General
Specifications

Chemical Cleaning
pH Measuring System

GS 12B7A1-E

■ General

Process pH measuring systems have played an important role in many fields including the chemical, food, metal, and paper pulp industries. They measure/ manage raw materials, control/monitor the reacting conditions in manufacturing processes, and determine the quality of products. They are used in a wide range of operations such as controlling the pH level in wastewater disposal and monitoring the pH level in rivers.

However, pH sensors in general are subject to aging due to their contamination and deterioration, and require periodic cleaning to maintain their performance. Our Chemical Cleaning pH measuring system solves this problem, while facilitating labor savings and eliminating dangerous operations at the job site.

Chemical Cleaning pH Measuring System incorporates a pH sensor with advanced diagnostic functions. This system features automatic chemical cleaning of the pH sensor as well as highly-reliable pH measurement; thus, it successfully meets an increasing need for accurate, reliable, and maintenance-free measurement.

■ Features

● Chemical Cleaning pH Measuring System cleans the pH sensor by immersing it in chemical solutions such as HCl, which air bubbling agitates. This process provides the remove of scaling (e.g., CaCO₃) as efficiently as manual cleaning.

● Chemical Cleaning pH measuring system diagnoses deterioration of electrodes and checks for a decline in a process liquid level.

● Since the sensor holder raises the pH sensor, the driving part does not come into contact with the liquid; thus, reliable operation is ensured for extended periods.

● Output signals are put on hold during cleaning.

■ System Configuration

<table>
<thead>
<tr>
<th>Chemical Cleaning pH Measuring System</th>
<th>pH/ORP Converter</th>
<th>2-wire Analyzer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Cleaning unit</td>
<td>PH8SM3-E</td>
<td>PH8SM3-G or PH8SM3-F</td>
</tr>
<tr>
<td>pH analyzer</td>
<td>PH450G</td>
<td>FLXA202 or FLXA21</td>
</tr>
<tr>
<td>Distributor</td>
<td></td>
<td>PH201G</td>
</tr>
<tr>
<td>pH sensor</td>
<td>PH8EFP-□-TT2 (Note)</td>
<td>PH8HS3</td>
</tr>
</tbody>
</table>

(Note) You can select WTB10 Terminal Box, if necessary.

You need to order each product above separately.

■ Chemical Cleaning Unit

● Standard Specifications

Model: PH8SM3
Cleaning Method: Automatic chemical cleaning air bubbling
Cleaning Intervals: 0.1 to 36.0 hours (to be set in analyzer)
Cleaning Duration: 0.1 to 10 min (factory setting: 4 min) (to be set in analyzer.)
Relaxation Time: 0.1 to 10 min (to be set in analyzer.) (factory setting: 0.5 min)
Bubbling (SV1: On) Time: 0 to 10 min (factory setting: Approx. 2 min)
Cylinder Failure Time: 0 to 1 min (factory setting: Approx. 0.5 min)

Structure: Free-standing rack for indoor installation (For the uv protection, when you install the unit outdoor, prepare tank cover and select Fluoropolymer (PTFE) tube.

Main Components: Chemical solution tank, control box, air-pressure regulator, and power supply unit (only for pH/Redox(ORP) Converter)

Chemicals Solution: Acid solution (e.g., hydrochloric acid or diluted sulfuric acid), or alkali solution.

Organic solvents are not allowed.

Note: Select appropriate solution for effective cleaning.

Material, Finish, and Color of Main Components: Control Box(K9729AN):
Material: Aluminum alloy casting
Colors: Deep sea moss green (Munsell 0.6GY3.1/2.0) and frosty white (Munsell 2.5Y8.4/1.2)
Finish: Baked polyurethane resin coating
Power Supply Unit (only for pH/ORP converter):
- Material: Carbon steel (body)
- Color: Deep sea moss green (Munsell 0.6GY3.1/2.0 or equivalent)
- Mounting Rack: Carbon steel
- Color: Deep sea moss green (Munsell 0.6GY3.1/2.0)
- Finish: Baked polyurethane resin coating

Chemical Solution Tank:
- (20 L tank containing 2 to 10% of diluted hydrochloric or sulfuric acid; approximately 100 ml is used for each cleaning. Effective capacity: 17 L)
- Material: Polyethylene resin (for solution tank), hard PVC resin (for internal tank)

Ambient Temperature: 0 to 45°C (Provide an anti-frost control, if necessary.)
- Power Supply: 100 V AC ± 10%, 50/60Hz ± 5%
- Power Consumption: Approx. 60 VA
- Air Supply: 300 to 950 kPa (3 to 9.5 kgf/cm²)
- Max. Air Consumption: Approx. 10 NL/m
- External Dimensions: 500 (W) x 600 (D) x 1630 (H)mm
- Weight: Approx. 50 kg (when the tank is empty.)
- Contact Capacity: 24 V DC, 1A
- Contact State: Normally open
- Specifications
- Model and Suffix Codes

● Model and Suffix Codes

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Option code</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH8SM3</td>
<td>-E</td>
<td>-</td>
<td>Operating Unit for Chemical</td>
</tr>
<tr>
<td></td>
<td>-F</td>
<td>-</td>
<td>Cleaning System</td>
</tr>
<tr>
<td></td>
<td>-G</td>
<td>-</td>
<td>pH/ORP converter (PH450G)</td>
</tr>
<tr>
<td>pH measuring</td>
<td>-</td>
<td>-</td>
<td>2-wire Analyzer (FLXA21)</td>
</tr>
<tr>
<td>system</td>
<td></td>
<td></td>
<td>2-wire Analyzer (FLXA202)</td>
</tr>
<tr>
<td>KCl reserve</td>
<td>-TT2</td>
<td>-</td>
<td>Medium-pressure reserve tank</td>
</tr>
<tr>
<td>tank</td>
<td></td>
<td></td>
<td>'2'</td>
</tr>
<tr>
<td>Pressure</td>
<td>-NN</td>
<td>-</td>
<td>None</td>
</tr>
<tr>
<td>regulator for</td>
<td>-PR</td>
<td>-</td>
<td>Attached to the stand</td>
</tr>
<tr>
<td>KCl tank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air connection</td>
<td>-JP</td>
<td>-NP</td>
<td>Rc1/4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/4 NPT female thread</td>
</tr>
<tr>
<td>Tubing for</td>
<td>-L10</td>
<td>-T10</td>
<td>Polyethylene (Connections:</td>
</tr>
<tr>
<td>cleaning</td>
<td></td>
<td></td>
<td>Polypropylene) Fluoropolymer</td>
</tr>
<tr>
<td>chemicals</td>
<td></td>
<td></td>
<td>(PTFE)</td>
</tr>
<tr>
<td>Style code</td>
<td>-C</td>
<td></td>
<td>Style C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option</th>
<th>/H</th>
<th>/TC</th>
<th>/KC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- *1: The pH/ORP converter or 2-wire analyzer is attached to the chemical cleaning operating unit when shipped.
- *2: For PH8EFP sensor, select KCl reserve tank (suffix code ~TT2) with a medium-pressure.
- *3: Due to the polyethylene's susceptibility to the ultraviolet rays, specify the Fluoropolymer (PTFE) (-T10) as tube material, when you install PH8HS outdoor. Specify the Fluoropolymer (PTFE) when using the operating unit outdoor, even though you install PH8SM3 unit indoor.
- *4: Specified at the outdoor installation. Hood is made of precoated SECC.
- *5: Specified at the outdoor installation. The cover is made of non-coated stainless steel.
- *6: For FLXA21 or FLXA202 with the suffix code -F, or -G, specify the type -AG (for general purpose for KC).

Note: The system must undergo start-up service when the chemical cleaning pH measuring system is installed.

### Accessories

**Description** | Qt'y | Remarks |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6 (OD) x 4 (ID) polyethylene resin or Fluoropolymer (PTFE)</td>
<td>40 m</td>
<td>For tubing *1</td>
</tr>
<tr>
<td>Fitting (polyethylene resin or Fluoropolymer (PTFE))</td>
<td>6</td>
<td>3 for joint, 3 for spare parts *2</td>
</tr>
</tbody>
</table>

**Remarks**

- *1: 1 tube for the control box-the tank assembly
- *2: 3 tubes for the PH8SM3-Ph8HS3
- *6: For FLXA21 or FLXA202 with the suffix code -F, or -G, specify the type -AG (for general purpose for KC).

Note: The system must undergo start-up service when the chemical cleaning pH measuring system is installed.

### Spare Parts

**Description** | PIN | Remarks |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuse for power supply box</td>
<td>A110EF</td>
<td>Rating: 1A (for pH and Redox/ORP converter only)</td>
</tr>
<tr>
<td>Polyethylene tubing</td>
<td>L9901CA</td>
<td>Specified length by meters</td>
</tr>
<tr>
<td>Fluoropolymer (PTFE) tubing</td>
<td>L9010LG</td>
<td>Specified length by meters</td>
</tr>
<tr>
<td>Polypropylene fitting</td>
<td>L9831NA</td>
<td>L-shape fitting (R1/8)</td>
</tr>
<tr>
<td></td>
<td>L9831NE</td>
<td>L-shape fitting (R1/8)</td>
</tr>
<tr>
<td></td>
<td>L9831JE</td>
<td>L-shape fitting (R1/8)</td>
</tr>
<tr>
<td>Fluoropolymer (PTFE) fitting</td>
<td>L9831TS</td>
<td>L-shape fitting (R1/8)</td>
</tr>
<tr>
<td></td>
<td>L9831TT</td>
<td>L-shape fitting (R1/8)</td>
</tr>
</tbody>
</table>

**Remarks**

- *1: For FLXA21 or FLXA202 with the suffix code -F, or -G, specify the type -AG (for general purpose for KC).
- **External Dimension**

  pH/ORP Converter (PH8SM3-E)

  ![Diagram of pH/ORP Converter (PH8SM3-E)]

  - KCl reserve tank (can be installed)
  - Control Box
  - Pressure Regulator for KCl reserve tank
  - Tank Cover (AS3)
  - Power Supply Unit
  - Chemical Solution tank (20 L)
  - Hood (Option)
  - Stand (SEHC)
  - 4-Φ15 fixing holes
  - Hood (Option)

  Unit: mm

  2-Wire Analyzer (PH8SM3-G, -F)

  ![Diagram of 2-Wire Analyzer (PH8SM3-G, -F)]

  - KCl reserve tank (Can be installed)
  - Control Box
  - Pressure Regulator AS3 (for KCl reserve tank)
  - Tank Cover (Option)
  - Air Inlet (Rc1/4 or 1/4NPT)
  - Tank cover fixing screws (option)
  - PVC plate
  - Hood (Option)
  - FLXA202 (Separated order)
  - FLXA21 (Separated order)
  - Air Inlet (Rc1/4 or 1/4NPT)
  - Tank cover fixing screws (option)
  - PVC plate
  - Hood (Option)

  Unit: mm
The maximum tubes length between the cleaning unit and the sensor holder is 10 m. Install the stand at the same level as the sensor holder. If not, you can install the stand a maximum 2 m below the holder level. Installation above the holder level causes no problem.

### pH Analyzer

Select either pH/ORP Converter pH450G or 2-wire analyzer: (FLXA202 + PH201G, or FLXA21 + PH201G)

Refer to GS 12B07C05-01E, GS 12A01A02-01E, GS 12A01A03-01EN for further information.

### Distributor

The distributor PH201G designed exclusively for use with the 2-wire analyzer, supplies drive power to the 2-wire analyzer while simultaneously receiving 4 to 20 mA DC current signal from the analyzer and converting it to 1 to 5 V DC voltage signal; it also simultaneously receives a digital signal superimposed on 4 to 20 mA DC signal, and provides contact outputs during hold, failure, and/or cleaning. A current limiter function is built into the distributor so it can continue to operate properly even with a short circuit on the transmitter side.

#### Standard Specifications

- **Accuracy:** ±0.2 % of span
- **Analyzer supply voltage:** 26.5 ± 1.5 V DC
- **Insulation resistance:**
  - Between I/O terminals and ground pin: 100 MΩ/500 V DC
  - Between power supply pins and ground pin: 100 MΩ/500 V DC

#### Operating Specifications

- **Ambient temperature:** 0 to 50 °C
- **Ambient humidity:** 5 to 90 % RH (Non-condensing)
- **Power supply:** Dual use AC/DC
  - 100 V: DC power 20 to 130 V, no polarity
  - AC power 80 to 138 V, 47 to 63 Hz
  - 220 V: DC power 120 to 340 V, no polarity
  - AC power 138 to 264 V, 47 to 63 Hz
- **Maximum current and power consumption:**
  - 24 V DC: Approx. 200 mA
  - 100 V AC: Approx. 7 VA
  - 220 V AC: Approx. 11 VA

#### Contact Output

- **Contact rating:** 250 V AC, maximum 100 VA 220 V DC, maximum 50 VA
- **Hold contact output:** 1 contact, Normally energized
- **Failure contact output:** 1 contact, Normally energized
- **Cleaning contact output:** Close during cleaning only

#### Model and Suffix Codes

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH201G</td>
<td>-</td>
<td>-</td>
<td>Distributor</td>
</tr>
<tr>
<td>Power Supply</td>
<td>-A1</td>
<td>-</td>
<td>100V AC</td>
</tr>
<tr>
<td></td>
<td>-A2</td>
<td>-</td>
<td>220V AC</td>
</tr>
<tr>
<td></td>
<td>-B</td>
<td>-</td>
<td>Style B</td>
</tr>
</tbody>
</table>

Option /TB Terminal for power connection
**External Dimension**

Unit: mm

TB with power terminal

- Mounting Holes
- Grounded Power code

**pH sensor**

For the pH sensor in the system, specify the PH8EFP-□-TT2 model (KCl-filling medium-pressure reserve tank, such as PH8EFP-03-TN-TT2-N-G*A.

The length of each sensor cable must be longer than or equal to the sum of the twice the length of the holder movement and the distance from the pH sensor to pH analyzer.

Purchase the accessory (PH8AX) if necessary. For further details, refer to GS 12B07B02-E.
### Holder

**Standard Specifications**

- **Model**: PH8HS3
- **Functions**: Moves the pH sensor up or down using an air cylinder, and provides facilities for chemical cleaning.
- **Structure**: Constructed for indoor use. Install a cylinder cover for outdoor use.
- **Max. External Dimensions**: 190 (W) x 170 (D) x Approx. 830 to 2030 (H) mm (when the sensor is raised).
- **Mounting**: Mounted on a 50A vertical pipe (outside diameter: 60.5 mm). Two mounting brackets are supplied.
- **pH Sensor Up/Down Movement (nominal)**: 300 mm, 600 mm, 1000 mm, 1500 mm
- **Weight**: Approx. 8 kg (holder with 300 mm movement) Approx. 10 kg (holder with 600 mm movement) Approx. 12 kg (holder with 1000 mm movement) Approx. 15 kg (holder with 1500 mm movement)
- **Materials**:
  - **Frame**: Baking finish over stainless steel
  - **Bottom Cover Pull-up Mechanism**: Rod (PPS resin) and screws (PEEK)
  - **Mounting bracket**: stainless steel
  - **Holder**: Polypropylene and hard PVC (for part of a holder)
  - **Solution Chamber**: Hard PVC
  - **O-ring**: Fluororubber
- **Solution Temperature Range**: -5 to 80°C
- **Ambient Temperature**: 0 to 45°C
- **Flow Speed**: 2 m/s or less

Use only with adequate ventilation due to the hazardous chemical for cleaning.

### Model and Suffix Codes

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Option code</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH8HS3</td>
<td>-PP</td>
<td>-----</td>
<td>Holder for Chemical Cleaning</td>
</tr>
<tr>
<td>Material</td>
<td>-PP</td>
<td>-----</td>
<td>Polypropylene</td>
</tr>
<tr>
<td>Movement</td>
<td>-03</td>
<td>-----</td>
<td>300 mm (with 2 mounting brackets)</td>
</tr>
<tr>
<td></td>
<td>-06</td>
<td>-----</td>
<td>600 mm (with 2 mounting brackets)</td>
</tr>
<tr>
<td></td>
<td>-10</td>
<td>-----</td>
<td>1000 mm (with 2 mounting brackets)</td>
</tr>
<tr>
<td></td>
<td>-15</td>
<td>-----</td>
<td>1500 mm (with 2 mounting brackets)</td>
</tr>
<tr>
<td>pH measuring system</td>
<td>-C</td>
<td>-----</td>
<td>EXA PH 4-wire pH converter system (PH400G)</td>
</tr>
<tr>
<td></td>
<td>-T</td>
<td>-----</td>
<td>EXA PH 2-wire pH transmitter system (PH202G)</td>
</tr>
<tr>
<td>Cleaning system</td>
<td>-YP</td>
<td>-----</td>
<td>Acid or alkali solutions can be used.</td>
</tr>
<tr>
<td></td>
<td>*C</td>
<td>-----</td>
<td>Style C</td>
</tr>
</tbody>
</table>

**Option** /SC: Cylinder cover for outdoor use *1

---

### Accessories of PH8HS3

(other than mounting brackets and sensor holder)

<table>
<thead>
<tr>
<th>Description</th>
<th>Qt'y</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>M8 x 16 mm bolts and nut Washers</td>
<td>4/pkg</td>
<td>Parts for mounting brackets (used to mount to the holder)</td>
</tr>
<tr>
<td>U bolts (M8) Washers and nuts</td>
<td>2</td>
<td>Parts for mounting brackets (used to mount to 2-inch pipe)</td>
</tr>
<tr>
<td>Rubber sheet (19 x 40 mm) Plate Clamp</td>
<td>1</td>
<td>Parts for sensor holder (used to fix sensor cable)</td>
</tr>
<tr>
<td>M4, 16mm screw</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Piping fitting (polypropylene)</td>
<td>3</td>
<td>Parts for PH8SM3 holder (used for piping port)</td>
</tr>
<tr>
<td>Cable tie</td>
<td>5</td>
<td>For KCl supply tube/sensor cable</td>
</tr>
<tr>
<td>Spare gaskets (P/N: K9729WJ)</td>
<td>1</td>
<td>Parts for cleaning chamber of PH8HS3 holder</td>
</tr>
</tbody>
</table>

### Spare Parts

<table>
<thead>
<tr>
<th>Description</th>
<th>P/N</th>
<th>Qt'y</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasket</td>
<td>K9729WJ</td>
<td>1</td>
<td>Material : EPDM</td>
</tr>
<tr>
<td>O-rings</td>
<td>K9729YK</td>
<td>2</td>
<td>1/pkg. Replace both of the two rings at the same time.</td>
</tr>
</tbody>
</table>

*1: For outdoor installation, select Cylinder cover /SC as Option.
●External Dimension

*1: This length should be 30 mm or more in consideration of variable surface level.

Tubing Connections
A: Chemical solution inlet (Ø6/Ø4 tube joint)
B: Lower air inlet of cylinder (Ø6/Ø4 tube joint)
C: Upper air inlet of cylinder (Ø6/Ø4 tube joint)

<table>
<thead>
<tr>
<th>Nominal movement</th>
<th>Actual movement</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
<th>L6</th>
</tr>
</thead>
<tbody>
<tr>
<td>300mm</td>
<td>340mm</td>
<td>1107</td>
<td>712</td>
<td>395</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>600mm</td>
<td>640mm</td>
<td>1707</td>
<td>1012</td>
<td>695</td>
<td>300</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>1000mm</td>
<td>1040mm</td>
<td>2507</td>
<td>1412</td>
<td>1095</td>
<td>300</td>
<td>300</td>
<td>–</td>
</tr>
<tr>
<td>1500mm</td>
<td>1540mm</td>
<td>3507</td>
<td>1912</td>
<td>1595</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
</tbody>
</table>

Note: Specify the nominal movement when ordering.
L4, L5, and L6 designate the movable position for the pipe mounting bracket.
**Wiring Diagram**

**pH/ORP (PH8SM3-E)**

- **PH450G**
  - Output signal (4 to 20 mA DC, HART)
  - Output signal (4 to 20 mA DC)
  - Remote Contact input

- **Air Cylinder**
  - pH Holder
  - pH Sensor

- **PH8SM3 Control Box**
  - Cleaning signal
  - Position signal
  - Power supply unit
  - Ground to earth

- **Electrical connections on the control box**: Watertight plastic gland equivalent to JIS A15 (outside diameter: 9 to 12 mm)

**2-wire analyzer (PH8SM3-G, -F)**

- **FLXA202 or FLXA21**
- **PH201G Distributor**
  - Output signal (1-5 V DC)
  - Cleaning signal
  - 100 V AC

- **Operational signals**:
  - Output signal
  - Cylinder failure signal
  - Wiring by customer

- **Electrical connections on the control box**: Watertight plastic gland equivalent to JIS A15 (outside diameter: 9 to 12 mm)
Piping Diagrams

PH8SM3 Operating unit for chemical cleaning system

AS1: Pressure regulator valve for forced feeding of chemical solution
AS2: Pressure regulator valve for actuating cylinder
AS3: Pressure regulator valve (optional) for pressurizing the KCI tank
PG1: Pressure gauge
PG2: Pressure gauge
PG3: Pressure gauge (option)
SV1: 2-way solenoid valve (N/C)
SV2: 4-way solenoid valve

<Piping>
A: Air source connection
   Rc 1/4 (JP) or 1/4NPT (NP)
B-F: Pneumatic line for forced feeding of chemical solution
C-J: Pneumatic line to raise the sensor holder
D-K: Pneumatic line to lower the sensor holder
G-H: Line for forced feeding of chemical solution

<Connection>
A, B, C, D, E: Rc1/4 with Ø6/Ø4 tube joints
F, G, H, K: Ø6/Ø4 tube joints

Note 1: For the piping between the cleaning unit and the sensor holder, a 40 m tube including joints are provided with the product. Cut the tube to required length for use. The maximum length is 10 m to pipe between the cleaning unit and the sensor.

Note 2: The tubes and joints are made of polyethylene resin or Fluoropolymer (PTFE). They should be replaced approximately once a year, although the intervals may vary depending on the chemicals used.
Inquiry Specification

Thank you for your inquiry on our Chemical Cleaning pH Measuring System. Please tick (v) the appropriate box and fill in the blank.

1. General Information
   Company name: __________________________
   Contact Person: ___________________________ Department: ___________________________
   Plant name: ___________________________
   Measurement location: ___________________________
   Purpose of use: □ Indication, □ Recording, □ Alarm, □ Control
   Power supply: □ V AC □ Hz

2. Measurement Conditions
   (1) Process temperature: _______ to Normally _______ [°C]
   (2) Process pressure: _______ to Normally _______ [kPa]
   (3) Flow rate: _______ to Normally _______ [l/min]
   (4) Flow speed: _______ to Normally _______ [m/s]
   (5) Slurry or contaminants; □ No, □ Yes
   (6) Name of process fluid: ___________________________
   (7) Components of process fluid: ___________________________
   (8) Others: ___________________________

3. Installation Site
   (1) Ambient temperature: ___________________________
   (2) Location: □ Outdoors, □ Indoors
   (3) Others: ___________________________

4. Requirements
   (1) Measuring range: □ pH 0 to 14 □
   (2) Transmission output: □ 4 to 20 mA DC □
   (3) System configuration selection: □ Sensor, □ Holder, □ pH Transmitter, □ Distributor, □ pH Converter, □ Chemical Cleaning Unit, □ Accessories
   (4) Electrode cable length: □ 3 m, □ 5 m, □ ______ m
   (5) Tube length between sensor holder and cleaning unit: ______ m
   (6) Holder movement: □ 300 mm, □ 600 mm, □ 1000 mm, □ 1500 mm
   (7) Others: ___________________________

Note: The system must undergo start-up service when the chemical cleaning pH measuring system is installed.