Output<br>DO4<br>ON in normal condition<br>Voltage
- +34<br>−35<br>(1-5 V DC)
- For direct input connection: see "Direct Input Wiring" described later.
- For digital output wiring: see "Wiring for Digital Input/Output and FAIL Output" described later.
- Power Supply<br>DC power supply can be connected without polarity.

**Installation and Wiring**

- For direct input connection: see "Direct Input Wiring" described later.
- For connecting two transmitters:
  - DI1
  - Supply voltage: 100 to 120 V AC (±10%), 50/60 Hz (±3 Hz)
- DI2<br>Supply voltage (AC): 100 to 120 V AC (±10%), 50/60 Hz (±3 Hz)
- Supply voltage (DC): 24 to 120 V DC (±10%)
- Match the wiring resistances of terminals 19 and 21 with each other. Mount the RJC at the terminal 21 side.

**Supply Voltage**

- Supply voltage (AC): 100 to 120 V AC (±10%), 50/60 Hz (±3 Hz)
- Supply voltage (DC): 24 to 120 V DC (±10%)
- DC power supply can be connected without polarity.

**Direct Input Terminals**

- Supply voltage (AC): 100 to 120 V AC (±10%), 50/60 Hz (±3 Hz)
- Supply voltage (DC): 24 to 120 V DC (±10%)

**Frequency Input**

- Frequency input (optional code /A08)
- Frequency input (optional code /A09)
- Two-wire transmitter input (optional code /A06, /A07)
- Two-wire transmitter input (optional code /A06, /A07)

**Power Supply**

- Digital input hardware specifications:
  - ON: resistance of 200 Ω or less
  - OFF: resistance of 100 kΩ or more

**Direct Input Terminals**

- For no voltage:
  - ON: resistance of 200 Ω or less
  - OFF: resistance of 100 kΩ or more

**Direct Input Terminals**

- For no voltage:
  - ON: resistance of 200 Ω or less
  - OFF: resistance of 100 kΩ or more

**Power Supply**

- DC power supply can be connected without polarity.

**Installation and Wiring**

- For direct input connection: see "Direct Input Wiring" described later.
- For connecting two transmitters:
  - DI1
  - Supply voltage: 100 to 120 V AC (±10%), 50/60 Hz (±3 Hz)
- DI2<br>Supply voltage (AC): 100 to 120 V AC (±10%), 50/60 Hz (±3 Hz)
- Supply voltage (DC): 24 to 120 V DC (±10%)
- Match the wiring resistances of terminals 19 and 21 with each other. Mount the RJC at the terminal 21 side.

**Power Supply**

- Supply voltage (AC): 100 to 120 V AC (±10%), 50/60 Hz (±3 Hz)
- Supply voltage (DC): 24 to 120 V DC (±10%)
- DC power supply can be connected without polarity.

**Installation and Wiring**

- For direct input connection: see "Direct Input Wiring" described later.
- For connecting two transmitters:
  - DI1
  - Supply voltage: 100 to 120 V AC (±10%), 50/60 Hz (±3 Hz)
- DI2<br>Supply voltage (AC): 100 to 120 V AC (±10%), 50/60 Hz (±3 Hz)
- Supply voltage (DC): 24 to 120 V DC (±10%)
- Match the wiring resistances of terminals 19 and 21 with each other. Mount the RJC at the terminal 21 side.

**Power Supply**

- Digital input hardware specifications:
  - ON: resistance of 200 Ω or less
  - OFF: resistance of 100 kΩ or more

**Direct Input Terminals**

- For no voltage:
  - ON: resistance of 200 Ω or less
  - OFF: resistance of 100 kΩ or more

**Power Supply**

- DC power supply can be connected without polarity.
Installation and Wiring

Terminal Diagrams of YS1360

**Digital Inputs and Outputs**

- **High limit alarm output**
  - DO1

- **Low limit alarm output**
  - DO2

- **CM status output**
  - DO4

If the terminals concerned are used as digital output, an external power supply is required.

- For digital output wiring: see "Wiring for Digital Input/Output and FAIL Output" described later.

**Analog Inputs**

- **Analog Inputs**
  - Measurement input 1
  - Link/Active LED (right side)
    - Unlit
    - Green/Blink (active)

- **Measurement input 2**
  - Link/Active LED (left side)
    - Yellow/Lit (100 Mbps)
    - Green/Lit (10 Mbps)

**Ethernet Communication**

- Number of connection: 2
  - 10BASE-T/100BASE-TX

**Analog Outputs**

- **Manipulated output variable 1**
  - Y1
  - Current output
    - 4-20 mA DC

- **Manipulated output variable 2**
  - Y2
  - Voltage output
    - 1-5 V DC

**FAIL Output**

- ON in normal condition
  - Voltage input
    - (1-5 V DC)

**Digital Outputs**

- **Digital outputs**
  - DO1
  - DO2
  - DO4

**Power Supply**

- Supply voltage (AC): 100 to 120 V AC (±10%), 50/60 Hz (±3 Hz)
  - Supply voltage (DC): 24 to 120 V DC (±10%)

**Connection of Transmitter Supply Power**

- For connecting two transmitters: see "Transmitter Supply Power Wiring" described later.

**Note:** Do not use unassigned terminals as relay terminals.

---

*Figure 8.7*
Transmitter Supply Power Wiring
If the YS1000 is connected to a two-wire transmitter, it is recommended that the field signal be isolated to limit the effects of short circuiting or ground fault incidents within a narrow range. (Use an external distributor.) However, for economical connection to a two-wire transmitter, the YS1000 is equipped with non-isolated power terminals for transmitters (25 to 25.5 V DC).

Supply current
When optional specification direct input (/A0璜) is provided: 25 to 25.5 V DC, 30 mA
When no optional specification direct input (/A0璜) is provided: 25 to 25.5 V DC, 60 mA (two two-wire transmitters can be connected)

Wiring for Digital Input/Output and FAIL Output

WARNING
For products with optional code /FM or /CSA:
Install explosion-proof wiring defined in the relevant country for the following signal wiring.
• The digital output cable must be wired from the non-hazardous area by using Class I, Division 2 wiring dedicated in potentially explosive atmospheres such as a threaded metal conduit. In addition, it is necessary to be wired not to apply stress at the end of the cable.

External no-voltage and voltage contacts for digital inputs should be provided so that the rated value is obtained. Attention must be paid to excessive conductor resistance and in-conductor voltage drop.

CAUTION
• Do not connect loads exceeding the contact rating.
• To drive equipment incorporating inductance components such as relays, always connect a protective diode (surge absorber) in parallel with the load.
• To connect a power supply for driving a load, the power supply’s polarity must be matched with that of the contact output. Connecting it in reverse may result in failure.
• An AC load cannot be directly opened or closed using contact output. In this case, provide a repeating relay, etc.
Installation and Wiring

**Rated value**
30 V DC or less
200 mA or less (resistive load)

This connection cannot be made.

**External power supply**
(24 V DC)

**Rated value**
30 V DC or less
200 mA or less (resistive load)

**Protective diode**

**Figure 8.11  Connection Using Digital Output**

**Figure 8.12  Connection of Digital Output to Drive a Load Including AC Power Supply**

**Direct Input Wiring (Optional Code /A0□)**
Direct input terminals allow the connection of one of the following: mV voltage, thermocouple, RTD, potentiometer, isolator, two-wire transmitter, or a pulse signal.
A sensor signal is connected to the direct input terminals, converted into a 1–5 V signal by a signal converter circuit, and then output to the direct input signal output terminals. Connect this signal to the terminals you wish to input to using external wiring.

![Diagram of Direct Input Wiring](0815E.ai)

A ferrite core is included when the optional code/A0□ is specified.
Be sure to use the ferrite core when connecting to the wire to the direct input terminals.

**CAUTION**
If there is any risk of a surge due to lightning discharge, an arrester should be connected to the direct input signal line.
YOKOGAWA AR series is recommended for the arrester.
**Wiring for the Serial Communication Interface (Optional Code /A31)**

To perform Modbus communication, PC-link communication, or YS protocol Communication connect the wires as shown below. To perform YS protocol communication with DCS, connect the wires as a four-wire type shown below. If the instrument is located at the end of the wiring, turn ON the terminating resistor. The terminating resistance (internal) can be set using the RS-485 communication terminating resistor ON/OFF (TRMR) engineering parameter.

**Note**

Even if the terminating resistor is being ON, it will be OFF when the power supply of the instrument is turned off.

For details of communication parameter setting and communication functions: see YS1000 Series Communication Interface User’s Manual

**Four-wire connection**

![Four-wire connection diagram](image1)

**Two-wire connection**

![Two-wire connection diagram](image2)

**Note**

ML2-□ is a YOKOGAWA converter. RS-232C/RS-485 converters other than these devices can also be used. In such a case, check the electric specifications of each converter, etc. before using them.
Wiring for Distributed Control System (DCS-LCS) Communication (Optional Code /A32)

The following shows a diagram of the wiring between YS1000 and an SCIU communication interface unit. For the wiring between the DCS and an SCIU, and for the number of units to be connected, see the respective user’s manuals.

For details of communication parameter setting and communication functions: see YS1000 Series Communication Interface User’s Manual

Equipment on DCS side

SCIU

P : +
N : -
S : Shield

LCS (+) LCS (-)

YS1000

Figure 8.16

Wiring for the Ethernet Communication Interface (Optional Code /A34)

* Device that cannot be connected over Ethernet.

CAUTION

If there is any risk of a surge due to lightning discharge, an arrester for Ethernet (100 BASE-TX/10 BASE-T) should be connected.
Wiring for Power Supply and Grounding

Power supply wiring

**WARNING**

Be sure to turn OFF the power supply before wiring.
Use a tester or similar device to ensure that no power is being supplied to a cable to be connected.
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 requirements of the area in which the instrument is being installed.
For the power cable, the temperature rating is 60 °C or more.

For products with optional code /FM or /CSA:
- When devices are installed in a hazardous area in Class I, Division 2, wire a power supply cable from a non-hazardous area by explosion-proof wiring (including metal conduit wiring).
- In case of option code /FM, install devices according to NEC (National Electrical Code: ANSI/NFPA-70).
  In case of option code /CSA, all wiring shall comply with Canadian Electrical Code Part I and local electrical codes.

Ground wiring

**WARNING**

The YS1000 should always be grounded to protect the operator and maintenance personnel from electric shock and to prevent the effects of external noise. Ground wiring should be grounded to Ground (minimum resistance).
For the ground cable, the temperature rating is 60 °C or more.

After completion of power cable wiring and ground wiring, always install the terminal cover to the instrument.

**Note**

If there are multiple YS1000s on the same panel and individual grounding cannot be provided, determine the location of a grounding bus lead-in at one location and use and connect grounding cables of 2 mm² or more from each YS1000 to the grounding bus.

Crimping terminal recommendations

Ring tongue terminal

- **Applicable terminals**
  - M4

<table>
<thead>
<tr>
<th>Applicable wire mm² (AWG#)</th>
<th>ød (mm)</th>
<th>A (mm)</th>
<th>F (mm)</th>
<th>Applicable cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.04-2.63 (16-14)</td>
<td>4.4 max</td>
<td>7.0 max</td>
<td>7.8 max</td>
<td>Grounding cable</td>
</tr>
<tr>
<td>0.25-1.65 (22-15)</td>
<td>4.4 max</td>
<td>6.6 max</td>
<td>6.7 max</td>
<td>Power supply cable</td>
</tr>
</tbody>
</table>

Recommended tightening torque: 1.2 N•m

Applicable wire size: Grounding cable 2 mm² or more, Power supply cable 1.25 mm² or more

**Installing the Terminal Cover**

After completing the wiring, be sure to install the terminal cover to the instrument for safety and dust proofing.
Troubleshooting

How to Take Actions if the ALM Lamp or FAIL Lamp Lights up

In detecting an abnormality, YS1000 lights up the lamps (FAIL, ALM) at the upper part of the instrument’s front panel.
- FAIL lamp (red): Lights up if a major failure occurs in which the Manual Setter cannot operate.
- ALM lamp (yellow): Lights up if a minor abnormality occurs in which the Manual Setter can still continue to operate.

Actions to be Taken if the ALM Lamp Lights Up

- If the ALM lamp lights up, the alarm item can be checked on the ALARM Display.
- Alarm types include process alarms, and system alarms.
- A process alarm that has occurred prior to a power failure will be stored in the memory and will be re-displayed upon a HOT start. (Even if the power supply is turned off while in the condition that an alarm occurred in the ALM lamp lights up again at HOT start. In this case, set the instrument once to COLD start and turn ON the power supply. This will clear the alarm indication.)

Table 9.1  List of Causes of Alarm Occurrence

<table>
<thead>
<tr>
<th>Type</th>
<th>Alarm Display</th>
<th>Description</th>
<th>Cause of Alarm Occurrence and Diagnosis</th>
<th>Actions and Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>System alarm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X1, X2</td>
<td>Input overrange</td>
<td>Input value is less than −6.3% or greater than +106.3%</td>
<td>The operation mode (C, M) does not change in the event of alarm occurrence.</td>
<td>Check wiring and instruments connected.</td>
</tr>
<tr>
<td>Y1</td>
<td>Current output connection open or output read-back error*</td>
<td>Output 1 (Y1) output connection is open or output read-back value error*</td>
<td>Check wiring and instruments connected or Remove the noise of wiring.</td>
<td></td>
</tr>
<tr>
<td>COMM</td>
<td>RS-485 communication error</td>
<td>Framing parity error Buffer overflow Character-to-character timeout Error detection (checksum, CRC, LRC)</td>
<td>Check communication connection (wiring and communication conditions).</td>
<td></td>
</tr>
<tr>
<td>DCS-LCS communication error</td>
<td>Framing parity error Buffer overflow Header receiving data error Framing parity error Error detection (BCC) Communication undetected Communication time exceeded Communication status error</td>
<td>Check communication connection (wiring and communication conditions). Check connection destination.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETHER</td>
<td>Ethernet communication error</td>
<td>No response from Ethernet communication device</td>
<td>Press the [ALM CLR] software key to confirm the ETHER alarm. If the above operation is repeated many times, it is judged as a failure.</td>
<td></td>
</tr>
<tr>
<td>DATA</td>
<td>Writing from YSS1000 incomplete</td>
<td>Data write from YSS1000 has not been completed.</td>
<td>Re-download data from YSS1000.</td>
<td></td>
</tr>
<tr>
<td>CALR</td>
<td>Adjustment inspection error</td>
<td></td>
<td>Contact YOKOGAWA’s sales office or sales representative.</td>
<td></td>
</tr>
<tr>
<td>Process alarm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PH1</td>
<td>High limit alarm for PV</td>
<td>Process abnormality PV1 or PV2 is at or above the high limit alarm setpoint.</td>
<td>Recover the process to normal conditions.</td>
<td></td>
</tr>
<tr>
<td>PL1</td>
<td>Low limit alarm for PV</td>
<td>Process abnormality PV1 or PV2 is at or below the low limit alarm setpoint.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* An output read-back error is when SCOCD is set to ALARM (1). (Please see P.48)
Troubleshooting

Actions to be Taken in the Event of the FAIL Lamp Lighting Up

If the FAIL lamp lights up, the FAIL Display appears. (If both the main processor (MCU) and display processor (DCU) fail or if the gate array (GA) is faulty, the FAIL lamp does not light up.)

Table 9.2 List of Causes of Failure

<table>
<thead>
<tr>
<th>FAIL Display</th>
<th>Description</th>
<th>Processing (Action to be Taken in the Event of Abnormality)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Main clock stopped or both the main processor and display processor are defective.</td>
<td>Computation stopped</td>
</tr>
<tr>
<td>SCLK</td>
<td>Sub-clock stopped</td>
<td>• FAIL contact open</td>
</tr>
<tr>
<td>MCU</td>
<td>Main processor (MCU) faulty</td>
<td>• Output HOLD (DO1, DO2, DO4)</td>
</tr>
<tr>
<td>DCU</td>
<td>Display processor (DCU) faulty</td>
<td>• Communication (RS-485, DCS-LCS, or Ethernet) stopped</td>
</tr>
<tr>
<td>A/D</td>
<td>A/D converter faulty</td>
<td></td>
</tr>
<tr>
<td>D/A</td>
<td>D/A converter faulty</td>
<td></td>
</tr>
<tr>
<td>RAM</td>
<td>MCU-RAM faulty</td>
<td></td>
</tr>
<tr>
<td>ROM</td>
<td>MCU-ROM faulty</td>
<td></td>
</tr>
<tr>
<td>FRAM</td>
<td>FRAM faulty</td>
<td></td>
</tr>
<tr>
<td>FLASH</td>
<td>Flash memory faulty</td>
<td></td>
</tr>
<tr>
<td>OPT</td>
<td>Communication abnormal</td>
<td></td>
</tr>
<tr>
<td>SYS</td>
<td>System data abnormal</td>
<td></td>
</tr>
<tr>
<td>EMPFR</td>
<td>FRAM data non-initialized, FRAM data lost</td>
<td></td>
</tr>
<tr>
<td>EMPFL</td>
<td>Flash data non-initialized, Flash data lost</td>
<td></td>
</tr>
</tbody>
</table>

Displays and Operation in the Event of FAIL

YS1000 has an independent computation circuit (main processor, MCU), a display operation circuit (display processor, DCU).

If the computation circuit fails, control computation stops, and outputs (DO1, DO2, DO4) are changed to held status. The communication function also stops. In this case, the FAIL Display is shown by the display operation circuit. This circuit measures and displays analog input data (X1). The display cannot be switched.

If the display operation circuit fails, both normal display and operation are disabled, thereby causing control computation to be stopped and outputs (Y1, Y2, DO1, DO2) to change to held status. The communication function also stops. In this case, the FAIL Display is shown by the computation circuit. This circuit measures and displays analog input data (X1), and the current output signal (Y1) can be manipulated by MV operation keys. The display cannot be switched.

For YS1360, regardless of the occurrence of a failure, the front panel of the instrument can be swung up to operate a current output signal (Y1) using the hard manual operation wheel (when the instrument is equipped with the hard manual unit (i.e. with the designation of suffix code -1[等])).
### Display Provided in the Event of FAIL

If both the main processor (MCU) and display processor (DCU) fail or if the gate array (GA) is faulty, no display is provided.

**WARNING**

If the FAIL lamp lights up and the LCD display does not function, the MV operation keys are available even if both the main processor (MCU) and display processor (DCU) are faulty. However, do not manipulate MV because MV display is invisible.

---

#### Table 9.3: Item Names in Figure Description

<table>
<thead>
<tr>
<th>Item Names in Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1 input bar</td>
<td>1 to 5 V DC of analog input (X1) is displayed in a range of 0 to 100%.</td>
</tr>
<tr>
<td>Y1 output bar</td>
<td>Y1 output value is displayed (if FAIL lights up, the value displayed is the manipulated output variable 1 produced immediately before the occurrence of the failure)</td>
</tr>
<tr>
<td>Hard manual pointer (YS1360)</td>
<td>Displayed being linked with the hard manual output value (this pointer is not displayed if suffix code -2 was specified.)</td>
</tr>
<tr>
<td>H.MAN selection status (YS1360)</td>
<td>Displayed if the hard manual unit has been selected (this indication is not displayed if suffix code -2 was specified.)</td>
</tr>
<tr>
<td>FAIL cause</td>
<td>The cause of failure is displayed. If there are multiple failures, multiple causes of failures are displayed. No indication is displayed if the cause of failure is unknown.</td>
</tr>
<tr>
<td>FAIL and ALM lamp</td>
<td>FAIL lamp lights up and the ALM lamp is off</td>
</tr>
<tr>
<td>SV pointer (YS1350)</td>
<td>Undefined</td>
</tr>
<tr>
<td>Tag number</td>
<td>The tag number shown immediately before FAIL was displayed.</td>
</tr>
<tr>
<td>MV valve direction (YS1360)</td>
<td>C-O or O-C indicated immediately before FAIL was displayed.</td>
</tr>
<tr>
<td>Scale</td>
<td>0 to 100% unconditionally. Divisions are used that were indicated immediately before FAIL was displayed.</td>
</tr>
<tr>
<td>C, M lamps</td>
<td>M lamp lights up.</td>
</tr>
<tr>
<td>PH and PL pointers</td>
<td>Not displayed</td>
</tr>
<tr>
<td>PV, SV, and MV digital display</td>
<td>Not displayed</td>
</tr>
<tr>
<td>Key entry</td>
<td>All invalid with the exception of the MV operation keys (&lt;, SHIFT, &gt;)</td>
</tr>
</tbody>
</table>
Troubleshooting

Selecting the action to take in the event of an error in the circuit diagnosis of current output.

**Description**

The SCOCD parameter is enabled when using Y1 terminal is 4-20 mA (0)).

This parameter can be used to select D/A FAIL or OOP ALARM for displaying the diagnostic result in the event of an error with the D/A conversion section and read-back value. Note that selecting OFF (2) does not perform diagnosis.

Current output wire open is detected, regardless of the setting of SCOCD.

**Setting Display**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Names</th>
<th>Setting Range</th>
<th>Factory Default</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCOCD</td>
<td>Selection of Current Output Circuit Diagnosis</td>
<td>FAIL: D/A FALL in the event of an error ALARM: OOP ALARM in the event of an error OFF: No diagnosis</td>
<td>ALARM</td>
<td>Engineering Menu Display &gt; [CONFIG1] (Configuration Display 1)</td>
</tr>
</tbody>
</table>

**Note**

- **How to use the Selection of Current Output Circuit Diagnosis (SCOCD)**
  
  **When SCOCD is in ALARM (1) (default value):**
  
  If an error is detected in the current output read-back value, OOP ALARM is issued and control is continued. In the event of a breakdown of the current output circuit, control is also continued. In this case, a breakdown of the current output circuit should be judged based on the fact that proper control can no longer be performed or another system alarm or process alarm has been issued.

  **When SCOCD is in FAIL (0):**
  
  If a breakdown of the current output circuit or an error in the current output read-back value is detected, D/A FAIL is set and control is stopped.

  **When SCOCD is in OFF (2):**
  
  Control continues, even if an output read-back value error occurs or the current output circuit breaks down. In this case, a breakdown of the current output circuit should be judged based on the fact that proper control can no longer be performed or another system alarm or process alarm is issued.

- **Diagnosis of the current output circuit**
  
  In current output circuit diagnosis, the current output value of the Y1 terminal is read back to within the YS1000 to detect an error from a difference between the output value and read-back value.

  There are cases where the read-back value does not agree with the output value temporarily due to the characteristics of a positioner, etc. connected to the Y1 terminal or noise superimposed by the wiring condition, which results in the judgment that there is an error in the D/A conversion section.

  However, temporary noise of this kind or low-level noise may not affect control and control may be continued normally.

  If an error occurs in the D/A conversion section, the cause may be one of the following three. Take action according to each cause.

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Breakdown of the current output circuit</td>
<td>In this case, control is disabled from being continued. The current output circuit has failed; contact us for repair.</td>
</tr>
<tr>
<td>(2) A break in wire of Y1 terminal</td>
<td>A wire of the Y1 terminal has broken; check the wiring. This error may also occur if a terminal wire is disconnected during maintenance, transient work, etc.</td>
</tr>
<tr>
<td>(3) Noise on Y1 terminal</td>
<td>If control is affected, eliminate noise. If control is normal, control can be continued as is. This presents no problem.</td>
</tr>
</tbody>
</table>

**Backup Operation in the Event of Instrument Failure**

**Hard manual unit operation (except in cases when suffix code -2XXXX was specified)**

Swinging up the front panel allows you to see the control section of the hard manual unit for backup (a manual operation output section consisting of analog circuits) on the internal panel.

If YS1000 is in FAIL status and there is an urgent demand situation, set the manipulated output variable (Y1 output) to the safe side using hard manual operation.
Troubleshooting

Hard Manual Operation Section
Figure 9.2

- Adjust the value output by the hard manual circuit using the hard manual operation wheel to match it to the Y1 output value (the control computation circuit’s manipulated output variable) produced immediately before FAIL was displayed. The output value increases when the operation wheel is turned clockwise, while it decreases when turned counterclockwise.
- When the hard manual circuit output value agrees with the Y1 output value, the MV balance lamp (BAL: green) lights up.
- When the hard manual selector switch is turned ON, the Y1 output value is shifted from the control computation circuit to the hard manual circuit while the Y1 output value continues to be generated. After that, output operation is available using the hard manual operation wheel.

Note
The hard manual unit is only available for Y1 output operation.

Online Controller Replacement

WARNING
Do not remove the internal unit from the instrument case. Contact YOKOGAWA’s sales office or sales representative when replacing the internal unit, as safety standard inspection is required.

WARNING
Explosion hazard.
Do not remove or insert the internal unit or do not connect the YS110 in explosive atmospheres.

CAUTION
Products with optional code /FM or /CSA cannot satisfy the explosion protection standards if the internal unit is removed.

Use of the standby manual station allows the controller to be replaced without interrupting Y1 output in the event of internal unit failure, etc.

Recovery Operations after Power Failures

If a power failure occurs that exceeds the power holdup time, the instrument enters power failure status. Operation after a power failure differs depending on the power failure time and on the start mode (START) engineering parameters that have been set. The following action occurs with the factory default values.
For operation after power failure: see Chapter 6, Processing during Power Failures, in the YS1500 Indicating Controller/YS1700 Programmable Indicating Controller User’s Manual (CD-ROM).

- Momentary power interruption of less than 2 seconds
  The instrument continues to operate the same as it had prior to the momentary power interruption.
- Power failure of 2 seconds or more
  The operation mode enters Manual, setpoints (SV) are maintained in the same condition as they were prior to the power failure, and the manipulated output variable becomes −6.3%.
List of Parameters

Understanding the List of Parameters

Parameter: Symbol displayed on YS1350/YS1360’s LCD
Name: Parameter name
Setting and Display Range: Range settable on YS1350/YS1360
Unit: Parameter unit. An oblique line represents that there is no unit.
Factory Default Value: Factory default values
Display and Setting Conditions: R: Display only, R/W: Display and setting available, N/A: No display

For more information about each parameter, see the YS1350 Manual Setter for SV Setting/YS1360 Manual Setter for MV Setting User’s Manual.
### List of Parameters

#### Setting Display (SETTING)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Setting and Display Range</th>
<th>Unit</th>
<th>Factory Default Value</th>
<th>Display and Setting Conditions</th>
<th>User Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV1</td>
<td>Process variable 1</td>
<td>Equivalent to -6.3 to 106.3% in the engineering unit (Note 1)</td>
<td>Engineering unit</td>
<td>Undefined</td>
<td>YS1350</td>
<td>YS1360</td>
</tr>
<tr>
<td>SV1</td>
<td>Setpoint value 1</td>
<td>Equivalent to -6.3 to 106.3% in the engineering unit (Note 1)</td>
<td>Engineering unit</td>
<td>0.0</td>
<td>R/W</td>
<td>N/A</td>
</tr>
<tr>
<td>MV1</td>
<td>Manipulated output variable 1 (Note 2)</td>
<td>-6.3 to 106.3</td>
<td>%</td>
<td>-6.3</td>
<td>N/A</td>
<td>R/W</td>
</tr>
<tr>
<td>CIN1</td>
<td>Cascade input value</td>
<td>YS1350: Equivalent to -6.3 to 106.3% in the engineering unit (Note 1)</td>
<td>Engineering unit</td>
<td>0.0</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YS1360: -6.3 to 106.3</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PH1</td>
<td>High limit alarm setpoint for PV1</td>
<td>Equivalent to -6.3 to 106.3% in the engineering unit (Note 1)</td>
<td>Engineering unit</td>
<td>106.3</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>PL1</td>
<td>Low limit alarm setpoint for PV1</td>
<td>Equivalent to -6.3 to 106.3% in the engineering unit (Note 1)</td>
<td>Engineering unit</td>
<td>-6.3</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>HYS1</td>
<td>Alarm hysteresis 1</td>
<td>Equivalent to 0.0 to 20.0% in the engineering unit (Note 1)</td>
<td>Engineering unit</td>
<td>2.0</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>MH1</td>
<td>High limit setpoint of MV1</td>
<td>-6.3 to 106.3 (Note 5)</td>
<td>%</td>
<td>106.3</td>
<td>N/A</td>
<td>R/W</td>
</tr>
<tr>
<td>ML1</td>
<td>Low limit setpoint of MV1</td>
<td>-6.3 to 106.3 (Note 5)</td>
<td>%</td>
<td>-6.3</td>
<td>N/A</td>
<td>R/W</td>
</tr>
<tr>
<td>PLC1</td>
<td>Square root extraction low cutoff setpoint for PV1</td>
<td>0.0 to 100.0</td>
<td>%</td>
<td>1.0</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>PLG1</td>
<td>First order lag time constant for PV1</td>
<td>0.0 to 800.0</td>
<td>s (second)</td>
<td>0.0</td>
<td>R/W</td>
<td>R/W</td>
</tr>
</tbody>
</table>

Note 1: The engineering units set with the Engineering parameters, SCH1, SCL1, and SCDP1.

Note 2: MV (Manipulated output variable) can be set only with the MV operation key at the bottom of the front panel.

Note 3: Alarm will not occur if set at a maximum value.

Note 4: Alarm will not occur if set at a minimum value.

Note 5: Be sure to set to MH1>ML1.

#### Input and Output Data Display (I/O Data)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Setting and Display Range</th>
<th>Unit</th>
<th>Factory Default Value</th>
<th>Display and Setting Conditions</th>
<th>User Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>Analog input 1</td>
<td>-25.0 to 125.0</td>
<td>%</td>
<td>-25.0</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>X2</td>
<td>Analog input 2</td>
<td>-25.0 to 125.0</td>
<td>%</td>
<td>-25.0</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Y1</td>
<td>Analog output 1</td>
<td>-20.0 to 106.3</td>
<td>%</td>
<td>-20.0</td>
<td>N/A</td>
<td>R</td>
</tr>
<tr>
<td>Y2</td>
<td>Analog output 2</td>
<td>-6.3 to 106.3</td>
<td>%</td>
<td>-6.3</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Di01</td>
<td>Digital input 1</td>
<td>0.1</td>
<td></td>
<td>0</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Di02</td>
<td>Digital input 2</td>
<td>0.1</td>
<td></td>
<td>0</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Do01</td>
<td>Digital output 1</td>
<td>0.1</td>
<td></td>
<td>0</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Do02</td>
<td>Digital output 2</td>
<td>0.1</td>
<td></td>
<td>0</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Do04</td>
<td>Digital output 4</td>
<td>0.1</td>
<td></td>
<td>0</td>
<td>R</td>
<td>R</td>
</tr>
</tbody>
</table>
### List of Parameters

**<Engineering Parameters>**

**Configuration Display 1 (CONFIG1)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Setting and Display Range</th>
<th>Unit</th>
<th>Factory Default Value</th>
<th>Display and Setting Conditions</th>
<th>User Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET</td>
<td>Enable/Disable setting</td>
<td>INHB: Setting impossible ENBL: Setting possible (Note1)</td>
<td></td>
<td>INHB</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>CTL</td>
<td>Controller mode selection</td>
<td>SVSTN: Manual Setter for SV Setting</td>
<td></td>
<td>SVSTN</td>
<td>R</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MVSTN: Manual Setter for MV Setting</td>
<td></td>
<td>MVSTN</td>
<td>N/A</td>
<td>R</td>
</tr>
<tr>
<td>START</td>
<td>Start mode</td>
<td>AUT: HOT start M-COLD: Power failure duration&lt;2 sec.; HOT Start, Power failure duration≥2 sec.; C-COLD start; HOT Start, Power failure duration≥2 sec.; COLD start</td>
<td></td>
<td>M-COLD</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>FDSP</td>
<td>Power-on initial display</td>
<td>LOOP1: LOOP 1 Display, MTR1: METER 1 Display, TRND1: TREND1 Display, TRND3: TREND 3 Display, ALARM: ALARM Display</td>
<td></td>
<td>LOOP1</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>LOOP1</td>
<td>LOOP 1 Display ON/OFF</td>
<td>OFF, ON (Note 2)</td>
<td></td>
<td>ON</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>MTR1</td>
<td>METER 1 Display ON/OFF</td>
<td></td>
<td></td>
<td>ON</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>TRND1</td>
<td>TREND 1 Display ON/OFF</td>
<td></td>
<td></td>
<td>ON</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>TRND3</td>
<td>TREND 3 Display ON/OFF</td>
<td></td>
<td></td>
<td>ON</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>ALARM</td>
<td>ALARM Display ON/OFF</td>
<td></td>
<td></td>
<td>ON</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>CAMLK</td>
<td>Keylock for C/M mode change</td>
<td></td>
<td></td>
<td>UNLOCK</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>SVLK</td>
<td>Keylock for SV change (YS1350)</td>
<td></td>
<td></td>
<td>UNLOCK</td>
<td>R/W</td>
<td>N/A</td>
</tr>
<tr>
<td>MVLK</td>
<td>Keylock for MV change (YS1360)</td>
<td></td>
<td></td>
<td>UNLOCK</td>
<td>N/A</td>
<td>R/W</td>
</tr>
<tr>
<td>SCOCD</td>
<td>Selection of Current Output Circuit Diagnosis</td>
<td>FAIL: D/A FALL in the event of an error, ALARM: OOP ALARM in the event of an error, OFF: No diagnosis</td>
<td></td>
<td>ALARM</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>REV</td>
<td>System revision number</td>
<td>Alphanumeric character 8 digits (Style number and Revision number of the product)</td>
<td></td>
<td>S×.××</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>MCU</td>
<td>Main CPU version number</td>
<td>Main CPU version number</td>
<td></td>
<td>R×.××.××</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>DCU</td>
<td>Display CPU version number</td>
<td>Display CPU version number</td>
<td></td>
<td>R×.××.××</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>PARA</td>
<td>MCU parameter version number</td>
<td>MCU parameter version number</td>
<td></td>
<td>R×.××.××</td>
<td>R</td>
<td>R</td>
</tr>
</tbody>
</table>

**Note 1:** When the SET parameter is set to “ENBL”, [STOP] will appear on the right of the display title, and the manipulated output and alarm output will be kept.

**Note 2:** Loop1 is always displayed even if you set “OFF” for all lines. When you do not use TRND3, set it to “OFF”.

---

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### List of Parameters

#### Configuration Display 2 (CONFIG2)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Setting and Display Range</th>
<th>Unit</th>
<th>Factory Default Value</th>
<th>Display and Setting Conditions</th>
<th>User Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET</td>
<td>Enable/Disable setting</td>
<td>INHB: Setting impossible&lt;br&gt;ENBL: Setting possible (Note1)</td>
<td></td>
<td></td>
<td>YS1350</td>
<td>YS1360</td>
</tr>
<tr>
<td>CMOD1</td>
<td>C-mode 1</td>
<td>-: None, CAS: Analog cascade setting mode, CMP: Computer cascade setting mode</td>
<td>-</td>
<td>INHB</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>PV1IN</td>
<td>PV1 input specification</td>
<td>-: Not use&lt;br&gt;X1: Use PV1</td>
<td>X1</td>
<td></td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>VDIR1</td>
<td>Valve direction 1</td>
<td>C-O: MV 0%=Close, 100%=Open, O-C: MV 0%=Open, 100%=Close</td>
<td>C-O</td>
<td>N/A</td>
<td>R/W</td>
<td></td>
</tr>
<tr>
<td>SCH1</td>
<td>100% value of scale 1</td>
<td>-80000 to 80000</td>
<td>1000</td>
<td>R/W</td>
<td>R/W</td>
<td></td>
</tr>
<tr>
<td>SCL1</td>
<td>0% value of scale 1</td>
<td>-80000 to 80000</td>
<td>0</td>
<td>R/W</td>
<td>R/W</td>
<td></td>
</tr>
<tr>
<td>SCDP1</td>
<td>Decimal point position 1</td>
<td>###, ####.$, ####.$###, ####.$###</td>
<td>####.$</td>
<td>R/W</td>
<td>R/W</td>
<td></td>
</tr>
<tr>
<td>SCDV1</td>
<td>Scale division 1</td>
<td>1, 2, 4, 5, 7, 10, 14, 20</td>
<td>10</td>
<td>R/W</td>
<td>R/W</td>
<td></td>
</tr>
<tr>
<td>UNIT1</td>
<td>Engineering unit 1</td>
<td></td>
<td></td>
<td>%</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>TAG1</td>
<td>Tag number 1</td>
<td></td>
<td></td>
<td>---YS1350---&lt;br&gt;---YS1360---</td>
<td>R/W</td>
<td>R/W</td>
</tr>
</tbody>
</table>

Note 1: When the SET parameter is set to “ENBL”, [STOP] will appear on the right of the display title, and the manipulated output and alarm output will be kept.

#### Configuration Display 3 (CONFIG3)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Setting and Display Range</th>
<th>Unit</th>
<th>Factory Default Value</th>
<th>Display and Setting Conditions</th>
<th>User Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET</td>
<td>Enable/Disable setting</td>
<td>INHB: Setting impossible&lt;br&gt;ENBL: Setting possible (Note1)</td>
<td></td>
<td></td>
<td>YS1350</td>
<td>YS1360</td>
</tr>
<tr>
<td>DI1F</td>
<td>DI1 function selection</td>
<td>NONE: No function&lt;br&gt;E-MAN: Switching to Manual mode (status)&lt;br&gt;TR-MAN: Switching to Manual mode (trigger)&lt;br&gt;TR-CAS: Switching to Cascade mode (trigger)&lt;br&gt;TR-EVTC: All event OFF</td>
<td>NONE</td>
<td>R/W</td>
<td>R/W</td>
<td></td>
</tr>
<tr>
<td>DI2F</td>
<td>DI2 function selection</td>
<td>NONE: No function&lt;br&gt;TR-MAN: Switching to Manual mode (trigger)&lt;br&gt;TR-CAS: Switching to Cascade mode (trigger)&lt;br&gt;LCD-OFF: Backlight auto-off&lt;br&gt;TR-EVTC: All event OFF</td>
<td>NONE</td>
<td>R/W</td>
<td>R/W</td>
<td></td>
</tr>
<tr>
<td>DI1D</td>
<td>DI1 contact type</td>
<td>OPN: Function is available when the contact is open</td>
<td>OPN</td>
<td>R/W</td>
<td>R/W</td>
<td></td>
</tr>
<tr>
<td>DI2D</td>
<td>DI2 contact type</td>
<td>CLS: Function is available when the contact is closed</td>
<td>OPN</td>
<td>R/W</td>
<td>R/W</td>
<td></td>
</tr>
<tr>
<td>DO1F</td>
<td>DO1 function selection</td>
<td>NONE: No function&lt;br&gt;PH1: High limit alarm for PV1&lt;br&gt;OOP: Current output open</td>
<td>PH1</td>
<td>R/W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DO2F</td>
<td>DO2 function selection</td>
<td>NONE: No function&lt;br&gt;PL1: Low limit alarm for PV1&lt;br&gt;OOP: Current output open</td>
<td>PL1</td>
<td>R/W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DO4F</td>
<td>DO4 function selection</td>
<td>NONE: No function&lt;br&gt;CAS: Cascade mode&lt;br&gt;OOP: Current output open</td>
<td>CAS</td>
<td>R/W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DO1D</td>
<td>DO1 contact type</td>
<td>OPN: When the event occurs, the contact is open</td>
<td>OPN</td>
<td>R/W</td>
<td>R/W</td>
<td></td>
</tr>
<tr>
<td>DO2D</td>
<td>DO2 contact type</td>
<td>CLS: When the event occurs, the contact is closed</td>
<td>OPN</td>
<td>R/W</td>
<td>R/W</td>
<td></td>
</tr>
<tr>
<td>DO4D</td>
<td>DO4 contact type</td>
<td></td>
<td></td>
<td></td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td>PSR1</td>
<td>Square root extraction for PV1</td>
<td>OFF, ON</td>
<td>OFF</td>
<td>R/W</td>
<td>R/W</td>
<td></td>
</tr>
</tbody>
</table>

Note 1: When the SET parameter is set to “ENBL”, [STOP] will appear on the right of the display title, and the manipulated output and alarm output will be kept.
### List of Parameters

**Input Specification Setting Display (SC MAINT)**


**Password Setting Display (PASSWORD)**


**Setting Display for Operation Display (DISPLAY)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Setting and Display Range</th>
<th>Unit</th>
<th>Factory Default Value</th>
<th>Display and Setting Conditions</th>
<th>User Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET</td>
<td>Enable/Disable setting</td>
<td>INHB: Setting impossible ENBL: Setting possible (Note1)</td>
<td></td>
<td>INHB</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>LP1C</td>
<td>LOOP 1 color selection</td>
<td>GREEN, AQUA, PINK, ORANGE</td>
<td></td>
<td>GREEN</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>BKCL</td>
<td>Background color selection</td>
<td>BLACK, WHITE, BLUE</td>
<td></td>
<td>BLACK</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>MTM1G1</td>
<td>10-exponential scale factor for METER 1 Display</td>
<td>AUTO, 10^-5, 10^-4, 10^-3, 10^-2, 10^-1, 10^0, 10^1, 10^2, 10^3, 10^4, 10^5;</td>
<td></td>
<td>AUTO</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>TR1PV</td>
<td>PV1 trend ON/OFF for TREND 1 Display</td>
<td>OFF, ON</td>
<td></td>
<td>ON</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>TR1SV</td>
<td>SV1 trend ON/OFF for TREND 1 Display</td>
<td>OFF, ON</td>
<td></td>
<td>ON</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>TR1MV</td>
<td>MV1 trend ON/OFF for TREND 1 Display</td>
<td>OFF, ON</td>
<td></td>
<td>ON</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>TRDS1</td>
<td>Data selection 1 for TREND 3 Display</td>
<td>(YS1350) OFF: None PV1: Process variable 1 SV1: Setpoint value 1 X1: Analog input 1 X2: Analog input 2 Y1: Analog Output 1</td>
<td></td>
<td>PV1</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>TRDS2</td>
<td>Data selection 2 for TREND 3 Display</td>
<td>(YS1360) OFF: None PV1: Process Variable 1 MV1: Manipulated output variable 1 X1: Analog input 1 X2: Analog input 2</td>
<td></td>
<td>YS1350: SV1 YS1360: MV1</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>TRDS3</td>
<td>Data selection 3 for TREND 3 Display</td>
<td>OFF</td>
<td></td>
<td>OFF</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>TRDS4</td>
<td>Data selection 4 for TREND 3 Display</td>
<td>OFF</td>
<td></td>
<td>OFF</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>TRDT1</td>
<td>TREND 1 Display time span</td>
<td>1M: 1min., 5M: 5min., 10M: 10min., 30M: 30min., 1H: 1hour, 5H: 5hours, 10H: 10hours, 30H: 30hours</td>
<td></td>
<td>1M</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>TRDT3</td>
<td>TREND 3 Display time span</td>
<td>1M</td>
<td></td>
<td>1M</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>TR3DV</td>
<td>Scale division for TREND3 Display</td>
<td>1, 2, 4, 5, 7, 10, 14, 20</td>
<td></td>
<td>10</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>ACTD1</td>
<td>Active color display selection 1</td>
<td>OFF: None, PH1: High limit alarm setpoint for PV1 PL1: Low limit alarm setpoint for PV1 1-ALM: Logical OR of all loop1 alarms</td>
<td></td>
<td>OFF</td>
<td></td>
<td>R/W</td>
</tr>
<tr>
<td>TAGAL</td>
<td>Color inversion of tag number</td>
<td>OFF, ON</td>
<td></td>
<td>OFF</td>
<td></td>
<td>R/W</td>
</tr>
</tbody>
</table>

Note 1: When the SET parameter is set to “ENBL”, [STOP] will appear on the right of the display title, and the manipulated output and alarm output will be kept.
## LCD Setting Display (LCD)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Setting and Display Range</th>
<th>Unit</th>
<th>Factory Default Value</th>
<th>Display and Setting Conditions</th>
<th>User Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO</td>
<td>LCD backlight auto-off timer</td>
<td>OFF: Timer function OFF, ON: Timer function ON (Off timer: 30 min)</td>
<td></td>
<td>OFF</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>BRT</td>
<td>LCD brightness adjustment</td>
<td>0 to 5</td>
<td></td>
<td>1</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
</tbody>
</table>

## Communication Setting Display (COMM)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Setting and Display Range</th>
<th>Unit</th>
<th>Factory Default Value</th>
<th>Display and Setting Conditions</th>
<th>User Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET</td>
<td>Enable/Disable setting</td>
<td>INHB: Setting impossible, ENBL: Setting possible (Note 1)</td>
<td></td>
<td>INHB</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>COMM</td>
<td>Communication selection</td>
<td>-: RS-485, DCS-LCS</td>
<td></td>
<td>No option: -</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R R</td>
</tr>
<tr>
<td>COMWR</td>
<td>Enable/Disable writing via RS-485 communication (Note 2)</td>
<td>INHB: Setting impossible, ENBL: Setting possible (Note 1)</td>
<td></td>
<td>ENBL</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>DREG 1</td>
<td>RS-485 communication D register setting for High/ Low level (Note 3)</td>
<td>H-L: High-Low, L-H: Low-High</td>
<td></td>
<td>H-L</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>PSL</td>
<td>RS-485 Protocol selection (Note 3)</td>
<td>PCL: PC-link communication, PCLSUM: PC-link communication (with checksum), MODASC: Modbus communication (ASCII), MODRTU: Modbus communication (RTU)</td>
<td></td>
<td>MODRTU</td>
<td>YS: YS protocol</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>ADRS</td>
<td>RS-485 communication address (Note 3)</td>
<td>1 to 99</td>
<td></td>
<td>1</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>STBIT</td>
<td>RS-485 stop bit (Note 3)</td>
<td>1 bit, 2 bit</td>
<td></td>
<td>1 bit</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>PAR</td>
<td>RS-485 parity (Note 3)</td>
<td>NONE, ODD, EVEN</td>
<td></td>
<td>EVEN</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>DLEN</td>
<td>RS-485 data length (Note 3)</td>
<td>7 bit, 8 bit</td>
<td></td>
<td>8 bit</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>BPS</td>
<td>RS-485 baud rate (Note 3)</td>
<td>1200, 2400, 4800, 9600, 19200, 38400 (bps)</td>
<td></td>
<td>38400</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>TRMR</td>
<td>RS-485 communication terminating resistor ON/OFF (Note 3)</td>
<td>OFF, ON</td>
<td></td>
<td>OFF</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>ETRWWR</td>
<td>Enable/Disable writing via Ethernet communication (Note 4)</td>
<td>INHB: Setting impossible, ENBL: Setting possible (Note 1)</td>
<td></td>
<td>ENBL</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>DREG 2</td>
<td>Ethernet communication D register setting for High/ Low level (Note 4)</td>
<td>H-L: High-Low, L-H: Low-High</td>
<td></td>
<td>H-L</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>ECTO</td>
<td>Ethernet communication timeout period</td>
<td>4 to 60</td>
<td>s</td>
<td>60</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>IPAD1</td>
<td>IP address 1 (Note 4)</td>
<td>0 to 255</td>
<td></td>
<td>0</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>IPAD2</td>
<td>IP address 2 (Note 4)</td>
<td></td>
<td></td>
<td>192</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>IPAD3</td>
<td>IP address 3 (Note 4)</td>
<td></td>
<td></td>
<td>168</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>IPAD4</td>
<td>IP address 4 (Note 4)</td>
<td></td>
<td></td>
<td>1</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>SM1</td>
<td>Subnet mask 1 (Note 4)</td>
<td>0 to 255</td>
<td></td>
<td>255</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>SM2</td>
<td>Subnet mask 2 (Note 4)</td>
<td></td>
<td></td>
<td>255</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>SM3</td>
<td>Subnet mask 3 (Note 4)</td>
<td></td>
<td></td>
<td>255</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>SM4</td>
<td>Subnet mask 4 (Note 4)</td>
<td></td>
<td></td>
<td>0</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>DG1</td>
<td>Default gateway1 (Note 4)</td>
<td>0 to 255</td>
<td></td>
<td>0</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>DG2</td>
<td>Default gateway2 (Note 4)</td>
<td></td>
<td></td>
<td>0</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>DG3</td>
<td>Default gateway3 (Note 4)</td>
<td></td>
<td></td>
<td>0</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>DG4</td>
<td>Default gateway4 (Note 4)</td>
<td></td>
<td></td>
<td>0</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>PORT</td>
<td>Port number (Note 4)</td>
<td>502, 1024 to 65535</td>
<td></td>
<td>502</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
<tr>
<td>ESW</td>
<td>Ethernet setting switch (Note 4)</td>
<td>-, ENTRY</td>
<td></td>
<td>-</td>
<td>YS1350 R/W, YS1360 R/W</td>
<td>R/W R/W</td>
</tr>
</tbody>
</table>

Note 1: When the SET parameter is set to "ENBL," [STOP] will appear on the right of the display title, and the manipulated output and alarm output will be kept.

Note 2: Available for the option /A31 or /A32.

Note 3: Available for the option /A31.

Note 4: Available for the option /A34.
# List of Parameters

## LCD Maintenance Setting Display (LCD MAINT)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Name</th>
<th>Setting and Display Range</th>
<th>Unit</th>
<th>Factory Default Value</th>
<th>Display and Setting Conditions</th>
<th>User Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET</td>
<td>Enable/Disable setting</td>
<td>INHB: Setting impossible</td>
<td></td>
<td>INHB</td>
<td>R/W</td>
<td>R/W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ENBL: Setting possible (Note1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PWDOR</td>
<td></td>
<td>These parameters are for maintenance. If maintenance is</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>required, contact your nearest YOKOGAWA dealer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1: When the SET parameter is set to “ENBL”, [STOP] will appear on the right of the display title, and the manipulated output and alarm output will be kept.
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