General Specifications  Sensor Holders

GS 12J05C02-00E

**GENERAL**
Various types of analyzers are used to control quality and wastewater in a wide variety of production processes. Holders are used to set up analyzers at sites of measurement. Yokogawa provides several types of holders, for which cleaners can be added, allowing customers to build reliable and easy-to-maintain measuring systems by selecting the right holders and cleaners for the conditions of applications.

The submersion type holders PH8HS, PH8HSF and DOX8HS are widely used with process analyzers and can be directly immersed in reaction tanks or measuring baths for measurement. The DOX8HS for dissolved-oxygen meters or MLSS meters has a skew-cut tip to prevent air bubbles from accumulating on the tip of a sensor.

The flow-through holders PH8HF, PH8HFF and FH350G can be set up at a point along pipelines to measure solvent in production lines or wastewater pipelines.

Unlike with submersion type holders that require the entire holder assembly to be pulled up, the suspension holder HH350G has a guide pipe along which just a fitting-mounted sensor can be separately pulled up with a chain, thus increasing the ease of maintenance.

The inclined float holder, PB350G is equipped with a float that moves up and down in accordance with the fluctuating water surface level. Since the float has been designed to accommodate an sensor without extreme projections and depressions, the amount of foreign matter building up around the float or sensor decreases, and it becomes harder for dirt to accumulate, thus enabling continuous stable measurement over a long period. We have provided the vertical float holder, PB360G, for cases when the installation space for a float holder is limited or the measuring bath is covered. If however, there is no flow, neither float holder is recommended.

**FEATURES**

**Submersion Type Holders: PH8HS, PH8HSF and DOX8HS**
- Available in stainless steel or polypropylene.
- Optional jet- or ultrasonic-cleaning device (unavailable for DOX8HS).
- Optional flange fitting for PH8HS, PH8HSF.
- Skewed mounting for DOX8HS to prevent influence from bubbles.

**Flow-Through Holders: PH8HF, PH8HFF and FH350G**
- Available in stainless steel or polypropylene.
- Optional jet- or ultrasonic-cleaning device (unavailable for FH350G).
- Allows direct mounting to the pipeline.

**Suspension Holder: HH350G**
- Allows the sensor to be pulled up separately.
- Easy maintenance.
- Optional jet-cleaning device.

**Float Holder: PB350G and PB360G**
- Continuous stable measurement without effect from fluctuations in fluid level.
- Reduces maintenance frequency.
- Easy-to-maintain.
- Vertical type is also available for limited installation space.

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Please select appropriate equipment in accordance with the laws and regulations of the relevant country/region, when it is used in a location where explosive atmospheres may be present.
### SYSTEM CONFIGURATION

For the pH/ORP converter and sensors, see GS 12B07B02-E.

For the FLXA202, see GS 12A01A03-01EN. For the FLXA21, see GS 12A01A02-01E. For the FLXA402, see GS 12A01F01-01EN. For the dissolved oxygen converter and sensor, see GS 12J05D02-00E.

For the MLSS converter and sensors, see GS 12E6A1-E.

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<th>Sensors</th>
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<td>● Guide Pipe PH8HG</td>
<td>FLXA202/FLXA21, FLXA402, SS400G</td>
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<td>● Submersion Type Holder PH8HS</td>
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<td>● Submersion Type Holder DOX8HS</td>
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<td>● Vertical Floating Ball Holder PB360G</td>
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<td>● Angled Floating Ball Holder PB350G</td>
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<td>Accessories</td>
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<td>Calibration reagents and KCl solution</td>
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</table>

**System Configuration (General Purpose, Non-Explosionproof Types)**

**CAUTION**

Select the material of wetted parts with careful consideration of process characteristics. Inappropriate selection may cause leakage of process fluids, which greatly affects facilities. Considerable care must be taken particularly in the case of strongly corrosive process fluid such as hydrochloric acid, sulfuric acid, hydrogen sulfide, and sodium hypochlorite. If you have any questions about the wetted part construction of the product, be sure to contact Yokogawa.

**CAUTION**

Installation Location of Holders (Guide Pipe, Submersion Type, etc)
The holder should be used in a place that is as vibration free as possible. Using the holder in a place where it is affected by vibration, may result in damage to the holder.
SPECIFICATIONS

1. Guide Pipe PH8HG
   Applicable sensors:
   - General pH Sensor PH8ERP, PH8EFP
   - General ORP Sensor OR8ERG, OR8EFG
   - Dissolved Oxygen Sensor DO30G
   - MLSS Sensor SS300G
   Note: When using a KCl filling type sensor, a stanchion or mounting bracket is required separately.
   Mounting: 2-inch pipe mounting vertical or horizontal.
   Note: Make sure the mounting pipe is rigid and firmly installed.
   Pipe length: 2 m
   Material:
   - Holder: Polypropylene or PVC
   - Mounting bracket: Galvanized iron or stainless steel (304 SS)
   Weight:
   - Holder: "-PP": approx. 1 kg
     "-PV": approx. 1.6 kg
   - Mounting bracket: Approx. 1 kg/set
   Measuring temperature: -5 to 50°C (PVC)
     -5 to 80°C (Polypropylene)

2A. Submersion Type Holder PH8HSHS
   Applicable sensors:
   - General pH Sensor; PH8ERP, PH8EFP
   - PH4 Sensor; PH4P, PH4PT, PH4F, PH4FT, PH4C, PH4CT
   - General ORP Sensor; OR8ERG, OR8EFG
   - OR4 Sensor; OR4P, OR4C
   Note: An adapter is required when using PH4/OR4 sensor.
   When using with special pH/ORP sensor or PH4/OR4 sensor, this holder cannot be used outdoors due to exposure to rain or due to condensation at a high humid place.
   Mounting: 2-inch pipe mounting vertical or horizontal with 1 or 2 set of mounting bracket.
   Note: Make sure the mounting pipe is firmly installed.
   Cleaning method: Jet cleaning, brush cleaning or ultrasonic cleaning
   Note: Brush cleaning and ultrasonic cleaning cannot be used when PH4/OR4 sensor.
   Material:
   - Holder: Polypropylene or stainless steel (316 SS)
   - Flange: Polypropylene or stainless steel (316 SS)
   - O-ring: Fluoro rubber (FKM) or Perfluoroelastomer (FFKM)
   - Mounting bracket: Galvanized iron or stainless steel (304 SS)
   Cleaning unit (wetted parts):
   - Ultrasonic: Stainless steel (316 SS), titanium or Hastelloy C
   - Jet: Polypropylene
   - Brush: Polypropylene, titanium (shaft), Rulon (bearings)
   Weight:
   - Holder: Approx. 0.5 to 5 kg (polypropylene)
     Approx. 1.5 to 11.5 kg (stainless steel)
   - Mounting bracket: Approx. 1 kg/set
   - Flange: Approx. 0.5 to 1.8 kg (polypropylene)
     Approx. 2.9 to 15.6 kg (stainless steel)

Temperature range:
- No Cleaning; -5 to 100°C
- With Cleaning; -5 to 80°C
Note: The temperature range may be limited by the specifications of the sensor.
Flow rate:
- 2 m/s or less
Note: The flow speed may be limited by the specifications of the sensor.
Measuring pressure: Submersion depth 3 m max.
Note: The pressure may be limited by the specifications of the sensor.

Utility required for cleaning unit:

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<tr>
<th>Type</th>
<th>Pressure (kPa)</th>
<th>Flow Rate</th>
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<td>Water jet</td>
<td>200 to 400 + Liquid pressure</td>
<td>5 to 20 L/min</td>
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<tr>
<td>Water brush</td>
<td>100 to 250 + Liquid pressure</td>
<td>20 to 30 L/min</td>
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<tr>
<td>Air jet</td>
<td>200 to 400 + Liquid pressure</td>
<td>100 to 300 NL/min</td>
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<tr>
<td>Air brush</td>
<td>150 to 250 + Liquid pressure</td>
<td>300 to 600 NL/min</td>
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</tbody>
</table>

Note 1: Pressure and flow rate must be simultaneously satisfied at the holder inlet port.
Note 2: A large braid-reinforced tube of ø22 x ø15 is recommended for supply due to the flow rate.

2B. Submersion Type Holder (Explosionproof Type) PH8HSF
The holder is used only when using ultrasonic cleaning system in the explosionproof area.
Use PH8HS when using no cleaning, jet cleaning or brush cleaning.

Applicable sensors:
- General pH Sensor PH8ERP, PH8EFP
- General ORP Sensor OR8ERG, OR8EFG
Mounting: 2-inch pipe mounting vertical or horizontal with 1 or 2 set of mounting bracket.
Note: Make sure the mounting pipe is firmly installed.
Cleaning method: Ultrasonic cleaning
Material:
- Holder: Polypropylene or stainless steel (316 SS)
- Flange: Polypropylene or stainless steel (316 SS)
- O-ring: Fluoro-rubber (FKM) or Perfluoroelastomer (FFKM)
Mounting bracket: Galvanized iron or stainless steel (304 SS)
Cleaning unit (wetted parts):
- Ultrasonic: Stainless steel (316 SS), titanium or Hastelloy C
Construction: TIIS flameproof type (for d2G4 gas)
Cable entrance port of terminal box; G 3/4
Weight:
- Holder: Approx. 2.2 to 3.2 kg (polypropylene)
  Approx. 3.3 to 5.7 kg (stainless steel)
- Mounting bracket: Approx. 1 kg/set
- Flange: Approx. 1.5 kg (polypropylene)
  Approx. 15 kg (stainless steel)
Temperature range: -5 to 80°C
Note: The temperature may be limited by the specifications of the sensor.
Flow rate: 2 m/s or less
Note: The flow speed may be limited by the specifications of the sensor.
Pressure: Submersion depth 3 m max.
Note: The pressure may be limited by the specifications of the sensor.

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2C. Submersion Type Holder DOX8HS

Applicable sensors:
- Dissolved Oxygen Sensor DO30G, DO70G
- MLSS Sensor SS300G

Mounting: 2-inch pipe mounting vertical or horizontal, with 1 or 2 set of mounting bracket.

Note: Make sure the mounting pipe is firmly installed.

Cleaning method: Water or air jet cleaning
(The wiping cleaning of MLSS meter should be specified on the sensor).

Material:
- Holder: Polypropylene or stainless steel (316 SS)
- O-ring: Fluoro rubber (FKM)

Mounting bracket:
- Stainless steel (316 SS) or galvanized iron

Cleaning unit (wetted parts): Polypropylene

Weight:
- Holder: Approx. 0.5 to 3.6 kg (polypropylene)
- Approx. 1.5 to 11.5 kg (stainless steel)

Mounting bracket: Approx. 1 kg set

Temperature range: 0 to 80°C

Note: The temperature may be limited by the specifications of the sensor.

Flow rate: 2 m/s or less.

Note: The flow rate may be limited by the specifications of the sensor.

Utility required for cleaning unit:

- Pressure: Atmospheric pressure to 500 kPa
- Flow rate: 3 to 11 L/min

3A. Flow-Through Type Holder PH8HF

Applicable sensors:
- General pH Sensor: PH8ERP, PH8EFP, PH8ECP
- PH4 Sensor: PH4P, PH4PT, PH4F, PH4FT, PH4C, PH4CT
- General ORP Sensor: OR8ERG, OR8EFG
- OR4 Sensor: OR4P, OR4C

Note: An adapter is required when using PH4/OR4 sensor. This holder cannot be used outdoors due to exposure to rain or condensation at a high humid place.

Mounting: 2-inch pipe mounting vertical or horizontal, with 1 set of mounting hard bracket.

Note: Make sure the mounting pipe is firmly installed.

Cleaning method: Jet cleaning, brush cleaning or ultrasonic cleaning.

Material:
- Holder: Polypropylene, stainless steel (316 SS), Heat-resistant PVC or Titanium
- O-ring: Fluoro rubber (FKM), Perfluoroelastomer (FFKM), Fluororesin coated

Mounting bracket: Stainless steel (304 SS)

Cleaning unit (wetted parts):
- Ultrasonic: Stainless steel (316 SS), titanium or Hastelloy C
- Jet: Polypropylene
- Brush: Polypropylene, titanium (shaft), Rulon (bearings)

Weight:
- Holder: Approx. 0.4 to 1.7 kg (polypropylene)
- Approx. 3 to 6.1 kg (stainless steel)

Mounting bracket: Approx. 0.5 kg

Temperature range:
- No Cleaning: -5 to 80°C (polypropylene)
- -5 to 105°C (stainless steel)

With Cleaning: -5 to 80°C

Note: The temperature may be limited by the specifications of the sensor.

Flow rate: 3 to 11 L/min

Note: The flow rate may be limited by the specifications of the sensor.

Pressure: Atmospheric pressure to 500 kPa

Note: The pressure may be limited by the specifications of the sensor.

3B. Flow-Through Type Holder (Explosionproof Type) PH8HFF

The holder is used only when using Ultrasonic cleaning system in the explosionproof area.

Use PH8HFF when using no cleaning, jet cleaning or brush cleaning.

Applicable sensors:
- General pH Sensor PH8ERP, PH8EFP
- General ORP Sensor OR8ERG, OR8EFG

Mounting: 2-inch pipe mounting vertical or horizontal, with 1 set of mounting bracket.

Note: Make sure the mounting pipe is firmly installed.

Cleaning method: Ultrasonic cleaning

Material:
- Holder: Polypropylene or stainless steel (316 SS)
- O-ring: Fluoro rubber (FKM) or Perfluoroelastomer (FFKM)

Mounting bracket: Stainless steel (304 SS)

Cleaning unit (wetted parts):
- Ultrasonic: Stainless steel (316 SS), titanium or Hastelloy C

Construction: TIIS flameproof type (for d2G4 gas)

Cable entrance port of terminal box: G 3/4

Weight:
- Holder: Approx. 3 to 3.2 kg (polypropylene)
- Approx. 5.6 to 7.6 kg (stainless steel)

Mounting bracket: Approx. 0.5 kg

Temperature range: -5 to 80°C

Note: The temperature may be limited by the specifications of the sensor.

Flow rate: 3 to 11 L/min

Note: The flow rate may be limited by the specifications of the sensor.

Pressure: Atmospheric pressure to 500 kPa

Note: The pressure may be limited by the specifications of the sensor.
3C. Flow-Through Type Holder FH350G
Applicable sensors: MLSS Sensor SS300G
(Measuring range: 0-1000 mg/L or less)
Note: Not applicable high range (greater than 0 to 1000 mg/L) of MLSS sensor and DO sensor.
Mounting: 2-inch pipe mounting vertical or horizontal
Note: Make sure the mounting pipe is firmly installed.
Cleaning method: Water or air jet cleaning
(The wiper cleaning of MLSS cannot be used)
Material:
Holder; Polypropylene or stainless steel (316 SS)
O-ring; Fluoro rubber (FKM)
Mounting bracket; Stainless steel (304 SS)
Cleaning unit (wetted parts); Polypropylene
Weight:
Holder; Approx. 0.4 to 5 kg
Mounting bracket; Approx. 0.5 kg
Temperature range: 0 to 80°C
Note: The temperature may be limited by the specifications of the sensor.
Flow rate: 6 to 11 L/min
Note: Keep the specified flow rate to prevent substances from standing in the holder and bubbles from sticking onto the sensor.
Pressure: 0 to 200 kPa
(Holder pressure rating is 500 kPa)
Utility required for cleaning unit:
Pressure:
Water jet; process pressure +100 to 200 kPa
Air jet; process pressure +100 to 200 kPa
Flow Rate:
Water jet; 5 to 20 L/min
Air jet; 10 to 20 NL/min
Note 1: Pressure and flow rate must be simultaneously satisfied at the holder inlet port.
Note 2: A large braid-reinforced tube of ø22 x ø15 is recommended for supply due to the flow rate.

5. Angled Floating Ball Holder PB350G
Applicable sensors:
General pH Sensor; PH8ERP, PH8EFP
General ORP Sensor; OR8ERG, OR8EFG
Dissolved Oxygen Sensor; DO30G, DO70G
MLSS Sensor; SS300G
Note 1: When using a KCl filling type sensor, a stanchion or mounting bracket for the KCl tank is required separately.
Note 2: Not applicable for PH4/OR4 sensor.
Pipe length: 2.5 m
Mounting: 2-inch pipe horizontal mounting or horizontal plane mounting
Note: Make sure the mounting pipe firmly installed. Use anchor bolts (4xM8) or relevant fixtures for mounting on horizontal planes.
Material:
Holder; ABS resin, Nitrile rubber (NBR), brass, and PVC
Arm; PVC or stainless steel (304 SS)
Mounting bracket; Stainless steel (304 SS)
Weight:
Holder (including arm); Approx. 5 kg (model PB350G-PV-25)
Approx. 6 kg (model PB350G-S3-25)
Mounting bracket; Approx. 5 kg
Temperature range: 0 to 50°C
Note: The temperature may be limited by the specifications of the sensor.
Flow rate: 20 to 100 cm/s
(The arm must not be distorted significantly).
Note: The flow speed may be limited depending on the specifications of the sensor.

6. Vertical Floating Ball PB360G
Applicable sensors:
General pH Sensor; PH8ERP, PH8EFP
General ORP Sensor; OR8ERG, OR8EFG
Dissolved Oxygen Sensor; DO30G, DO70G
MLSS Sensor; SS300G
Note 1: When using a KCl filling type sensor, a stanchion or mounting bracket for the KCl tank is required separately.
Note 2: Not applicable for PH4/OR4 sensor.
Mounting: 2-inch pipe vertical mounting
Note: Make sure the mounting pipe firmly installed.
Material:
Holder; ABS resin, brass, and rigid PVC
O-ring; Nitrile rubber (NBR)
Arm; rigid PVC or stainless steel (304 SS)
Guide-pipe; Stainless steel (304 SS)
Mounting bracket; Stainless steel (304 SS)
Roller, Pulley; Polypropylene
Balance Weight; Stainless steel (304 SS)
Rope; Vinyl Covered Stainless steel (304 SS)
Connection Supporter; Stainless steel (304 SS)
Weight:
Holder, guide-pipe, and arm; Approx. 7.4 kg (model PB360G-PV-25-NN)
Approx. 8.8 kg (model PB360G-PV-35-NN)
Approx. 8.0 kg (model PB360G-S3-25-NN)
Approx. 9.6 kg (model PB360G-S3-35-NN)
Mounting bracket (including assist bracket and U-bolt assembly); Approx. 5 kg x 2 sets
Roller assembly (including mounting bolt assembly); Approx. 3.3 kg x 2 sets
Pulley assembly (including mounting bolt assembly); Approx. 0.5 kg
Connection supporter; Approx. 0.5 kg
Balance weight; Approx. 3 kg (model PB360G-uu-25-NN)
Approx. 4.5 kg (model PB360G-uu-35-NN)
Rope (including bolt clip); Approx. 85 g (model PB360G-uu-25-NN)
Approx. 97 g (model PB360G-uu-35-NN)
Temperature range: 0 to 50°C
Note: The temperature may be limited by the specifications of the sensor.
Flow rate: 20 to 100 cm/s
Flow rate may be limited depending on the specifications of the sensor.

7B. Explosionproof Type Solenoid Valve for Jet/Brush Cleaning PH8MV
Pilot kick operated, 2-port valve. Open when energized.
Fluid: Normal tap water, industrial water, or air
Operational pressure: 0 to 1 MPa
Forward (reverse) pressure resistance: 2 MPa
Fluid temperature:
Water; 5 to 60°C
Air; -10 to 60°C
Cv: 4.5
Process connection: Rc 1/2
Power supply:
100 V AC, 50/60 Hz
110 V AC, 60 Hz
200 V AC, 50/60 Hz
220 V AC, 60 Hz
Power consumption: 10 W
Construction: TiIS flameproof type (for d2G4 gas)
Material:
Body; Bronze
Sealing; Nitrile rubber
Ambient temperature: Maximum 50°C
Leak at valve seat: 300 NmL/min
(air pressure: 50 to 700 kPa)
Cable inlet connection: Frameproof packing adapter (G1/2)
Mounting position: Vertical mounting with coil in top
Weight: Approx. 1.9 kg

8A. Ultrasonic Oscillator (Non-Explosionproof Type) PUS400G
Combination device:
Holder with ultrasonic cleaner (PH8HS, PH8HF)
Connection cables are provided with holders.
Cleaning method:
Continuous ultrasonic emission (Frequency sweep method)
Oscillation frequency: Approx. 61 to 81 kHz
Output voltage: 70 V
Power supply:
100/110/115/200/220/240 V AC±10%
Power consumption: Approx. 15 VA
Ambient Temperature: -10 to 50°C
(hood may be fitting as option)
Storage Temperature: -25 to 70°C
Construction: JIS C0920 Watertight
(NEMA 4 equivalent waterproof construction)
Material:
Case; Aluminum alloy casting
Window; Polycarbonate
Mounting bracket; Stainless steel
Finish: Baked polyurethane resin (Standard)
Baked epoxy resin (Option)
Color:
Case; Frosty white
(Munsell 2.5Y8.4/1.2 or equivalent)
Cover; Deep sea-moss green
(Munsell 0.6GY3.1/2.0 equivalent)
Mounting: (2-inch) pipe mounting, wall or rack mounting or panel mounting
Cable inlet: ø22.7 x 2 Pg16 watertight plastic gland
Cable/Terminal: For 7 to 12 mm, M4
Conduit adapter: Power Supply side only (Option)
Connection: G 1/2 or 1/2 NPT
Weight:
Body;   Approx. 2.0 kg
Pipe mounting bracket; Approx. 0.7 kg
Wall mounting bracket; Approx. 0.4 kg

Note: Output of ultrasonic oscillator changes with power supply voltage or connected cable length.

Noise filter assembly: (only for PUS400G-NN-KC)
Ambient temperature; -10 to 50°C
(No dew condensation allowed)
Strage temperature; -25 to 70°C
Construction: JIS C 0920 Watertight (IP53)

Regulatory Compliance:
(for PUS400G-NN-KC)
Korea Electromagnetic Conformity Standard Class A
한국 전자파적합성 기준

RCM: EN55011 Class A Group 1

8B1. Ultrasonic Oscillator (Explosionproof Type) PH8USF

Combination device:
   Holder with ultrasonic cleaner (PH8HSF, PH8HFF)
Note: This oscillator must be used with the Alarm Box PH8AL to provide power circuit interruption and failure alarm contact outputs.

Cleaning method: Continuous ultrasonic emission
   (Frequency sweep method)

Oscillation frequency: Approx. 65 to 80 kHz
Output voltage: Maximum 150 V

Power supply:
   100, 110 to 115 (specify voltage), 200, 220 to 240 V AC ±10%, 50/60 Hz

Power consumption: Approx. 15 VA

Construction: TIIS flameproof construction (d2G4)

Material:
   Case; Aluminum alloy
   Finish: Baked polyurethane resin casting (optional)
   Color:
   Case; Munsell 7.5BG4/1.5 equivalent
   Weight: Approx. 9.5 kg

Mounting:
   2-inch pipe mounting

Ambient temperature: -10 to 50°C

Cable inlet: G 3/4

Cable/Terminal:
   Oscillator to Vibrator;
   3-conductor shielded cable, OD 10 to 12 mm,
   Maximum length 10 m, Selectable by option code /C
   Oscillator to Alarm box;
   2-conductor shielded cable, OD 10 to 12 mm,
   Maximum length 1000 m

Note: Total resistance of two leadwires should be 10 Ω or less. Complete grounding for explosionproof areas must be conducted
Note: Output of ultrasonic oscillator changes with power supply voltage or connected cable length.

8B2. Alarm Box PH8AL

Combination device:
   One to one combination with ultrasonic Oscillator Explosionproof Type PH8USF

Case:
   Square shape, panel-back side mounting, dustproof steel plate construction, universal mounting position.

Coating color: Gray (Munsell N7.0)
Finish: Baked melamine resin

Power supply: 100, 110 to 115, 200, 220 to 240 V AC ±10%, 50/60 Hz
Note: Maximum voltage is 125 VAC when power supply of 110 to 115 V AC is specified, maximum voltage is 250 V AC when power supply of 220 to 240 V AC is specified.

Ambient temperature: -10 to 50°C
Weight: Approx. 2.0 kg
### MODEL AND SUFFIX CODES

#### 1. Guide Pipe PH8HG

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<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
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<td>Stainless steel mounting bracket (1 set)</td>
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*: A set of 2-inch pipe mounting bracket is provided as standard.

#### 2A. Submersion Type Holder PH8HS

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<th>Model</th>
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<th>Option Code</th>
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<td></td>
<td></td>
<td>-S3</td>
<td>For ultrasonic cleaning (Transducer: 316 SS) (*)1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-TN</td>
<td>For ultrasonic cleaning (Transducer: Titanium) (*)2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-HC</td>
<td>For ultrasonic cleaning (Transducer: Hastelloy C) (*)3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-JT</td>
<td>For jet cleaning. The solenoid valve must be specified separately.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-BR</td>
<td>For brush cleaning. The solenoid valve must be specified separately.</td>
</tr>
<tr>
<td>Cable Length or Conne. Size</td>
<td></td>
<td>-NN</td>
<td>No Cleaning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-C3</td>
<td>3 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-C5</td>
<td>5 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-C6</td>
<td>7 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-C7</td>
<td>10 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-C8</td>
<td>15 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-C9</td>
<td>20 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-JP</td>
<td>Rc1/2 (for Jet or Brush Cleaning)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-NP</td>
<td>1/2 NPT (for Jet or Brush Cleaning)</td>
</tr>
<tr>
<td>Style Code</td>
<td></td>
<td>*A</td>
<td>Style A</td>
</tr>
<tr>
<td>Option</td>
<td>Mounting (*)</td>
<td>/MS1</td>
<td>Mounting bracket: 1 set</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/MS2</td>
<td>Mounting bracket: 2 sets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/MS3</td>
<td>Stainless steel mounting bracket: 1 set</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/MS4</td>
<td>Stainless steel mounting bracket: 2 sets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/MS9</td>
<td>Mounting hardware for calibration holder (*)7</td>
</tr>
<tr>
<td>Special Mounting</td>
<td></td>
<td>/F1</td>
<td>JIS 10K 100 FF eq. Flange Mounting (Without Cleaner)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/F2</td>
<td>JIS 10K 200 FF eq. Flange Mounting (With Cleaner)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/PF</td>
<td>Perfluoroelastomer (FFKM) (*)4</td>
</tr>
</tbody>
</table>

*1: General purpose (Normal pH3 to 14)
*2: For salt water
*3: For acid (Normal pH0 to 4)
*4: Choose Perfluoroelastomer (FFKM) when this holder is used in organic solvent, high alkali or high temperature alkali.
*5: The required number of mounting bracket sets depends on the installation location and flow rate. In general, one set is sufficient for pipe lengths of 1 meter, and otherwise two sets are required.
*6: For Pipe length, select -10, -15, -20.
*7: For Material, select -ST.
### 2B. Submersion Type Holder (Explosionproof Type) PH8HSF

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH8HSF</td>
<td>-</td>
<td>-</td>
<td>Submersion type holder (Ex-proof type)</td>
</tr>
</tbody>
</table>

#### Material
- PP: Polypropylene
- S3: Stainless steel

<table>
<thead>
<tr>
<th>Pipe length</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td></td>
<td>1.0 m</td>
</tr>
<tr>
<td>-15</td>
<td></td>
<td>1.5 m</td>
</tr>
<tr>
<td>-20</td>
<td></td>
<td>2.0 m</td>
</tr>
</tbody>
</table>

#### Measuring System
- T: Always -T

#### Cleaning Device (*4)
(Ultrasonic cleaning only)
- S3: 316SS Transducer (*1)
- TN: Titanium Transducer (*2)
- HC: Hastelloy C Transducer (*3)

#### Explosion Protection
- JS: TIIS Flameproof (d2G4)

#### Style Code
* A: Style A

<table>
<thead>
<tr>
<th>Option</th>
<th>Mounting Bracket for Pipe</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>/MS1</td>
<td>Mounting bracket: 1 set (*6)</td>
</tr>
<tr>
<td></td>
<td>/MS2</td>
<td>Mounting bracket: 2 sets (*)</td>
</tr>
<tr>
<td></td>
<td>/MS3</td>
<td>Stainless steel mounting bracket: 1 set (*6)</td>
</tr>
<tr>
<td></td>
<td>/MS4</td>
<td>Stainless steel mounting bracket: 2 sets (*6)</td>
</tr>
<tr>
<td></td>
<td>/F</td>
<td>JIS 10K 200 FF equ. Flange Mounting</td>
</tr>
<tr>
<td></td>
<td>/PG2</td>
<td>Flameproof packing adapter 3/4 inch</td>
</tr>
<tr>
<td></td>
<td>/SCT</td>
<td>Stainless steel tag plate</td>
</tr>
<tr>
<td></td>
<td>/PF</td>
<td>Perfluoroelastomer (FFKM) (*5)</td>
</tr>
</tbody>
</table>

*1: General purpose (Normal pH3 to 14)
*2: For salt water
*3: For acid (Normal pH0 to 4)
*4: Use PH8HS for no cleaning, jet cleaning or brush cleaning.
*5: Choose Perfluoroelastomer (FFKM) when this holder is used in organic solvent, high alkali or high temperature alkali.
*6: The required number of mounting bracket sets depends on the installation location and flow rate. In general, one set is sufficient for pipe lengths of 1 meter, and otherwise two sets are required.

### 2C. Submersion Type Holder DOX8HS

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOX8HS</td>
<td>-</td>
<td>-</td>
<td>Submersion type holder</td>
</tr>
</tbody>
</table>

#### Material
- PP: Polypropylene
- S3: Stainless steel

<table>
<thead>
<tr>
<th>Pipe length</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td></td>
<td>1.0 m</td>
</tr>
<tr>
<td>-15</td>
<td></td>
<td>1.5 m</td>
</tr>
<tr>
<td>-20</td>
<td></td>
<td>2.0 m</td>
</tr>
<tr>
<td>-25</td>
<td></td>
<td>2.5 m</td>
</tr>
<tr>
<td>-30</td>
<td></td>
<td>3.0 m</td>
</tr>
<tr>
<td>-35</td>
<td></td>
<td>3.5 m (stainless steel -S3 only)</td>
</tr>
<tr>
<td>-40</td>
<td></td>
<td>4.0 m (stainless steel -S3 only)</td>
</tr>
</tbody>
</table>

#### Type
- C: For DO30G, SS300G
- L: For DO70G

#### Cleaning Device (*1)
- NN: No Cleaning
- JT: For jet cleaning (The solenoid valve must be specified separately.)

#### Connector for Cleaning
- NN: No Cleaning
- JP: Rc1/2
- NP: 1/2NPT

#### Style Code
* B: Style B

<table>
<thead>
<tr>
<th>Option</th>
<th>Mounting Bracket for Pipe (*2)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>/MS1</td>
<td>Pipe mounting hardware: 1 set</td>
</tr>
<tr>
<td></td>
<td>/MS2</td>
<td>Pipe mounting hardware: 2 sets</td>
</tr>
<tr>
<td></td>
<td>/MS5</td>
<td>One mounting bracket (Stainless steel)</td>
</tr>
<tr>
<td></td>
<td>/MS6</td>
<td>Two mounting brackets (Stainless steel)</td>
</tr>
</tbody>
</table>

*1: When using the wiper cleaning of MLSS meter, choose a proper cleaning system under the MS code of the MLSS sensor.
*2: The required number of mounting bracket sets depends on the installation location and flow rate. In general, one set is sufficient for pipe lengths of 1 meter, and otherwise two sets are required.
### 3A. Flow-Through Type Holder PH8HF

**Model** | **Suffix Code** | **Option Code** | **Description**
--- | --- | --- | ---
PH8HF |  |  | Flow-through type holder

**Material** (*7*)
- PP
- S3
- PV
- TN

**Process Connection**
- JPT
- NPT
- J10
- A15

**Measuring System**
- T

**Cleaning Device**
- NN
- S3
- TN
- HC
- JT
- BR

**Cable length or Connection**
- NN
- C1
- C3
- C6
- C7
- C8
- C9
- JP
- NP

**Style Code**
* A

---------------------

<table>
<thead>
<tr>
<th>Option</th>
<th>Mounting Bracket for Pipe O-ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF1</td>
<td>Stainless Steel Mounting Bracket (*5)</td>
</tr>
<tr>
<td>PF</td>
<td>Perfluoroelastomer (FFKM) (*4)</td>
</tr>
<tr>
<td>TF1</td>
<td>Fluoroelastomers coated O-ring for PH8ECP (*9)</td>
</tr>
<tr>
<td>TF2</td>
<td>Fluoroelastomers coated O-ring for PH4C and PH4CT (*9)</td>
</tr>
</tbody>
</table>

---

*1: General purpose (Normal pH 3 to 14)
*2: For salt water
*3: For acid (Normal pH 0 to 4)
*4: Choose Perfluoroelastomer (FFKM) when this holder is used in organic solvent, high alkali or high temperature alkali.
*5: Mounting bracket is generally not required when the stainless steel holder is installed in-line in a pipe. It is required where the holder is installed in a sampling rack (in which case the U-bolt included in MF1 in not used).
*6: Only mating dimensions are according to flange standard.
*7: Criteria for material selection (-PP or -S3)
In general, polypropylene is recommended from the viewpoint of chemical resistance. However stainless steel is recommend in any of the following cases:
- The liquid contains organic reagent, oxidizing agents, etc., which can attack polypropylene.
- The temperature/pressure correlation of the process condition falls within the hatched area of the diagram shown right.
- The use of polypropylene is not reasonable from a viewpoint of strength or past experience.
For stainless steel, normally a 3 to 14 pH value is recommended.

---

*8: For Process Connection, select -J10 or -A15, for Cleaning Device select -NN.
*9: Selectable only when Material is -PV or -TN.
### 3B. Flow-Through Type Holder (Explosionproof Type) PH8HFF

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH8HFF</td>
<td></td>
<td></td>
<td>Flow-through type holder (Ex-proof type)</td>
</tr>
</tbody>
</table>

**Material** (*7)
- PP: Polypropylene (Refer to note below for selection)
- S3: Stainless steel

**Process Connection**
- JPT: 1 NPT female thread
- NPT: JIS 10K 25 FF flange
- J10: ANSI Class 150 1 FF flange equivalent (for polypropylene holder -PP)
- A15: ANSI Class 150 1 RF Flange with serration (for 316 SS holder -S3)

**Measuring System**
- T: Always -T

**Cleaning Device** (*4)
- S3: 316SS transducer (*1)
- TN: Titanium transducer (*2)
- HC: Hastelloy C transducer (*3)

**Explosion Protection**
- JS: TiIS Flameproof (d2G4)

**Style Code**
- A: Style A

**Option**
- Mounting Bracket for Pipe: /MF1
- Flame-proof Packing: /PG2
- Tag Plate: /SCT
- O-ring: /PF
- Perfluoroelastomer (FFKM): (*5)

*1: General purpose (Normal pH 3 to 14)
*2: For salt water
*3: For acid (Normal pH 0 to 4)
*4: Use PH8HS for no cleaning, Jet cleaning or Brush cleaning.
*5: Choose Perfluoroelastomer (FFKM) when this holder is used in organic solvent, high alkali or high temperature alkali.
*6: Mounting bracket is generally not required when the stainless steel holder is installed in-line in a pipe
It is required where the holder is installed in a sampling rack (in which case the U-bolt included in /MF1 in not used).
*7: Criteria for material selection (-PP or -S3)
In general, polypropylene is recommended from the viewpoint of chemical resistance.
However, stainless steel is recommended in any of the following cases:
- The liquid contains organic reagent, oxidizing agents, etc. which can attack polypropylene.
- The temperature/pressure correlation of the process condition falls within the hatched area of the diagram shown right.
- The use of polypropylene is not reasonable from a viewpoint of strength or past experience.
For stainless steel, normally a 3 to 14 pH value is recommended.

---

### 3C. Flow Type Holder FH350G (For MLSS Meter)

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FH350G</td>
<td></td>
<td></td>
<td>Flow type holder</td>
</tr>
</tbody>
</table>

**Material**
- PP: Polypropylene
- S3: Stainless steel

**Process Connection**
- JPT1: 1 NPT female thread
- NPT1: JIS 10K 25 FF flange
- J10F: ANSI Class 150 1 FF flange equivalent (Only -PP)
- A15F: ANSI Class 150 1 FF flange with serration (Only -S3)

**Cleaning Device**
- NN: Not Required
- JT: For Jet Cleaning (A solenoid valve is separately required)

**Connection for Jet Cleaning**
- NN: Not Required
- JP: Rc 1/2
- NP: 1/2 NPT female thread

**Option**
- Mounting Hardware: /MF5
- Tag Plate: /SCT

Note: Required flow rate is 6 L/min or greater.
Maximum measuring range of MLSS sensor is 0 to 1000 mg/L.
### 4. Pull-up Type Holder HH350G

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HH350G</td>
<td>-</td>
<td>-NN</td>
<td>Pull-up Type Holder</td>
</tr>
<tr>
<td>-</td>
<td>-NN</td>
<td>Always</td>
<td>-NN</td>
</tr>
<tr>
<td>Guide Pipe Length</td>
<td>-00</td>
<td>Always</td>
<td>Not required</td>
</tr>
<tr>
<td></td>
<td>-10</td>
<td>Always</td>
<td>1 m</td>
</tr>
<tr>
<td></td>
<td>-20</td>
<td>Always</td>
<td>2 m</td>
</tr>
<tr>
<td></td>
<td>-30</td>
<td>Always</td>
<td>3 m</td>
</tr>
<tr>
<td></td>
<td>-40</td>
<td>-NN</td>
<td>4 m</td>
</tr>
</tbody>
</table>

Cleaning Device | -NN | No Cleaning |
Connection for Jet Cleaning | -NN | Not required |
|                 | -JP | Rc 1/2       |
|                 | -NP | 1/2 NPT      |

*Always -NN: For jet cleaning (The solenoid valve must be specified separately.)*

### 5. Slant Type Float Holder PB350G

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB350G</td>
<td>-PV</td>
<td>-S3</td>
<td>Slant Type Float Holder</td>
</tr>
<tr>
<td>Arm Material</td>
<td>-PV</td>
<td>PVC</td>
<td>Stainless steel</td>
</tr>
<tr>
<td></td>
<td>-S3</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>Pipe Length</td>
<td>-00</td>
<td>Not required</td>
<td>-PV</td>
</tr>
<tr>
<td></td>
<td>-25</td>
<td>2.5 m</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>-NN</td>
<td>Always -NN</td>
<td></td>
</tr>
</tbody>
</table>

*1: When pipe (JIS K6741 VP40) is prepared by user.

### 6. Vertical Type Float Holder PB360G

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB360G</td>
<td>-PV</td>
<td>-S3</td>
<td>Vertical Type Float Holder</td>
</tr>
<tr>
<td>Arm Material</td>
<td>-PV</td>
<td>PVC</td>
<td>Stainless steel</td>
</tr>
<tr>
<td></td>
<td>-S3</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>Pipe Length</td>
<td>-25</td>
<td>2.5 m</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-35</td>
<td>3.5 m</td>
<td></td>
</tr>
</tbody>
</table>

### 7A. Solenoid Valve for Jet/Brush Cleaning PH8MV

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH8MV</td>
<td>-A</td>
<td>-W</td>
<td>Solenoid Valve for Jet/Brush Cleaning</td>
</tr>
<tr>
<td>Fluid</td>
<td>-100</td>
<td>-100</td>
<td>100 V AC</td>
</tr>
<tr>
<td></td>
<td>-110</td>
<td>-110</td>
<td>110 V AC</td>
</tr>
<tr>
<td></td>
<td>-200</td>
<td>-200</td>
<td>200 V AC</td>
</tr>
<tr>
<td></td>
<td>-220</td>
<td>-220</td>
<td>220 V AC</td>
</tr>
<tr>
<td>Power Frequency</td>
<td>-50</td>
<td>-50</td>
<td>50 Hz</td>
</tr>
<tr>
<td></td>
<td>-60</td>
<td>-60</td>
<td>60 Hz</td>
</tr>
<tr>
<td>Style Code</td>
<td>*D</td>
<td>Style D</td>
<td></td>
</tr>
</tbody>
</table>

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### 7B. Solenoid Valve (Explosionproof Type) for Jet/Brush Cleaning PH8MVF

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH8MVF</td>
<td></td>
<td></td>
<td>Flameproof type Solenoid Valve</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fluid Name</th>
<th>-A</th>
<th>-W</th>
<th>Air</th>
<th>Water</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>-100</th>
<th>-110</th>
<th>-200</th>
<th>-220</th>
<th>100 V AC 50/60 Hz</th>
<th>110 V AC 60 Hz only</th>
<th>200 V AC 50/60 Hz</th>
<th>220 V AC 60 Hz only</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Frequency</th>
<th>-50</th>
<th>-60</th>
<th>50 Hz</th>
<th>60 Hz</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Explosion Protection</th>
<th>-JS</th>
<th>TIIS Flameproof (d2G4)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Style Code</th>
<th>*B</th>
<th>Style B</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Option</th>
<th>Tag Plate</th>
<th>/SCT</th>
<th>Stainless steel tag plate</th>
</tr>
</thead>
</table>

### 8A. Ultrasonic Oscillator PUS400G

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUS400G</td>
<td></td>
<td></td>
<td>Ultrasonic Oscillator (for pH Meter)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application</th>
<th>-NN</th>
<th>General purpose</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>-1</th>
<th>-2</th>
<th>-3</th>
<th>-4</th>
<th>-5</th>
<th>-6</th>
<th>100 V AC 50/60 Hz</th>
<th>110 V AC 50/60 Hz</th>
<th>115 V AC 50/60 Hz</th>
<th>200 V AC 50/60 Hz</th>
<th>220 V AC 50/60 Hz</th>
<th>240 V AC 50/60 Hz</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Language Used for Cautions</th>
<th>-E</th>
<th>-J</th>
<th>English</th>
<th>Japanese</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Option</th>
<th>Mounting Bracket</th>
<th>/PS</th>
<th>Pipe mounting bracket (stainless steel)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Hood</th>
<th>/H</th>
<th>2-inch pipe mounting</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Special Coating</th>
<th>/X1</th>
<th>Epoxy coating</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Tag Plate</th>
<th>/SCT</th>
<th>Stainless steel tag plate</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Conduit Adaptor</th>
<th>/AFTG</th>
<th>G1/2</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>/ANSI</th>
<th>1/2 NPT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>/SPS</th>
<th>Teflon coated stainless steel screws</th>
</tr>
</thead>
</table>

### 8B1. Ultrasonic Oscillator (Explosionproof Type) PH8USF

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH8USF</td>
<td></td>
<td></td>
<td>Explosionproof type Ultrasonic Oscillator</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>-3</th>
<th>-4</th>
<th>-5</th>
<th>-7</th>
<th>200 V AC 50/60 Hz</th>
<th>220 to 240 V AC 50/60 Hz specify voltage</th>
<th>100 V AC 50/60 Hz</th>
<th>110 to 115V AC 50/60 Hz specify voltage</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Explosion Protection</th>
<th>-JS</th>
<th>TIIS Flameproof (d2G4)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Style Code</th>
<th>*A</th>
<th>Style A</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Option</th>
<th>Mounting Bracket</th>
<th>/PM</th>
<th>2-inch pipe mounting</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Oscillator - Holder Cable</th>
<th>/C□□</th>
<th>Specify the length in meter □□. No termination</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Gasket</th>
<th>/PG2</th>
<th>TIIS flameproof packing adaptor 3/4 inch: 2 pcs</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Tag Plate</th>
<th>/SCT</th>
<th>Stainless steel tag plate</th>
</tr>
</thead>
</table>

Note: PH8USF must be used with Alarm Box PH8AL.

For 110 to 115 V AC or 220 to 240 V AC power supplies, specify the voltage when ordering.

Tolerance is ±10% of the voltage specified.

Example: Power supply voltage 110 V AC
### 8B2. Alarm Box PH8AL

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Code</th>
<th>Option Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH8AL</td>
<td></td>
<td></td>
<td>Alarm box</td>
</tr>
<tr>
<td>Power Supply</td>
<td>-3</td>
<td></td>
<td>200 V AC 50/60 Hz</td>
</tr>
<tr>
<td></td>
<td>-4</td>
<td></td>
<td>220 to 240 V AC 50 to 60 Hz</td>
</tr>
<tr>
<td></td>
<td>-5</td>
<td></td>
<td>100 V AC 50/60 Hz</td>
</tr>
<tr>
<td></td>
<td>-7</td>
<td></td>
<td>110 to 115 V AC 50 to 60 Hz</td>
</tr>
<tr>
<td>Style Code</td>
<td>*A</td>
<td></td>
<td>Style A</td>
</tr>
<tr>
<td>Option</td>
<td>IAPC</td>
<td></td>
<td>Air purge connector Rc1/4</td>
</tr>
</tbody>
</table>

#### WIRING DIAGRAM

- **Explosionproof type**
  - Holder with ultrasonic cleaner (PH8HSF, PH8HFF)
  - Ultrasonic Oscillator PH8USF

- **Non-Hazardous Area**
  - Alarm Box PH8AL

Terminal: M3.5 screw for Holder and Ultrasonic Oscillator
- M5 for AL1, AL2, L1, and L2 of Alarm Box
- M3 for N.C, COM, N.O of Alarm Box

*1: 3-conductor cable of OD 10 to 12 mm. Max. 10 m (e.g. CVV 1.25 mm² x 3c)
*2: 2-conductor shielded cable of OD 10 to 12 mm, Max. 1000 m.
  - Normal conductor cross-section: 3.5 mm² or greater. (total lead resistance not to exceed 10 Ω)
*3: Metal conduit or flexible conduit (only with flameproof packing)
*4: Must prepare a switch for power supply in a panel.

---

**Wiring for Non-Explosionproof Ultrasonic Cleaning System**

- Ultrasonic vibrator
- Dedicated cable (supplied with vibrator)
- Ultrasonic oscillator PUS400G
- Output terminals
- Shield
- Noise filter assembly *
- Power supply

* Only for PUS400G-NN-KC
- **Mounting Bracket, Stainless Steel**
  /MS5 (1 set), /MS6 (2 set)  
  UNIT : mm
Submersion Type Holder, Polypropylene,
PH8HS-PP, PH8HS-ST

UNIT: mm

<table>
<thead>
<tr>
<th>Specification of Holder (Model and Code)</th>
<th>Cable Length (l) (Code: CI)</th>
<th>Nominal Holder Length (L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Cleaner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PH8HS-PP-C(T-NN-NN)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PH8HS-ST-C(T-NN-NN)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With Ultrasonic Cleaner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PH8HS-PP-□-T-S3-□</td>
<td>3m (C3)</td>
<td>1.7 kg 0.8 kg 2.2 kg 1.0 kg 2.7 kg 1.2 kg 3.2 kg 3.7 kg</td>
</tr>
<tr>
<td>PH8HS-PP-□-T-S5-□</td>
<td>5m (C5)</td>
<td>1.8 kg 0.8 kg 2.3 kg 1.0 kg 2.8 kg 1.2 kg 3.3 kg 3.8 kg</td>
</tr>
<tr>
<td>PH8HS-PP-□-T-S6-□</td>
<td>7m (C6)</td>
<td>1.9 kg 0.9 kg 2.4 kg 1.1 kg 2.9 kg 1.3 kg 3.4 kg 3.9 kg</td>
</tr>
<tr>
<td>PH8HS-PP-□-T-HC-□</td>
<td>10m (C7)</td>
<td>2.1 kg 1.1 kg 2.6 kg 1.3 kg 3.1 kg 1.5 kg 3.6 kg 4.1 kg</td>
</tr>
<tr>
<td>PH8HS-PP-□-T-S3-□</td>
<td>15m (C8)</td>
<td>2.5 kg 1.5 kg 3.0 kg 1.7 kg 3.5 kg 1.9 kg 4.0 kg 4.5 kg</td>
</tr>
<tr>
<td>PH8HS-PP-□-T-S3-□</td>
<td>20m (C9)</td>
<td>2.9 kg 1.9 kg 3.4 kg 2.1 kg 3.9 kg 2.3 kg 4.4 kg 4.9 kg</td>
</tr>
<tr>
<td>With Jet Cleaner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PH8HS-PP-□-T-JT-□</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PH8HS-ST-□-T-JT-□</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With Brush Cleaner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PH8HS-PP-□-T-BR-□</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PH8HS-ST-□-T-BR-□</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Weight (Approx.)

- Without Cleaner: 0.5 kg, 0.65 kg, 0.8 kg, 1.0 kg, 1.1 kg
- With Ultrasonic Cleaner: 1.7 kg, 0.8 kg, 2.2 kg, 1.0 kg, 2.7 kg, 1.2 kg, 3.2 kg, 3.7 kg
- With Jet Cleaner: 1.6 kg, 0.7 kg, 2.1 kg, 0.9 kg, 2.6 kg, 1.1 kg, 3.1 kg, 3.6 kg
- With Brush Cleaner: 1.6 kg, 0.7 kg, 2.1 kg, 0.9 kg, 2.6 kg, 1.1 kg, 3.1 kg, 3.6 kg

Cable for ultrasonic cleaning (l: Cable length)
Submersion Type Holder, Stainless Steel
PH8HS-S3

UNIT: mm

<table>
<thead>
<tr>
<th>Specification of Holder (Model and Code)</th>
<th>Without Cleaner PH8HS-S3-□□□□□□□□-NN</th>
<th>With Non-Explosionproof Ultrasonic Cleaner PH8HS-S3-□□□□□□□□-S3, TN, HC</th>
<th>With Jet Cleaner PH8HS-S3-□□□□□□□□-JT</th>
<th>With Brush Cleaner PH8HS-S3-□□□□□□□□-BR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (Approx.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without Cleaner</td>
<td>1.5 kg</td>
<td>2.3 kg</td>
<td>3.1 kg</td>
<td>3.9 kg</td>
</tr>
<tr>
<td>With Jet Cleaner</td>
<td>2.5 kg</td>
<td>3.6 kg</td>
<td>4.7 kg</td>
<td>5.8 kg</td>
</tr>
<tr>
<td>With Brush Cleaner</td>
<td>2.5 kg</td>
<td>3.6 kg</td>
<td>4.7 kg</td>
<td>5.8 kg</td>
</tr>
</tbody>
</table>

Cable for ultrasonic cleaning

Without Cleaner
PH8HS-S3-□□□□□□□□-NN
With Jet Cleaner
PH8HS-S3-□□□□□□□□-JT
With Brush Cleaner
PH8HS-S3-□□□□□□□□-BR

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GS 12J05C02-00E 10th Edition Oct. 05, 2018-00
Submersion Type Holder (Explosionproof Type), Polypropylene
PH8HSF-PP

UNIT : mm

<table>
<thead>
<tr>
<th>Specification of Holder (Model and Code)</th>
<th>Nominal Holder Length (L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Ultrasonic Cleaner PH8HSF-PP-T-T3-TN, HC</td>
<td>1000mm [Code: -10]</td>
</tr>
<tr>
<td></td>
<td>1500mm [Code: -15]</td>
</tr>
<tr>
<td></td>
<td>2000mm [Code: -20]</td>
</tr>
<tr>
<td>Weight (Approx.)</td>
<td>2.2 kg</td>
</tr>
<tr>
<td></td>
<td>2.7 kg</td>
</tr>
<tr>
<td></td>
<td>3.2 kg</td>
</tr>
</tbody>
</table>

TLIS flameproof packing adapter (optional)

Approx. 155
Submersion Type Holder (Explosionproof Type), Stainless Steel

PH8HSF-S3

UNIT: mm

Weight (Approx.)

<table>
<thead>
<tr>
<th>Specification of Holder (Model and Code)</th>
<th>Nominal Holder Length (L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Flameproof Ultrasonic Cleaner PH8HSF-S3-T-S3, TN, HC</td>
<td>1000mm [Code : -10]</td>
</tr>
<tr>
<td></td>
<td>3.3 kg</td>
</tr>
</tbody>
</table>

L = Normal holder length (Standard: 1000 mm, 1500 mm, 2000 mm)
• Mounting Bracket for Submersion Type Holder
  /MS1: 1 set, /MS2: 2 set
  <For Holder without cleaner>
  
  <For Holder with Cleaner>

• Stainless Steel Mounting Bracket for Submersion Type Holder
  /MS3: 1 set, /MS4: 2 sets
• Mounting Hardware for Calibration Holder (/MS9)

PH8HS-ST-...../MS9

UNIT : mm

- 5-ø9.5 holes
- 2-inch stanchion
- Sensor holder
- Weight: Approx. 2.5 kg

Approx. 49
46.5 35 35 35 35
201.5
130 to 200 (pitch 35)
58
54
37.5 17.5
44
57.5
46
147 to 235 (pitch 44)
• /F1 Flange Mounting
  /F1: Flange of holder without cleaner
  - Material: Polypropylene
  - Translucent polypropylene
    (PH8HS-PP-..../F1)
    (PH8HS-ST-..../F1)
    JIS 10K 100 FF (Note)
    8-ø19 holes
  Flange weight: Approx. 1 kg

  /F2: Flange of holder with cleaner, or /F
  - Material: Polypropylene
  - Translucent polypropylene
    (PH8HS-PP-..../F2)
    (PH8HS-ST-..../F2)
    (PH8HSF-PP-..../F)
    JIS 10K 200 FF (Note)
    12-ø23 holes
  Flange weight: Approx. 1.5 kg

Note: Only mating dimensions are according to flange standard.

-F1: Flange of holder without cleaner
- Material: Stainless steel (316 SS) -
  ø210
  JIS 10K 100 FF (Note)
  8-ø19 holes
  Flange weight: Approx. 5 kg

-F2: Flange of holder with cleaner, or /F
- Material: Stainless steel (316 SS) -
  ø330
  JIS 10K 200 FF (Note)
  12-ø23 holes
  Flange weight: Approx. 15 kg
Submersion Type Holder, Polypropylene (See separate drawing for mounting bracket)
DOX8HS-PP (For DO30G and SS300G)

Without cleaner
DOX8HS-PP-PP-C-NN-NN*B*

With Jet cleaner
DOX8HS-PP-PP-C-JT-JP*B*

UNIT: mm

<table>
<thead>
<tr>
<th>Specification of Holder (Model and Code)</th>
<th>Nominal Holder Length (L)</th>
<th>Without Cleaner</th>
<th>With Jet cleaner</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1000 mm</td>
<td>1500 mm</td>
<td>2000 mm</td>
</tr>
<tr>
<td></td>
<td>[ Code: -10 ]</td>
<td>[ Code: -15 ]</td>
<td>[ Code: -20 ]</td>
</tr>
<tr>
<td>Without Cleaner</td>
<td>Approx. 0.5 kg</td>
<td>Approx. 0.65 kg</td>
<td>Approx. 0.8 kg</td>
</tr>
<tr>
<td>With Jet cleaner</td>
<td>Approx. 1.6 kg</td>
<td>Approx. 2.1 kg</td>
<td>Approx. 2.6 kg</td>
</tr>
</tbody>
</table>

Weight (Approx.)

Approx. 50

UNIT: kg
Submersion Type Holder, Polypropylene (See separate drawing for mounting bracket)
DOX8HS-PP (For DO70G)

**Without cleaner**

- Sensor cable outlet
- Sensor cable outlet
- L+72
- ø50
- Approx. 63
- 42
- 458

**With Jet cleaner**

- Sensor cable outlet
- L-1
- ø34
- ø22
- ø50
- 103
- 42
- 3548
- 107
- 134
- L-323
- 454
- 239
- Approx. L+281

### Weight (Approx.)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Without Cleaner</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOX8HS-PP-□□□□□□□□□□□□□□□□□□□□□□□□□□□□</td>
<td>Approx. 0.5 kg</td>
<td>Approx. 0.65 kg</td>
<td>Approx. 0.8 kg</td>
<td>Approx. 0.95 kg</td>
<td>Approx. 1.1 kg</td>
</tr>
<tr>
<td><strong>With Jet cleaner</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOX8HS-PP-□□□□□□□□□□□□□□□□□□□□□□□□□□□□</td>
<td>Approx. 1.7 kg</td>
<td>Approx. 2.2 kg</td>
<td>Approx. 2.7 kg</td>
<td>Approx. 3.2 kg</td>
<td>Approx. 3.7 kg</td>
</tr>
</tbody>
</table>

UNIT: mm
Submersion Type Holder, Stainless Steel (See separate drawing for mounting bracket)
DOX8HS-S3 (For DO30G and SS300G)

Unit: mm

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Cleaner</td>
<td>1.9 kg</td>
<td>3.1 kg</td>
<td>4.3 kg</td>
<td>5.5 kg</td>
<td>6.7 kg</td>
</tr>
<tr>
<td>DOX8HS-S3-C-NN-B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With Jet cleaner</td>
<td>4.1 kg</td>
<td>5.6 kg</td>
<td>7.1 kg</td>
<td>8.6 kg</td>
<td>10.1 kg</td>
</tr>
<tr>
<td>DOX8HS-S3-C-JT-OP-B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specification of Holder (Model and Code)</th>
<th>3500 mm [Code:-35]</th>
<th>4000 mm [Code:-40]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Cleaner</td>
<td>7.9 kg</td>
<td>9.1 kg</td>
</tr>
<tr>
<td>DOX8HS-S3-C-NN-B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With Jet cleaner</td>
<td>11.6 kg</td>
<td>13.1 kg</td>
</tr>
<tr>
<td>DOX8HS-S3-C-JT-OP-B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the "/MS1", "/MS2" Mounting Bracket, see page 20, for the "/MS5", "/MS6", see page 15.
**Submersion Type Holder, Stainless Steel (See separate drawing for mounting bracket)**

DOX8HS-S3 (For DO70G)

**UNIT: mm**

**Weight (Approx.)**

<table>
<thead>
<tr>
<th>Specification of Holder (Model and Code)</th>
<th>Nominal Holder Length (L)</th>
<th>Weight (Approx.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Cleaner</td>
<td>1000 mm [ Code:-10 ]</td>
<td>2.0 kg</td>
</tr>
<tr>
<td></td>
<td>1500 mm [ Code:-15 ]</td>
<td>3.2 kg</td>
</tr>
<tr>
<td></td>
<td>2000 mm [ Code:-20 ]</td>
<td>4.4 kg</td>
</tr>
<tr>
<td></td>
<td>2500 mm [ Code:-25 ]</td>
<td>5.6 kg</td>
</tr>
<tr>
<td></td>
<td>3000 mm [ Code:-30 ]</td>
<td>6.8 kg</td>
</tr>
<tr>
<td>With Jet cleaner</td>
<td>3500 mm [ Code:-35 ]</td>
<td>8.0 kg</td>
</tr>
<tr>
<td></td>
<td>4000 mm [ Code:-40 ]</td>
<td>9.2 kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specification of Holder (Model and Code)</th>
<th>Nominal Holder Length (L)</th>
<th>Weight (Approx.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Cleaner</td>
<td>3500 mm [ Code:-35 ]</td>
<td>8.0 kg</td>
</tr>
<tr>
<td></td>
<td>4000 mm [ Code:-40 ]</td>
<td>9.2 kg</td>
</tr>
<tr>
<td>With Jet cleaner</td>
<td>4000 mm [ Code:-40 ]</td>
<td>11.7 kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13.2 kg</td>
</tr>
</tbody>
</table>

For the “/MS1”, “/MS2” Mounting Bracket, see page 20, for the “/MS5”, “/MS6”, see page 15.
### Flow-Through Type Holder

**PH8HF-PP-JPT-T-NN-NN**

<table>
<thead>
<tr>
<th>Model and Code</th>
<th>A Screw</th>
<th>a</th>
<th>d</th>
<th>g</th>
<th>h</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH8HF-PP-JPT-T-NN-NN</td>
<td>Rc1</td>
<td>80</td>
<td>Approx. 60</td>
<td>Approx. 70</td>
<td>Approx. 250</td>
<td>Approx. 0.4kg</td>
</tr>
<tr>
<td>PH8HF-PP-NPT-T-NN-NN</td>
<td>1NPT</td>
<td>80</td>
<td>Approx. 60</td>
<td>Approx. 70</td>
<td>Approx. 250</td>
<td>Approx. 0.4kg</td>
</tr>
<tr>
<td>PH8HF-S3-JPT-T-NN-NN</td>
<td>Rc1</td>
<td>70</td>
<td>Approx. 60</td>
<td>Approx. 70</td>
<td>Approx. 243</td>
<td>Approx. 3kg</td>
</tr>
<tr>
<td>PH8HF-S3-NPT-T-NN-NN</td>
<td>1NPT</td>
<td>70</td>
<td>Approx. 60</td>
<td>Approx. 70</td>
<td>Approx. 243</td>
<td>Approx. 3kg</td>
</tr>
</tbody>
</table>

**PH8HF-PP-A15-T-NN-NN**

<table>
<thead>
<tr>
<th>Model and Code</th>
<th>A Screw</th>
<th>a</th>
<th>d</th>
<th>g</th>
<th>h</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH8HF-PP-A15-T-NN-NN</td>
<td>108</td>
<td>79.4</td>
<td>14.2</td>
<td>15.7</td>
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<td>Approx. 70</td>
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<td>125</td>
<td>90</td>
<td>14</td>
<td>19</td>
<td>Approx. 60</td>
<td>Approx. 70</td>
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### Flow-Through Type Holder

**PH8HF-S3-J10-T-NN-NN**

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>a</th>
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<th>g</th>
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<th>Weight</th>
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<td>Approx. 70</td>
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<td>PH8HF-PP-A15-T-NN-NN</td>
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<td>Approx. 70</td>
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<td>-</td>
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Flow-Through Type Holder

PH8HF-PV-□1□-T-NN-NN

UNIT : mm

Model and Code

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<th>D</th>
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<td>15.7</td>
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Flow-Through Type Holder

PH8HF-TN-□1□-T-NN-NN

UNIT : mm

Model and Code

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<th>D</th>
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<th>Weight</th>
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*: With serrations
### Flow-Through Type Holder, Screw Connection, With Jet Cleaner / Brush Cleaner

**PH8HF-□□-OPT-T-□□-OP**

**UNIT: mm**

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<th>k</th>
<th>Weight</th>
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<td>Approx. 70</td>
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<td>Approx. 1.4kg</td>
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<td>PH8HF-S3-JPT-T-□□-OP</td>
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<td>Approx. 70</td>
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<td>Approx. 70</td>
<td>Approx. 250</td>
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<td>Approx. 1.4kg</td>
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<td>Approx. 70</td>
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Flow-Through Type Holder, Flange Connector With Jet Cleaner / Brush Cleaner

**PH8HF-○○-○10-○○-○P**

UNIT : mm

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<th>C</th>
<th>D</th>
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<th>h</th>
<th>k</th>
<th>Weight</th>
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<td>14</td>
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<td>-</td>
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<td>-</td>
<td>70</td>
<td>15</td>
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<td>Approx. 1.6kg</td>
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<td>PH8HF-S3-J10-T-○○-○P</td>
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<td>-</td>
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<td>15</td>
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<td>-</td>
<td>17</td>
<td>17</td>
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<td>Approx. 6kg</td>
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Inlet øA øB
Outlet øA øB

RC 1/2 (Code : -JP)
1/2 NPT (Code : -NP)

Approx. 47
approx. 47

150±1

110±1

øa ød

O-Ring

Unit : mm
Flow-Through Type Holder, Screw Connection, With Ultrasonic Cleaner
PH8HF-PP-JPT-T-□-□-□

UNIT: mm

<table>
<thead>
<tr>
<th>Mode and Code</th>
<th>A Screw</th>
<th>a</th>
<th>d</th>
<th>g</th>
<th>h</th>
<th>k</th>
<th>Weight</th>
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<td>Approx. 70</td>
<td>Approx. 250</td>
<td>15</td>
<td>Approx. 1.5kg</td>
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<td>PH8HF-S3-JPT-T-□-□-□</td>
<td>Rc1</td>
<td>70</td>
<td>Approx. 60</td>
<td>Approx. 70</td>
<td>Approx. 245</td>
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<td>Approx. 4.1kg</td>
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<td>1NPT</td>
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<td>Approx. 60</td>
<td>Approx. 70</td>
<td>Approx. 250</td>
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<td>Approx. 1.5kg</td>
</tr>
<tr>
<td>PH8HF-S3-NPT-T-□-□-□</td>
<td>1NPT</td>
<td>70</td>
<td>Approx. 60</td>
<td>Approx. 70</td>
<td>Approx. 245</td>
<td>17</td>
<td>Approx. 4.1kg</td>
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Cable length (l)
(Code: C□)
1 m (C1)
3 m (C3)
5 m (C5)
7 m (C6)
10 m (C7)
15 m (C8)
20 m (C9)

Cable weight; Approx. 0.1kg/m

Oct. 05, 2018-00
Flow-Through Type Holder, Flange Connection, With Ultrasonic Cleaner

PH8HF-□□-□□-□□-□□-□□-□□

UNIT : mm

<table>
<thead>
<tr>
<th>Model and Code</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>a</th>
<th>d</th>
<th>g</th>
<th>h</th>
<th>k</th>
<th>Weight</th>
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<tbody>
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<td>90</td>
<td>14</td>
<td>19</td>
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<td></td>
<td></td>
<td>15</td>
<td>Approx. 1.7kg</td>
</tr>
<tr>
<td>PH8HF-S3-J10-T-□□-□□</td>
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<td>90</td>
<td>14</td>
<td>19</td>
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<td>70</td>
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<td></td>
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<td>17</td>
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<tr>
<td>PH8HF-PP-A15-T-□□-□□</td>
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<td>79.4</td>
<td>14.2</td>
<td>15.7</td>
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<td>80</td>
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<td></td>
<td></td>
<td>15</td>
<td>Approx. 1.7kg</td>
</tr>
<tr>
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<td>79.2</td>
<td>14.2</td>
<td>15.7</td>
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<td>70</td>
<td></td>
<td></td>
<td></td>
<td>17</td>
<td>Approx. 6.1kg</td>
</tr>
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</table>

Cable length (I) (Code: C)
1 m (C1)
3 m (C3)
5 m (C5)
7 m (C6)
10 m (C7)
15 m (C8)
20 m (C9)

Cable weight; Approx. 0.1 kg/m

1 m (C1) 3 m (C3) 5 m (C5) 7 m (C6) 10 m (C7) 15 m (C8) 20 m (C9)
Flow-Through Type Holder (Explosionproof), Screw Connection, With Type Ultrasonic Cleaner

PH8HFF-ØØ-ØPT-T-ØØ-JS

Model and Code | Screw A | a | b | c | d | e | f | g | h (Approx.) | Weight (Approx.)
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
PH8HFF-PP-JPT-T-ØØ-JS | Rc1 | 80 | 9 | 11 | 60 | 25 | 30 | 70 | 250 | 3kg
PH8HFF-S3-JPT-T-ØØ-JS | Rc1 | 70 | 10 | 6 | 60.5 | 26 | 26 | 69 | 245 | 5.6kg
PH8HFF-PP-NPT-T-ØØ-JS | 1NPT | 80 | 9 | 11 | 60 | 25 | 30 | 70 | 250 | 3kg
PH8HFF-S3-NPT-T-ØØ-JS | 1NPT | 70 | 10 | 6 | 60.5 | 26 | 26 | 69 | 245 | 5.6kg
Flow-Through Type Holder (Explosionproof Type), Flange Connection, With Ultrasonic Cleaner

**PH8HFF-□□-□□-T-□□-JS**

UNIT: mm

<table>
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<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>g</th>
<th>h (Approx.)</th>
<th>Weight (Approx.)</th>
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<tbody>
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<td>Rc 1</td>
<td>80</td>
<td>8.9</td>
<td>12</td>
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<td>25</td>
<td>30</td>
<td>70</td>
<td>250</td>
<td>3.2kg</td>
</tr>
<tr>
<td>PH8HFF-S3-J10-T-□□-JS</td>
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<td>80</td>
<td>8.9</td>
<td>12</td>
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<td>25</td>
<td>30</td>
<td>70</td>
<td>250</td>
<td>3.2kg</td>
</tr>
<tr>
<td>PH8HFF-PP-A15-T-□□-JS</td>
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<td>6</td>
<td>60.5</td>
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<td>26</td>
<td>69</td>
<td>245</td>
<td>3.2kg</td>
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<td>6</td>
<td>60.5</td>
<td>26</td>
<td>26</td>
<td>69</td>
<td>245</td>
<td>3.2kg</td>
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Flow-Through Type Holder (For MLSS Meter), Screw Connection, Without Cleaning, (See separate drawing for mounting bracket)

**FH350G**

UNIT: mm

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<th>Model and Code</th>
<th>Screw A</th>
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<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>g</th>
<th>h (Approx.)</th>
<th>i</th>
<th>Weight (Approx.)</th>
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<tr>
<td>FH350G-S3-JPT1-NN-NN</td>
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<td>8.9</td>
<td>12</td>
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<td>3kg</td>
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<td>8.7</td>
<td>6</td>
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<td>26</td>
<td>69</td>
<td>245</td>
<td>55</td>
<td>3kg</td>
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Flow-Through Type Holder (For MLSS Meter), Flange Connection, Without Cleaning
(See separate drawing for mounting bracket)
FH350G

UNIT: mm

| Model and Code          | A   | B   | C   | D   | E   | a   | b   | c   | d   | e   | f   | g   | h (Approx.) | Weight (Approx.) |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|------------------|
| FH350G-PP-J10F-NN-NN    | 125 | 90  | 14  | 19  | 80  | 8.9 | 12  | 60  | 25  | 30  | 70  | 250 | 0.6kg      |
| FH350G-PP-A15F-NN-NN    | 108 | 79.4| 14.2| 15.7| 80  | 8.9 | 12  | 60  | 25  | 30  | 70  | 250 | 0.6kg      |
| FH350G-S3-J10F-NN-NN    | 125 | 90  | 14  | 19  | 70  | 8.7 | 6   | 60.5| 26  | 26  | 69  | 245 | 5kg        |
| FH350G-S3-A15R-NN-NN    | 108 | 79.2| 14.2| 15.7| 70  | 8.7 | 6   | 60.5| 26  | 26  | 69  | 245 | 5kg        |
Flow-Through Type Holder (For MLSS Meter), Screw Connection, With Jet Cleaner
(See separate drawing for mounting bracket)

FH350G

UNIT: mm

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<th>Model and Code</th>
<th>Screw A</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>g</th>
<th>h (Approx.)</th>
<th>k</th>
<th>Weight (Approx.)</th>
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<td>25</td>
<td>30</td>
<td>70</td>
<td>250</td>
<td>15</td>
<td>1.4 kg</td>
</tr>
<tr>
<td>FH350G-S3-JPT1-JP</td>
<td>Rc 1</td>
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<td>79.2</td>
<td>14.2</td>
<td>15.7</td>
<td>–</td>
<td>70</td>
<td>8.7</td>
<td>6</td>
<td>60.5</td>
<td>26</td>
<td>26</td>
<td>69</td>
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<td>4 kg</td>
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<td>12</td>
<td>60</td>
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Flow-Through Type Holder (For MLSS Meter), With Jet Cleaner (See separate drawing for mounting bracket)

FH350G

UNIT : mm

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<th>Model and Code</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>g</th>
<th>h (Approx.)</th>
<th>k</th>
<th>Weight (Approx.)</th>
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<td>250</td>
<td>15</td>
<td>1.6 kg</td>
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<td>FH350G-PP-A15F-JT-QP</td>
<td>108</td>
<td>79.4</td>
<td>14.2</td>
<td>15.7</td>
<td>2</td>
<td>80</td>
<td>9</td>
<td>11</td>
<td>60</td>
<td>25</td>
<td>30</td>
<td>70</td>
<td>250</td>
<td>15</td>
<td>1.6 kg</td>
</tr>
<tr>
<td>FH350G-S3-J10F-JT-QP</td>
<td>125</td>
<td>90</td>
<td>14</td>
<td>19</td>
<td>2</td>
<td>70</td>
<td>8</td>
<td>6</td>
<td>60.5</td>
<td>26</td>
<td>26</td>
<td>69</td>
<td>245</td>
<td>17</td>
<td>6 kg</td>
</tr>
<tr>
<td>FH350G-S3-A15R-JT-QP</td>
<td>108</td>
<td>79.4</td>
<td>14.2</td>
<td>15.7</td>
<td>2</td>
<td>70</td>
<td>8</td>
<td>6</td>
<td>60.5</td>
<td>26</td>
<td>26</td>
<td>69</td>
<td>245</td>
<td>17</td>
<td>6 kg</td>
</tr>
</tbody>
</table>
Mounting Bracket for Flow-Through Type Holder

(∗PH8HF- - -)/MF1, (∗PH8HFF- - -)/MF1, (∗FH350G- - -)/MF5

UNIT : mm

Approx. 85
Approx. 130

2-inch pipe

Bracket (thickness : 3)

U-bolt holes for holder mounting

6-ø10 holes

Holes dimension for wall mounting

F35.ai

Approx. 82
Approx. 130

2B (O.D. 60.5) Pipe

Approx. 70
Approx. 118

2B (O.D. 60.5) Pipe

Weight: Approx. 0.5kg
**Suspension Type Holder**

HH350G

UNIT: mm

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Cleaner HH350G-NN-NN-NN</td>
<td>6.4 kg</td>
<td>8.7 kg</td>
<td>11 kg</td>
<td>13.3 kg</td>
</tr>
<tr>
<td>With Jet Cleaner HH350G-NN-JT-JT-DP</td>
<td>6.9 kg</td>
<td>9.2 kg</td>
<td>11.5 kg</td>
<td>13.8 kg</td>
</tr>
</tbody>
</table>

**Angle Floating Ball Holder**

PB350G-PV, Arm Material: PVC

UNIT: mm

- **Holder**

  * Holder

  Float ball
  
  ø230 (sphere)
  
  Arm
  
  ø48
  
  45°
  
  (2570±50) *1
  
  (2500±50) *1
  
  (310)
  
  *1: Dimension when a 2500 mm long pipe is used for the arm assembly with the PB350G-PV-00-NN.
**PB350G-S3, Arm Material: Stainless Steel**

**UNIT : mm**

* Holder

- Arm assembly with the PB350G-S3-00-NN.

* Mounting Bracket

Pipe Mounting with U-bolts

- **Arm assembly**
  - For JIS 40A (48 mm in diameter) pipe (PVC pipe)
  - JIS 20Su (34 mm in diameter) pipe (304 SS pipe)

Installation with Anchor Bolt

- **Dimensions for Anchor Bolt Installation**
  - 4-M8 anchor bolt

Note: When the lock pin is inserted in the pin hole for limiting arm assembly tilt, the arm assembly holder is tilted at about 30° (in float rising direction).
Vertical Floating Ball Holder
PB360G-PV, Arm Material: PVC
UNIT : mm

Note 1: Adjust the weight so that the fluid surface level is equal to or above the center of the float ball. (Two weights when L1=2.5 m; three weights when L1=3.5 m)

Note 2: Before fixing the saddle band, adjust the orientation of the holder so that the sensor tip faces downstream.

L1= Holder length specified
L2= Half the maximum span +150 mm. However, if the counterweight touches the stanchion pipe installed, adjust the position of the pulley so that the counterweight can freely move up and down inside the tank.
Vertical Floating Ball Holder
PB360G-S3, Arm Material: Stainless Steel

UNIT: mm

- Arm pipe (ø34)
- Counterweight (n x 1.5kg)
- Saddle band
- Stanchion pipe ø60.5
- 2-inch (prepared by user)
- Float ball ø230

The guide roller must be able to be opened/closed smoothly.

- Note 1: Adjust the weight so that the fluid surface level is equal to or above the center of the float ball. (Two weights when L1=2.5 m; three weights when L1=3.5 m)
- Note 2: Before fixing the saddle band, adjust the orientation of the holder so that the sensor tip faces downstream.

L1= Holder length specified
L2= Half the maximum span + 150 mm. However, if the counterweight touches the stanchion pipe installed, adjust the position of the pulley so that the counterweight can freely move up and down inside the tank.
Solenoid valve

General Purpose Solenoid Valve
PH8MV*D

Explosionproof Solenoid Valve
PH8MVF*B

Cautions on Installation of Solenoid Valve for Jet / Brush Cleaning
1. Do not allow a sample solution to flow backward into the solenoid valve or to be replaced with the driving fluid. For this take relevant measures; e.g. install a check valve to prevent inverse pressure between the inlet and outlet of the solenoid valve, or install the solenoid valve higher than the holder, especially when using the air jet/brush cleaning system.
2. Make sure to avoid the risk of corrosion of the solenoid body (bronze) and seal (nitrile rubber) by vapor or gaseous components generated from a sample solution, especially when using the air jet/brush cleaning system.

Ultrasonic Oscillator (Non-Explosionproof Type)
PUS400G
• External dimensions of additional noise filter assembly when PUS400G-NN-KC

UNIT : mm

- Dedicated power cable for noise filter assembly
  - Black L1
  - White L2
  - Green G

- Dedicated power cable outlet
- External power cable inlet (cable OD of ø6 to ø12)
- Weight of noise filter assembly: Approx. 2 kg
- Weight of power cable: Approx. 0.2 kg

• Pipe mounting bracket for additional noise filter assembly (option code: /PS)

UNIT : mm

- Pipe mounting bracket 1
  - 5- ø6.5 holes
  - ø6.5 x 13 hole
  - 2- ø5.5 holes
  - ø6.5 x 13 hole
  - 2- ø9 holes
  - 4- ø10 holes
  - Weight: Approx. 0.7 kg

- Pipe mounting bracket 2
  - 4-M5 screws
  - U-bolt
  - M8 nut ×2
  - 2-inch pipe (vertical mounting OD ø60.5)
- Wall or Panel mounting bracket for additional noise filter assembly (option code: /W, /PA)  UNIT: mm

Ultrasonic Oscillator (Explosionproof Type))
PH8USF  UNIT: mm

Alarm Box
PH8AL  UNIT: mm