MagneW3000 PLUS+
Smart Electromagnetic Flowmeter Converter (Smart model)
Model MGG14C

OVERVIEW
MagneW 3000 PLUS+ electromagnetic flowmeter converter is a high-performance and highly reliable flowmeter converter based on Yamatake's proven MagneW 3000 PLUS flow measurement technologies. The MagneW PLUS+ converter offers expanded flow rate measurement capabilities in the various processes when used with the MagneW detectors.

FEATURES
Improved performance and function
- Improved noise immunity performance up to 250%.
- Averaging function for pulsating flow applications has been added.
- User selectable functionality provides advanced noise immunity technology such as auto spike cut function and excitation frequency change.
- Optional “Fast Response” model for short run batch applications.

Universal power supply
- AC 90 to 130V, AC 180 to 250V.

Liquid Crystal Display with backlighting (optional)
- Backlit display eases reading in direct sunlight or poor lightning conditions.
- Simultaneously displays flow volume in percentage, actual flow rate and totalized value.
- Rotating display improves visibility of integral models mounted on pipes up to 90 degrees from standard.

Setting parameters by infrared touch sensor (optional)
- Allows safe setting, in severe environments, without opening the cover.
- Write protect function prevents tampering with converter settings.

Compatibility
- MagneW 3000 PLUS+ converter is compatible with all conventional Yamatake detectors.

Conforms with the CE marking
Conform with the RoHS (restriction of the use of certain hazardous substances in electrical and electronic equipment)

China RoHS
This device is used in the Oil & Gas, Petrochemical, Chemical, Pulp & Paper, Food & Beverage, Machinery, Steel/Metal & Mining, and Automobile industries and therefore does not fall under the China RoHS Legislation.
If this device is used in equipment or applications which fall under the China RoHS, labeling on the device and documents for the China RoHS may be required. If such documents are required, consult a Yamatake representative.
COMMUNICATION(SELECTABLE)
• Yamatake/Honeywell DE protocol
• HART protocol (HART Rev. 5)

APPLICATIONS
Available for various applications such as:

Pulp and Paper
Pulp slurries, chemicals, green liquor, white water, white liquor, black liquor, corrosive fluid, industrial water, waste water

Petroleum/Petrochemical/Chemicals
Corrosive fluid, electrolyte, dyestuffs, chemicals, industrial water, waste water

Water/Waste water
Tap water, sewage water, sludge, sediment slurries, effluent

Food and Beverage
Beer, milk, juice, wine, liquor, soy sauce, potable water, industrial water, waste water

Steel/Metal and Mining
Alumina slurry, cooling water, sea water, corrosive fluid, industrial water, waste water

Machinery
Corrosive fluid, cooling water, circulating water, waste water

Building/Construction
Building material slurry, sediment slurry, cement, industrial water

Electric Power/Gas
Corrosive fluid, cooling water, industrial water, waste water

FUNCTIONAL SPECIFICATIONS

Type of protection

Enclosure rating
JIS C 0920 Waterproof
NEMA TYPE4X
IEC IP66

Hazardous area certification:
FM approval
<for Division 2>
Nonincendive for
Class I, Division 2, Groups A, B, C & D, T5;
Class II, Division 2, Groups F & G, T5;
Class III, Division 2, T5;
-25°C ≤ Tamb ≤ +60°C

CSA certification
<for Division 2>
Class I, Division 2, Groups A, B, C, & D, T4;
Class II, Division 2, Groups E, F & G, T4;
Class III, T4;
-25°C ≤ Tamb ≤ +60°C

Power supply
Normal operating voltage:
AC 100 to 120V, AC200 to 240V, 47 to 63Hz

Operational voltage limit:
AC 90 to 130V, AC180 to 250V, 47 to 63Hz

Power consumption
10W max. (AC90 to 130V)
11W max. (AC180 to 250V)

Lightning protection
12kV, 1000A
Equipped with the lightning arrester in the power source and external input and output terminals.

Power failure
An EEPROM retains data record of the totalized value when pulse output is used (retention period approximately 10 years).

EMC conformity standards
EN61326

Input signal
Flow rate signal
Electromotive force which is proportional to the average flow velocity.

Contact input
Solid-state contact or no-voltage contact (2 max.)

Output signal
Analog output
4 to 20mA DC
Digital output
DE
Analog or digital output is selectable.

Contact output
Open collector (2 max.)

Contact capacity
DC30V max., 200mA max.

Pulse output
Open collector

Contact capacity
DC30V max., 200mA max.

Pulse Frequency
0.00006 to 3000 Hz

Pulse width
adjustable from 0.10 to 999.99 ms or fixed at 50% of the duty (In case of pulse frequency is 0.00006 to 0.5Hz, pulse width is fixed at 1sec.)
Voltage drop during transistor ON: 2.7V typ.
(Voltage drop can be reduced to 2.0 V by a switch)

Analog output range/load resistance

Without SFC communication
0.8 to 22.4mA (-20 to +115%)
Load resistance: 0 to 600Ω

With SFC communication
3.2 to 22.4mA (-5 to +115%)
External power supply required for SFC communication: 16 to 45V DC
Load resistance (Ω) = (External power supply voltage -8.5V)/0.025

With HART communication by using Internal power supply
3.2 to 22.4mA (-5 to +115%)
Load resistance: 0 to 600Ω

With HART communication by using an external power supply
3.2 to 22.4mA (-5 to +115%)
External power supply required for HART communication: 16 to 45V DC
Load resistance (Ω) = (External power supply voltage -8.5V)/0.025

Fast response type/no communication function
0.8 to 22.4mA (-20 to +115%)
Load resistance: 0 to 600Ω

Digital output range/load resistance

With DE output
3.2 to 22.4mA (-5 to +115%)
External power supply required for DE communication: 16 to 45V DC

Load resistance (Ω) = (External power supply voltage -8.5V)/0.025

Unit of flow rate
Selectable from %, volumetric flow rate unit, mass flow rate unit, time.
Volumetric flow rate: m³, l, cm³, B (barrel), G (gallon), kG, mG, IG (imperial gallon),
Mass flow rate: t, kg, g, lb (pound)
Time: d, h, min., s

Note) Selection for non-SI unit, option code "H" must be selected.

Operation Mode
MEASURING MODE:
Mode for flow rate measurement
BASIC SETUP MODE:
Mode for quick start-up
ENGINEERING MODE
Mode for parameter configuration (Range, pulse scale, etc.)
MAINTENANCE MODE
Mode for maintenance
ADVANCED MODE
Mode for advanced functions

Auto zeroing function (in the BASIC SETUP MODE)
Adjust zero automatically

Damping (in the BASIC SETUP MODE)
Adjustable between 0.1 and 199.9 seconds
Fast response type: Adjustable between 0 and 199.9 seconds

Averaging function (in the ADVANCED MODE)
Moving average processing of the measured flow rate
ON/OFF, Adjustable between 1.0 and 30.0 seconds

Spike cut function (in the ADVANCED MODE)
Eliminates steep noise spikes.
Auto/Manual/OFF

Low flow cutoff
Adjustable between 0 and 10% of setting range
Below selected value, output is driven to the zero flow rate signal level.

Drop out
Adjustable between 0 and 10% of setting range
Below selected value, pulse output is fixed at 0%.

Fail-safe mode
Determine analog/pulse output direction when the flow meter detects a critical status condition.
LOW/HIGH/HOLD
Compensation coefficient (in the ADVANCED MODE)
  Compensation coefficient used to multiply the output flow rate as required.

Built-in counter function
  Totalizer
  According to the pulse scale setting, it totals one count at a time. If double range of normal/reverse flow measurement function is set, it totals one count at a time for normal and reverse flows. If single range of flow measurement is set, it totals one count at a time only for normal flow direction.

  Totalizer with presetting function
  A preset value (target totalized value) can be set between 0000000000 and 9999999999. The counting method is same as that of the standard totalizer.

  Normal/reverse flow difference totalizer
  The difference in flow volumes in the normal or reverse flow directions is calculated and counted.

Contact input function
  External 0% lock input
  Forces outputs (analog, digital, pulse) to the zero flow rate signal level.

  External automatic zero adjustment input
  Adjust zero.

  External range switching input
  Switches two flow measurement ranges.

  Two flow measurement ranges:
  Dual range for nominal direction. Normal/reverse range

Built-in counter reset input
  Resets the totalized value in the built-in counter.

Contact output function
  Alarm output
  Outputs an alarm under the following conditions.
  • Self-diagnostic result
  • Empty pipe detection
  • High/low limit alarm

  Range switching output
  Outputs the status of flow range.
  • Large/small in the dual range
  • Normal/reverse

  Counter preset status output
  Activates when the counter reaches the preset value.

  Self-diagnostic result output
  Activates only when a critical failure appears by the self-diagnostic.

  Empty detection output
  Activates only when empty status (when electrodes are in contact with air) is detected.
  Please make sure that there is no air trap inside of the detector and process fluid conductivity should be 30 mS/cm or greater for functioning properly.

  High/low limit alarm output
  Activates when a high/low limit occurs.

  Two-stage flow rate alarm output (with two contact outputs)
  Activates when the first high/low limit alarm (H/L) occurs and the second high/low limit alarm (HH/LL) occurs.
Detectors coupled with MGG14C converter

MGG14C works with the following Yamatake detectors.

Integral style:  
MGG11/18D, MGG11/18F, MGG11/18U, MGS11/28U,
Remote style:  

Optional specifications

Display (optional): LCD with backlighting

Main display  
7-segment, 6 digits

Sub display  
16 digits, two lines

Display  
Flow rate in%, Actual flow rate, Totalized value  
Configuration parameters, Self-diagnostic, Write protect status  
Main display is selectable among “flow rate in%”, “actual flow rate” and “totalized value”.

Data setting device

Configuration by infrared ray touch sensor  
Infrared ray touch sensor: Four switches  
Write protect: Write protection level is set by switches in the converter.  
Write protect level is indicated on the display.

Empty pipe detection

When the detector is empty, the analog output, digital output and pulse output are fixed at zero. Display is latched to zero.

Traceability certificate

The following three documents are provided.  
• Traceability system chart  
• Traceability certificate  
• Calibration certificate

Tag number on the terminal box

The designated tag numbers (maximum 16 characters) should be stamped on a tag plate, which is attached to the terminal box. One line can contain 8 characters. Tag numbers exceed 8 characters will be stamped on the two lines.

PERFORMANCE SPECIFICATION

Measurable process fluid conductivity

It depends on the cable length between the converter and the detector. With the detector size of 2.5 to 1100mm (0.1 to 44 inch)  
3 µS/cm or greater

Accuracy (coupled with MGG, MGS and KID90 type detectors)

Table 1  
in combination with a detector  
<Size 2.5 to 15 mm (0.1 to 1/2 inch)>  
Vs = Velocity of setting range

<table>
<thead>
<tr>
<th>Vs (m/s)</th>
<th>Velocity during measurement ≥ Vs x 40%</th>
<th>Velocity during measurement ≤ Vs x 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)>  
Vs = Velocity of setting range

<table>
<thead>
<tr>
<th>Vs (m/s)</th>
<th>Velocity during measurement ≥ Vs x 20%</th>
<th>Velocity during measurement ≤ Vs x 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)>  
Vs = Velocity of setting range

<table>
<thead>
<tr>
<th>Vs (m/s)</th>
<th>Velocity during measurement ≥ Vs x 50%</th>
<th>Velocity during measurement ≤ Vs x 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>(0.2/Vs+0.8)% of Vs</td>
</tr>
</tbody>
</table>

Magnetic field effect

±0.2%FS max. (400A/m)

Output Fluctuation

Range set as 1≤Vs≤10m/s: ±0.1%FS max.  
Range set as 0.1≤Vs≤1m/s: ±0.1/Vs%FS max.  
(Damping: 3seconds, with clean water (150µS/cm))
PHYSICAL SPECIFICATION

Housing and cover material
Aluminum alloy (ADC12)

Glass
Tempered glass (thickness 5mm (0.2inch))

Name plate material
SUS304 (thickness 0.5mm (0.02inch))

Screw material
SUS304

Gasket material between housing and cover
EPDM

Paint
Standard: baked acrylic resin
Corrosion-proof: Epoxy resin

Color
Cover: light beige (Munsell 4Y7.2/1.3)
Housing: dark beige (Munsell 10YR4.7/0/5)

INSTALLATION SPECIFICATION

Conduit connection
G1/2 (PF1/2) internal thread, 1/2NPT internal thread, CM20 internal thread, pg13.5 internal thread

Mounting
Remote style: Wall mounting, 2-inch pipe mounting
Integral style: Mount on the detector

Grounding
Grounding resistance: 100Ω max.

Weight
3.1kg (6.83 lb)

Site selection
When selecting an installation site for the flowmeter, observe the following safety measures:
• Do not install the flowmeter near high-current power lines, motors or transformers to prevent damage from electromagnetic induction, which can cause equipment malfunction or output errors.
• Do not use the flowmeter to ground a welder. It can damage the flowmeter.
• Be sure to ground the welding power transformer when welding near the flowmeter to avoid output errors.
• Avoid locations subject to severe vibration or highly corrosive atmospheres to prevent detector breakage or equipment damage.
• Do not install the flowmeter in a location subject to direct sunlight, wind and rain. The converter and detector can be damaged.

Ambient temperature
-25 to +60 degree C (-13 to 140 degree F)

Ambient humidity
5 to 100%RH (no condensation)

Vibration
Integral style: 500Hz max. 4.9m/S² (0.5G) (16.076 ft/S²) max.
Remote style: 500Hz max., 19.6m/S² (2G) (64.304 ft/S²) max.
# MODEL SELECTION

## MagneW3000 PLUS+ Smart Converter (Integral style)

Model MGG14C - I II III IV - V VI VII VIII - / Options

<table>
<thead>
<tr>
<th>Basic model no.</th>
<th>Selections</th>
<th>Optional selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGG14C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### I Power supply
- 100 to 120 V AC, 200 to 240V AC, 47 to 63Hz
- 24 V DC, noise filter 50 Hz
- 24 V DC, noise filter 60 Hz

### II Output signal / Communication
- Volume flow 4 to 20mA DC output / with open collector pulse output / with HART communication or without communication
- Volume flow 4 to 20mA DC output / with open collector pulse output / with SFC communication (Note 1)
- Volume flow DE output / with open collector pulse output / without communication (Note 1)
- Fast Response model Volume flow 4 to 20mA DC output / with open collector pulse output / without communication (Note 9)

### III Electrical connection / 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 (Note 2)
- CM20 internal thread / without watertight gland
- Pg13.5 internal thread / without watertight gland
- G1/2 internal thread / with SUS304 watertight gland

### IV Installation / Wiring direction
- Horizontal piping mounting / upstream side
- Horizontal piping mounting / downstream side
- Horizontal piping mounting / left side viewed from upstream
- Horizontal piping mounting / right side viewed from upstream
- Vertical piping mounting / downstream side (flow direction: downstream to upstream)
- Vertical piping mounting / (flow direction: downstream to upstream)

### V Finish
- Corrosion-resistant finish
- Corrosion-proof finish (Note 7)

### VI Display with data setting device
- None
- Main display: instantaneous flow rate in %
- Main display: instantaneous actual flow rate
- Main display: indication of totalized value

### VII Contact inputs / outputs
- 1 input and 1 output (ranging function, warning for contact input/output, etc.)
- 2 inputs (ranging function, external automatic zero adjustment input, etc.)
- 2 outputs (ranging function, warning for contact outputs.)

### VIII Style code
- None
- FM/CSA NI approval (Note 3)

### Options
- None
- Empty pipe detection function
- Traceability certificate for converter
- Plastic (Polycarbonate) window
- Indication other than SI units (Note 6)
- Attachment of the TAG number to the terminal box for converter (Note 4)
- Specific color paint (Note 5)

**Note**
1. External DC power supply is necessary on analog 4-20 mA output. No analog output is expected without the external DC Power supply.
2. Must be selected for FM / CSA NI approval.
3. For FM/CSA NI, the Electrical connection / watertight gland selection code must be “4”.
4. Must be selected for Tag no. requirement.
5. Must specify Munsell No.
6. Must be specified for non-SI unit indication.
7. If no display is selected, configuration should be done by HART or SFC communicator.
8. When process fluid level in the flowtube is under electrodes, this function is activated and display and output are latched to zero.
9. Applicable detector size is from 15mm to 80mm.
# MagneW3000 PLUS+ Smart Converter (Remote style)

Model MGG14C - I II III IV - V VI VII VIII - 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>MGG14C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## I Power supply

<table>
<thead>
<tr>
<th>Selections</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>100 to 120 V AC, 200 to 240V AC, 47 to 63Hz</td>
</tr>
<tr>
<td>P</td>
<td>24 V DC, noise filter 50 Hz</td>
</tr>
<tr>
<td>R</td>
<td>24 V DC, noise filter 60 Hz</td>
</tr>
</tbody>
</table>

## II Output signal / Communication

<table>
<thead>
<tr>
<th>Selections</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Volume flow 4 to 20mA DC output / with open collector pulse output / with HART communication or without communication</td>
</tr>
<tr>
<td>B</td>
<td>Volume flow 4 to 20mA DC output / with open collector pulse output / with SFC communication (Note 1)</td>
</tr>
<tr>
<td>C</td>
<td>Volume flow DE output / with open collector pulse output / without communication (Note 1)</td>
</tr>
<tr>
<td>R</td>
<td>Fast Response model Volume flow 4 to 20mA DC output / with open collector pulse output /without communication (Note 9)</td>
</tr>
</tbody>
</table>

## III Electrical connection / Watertight gland

<table>
<thead>
<tr>
<th>Selections</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>G1/2 internal thread / with brass (Ni-plated) watertight gland</td>
</tr>
<tr>
<td>2</td>
<td>G1/2 internal thread / with plastic watertight gland</td>
</tr>
<tr>
<td>3</td>
<td>1/2NPT internal thread / without watertight gland (Note 2)</td>
</tr>
<tr>
<td>4</td>
<td>CM20 internal thread / without watertight gland</td>
</tr>
<tr>
<td>5</td>
<td>PG13.5 internal thread / without watertight gland</td>
</tr>
<tr>
<td>6</td>
<td>G1/2 internal thread / with SUS304 watertight gland</td>
</tr>
</tbody>
</table>

## IV Installation / Wiring direction

<table>
<thead>
<tr>
<th>Selections</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Wall mounting with standard bracket</td>
</tr>
<tr>
<td>H</td>
<td>2-inch pipe mounting with standard bracket</td>
</tr>
<tr>
<td>J</td>
<td>Wall mounting with SUS304 bracket</td>
</tr>
<tr>
<td>K</td>
<td>2-inch pipe mounting with SUS304 bracket</td>
</tr>
</tbody>
</table>

## V Finish

<table>
<thead>
<tr>
<th>Selections</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Corrosion-resistant finish</td>
</tr>
<tr>
<td>2</td>
<td>Corrosion-proof finish</td>
</tr>
</tbody>
</table>

## VI Display with data setting device

<table>
<thead>
<tr>
<th>Selections</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>None (Note 7)</td>
</tr>
<tr>
<td>A</td>
<td>Main display: instantaneous indication of flow rate in %</td>
</tr>
<tr>
<td>B</td>
<td>Main display: instantaneous indication of actual flow rate</td>
</tr>
<tr>
<td>C</td>
<td>Main display: indication of totalized value</td>
</tr>
</tbody>
</table>

## VII Contact inputs / outputs

<table>
<thead>
<tr>
<th>Selections</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 input and 1 output (ranging function, warning for contact input/output, etc.)</td>
</tr>
<tr>
<td>2</td>
<td>2 inputs (ranging function, external automatic zero adjustment input, etc.)</td>
</tr>
<tr>
<td>3</td>
<td>2 outputs (ranging function, warning for contact outputs.)</td>
</tr>
</tbody>
</table>

## VIII Style code

<table>
<thead>
<tr>
<th>Selections</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td>N</td>
<td>FM/CSA NI approval (Note 3)</td>
</tr>
</tbody>
</table>

## Options

<table>
<thead>
<tr>
<th>Selections</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Empty pipe detection function (Note 8)</td>
</tr>
<tr>
<td>C</td>
<td>Traceability certificate for converter</td>
</tr>
<tr>
<td>G</td>
<td>Plastic (Polycarbonate) window</td>
</tr>
<tr>
<td>H</td>
<td>Indication other than SI units (Note 6)</td>
</tr>
<tr>
<td>J</td>
<td>Attachment of the TAG number to the terminal box for converter (Note 4)</td>
</tr>
<tr>
<td>L</td>
<td>Specific color paint (Note 5)</td>
</tr>
</tbody>
</table>

### Notes
1. External DC power supply is necessary on analog 4-20 mA output. No analog output is expected without the external DC Power supply.
2. Must be selected for FM / CSA NI approval.
3. For FM/CSA N1, the Electrical connection/watertight gland selection code must be “4”.
4. Must be selected for Tag no. requirement
5. Must specify Munsell No.
6. Must be specified for non-SI unit indication.
7. If no display is selected, configuration should be done by HART or SFC communicator.
8. When process fluid level in the flowtube is under electrodes, this function is activated and display and output are latched to zero.
9. Applicable detector size is from 15mm to 80mm.
MOUNTING / WIRING DIRECTION

CONDUIT CONNECTION / WATERTIGHT GLAND
## CONVERTER TERMINAL DESCRIPTION

### Table 2  Remote converter terminal descriptions

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Flow signal input from detector</td>
<td>A</td>
<td>Flow signal input from detector</td>
<td>A</td>
<td>Flow signal input from detector</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td>B</td>
<td></td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>C</td>
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### Note

- Grounding (grounding resistance must be < 100 Ω)

## CONDUIT CONNECTION / WATERTIGHT GLAND

![Conduit Connection Diagrams](image1)

### Diagrams

1. [Diagram 1](image1)
2. [Diagram 2](image2)
3. [Diagram 3](image3)
4. [Diagram 4](image4)
5. [Diagram 5](image5)
6. [Diagram 6](image6)
7. [Diagram 7](image7)
Dimension drawings

Wall mounting

2 inch pipe mounting
Integral type

[Unit: mm]

Flange type