Operation Guide

UM33A-S
Digital Indicator with Alarms
(SENCOM HMI Type) Operation Guide

UTAdvanced

Installation and Wiring

IM 05P09D21-11EN

5th Edition: Dec. 2022

YOKOGAWA
Yokogawa Electric Corporation

This operation guide describes installation, wiring, and other tasks required to make the indicator ready for operation.
For details of the each function, refer to the electronic manual. User's manuals can be downloaded or viewed at the following URL.

https://www.yokogawa.com/ns/ut/im/

Contents

Introduction

Thank you for purchasing the UM33A-S Digital Indicator with Alarms.
This operation guide describes the basic operations of the UM33A-S. The guide should be provided to the end user of this product.
Be sure to read this operation guide before using the product in order to ensure correct operation. For details of each function, refer to the electronic manual. Before using the product, refer to the table of Model and Suffix Codes to make sure that the delivered product is consistent with the model and suffix codes you ordered. Also make sure that the following items are included in the package.

- Digital Indicator with Alarms (the model you ordered) x1
- Set of Brackets x1
- Unit Label (L4502VZ) x1
- Tag Label (L4502VE) (Only when ordered.) x1
- Operation Guide (this document) .....x4 (A3 size)
  (Installation and Wiring, Initial Settings, Operations, and Parameters)

● Target Readers
This guide is intended for the following personnel;
- Engineers responsible for installation, wiring, and maintenance of the equipment.
- Personnel responsible for normal daily operation of the equipment.

1. Safety Precautions

The following symbol is used on the instrument. It indicates the possibility of injury to the user or damage to the instrument, and signifies that the user must refer to the 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.

AC

AC/DC

The equipment wholly protected by double insulation or reinforced insulation.

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

Note

Identifies important information required to operate the instrument.

■ Warning and Disclaimer

(1) YOKOGAWA makes no warranties regarding the product except those stated in the WARRANTY that is provided separately.
(2) 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.

■ Safety, Protection, and Modification of the Product

(1) In order to protect the system controlled by this product and the product itself, and to ensure safe operation, observe the safety precautions described in the 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.
(2) Installation of protection 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.
(3) Be sure to use the spare parts approved by YOKOGAWA when replacing parts or consumables.
(4) This product is not designed or manufactured to be used in critical applications that 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.
(5) Modification of the product is strictly prohibited.
(6) This product is intended to be handled by skilled/trained personnel for electric devices.
(7) This product is UL Recognized Component. In order to comply with UL standards, end-products are necessary to be designed by those who have knowledge of the requirements.

WARNING

- **Power Supply**
  Ensure that the instrument's supply voltage matches the voltage of the power supply before turning ON the power.
- **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 (H_2S, SO_X, 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. Additionally, do not replace the fuse by yourself.
- **Damage to the Protective Construction**
  Operation of the instrument in a manner not specified in the user's manual may damage its protective construction.

CAUTION

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

2. Model and Suffix Codes

■ UM33A

Model	Suffix code	Optional suffix code	Description
UM33A			Digital Indicator with Alarms
Type 1: Basic	-S		Dedicated to SENCOM HMI (provided with SENCOM smart adapter Interface and retransmission output)
Type 2: Functions	0		Always "0"
Type 3: Open networks	0		Always "0"
Display language	-1		English (Default. Can be switched to other language by the setting.)
Case color	0		White (Light gray)
	1		Black (Light charcoal gray)
Optional suffix codes		/AL	3 additional DO (a-contact relay)
		/DC	Power supply 24 V AC/DC
		/CT	Coating [1]
		/CV	Terminal cover
		/NS	Limited standards certification[2]

1: When the /CT option is specified, the UM33A does not conform to the safety standards (UL and CSA) and CE marking.
(Products with /CT option are not intended for countries which require CE marking.)
2: /NS option does not conform to the Safety and EMC Standards.
(Products with /NS option are not intended for countries which require CE marking.)

■ Accessories (sold separately)

The following is an accessory sold separately.
- Terminal Cover: Model UTAP002
- Brackets
  Part number: L4502TP (2 pcs for left and right sides)
- External Precision Resistor

Model	Suffix code	Description
X010	See the General Specifications (GS X010-01EN)	Resistance Module

■ Customized Product

For customized product, the product is identified by the option code of /S# (where '#' is a number). Contact your supplier in case your instrument has option /S#, and you are not in the possession of FX1-[Model code]-S# or IM [Model code]-S# (where [Model code] means, for example, UT55A).

■ Protection of Environment

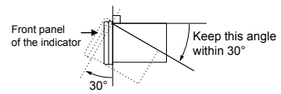
Waste Electrical and Electronic Equipment (WEEE)

(Only valid in the EEA for EU WEEE Directive and in the UK for UK WEEE Regulation)
This product complies with the WEEE marking requirement. This marking indicates that you must not discard this electrical/electronic product in domestic household waste. When disposing of products in the EEA or UK, contact your local Yokogawa office in the EEA or UK respectively.

3. How to Install

■ Installation Location

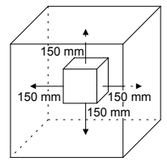
The instrument should be installed in indoor locations meeting the following conditions:
- **Instrumented panel**
  This instrument is designed to be mounted in an instrumented panel. Mount the instrument in a location where its terminals will not inadvertently be touched.
- **Well ventilated locations**
  Mount the instrument in well ventilated locations to prevent the instrument's internal temperature from rising.
  However, make sure that the terminal portions are not exposed to wind. Exposure to wind may cause the temperature sensor accuracy to deteriorate. To mount multiple indicators, 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 instrument.
- **Locations with substantial amounts of oily fumes, steam, moisture, dust, or corrosive gases**
  The presence of oily fumes, steam, moisture, 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**

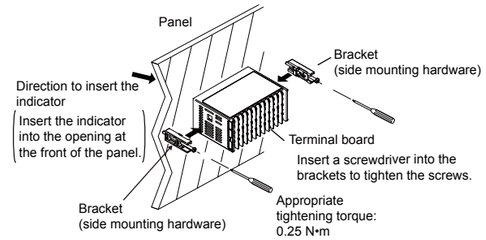


WARNING

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

■ Mounting the Instrument Main Unit

Provide an instrumented panel steel sheet of 1 to 10 mm thickness.
After opening the mounting hole on the panel, follow the procedures below to install the indicator:
1) Insert the indicator into the opening from the front of the panel so that the terminal board on the rear is at the far side.
2) Set the brackets in place on the right and left of the indicator as shown in the figure below, then tighten the screws of the brackets. Take care not to overtighten them.



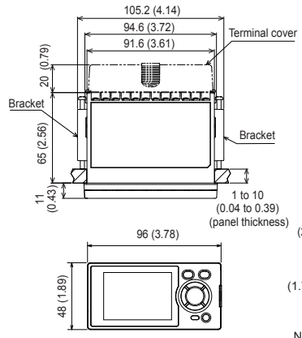
CAUTION

- **Tighten the screws with appropriate tightening torque within 0.25 N•m. Otherwise it may cause the case deformation or the bracket damage.**
- **Make sure that foreign materials do not enter the inside of the instrument through the case's slit holes.**

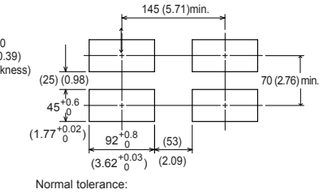
■ External Dimensions and Panel Cutout Dimensions

UM33A

Unit: mm (approx. inch)



• General mounting

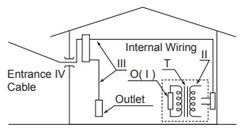


Normal tolerance:
±(value of JIS B 0401-1998 tolerance class IT18)/2

4. Hardware Specifications

WARNING

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



Category	IEC/EN/CSA/UL 61010-1	EN 61010-2-030	Remarks
No.1	Measurement Category I	O (Other)	For measurements performed on circuits not directly connected to MAINS.
No.2	Measurement Category II	Measurement Category II	For measurements performed on circuits directly connected to the low-voltage installation.
No.3	Measurement Category III	Measurement Category III	For measurements performed in the building installation.
No.4	Measurement Category IV	Measurement Category IV	For measurements performed at the source of the low-voltage installation.

■ Retransmission Output Specifications

- Current output: 4 to 20 mA DC (for process output), 3.5 mA or less 22 mA or more (error indication)
  Load resistance of 600 Ω or less
- Current output accuracy: ±0.1% of span
  The accuracy is that in the standard operating conditions: 23±2°C, 55±10%RH, and power frequency at 50/60 Hz.

YOKOGAWA

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■ 3 additional DO (a-contact relay) Specifications

- Contact type and number of outputs: 1a, 3 points (common is independent)
- Contact rating: 240 V AC, 1A or 30 V DC, 1 A (resistance load)
- Use: Alarm output

Note: The alarm output should always be used with a load of 1 mA or more.

■ Safety and EMC Standards

Note: /NS option does not conform to the Safety and EMC Standards.

- Safety:
  Compliant with IEC/EN 61010-1 (CE), IEC/EN 61010-2-201 (CE), IEC/EN 61010-2-030 (CE), approved by CAN/CSA C22.2 No. 61010-1 (CSA), approved by UL 61010-1.
  Installation category: II
  Pollution degree: 2
  Measurement category: I (CAT I) (UL, CSA), O (Other) (CE)
  Rated measurement input voltage: Max. 10 V DC
  Rated transient overvoltage: 1500 V (*)
  * This is a reference safety standard value for measurement category I of CSA/UL 61010-1, and for measurement category O of IEC/EN 61010-2-030. This value is not necessarily a guarantee of instrument performance.
- EMC standards:
  Compliant with CE marking
  EN 61326-1 Class A, Table 2,
  EN 61326-2-3
  * The instrument continues to operate at a measurement accuracy of within ±20% of the range during testing.
  EN 55011 Class A, Group 1
  EN 61000-3-2 Class A
  EN 61000-3-3
  EMC Regulatory Arrangement in Australia and New Zealand (RCM)
  EN 55011 Class A, Group 1 compliant
  KC marking
  Electromagnetic wave interference prevention standard, electromagnetic wave protection standard compliance

■ Environment Standard

EU RoHS directive: EN IEC 63000

■ Construction, Installation, and Wiring

- Dust-proof and drip-proof: IP66 (for front panel)
- Material: Polycarbonate (Flame retardancy: UL94V-0)
- Case color: White (Light gray) or Black (Light charcoal gray)
- Weight: 0.5 kg or less
- External dimensions (mm): 96 (W) × 48 (H) × 65 (depth from the panel face)
  (Depth except the projection on the rear panel)
- Installation: Direct panel mounting; mounting bracket, one each for right and left mounting
- Panel cutout dimensions (mm): $92^{+0.8/0}$ (W) × $45^{+0.6/0}$ (H)
- Mounting attitude: Up to 30 degrees above the horizontal. No downward titling allowed.
- Wiring: M3 screw terminal with square washer (for signal wiring and power wiring)

■ Power Supply Specifications and Isolation

- Power supply:
  Rated voltage: 100-240 V AC (+10%/-15%), 50/60 Hz
  24 V AC/DC (+10%/-15%) (for /DC option)
- Power consumption: 15 VA (DC: 7 VA, AC: 11 VA if /DC option is specified)
- Data backup: Nonvolatile memory
- Power holdup time: 20 ms (for 100 V AC drive)
- Withstanding voltage
  Between primary terminals and secondary terminals: 2300 V AC for 1 minute (UL, CSA)
  Between primary terminals and secondary terminals: 3000 V AC for 1 minute (CE)
  Between primary terminals: 1500 V AC for 1 minute
  Between secondary terminals: 500 V AC for 1 minute
  (Primary terminals: Power* and relay output terminals; Secondary terminals: Analog I/O signal terminals, contact input terminals, communication terminals and functional grounding terminals.)
  *: Power terminals for 24V AC/DC models are the secondary terminals.
- Insulation resistance: Between power supply terminals and a grounding terminal 20 MΩ or more at 500 V DC
- Isolation specifications

Retransmission output terminals	Internal circuits	Power supply
Alarm-1 relay (contact point a) output terminals		
Alarm-2 relay (contact point a) output terminals		
Alarm-3 relay (contact point a) output terminals		
SENCOM smart adapter Interface terminals		

The circuits divided by lines are insulated mutually.

■ Environmental Conditions

Normal Operating Conditions

- Ambient temperature: -10 to 50ºC
- Ambient humidity: 20 to 90% RH (no condensation allowed)
- Magnetic field: 400 A/m or less
- Continuous vibration at 5 to 9 Hz: Half amplitude of 1.5 mm or less, 1oct/min for 90 minutes each in the three axis directions
  Continuous vibration at 9 to 150 Hz: 4.9 m/s^2 or less, 1oct/min for 90 minutes each in the three axis directions
- Short-period vibration: 14.7 m/s^2, 15 seconds or less
- Shock: 98 m/s^2 or less, 11 ms
- Altitude: 2000 m or less above sea level
- Warm-up time: 30 minutes or more after the power is turned on
- Startup time: Within 20 seconds
  *: The LCD (a liquid crystal display) is used for a display portion of this product. The LCD has a characteristic that the display action becomes late at the low temperature.

Transportation and Storage Conditions

- Temperature: -25 to 70ºC
- Temperature change rate: 20ºC/h or less
- Humidity: 5 to 95% RH (no condensation allowed)

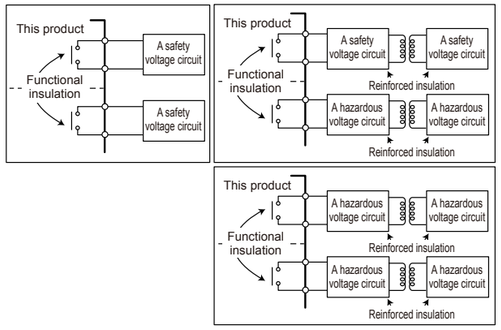
Effects of Operating Conditions

- Effect of ambient temperature:
  Analog output: ±0.02% of F.S./ºC or less
- Effect of power supply voltage fluctuation
  Analog output: ±0.05% of F.S. or less
  (Each within rated voltage range)

5. How to Connect Wires

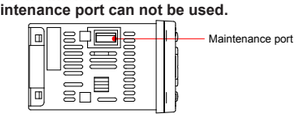
WARNING

- **Wiring work must be carried out by a person with basic electrical knowledge and practical experience.**
- **Be sure to turn OFF the power supply to the indicator before wiring to avoid an electric shock. Use a tester or similar device to ensure that no power is being supplied to a cable to be connected.**
- **For the wiring cable, the temperature rating is 75 °C or more.**
- **As a safety measure, always install a circuit breaker (an IEC 60947-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.**
- **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.**
- **Wiring should be installed to conform to NEC (National Electrical Code: ANSI/NFPA-70) or the wiring construction standards in countries or regions where wiring will be installed.**
- **Since the insulation provided to each relay output terminal is Functional insulation, provide Reinforced insulation to the external of the device as necessary. (Refer to the drawing below.)**

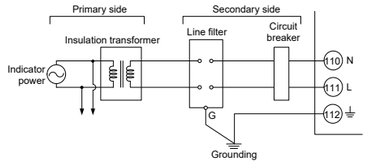


CAUTION

- **Provide electricity from a single-phase power supply. If the power is noisy, install an isolation transformer on the primary side, and use a line filter on the secondary side. When measures against noise are taken, do not install the primary and secondary power cables close to each other.**
- **If there is a risk of external lightning surges, use a lightning arrester etc.**
- **Since the alarm output relay has a life span (resistance load of 100,000 times), use the auxiliary relay to perform ON/OFF control.**
- **The use of inductance (L) loads such as auxiliary relays, motors and solenoid valves causes malfunction or relay failure; always insert a CR filter for use with alternating current or a diode for use with direct current, as a spark-removal surge suppression circuit, into the line in parallel with the load.**
- **After completing the wiring, the terminal cover is recommended to use for the instrument.**
- **The maintenance port can not be used.**



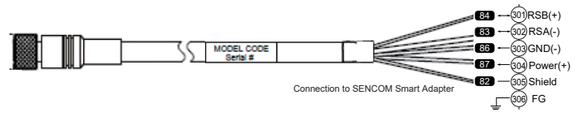
Power Supply Wiring



CAUTION

- **When connecting two or more crimp-on terminal lugs to the single terminal block, bend the crimp-on terminal lugs before tightening the screw.**
- **Note that the wiring of two or more crimp-on terminal lugs to the single high-voltage terminal of the power supply does not comply with the safety standard.**

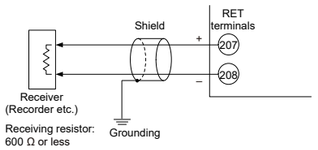
SENCOM Smart Adapter Interface Wiring



Note

Do not connect an external termination resistor. FG is interconnected with Shield. FG must be connected to a low grounding resistance to reduce EMC and common-mode noise. The ground of the power supply can be used for this purpose.

Retransmission Output Wiring



● Recommended Crimp-on Terminal Lugs

Recommended tightening torque: 0.6 N·m
Applicable wire size: Power supply wiring 1.25 mm^2 or more

Applicable terminal lug	Applicable wire size mm^2 (AWG#)	(φ d)	(A)	(F)
M3	0.25 to 1.65 (22 to 16)	3.3	5.5	4.2

Note

Communication wires of cross-sectional area less than or equal to 0.34 mm^2 may not be secured firmly to the terminals. Check that the wire is firmly connected to the terminal by folding the conductor of the wire connected to the crimp-on lug.
Recommended length of the stripped wire: 7 mm

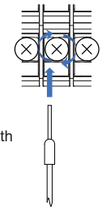
● Cable Specifications and Recommended Cables

Purpose	Name and Manufacturer
Power supply/Realy contact output	600 V Grade heat-resistant PVC insulated wires, JIS C 3317(HIV), 0.9 to 2.0 mm^2
Other signals	Shielded wires
SENCOM Smart Adapter Interface	Shielded wires WU11 SENCOM cable, Yokogawa Electric Corporation

Recommended tightening torque: 0.5 to 0.6 N·m

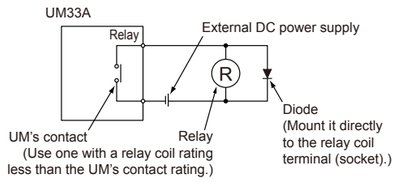
Connecting to the SENCOM Smart Adapter Interface

As shown in the following figure, insert the bar terminal of the SENCOM cable (WU11) to the left side of the screw shaft, and tighten the screw.

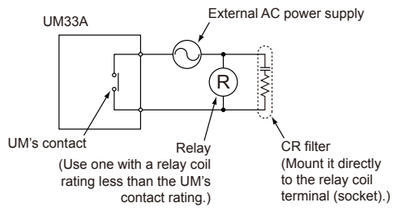


The WU11 cable is available length up to a maximum of 100 m.

DC Relay Wiring



AC Relay Wiring

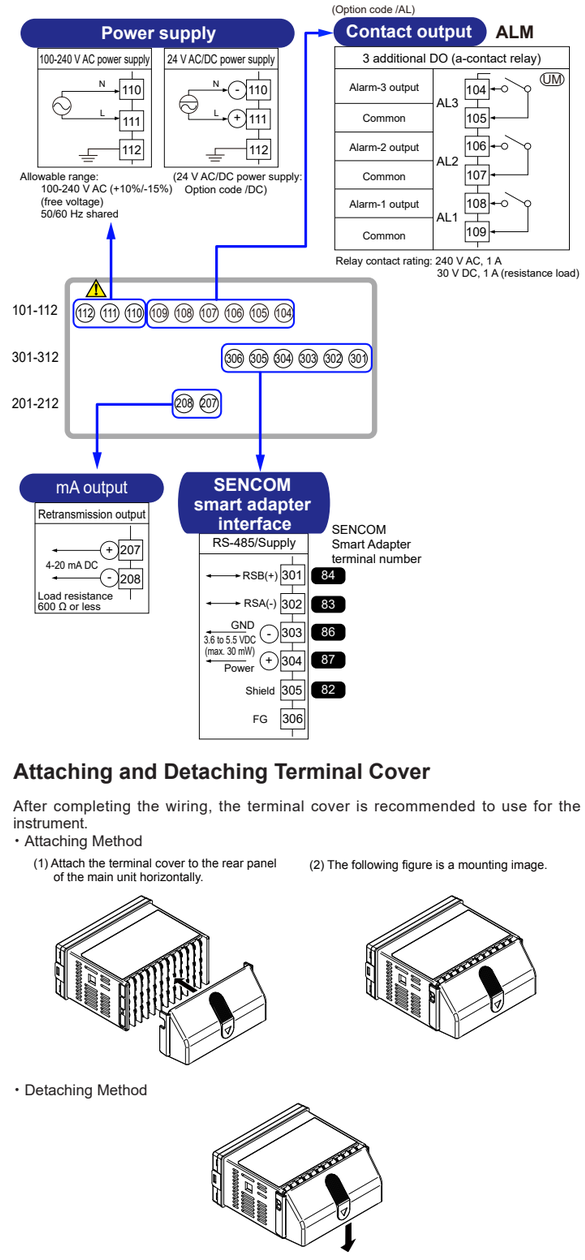


6. Terminal Wiring Diagrams

CAUTION

- **Do not use an unassigned terminal as the relay terminal.**
- **Do not use a 100-240 V AC power supply for the 24 V AC/DC model; otherwise, the instrument will malfunction.**

■ UM33A



Attaching and Detaching Terminal Cover

After completing the wiring, the terminal cover is recommended to use for the instrument.

・Attaching Method

(1) Attach the terminal cover to the rear panel of the main unit horizontally.

(2) The following figure is a mounting image.

・Detaching Method

Operation Guide

UM33A-S
Digital Indicator with Alarms
(SENCOM HMI Type) Operation Guide

UTAdvanced

Initial Settings

YOKOGAWA
Yokogawa Electric Corporation

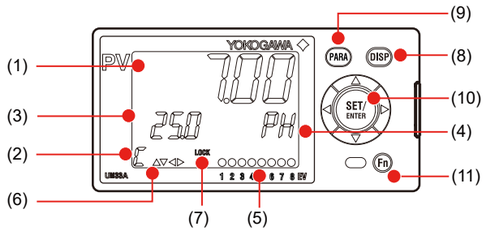
This operation guide describes basic settings and operations of the UM33A-S.
The scrolling guide is displayed on PV display in the Calibration Display.

The latest user's manuals can be downloaded or viewed at the following URL.

https://www.yokogawa.com/ns/ut/im/

Contents

1. Names and Functions of Display Parts



No. in figure	Name	Description
(1)	PV display (white or red)	Displays PV. Displays an error message if an error occurs. Displays the scrolling guide in the Calibration Display.
(2)	Unit (temperature) display (green)	Displays a unit.
(3)	Temperature display (orange)	Displays a temperature value.
(4)	Unit (PV) display (orange)	Displays a unit of PV. (Unit: pH, nS/cm, µS/cm, mS/cm, or S/cm) Displays an code if an error or a warning occurs. Displays a parameter setpoint and menu symbol when parameter settings.
(5)	Event indicator (orange)	Lights when an warning occurs. You can show or hide this indicator with a parameter.
(6)	Key navigation indicator (green)	Lit or blinks when the Up/Down or Left/Right arrow key operation is possible.
(7)	Hold display (red)	Pressing Fn turns on the LOCK indicator and the current output is held.

No. in figure	Name	Description
(8)	DISP key	Used to switch the Operation Displays. Press the key in the Menu Display or Parameter Setting Display to return to the Operation Display.
(9)	PARA key	Hold down the key and the Left arrow key simultaneously for 3 seconds to move to the Setup Parameter Setting Display. Press the key in the Parameter Setting Display to return to the Menu Display. Press the key once to cancel the parameter setting (setpoint is blinking).
(10)	SET/ENTER key Up/Down/Left/Right arrow keys	SET/ENTER key Press the key in the Menu Display to move to the Parameter Setting Display of the Menu. Press the key in the Parameter Setting Display to transfer to the parameter setting mode (setpoint is blinking), and the parameter can be changed. Press the key during parameter setting mode to register the setpoint. Up/Down/Left/Right arrow keys Press the Left/Right arrow keys in the Menu Display to switch the Displays. Press the Up/Down arrow keys in the Parameter Setting Display to switch the Displays. Press the Up/Down arrow keys during parameter setting mode (setpoint is blinking) to change a setpoint. Press the Left/Right arrow keys during parameter setting mode (setpoint is blinking) to move between digits according to the parameter.
(11)	Fn (mA hold key)	Fn key. Press this key to apply and release the hold operation.

2. Calibrating the pH Sensor

The UM33A-S checks whether a SENCOM sensor is connected as well as other status of the sensor. Calibration is not possible if an error is occurring.

CAUTION

Do not remove the sensor during the calibration procedure.

Before making pH measurements, be sure to calibrate the pH meter with a standard buffer.

CAUTION

When calibrating the pH meter with a standard buffer, note the following points.

1. **Before calibration, check that the sensor is adequately clean and that the electrodes work appropriately. Rise the electrodes with distilled water to prevent the standard buffer from being contaminated.**
2. **Use fresh standard buffer at all times to avoid errors caused by contamination and alteration of the standard buffer. Standard buffers have expiration dates.**
   Pay attention to the expiration date particularly for alkaline standard buffers, which absorbs CO2 from the air.
3. **We recommend the NIST/DIN 19266 standard buffer, which features excellent precision and buffer capacity. It is possible to use prepared standard buffers sold on the market (e.g., 7.00, 9.00, 10.00 pH), but they sometimes do not come with a temperature characteristics table, and their stability is inferior to the NIST (JIS) standard buffer.**

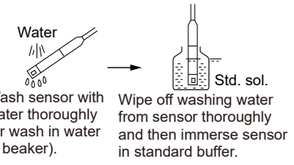
Before calibration, be sure to thoroughly soak the electrodes to clean them, and replenish KCl compliant with the electrodes if necessary. For details, see the user's manual for the sensor.

The calibration procedure is provided below.

1. 

Show the Operation Display.
- Wash sensor with water completely.
- Wipe off washing water from sensor thoroughly and then immerse sensor in standard buffer.

Press the PARA key and Left arrow key simultaneously.



2. 

The setup parameter menu SA11 is displayed.

Press the Right arrow key twice.

3. 

The setup parameter CALB is displayed.

Press the SET/ENTER key.

4. 

The setup parameter STRT (Start calibration) is displayed.

Press the SET/ENTER key.

5. 

NO blinks.

Press the Up arrow key.

6. 

YES blinks.

Press the SET/ENTER key.

7. 

When the parameter CAL.H or MAN.H is ON, LOCK lights and the current output is held.

To cancel calibration, press PARA.

To start calibration, press SET/ENTER.

8. 

CHK1 blinks.

If a calibration error occurs, END appears.

9. 

When the calibration of the first point is complete, CHK1 becomes solid.

Press the SET/ENTER key.

10. 

For a single-point calibration, simply press PARA.

In the case of two-point calibration, the second calibration is started. Remove the sensor from the first standard buffer and wash sensor with water thoroughly.
In addition, wipe off washing water from sensor thoroughly and then immerse sensor in second standard buffer.

To start calibration, press SET/ENTER.

11. 

CHK2 blinks.

If a calibration error occurs, END appears.

12. 

When the calibration of the second point is complete, CHK2 becomes solid.

13. 

When all calibration is complete, END becomes solid.

Press the SET/ENTER key.

14. 

Press the Down arrow key.

15. 

The parameter AP (zero) is displayed.

Press the Down arrow key.

16. 

The parameter SL (slope) is displayed.

Press the Down arrow key.

17. 

Press the DISP key to return to the Operation Display.

2. Calibrating the SC Sensor

The UM33A-S checks whether a SENCOM sensor is connected as well as other status of the sensor. Calibration is not possible if an error is occurring.

CAUTION

Do not remove the sensor during the calibration procedure.

The cell constant of a conductivity meter does not change during operation, as long as it remains undamaged, and clean. Therefore, it is vital that in any calibration check, the first step should be to clean the sensor, or at least to check its cleanliness. After cleaning, ensure that the sensor is
carefully rinsed in distilled water to remove all traces of the cleaning medium.
The cell constant is indicated on the nameplate or cable label of the SC sensor.

The calibration procedure is provided below.

1. 

Show the Operation Display.
- Wash sensor with water completely.
- Wipe off washing water from sensor thoroughly and then immerse sensor in standard buffer.

Press the PARA key and Left arrow key simultaneously.

2. 

The setup parameter menu SA11 is displayed.

Press the Right arrow key twice.

3. 

The setup parameter CALB is displayed.

Press the SET/ENTER key.

4. 

The setup parameter STRT (Start calibration) is displayed.

Press the SET/ENTER key.

5. 

NO blinks.

Press the Up arrow key.

6. 

YES blinks.

Press the SET/ENTER key.

When the parameter CAL.H or MAN.H is ON, LOCK lights and the current output is held.

7. 

To cancel calibration, press PARA.

To start calibration, press SET/ENTER.

8. 

CHK1 blinks.

If a calibration error occurs, END appears.

9. 

When the calibration is complete, CHK1 becomes solid.

Press the SET/ENTER key.

10. 

When a calibration error occurrd, error message is displayed.

Press the SET/ENTER key.

Calibration Error Message
CAL END DUE TO EXCEEDING CELL CONSTANT LIMITS

11. 

Press the Down arrow key.

12. 

The parameter CC is displayed.

Press the Down arrow key.

13. 

Press the DISP key to return to the Operation Display.

Operation Guide

UM33A-S
Digital Indicator with Alarms
(SENCOM HMI Type) Operation Guide

Parameters

YOKOGAWA
Yokogawa Electric Corporation

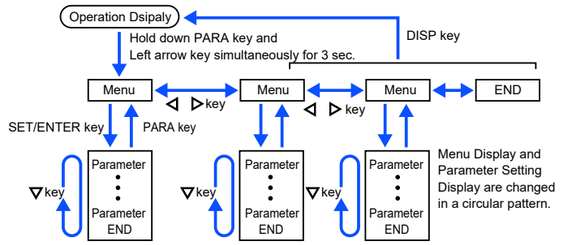
This operation guide describes the functions of parameters briefly. The parameter symbols listed are in the order shown on the display in each group of menu symbols. In addition, each parameter table has a “User Setting” column, where you can record your setpoints when setting them in the indicator.

The latest user's manuals can be downloaded or viewed at the following URL.

https://www.yokogawa.com/ns/ut/im/

Setup Parameters

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



Operation for Setting

- To select the parameter setting displayed as the initial value, press the Down arrow key to move to the next parameter.
- To change and set the parameter setting, press the SET/ENTER key to start the set-point blinking. The blinking state allows you to make changes (setting mode). Use the Up/Down/Left/Right arrow keys to change the setpoint. Press the SET/ENTER key to register the setting.

<Note>

- You can protect the instrument’s setup parameters using a password (so that the set-up parameter setting screen can no longer be displayed). If you set a password, take a note of it. To set a password, use the PASS parameter in the system setup menu.

■ Function Setting Parameter

Menu symbol: SA11 (SA11)

Parameter symbol	Name of Parameter	Setting Range	Initial value	User setting
CNt (CNT)	the settings of the Sensor setup	PH: pH sensor SC: Conductivity (SC) sensor	PH	

■ Calibration Function Selection Parameters (pH Sensor)

Menu symbol: CALS (CALS)

Parameter symbol	Name of Parameter	Setting Range	Initial value	User setting
tYPE (TYPE)	Calibration type	AUTO: One point or two points calibration (the zero (asymmetry)) and slope (sensitivity) will be calibrated.	AUTO	
bUF.S (BUF.S)	Buffer settings	When the TYPE parameter is set to AUTO, you can set the buffer. 1: NIST/DIN, 2: DIN, 3: US, 4: User-defined	1	

■ Calibration Function Selection Parameters (SC Sensor)

Menu symbol: CALS (CALS)

Parameter symbol	Name of Parameter	Setting Range	Initial value	User setting
tYPE (TYPE)	Calibration type	C.C.: Cell constant	C.C.	
bUF.S (BUF.S)	Buffer settings	You can set the buffer. 1: 1.000 mol/L KCl, 2: 0.100 mol/L KCl, 3: 0.010 mol/L KCl, 4: 0.005 mol/L KCl, 5: 0.002 mol/L KCl, 6: 0.001 mol/L KCl	1	

■ Calibration parameter (pH sensor)

You can easily perform calibration using the standard buffer table available in the sensor. Calibration is not possible if an error is occurring.
Note: Do not remove the sensor during the calibration procedure.

Menu symbol: CALb (CALB)

Parameter symbol	Name of Parameter	Setting Range	Initial value	User setting
StRt (STRT)	Start calibration	NO: Standby or stopped YES: Calibration running	NO	
CAL 1 (CAL1)	Excut calibration 1	* Insert the sensor in the standard buffer for calibration.	-	
CHK 1 (CHK1)	(Status)	The pH value being calibrated is displayed.	-	
CAL2 (CAL2)	Excute calibration 2	* Insert the sensor in the standard buffer for calibration.	-	
CHK2 (CHK2)	(Status)	The pH value being calibrated is displayed.	-	
End (END)	(Status)	The pH value is displayed.	-	
AP (AP)	Zero (asymmetry)	The sensor zero (asymmetry potential) is displayed.	-	
SL (SL)	Slope (sensitivity)	The sensor slope (sensitivity) is displayed.	-	

■ Calibration parameter (SC sensor)

You can perform calibration. Calibration is not possible if an error is occurring.
Note: Do not remove the sensor during the calibration procedure.

Menu symbol: CALb (CALB)

Parameter symbol	Name of Parameter	Setting Range	Initial value	User setting
StRt (STRT)	Start calibration	NO: Standby or stopped YES: Calibration running	OFF	
CAL 1 (CAL1)	Excut calibration 1	Put sensor in CAL solution.	Nan	
CHK 1 (CHK1)	(Status)	SC value shown during calibration.	Nan	
End (END)	(Status)	The SC value is displayed.	Nan	
CC. (C.C.)	CC value	The C.C. value of SC sensor is displayed.	NaN	

■ Warning Setting Parameter (pH sensor)

The occurrence of errors can be indicated using numbers in the event display area.

Menu symbol: WARN (WARN)

Parameter symbol	Name of Parameter	Event Indication	Setting Range	Initial value	User setting
tMPH (TMP.H)	Temperature too high	1	ON : ON OFF : OFF Temperature: TMP.L turns on when the temperature falls below -40.0 °C (-40.0°F). TMP.H turns on when the temperature exceeds 260.0°C (500.0°F). pH: PH.L turns on when the pH falls below -2.00 pH. PH.H turns on when the pH exceeds 16.00pH.	ON	
tMPL (TMP.L)	Temperature too low	1		ON	
PHH (PH.H)	pH too high	2		ON	
PHL (PH.L)	pH too low	2		ON	
ORPH (ORP.H)	ORP too high	3		ON	
ORPL (ORP.L)	ORP too low	3		ON	
RHH (RH.H)	rH too high	4		ON	
RHL (RH.L)	rH too low	4		ON	
I M2H (IM2.H)	Impedance 2 too high	6		ON	
I M2L (IM2.L)	Impedance 2 too low	6		ON	
PHtC (PH.TC)	Measured value outside the matrix range	7		ON	
SAOL (SA.OL)	SA11 temperature too high	8		ON	

The ORP.H, ORP.L, RH.H, and RH.L parameters work, but ORP is not displayed.

■ Warning Setting Parameter (SC sensor)

The occurrence of errors can be indicated using numbers in the event display area.

Menu symbol: WARN (WARN)

Parameter symbol	Name of Parameter	Event Indication	Setting Range	Initial value	User setting
tMPH (TMP.H)	Temperature too high	1	ON : ON OFF : OFF	ON	
tMPL (TMP.L)	Temperature too low	1		ON	
SCH (SC.H)	SC too high	2		ON	
SCL (SC.L)	SC too low	2		ON	
SCt 1 (SC.T1)	SC temp comp1 warning	3		ON	
SCt2 (SC.T2)	SC temp comp2 warning	3		ON	
USPL (USP.L)	USP exceed limit	4		ON	
USPM (USP.M)	USP exceed margin	4		ON	
SCU (SC.U)	SC measurement unstable	5	ON : ON OFF : OFF	ON	
POL (POL)	Polarization warning	5		ON	
Mtx.1 (MTX.1)	Matrix1 configuration worning	6		ON	
Mtx2 (MTX.2)	Matrix2 configuration warning	6		ON	
SCCt (SC.CT)	SCCT configuration warning	7		ON	
SAOL (SA.OL)	SA11 temperature too high	8		ON	

■ Output Setting Parameter

The measured value received from the sensor can be output using current according to the settings. It is a linear output with 20 mADC mapped to 100% (LIN.H) and 4 mADC mapped to 0% (LIN.L).

Menu symbol: OUt (OUT)

Parameter symbol	Name of Parameter	Setting Range	Initial value	User setting
LINU (LIN.U)	Unit for LIN.H and LIN.L	S/cm, mS/cm, uS/cm, nS/cm	uS/cm	
LNdP (LN.DP)	Decimal point position for LIN.H and LIN.L	0: No decimal place 1: One decimal place 2: Two decimal places 3: Three decimal places	1	
LINH (LIN.H)	100 % value	pH sensor: pH indication: -2.00 to 16.00 (pH) mV indication: -750 to 750 (mV) SC sensor: 0 to 30000(S/cm)	14.00 (pH) 375 (mV) 500.0 (uS/cm) (Note 1)	
LINL (LIN.L)	0 % value		0.00 (pH) -375 (mV) 0.0 (uS/cm) (Note 1)	
bURN (BURN)	Burn	OFF: The measured value is output even when a sensor error occurs. When a communication error occurs, the measured value immediately before the error occurred is output. LOW: When a sensor or communication error occurs, 3.5 mA or less is output. HIGH: When a sensor or communication error occurs, 22.0 mA or more is output.	OFF	

Note1: It depends on the settings of LIN.U and LN.DP.
e.g. When LIN.U = mS/cm and LN.DP = 3, LIN.H is 3.000 mS/cm and LIN.L is 0.000 mS/cm.
When LIN.U = uS/cm and LN.DP = 2, LIN.H is 3.00 mS/cm and LIN.L is 0.00 mS/cm.

■ Configure Hold Parameter

Menu symbol: HOLd (HOLD)

Parameter symbol	Name of Parameter	Setting Range	Initial value	User setting
HLdS (HLD.S)	Hold type	LAST: The preset value is a value measured just before hold condition. FIX: The preset value is a value set in the “Fixed value mA”. When the “Fixed” is selected, set a mA value in the “Fixed value mA”. (3.6 to 20.5 mA)	LAST	
FIx (FIX)	Hold preset value	You can set the hold preset value when the HLD.S parameter is set to FIX. 3.6 to 20.5 (mA) (Note 1)	3.6 (mA)	
CALH (CAL.H)	Hold during calibration	ON: Enables auto hold. OFF: Disables the function (Note 2)	ON	
MANH (MAN.H)	Manual hold	ON: Enables manual hold using the Fn key. OFF: Disables manual hold using the Fn key. (Note 2, Note 3)	OFF	

Note 1: If the FIX parameter is set to 3.6 (mA), the preset value is limited to -2% (3.68 mA).
If the FIX parameter is set to 20.5 (mA), the preset value is limited to 103% (20.48 mA).
Note 2: If the CAL.H or MAN.H parameter is set to ON, the hold display (LOCK) lights when in hold mode.
Note 3: If the MAN.H parameter is set to ON, pressing Fn enables the manual hold. Pressing Fn again releases the manual hold.

■ Display Function Setting Parameter

You can set the various display functions of the instrument.

Menu symbol: diSP (DISP)

Parameter symbol	Name of Parameter	Setting Range	Initial value	User setting
tMPU (TMP.U)	Temperature unit	Displays the unit of temperature that the sensor is measuring. C: Celsius, F: Fahrenheit	C	
PHU (PH.U)	pH unit	Sets the unit of pH that the sensor is measuring. PH: pH, MV: mV	PH	
SPd (SPD)	Scroll speed	Sets the message scroll speed. (Slow) 1 to 8 (Quick)	4	
bRI (BRI)	Brightness	Sets the LCD brightness. (Dark) 3 to 5 (Bright)	3	
bPVW (B.PVW)	White brightness adjustment of PV display	Adjusts the white brightness of PV display. (Dark) 0 to 2 (Bright)	0	
bSP (B.SP)	Brightness adjustment of the temperature display and the unit (PV) display	Adjusts the brightness of the temperature display and the unit (PV) display. (Dark) 0 to 2 (Bright)	0	
bSts (B.STS)	Brightness adjustment of Status indicator	Adjusts the brightness of Status indicator. (Dark) 0 to 2 (Bright)	0	
dCYC (D.CYC)	Display update cycle	1: 100 ms, 2: 200 ms, 3: 500 ms, 4: 1 s, 5: 2 s	2	

*: The LCD (a liquid crystal display) is used for a display portion of this product. The LCD has a characteristic that the display action becomes late at the low temperature. If this happens, increase the display update interval.

■ AL1-AL3 Function Registration Parameter

Menu symbol: ALM (ALM)

Parameter symbol	Name of Parameter	Setting Range	Initial value	User setting
AL 1t (AL1.T)	AL1 Type	OFF 1: Fail, 2: Warning, 3: Fail or Warning, 4: Temperature high limit or low limit, 5: pH high limit, 6: pH low limit 7: Conductivity value high limit 8: Conductivity value low limit	OFF	
AL 1d (AL1.D)	AL1 energized/ de-energized	0: Energized 1: De-energized	0	
AL2t (AL2.T)	AL2 Type	Same as AL1.T.	OFF	
AL2d (AL2.D)	AL2 energized/ de-energized	Same as AL1.D.	0	
AL3t (AL3.T)	AL3 Type	Same as AL1.T.	OFF	
AL3d (AL3.D)	AL3 energized/ de-energized	Same as AL1.D.	0	
AL.S (AL.S)	Alarm output status	AL1-AL3 output status	-	

Note1: The warning setting affects the alarm (AL type = 2 to 8). When the warning setting parameter is OFF, the alarm is disable. See the table below for the relationship between warning setting and AL type.

The relationship between warning setting and AL type.

AL Type	Affected warning setting
2:Warning	All of pH warning setting. (Sensor type = PH) All of SC warning setting. (Sensor type = SC)
3:Fail or Warning	All of pH warning setting. (Sensor type = PH) All of SC warning setting. (Sensor type = SC)
4:Temperature high limit or low limit	TMP.H and TMP.L of PH Warning Setting Menu. (Sensor type = PH) TMP.H and TMP.L of SC Warning Setting Menu. (Sensor type = SC)
5:pH high limit	PH.H of PH Warning Setting Menu. (Sensor type = PH)
6:pH low limit	PH.L of PH Warning Setting Menu. (Sensor type = PH)
7:Conductivity value high limit	SC.H of SC Warning Setting Menu. (Sensor type = SC)
8:Conductivity value low limit	SC.L of SC Warning Setting Menu. (Sensor type = SC)

■ System Setting Parameter

You can prohibit switching to the setup parameter setting screen.

Menu symbol: SYS (SYS)

Parameter symbol	Name of Parameter	Setting Range	Initial value	User setting
PASS (PASS)	Password setting	0 (No password) to 65535 Once a password is set, you can no longer choose not to set a password.	0	

■ Initialization Parameter

You can initialize the setup parameter settings to their factory default values.

Menu symbol: INIt (INIT)

Parameter symbol	Name of Parameter	Setting Range	Initial value	User setting
F.dEF (F.DEF)	Initialization to factory default value	-12345: Initialization, automatically returned to “0” after initialization.	0	

■ Error and Version Confirmation Parameter

You can check the various information of the instrument and sensor.

Menu symbol: VER (VER)

Parameter symbol	Name of Parameter	Status record
PAER (PA.ER)	Parameter error status 0010: Setup parameter error 0100: FRM error 0110: Setup parameter and FRM error	
MCU (MCU)	MCU version	
dCU (DCU)	DCU version	
PARA (PARA)	Parameter version	
HVER (H.VER)	Product version	
SER 1 (SER1)	Serial number 1	
SER2 (SER2)	Serial number 2	
SSN 1 (SSN1)	SENCOM Serial number 1	
SSN2 (SSN2)	SENCOM Serial number 2	
tYP (TYP)	Type of SENCOM Smart Adaper	

Operation Guide

UM33A-S
Digital Indicator with Alarms
(SENCOM HMI Type) Operation Guide

Operations

YOKOGAWA
Yokogawa Electric Corporation

This operation guide describes key entries for operating the UM33A-S.
If you cannot remember how to carry out an operation during setting, press the DISP key once. This brings you to the display (Operation Display) that appears at power-on.

The latest user's manuals can be downloaded or viewed at the following URL.

https://www.yokogawa.com/ns/ut/im/

Contents

1. Operation Display

The UM33A-S operation display consists of three displays: PV display, warning display, and error display.

PV Display

When an error occurs, the sensor error display appears.
When the error is cleared, the PV display appears.

DISP

Warning Display

If there is no warning, WARN NONE is displayed.

(Example when the upper alarm value is exceed)
For the warning types, see “Warning Codes.”

DISP

Sensor Error Display

(Example of a non-volatile memory error)

For the error types, see “Sensor Error Codes.”

List of Warning Code

<In case of pH sensor>

Warning Code	Message	Event number
tMPH (TMP.H)	Temperature exceeding upper warning limit	1
tMPL (TMP.L)	Temperature exceeding lower warning limit	1
PHH (PH.H)	pH exceeding upper warning limit	2
PHL (PH.L)	pH exceeding lower warning limit	2
ORPH (ORP.H)	ORP exceeding upper warning limit	3
ORPL (ORP.L)	ORP exceeding lower warning limit	3
RHH (RH.H)	rH exceeding upper warning limit	4
RHL (RH.L)	rH exceeding lower warning limit	4
IM2H (IM2.H)	Impedance REF electrode exceeding upper warning limit	6
IM2L (IM2.L)	Impedance REF electrode exceeding lower warning limit	6
PHtC (PH.TC)	Measured value outside the matrix range	7
SAOL (SA.OL)	SA11 internal temperature outside operating limits	8

<In case of Conductivity (SC) sensor>

Warning Code	Message	Event number
tMPH (TMP.H)	Temperature exceeding upper warning limit	1
tMPL (TMP.L)	Temperature exceeding lower warning limit	1
SCH (SC.H)	Conductivity exceeding upper warning limit	2
SCL (SC.L)	Conductivity exceeding lower warning limit	2
SCt 1 (SC.T1)	SC Temperature compensation 1 exceeding warning limits	3
SCt2 (SC.T2)	SC Temperature compensation 2 exceeding warning limits	3
USPL (USP.L)	United States Pharmacopeia exceeding limit	4
USPM (USP.M)	United States Pharmacopeia exceeding margin	4
SCU (SC.U)	Conductivity measurement unstable	5
POL (POL)	Polarization of sensor exceeding warning limit	5
Mtx.1 (MTX.1)	Matrix 1 not configured correctly	6
Mtx2 (MTX.2)	Matrix 2 not configured correctly	6
SCCt (SC.CT)	Conductivity Concentration Table not configured correctly	7
SAOL (SA.OL)	SA11 internal temperature outside operating limits	8

List of Sensor Error Code

<In case of PH sensor>

Error code	Message	Display precedence
NVM (NVM)	Non Volatile Memory ERROR	High
CRC 1 (CRC1)	CRC ERROR User Data	↑
CRC2 (CRC2)	CRC ERROR Factory Data	↑
SA11 (SA11)	SA11 Failure	↑
SENFA (SENFA)	Sensor Failure	↑
SENI d (SENID)	Sensor ID chip Failure	↑
tMPH (TMP.H)	Temperature exceeding high input limit	↑
tMPL (TMP.L)	Temperature exceeding low input limit	↑
PHH (PH.H)	pH exceeding high input limit	↑
PHL (PH.L)	pH exceeding low input limit	↑
ORP 1H (ORP1H)	ORP1 exceeding high input limit	↑
ORP 1L (ORP1L)	ORP1 exceeding low input limit	↑
ORP2H (ORP2H)	ORP2 exceeding high input limit	↑
ORP2L (ORP2L)	ORP2 exceeding low input limit	↑
SAOL (SA.OL)	SA11 exceeding design specification limits	Low

<In case of Conductivity (SC) sensor>

Error code	Message	Display precedence
NVM (NVM)	Non Volatile Memory ERROR	High
CRC 1 (CRC1)	CRC ERROR User Data	↑
CRC2 (CRC2)	CRC ERROR Factory Data	↑
SA11 (SA11)	SA11 Failure	↑
SENFA (SENFA)	Sensor Failure	↑
SENI d (SENID)	Sensor ID chip Failure	↑
tMPH (TMP.H)	Temperature exceeding high input limit	↑
tMPL (TMP.L)	Temperature exceeding low input limit	↑
SCH (SC.H)	Conductivity exceeding high input limit	↑
SCL (SC.L)	Conductivity exceeding low input limit	↑
SAOL (SA.OL)	SA11 exceeding design specification limits	Low

2. Hold Display Operation

The UM33A-S has a hold function that holds the current output at a known value (default value: the previous value). If you want to hold the output manually, perform the procedure below.

Hold Display

LOCK lights when in hold mode.

Hold mode is enabled when the CAL.H or MAN.H parameter is set to ON.

Manual hold display

Press Fn to hold the output (LOCK lights).
Press it again to release the hold (LOCK turns off).

Manual hold is enabled when the MAN.H parameter is set to ON.

3. Troubleshooting

■ Troubleshooting Flow

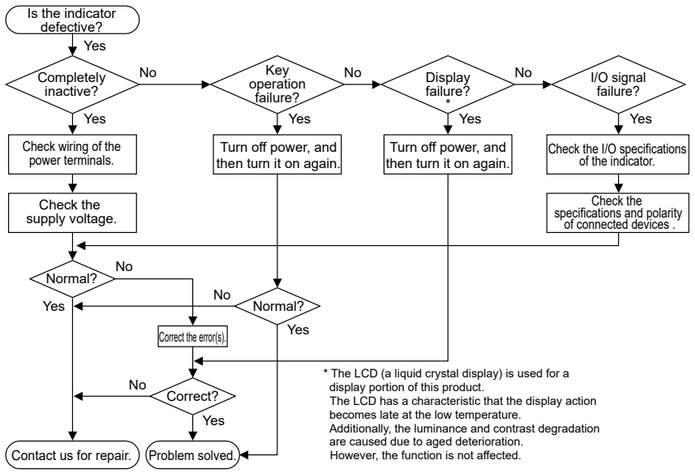
If the Operation Display does not appear after turning on the indicator's power, check the procedures in the following flowchart.
If a problem appears to be complicated, contact our sales representatives.

● Remedies if Power Failure Occurs during Operations

- **Instantaneous power failure within 20 ms.**
  A power failure is not detected. Normal operation continues.
- **Power failure for less than about 5 seconds, or for about 5 seconds or more.**
  Affects the "settings" and "operation status."

NOTE

Write down the settings of parameters for a repair request.



* The LCD (a liquid crystal display) is used for a display portion of this product.
The LCD has a characteristic that the display action becomes late at the low temperature.
Additionally, the luminance and contrast degradation are caused due to aged deterioration.
However, the function is not affected.

■ Errors at Power On

The errors shown below may occur in the fault diagnosis when the power is turned on.

PV display (Operation Display)	Setpoint display (Operation Display)	Parameter that displays error details	Error description	Cause and diagnosis	mA output	Alarm action	Remedy
Indication off	Indication off	—	Faulty MCU RAM / MCU ROM	MCU RAM / MCU ROM are failed.	0 % or less	Stopped	Faulty. Contact us for repair.
ERR	SYS - - - - -	—	System data error	System data is corrupted.	0 % or less	Stopped	Faulty. Contact us for repair.
	PAR 0010 (for setup parameter error only)	Setup parameter (PA. ER)	Setup parameter error	Setup parameter data is corrupted. Initialized to user default value.	Normal operation	Normal action (AL type = 1)	Check and reconfigure the initialized setting parameters. Error indication is erased when the power is turned on again.
Normal indication	Rightmost decimal point on Symbol display blinks.	Setup parameter (PA. ER)	Faulty FRAM	Data writing (storing) to FRAM is impossible.	Normal operation	Normal action (AL type = 1)	Faulty. Contact us for repair.
NO COMMUNICATION WITH SA11	ERR COMM	—	Sensor not connected or no communication response	The sensor is not connected, or an incompatible sensor is connected.	According to the BURN parameter value	Normal Action (AL type = 1)	Check the sensor type or the connection to the sensor.

■ Errors during Operation

The errors shown below may occur during operation.

PV display (Operation Display)	Setpoint display (Operation Display)	Parameter that displays error details	Error description	Cause and diagnosis	mA output	Alarm action	Remedy
Normal indication	Normal indication	Setup parameter (PA.ER)	Faulty FRAM	Writing (storing) data to FRAM is impossible.	0 % or less	Normal action (AL type = 1)	Faulty. Contact us for repair.
Undefined	Undefined	—	Faulty MCU / DCU (ROM / RAM error, corrupted)	MCU / DCU is corrupted.	0 % or less	Stopped	Faulty. Contact us for repair.
NO COMMUNICATION WITH SA11	ERR COMM	—	Sensor not connected or no communication response	The sensor is not connected, or an incompatible sensor is connected.	According to the BURN parameter value	Normal action (AL type = 1)	Check the sensor type or the connection to the sensor.

- Authorised Representative in the EEA and the Importer into the EU/EEA Market
  The Authorised Representative for this product in the EEA and the importer for this product into the EU/EEA market via Yokogawa sale channel is:
  Yokogawa Europe B.V.
  Euroweg 2, 3825 HD Amersfoort,The Netherlands
- Importer for This Product into the Great Britain Market
  In relation to UKCA marking, the importer for this product into the Great Britain market via the YOKOGAWA sales channel is :
  Yokogawa United Kingdom Limited
  Stuart Road Manor Park Runcorn, WA7 1TR, United Kingdom
- Printed Manuals

Model	Description
UM33A Digital Indicator with Alarms Operation Guide	IM 05P03D21-11EN
UM33A-S Digital Indicator with Alarms Operation Guide	IM 05P09D21-11EN
X010 External Precision Resistor	IM X010-01EN
Precautions on the Use of the UTAdvanced Series	IM 05P01A01-11EN

- Electronic Manuals
  You can download the latest manuals from the following website:
  URL: https://www.yokogawa.com/ns/ut/im/

Model	Description
UM33A Digital Indicator with Alarms Operation Guide	IM 05P03D21-11EN
UM33A Digital Indicator with Alarms User's Manual	IM 05P03D21-01EN
UM33A-S Digital Indicator with Alarms Operation Guide	IM 05P09D21-11EN
X010 External Precision Resistor	IM X010-01EN
Precautions on the Use of the UTAdvanced Series	IM 05P01A01-11EN

- General Specification

Model	Description
UM33A Digital Indicator with Alarms	GS 05P03D21-01EN
UM33A-S Digital Indicator with Alarms	GS 05P09D21-01EN
X010 External Precision Resistor	GS X010-01EN

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

■ QR Code

The product has a QR Code pasted for efficient plant maintenance work and asset information management. It enables confirming the specifications of purchased products and user's manuals.
For more details, please refer to the following URL.
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