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 fittingmounted 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.

■ 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.

Sensors	Holders, Holders with Cleaning System	Converters
PH8ERP PH8EFP OR8ERG OR8EFG DO30G SS300G PH4P PH4PT OR4P PH4F PH4FT PH4C PH4CT OR4C PH4FE **Accessories** Calibration reagents and KCl solution	●Guide Pipe — PH8HG ●Suspension Type Holder — HH350G <No Cleaning> <With Jet Cleaning> ●Submersion Type Holder — PH8HS (No Cleaning / With Cleaning) ●Vertical Floating Ball Holder — PB360G ●Angled Floating Ball Holder — PB350G (Float) ●Submersion Type Holder — DOX8HS (No Cleaning / With Cleaning) ●Flow-Through Type Holder — PH8HF、FH350G (No Cleaning / With Cleaning)	FLXA202/FLXA21 FLXA402 SS400G **Cleaning Devices** ● PUS400G
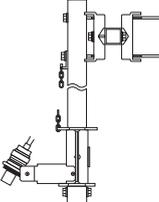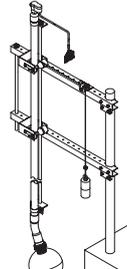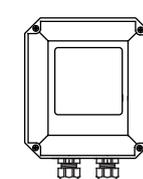
System Configuration (General Purpose, Non-Explosionproof Types)

> **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 PH8HS

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 (refer to dimensions) 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 3m max.
  Note: The pressure may be limited by the specifications of the sensor.
Utility required for cleaning unit:

Type	Pressure (kPa)	Flow Rate
Water jet	200 to 400 + Liquid pressure	5 to 20 L/min
Water brush	100 to 250 + Liquid pressure	20 to 30 L/min
Air jet	200 to 400 + Liquid pressure	100 to 300 NL/min
Air brush	150 to 250 + Liquid pressure	300 to 600 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.

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; Fluor-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.
Fflow 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.

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 wiper 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. Water jet;　100 to 200 kPa
　　　　　Air jet;　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.

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. When using with 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 set of mounting hard 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, 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.

Utility required for cleaning unit:

Type	Pressure (kPa)	Flow Rate
Water jet	200 to 400 + Liquid pressure	5 to 20 L/min
Water brush	100 to 250 + Liquid pressure	20 to 30 L/min
Air jet	200 to 400 + Liquid pressure	100 to 300 NL/min
Air brush	150 to 250 + Liquid pressure	300 to 600 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.

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

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

Use PH8HF 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 to1000mg/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.

4. Suspension Holder HH350G

Applicable sensor:
   General pH Sensor;   PH8ERP, PH8EFP
   General ORP Sensor;   OR8ERG, OR8EFG
   Dissolved Oxygen Sensor; DO30G
   MLSS Sensor;   SS300G
   Note1: When using a KCl filling type sensor, a stanchion or mounting bracket for the KCl tank is required separately.
   Note2: Not applicable for PH4/OR4 sensor.

Mounting: 2-inch pipe mounting vertical.
   Note: Make sure the mounting pipe firmly installed.

Cleaning method: Water or air jet cleaning Material:
   Holder;   Polypropylene and stainless steel (304 SS)
   Guide-pipe;   Stainless steel (304 SS)
   Mounting bracket; Stainless steel (304 SS)
   Cleaning unit;   Stainless steel (304 SS), PVC, and polypropylene

Weight: 6.4 to 13.8 kg
Temperature range: 0 to 80°C
   Note: The temperature may be limited by the specifications of the sensor.

Flow rate: 1 m/s or less
   Note: The flow speed may be limited by the specifications of the sensor.

Utility required for cleaning device:
   Pressure; Water jet;   100 to 200 kPa
              Air jet;   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
   Note1: When using a KCl filling type sensor, a stanchion or mounting bracket for the KCl tank is required separately.
   Note2: 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
            (The arm must not be distorted significantly).
  Note: The flow speed may be limited depending on the
        specifications of the sensor.

7A. Solenoid Valve for Jet/Brush Cleaning PH8MV

Pilot kick operated, 2-port valve. Open when energized.

Fluid: Normal tap water, industrial water, or air
Operating 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: 100/110/200/220 V AC, 50/60 Hz
Power consumption: 10 W
Construction: IP53
Material:
  Body;   Bronze
  Sealing;   Nitrile rubber
Ambient temperature: Maximum 50°C
Cable inlet connection: G 1/2
Weight: Approx. 0.9 kg

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

Pilot kick operated, 2-port valve. Open when energized.

Fluid: Normal tap water, industria water, or air
Operating pressure: 0.05 to 1 MPa
Forward (reverse) pressure resistance:
                    1.5 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 packin adaptor (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: Approx. 70 V
Power supply: 100/110/115/200/220/240 V AC±10%
                50/60 Hz
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 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 (specify voltage) 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 V AC 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

Model	Suffix Code		Option Code	Description
PH8HG	....		....	Guide Pipe
Material	**-PV**		....	Polyvinylchloride
	-PP		....	Polypropylene
Style Code		***A**	....	Style A
Option Mounting Bracket (*)		**/MS5**		Stainless steel mounting bracket (1 set)

   *:   A set of 2-inch pipe mounting bracket is provided as standard.

2A. Submersion Type Holder PH8HS

Model	Suffix Code				Option Code	Description
PH8HS	-----------------------------------				....	Submersion type holder
Material	**-PP**				....	Polypropylene
	-S3				....	Stainless steel
	-ST				....	Translucent polypropylene (*6)
Pipe length	**-10**				....	1.0 m
	-15				....	1.5 m
	-20				....	2.0 m
	-25				....	2.5 m
	-30				....	3.0 m
pH Measuring System		**-T**			....	Always -T
Cleaning Device		**-NN**			....	No Cleaning
		-S3			....	For ultrasonic cleaning (Transducer: 316 SS) (*1)
		-TN			....	For ultrasonic cleaning (Transducer: Titanium) (*2)
		-HC			....	For ultrasonic cleaning (Transducer: Hastelloy C) (*3)
		-JT			....	For jet cleaning. The solenoid valve must be specified separately.
		-BR			....	For brush cleaning. The solenoid valve must be specified separately.
Cable Length or Conne. Size			**-NN**		....	No Cleaning
			-C3		....	3 m
			-C5		....	5 m
			-C6		....	7 m
			-C7		....	10 m
			-C8		....	15 m
			-C9		....	20 m
			-JP		....	Rc1/2 (for Jet or Brush Cleaning)
			-NP		....	1/2 NPT (for Jet or Brush Cleaning)
Style Code				***A**	....	Style A
Option Mounting (*5)				**/MS1**		Mounting bracket: 1 set
				/MS2		Mounting bracket: 2 sets
				/MS3		Stainless steel mounting bracket: 1 set
				/MS4		Stainless steel mounting bracket: 2 sets
				/MS9		Mounting hardware for calibration holder (*7)
Special Mounting				**/F1**		JIS 10K 100 FF eq. Flange Mounting (Without Cleaner)
				/F2		JIS 10K 200 FF eq. Flange Mounting (With Cleaner)
O-ring				**/PF**		Perfluoroelastomer (FFKM) (*4)

   *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

Model	Suffix Code				Option Code	Description
PH8HSF	·············				·············	Submersion type holder (Ex-proof type)
Material	**-PP**				·············	Polypropylene
	-S3				·············	Stainless steel
Pipe length		**-10**			·············	1.0 m
		-15			·············	1.5 m
		-20			·············	2.0 m
Measuring System			**-T**		·············	Always -T
Cleaning Device (*4)				**-S3**	·············	316SS Transducer (*1)
(Ultrasonic cleaning only)				**-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				**/MS1**	Mounting bracket: 1 set (*6)
				/MS2	Mounting bracket: 2 sets (*6)
				/MS3	Stainless steel mounting bracket:1 set (*6)
				/MS4	Stainless steel mounting bracket:2 sets (*6)
Flange Mounting				**/F**	JIS 10K 200 FF equ. Flange Mounting
Flameproof Packing				**/PG2**	Flameproof packing adapter 3/4 inch
Tag Plate				**/SCT**	Stainless steel tag plate
O-ring				**/PF**	Perfluoroelastomer (FFKM) (*5)

*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

Model	Suffix Code					Option Code	Description
DOX8HS	·············					·············	Submersion type holder
Material	**-PP**					·············	Polypropylene
	-S3					·············	Stainless steel
Pipe length		**-10**				·············	1.0 m
		-15				·············	1.5 m
		-20				·············	2.0 m
		-25				·············	2.5 m
		-30				·············	3.0 m
		-35				·············	3.5 m (stainless steel -S3 only)
		-40				·············	4.0 m (stainless steel -S3 only)
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
Option　Mounting Bracket for Pipe (*2)					**/MS1**	Pipe mounting hardware:　1 set
					/MS2	Pipe mounting hardware:　2 sets
					/MS5	One mounting bracket (Stainless steel)
					/MS6	Two mounting brackets (Stainless steel)

*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

[Style: S2]

Model	Suffix Code				Option Code	Description
PH8HF	....				....	Flow-through type holder
Material (*7)	**-PP**				....	Polypropylene
	-S3				....	Stainless steel
	-PV				....	Heat-resistant PVC (*8)
	-TN				....	Titanium (*8)
Process Connection		**-JPT**			....	Rc1
		-NPT			....	1 NPT
		-J10			....	JIS 10K 25 FF (*6)
		-A15			....	ANSI Class 150 1 FF flange (only for -PP) (*6)
						ANSI Class 150 1 RF flange with serration (only for -S3)
Measuring System			**-T**		....	Always -T
Cleaning Device				**-NN**	....	No Cleaning
				-S3	....	For ultrasonic cleaning (Transducer: 316 SS) (*1)
				-TN	....	For ultrasonic cleaning (Transducer: Titanium) (*2)
				-HC	....	For ultrasonic cleaning (Transducer: Hastelloy C) (*3)
				-JT	....	For jet cleaning. The solenoid valve must be specified separately.
				-BR	....	For brush cleaning. The solenoid valve must be specified separately.
Cable length or Connection				**-NN**	....	None
				-C1	....	1 m
				-C3	....	3 m
				-C6	....	7 m
				-C7	....	10 m
				-C8	....	15 m
				-C9	....	20 m
				-JP	....	Rc1/2 (for Jet or Brush Cleaning)
				-NP	....	1/2 NPT (for Jet or Brush Cleaning)
Style Code				***A**	....	Style A
Option	Mounting Bracket for Pipe			**/MF1**		Stainless Steel Mounting Bracket (*5)
	O-ring			**/PF**		Perfluoroelastomer (FFKM) (*4)
				/TF1		Fluororesin coated O-ring for PH8ECP (*9)
				/TF2		Fluororesin coated O-ring for PH4C and PH4CT (*9)

*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 dimensioms 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.
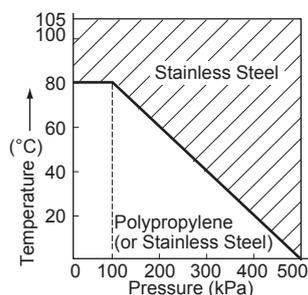
*8:   For Process Connection, select -J10 or -A15, for Cleaning Device select -NN.
*9:   Selectable only when Material is -PV or -TN.

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

[Style: S2]

Model	Suffix Code				Option Code	Description
PH8HFF	····················				············	Flow-through type holder (Ex-proof type)
Material (*7)	-PP				············	Polypropylene (Refer to note below for selection)
	-S3				············	Stainless steel
Process Connection	-JPT				············	Rc1
	-NPT				············	1 NPT female thread
	-J10				············	JIS 10K 25 FF flange
	-A15				············	ANSI Class 150 1 FF flange equivalent (for polypropylene holder -PP)
						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)
(Ultrasonic cleaning only)		-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		Stainless Steel Mounting Bracket (*6)
	Flameproof Packing			/PG2		JIS flameproof packing adapter 3/4 inch
	Tag Plate			/SCT		Stainless steel tag plate
	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 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.
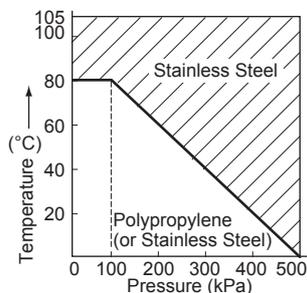
3C. Flow Type Holder FH350G (For MLSS Meter)

Model	Suffix Code			Option Code	Description
FH350G	····················			············	Flow type holder
Material	-PP			············	Polypropylene
	-S3			············	Stainless steel
Process Connection	-JPT1			············	Rc1
	-NPT1			············	1 NPT female
	-J10F			············	JIS 10K 25 FF flange
	-A15F			············	ANSI Class 150 1 FF flange equivalent (Only -PP)
	-A15R			············	ANSI Class 150 1 RF 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			Stainless Steel Mounting Bracket
	Tag Plate	/SCT			Stainless steel tag plate

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

Model	Suffix Code			Option Code	Description
HH350G	⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯			⋯⋯⋯⋯⋯⋯⋯	Pull-up Type Holder
-	**-NN**			⋯⋯⋯⋯⋯⋯	Always -NN
Guide Pipe Length	**-00**			⋯⋯⋯⋯⋯⋯	Not required
	-10			⋯⋯⋯⋯⋯⋯	1 m
	-20			⋯⋯⋯⋯⋯⋯	2 m
	-30			⋯⋯⋯⋯⋯⋯	3 m
	-40			⋯⋯⋯⋯⋯⋯	4 m
Cleaning Device		**-NN**		⋯⋯⋯⋯⋯⋯	No Cleaning
		-JT		⋯⋯⋯⋯⋯⋯	For jet cleaning (The solenoid valve must be specified separately.)
Connection for Jet Cleaning			**-NN**	⋯⋯⋯⋯⋯⋯	Not required
			-JP	⋯⋯⋯⋯⋯⋯	Rc 1/2
			-NP	⋯⋯⋯⋯⋯⋯	1/2 NPT

5. Slant Type Float Holder PB350G

Model	Suffix Code		Option Code	Description
PB350G	⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯		⋯⋯⋯⋯⋯⋯⋯	Slant Type Float Holder
Arm Material	**-PV**		⋯⋯⋯⋯⋯⋯	PVC
	-S3		⋯⋯⋯⋯⋯⋯	Stainless steel
Pipe Length	**-00**		⋯⋯⋯⋯⋯⋯	Not required (Only -PV) (*1)
	-25		⋯⋯⋯⋯⋯⋯	2.5 m
-		**-NN**	⋯⋯⋯⋯⋯⋯	Always -NN

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

6. Vertical Type Float Holder PB360G

Model	Suffix Code		Option Code	Description
PB360G	⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯		⋯⋯⋯⋯⋯⋯⋯	Vertical Type Float Holder
Arm Material	**-PV**		⋯⋯⋯⋯⋯⋯	PVC
	-S3		⋯⋯⋯⋯⋯⋯	Stainless steel
Pipe Length	**-25**		⋯⋯⋯⋯⋯⋯	2.5 m
	-35		⋯⋯⋯⋯⋯⋯	3.5 m
Float Type		**-NN**	⋯⋯⋯⋯⋯⋯	Standard Type

7A. Solenoid Valve for Jet/Brush Cleaning PH8MV

Model	Suffix Code			Option Code	Description
PH8MV	⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯			⋯⋯⋯⋯⋯⋯⋯	Solenoid Valve for Jet/Brush Cleaning
Fluid	**-A**			⋯⋯⋯⋯⋯⋯	Air
	-W			⋯⋯⋯⋯⋯⋯	Water
Power Supply	**-100**			⋯⋯⋯⋯⋯⋯	100 V AC
	-110			⋯⋯⋯⋯⋯⋯	110 V AC
	-200			⋯⋯⋯⋯⋯⋯	200 V AC
	-220			⋯⋯⋯⋯⋯⋯	220 V AC
Power Frequency		**-50**		⋯⋯⋯⋯⋯⋯	50 Hz
		-60		⋯⋯⋯⋯⋯⋯	60 Hz
Style Code			***D**	⋯⋯⋯⋯⋯⋯	Style D

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

Model	Suffix Code				Option Code	Description
PH8MVF	··············				·············	Flameproof type Solenoid Valve
Fluid Name	**-A**				·············	Air
	-W				·············	Water
Power Supply		**-100**			·············	100 V AC 50/60 Hz
		-110			·············	110 V AC 60 Hz only
		-200			·············	200 V AC 50/60 Hz
		-220			·············	220 V AC 60 Hz only
Frequency			**-50**		·············	50 Hz
			-60		·············	60 Hz
Explosion Protection			**-JS**		·············	TIIS Flameproof (d2G4)
Style Code				***B**	·············	Style B
Option	Tag Plate			**/SCT**		Stainless steel tag plate

8A. Ultrasonic Oscillator PUS400G

Model	Suffix Code			Option Code	Description
PUS400G	··············			·············	Ultrasonic Oscillator (for pH Meter)
-	**-NN**			·············	Always -NN
Application	**-NN**			·············	General purpose
	-KC			·············	General purpose for Korea and Australia
Power Supply		**-1**		·············	100 V AC 50/60 Hz
		-2		·············	110 V AC 50/60 Hz
		-3		·············	115 V AC 50/60 Hz
		-4		·············	200 V AC 50/60 Hz
		-5		·············	220 V AC 50/60 Hz
		-6		·············	240 V AC 50/60 Hz
Language Used for Cautions		**-E**		·············	English
		-J		·············	Japanese
Option	Mounting Bracket		**/PS**		Pipe mounting bracket (stainless steel)
			/W		Wall mounting bracket (stainless steel)
			/PA		Panel mounting bracket (stainless steel)
	Hood		**/H**		Awning hood (carbon steel)
			/H2		Awning hood (stainless steel)
	Special Coating		**/X1**		Epoxy coating
	Tag Plate		**/SCT**		Stainless steel tag plate
	Conduit Adaptor		**/AFTG**		G1/2
			/ANSI		1/2 NPT
			/SPS		Teflon coated stainless steel screws

8B1. Ultrasonic Oscillator (Explosionproof Type) PH8USF

Model	Suffix Code			Option Code	Description
PH8USF	··············			·············	Explosionproof type Ultrasonic Oscillator
Power Supply	**-3**			·············	200 V AC 50/60 Hz
	-4			·············	220 to 240 V AC 50/60 Hz specify voltage
	-5			·············	100 V AC 50/60 Hz
	-7			·············	110 to 115V AC 50/60 Hz specify voltage
Explosion Protection		**-JS**		·············	TIIS Flameproof (d2G4)
Style Code			***A**	·············	Style A
Option	Mounting Bracket		**/PM**		2-inch pipe mounting
	Oscillator - Holder Cable		**/C□□**		Specify the length in meter □□. No termination e.g. /C03 refers to the cable length of 3 m. Standard cable lengths: 3, 7, 10 m, 10 m max.
	Gasket		**/PG2**		TIIS flameproof packing adaptor 3/4 inch: 2 pcs
	Tag Plate		**/SCT**		Stainless steel tag plate

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

Model	Suffix Code	Option Code	Description
PH8AL	....	....	Alarm box
Power Supply	**-3**	....	200 V AC 50/60 Hz
	-4	....	220 to 240 V AC 50 to 60 Hz
	-5	....	100 V AC 50/60 Hz
	-7	....	110 to 115 V AC 50 to 60 Hz
Style Code	***A**	....	Style A
Option		**/APC**	Air purge connector Rc1/4

■ WIRING DIAGRAM

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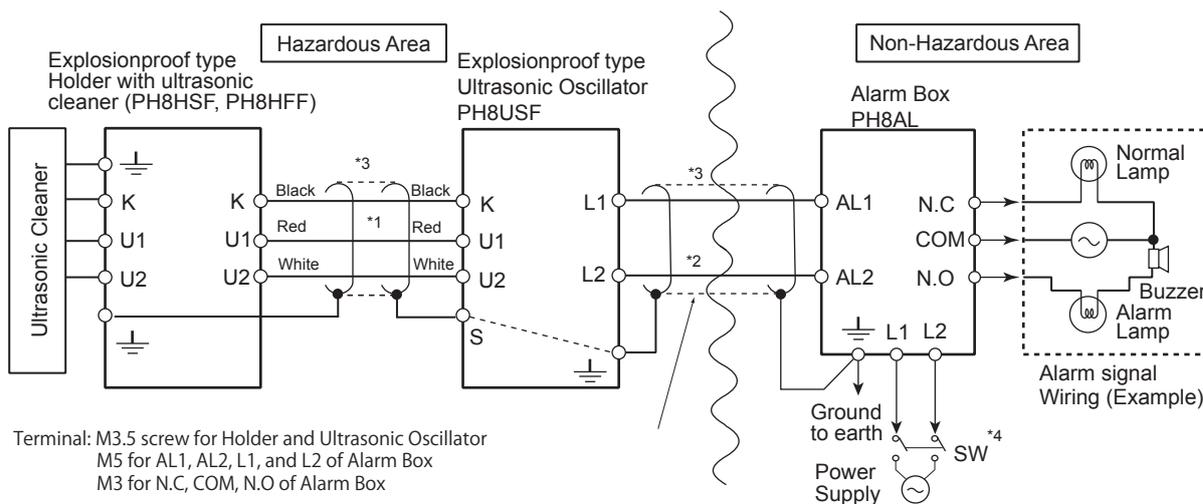
*1: 3-conductor cable of OD 10 to 12 mm. Max. 10 m (e.g. CVV 1.25 mm² x 3c)
*2: 2-conductor shielded cable of OD 10 to 12 mm, Max. 1000 m.
　　Normal conductor cross-section: 3.5 mm² or greater. (total lead resistance not to exceed 10 Ω)
*3: Metal conduit or flexible conduit (only with flameproof packing)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

Wiring for Non-Explosionproof Ultrasonic Cleaning System
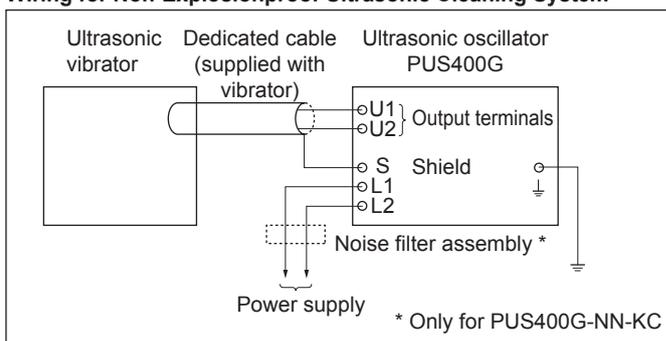
■ DIMENSIONS

Guide Pipe (with Mounting Bracket)
PH8HG   UNIT : mm

Min :110
Max:515

85

95

ø48.6

600

2-inch
stanchion (vertical)

ø48.6

54

2000

Min :50
Max:1900

Sensor
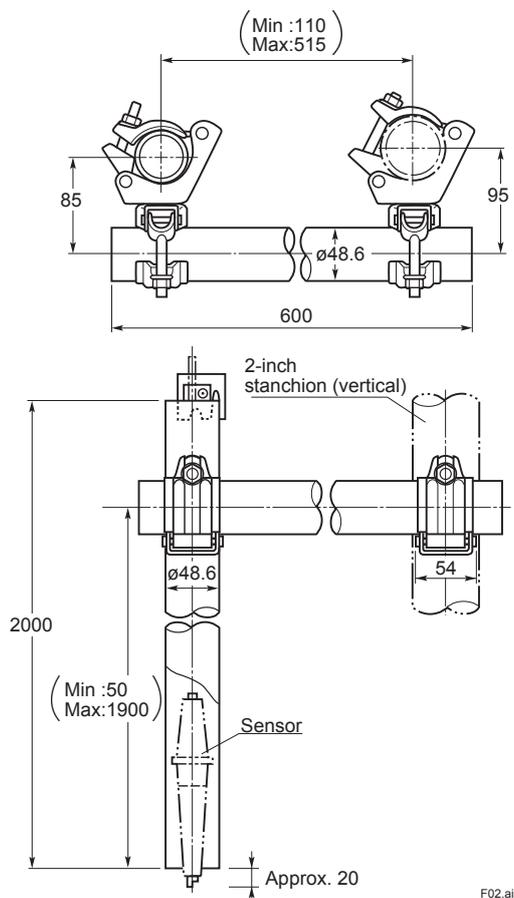
Approx. 20

F02.ai

• **Mounting Bracket, Stainless Steel**
 /MS5 (1 set), /MS6 (2 set)   UNIT : mm

28

38

58

49

22

600

15

182.5 to 400 (pitch 51.5)

100

20°

86

Angle mounting

2000

Min. 50
Max.1900

Guide pipe

2-inch
stanchion (Vertical)
(Prepared by user)

Sensor
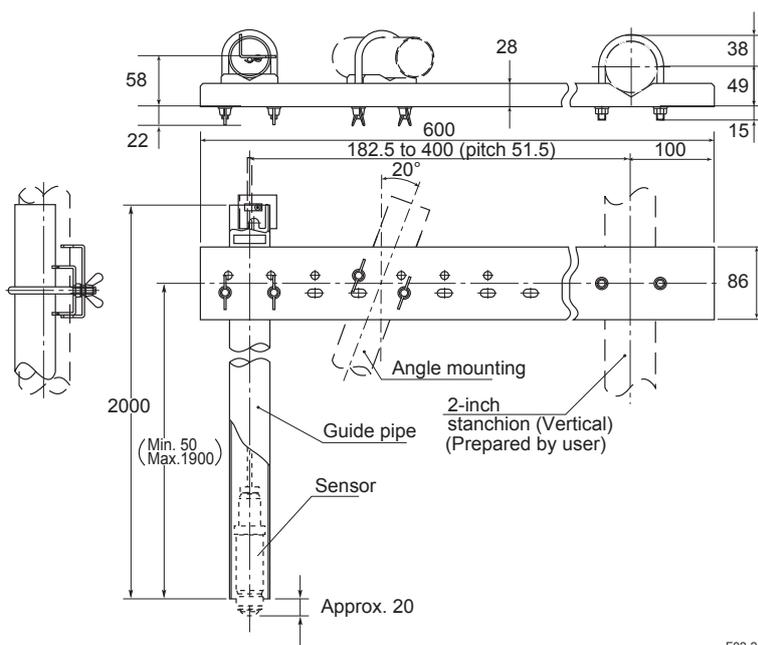
Approx. 20

F02-2.ai

Submersion Type Holder, Polypropylene,
PH8HS-PP, PH8HS-ST

UNIT : mm

<Without Cleaner>   <With Ultrasonic Cleaner>   <With Jet Cleaner>   <With Brush Cleaner>

F03.ai
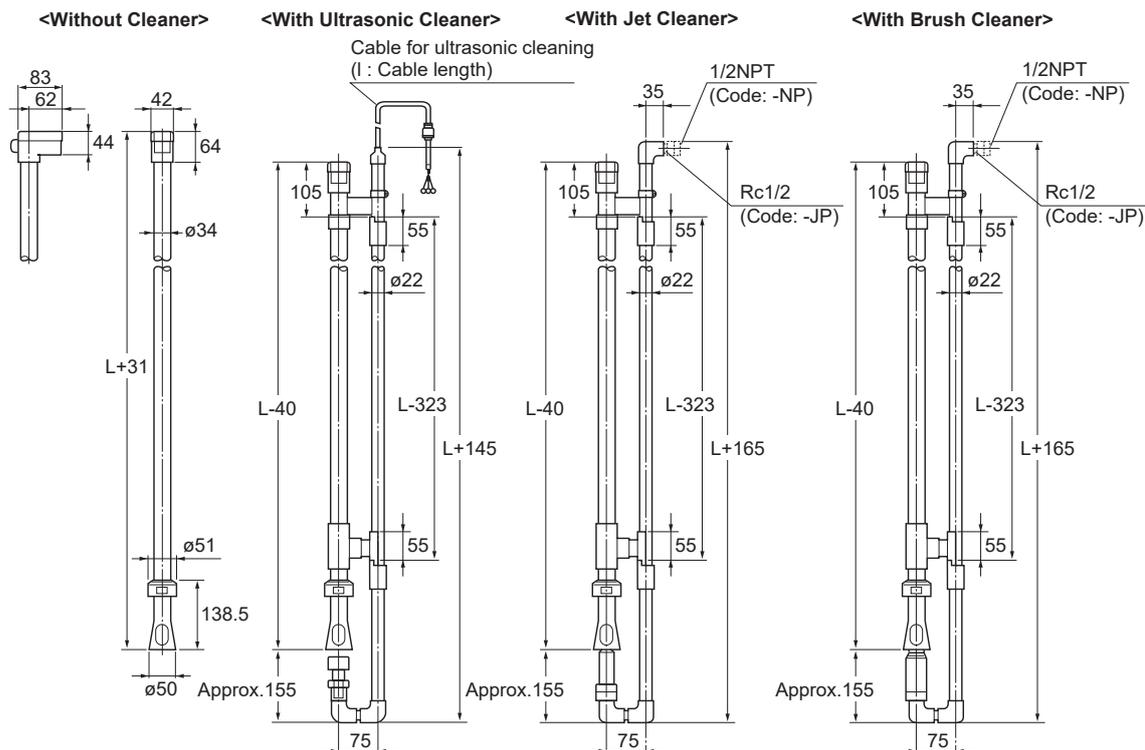
Specification of Holder (Model and Code)	Cable Length (l) (Code : C□)	Weight (Approx.) (Top or Left: Material - PP, Bottom or Right: Material - ST)				
		Nominal Holder Length (L)				
		1000mm [Code : -10]	1500mm [Code : -15]	2000mm [Code : -20]	2500mm [Code : -25]	3000mm [Code : -30]
Without Cleaner PH8HS-PP-□□-T-NN-NN PH8HS-ST-□□-T-NN-NN	――――	0.5 kg 0.5 kg	0.65 kg 0.65 kg	0.8 kg 0.8 kg	1.0 kg	1.1 k g
With Ultrasonic Cleaner PH8HS-PP-□□-T-S3-C□ PH8HS-PP-□□-T-TN-C□ PH8HS-PP-□□-T-HC-C□ PH8HS-ST-□□-T-S3-C□ PH8HS-ST-□□-T-TN-C□ PH8HS-ST-□□-T-HC-C□	3m (C3) 5m (C5) 7m (C6) 10m (C7) 15m (C8) 20m (C9)	1.7 kg 0.8 kg 1.8 kg 0.8 kg 1.9 kg 0.9 kg 2.1 kg 1.1 kg 2.5 kg 1.5 kg 2.9 kg 1.9 kg	2.2 kg 1.0 kg 2.3 kg 1.0 kg 2.4 kg 1.1 kg 2.6 kg 1.3 kg 3.0 kg 1.7 kg 3.4 kg 2.1 kg	2.7 kg 1.2 kg 2.8 kg 1.2 kg 2.9 kg 1.3 kg 3.1 kg 1.5 kg 3.5 kg 1.9 kg 3.9 kg 2.3 kg	3.2 kg 3.3 kg 3.4 kg 3.6 kg 4.0 kg 4.4 kg	3.7 kg 3.8 kg 3.9 kg 4.1 kg 4.5 kg 4.9 kg
With Jet Cleaner PH8HS-PP-□□-T-JT-□P PH8HS-ST-□□-T-JT-□P	――――	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 PH8HS-PP-□□-T-BR-□P PH8HS-ST-□□-T-BR-□P	――――	1.6 kg 0.7 kg	2.1 kg 0.9 kg	2.6 kg 1.1kg	3.1 kg	3.6 kg

Submersion Type Holder, Stainless Steel
PH8HS-S3

UNIT : mm

Specification of Holder (Model and Code)	Weight (Approx.)				
	Nominal Holder Length (L)				
	1000mm [Code : -10]	1500mm [Code : -15]	2000mm [Code : -20]	2500mm [Code : -25]	3000mm [Code : -30]
Without Cleaner PH8HS-S3-□□-T-NN	1.5 kg	2.3 kg	3.1 kg	3.9 kg	4.7 kg
With Non-Explosionproof Ultrasonic Cleaner PH8HS-S3-□□-T-S3, TN, HC	2.7 kg	3.9 kg	5.1 kg	6.3 kg	7.5 kg
With Jet Cleaner PH8HS-S3-□□-T-JT	2.5 kg	3.6 kg	4.7 kg	5.8 kg	6.9 kg
With Brush Cleaner PH8HS-S3-□□-T-BR	2.5 kg	3.6 kg	4.7 kg	5.8 kg	6.9 kg

F07.ai

Submersion Type Holder (Explosionproof Type), Polypropylene
PH8HSF-PP

UNIT : mm
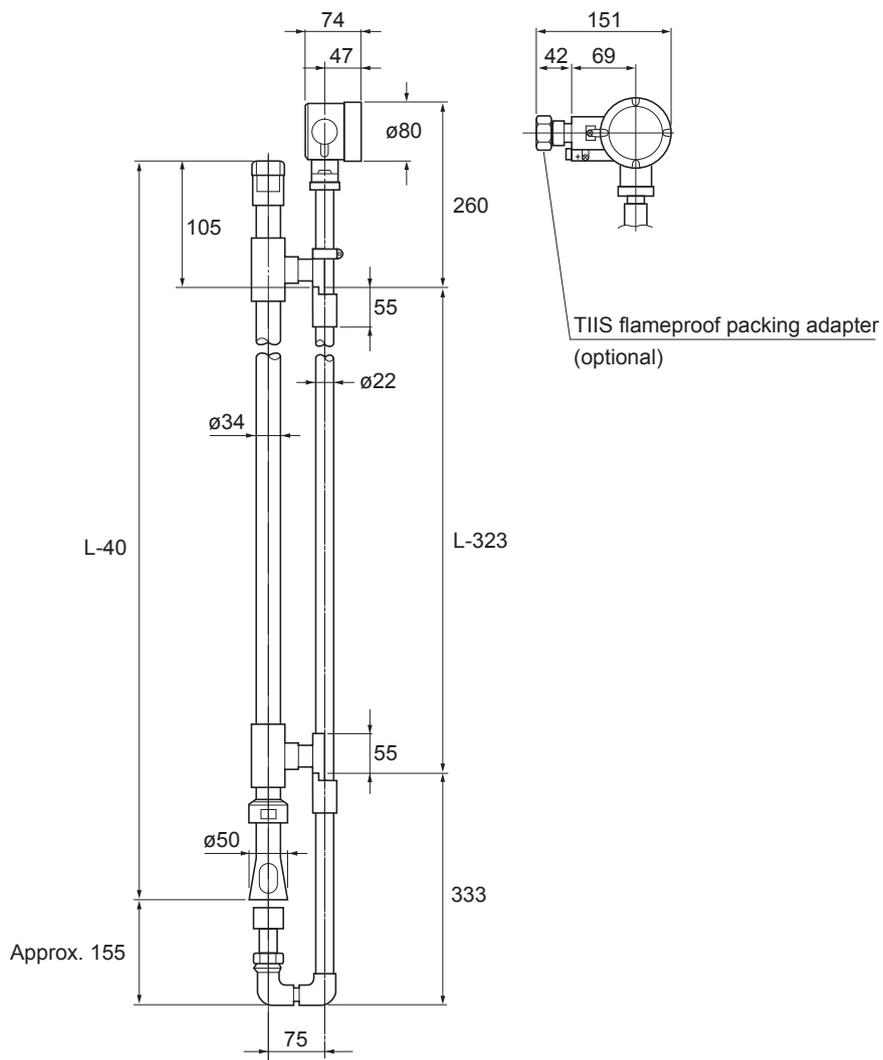
74
47
ø80
260
105
55
ø22
ø34
L-40
L-323
55
333
ø50
Approx. 155
75

151
42   69

TIIS flameproof packing adapter
(optional)

Specification of Holder (Model and Code)	Weight (Approx.)		
	Nominal Holder Length (L)		
	1000mm [Code: -10]	1500mm [Code: -15]	2000mm [Code: -20]
With Ultrasonic Cleaner PH8HSF-PP-□□-T-S3, TN, HC	2.2 kg	2.7 kg	3.2 kg

F11.ai

Submersion Type Holder (Explosionproof Type), Stainless Steel
PH8HSF-S3

UNIT : mm

74
47
ø80
245
176
42
ø22
ø34
L+31
L-323
49
ø48.6
379
Approx. 232
75

151
42   69

TIIS flameproof packing adapter
(optional)
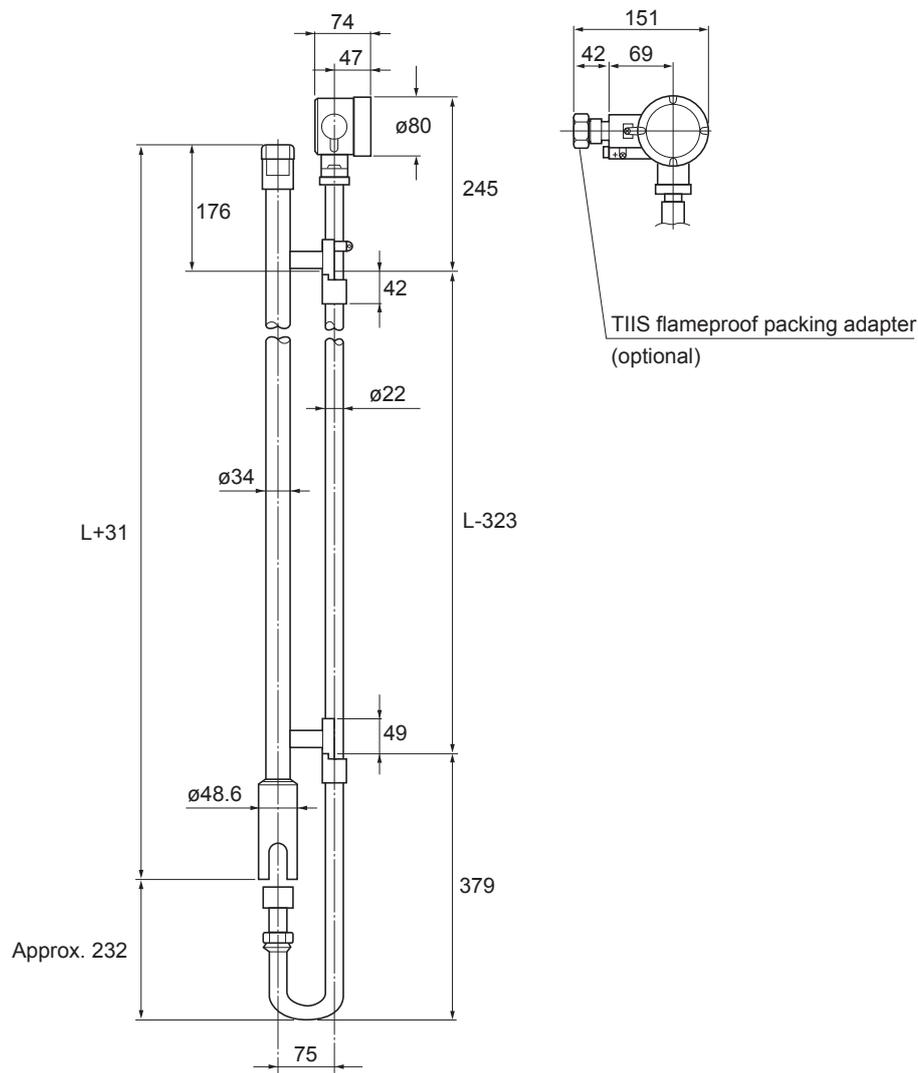
L = Normal holder length (Standard: 1000 mm, 1500 mm, 2000 mm)

Specification of Holder (Model and Code)	Weight (Approx.)		
	Nominal Holder Length (L)		
	1000mm [Code : -10]	1500mm [Code : -15]	2000mm [Code : -20]
With Flameproof Ultrasonic Cleaner PH8HSF-S3-☐☐-T-S3, TN, HC	3.3 kg	4.5 kg	5.7 kg

F15.ai

GS 12J05C02-00E 10th Edition Oct. 05, 2018-00

- **Mounting Bracket for Submersion Type Holder**
  /MS1: 1 set, /MS2: 2 set

  <For Holder without cleaner>

UNIT: mm

68

Sensor Holder

64

2-inch (OD 60.5) Stanchion

94

90

54

Max: 515, Min: 110

600

<For Holder with Cleaner>

Max: 515, Min: 110

ø48.6

62

95

600

Cleaner Holder

2-inch (OD 60.5) Stanchion

130

90

54

100
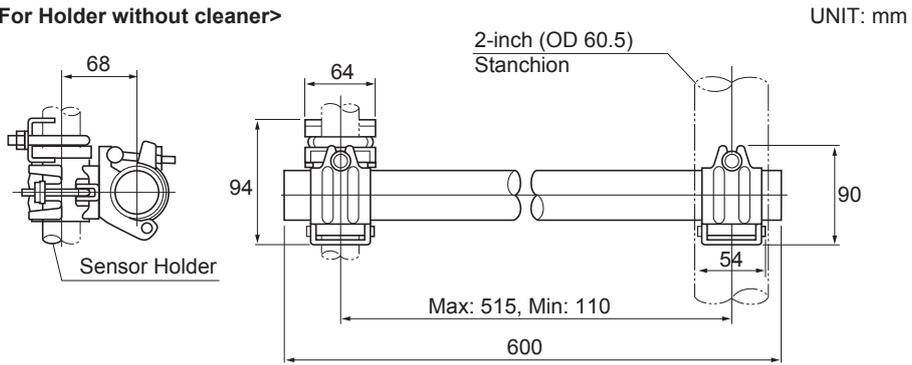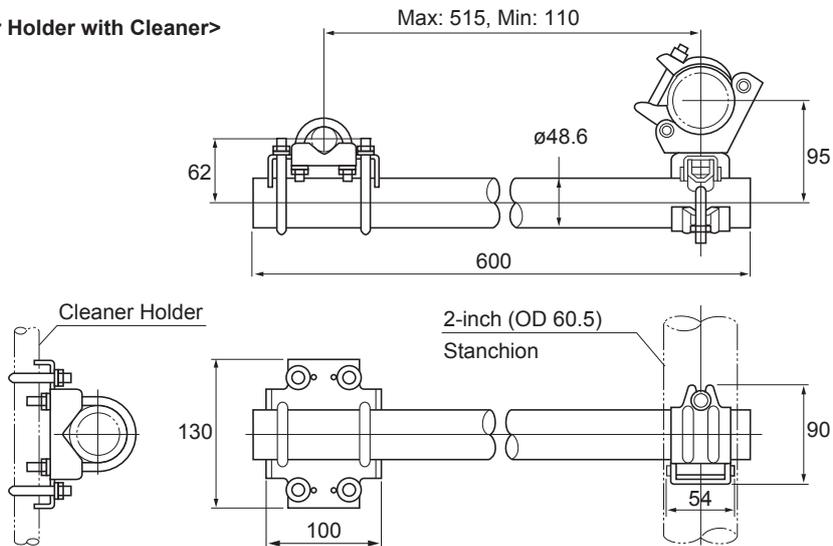
F08.ai

Weight: Approx. 1kg

- **Stainless Steel Mounting Bracket for Submersion Type Holder**
  /MS3: 1 set, /MS4: 2 sets

UNIT : mm

Max : 500

Min : 236

Holder with cleaner

Holder without cleaner

51 44

48.5

28

55

22 44 44 44 44 44 44 44 22

55

65

600

Cleaner holder

Sensor holder

2-inch (OD 60.5) Stanchion

F09.ai

Weight: Approx. 1kg

GS 12J05C02-00E 10th Edition Oct. 05, 2018-00
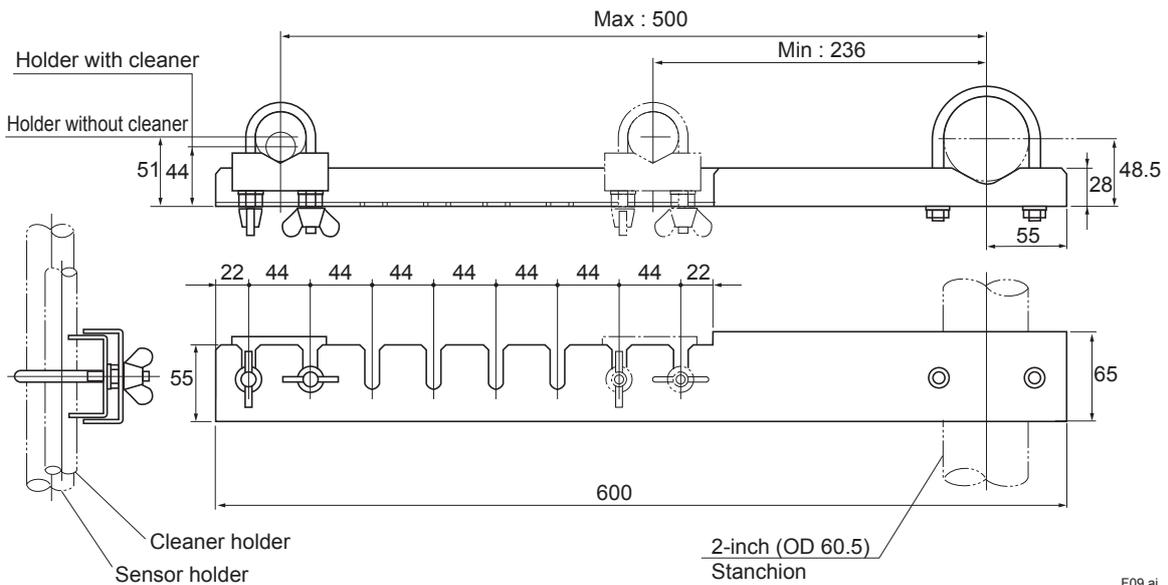
- **Mounting Hardware for Calibration Holder (/MS9)**
  PH8HS-ST-...../MS9   UNIT : mm

201.5

Approx. 49

46.5 35 35 35 35

58

5-ø9.5 holes

130 to 200 (pitch 35)

2-inch stanchion

231.5

Approx. 46

44 44 44 79.5

10

54 37.5 17.5

57.5

Sensor holder

147 to 235 (pitch 44)

Weight: Approx. 2.5 kg

GS 12J05C02-00E 10th Edition Oct. 05, 2018-00
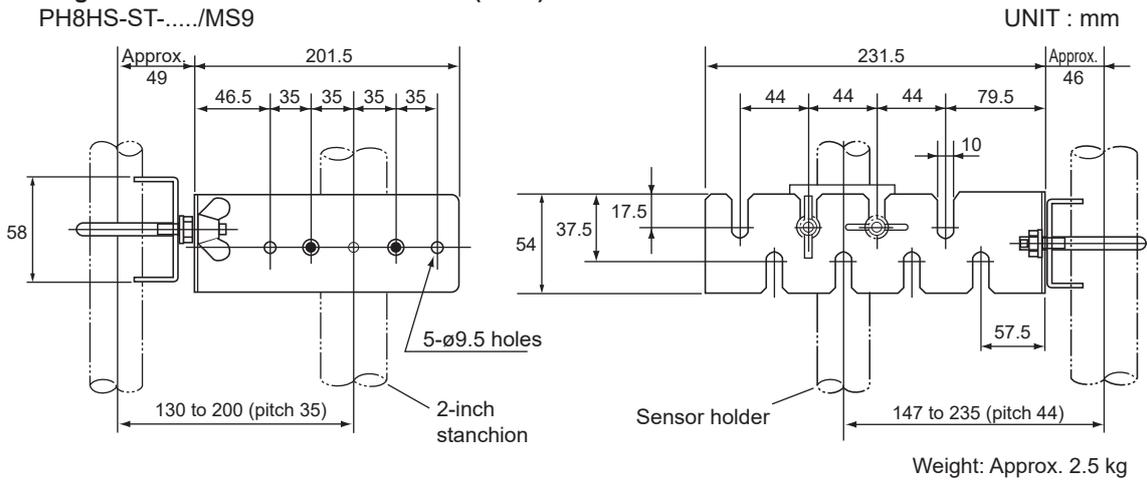
- **/F□ Flange Mounting**

UNIT : mm

/F1: Flange of holder without cleaner
- Material: Polypropylene
Translucent polypropylene -

(PH8HS-PP-..../F1)
(PH8HS-ST-..../F1)

ø210

JIS 10K 100 FF (Note)
flange

8-ø19 holes

74
18
ø175

L+31

Plate and screws
(Material: 304 SS)

Min : 150
Max : L-115

Note: Only mating dimensions are
according to flange standard.

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)

ø330

JIS 10K 200 FF (Note)
flange

12-ø23 holes

ø290

78
22

Min : 405
Max : L-130
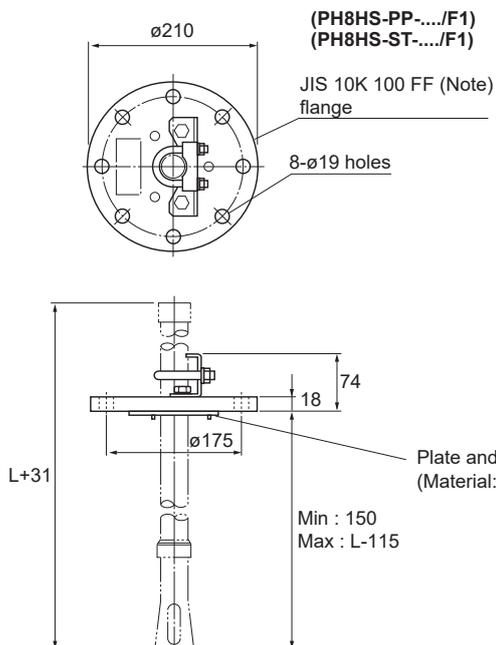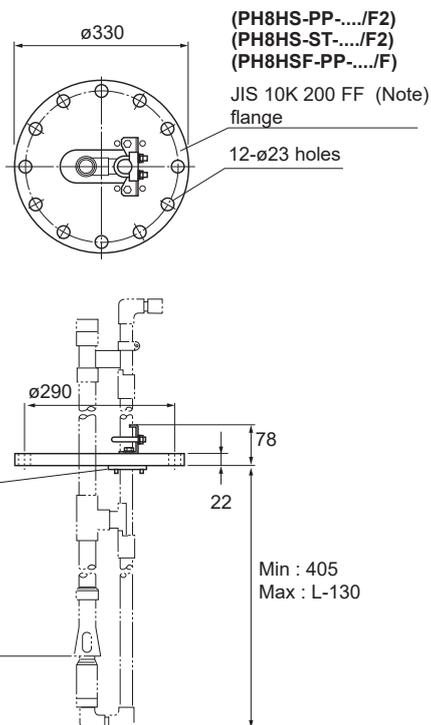
Approx. 155

Flange weight: Approx. 1.5 kg

F06.ai

/F1: Flange of holder without cleaner
- Material: Stainless steel (316 SS) -

ø210

JIS 10K 100 FF (Note)
flange

8-ø19 holes

74
18
ø175

L+31

Min : 150
Max : L-115

Note: Only mating dimensions are
according to flange standard.

Flange weight: Approx. 5 kg

/F2: Flange of holder with cleaner
- Material: Stainless steel (316 SS) -

(PH8HSF-S3-..../F)

ø330

JIS 10K 200 FF (Note)
flange

12-ø23 holes

ø290

78
22

Min : 430
Max : L-80

Approx. 232
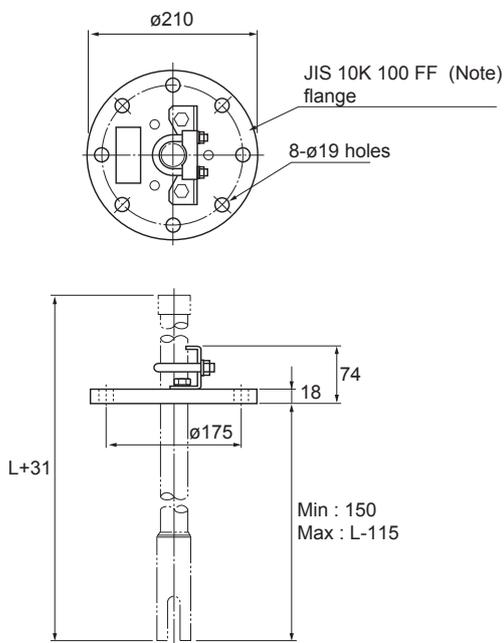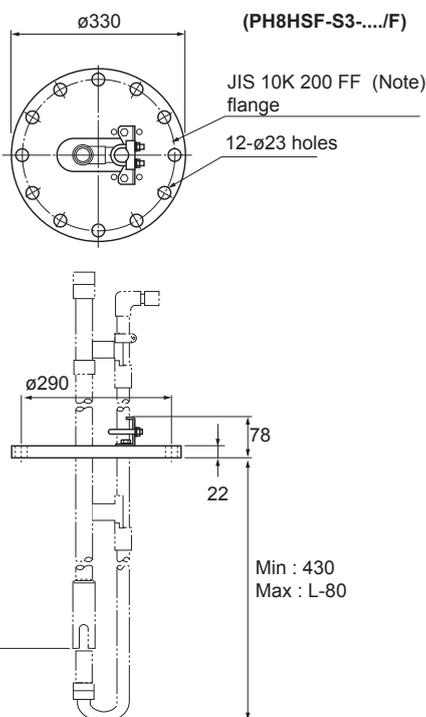
Flange weight: Approx. 15 kg

F10.ai

Submersion Type Holder, Polypropylene (See separate drawing for mounting bracket)
DOX8HS-PP (For DO30G and SS300G)

UNIT: mm

<Without cleaner>

<With Jet cleaner>

Sensor cable outlet

Sensor cable outlet

1/2 NPT (Code: NP)

Rc1/2 (Code: JP)

	Weight (Approx.)				
	Nominal Holder Length (L)				
Specification of Holder (Model and Code)	1000 mm [Code: -10]	1500 mm [Code: -15]	2000 mm [Code: -20]	2500 mm [Code: -25]	3000 mm [Code: -30]
Without Cleaner DOX8HS-PP-□□-C-NN-NN*B/□□	Approx. 0.5 kg	Approx. 0.65 kg	Approx. 0.8 kg	Approx. 0.95 kg	Approx. 1.1 kg
With Jet cleaner DOX8HS-PP-□□-C-JT-□P*B/□□	Approx. 1.6 kg	Approx. 2.1 kg	Approx. 2.6 kg	Approx. 3.1 kg	Approx. 3.6 kg

F19.ai

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

UNIT: mm

<Without cleaner>

<With Jet cleaner>

F19-1.ai

	Weight (Approx.)				
	Nominal Holder Length (L)				
Specification of Holder (Model and Code)	1000 mm [Code: -10]	1500 mm [Code: -15]	2000 mm [Code: -20]	2500 mm [Code: -25]	3000 mm [Code: -30]
Without Cleaner DOX8HS-PP-□□-L-NN-NN*B/□□	Approx. 0.5 kg	Approx. 0.65 kg	Approx. 0.8 kg	Approx. 0.95 kg	Approx. 1.1 kg
With Jet cleaner DOX8HS-PP-□□-L-JT-□P*B/□□	Approx. 1.7 kg	Approx. 2.2 kg	Approx. 2.7 kg	Approx. 3.2 kg	Approx. 3.7 kg

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

UNIT: mm

<Without cleaner>   <With Jet cleaner>

	Weight (Approx.)				
	Nominal Holder Length (L)				
Specification of Holder (Model and Code)	1000 mm [Code:-10]	1500 mm [Code:-15]	2000 mm [Code:-20]	2500 mm [Code:-25]	3000 mm [Code:-30]
Without Cleaner DOX8HS-S3-□□-C-NN-NN*B/□□	1.9 kg	3.1 kg	4.3 kg	5.5 kg	6.7 kg
With Jet cleaner DOX8HS-S3-□□-C-JT-□P*B/□□	4.1 kg	5.6 kg	7.1 kg	8.6 kg	10.1 kg

	Weight (Approx.)	
	Nominal Holder Length (L)	
Specification of Holder (Model and Code)	3500 mm [Code:-35]	4000 mm [Code:-40]
Without Cleaner DOX8HS-S3-□□-C-NN-NN*B/□□	7.9 kg	9.1 kg
With Jet cleaner DOX8HS-S3-□□C-JT-□P*B/□□	11.6 kg	13.1 kg

F20.ai

Submersion Type Holder, Stainless Steel (See separate drawing for mounting bracket)
DOX8HS-S3 (For DO70G)

UNIT: mm

<Without cleaner>

<With Jet cleaner>

	Weight (Approx.)				
	Nominal Holder Length (L)				
Specification of Holder (Model and Code)	1000 mm [Code:-10]	1500 mm [Code:-15]	2000 mm [Code:-20]	2500 mm [Code:-25]	3000 mm [Code:-30]
Without Cleaner DOX8HS-S3-□□-L-NN-NN*B/□□	2.0 kg	3.2 kg	4.4 kg	5.6 kg	6.8 kg
With Jet cleaner DOX8HS-S3-□□-L-JT-□P*B/□□	4.2 kg	5.7 kg	7.2 kg	8.7 kg	10.2 kg

	Weight (Approx.)	
	Nominal Holder Length (L)	
Specification of Holder (Model and Code)	3500 mm [Code:-35]	4000 mm [Code:-40]
Without Cleaner DOX8HS-S3-□□-L-NN-NN*B/□□	8.0 kg	9.2 kg
With Jet cleaner DOX8HS-S3-□□-L-JT-□P*B/□□	11.7 kg	13.2 kg

F20-1.ai

For the "/MS1", "/MS2" Mounting Bracket, see page 20, for the "/MS5", "/MS6", see page 15.

F24.ai

Flow-Through Type Holder
PH8HF-PP-□PT-T-NN-NN
PH8HF-S3-□PT-T-NN-NN

UNIT : mm

F23.ai
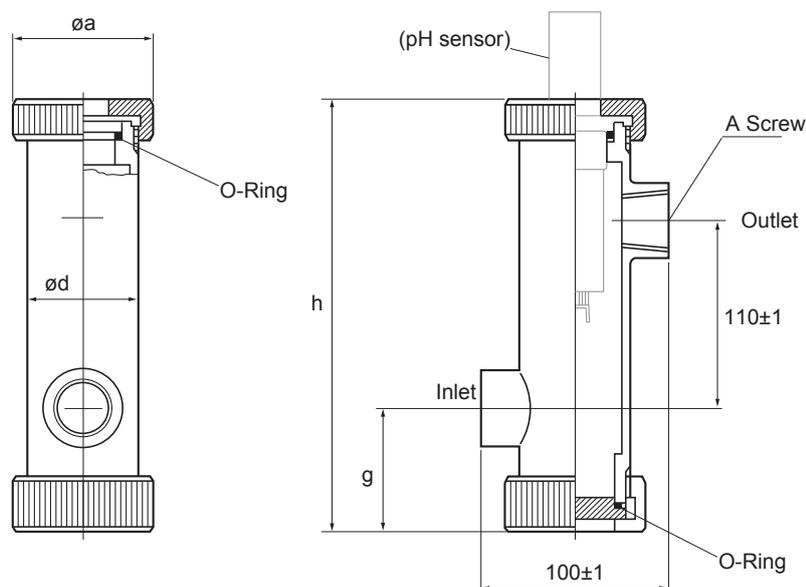
Model and Code	A Screw	a	d	g	h	Weight
PH8HF-PP-JPT-T-NN-NN	Rc1	80	Approx. 60	Approx. 70	Approx. 250	Approx. 0.4kg
PH8HF-PP-NPT-T-NN-NN	1NPT	80	Approx. 60	Approx. 70	Approx. 250	Approx. 0.4kg
PH8HF-S3-JPT-T-NN-NN	Rc1	70	Approx. 60	Approx. 70	Approx. 243	Approx. 3kg
PH8HF-S3-NPT-T-NN-NN	1NPT	70	Approx. 60	Approx. 70	Approx. 243	Approx. 3kg

Flow-Through Type Holder
PH8HF-PP-□1□-T-NN-NN
PH8HF-S3-□1□-T-NN-NN

UNIT : mm
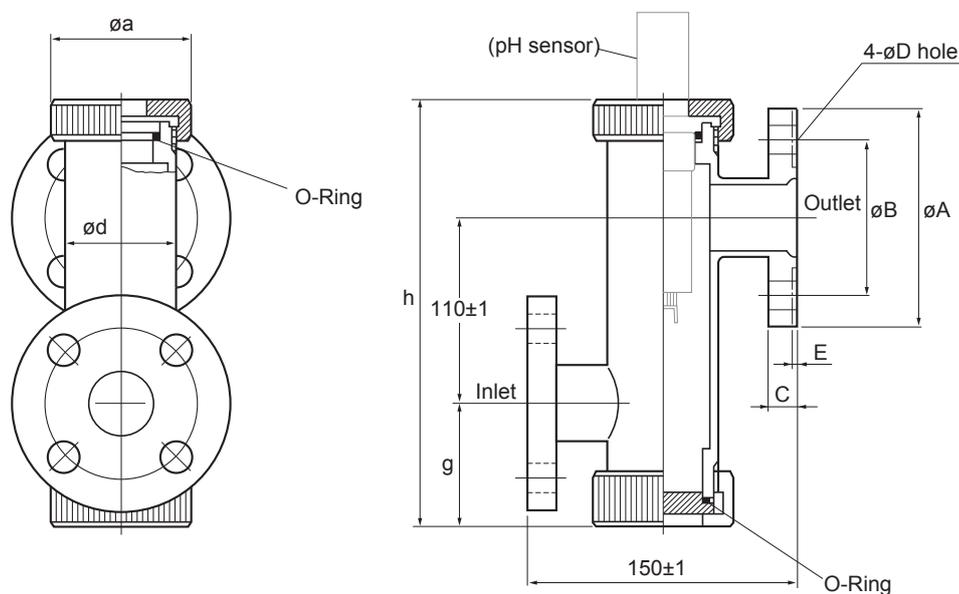
Model and Code	A	B	C	D	E	a	d	g	h	Weight
PH8HF-PP-J10-T-NN-NN	125	90	14	19	-	80	Approx. 60	Approx. 70	Approx. 250	Approx. 0.6kg
PH8HF-PP-A15-T-NN-NN	108	79.4	14.2	15.7	-	80	Approx. 60	Approx. 70	Approx. 250	Approx. 0.6kg
PH8HF-S3-J10-T-NN-NN	125	90	14	19	-	70	Approx. 60	Approx. 70	Approx. 243	Approx. 5kg
PH8HF-S3-A15-T-NN-NN	108	79.2	14.2	15.7	2	70	Approx. 60	Approx. 70	Approx. 243	Approx. 5kg

Flow-Through Type Holder
PH8HF-PV-□1□-T-NN-NN   UNIT : mm
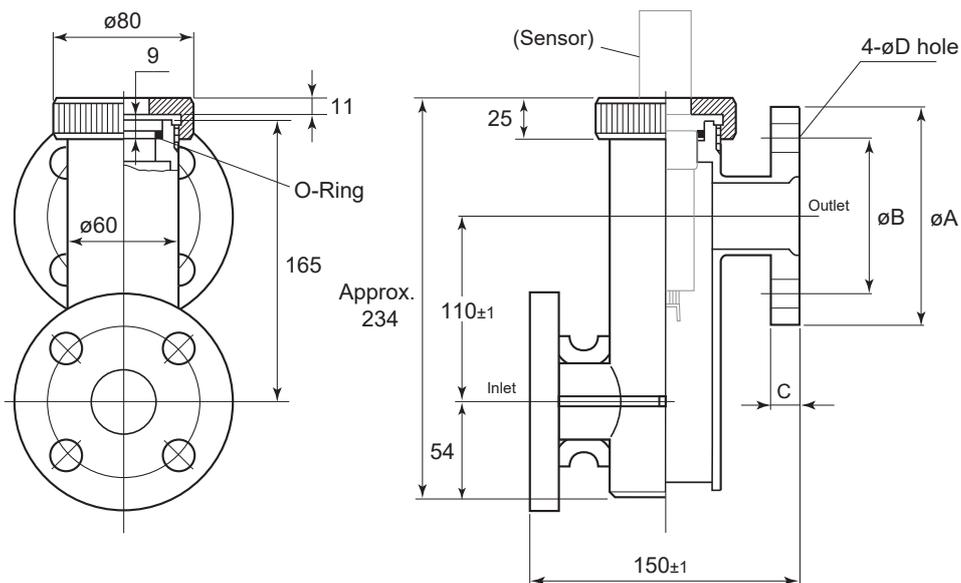
Model and Code	A	B	C	D	Weight
PH8HF-PV-J10-T-NN-NN	125	90	14	19	Approx. 0.7 kg
PH8HF-PV-A15-T-NN-NN	108	79.2	14.2	15.7	Approx. 0.7 kg

Flow-Through Type Holder
PH8HF-TN-□1□-T-NN-NN   UNIT : mm
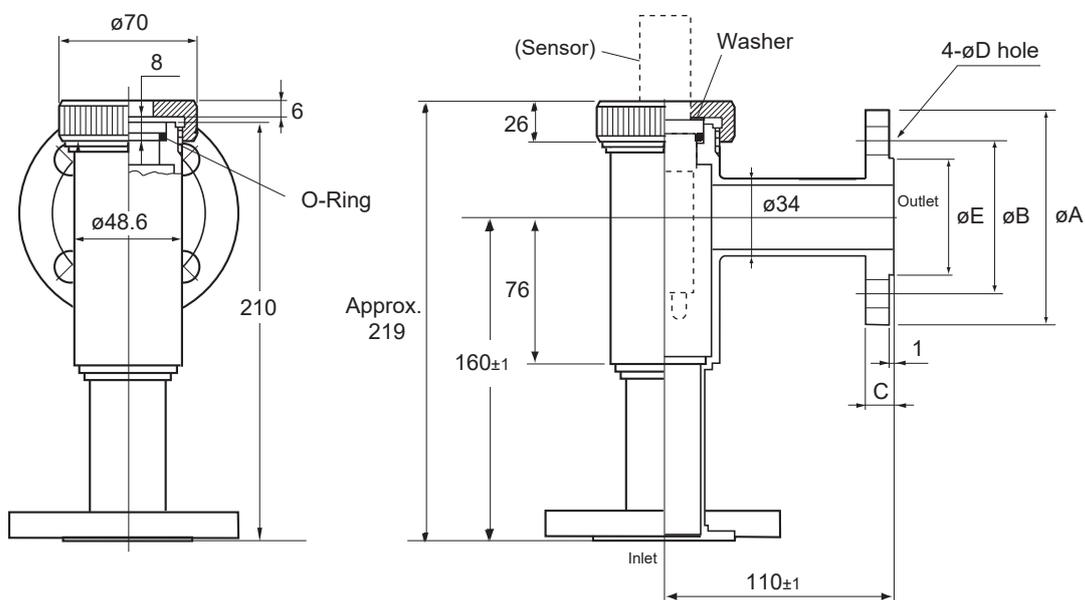
Model and Code	A	B	C	D	E	Weight
PH8HF-TN-J10-T-NN-NN	125	90	14	19	68.5	Approx. 3.2kg
PH8HF-TN-A15-T-NN-NN	108	79.2	14.2	15.7	57.5*	Approx. 3.2kg

*: With serrations   F30.ai

Flow-Through Type Holder, Screw Connection, With Jet Cleaner / Brush Cleaner
PH8HF-□□-□PT-T-□□-□P

UNIT : mm

(pH sensor)

A Screw

Outlet

O-Ring

110±1

Inlet

O-Ring

Approx. 47

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

100±1

F25.ai
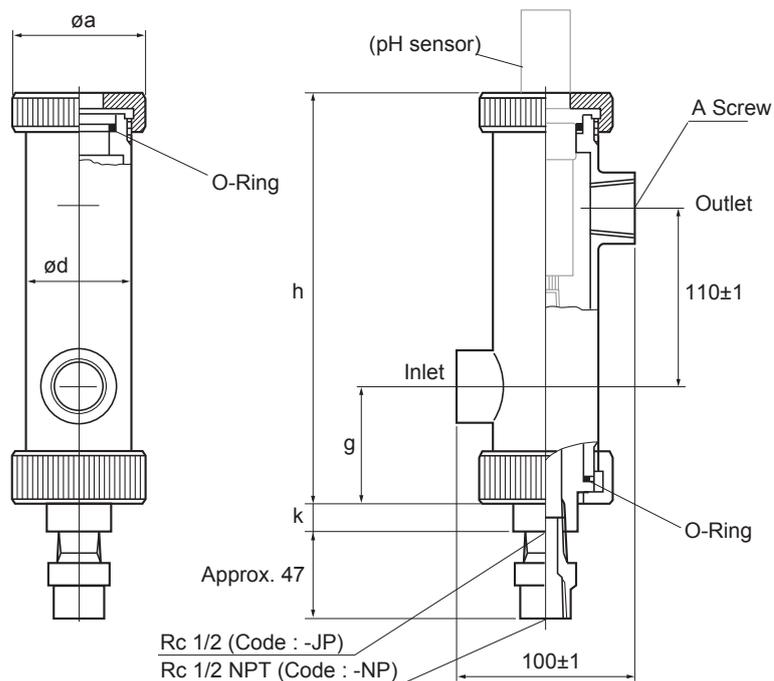
Model and Code	A Screw	a	d	g	h	k	Weight
PH8HF-PP-JPT-T-□□-□P	Rc1	80	Approx. 60	Approx. 70	Approx. 250	15	Approx. 1.4kg
PH8HF-S3-JPT-T-□□-□P	Rc1	70	Approx. 60	Approx. 70	Approx. 245	17	Approx. 4kg
PH8HF-PP-NPT-T-□□-□P	1NPT	80	Approx. 60	Approx. 70	Approx. 250	15	Approx. 1.4kg
PH8HF-S3-NPT-T-□□-□P	1NPT	70	Approx. 60	Approx. 70	Approx. 245	17	Approx. 4kg

Flow-Through Type Holder, Flange Connector With Jet Cleaner / Brush Cleaner
PH8HF-□□-□1□-T-□□-□P

UNIT : mm

(pH sensor)

4-øD hole

O-Ring

ød

øa

Outlet øB øA

h 110±1

Inlet

g

E

C

k

Approx. 47

RC 1/2 (Code : -JP)

1/2 NPT (Code : -NP)

150±1

O-Ring
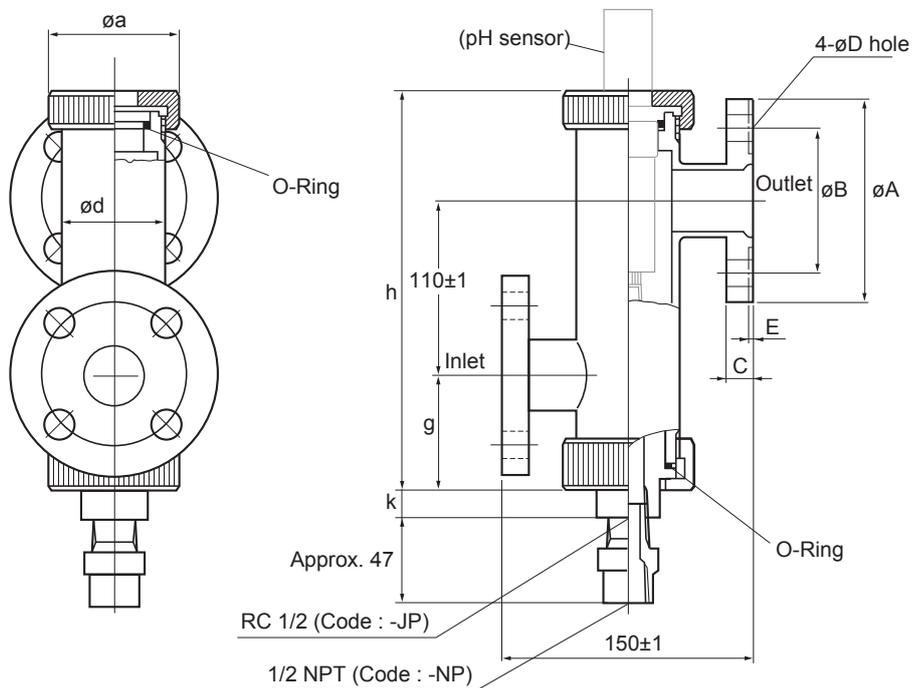
Model and Code	A	B	C	D	E	a	d	g	h	k	Weight
PH8HF-PP-J10-T-□□-□P	125	90	14	19	-	80	Approx. 60	Approx. 70	Approx. 250	15	Approx. 1.6kg
PH8HF-S3-J10-T-□□-□P	125	90	14	19	-	70	Approx. 60	Approx. 70	Approx. 245	17	Approx. 6kg
PH8HF-PP-A15-T-□□-□P	108	79.4	14.2	15.7	-	80	Approx. 60	Approx. 70	Approx. 250	15	Approx. 1.6kg
PH8HF-S3-A15-T-□□-□P	108	79.2	14.2	15.7	2	70	Approx. 60	Approx. 70	Approx. 245	17	Approx. 6kg

F26.ai

Flow-Through Type Holder, Screw Connection, With Ultrasonic Cleaner
PH8HF-□□-□PT-T-□□-C□

UNIT : mm

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
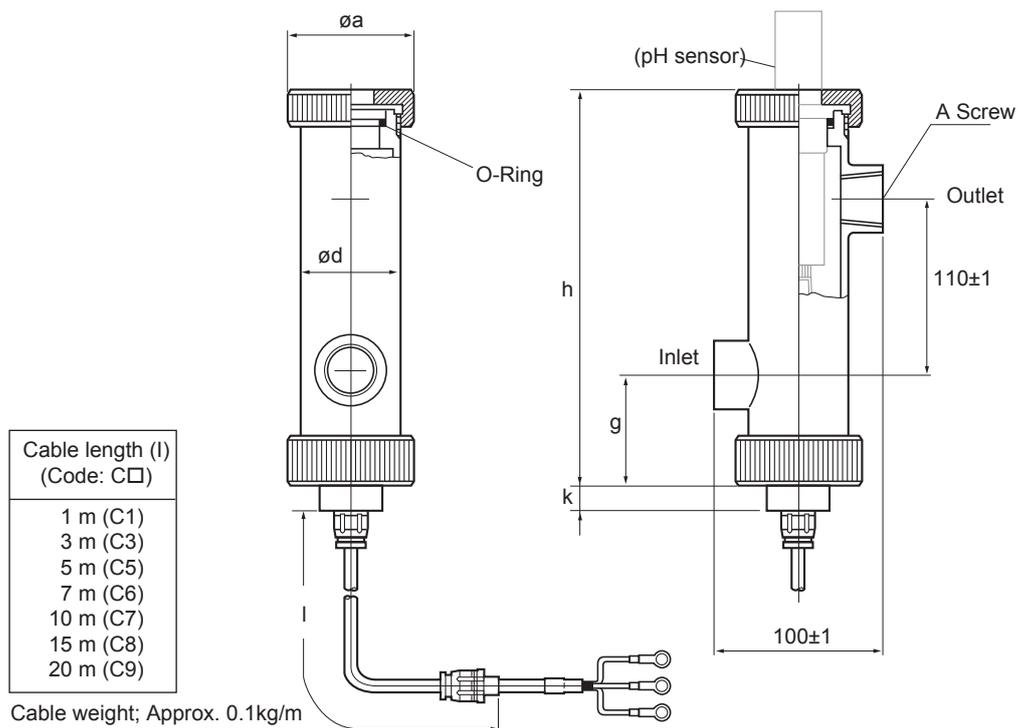
Mode and Code	A Screw	a	d	g	h	k	Weight
PH8HF-PP-JPT-T-□□-C□	Rc1	80	Approx. 60	Approx. 70	Approx. 250	15	Approx. 1.5kg
PH8HF-S3-JPT-T-□□-C□	Rc1	70	Approx. 60	Approx. 70	Approx. 245	17	Approx. 4.1kg
PH8HF-PP-NPT-T-□□-C□	1NPT	80	Approx. 60	Approx. 70	Approx. 250	15	Approx. 1.5kg
PH8HF-S3-NPT-T-□□-C□	1NPT	70	Approx. 60	Approx. 70	Approx. 245	17	Approx. 4.1kg

F27.ai

Flow-Through Type Holder, Flange Connection, With Ultrasonic Cleaner
PH8HF-□□-□1□-T-□□-C□   UNIT : mm

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. 0.1 kg/m
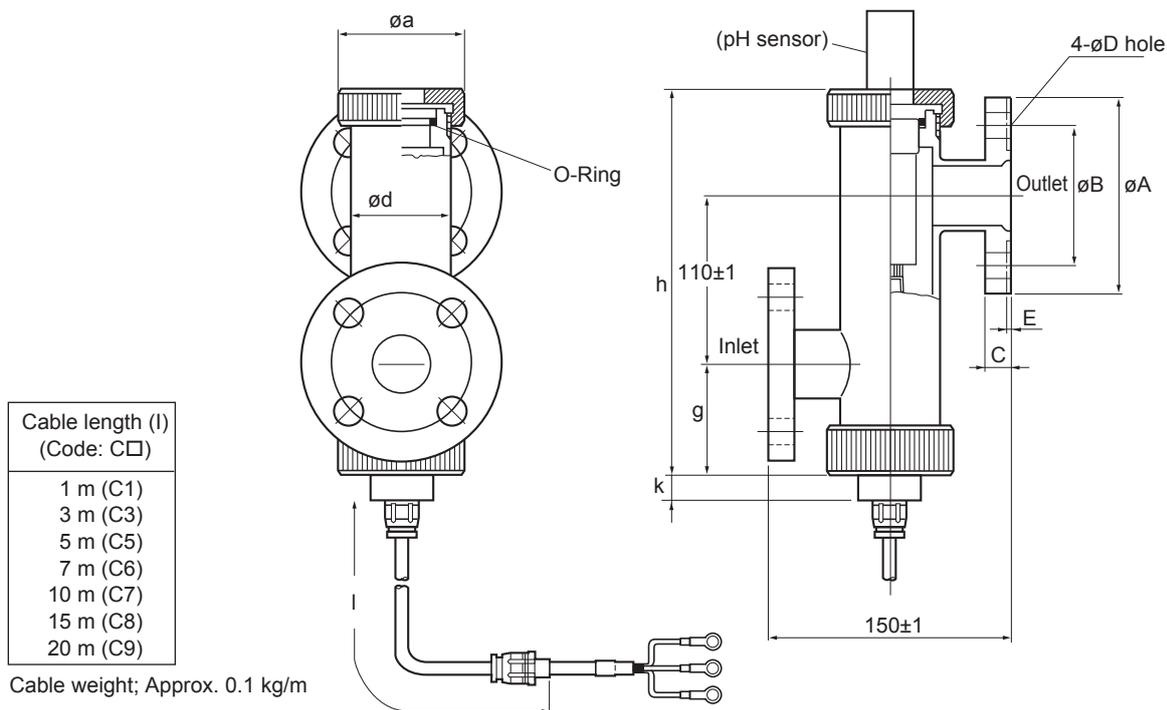
Model and Code	A	B	C	D	E	a	d	g	h	k	Weight
PH8HF-PP-J10-T-□□-C□	125	90	14	19	-	80	Approx. 60	Approx. 70	Approx. 250	15	Approx. 1.7kg
PH8HF-S3-J10-T-□□-C□	125	90	14	19	-	70	Approx. 60	Approx. 70	Approx. 245	17	Approx. 6.1kg
PH8HF-PP-A15-T-□□-C□	108	79.4	14.2	15.7	-	80	Approx. 60	Approx. 70	Approx. 250	15	Approx. 1.7kg
PH8HF-S3-A15-T-□□-C□	108	79.2	14.2	15.7	2	70	Approx. 60	Approx. 70	Approx. 245	17	Approx. 6.1kg

F28.ai

Flow-Through Type Holder (Explosionproof), Screw Connection, With Type Ultrasonic Cleaner)
PH8HFF-☐☐-☐PT-T-☐☐-JS   UNIT : mm

øa

b

c

O-ring

165

G 3/4 (Connection)

74

28

ø80

42

69

(pH Sensor)

e

Screw A

Outlet

h

110±1

Inlet

ød

Flameproof packing adapter
(Code : /PG)

ø21.7

g

f

Approx. 95

Approx. 231

100

100±1
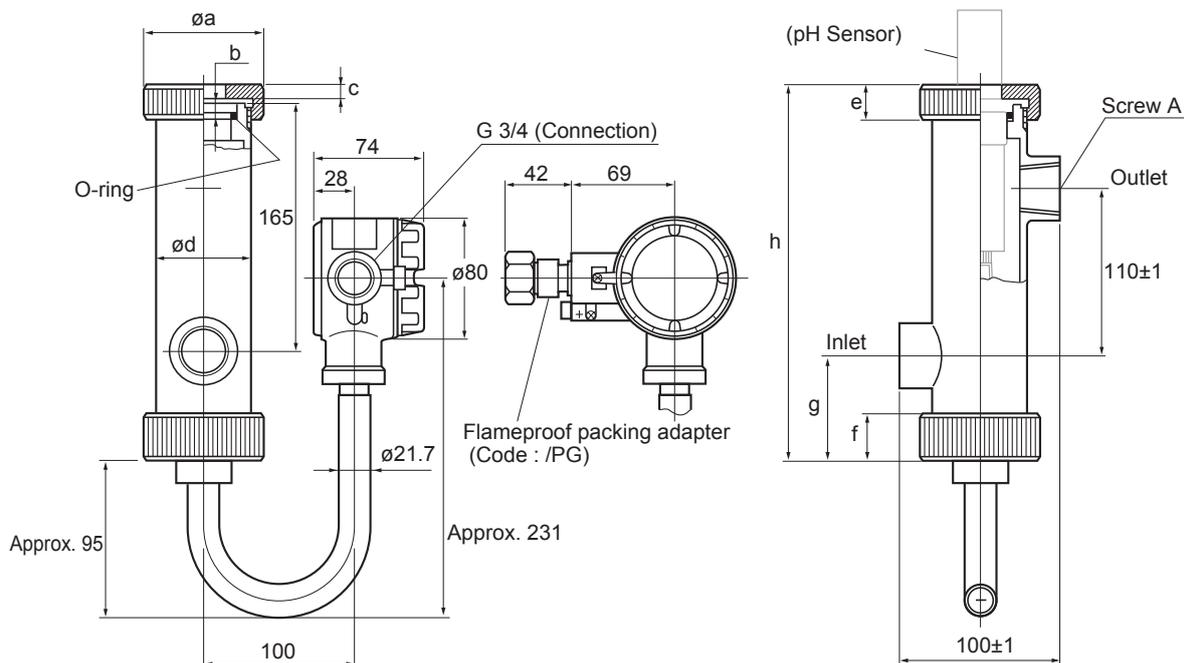
Model and Code	Screw A	a	b	c	d	e	f	g	h (Approx.)	Weight (Approx.)
PH8HFF-PP-JPT-T-☐☐-JS	Rc1	80	9	11	60	25	30	70	250	3kg
PH8HFF-S3-JPT-T-☐☐-JS	Rc1	70	10	6	60.5	26	26	69	245	5.6kg
PH8HFF-PP-NPT-T-☐☐-JS	1NPT	80	9	11	60	25	30	70	250	3kg
PH8HFF-S3-NPT-T-☐☐-JS	1NPT	70	10	6	60.5	26	26	69	245	5.6kg

F29.ai

Flow-Through Type Holder (Explosionproof Type), Flange Connection, With Ultrasonic Cleaner
PH8HFF-□□-□1□-T-□□-JS   UNIT : mm
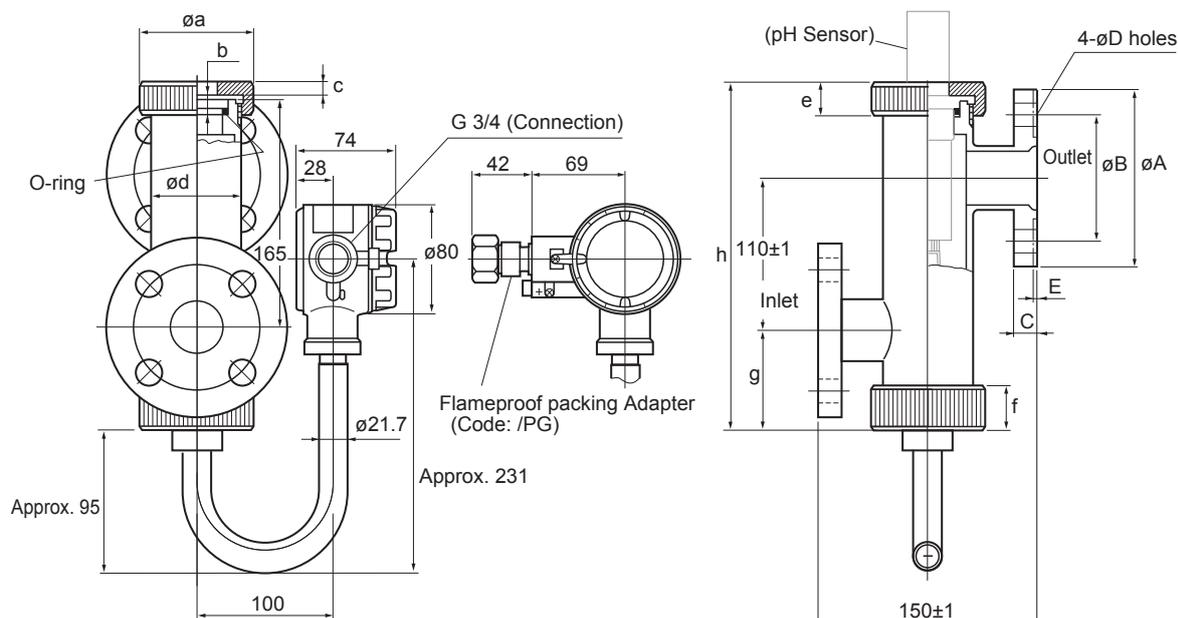
Model and Code	A	B	C	D	E	a	b	c	d	e	f	g	h (Approx.)	Weight (Approx.)
PH8HFF-PP-J10-T-□□-JS	125	90	14	19	-	80	9	11	60	25	30	70	250	3.2kg
PH8HFF-S3-J10-T-□□-JS	125	90	14	19	-	70	10	6	60.5	26	26	69	245	7.6kg
PH8HFF-PP-A15-T-□□-JS	108	79.4	14.2	15.7	-	80	9	11	60	25	30	70	250	3.2kg
PH8HFF-S3-A15-T-□□-JS	108	79.2	14.2	15.7	2	70	10	6	60.5	26	26	69	245	7.6kg

F30.ai

Flow-Through Type Holder (For MLSS Meter), Screw Connection, Without Cleaning,
(See separate drawing for mounting bracket)
FH350G   UNIT : mm
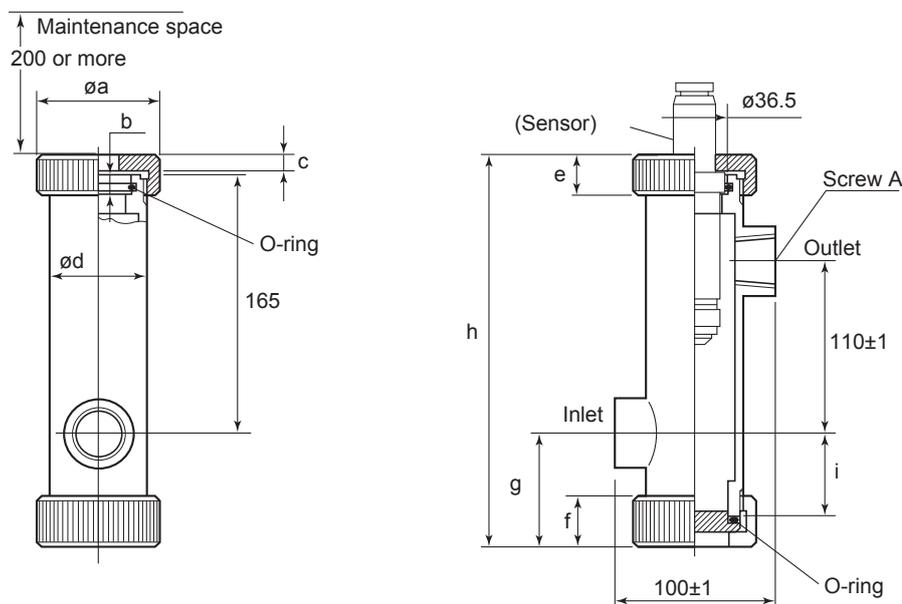
Model and Code	Screw A	a	b	c	d	e	f	g	h (Approx.)	i	Weight (Approx.)
FH350G-PP-JPT1-NN-NN	Rc1	80	8.9	12	60	25	30	70	250	54	0.4kg
FH350G-PP-NPT1-NN-NN	1NPT	80	8.9	12	60	25	30	70	250	54	0.4kg
FH350G-S3-JPT1-NN-NN	Rc1	70	8.7	6	60.5	26	26	69	245	55	3kg
FH350G-S3-JPT1-NN-NN	1NPT	70	8.7	6	60.5	26	26	69	245	55	3kg

F31.ai

**Flow-Through Type Holder (For MLSS Meter), Flange Connection, Without Cleaning
(See separate drawing for mounting bracket)**
FH350G   UNIT : mm
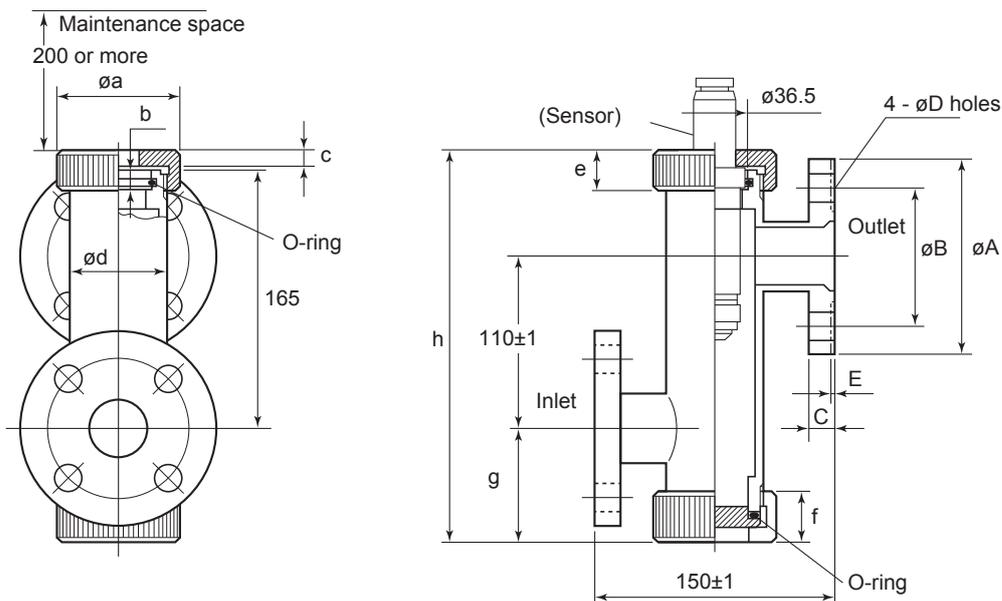
Model and Code	A	B	C	D	E	a	b	c	d	e	f	g	h (Approx.)	Weight (Approx.)
FH350G-PP-J10F-NN-NN	125	90	14	19	–	80	8.9	12	60	25	30	70	250	0.6kg
FH350G-PP-A15F-NN-NN	108	79.4	14.2	15.7	–	80	8.9	12	60	25	30	70	250	0.6kg
FH350G-S3-J10F-NN-NN	125	90	14	19	–	70	8.7	6	60.5	26	26	69	245	5kg
FH350G-S3-A15R-NN-NN	108	79.2	14.2	15.7	6	70	8.7	6	60.5	26	26	69	245	5kg

F32.ai

GS 12J05C02-00E 10th Edition Oct. 05, 2018-00

**Flow-Through Type Holder (For MLSS Meter), Screw Connection, With Jet Cleaner
(See separate drawing for mounting bracket)**
FH350G   UNIT : mm
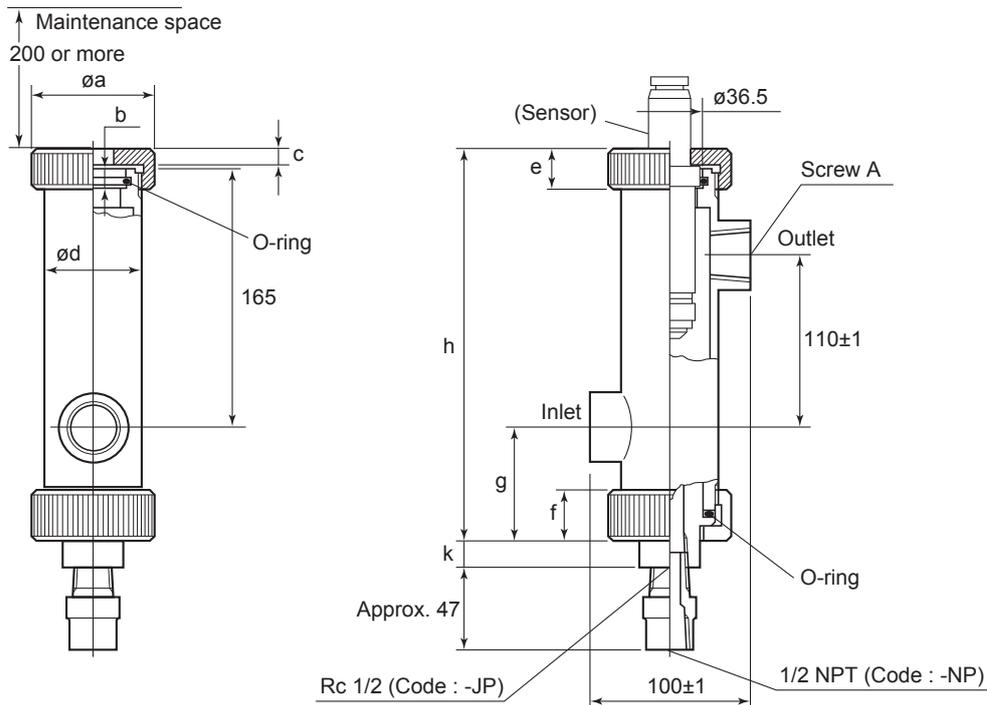
Model and Code	Screw A	A	B	C	D	E	a	b	c	d	e	f	g	h (Approx.)	k	Weight (Approx.)
FH350G-PP-JPT1-□□-□P	Rc 1	125	90	14	19	–	80	8.9	12	60	25	30	70	250	15	1.4 kg
FH350G-S3-JPT1-□□-□P	Rc 1	108	79.2	14.2	15.7	–	70	8.7	6	60.5	26	26	69	250	17	4 kg
FH350G-PP-NPT1-□□-□P	1NPT	125	90	14	19	–	80	8.9	12	60	25	30	70	250	15	1.4 kg
FH350G-S3-NPT1-□□-□P	1 NPT	108	79.2	14.2	15.7	6	70	8.7	6	60.5	26	26	69	250	17	4 kg

F33-2.ai

GS 12J05C02-00E 10th Edition Oct. 05, 2018-00

Flow-Through Type Holder (For MLSS Meter), With Jet Cleaner (See separate drawing for mounting bracket)
FH350G
UNIT : mm
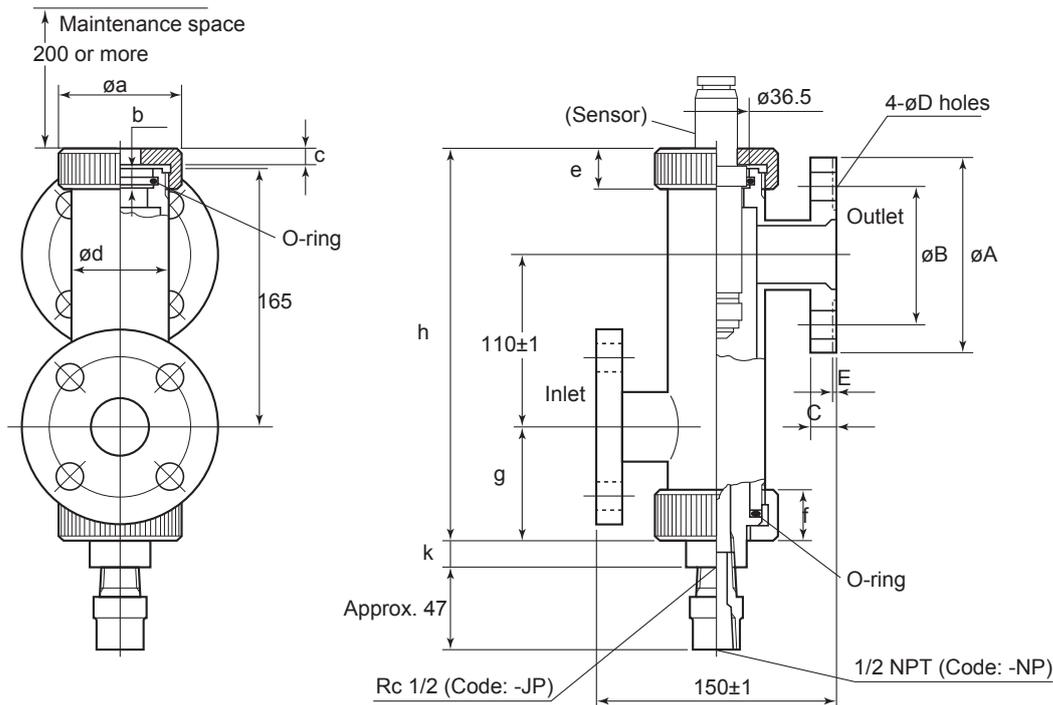
Model and Code	A	B	C	D	E	a	b	c	d	e	f	g	h (Approx.)	k	Weight (Approx.)
FH350G-PP-J10F-JT-□P	125	90	14	19	2	80	9	11	60	25	30	70	250	15	1.6 kg
FH350G-PP-A15F-JT-□P	108	79.4	14.2	15.7	2	80	9	11	60	25	30	70	250	15	1.6 kg
FH350G-S3-J10F-JT-□P	125	90	14	19	2	70	8	6	60.5	26	26	69	245	17	6 kg
FH350G-S3-A15R-JT-□P	108	79.4	14.2	15.7	2	70	8	6	60.5	26	26	69	245	17	6 kg

F33.2a.ai

GS 12J05C02-00E 10th Edition Oct. 05, 2018-00

Mounting Bracket for Flow-Through Type Holder
(PH8HF- - -)/MF1,　(PH8HFF- - -)/MF1, (FH350G- - -)/MF5　　　　UNIT : mm

Bracket (thickness : 3)
U-bolt holes for holder mounting

26
75
45

140
75
45

6-ø10 holes
70±0.3
70±0.3
10
92

Approx. 85
Approx. 130
2-inch pipe

Holes dimension for wall mounting

F35.ai

(PH8HF-PV- -)/MF1

26
75
45

Approx. 82
Approx. 130
2B(O.D. 60.5) Pipe

(PH8HF-PV- -)/MF1

26
75
45

Approx. 70
Approx. 118
2B(O.D. 60.5) Pipe

Weight: Approx. 0.5kg

　　　　GS 12J05C02-00E 10th Edition Oct. 05, 2018-00
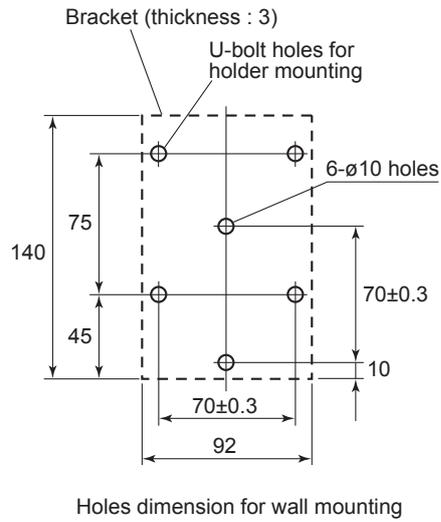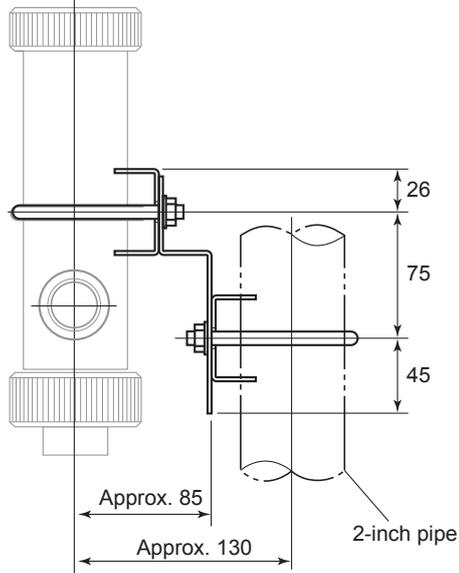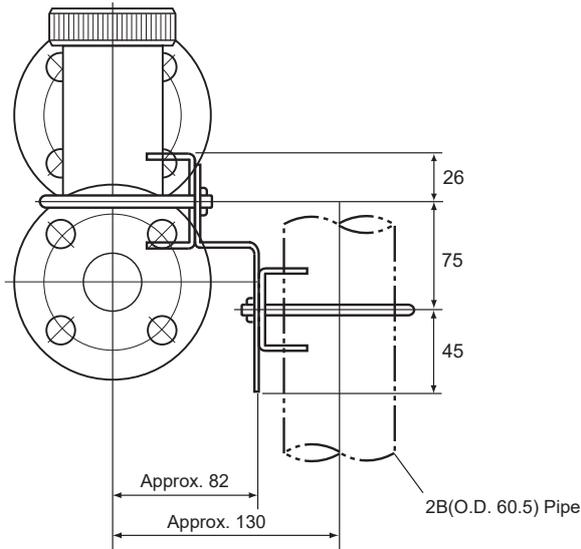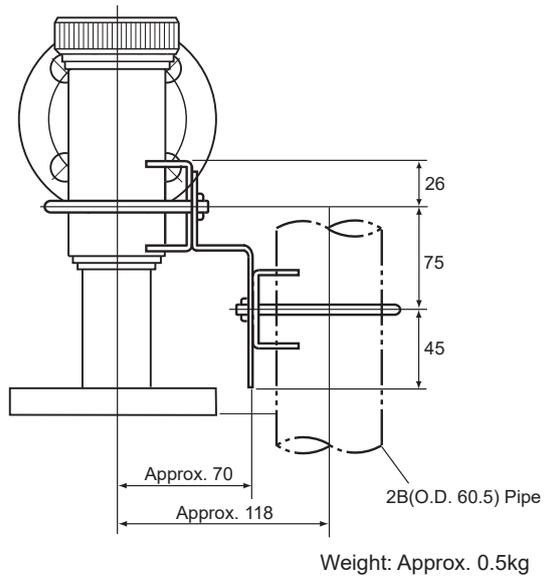
Suspension Type Holder
HH350G

UNIT : mm
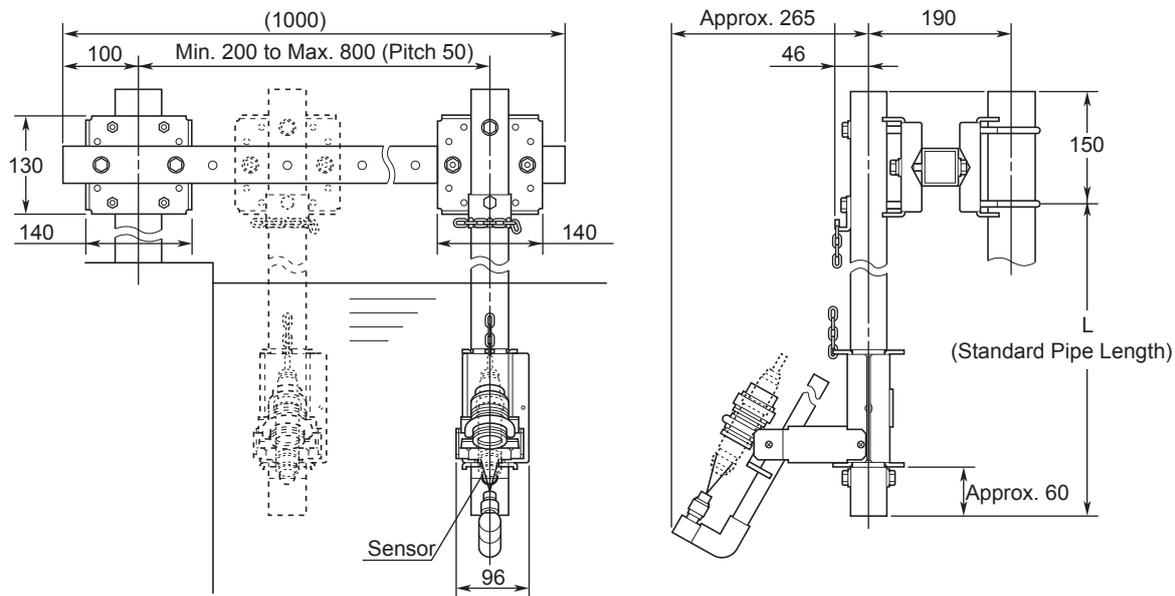
	Weight			
Specification of Holder (Model and Code)	Nominal Holder Length (L)			
	1000mm [Code : -10]	2000mm [Code : -20]	3000mm [Code : -30]	4000mm [Code : -40]
Without Cleaner HH350G-NN-□□-NN-NN	6.4 kg	8.7 kg	11 kg	13.3 kg
With Jet Cleaner HH350G-NN-□□-JT-□P	6.9 kg	9.2 kg	11.5 kg	13.8 kg

F36.ai

Angled Floating Ball Holder
PB350G-PV, Arm Material: PVC

UNIT : mm

● **Holder**
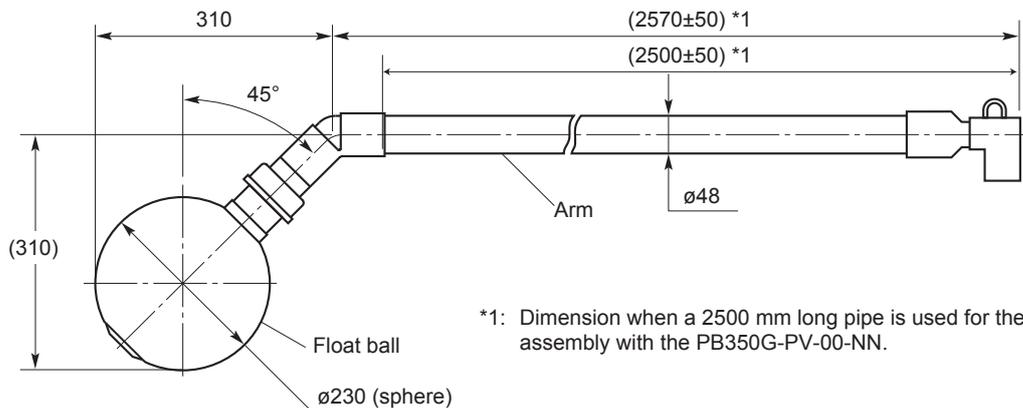
*1: Dimension when a 2500 mm long pipe is used for the arm assembly with the PB350G-PV-00-NN.

F37.ai

PB350G-S3, Arm Material: Stainless Steel   UNIT : mm

● **Holder**

310

(2570±25) *1

(2500±25) *1

45°

Arm

ø34

(310)

Float ball

ø230 (sphere)

*1: Dimension when a 2500 mm long pipe is used for the arm assembly with the PB350G-S3-00-NN.

F38.ai
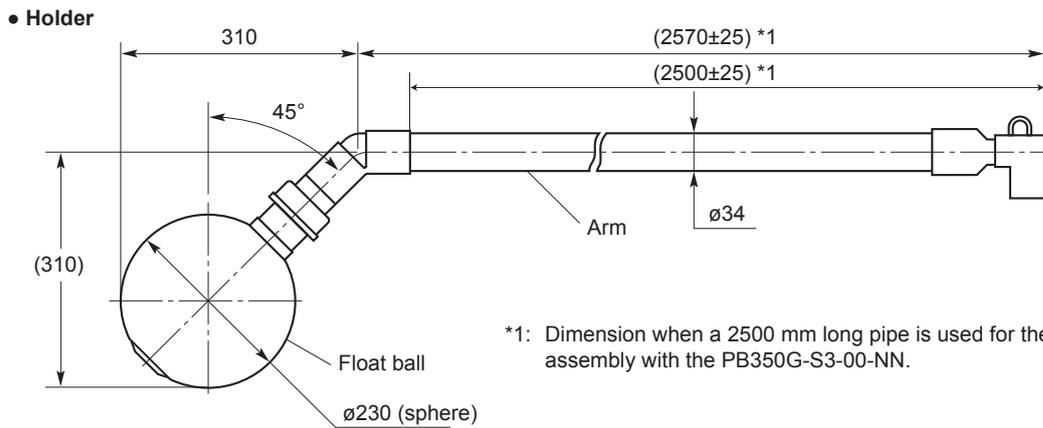
● **Mounting Bracket**

Pipe Mounting with U-bolts   Installation with Anchor Bolt
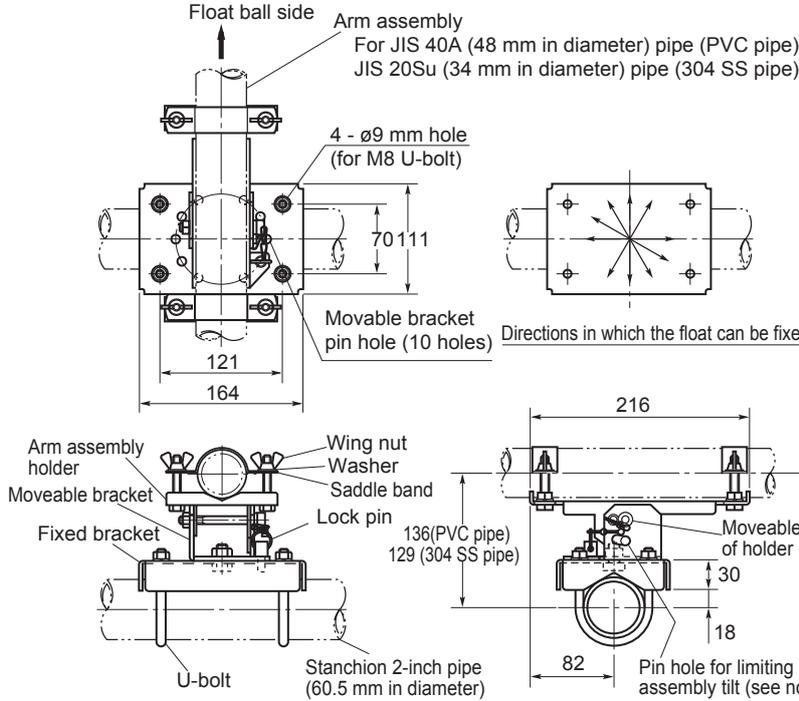
Float ball side

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

4 - ø9 mm hole
(for M8 U-bolt)

70 111

121

164

Movable bracket
pin hole (10 holes)

Directions in which the float can be fixed

Dimensions for Anchor Bolt Installation
4-M8 anchor bolt

121±0.3

Float ball side

70±0.3

Arm assembly
holder

Wing nut
Washer
Saddle band

216

Float ball side

Moveable bracket

Lock pin

Fixed bracket

U-bolt

Stanchion 2-inch pipe
(60.5 mm in diameter)

136(PVC pipe)
129 (304 SS pipe)

Moveable shaft
of holder

30

18

82

Pin hole for limiting arm
assembly tilt (see note)

Anchor bolt (M8)

40 to 50

(Height of
anchor bolt)
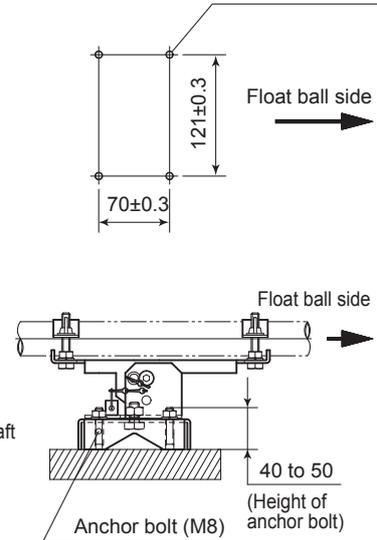
Note: When the lock pin is inserted in the pin hole for limiting arm assembly tilt, the
arm assembly holder is tilted at about 30° (in float rising direction).

F39.ai

GS 12J05C02-00E 10th Edition Oct. 05, 2018-00

Vertical Floating Ball Holder
PB360G-PV, Arm Material: PVC   UNIT : mm
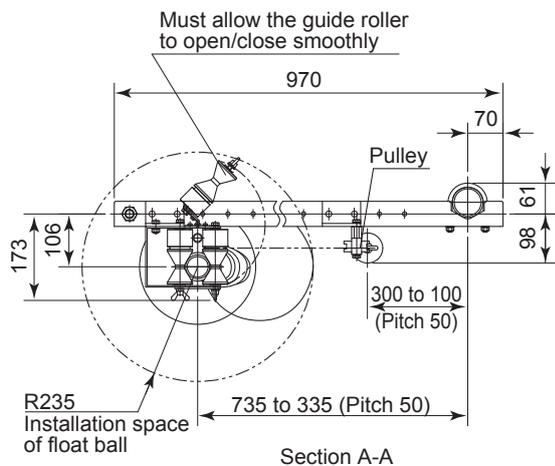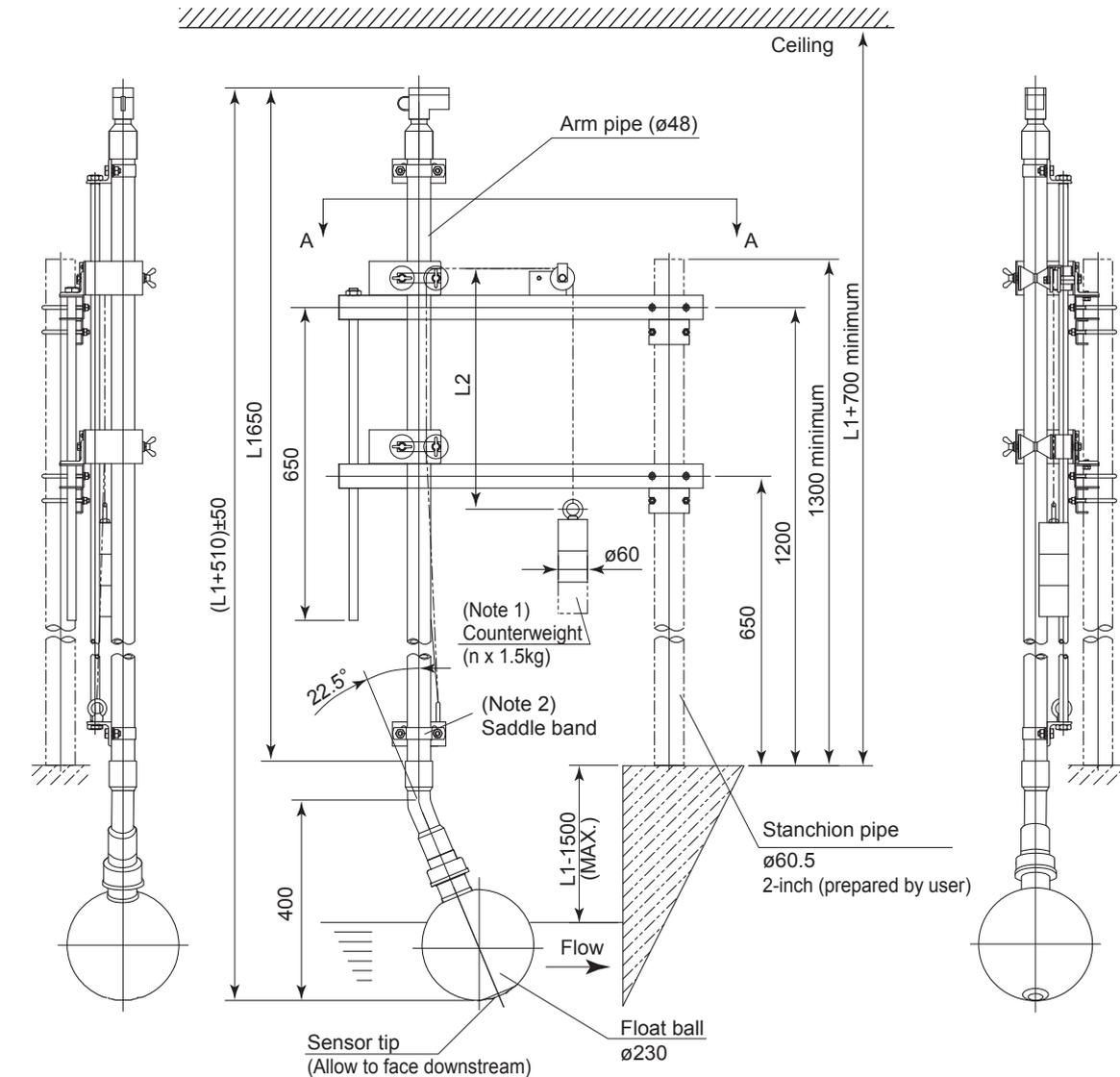
Ceiling

Arm pipe (ø48)

L 1650

(L1+510)±50

650

L2

A   A

L1+700 minimum

1300 minimum

1200

650

ø60

22.5°

(Note 1)
Counterweight
(n x 1.5kg)

(Note 2)
Saddle band

400

L1-1500
(MAX.)

Flow

Stanchion pipe
ø60.5
2-inch (prepared by user)

Sensor tip
(Allow to face downstream)

Float ball
ø230

Must allow the guide roller
to open/close smoothly

970

70

Pulley

61

98

173

106

300 to 100
(Pitch 50)

R235
Installation space
of float ball

735 to 335 (Pitch 50)

Section A-A

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.

F40.ai

GS 12J05C02-00E 10th Edition Oct. 05, 2018-00

Vertical Floating Ball Holder
PB360G-S3, Arm Material: Stainless Steel   UNIT : mm
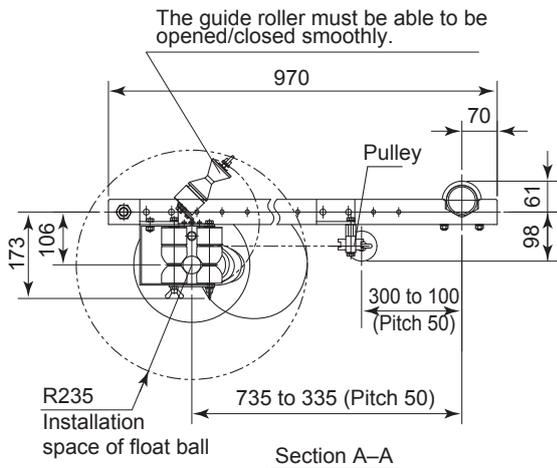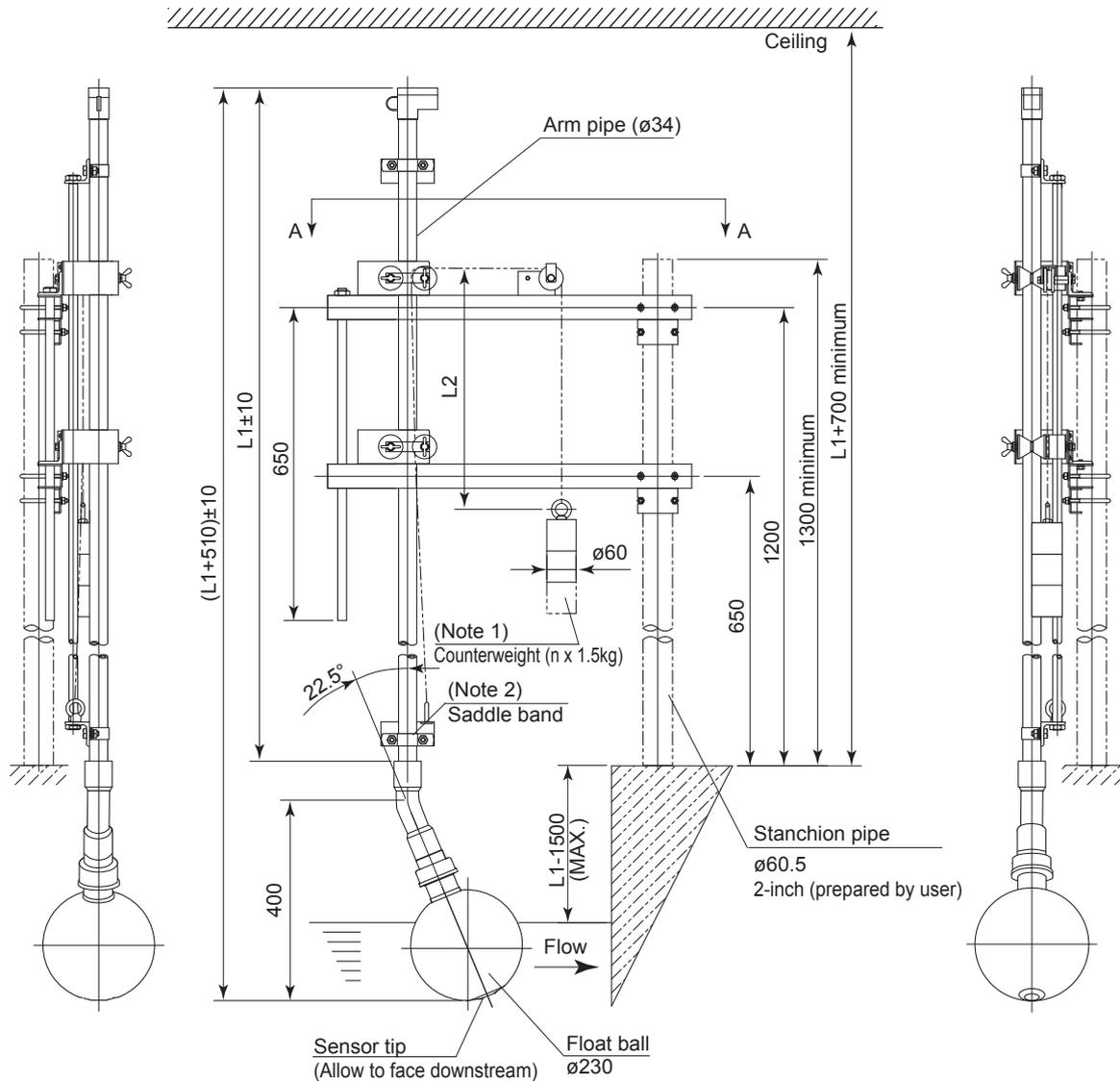
Ceiling

Arm pipe (ø34)

A

A

L1±10

650

(L1+510)±10

L2

L1+700 minimum

1300 minimum

1200

650

ø60

(Note 1)
Counterweight (n x 1.5kg)

22.5°

(Note 2)
Saddle band

L1-1500 (MAX.)

400

Flow

Stanchion pipe
ø60.5
2-inch (prepared by user)

Sensor tip
(Allow to face downstream)

Float ball
ø230

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

970

70

Pulley

61

98

173

106

300 to 100
(Pitch 50)

R235
Installation
space of float ball

735 to 335 (Pitch 50)

Section A–A

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.

F41.ai

Solenoid valve

General Purpose Solenoid Valve
PH8MV*D

Explosionproof Solenoid Valve
PH8MVF*B

2-Rc1/2   G1/2

2-Rc1/2   G1/2
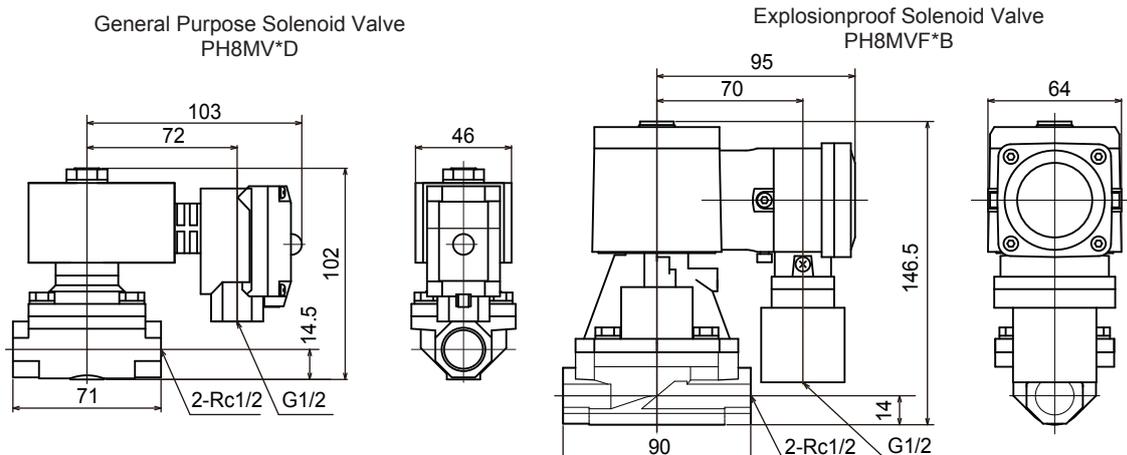
Cautions on Installation of Solenoid Valve for Jet / Brush Cleaning
1. Do not allow a sample solution to flow backward into the solenoid valve or to be replaced with the driving fluid. For this take relevant measures; e.g. install a check valve to prevent inverse pressure between the inlet and outlet 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.

F43.ai

Ultrasonic Oscillator (Non-Explosionproof Type)
PUS400G

Pipe mounting

Panel, Wall mounting

UNIT : mm

Hood
(optional)

Panel mounting bracket

Pipe mounting bracket
(optional)

Ground terminal
(M4 screw)

Power supply cable inlet
Cable gland DIN PG16 equivalent

Ultrasonic transducer cable inlet
Cable gland DIN PG16 equivalent

Power supply cable inlet
Cable gland DIN PG16 equivalent

Ground terminal
(M4 screw)

Ultrasonic transducer cable inlet
Cable gland DIN PG16 or equivalent

2-ø5.5 holes
(for hood mounting)

2-inch (OD ø60.5 mm)
stanchion (vertical)

2-inch pipe
stanchion (horizontal)

2-ø6.6 holes
(for hood
mounting)

<Pipe mounting bracket>

<Panel cutout>

2-ø5.5 holes
(for hood mounting)

2-ø6.6 holes
(for oscillator
mounting)

3-ø10 holes

<Wall mounting bracket>

F44.ai

- **External dimensions of additional noise filter assembly when PUS400G-NN-KC**   UNIT : mm

275

203

10   92

4-M5 screws, (depth:10mm)
(for mounting)

17

75

External power cable inlet
(cable OD of ø6 to ø12)

Dedicated power cable outlet

36

70

152

Weight of noise filter assembly: Approx. 2 kg

● Dedicated power cable for noise filter assembly

Black L1
White L2
Green G

Approx. 80

Cable length : Approx. 0.7 m

L1 Black
L2 White
G Green

Approx. 80

Weight of power cable: Approx. 0.2 kg
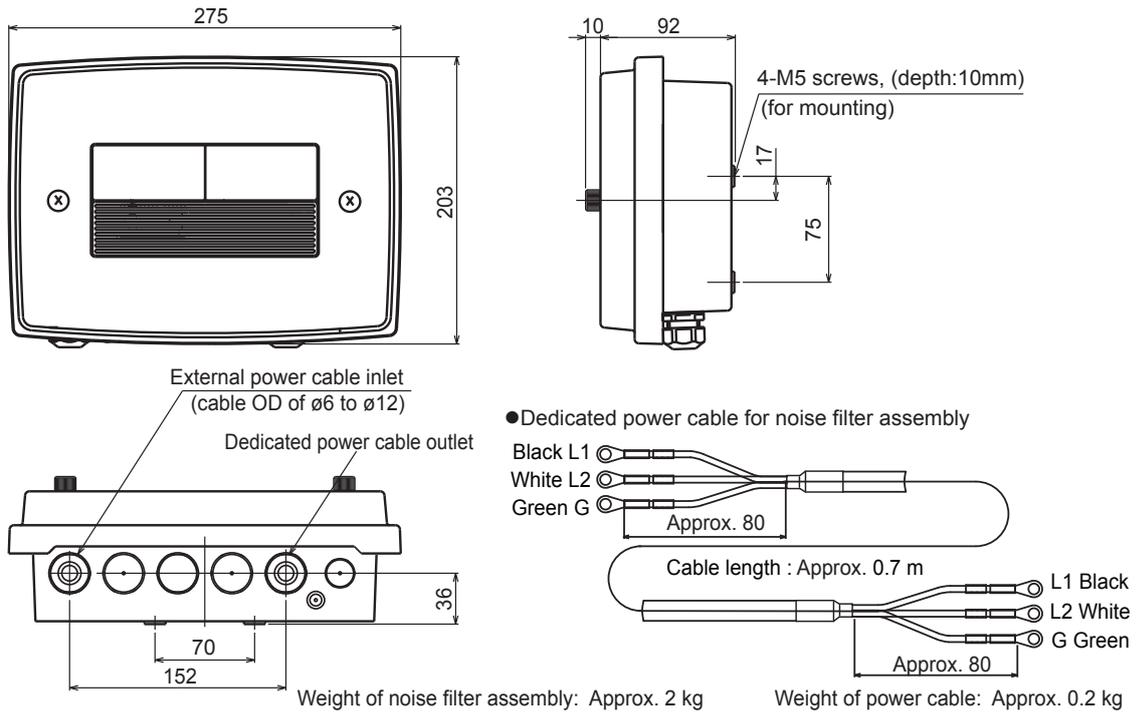
- **Pipe mounting bracket for additional noise filter assembly (option code: /PS)**   UNIT : mm

70

8

5- ø6.5 holes

ø6.5 x 13 hole

Pipe mounting bracket 1

75

2- ø5.5 holes

200

Pipe mounting bracket 2

35

2-ø9 holes

35

4-ø10 holes

15

70

100

Weight: Approx. 0.7 kg

4-M5 screws

U-bolt

M8 nut ×2

(10)   (92)   (54)

2-inch pipe (vertical
mounting OD ø60.5)
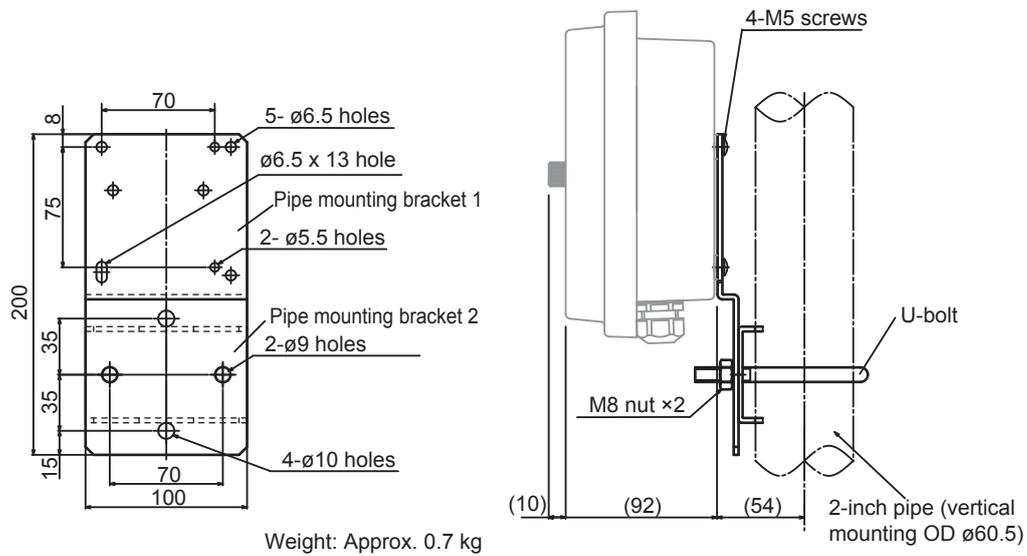
- **Wall or Panel mounting bracket for additional noise filter assembly (option code: /W, /PA)**   UNIT : mm

5- ø6.5 holes
ø6.5 x13 hole
Wall mounting bracket
2- ø5.5 holes
4- ø10 holes

70
8
75
200
35
35
15
70
100

4-M5 screw
4-M6 screw
(customer's scope)
(10)   (92)   13

Weight: Approx. 0.7 kg
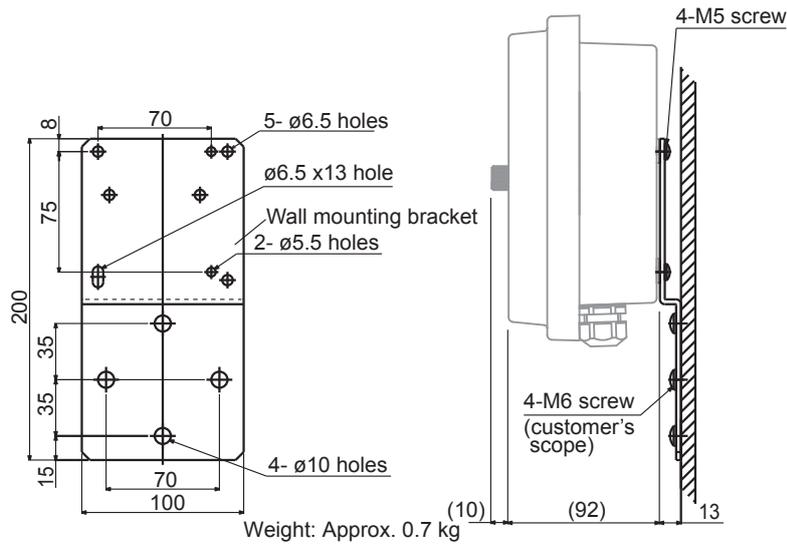
Ultrasonic Oscillator (Explosionproof Type))
PH8USF   UNIT : mm

315
142
152
ø190
ø100
85
246

Electrical connection G 3/4
2-inch pipe

F45.ai

Alarm Box
PH8AL   UNIT : mm

2-ø10 holes
40
10
131
150
176
133

Electrical connection
ø18 hole

Electrical connection
2-ø28 holes
46 37
7
90
120
38
35

Air purge port
Rc 1/4 (optional)

F46.ai

GS 12J05C02-00E 10th Edition Oct. 05, 2018-00