OVERVIEW
The MagneW 3000 PLUS electromagnetic flowmeter detector is a high performance, highly reliable flowmeter developed with Yamatake’s proven MagneW 3000 flow measurement technologies. Model MGG18 (watertight model) and model MGG19 (submersible model) offer superior process flowrate measurement and couple with a wide range of MagneW 3000 PLUS converters.

FEATURES
High performance lining
• A new, exclusive high quality lining technology and a special mirror-finish PFA lining offers higher anti-adhesive properties than existing models.
• The mirror-finish PFA lining is particularly applicable for measurement of sticky pulp and gypsum slurries.
• Only pure white PFA with no additives is used to make new linings.
• The successful embedded punch plate that offers proven performance under conditions such as rapid thermal change and negative pressure. PFA linings with diameter ranges from 2.5 mm to 600 mm (0.1 to 24 inches) are available, making selection of the best lining easy for a wide variety of applications.

Replacement interfacing detector (optional)
• This detector can replace the detector interfaces of our existing models and those of other manufacturers. Please consult your Yamatake representative for details.

Rugged detector structure
• A stainless steel case has been adopted for sizes of 2.5 mm to 200 mm (0.1 to 8 inches).
• A watertight structure effective for environments where moisture and condensation tends to occur is used for the water-tight model (model MGG18).

A wide variety of piping connections
• A hose or union joint or clamp can be selected for very small size models (diameters of 2.5 to 15 mm (0.1 to 1/2 inches)).
• A flange structure is available for all sizes (sizes of 2.5 to 1100 mm (0.1 to 44 inches).
• A wafer construction can be also selected (sizes of 2.5 to 200 mm (0.1 to 8 inches)).

Over view
Size 2.5 to 600 mm (0.1 to 24 inches)

Replacement interfacing detector (optional)
Size 700 to 1100 mm (28 to 44 inches)

Compatibility
• Remote model converters can be used in combination with our conventional converters. Please consult your Yamatake representative for details.

Type of protection
• Model MGG 18/19 are suitable for use in FM/CSA Nonincendive Class I, Division 2, Groups A, B, C and D; Class II, Division 2, Groups F and G; Class III, Division 2.

Specifications are subject to change without notice. - 1 - First issue: Feb. 1997 Rev.7: Jun. 2003
APPLICATIONS

Pulp and paper
Pulp liquids, chemicals, corrosive liquids, industrial water, wastewater, etc.

Petroleum/petrochemical/chemicals
Corrosive liquids, dyestuffs, chemicals, industrial water, waste water, etc.

Public utilities
Water supply systems, sewage systems, community drainage, human waste, sludge, sediment slurry, regulation of total effluent, etc.

Food
Potable water, light, medium and high density fluids, industrial water, waste water, etc.

Steel/nonferrous metals/ceramics
Aluminum slurry, cooling water, industrial water, corrosive liquids, wastewater, etc.

Machinery/equipment/electric machinery
Corrosive liquids, cooking water, circulating water, industrial water, wastewater, etc.

Construction
Building material slurry, sediment slurry, cement slurry, industrial water, etc.

Shipbuilding
Sediment slurry etc.

Electric power
Corrosive liquids, cooling water, industrial water, wastewater, etc.

Gas
Circulating water for air conditioning, etc.

FUNCTIONAL SPECIFICATIONS

Type of protection
Model MGG18
JIS C 0920 watertight model
NEMA TYPE4X, IEC IP67

Model MGG19
JIS C 0920 submersible model
NEMA TYPE6P, IEC IP68

FM approval for both
Nonincendive for Class I, Division 2, Groups A, B, C and D
Suitable for Class II, Division 2, Groups F and G
Suitable for Class III, Division 2, indoor and outdoor (type 4X) hazardous locations.

CSA approval for both
Nonincendive for Class I, Division 2, Groups A, B, C, and D
For Class II, Division 2, Groups E, F and G
For Class III for used with non-flammable process fluids.

Line size
2.5, 5, 10, 15, 25, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1000, 1100 mm
(0.1, 0.2, 3/8, 1/2, 1, 1½, 2, 2½, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 24, 28, 32, 36, 40, 44 inches)

Flange rating
JIS 10K, JIS 16K, JIS 20K, JIS 30K, JPI 150, ANSI 150, ANSI 300, DIN PN10, DIN PN16, DIN PN25, DIN PN40
(Size 2.5 to 50 mm (0.1 to 2 inches))
JIS 10K, JIS 16K, JIS 20K, JIS 30K, JIS G3451 F12 JPI 150, JPI 300, ANSI 150, ANSI 300, DIN PN10, DIN PN16, DIN PN25, DIN PN40
(Size 80 to 200 mm (3 to 8 inches))
JIS 10K, JIS 16K, JIS 20K, JIS G3451 F12 JPI 150, JPI 300, ANSI 150, ANSI 300, DIN PN10, DIN PN16, DIN PN25
(Size 250 to 600 mm (10 to 24 inches), PFA/ETFE lining)
JIS 10K, JIS G3451 F12, JPI 150, ANSI 150, DIN PN10
(Size 250 to 600 mm (10 to 24 inches), chloroprene rubber lining)
## Measurement flow range

Refer to the minimum/maximum set ranges shown in the table below.

<table>
<thead>
<tr>
<th>Size</th>
<th>Minimum flow velocity range is</th>
<th>Maximum flow velocity range is</th>
<th>Conversion factor K</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 0.1 m/s (0 to 0.33 ft/s)</td>
<td>0 to 10 m/s (0 to 32.8 ft/s)</td>
<td></td>
</tr>
<tr>
<td>mm</td>
<td>m³/h</td>
<td>GPM</td>
<td>m³/h</td>
</tr>
<tr>
<td>2.5</td>
<td>0 to 0.001768</td>
<td>0 to 0.007782</td>
<td>0 to 0.1767</td>
</tr>
<tr>
<td>5</td>
<td>0 to 0.007069</td>
<td>0 to 0.03113</td>
<td>0 to 0.7068</td>
</tr>
<tr>
<td>10</td>
<td>0 to 0.02825</td>
<td>0 to 0.1246</td>
<td>0 to 2.827</td>
</tr>
<tr>
<td>15</td>
<td>0 to 0.06362</td>
<td>0 to 0.2802</td>
<td>0 to 6.361</td>
</tr>
<tr>
<td>25</td>
<td>0 to 0.1768</td>
<td>0 to 0.7782</td>
<td>0 to 17.67</td>
</tr>
<tr>
<td>40</td>
<td>0 to 0.4524</td>
<td>0 to 1.993</td>
<td>0 to 45.23</td>
</tr>
<tr>
<td>50</td>
<td>0 to 0.7069</td>
<td>0 to 3.113</td>
<td>0 to 70.68</td>
</tr>
<tr>
<td>65</td>
<td>0 to 1.195</td>
<td>0 to 5.261</td>
<td>0 to 119.4</td>
</tr>
<tr>
<td>80</td>
<td>0 to 1.810</td>
<td>0 to 7.969</td>
<td>0 to 180.9</td>
</tr>
<tr>
<td>100</td>
<td>0 to 2.828</td>
<td>0 to 12.46</td>
<td>0 to 282.7</td>
</tr>
<tr>
<td>125</td>
<td>0 to 4.418</td>
<td>0 to 19.46</td>
<td>0 to 441.7</td>
</tr>
<tr>
<td>150</td>
<td>0 to 6.362</td>
<td>0 to 28.02</td>
<td>0 to 636.1</td>
</tr>
<tr>
<td>200</td>
<td>0 to 11.31</td>
<td>0 to 49.81</td>
<td>0 to 1130</td>
</tr>
<tr>
<td>250</td>
<td>0 to 17.68</td>
<td>0 to 77.82</td>
<td>0 to 1767</td>
</tr>
<tr>
<td>300</td>
<td>0 to 25.45</td>
<td>0 to 112.1</td>
<td>0 to 2544</td>
</tr>
<tr>
<td>350</td>
<td>0 to 34.64</td>
<td>0 to 152.6</td>
<td>0 to 3463</td>
</tr>
<tr>
<td>400</td>
<td>0 to 45.24</td>
<td>0 to 199.3</td>
<td>0 to 4523</td>
</tr>
<tr>
<td>450</td>
<td>0 to 57.26</td>
<td>0 to 252.2</td>
<td>0 to 5725</td>
</tr>
<tr>
<td>500</td>
<td>0 to 70.69</td>
<td>0 to 311.3</td>
<td>0 to 7068</td>
</tr>
<tr>
<td>600</td>
<td>0 to 101.8</td>
<td>0 to 448.3</td>
<td>0 to 10178</td>
</tr>
<tr>
<td>700</td>
<td>0 to 138.6</td>
<td>0 to 610.1</td>
<td>0 to 13854</td>
</tr>
<tr>
<td>800</td>
<td>0 to 181.0</td>
<td>0 to 796.9</td>
<td>0 to 18095</td>
</tr>
<tr>
<td>900</td>
<td>0 to 229.1</td>
<td>0 to 1009</td>
<td>0 to 22902</td>
</tr>
<tr>
<td>1000</td>
<td>0 to 282.8</td>
<td>0 to 1246</td>
<td>0 to 28274</td>
</tr>
<tr>
<td>1100</td>
<td>0 to 342.2</td>
<td>0 to 1507</td>
<td>0 to 34211</td>
</tr>
</tbody>
</table>

Flow conversion: \( V(m/s) = K \times Q \)

\[ K = \frac{1}{3600} \times \frac{4}{\pi D^2} \]

\[ Q = \text{Flow rate (m}^3\text{/h)} \]

## Temperature range and pressure range of process fluid

**Size 2.5 to 10 mm (0.1 to 3/8 inch)**

- Chloroprene rubber and PFA/ETFE lining
- Polyurethane rubber and PFA/ETFE lining
- PFA/ETFE lining
- PFA lining (Remote model only)
- Special products

**Size 250 to 1100 mm (10 to 44 inches)**

- Chloroprene rubber and PFA/ETFE lining
- Polyurethane rubber and PFA/ETFE lining
- PFA/ETFE lining
- PFA lining
- Special products
**Ambient temperature limits**
-25 to +60°C (-13 to +140°F) (integral model)
-30 to +80°C (-22 to +176°F) (remote model, PFA lining)
30 to +60°C (-22 to +140°F) (remote model, polyurethane rubber lining/chloroprene rubber lining)

**Ambient humidity limits**
5 to 100% RH

**Measurable electrical conductivity**
Combined with model MGG14C converter
3 μS/cm or more

**Optional specifications**

**Test report**
Calibration certificate, withstand voltage test, insulation resistant, hydrostatic pressure test, physical inspection are included.

**Traceability certificate**
The following three documents are included.
- Traceability System Chart
- Traceability Certificate
- Test Report

**Material certificate**
Material certificate for electrode/grounding ring

**Gasket for plastic piping**
When the detector is being mounted on plastic pipe, attach this gasket between the lining and the grounding ring, and between the grounding ring and the plastic pipe flange.

**Attaching the tag number to the terminal box**
Stamp the tag with the specified number and attach to the terminal box. The maximum number of characters of the tag number is 8.

**Attaching the tag number to the neck section**
Stamp the tag with the specified number and attach to the neck section of the detector with stainless wire. The maximum number of characters of the tag number is 16.

---

**PERFORMANCE SPECIFICATIONS**

**Accuracy**
(in combination with the model MGG14C converter)

**<Size 2.5 to 15 mm (0.1 to 1/2 inch)>**

<table>
<thead>
<tr>
<th>Vs (m/s)</th>
<th>Velocity during measurement ≥ Vs × 40%</th>
<th>Velocity during measurement ≤ Vs × 40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 ≤ Vs ≤ 10</td>
<td>±0.5% of rate</td>
<td>±0.2% of Vs</td>
</tr>
<tr>
<td>0.1 ≤ Vs ≤ 1.0</td>
<td>±(0.1/Vs+0.4)% of rate</td>
<td>±0.4(0.1/Vs+0.4)% of Vs</td>
</tr>
</tbody>
</table>

**<Size 25 to 600 mm (1 to 24 inches)>**

<table>
<thead>
<tr>
<th>Vs (m/s)</th>
<th>Velocity during measurement ≥ Vs × 20%</th>
<th>Velocity during measurement ≤ Vs × 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 ≤ Vs ≤ 10</td>
<td>±0.5% of rate</td>
<td>±0.1% of Vs</td>
</tr>
<tr>
<td>0.1 ≤ Vs ≤ 1.0</td>
<td>±(0.1/Vs+0.4)% of rate</td>
<td>±0.2 (0.1/Vs+0.4)% of Vs</td>
</tr>
</tbody>
</table>

**<Size 700 to 1100 mm (28 to 44 inches)>**

<table>
<thead>
<tr>
<th>Vs (m/s)</th>
<th>Velocity during measurement ≥ Vs × 50%</th>
<th>Velocity during measurement ≤ Vs × 50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 ≤ Vs ≤ 10</td>
<td>±1.0% of rate</td>
<td>±0.5% of Vs</td>
</tr>
<tr>
<td>0.1 ≤ Vs ≤ 1.0</td>
<td>±(0.2/Vs+0.8)% of rate</td>
<td>(0.1/Vs+0.4)% of Vs</td>
</tr>
</tbody>
</table>

---

**PHYSICAL SPECIFICATIONS**

**Main body material**
Measuring pipe materials
SUS304 stainless steel

**Flange**
SUS304 stainless steel (size 2.5 to 65 mm (0.1 to 2½ inches))
Carbon steel + corrosion-preventive coating (size 80 to 600 mm (3 to 24 inches))

**Case**
SCS13 stainless steel (size 2.5 to 15 mm (0.1 to 1/2 inch))
SUS304 stainless steel (size 25 to 200 mm (1 to 8 inches))
SS400 carbon steel (size 250 to 1100 mm (10 to 44 inches))

**Terminal box**
Aluminum alloy (remote model)
Finish

Model MGG18

- Standard
  - Terminal box
    - Baked acryl paint
  - Case (size 250 to 1100 mm (10 to 44 inches))
    - Polyurethane paint

- Corrosion-resistant
  - Terminal box
    - Baked acryl paint
  - Case (size 250 to 1100 mm (10 to 44 inches))
    - Polyurethane paint

- Corrosion-proof
  - Terminal box
    - Baked epoxy paint
  - Case (size 250 to 1100 mm (10 to 44 inches))
    - Epoxy paint

- Color
  - Light beige (Munsell 4Y7.2/1.3)

Model MGG19

- Terminal box and case
  - Corrosion-proof tar epoxy paint, black

Process wetted material

- Lining
  - PFA (size 2.5 to 600 mm (0.1 to 24 inches))
  - ETFE (size 80 to 600 mm (3 to 24 inches))
  - Polyurethane rubber (size 25 to 200 mm (1 to 8 inches))
  - Chloroprene rubber (size 250 to 1100 mm (10 to 44 inches))

- Electrode
  - SUS316L, Hastelloy C, titanium, zirconium, tantalum, tungsten-carbide, platinum/iridium

- Grounding ring
  - SUS316, Hastelloy C, titanium, zirconium, tantalum, platinum

- Union joint
  - SUS316 (size 2.5 to 15mm (0.1 to 1/2 inch))

- Hose
  - SUS316 (size 2.5 to 15mm (0.1 to 1/2 inch))

- IDF Clamp
  - SUS316 (size 2.5 to 15mm (0.1 to 1/2 inch))

- Tri Clamp
  - SUS316 (size 2.5 to 15mm (0.1 to 1/2 inch))

- Gasket
  - PTFE (if the grounding ring is not made of SUS316)

- O-ring
  - Viton rubber (with union joints)

INSTALLATION

Electrical connection

- Integral model
  - Connected to converter

- Remote model
  - General model
    - G1/2 (PF1/2) internal thread, CM20 internal thread, Pg 13.5 internal thread.
  - FM/CSA Nonincendive model
    - 1/2NPT internal thread for model MGG18
    - Watertight gland for model MGG19

Pipe connection

- Wafer (size 2.5 to 200 mm (0.1 to 8 inches))
- Flange (size 2.5 to 1100 mm (0.1 to 44 inches))
- Union (size 2.5 to 15 mm (0.1 to 1/2 inch))
- Hose (size 2.5 to 15 mm (0.1 to 1/2 inch))
- IDF Clamp (size 2.5 to 15 mm (0.1 to 1/2 inch))
- Tri Clamp (size 2.5 to 15 mm (0.1 to 1/2 inch))

Nuts and bolts (for wafer models)

- S20C carbon steel, SUS304 stainless steel

Grounding

- Resistance less than 100 Ω

Length of straight pipe

- Upstream side
  - A minimum five straight pipe diameters
  - A minimum 10 straight pipe diameters is required if a diffuser/valve/pump is installed upstream side.

- Downstream side
  - Two straight pipe diameters is recommended.

Cable (between remote detector and converter)

- Maximum length 300 m (984 ft)
  - (depends on fluid conductivity)
  - Outer diameter 10 to 12 mm (0.4 to 0.47 inch)

- Signal cable
  - Dedicated cable: MGA12W
  - (O.D. 11.4 mm, 0.75 mm²) or equivalent (CVVS, CEEV etc.)

- Excitation cable
  - Dedicated cable: MGA12W
  - (O.D. 10.5 mm, 2 mm²) or equivalent (CVV and others)
For FM/CSA Nonincendive model
This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D, Class II, Division 2, Groups F and G; Class III, Division 2.

⚠️ CAUTION

Power supply and internal voltage of ordinary equipment to the earth shall not exceed 250 V AC 50/60Hz, 250 V DC in case of normal/fault conditions.

(Integral type)

(Remote type)

Configuration #1
- Preferred for 2.5 mm to 10 mm detectors to minimize noise

Configuration #2

Configuration #3

Non-hazardous or Division 2 location
### MODEL SELECTION

#### Contents of model number table

**Detector (General model)**

<table>
<thead>
<tr>
<th>Structure / Basic model no.</th>
<th>Lining</th>
<th>Pipe connection</th>
<th>Size</th>
<th>Ref. page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watertight model MGG18U</td>
<td>PFA</td>
<td>Union / Hose / Clamp</td>
<td>2.5 to 15 mm (0.1 to 1/2 inch)</td>
<td>page 8</td>
</tr>
<tr>
<td>Watertight model MGG18D</td>
<td>PFA</td>
<td>Wafer</td>
<td>2.5 to 10 mm (0.1 to 3/8 inch)</td>
<td>page 9</td>
</tr>
<tr>
<td>Watertight model MGG18D</td>
<td>PFA / ETFE</td>
<td>Wafer</td>
<td>15 to 200 mm (1/2 to 8 inches)</td>
<td>page 10</td>
</tr>
<tr>
<td>Watertight model MGG18F</td>
<td>PFA / ETFE</td>
<td>Flange</td>
<td>15 to 200 mm (1/2 to 8 inches)</td>
<td>page 11</td>
</tr>
<tr>
<td>Watertight model MGG18F</td>
<td>PFA / ETFE</td>
<td>Flange</td>
<td>250 to 600 mm (10 to 24 inches)</td>
<td>page 12</td>
</tr>
<tr>
<td>Watertight model MGG18D</td>
<td>Polyurethane rubber</td>
<td>Wafer</td>
<td>25 to 200 mm (1 to 8 inches)</td>
<td>page 13</td>
</tr>
<tr>
<td>Watertight model MGG18F</td>
<td>Polyurethane rubber</td>
<td>Flange</td>
<td>25 to 200 mm (1 to 8 inches)</td>
<td>page 14</td>
</tr>
<tr>
<td>Watertight model MGG18F</td>
<td>Chloroprene rubber</td>
<td>Flange</td>
<td>250 to 600 mm (10 to 24 inches)</td>
<td>page 15</td>
</tr>
<tr>
<td>Watertight model MGG18F</td>
<td>Chloroprene rubber</td>
<td>Flange</td>
<td>700 to 1100 mm (28 to 44 inches)</td>
<td>page 16</td>
</tr>
</tbody>
</table>

**Detector (Submersible model)**

<table>
<thead>
<tr>
<th>Structure / Basic model no.</th>
<th>Lining</th>
<th>Pipe connection</th>
<th>Size</th>
<th>Ref. page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submersible model MGG19D</td>
<td>PFA / ETFE</td>
<td>Wafer</td>
<td>15 to 200 mm (1/2 to 8 inches)</td>
<td>page 17</td>
</tr>
<tr>
<td>Submersible model MGG19F</td>
<td>PFA / ETFE</td>
<td>Flange</td>
<td>15 to 200 mm (1/2 to 8 inches)</td>
<td>page 18</td>
</tr>
<tr>
<td>Submersible model MGG19F</td>
<td>PFA / ETFE</td>
<td>Flange</td>
<td>250 to 600 mm (10 to 24 inches)</td>
<td>page 19</td>
</tr>
<tr>
<td>Submersible model MGG19D</td>
<td>Polyurethane rubber</td>
<td>Wafer</td>
<td>25 to 200 mm (1 to 8 inches)</td>
<td>page 20</td>
</tr>
<tr>
<td>Submersible model MGG19F</td>
<td>Polyurethane rubber</td>
<td>Flange</td>
<td>25 to 200 mm (1 to 8 inches)</td>
<td>page 21</td>
</tr>
</tbody>
</table>

Note: All MGG19 models satisfy FM/CSA Nonincendive approval.
## Union / Hose / Clamp type (2.5 to 15 mm (0.1 to 1/2 inch)) PFA lining

Model MGG18U - I II III IV V VI VII VIII IX - X - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG18U</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### I Line size
- 2.5 mm (0.1 inch) 002
- 5 mm (0.2 inch) 005
- 10 mm (3/8 inch) 010
- 15 mm (1/2 inch) 015

### II Lining
- Union / Hose / Clamp type (PFA) P

### III Piping connection
- Union joint R1/2 (PT1/2) external thread U1
- Union joint 1/2NPT external thread U2
- Union joint R1/2 (PT1/2) internal thread U3
- Union joint 1/2NPT internal thread U4
- Hose joint U5
- IDF clamp U6
- Tri clamp U7

### IV Electrode
- SUS316L L
- Hastelloy C C
- Titanium K
- Zirconium H
- Tungsten carbide (only for size 10 mm or upper) W
- Others

### V Grounding ring
- SUS316 S

### VI Electrical connection / watertight gland
- Integral type 1
  - G1/2 internal thread / without watertight gland 2
  - G1/2 internal thread / with brass (Ni-plated) watertight gland 3
  - G1/2 internal thread / with plastic watertight gland 4
  - 1/2NPT internal thread / without watertight gland (Note 1) 5
  - CM20 internal thread / without watertight gland 6
  - Pg 13.5 internal thread / without watertight gland 7
  - G1/2 internal thread / with SUS304 watertight gland 8

### VII Face-to-face
- Standard A

### VIII Installation / wiring direction
- Integral type H
  - Upstream side (horizontal / vertical piping mounting) A
  - Downstream side (horizontal / vertical piping mounting) B
  - Horizontal piping mounting / left side viewed from upstream C
  - Horizontal piping mounting / right side viewed from upstream D

### IX Calibration
- Standard A
- Others

### X Finish
- Standard X
  - Corrosion-resistant finish 1
  - Corrosion-proof finish 2

### Options
- Yamatake version (must be selected) Y
- Calibration certificate (sent to ordering location separately) A
- Traceability certificate for detector B
- Material certificate (only for electrodes and ground rings) C
- Attachment of the TAG number to the terminal box for detector (Note 2) K
- Attachment of the TAG number plate to neck section for detector L

**Notes**
1. Must be selected for CSA/FM NI approval
2. Must be selected for Tag no. requirement
### Wafer type (2.5 to 10 mm (0.1 to 3/8 inch)) PFA lining

Model MGG18D - I II III IV V VI VII VIII IX - X XI - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG18D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### I Line size
- 2.5 mm (0.1 inch) 002
- 5 mm (0.2 inch) 005
- 10 mm (3/8 inch) 010

#### II Lining
- PFA

#### III Piping connection
- Wafer JIS 10K 11
- Wafer JIS 20K 12
- Wafer JIS 30K 13
- Wafer JIS 10/20K for 10 mm flange 14
- Wafer JIS 30K for 10 mm flange 15
- Wafer ANSI 150 21
- Wafer ANSI 300 22
- Wafer DIN PN10 41
- Wafer DIN PN16 42
- Wafer DIN PN25 43
- Wafer DIN PN40 44
- Wafer DIN PN10/16/25/40 for 10 mm flange 45
- Wafer JPI 150 61
- Wafer JPI 300 62

#### IV Electrode
- SUS316L L
- Hastelloy C C
- Titanium K
- Zirconium H
- Tantalum T
- Tungsten carbide (only for size 10 mm) W
- Platinum iridium P
- Others F

#### V Grounding ring
- SUS316 S
- Hastelloy C C
- Titanium K
- Zirconium H
- Tantalum T
- Platinum iridium P
- Others F

#### VI Electrical connection / watertight gland
- Integral type
  - G1/2 internal thread / without watertight gland 1
  - G1/2 internal thread / with brass (Ni-plated) watertight gland 2
  - G1/2 internal thread / with plastic watertight gland 3
  - 1/2NPT internal thread / without watertight gland (Note 1) 4
  - CM20 internal thread / without watertight gland 5
  - Pg 13.5 internal thread / without watertight gland 6
  - G1/2 internal thread / with SUS304 watertight gland 7
- Remote type
  - Upstream side (horizontal / vertical piping mounting) A
  - Downstream side (horizontal / vertical piping mounting) B
  - Horizontal piping mounting / left side viewed from upstream C
  - Horizontal piping mounting / right side viewed from upstream D

#### VII Face-to-face dimensions
- Standard A
- Others F

#### VIII Installation / wiring direction
- Integral type
  - H
- Remote type
  - Upstream side (horizontal / vertical piping mounting) A
  - Downstream side (horizontal / vertical piping mounting) B
  - Horizontal piping mounting / left side viewed from upstream C
  - Horizontal piping mounting / right side viewed from upstream D

#### IX Calibration
- Standard A
- Others F

#### X Finish
- Standard X
- Corrosion-resistant finish 1
- Corrosion-proof finish 2

#### XI Bolt / nut
- None X
- Carbon steel 1
- SUS304 2

---

### Options
- Yamatake version (must be selected) Y
- Calibration certificate (sent to ordering location separately) A
- Traceability certificate for detector B
- Material certificate (only for electrodes and ground rings) C
- With gasket for plastic piping J
- Attachment of the TAG number to the terminal box for detector (Note 2) K
- Attachment of the TAG number plate to neck section for detector L

**Note:**
1. Must be selected for CSA/FM NI approval
2. Must be selected for Tag no. requirement
### Wafer type (15 to 200 mm (1/2 to 8 inches)) PFA / ETFE lining
Model MGG18D - I II III IV V VI VII VIII IX - X XI - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG18D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### I Line size
- 15 mm (1/2 inch) 015
- 25 mm (1 inch) 025
- 40 mm (1 1/2 inches) 040
- 50 mm (2 inches) 050
- 65 mm (2 1/2 inches) 065
- 80 mm (3 inches) 080
- 100 mm (4 inches) 100
- 125 mm (5 inches) 125
- 150 mm (6 inches) 150
- 200 mm (8 inches) 200

#### II Lining
- ETFE (Size 80 to 200 mm (3 to 8 inches)) E
- PFA P

#### III Piping connection
- Wafer JIS 10K 11
- Wafer JIS 20K 12
- Wafer JIS 30K 13
- Wafer ANSI 150 21
- Wafer ANSI 300 22
- Wafer JIS G3451 P12 (size 80 mm or larger) 31
- Wafer DIN PN10 41
- Wafer DIN PN16 42
- Wafer DIN PN25 43
- Wafer DIN PN40 44
- Wafer JPI 150 61
- Wafer JPI 300 62

#### IV Electrode
- SUS316L L
- Hastelloy C C
- Titanium K
- Zirconium H
- Tantalum T
- Tungsten carbide W
- Platinum iridium P
- Others [ ]

#### V Grounding ring
- SUS316 S
- Hastelloy C C
- Titanium K
- Zirconium H
- Tantalum T
- Platinum iridium P
- Others [ ]

#### VI Electrical connection / watertight gland
- Integral type 1
- Remote type
  - G1/2 internal thread / without watertight gland 2
  - G1/2 internal thread / with brass (Ni-plated) watertight gland 3
  - G1/2 internal thread / with plastic watertight gland 4
  - BS NPT internal thread / without watertight gland (Note 1) 5
  - CM20 internal thread / without watertight gland 6
  - Pg 13.5 internal thread / without watertight gland 7
  - G1/2 internal thread / with SUS304 watertight gland 8
- Others [ ]

#### VII Face-to-face dimensions
- Standard A
- Others [ ]

#### VIII Installation / wiring direction
- Integral type H
- Remote type
  - Upstream side (horizontal / vertical piping mounting) A
  - Downstream side (horizontal / vertical piping mounting) B
  - Horizontal piping mounting / left side viewed from upstream C
  - Horizontal piping mounting / right side viewed from upstream D
- Others [ ]

#### IX Calibration
- Standard A
- Others [ ]

#### X Finish
- Standard X
- Corrosion-resistant finish 1
- Corrosion-proof finish 2

#### XI Bolt / nut
- None X
- Carbon steel 1
- SUS304 2

### Options
- Yamatake version (must be selected) Y
- Calibration certificate (sent to ordering location separately) A
- Traceability certificate for detector B
- Material certificate (only for electrodes and ground rings) C
- With gasket for plastic piping J
- Attachment of the TAG number to the terminal box for detector (Note 2) K
- Attachment of the TAG number plate to neck section for detector L

Note) 1. Must be selected for CSA/FM NI approval
2. Must be selected for Tag no. requirement
### Flange type (15 to 200 mm (1/2 to 8 inches)) PFA / ETFE lining

#### Model MGG18F - I II III IV V VI VII VIII IX X - XI - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG18F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### I Line size
- 15 mm (1/2 inch) 015
- 25 mm (1 inch) 025
- 40 mm (1½ inches) 040
- 50 mm (2 inches) 050
- 65 mm (2½ inches) 065
- 80 mm (3 inches) 080
- 100 mm (4 inches) 100
- 125 mm (5 inches) 125
- 150 mm (6 inches) 150
- 200 mm (8 inches) 200

#### II Lining
- ETFE (Size 80 to 200 mm (3 to 8 inches)) E
- PFA F

#### III Piping connection
- Flange JIS 10K J1
- Flange JIS 20K J2
- Flange JIS 30K J3
- Flange ANSI 150 A1
- Flange ANSI 300 A2
- Flange JIS G3451 F12 (line size 80 mm or larger) G1
- Flange DIN PN10 D1
- Flange DIN PN16 D2
- Flange DIN PN25 D3
- Flange DIN PN40 D4
- Flange JPI 150 F1
- Flange JPI 300 F2

#### IV Flange material
- Standard 1
- Others

#### V Electrode
- SUS316L L
- Hasselloy C C
- Titanium K
- Zirconium H
- Tantalum T
- Tungsten carbide W
- Platinum iridium P
- Others

#### VI Grounding ring
- SUS316 S
- Hasselloy C C
- Titanium K
- Zirconium H
- Tantalum T
- Platinum iridium P
- Others

#### VII Electrical connection / watertight gland
- Integral type 1
- Remote type
  - G1/2 internal thread / without watertight gland 2
  - G1/2 internal thread / with brass (Ni-plated) watertight gland 3
  - G1/2 internal thread / with plastic watertight gland 4
  - 1/2NPT internal thread / without watertight gland (Note 1) 5
  - CM20 internal thread / without watertight gland 6
  - Pg 13.5 internal thread / without watertight gland 7
  - G1/2 internal thread / with SUS304 watertight gland 8

#### VIII Face-to-face dimensions
- Standard A
- Others

#### IX Installation / wiring direction
- Integral type H
- Remote type
  - Upstream side (horizontal / vertical piping mounting) A
  - Downstream side (horizontal / vertical piping mounting) B
  - Horizontal piping mounting / left side viewed from upstream C
  - Horizontal piping mounting / right side viewed from upstream D

#### X Calibration
- Standard A
- Others

#### XI Finish
- Standard X
- Corrosion-resistant finish F1
- Corrosion-proof finish

<table>
<thead>
<tr>
<th>Option</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calibration certificate (sent to ordering location separately)</td>
<td>A</td>
</tr>
<tr>
<td>Traceability certificate for detector</td>
<td>B</td>
</tr>
<tr>
<td>Material certificate (only for electrodes and ground rings)</td>
<td>C</td>
</tr>
<tr>
<td>With gasket for plastic piping</td>
<td>J</td>
</tr>
<tr>
<td>Attachment of the TAG number to the terminal box for detector (Note 1)</td>
<td>K</td>
</tr>
<tr>
<td>Attachment of the TAG number plate to neck section for detector (Note 2)</td>
<td>L</td>
</tr>
</tbody>
</table>

**Note**
1. Must be selected for CSA/FM NI approval
2. Must be selected for Tag no. requirement
# Flange type (250 to 600 mm (10 to 24 inches)) PFA / ETFE lining

Model MGG18F - I II III IV V VI VII VIII IX X - XI - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>MGG18F</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I Line size</td>
<td>250 mm (10 inches)</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td></td>
<td>300 mm (12 inches)</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td></td>
<td>350 mm (14 inches)</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td></td>
<td>400 mm (16 inches)</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td></td>
<td>450 mm (18 inches)</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td></td>
<td>500 mm (20 inches)</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>600 mm (24 inches)</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>II Lining</td>
<td>ETFE E</td>
<td>PFA P</td>
<td></td>
</tr>
<tr>
<td>III Piping connection</td>
<td>Flange JIS 10K J1</td>
<td>Flange JIS 20K J2</td>
<td>Flange ANSI 150 A1</td>
</tr>
<tr>
<td>IV Flange material</td>
<td>Standard 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V Electrode</td>
<td>SUS316L L</td>
<td>Hastelloy C C</td>
<td>Titanium K K</td>
</tr>
<tr>
<td>VI Grounding ring</td>
<td>SUS316 S</td>
<td>Hastelloy C C</td>
<td>Titanium K K</td>
</tr>
<tr>
<td>VII Electrical connection / watertight gland</td>
<td>Integral type 1</td>
<td>G1/2 internal thread / without watertight gland 2</td>
<td>G1/2 internal thread / with brass (Ni-plated) watertight gland 3</td>
</tr>
<tr>
<td>VIII Face-to-face dimensions</td>
<td>Standard A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IX Installation / wiring direction</td>
<td>Integral type H</td>
<td>Remote type Upstream side (horizontal / vertical piping mounting) A</td>
<td>Downstream side (horizontal / vertical piping mounting) B</td>
</tr>
<tr>
<td>X Calibration</td>
<td>Standard A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XI Finish</td>
<td>Standard X</td>
<td>Corrosion-resistant finish 1</td>
<td>Corrosion-proof finish 2</td>
</tr>
</tbody>
</table>

**Options**

- Yamatake version (must be selected) Y
- Calibration certificate (sent to ordering location separately) A
- Traceability certificate for detector B
- Material certificate (only for electrodes and ground rings) C
- With gasket for plastic piping J
- Attachment of the TAG number to the terminal box for detector (Note 2) K
- Attachment of the TAG number plate to neck section for detector L

**Note**

1. Must be selected for CSA/FM NI approval.
2. Must be selected for Tag no. requirement.
### Wafer type (25 to 200 mm (1 to 8 inches)) Polyurethane rubber lining

Model MGG18D - I II III IV V VI VII VIII IX - X XI - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG18D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### I Line size
- 25 mm (1 inch) 025
- 40 mm (1½ inches) 040
- 50 mm (2 inches) 050
- 65 mm (2½ inches) 065
- 80 mm (3 inches) 080
- 100 mm (4 inches) 100
- 125 mm (5 inches) 125
- 150 mm (6 inches) 150
- 200 mm (8 inches) 200

#### II Lining
- Polyurethane rubber Q

#### III Piping connection
- Wafer JIS 10K 11
- Wafer JIS 20K 12
- Wafer JIS 30K 13
- Wafer ANSI 150 21
- Wafer ANSI 300 22
- Wafer JIS G3451 F12 (line size 80 mm or larger) 31
- Wafer DIN PN10 41
- Wafer DIN PN16 42
- Wafer DIN PN25 43
- Wafer DIN PN40 44
- Wafer JPI 150 61
- Wafer JPI 300 62

#### IV Electrode
- SUS316L L
- Titanium K
- Tungsten carbide (only for size 10 mm) W
- Others ☐

#### V Grounding ring
- SUS316 S
- Titanium K
- Others ☐

#### VI Electrical connection / watertight gland
- Integral type 1
- Remote type
  - GI/2 internal thread / without watertight gland 2
  - GI/2 internal thread / with brass (Ni-plated) watertight gland 3
  - GI/2 internal thread / with plastic watertight gland 4
  - 1/2NPT internal thread / without watertight gland (Note 1) 5
  - CM20 internal thread / without watertight gland 6
  - Pg 13.5 internal thread / without watertight gland 7
  - GI/2 internal thread / with SUS304 watertight gland 8

#### VII Face-to-face dimensions
- Standard A

#### VIII Installation / wiring direction
- Integral type H
- Remote type
  - Upstream side (horizontal / vertical piping mounting) A
  - Downstream side (horizontal / vertical piping mounting) B
  - Horizontal piping mounting / left side viewed from upstream C
  - Horizontal piping mounting / right side viewed from upstream D

#### IX Calibration
- Standard A
- Others ☐

#### X Finish
- Standard X
- Corrosion-resistant finish 1
- Corrosion-proof finish 2

#### XI Bolt / nut
- None X
- Carbon steel 1
- SUS304 2

#### Options
- Yamatake version (must be selected) Y
- Calibration certificate (sent to ordering location separately) A
- Traceability certificate for detector B
- Material certificate (only for electrodes and ground rings) C
- With gasket for plastic piping J
- Attachment of the TAG number to the terminal box for detector (Note 2) K
- Attachment of the TAG number plate to neck section for detector L

**Note:**
1. Must be selected for CSA/FM NI approval
2. Must be selected for Tag no. requirement
### Flange type (25 to 200 mm (1 to 8 inches)) Polyurethane rubber lining

Model MGG18F - I II III IV V VI VII VIII IX X - XI - Y

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG18F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Line size
- 25 mm (1 inch) 025
- 40 mm (1½ inches) 040
- 50 mm (2 inches) 050
- 65 mm (2½ inches) 065
- 80 mm (3 inches) 080
- 100 mm (4 inches) 100
- 125 mm (5 inches) 125
- 150 mm (6 inches) 150
- 200 mm (8 inches) 200

### Lining
- Polyurethane rubber Q

### Piping connection
- Flange JIS 10K J1
- Flange JIS 20K J2
- Flange JIS 30K J3
- Flange ANSI 150 A1
- Flange ANSI 300 A2
- Flange JIS G3451 FT2 (line size 80 mm or larger) G1
- Flange DIN PN10 D1
- Flange DIN PN16 D2
- Flange DIN PN25 D3
- Flange DIN PN40 D4
- Flange JPI 150 P1
- Flange JPI 300 P2

### Flange material
- Standard 1
- Others □

### Electrode
- SUS316L L
- Titanium K
- Tungsten carbide (only for size 10 mm) W
- Others □

### Grounding ring
- SUS316 S
- Titanium K
- Others □

### Electrical connection / watertight gland
- Integral type 1
- G1/2 internal thread / without watertight gland 2
- G1/2 internal thread / with brass (Ni-plated) watertight gland 3
- G1/2 internal thread / with plastic watertight gland 4
- 1/2NPT internal thread / without watertight gland (Note 1) 5
- CM20 internal thread / without watertight gland 6
- Pg 13.5 internal thread / without watertight gland 7
- G1/2 internal thread / with SUS304 watertight gland 8

### Face-to-face dimensions
- Standard A
- Others □

### Installation / wiring direction
- Integral type H
- Upstream side (horizontal / vertical piping mounting) A
- Downstream side (horizontal / vertical piping mounting) B
- Horizontal piping mounting / left side viewed from upstream C
- Horizontal piping mounting / right side viewed from upstream D

### Calibration
- Standard A
- Others □

### Finish
- Standard X
- Corrosion-resistant finish 1
- Corrosion-proof finish 2

---

**Options:**
- Yamatake version (must be selected) Y
- Calibration certificate (sent to ordering location separately) A
- Traceability certificate for detector B
- Material certificate (only for electrodes and ground rings) C
- With gasket for plastic piping J
- Attachment of the TAG number to the terminal box for detector (Note 2) K
- Attachment of the TAG number plate to neck section for detector L

**Note:**
1. Must be selected for CSA/FM NI approval
2. Must be selected for Tag no. requirement
### Flange type (250 to 600 mm (10 to 24 inches)) Chloroprene rubber lining

Model MGG18F - I II III IV V VI VII VIII IX X - XI - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>MGG18F</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Line size</td>
<td></td>
</tr>
<tr>
<td></td>
<td>250 mm (10 inches)</td>
</tr>
<tr>
<td></td>
<td>300 mm (12 inches)</td>
</tr>
<tr>
<td></td>
<td>350 mm (14 inches)</td>
</tr>
<tr>
<td></td>
<td>400 mm (16 inches)</td>
</tr>
<tr>
<td></td>
<td>450 mm (18 inches)</td>
</tr>
<tr>
<td></td>
<td>500 mm (20 inches)</td>
</tr>
<tr>
<td></td>
<td>600 mm (24 inches)</td>
</tr>
<tr>
<td>II Lining</td>
<td>Chloroprene rubber R</td>
</tr>
<tr>
<td>III Piping connection</td>
<td>Flange JIS 10K J1</td>
</tr>
<tr>
<td></td>
<td>Flange ANSI 150 A1</td>
</tr>
<tr>
<td></td>
<td>Flange JIS G3451 F12 G1</td>
</tr>
<tr>
<td></td>
<td>Flange DIN PN10 D1</td>
</tr>
<tr>
<td></td>
<td>Flange JPI 150 P1</td>
</tr>
<tr>
<td>IV Flange material</td>
<td>Standard 1</td>
</tr>
<tr>
<td></td>
<td>Others</td>
</tr>
<tr>
<td>V Electrode</td>
<td>SUS316L L</td>
</tr>
<tr>
<td></td>
<td>Titanium K</td>
</tr>
<tr>
<td></td>
<td>Tungsten carbide W</td>
</tr>
<tr>
<td></td>
<td>Others</td>
</tr>
<tr>
<td>VI Grounding ring</td>
<td>SUS316 S</td>
</tr>
<tr>
<td></td>
<td>Titanium K</td>
</tr>
<tr>
<td></td>
<td>Others</td>
</tr>
<tr>
<td>VII Electrical connection / watertight gland</td>
<td>Integral type 1</td>
</tr>
<tr>
<td></td>
<td>Remote type</td>
</tr>
<tr>
<td></td>
<td>G1/2 internal thread / without watertight gland 2</td>
</tr>
<tr>
<td></td>
<td>G1/2 internal thread / with brass (Ni-plated) watertight gland 3</td>
</tr>
<tr>
<td></td>
<td>G1/2 internal thread / with plastic watertight gland 4</td>
</tr>
<tr>
<td></td>
<td>1/2NPT internal thread / without watertight gland (Note 1) 5</td>
</tr>
<tr>
<td></td>
<td>CM20 internal thread / without watertight gland 6</td>
</tr>
<tr>
<td></td>
<td>Pg 13.5 internal thread / without watertight gland 7</td>
</tr>
<tr>
<td></td>
<td>G1/2 internal thread / with SUS304 watertight gland 8</td>
</tr>
<tr>
<td>VIII Face-to-face dimensions</td>
<td>Standard A</td>
</tr>
<tr>
<td></td>
<td>Others</td>
</tr>
<tr>
<td>IX Installation / wiring direction</td>
<td>Integral type H</td>
</tr>
<tr>
<td></td>
<td>Remote type</td>
</tr>
<tr>
<td></td>
<td>Upstream side (horizontal / vertical piping mounting) A</td>
</tr>
<tr>
<td></td>
<td>Downstream side (horizontal / vertical piping mounting) B</td>
</tr>
<tr>
<td></td>
<td>Horizontal piping mounting / left side viewed from upstream C</td>
</tr>
<tr>
<td></td>
<td>Horizontal piping mounting / right side viewed from upstream D</td>
</tr>
<tr>
<td>X Calibration</td>
<td>Standard A</td>
</tr>
<tr>
<td></td>
<td>Others</td>
</tr>
<tr>
<td>XI Finish</td>
<td>Standard X</td>
</tr>
<tr>
<td></td>
<td>Corrosion-resistant finish 1</td>
</tr>
<tr>
<td></td>
<td>Corrosion-proof finish 2</td>
</tr>
</tbody>
</table>

**Options**

- Yamatake version (must be selected) Y
- Calibration certificate (sent to ordering location separately) A
- Traceability certificate for detector B
- Material certificate (only for electrodes and ground rings) C
- With gasket for plastic piping J
- Attachment of the TAG number to the terminal box for detector (Note 2) K
- Attachment of the TAG number plate to neck section for detector L

**Note**

1. Must be selected for CSA/FM NI approval
2. Must be selected for Tag no. requirement
### Flange type (700 to 1100 mm (28 to 44 inches)) Chloroprene rubber lining

Model MGG18F - I II III IV V VI VII VIII IX X - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG18F</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### I Line size
- 700 mm (28 inches)
- 800 mm (32 inches)
- 900 mm (36 inches)
- 1000 mm (40 inches)
- 1100 mm (44 inches)

#### II Lining
- Chloroprene rubber

#### III Piping connection
- Flange JIS 10K
- Flange ANSI 150
- Flange JIS G3451 F12
- Flange DIN PN10
- Flange JPI 150

#### IV Flange material
- Standard

#### V Electrode
- SUS316L
- Titanium
- Tungsten carbide
- Others

#### VI Grounding ring
- SUS316
- Others

#### VII Electrical connection / watertight gland
- Integral type
- Remote type
- G1/2 internal thread / without watertight gland
- G1/2 internal thread / with brass (Ni-plated) watertight gland
- G1/2 internal thread / with plastic watertight gland
- 1/2NPT internal thread / without watertight gland
- CM20 internal thread / without watertight gland
- Pg 13.5 internal thread / without watertight gland
- G1/2 internal thread / with SUS304 watertight gland

#### VIII Face-to-face dimensions
- Standard
- Others

#### IX Installation / wiring direction
- Integral type
- Remote type
- Upstream side (horizontal / vertical piping mounting)
- Downstream side (horizontal / vertical piping mounting)
- Horizontal piping mounting / left side viewed from upstream
- Horizontal piping mounting / right side viewed from upstream

#### X Calibration
- Standard
- Others

#### XI Finish
- Standard
- Corrosion-resistant finish
- Corrosion-proof finish

#### Options
- Yamatake version (must be selected)
- Calibration certificate (sent to ordering location separately)
- Traceability certificate for detector
- Material certificate (only for electrodes and ground rings)
- Attachment of the TAG number to the terminal box for detector (Note 1)
- Attachment of the TAG number plate to neck section for detector

**Note** 1. Must be selected for Tag no. requirement
# Submersible detector with FM/CSA NI approval

## Wafer type (15 to 200 mm (1/2 to 8 inches)) PFA / ETFE lining

Model MGG19D - I II III IV V VI VII VIII IX - X XI - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG19D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### I Line size
- 15 mm (1/2 inch) 015
- 25 mm (1 inch) 025
- 40 mm (1 1/2 inches) 040
- 50 mm (2 inches) 050
- 65 mm (2 1/2 inches) 065
- 80 mm (3 inches) 080
- 100 mm (4 inches) 100
- 125 mm (5 inches) 125
- 150 mm (6 inches) 150
- 200 mm (8 inches) 200

### II Lining
- ETFE (Size 80 to 200 mm (3 to 8 inches)) E
- PFA P

### III Piping connection
- Wafer JIS 10K 11
- Wafer JIS 20K 12
- Wafer JIS 30K 13
- Wafer ANSI 150 21
- Wafer ANSI 300 22
- Wafer JIS G3451 F12 (line size 80 mm or larger) 31
- Wafer DIN PN10 41
- Wafer DIN PN16 42
- Wafer DIN PN25 43
- Wafer DIN PN40 44
- Wafer ANSI 150 61
- Wafer ANSI 300 62

### IV Electrode
- SUS316L L
- Hastelloy C C
- Titanium K
- Zirconium H
- Tantalum T
- Tungsten carbide W
- Platinum iridium P
- Others □

### V Grounding ring
- SUS316 S
- Hastelloy C C
- Titanium K
- Zirconium H
- Tantalum T
- Platinum iridium P
- Others □

### VI Electrical connection / watertight gland
- Remote type
  - G1/2 internal thread / with brass (Ni-plated) watertight gland 3
  - G1/2 internal thread / with SUS304 watertight gland 8

### VII Face-to-face dimensions
- Standard A
- Others □

### VIII Installation / wiring direction
- Remote type
  - Upstream side (horizontal / vertical piping mounting) A
  - Downstream side (horizontal / vertical piping mounting) B
  - Horizontal piping mounting / left side viewed from upstream C
  - Horizontal piping mounting / right side viewed from upstream D

### IX Calibration
- Standard A
- Others □

### X Finish
- Standard X

### XI Bolt / nut
- None X
- Carbon steel 1
- SUS304 2

### Options
- Yamatake version (must be selected) Y
- Calibration certificate (sent to ordering location separately) A
- Traceability certificate for detector B
- Material certificate (only for electrodes and ground rings) C
- With gasket for plastic piping J
- Attachment of the TAG number to the terminal box for detector (Note 1) K
- Attachment of the TAG number plate to neck section for detector L

**Note:** 1. Must be selected for Tag no. requirement
Submersible detector with FM/CSA NI approval
Flange type (15 to 200 mm (1/2 to 8 inches)) PFA / ETFE lining
Model MGG19F - I II III IV V VI VII VIII IX X - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG19F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### I Line size
- 15 mm (1/2 inch): 015
- 25 mm (1 inch): 025
- 40 mm (1 1/2 inches): 040
- 50 mm (2 inches): 050
- 65 mm (2 1/2 inches): 065
- 80 mm (3 inches): 080
- 100 mm (4 inches): 100
- 125 mm (5 inches): 125
- 150 mm (6 inches): 150
- 200 mm (8 inches): 200

### II Lining
- ETFE (Size 80 to 200 mm (3 to 8 inches)): E
- PFA: P

### III Piping connection
- Flange JIS 10K: J1
- Flange JIS 20K: J2
- Flange JIS 30K: J3
- Flange ANSI 150: A1
- Flange ANSI 300: A2
- Flange JIS G3451 F12 (line size 80 mm or larger): G1
- Flange DIN PN10: D1
- Flange DIN PN16: D2
- Flange DIN PN25: D3
- Flange DIN PN40: D4
- Flange JPI 150: P1
- Flange JPI 300: P2

### IV Flange material
- Standard: 1
- Others

### V Electrode
- SUS316L: L
- Hastelloy C: C
- Titanium: K
- Zirconium: H
- Tantalum: T
- Tungsten carbide: W
- Platinum iridium: P
- Others

### VI Grounding ring
- SUS316: S
- Hastelloy C: C
- Titanium: K
- Zirconium: H
- Tantalum: T
- Platinum iridium: P
- Others

### VII Electrical connection / watertight gland
- Remote type
  - G1/2 internal thread / with brass (Ni-plated) watertight gland: 3
  - G1/2 internal thread / with SUS304 watertight gland: 8

### VIII Face-to-face dimensions
- Standard: A
- Others

### IX Installation / wiring direction
- Remote type
  - Upstream side (horizontal / vertical piping mounting): A
  - Downstream side (horizontal / vertical piping mounting): B
  - Horizontal piping mounting / left side viewed from upstream: C
  - Horizontal piping mounting / right side viewed from upstream: D

### X Calibration
- Standard: A
- Others

### XI Finish
- Standard: X
- Others

### Options
- Yamatake version (must be selected): Y
- Calibration certificate (sent to ordering location separately): A
- Traceability certificate for detector: B
- Material certificate (only for electrodes and ground rings): C
- With gasket for plastic piping: J
- Attachment of the TAG number to the terminal box for detector (Note 1): K
- Attachment of the TAG number plate to neck section for detector: L

**Note:** 1. Must be selected for Tag no. requirement
## Submersible detector with FM/CSA NI approval

### Flange type (250 to 600 mm (10 to 24 inches)) PFA / ETFE lining

Model MGG19F - I II III IV V VI VII VIII IX X - XI - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG19F</td>
<td>I</td>
<td>II</td>
</tr>
</tbody>
</table>

### I Line size
- 250 mm (10 inches) 250
- 300 mm (12 inches) 300
- 350 mm (14 inches) 350
- 400 mm (16 inches) 400
- 450 mm (18 inches) 450
- 500 mm (20 inches) 500
- 600 mm (24 inches) 600

### II Lining
- ETFE E
- PFA P

### III Piping connection
- Flange JIS 10K J1
- Flange JIS 20K J2
- Flange ANSI 150 A1
- Flange ANSI 300 (Size 16 inches or smaller) A2
- Flange JIS G3451 F12 G1
- Flange DIN PN10 D1
- Flange DIN PN16 D2
- Flange DIN PN25 D3
- Flange JPI 150 P1
- Flange JPI 300 (Size 400 mm or smaller) P2

### IV Flange material
- Standard 1
- Others

### V Electrode
- SUS316L L
- Hastelloy C C
- Titanium K
- Zirconium H
- Tantalum T
- Tungsten carbide W
- Platinum iridium P
- Others

### VI Grounding ring
- SUS316 S
- Hastelloy C C
- Titanium K
- Others

### VII Electrical connection / watertight gland
- Remote type
  - G1/2 internal thread / with brass (Ni-plated) watertight gland 3
  - G1/2 internal thread / with SUS 304 watertight gland 8

### VIII Face-to-face dimensions
- Standard A
- Others

### IX Installation / wiring direction
- Remote type
  - Upstream side (horizontal / vertical piping mounting) A
  - Downstream side (horizontal / vertical piping mounting) B
  - Horizontal piping mounting / left side viewed from upstream C
  - Horizontal piping mounting / right side viewed from upstream D

### X Calibration
- Standard A
- Others

### XI Finish
- Standard X

#### Options
- Yamatake version (must be selected) Y
- Calibration certificate (sent to ordering location separately) A
- Traceability certificate for detector B
- Material certificate (only for electrodes and ground rings) C
- With gasket for plastic piping J
- Attachment of the TAG number to the terminal box for detector (Note 1) K
- Attachment of the TAG number plate to neck section for detector L

**Note** 1. Must be selected for Tag no. requirement

---

- 19 -
## Submersible detector with FM/CSA Ni approval

**Wafer type (25 to 200 mm (1 to 8 inches)) Polyurethane rubber lining**

Model MGG19D - I III IV V VI VII VIII IX - X XI - Y / Options (some options can be selected per each model)

### Basic model no.
- MGG19D

### Selections

<table>
<thead>
<tr>
<th>I</th>
<th>Line size</th>
<th>Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25 mm (1 inch)</td>
<td>025</td>
</tr>
<tr>
<td></td>
<td>40 mm (1½ inches)</td>
<td>040</td>
</tr>
<tr>
<td></td>
<td>50 mm (2 inches)</td>
<td>050</td>
</tr>
<tr>
<td></td>
<td>65 mm (2½ inches)</td>
<td>065</td>
</tr>
<tr>
<td></td>
<td>80 mm (3 inches)</td>
<td>080</td>
</tr>
<tr>
<td></td>
<td>100 mm (4 inches)</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>125 mm (5 inches)</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>150 mm (6 inches)</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>200 mm (8 inches)</td>
<td>200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II</th>
<th>Lining</th>
<th>Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Polyurethane rubber</td>
<td>Q</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>III</th>
<th>Piping connection</th>
<th>Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wafer JIS 10K</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Wafer JIS 20K</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Wafer JIS 30K</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Wafer ANSI 150</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Wafer ANSI 300</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Wafer JIS G3451 F12 (line size 80 mm or larger)</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Wafer DIN PN10</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Wafer DIN PN16</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Wafer DIN PN25</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Wafer JPI 150</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Wafer JPI 300</td>
<td>62</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IV</th>
<th>Electrode</th>
<th>Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SUS316L</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>Titanium</td>
<td>K</td>
</tr>
<tr>
<td></td>
<td>Tungsten carbide (only for size 10 mm)</td>
<td>W</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>V</th>
<th>Grounding ring</th>
<th>Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SUS316</td>
<td>S</td>
</tr>
<tr>
<td></td>
<td>Titanium</td>
<td>K</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VI</th>
<th>Electrical connection / watertight gland</th>
<th>Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remote type</td>
<td>G1/2 internal thread / with brass (Ni-plated) watertight gland</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G1/2 internal thread / with SUS304 watertight gland</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VII</th>
<th>Face-to-face dimensions</th>
<th>Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VIII</th>
<th>Installation / wiring direction</th>
<th>Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remote type</td>
<td>Upstream side (horizontal / vertical piping mounting)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Downstream side (horizontal / vertical piping mounting)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Horizontal piping mounting / left side viewed from upstream</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Horizontal piping mounting / right side viewed from upstream</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IX</th>
<th>Calibration</th>
<th>Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>X</th>
<th>Finish</th>
<th>Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>XI</th>
<th>Bolt / nut</th>
<th>Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Carbon steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUS304</td>
<td>1</td>
</tr>
</tbody>
</table>

### Optional

- Yamatake version (must be selected) | Y
- Calibration certificate (sent to ordering location separately) | A
- Traceability certificate for detector | B
- Material certificate (only for electrodes and ground rings) | C
- With gasket for plastic piping | J
- Attachment of the TAG number to the terminal box for detector (Note 1) | K
- Attachment of the TAG number plate to neck section for detector | L

**Note:** 1. Must be selected for Tag no. requirement
## Submersible detector with FM/CSA NI approval

### Flange type (25 to 200 mm (1 to 8 inches)) Polyurethane rubber lining

Model MGG19F - I II III IV V VI VII VIII IX X - XI - Y / Options (some options can be selected per each model)

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG19F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### I Line size

- 25 mm (1 inch) 025
- 40 mm (1½ inches) 040
- 50 mm (2 inches) 050
- 65 mm (2½ inches) 065
- 80 mm (3 inches) 080
- 100 mm (4 inches) 100
- 125 mm (5 inches) 125
- 150 mm (6 inches) 150
- 200 mm (8 inches) 200

### II Lining

Polyurethane rubber Q

### III Piping connection

- Flange JIS 10K J1
- Flange JIS 20K J2
- Flange JIS 30K J3
- Flange ANSI 150 A1
- Flange ANSI 300 A2
- Flange JIS G3451 F12 (line size 80 mm or larger) G1
- Flange DIN PN10 D1
- Flange DIN PN16 D2
- Flange DIN PN25 D3
- Flange DIN PN40 D4
- Flange JPI 150 P1
- Flange JPI 300 P2

### IV Flange material

Standard 1

### V Electrode

- SUS316L L
- Titanium K
- Tungsten carbide W
- Others

### VI Grounding ring

- SUS316 S
- Titanium K
- Others

### VII Electrical connection / watertight gland

- Remote type G1/2 internal thread / with brass (Ni-plated) watertight gland 3
- G1/2 internal thread / with SUS304 watertight gland 8

### VIII Face-to-face dimensions

Standard A

### IX Installation / wiring direction

- Remote type
  - Upstream side (horizontal / vertical piping mounting) A
  - Downstream side (horizontal / vertical piping mounting) B
  - Horizontal piping mounting / left side viewed from upstream C
  - Horizontal piping mounting / right side viewed from upstream D

### X Calibration

- Standard A
- Others

### XI Finish

Standard X

#### Options

- Yamatake version (must be selected) Y
- Calibration certificate (sent to ordering location separately) A
- Traceability certificate for detector B
- Material certificate (only for electrodes and ground rings) C
- With gasket for plastic piping J
- Attachment of the TAG number to the terminal box for detector (Note 1) K
- Attachment of the TAG number plate to neck section for detector L

**Note:** 1. Must be selected for Tag no. requirement
DIMENSIONS
All dimensions are in millimeters, dimensions in brackets ( ) are in inches (inch).

Union joint (size 2.5 to 15 mm (0.1 to 1/2 inch))

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Excitation current input</td>
</tr>
<tr>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Flow rate signal output</td>
</tr>
<tr>
<td>B</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

Hose joint (size 2.5 to 15 mm (0.1 to 1/2 inch))
**IDF / Tri clamp (size 2.5 to 15 mm (0.1 to 1/2 inch))**

**Note)**
1. An integral detector includes an integral converter instead of a terminal box.
2. Clamp size: IS
### Wafer type (size 2.5 to 15 mm (0.1 to 1/2 inch))

<table>
<thead>
<tr>
<th>Size</th>
<th>2.5 (0.1)</th>
<th>5 (0.2)</th>
<th>10 (3/8)</th>
<th>15 (1/2)</th>
<th>25 (1)</th>
<th>40 (1 1/16)</th>
<th>50 (1 1/8)</th>
<th>65 (1 3/16)</th>
<th>80 (1 1/4)</th>
<th>100 (1 3/8)</th>
<th>125 (1 7/16)</th>
<th>150 (1 3/4)</th>
<th>200 (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face to face dimension</td>
<td>mm</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>80</td>
<td>86</td>
<td>96</td>
<td>106</td>
<td>120</td>
<td>140</td>
<td>160</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>(inches)</td>
<td>(2.20)</td>
<td>(2.20)</td>
<td>(2.20)</td>
<td>(2.20)</td>
<td>(3.15)</td>
<td>(3.39)</td>
<td>(3.78)</td>
<td>(4.17)</td>
<td>(4.72)</td>
<td>(5.51)</td>
<td>(6.30)</td>
<td>(7.87)</td>
</tr>
<tr>
<td>Height</td>
<td>L</td>
<td>mm</td>
<td>71</td>
<td>71</td>
<td>71</td>
<td>77</td>
<td>84</td>
<td>93</td>
<td>100</td>
<td>108</td>
<td>121</td>
<td>133</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>(inches)</td>
<td>(2.80)</td>
<td>(2.80)</td>
<td>(2.80)</td>
<td>(2.80)</td>
<td>(3.03)</td>
<td>(3.31)</td>
<td>(3.66)</td>
<td>(3.94)</td>
<td>(4.25)</td>
<td>(4.76)</td>
<td>(5.24)</td>
<td>(6.30)</td>
</tr>
<tr>
<td></td>
<td>H1</td>
<td>mm</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>43.5</td>
<td>52</td>
<td>62</td>
<td>67</td>
<td>79.5</td>
<td>95</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>(inches)</td>
<td>(2.83)</td>
<td>(2.83)</td>
<td>(2.83)</td>
<td>(2.83)</td>
<td>(1.34)</td>
<td>(1.71)</td>
<td>(2.05)</td>
<td>(2.44)</td>
<td>(2.64)</td>
<td>(3.13)</td>
<td>(3.74)</td>
<td>(4.33)</td>
</tr>
<tr>
<td></td>
<td>H2</td>
<td>mm</td>
<td>190</td>
<td>190</td>
<td>190</td>
<td>158</td>
<td>175</td>
<td>192</td>
<td>209</td>
<td>222</td>
<td>247</td>
<td>275</td>
<td>317</td>
</tr>
<tr>
<td></td>
<td>H3</td>
<td>mm</td>
<td>96</td>
<td>96</td>
<td>96</td>
<td>102</td>
<td>109</td>
<td>118</td>
<td>125</td>
<td>133</td>
<td>146</td>
<td>158</td>
<td>185</td>
</tr>
<tr>
<td></td>
<td>(inches)</td>
<td>(3.78)</td>
<td>(3.78)</td>
<td>(3.78)</td>
<td>(4.02)</td>
<td>(4.29)</td>
<td>(4.65)</td>
<td>(4.92)</td>
<td>(5.24)</td>
<td>(5.75)</td>
<td>(6.22)</td>
<td>(7.28)</td>
<td>(8.27)</td>
</tr>
<tr>
<td>Housing width</td>
<td>W</td>
<td>mm</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>106</td>
<td>125</td>
<td>135</td>
<td>148</td>
<td>164</td>
<td>189</td>
<td>214</td>
</tr>
<tr>
<td></td>
<td>(inches)</td>
<td>(3.86)</td>
<td>(3.86)</td>
<td>(3.86)</td>
<td>(3.86)</td>
<td>(4.17)</td>
<td>(4.92)</td>
<td>(5.31)</td>
<td>(5.83)</td>
<td>(6.46)</td>
<td>(7.44)</td>
<td>(8.43)</td>
<td>(9.45)</td>
</tr>
<tr>
<td>Housing outer diameter</td>
<td>φD</td>
<td>mm</td>
<td>49.5</td>
<td>49.5</td>
<td>49.5</td>
<td>49.5</td>
<td>68</td>
<td>87</td>
<td>104</td>
<td>124</td>
<td>134</td>
<td>159</td>
<td>190</td>
</tr>
<tr>
<td></td>
<td>(inches)</td>
<td>(1.95)</td>
<td>(1.95)</td>
<td>(1.95)</td>
<td>(1.95)</td>
<td>(1.85)</td>
<td>(3.43)</td>
<td>(4.09)</td>
<td>(4.88)</td>
<td>(5.28)</td>
<td>(6.26)</td>
<td>(7.48)</td>
<td>(8.66)</td>
</tr>
<tr>
<td>Weight</td>
<td>kg</td>
<td>2.6</td>
<td>2.6</td>
<td>2.6</td>
<td>2.9</td>
<td>3.4</td>
<td>4.5</td>
<td>5.2</td>
<td>6.7</td>
<td>10.0</td>
<td>13.6</td>
<td>16.0</td>
<td>22.0</td>
</tr>
<tr>
<td></td>
<td>(lb)</td>
<td>(5.7)</td>
<td>(5.7)</td>
<td>(5.7)</td>
<td>(6.2)</td>
<td>(6.3)</td>
<td>(9.9)</td>
<td>(11.5)</td>
<td>(14.8)</td>
<td>(22.0)</td>
<td>(30.0)</td>
<td>(48.5)</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** 1. An integral detector includes an integral converter instead of a terminal box.
Flange type (size 2.5 to 15 mm (0.1 to 1/2 inch))

<table>
<thead>
<tr>
<th>Size</th>
<th>mm</th>
<th>2.5</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(inches)</td>
<td>(0.1)</td>
<td>(0.2)</td>
<td>(3/8)</td>
<td>(1/2)</td>
<td>(1)</td>
</tr>
<tr>
<td>Face to face dimension</td>
<td>L</td>
<td>mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(inches)</td>
<td>160</td>
<td>160</td>
<td>160</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6.30)</td>
<td>(6.30)</td>
<td>(6.30)</td>
<td>(7.87)</td>
<td>(7.87)</td>
</tr>
<tr>
<td>Height</td>
<td>H1</td>
<td>mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(inches)</td>
<td>71</td>
<td>71</td>
<td>71</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.80)</td>
<td>(2.80)</td>
<td>(2.80)</td>
<td>(2.80)</td>
<td>(3.03)</td>
</tr>
<tr>
<td></td>
<td>H2</td>
<td>mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(inches)</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.83)</td>
<td>(2.83)</td>
<td>(2.83)</td>
<td>(2.83)</td>
<td>(2.13)</td>
</tr>
<tr>
<td></td>
<td>H3</td>
<td>mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(inches)</td>
<td>190</td>
<td>190</td>
<td>190</td>
<td>190</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7.48)</td>
<td>(7.48)</td>
<td>(7.48)</td>
<td>(7.48)</td>
<td>(7.01)</td>
</tr>
<tr>
<td></td>
<td>H4</td>
<td>mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(inches)</td>
<td>96</td>
<td>96</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.78)</td>
<td>(3.78)</td>
<td>(3.78)</td>
<td>(3.78)</td>
<td>(4.02)</td>
</tr>
<tr>
<td>Width</td>
<td>W</td>
<td>mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(inches)</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.86)</td>
<td>(3.86)</td>
<td>(3.86)</td>
<td>(3.86)</td>
<td>(4.17)</td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td>kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(lb)</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(11.0)</td>
<td>(11.0)</td>
<td>(11.0)</td>
<td>(11.0)</td>
<td>(14.6)</td>
</tr>
</tbody>
</table>

Note: 1. This table is for remote detectors.
2. An integral detector includes an integral converter instead of a terminal box.
3. The table indicates dimensions for ANSI 150 flange.
Flange type (size 40 to 100 mm (1½ to 4 inches))

<table>
<thead>
<tr>
<th>Size</th>
<th>mm</th>
<th>40</th>
<th>50</th>
<th>65</th>
<th>80</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
<th>450</th>
<th>500</th>
<th>600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face to face dimension L</td>
<td>mm</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>350</td>
<td>450</td>
<td>500</td>
<td>550</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>650</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(inches)</td>
<td>(7.87)</td>
<td>(7.87)</td>
<td>(7.87)</td>
<td>(9.84)</td>
<td>(9.84)</td>
<td>(11.81)</td>
<td>(13.78)</td>
<td>(17.72)</td>
<td>(19.69)</td>
<td>(21.65)</td>
<td>(23.62)</td>
<td>(23.62)</td>
<td>(25.59)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mm</td>
<td>84</td>
<td>93</td>
<td>100</td>
<td>108</td>
<td>121</td>
<td>133</td>
<td>160</td>
<td>185</td>
<td>235</td>
<td>258</td>
<td>282</td>
<td>310</td>
<td>339</td>
<td>366</td>
<td>415</td>
</tr>
<tr>
<td>Height H1</td>
<td>mm</td>
<td>77</td>
<td>88</td>
<td>103</td>
<td>113</td>
<td>131</td>
<td>145</td>
<td>174</td>
<td>204</td>
<td>224</td>
<td>271</td>
<td>297</td>
<td>340</td>
<td>364</td>
<td>396</td>
<td>456</td>
</tr>
<tr>
<td></td>
<td>(inches)</td>
<td>(3.03)</td>
<td>(3.46)</td>
<td>(4.06)</td>
<td>(4.45)</td>
<td>(5.16)</td>
<td>(5.71)</td>
<td>(6.85)</td>
<td>(8.03)</td>
<td>(8.82)</td>
<td>(10.67)</td>
<td>(11.09)</td>
<td>(12.39)</td>
<td>(14.33)</td>
<td>(15.59)</td>
<td>(17.95)</td>
</tr>
<tr>
<td>Height H2</td>
<td>mm</td>
<td>208</td>
<td>228</td>
<td>250</td>
<td>268</td>
<td>299</td>
<td>325</td>
<td>381</td>
<td>436</td>
<td>506</td>
<td>576</td>
<td>626</td>
<td>697</td>
<td>750</td>
<td>809</td>
<td>918</td>
</tr>
<tr>
<td>Height H3</td>
<td>mm</td>
<td>109</td>
<td>118</td>
<td>125</td>
<td>133</td>
<td>146</td>
<td>158</td>
<td>185</td>
<td>210</td>
<td>260</td>
<td>283</td>
<td>307</td>
<td>335</td>
<td>364</td>
<td>391</td>
<td>440</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>kg</td>
<td>6.0</td>
<td>10.5</td>
<td>12.5</td>
<td>15.5</td>
<td>23.3</td>
<td>32.0</td>
<td>35.4</td>
<td>60.0</td>
<td>68.0</td>
<td>97.0</td>
<td>128</td>
<td>163</td>
<td>213</td>
<td>249</td>
<td>339</td>
</tr>
<tr>
<td></td>
<td>(lb)</td>
<td>(13.2)</td>
<td>(23.1)</td>
<td>(27.6)</td>
<td>(34.2)</td>
<td>(51.4)</td>
<td>(70.5)</td>
<td>(78.0)</td>
<td>(132)</td>
<td>(150)</td>
<td>(214)</td>
<td>(282)</td>
<td>(359)</td>
<td>(470)</td>
<td>(549)</td>
<td>(747)</td>
</tr>
</tbody>
</table>

Note) 1. This table is for remote detectors.
2. An integral detector includes an integral converter instead of a terminal box.
3. The table indicates dimensions for ANSI 150 flange.
### Flange type (size 700 to 900 mm (28 to 36 inches))

<table>
<thead>
<tr>
<th>Size</th>
<th>mm (inches)</th>
<th>700 (28)</th>
<th>800 (32)</th>
<th>900 (36)</th>
<th>1000 (40)</th>
<th>1100 (44)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face to face dimension</td>
<td>L</td>
<td>mm</td>
<td>1100</td>
<td>1200</td>
<td>1300</td>
<td>1500</td>
</tr>
<tr>
<td>Height</td>
<td>H</td>
<td>mm (inches)</td>
<td>979 (38.54)</td>
<td>1080 (42.52)</td>
<td>1121 (44.17)</td>
<td>1278 (50.31)</td>
</tr>
<tr>
<td></td>
<td>H1</td>
<td>mm (inches)</td>
<td>503 (19.80)</td>
<td>554 (21.81)</td>
<td>634 (24.96)</td>
<td>650 (25.59)</td>
</tr>
<tr>
<td></td>
<td>H2</td>
<td>mm (inches)</td>
<td>429 (16.89)</td>
<td>480 (18.90)</td>
<td>530 (20.87)</td>
<td>581 (22.87)</td>
</tr>
<tr>
<td></td>
<td>H3</td>
<td>mm (inches)</td>
<td>454 (17.87)</td>
<td>505 (19.88)</td>
<td>555 (21.85)</td>
<td>606 (23.86)</td>
</tr>
<tr>
<td>Feet length</td>
<td>W</td>
<td>mm (inches)</td>
<td>1049 (41.30)</td>
<td>1145 (45.08)</td>
<td>1245 (49.02)</td>
<td>980 (38.58)</td>
</tr>
<tr>
<td>Feet width</td>
<td>A</td>
<td>mm (inches)</td>
<td>600 (23.62)</td>
<td>600 (23.62)</td>
<td>600 (23.62)</td>
<td>800 (31.50)</td>
</tr>
<tr>
<td>Feet halls *</td>
<td>n-φd</td>
<td>mm (inches)</td>
<td>4-φ33 (1.30)</td>
<td>4-φ33 (1.30)</td>
<td>4-φ33 (1.30)</td>
<td>4-φ33 (1.30)</td>
</tr>
<tr>
<td>Weight</td>
<td>kg (lb)</td>
<td>630.0 (1389)</td>
<td>720.0 (1587)</td>
<td>1060.0 (2337)</td>
<td>1320.0 (2910)</td>
<td>1540.0 (3395)</td>
</tr>
</tbody>
</table>

*Note* The table indicates dimensions for ANSI 150 flange.

*: n = number, d = diameter
Yamatake Corporation
Totate international Building
2-12-19 Shibuya
Shibuya-ku, Tokyo 150-8316
Japan
Tel :  81-3-3486-2310
Fax :  81-3-3486-2593

http://www.yamatake.com/

This has been printed on recycled paper.