

SMT3000 Electromagnetic Flowmeter

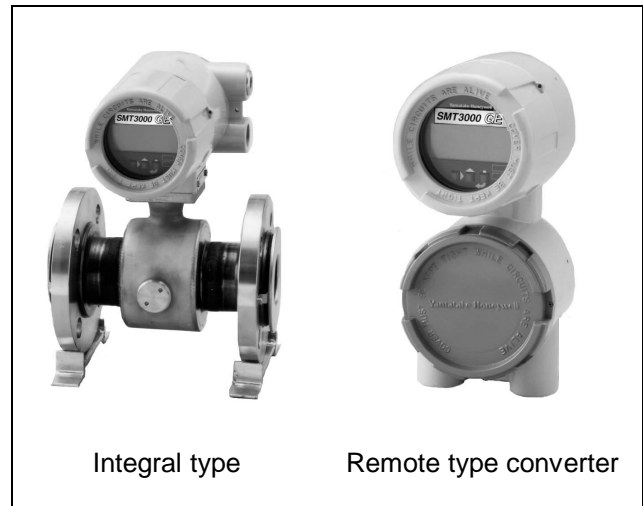
Model : SMT31/51

Smart MagneW Two-wire General Model

OVERVIEW

The SMT3000 GE Series of Smart Two-wire Electromagnetic Flowmeters are general electromagnetic flowmeters utilizing Two-wire loop powered technology.

The SMT3000 GE Series offers a full line of 4 to 20mA DC models and high powered models to serve a wide range of user needs in flow rate measurement.



Integral type

Remote type converter

FEATURES

- Since the field location and the instrument room are connected by Two-wire instrumentation, you can substantially reduce wiring costs.
- The detector case is made of stainless steel SUS304 for improved durability (diameters from 2.5 to 100mm).
- You can change data settings by remote communication using the SFC(SFC Rom Ver. 5.0 or later)
- You can choose either the flange type or wafer type for piping connections.
- Numerous options are available to meet a wide variety of needs (including gaskets for resin pipes, oil-proof treatment, waterproof treatment, tropical climate treatment, air purge holes, traceability certificates, and mill sheets). Choose your option according to your specific requirements.
- This series of flowmeters is provided with a new low-flow cutoff function that enables a fixed zero digital display when there is no flow or when the flow rate is low. They feature lets you eliminate insignificant display changes.
- Lightning protection provided as a standard feature(12kV/1000A)

APPLICATIONS

- Measurement of water supply and drainage flow rates
- Measurement of industrial and agricultural water flow rates
- Measurement of sea water flow rates
- Measurement of corrosive liquid flow rates
- Measurement of the flow rates of medical fluids
- Measurement of the flow rates of drainage and waste liquids
- Measurement of the flow rates of human wastes

PERFORMANCE SPECIFICATIONS

Accuracy

Standard model

Upper limit value of V_s =set velocity range

$1.0 \leq V_s \leq 10$	$\pm 0.5\%$ of V_s
$0.5 \leq V_s \leq 1.0$	$\pm \frac{0.5}{V_s} \%$

High powered model

<diameter 2.5 to 10mm>

Upper limit value of V_s =set velocity range

$1.0 \leq V_s \leq 10$	$\pm 0.5\%$ of V_s
$0.3 \leq V_s \leq 1.0$	$\pm \frac{0.5}{V_s} \%$

<diameter 15 to 200mm>

Upper limit value of V_s =set velocity range

V_s (m/s)	Velocity during measurement $\geq V_s \times 50\%$	Velocity during measurement $\leq V_s \times 50\%$
$1.0 \leq V_s \leq 10$	± 0.5 of rate	$\pm 0.25\%$ of V_s
$0.3 V_s \leq 1.0$	$\pm \frac{0.5}{V_s} \%$ of rate	$\pm \frac{0.25}{V_s} \%$

For Detector

FUNCTIONAL SPECIFICATIONS

Type of protection

JIS C 0920 waterproof model

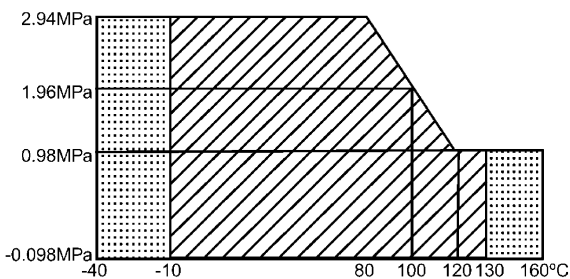
NEMA ICS6-110 TYPE 4X

IEC PUBL 529 IP67

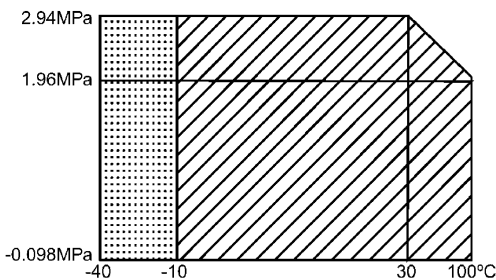
Temperature range of liquid to be measured

Size (mm)	Temperature	
	Integral type	Remote type
2.5 to 10	+10 ~ +100	-40 ~ +100
15 to 200	-10 ~ +130	-40 ~ +160

SIZE: 15 to 200mm



SIZE: 2.5 to 10mm



: Remote type
 : Integral type

Measurable electrical conductivity

Standard model ; 50 μ S/cm or greater

High posered model ; 10 μ S/cm or greater

Measurement flow range

High powered model

Size (mm)	Minimum range(m ³ /h) (Minimum flow velocity range is 0 to 0.3m/s)	Maximum range(m ³ /h) (Maximum flow velocity range is 0 to 10m/s)	Conversion factor K
2.5	0~0.00531	0~0.176	56.59
5	0~0.02121	0~0.706	14.14
10	0~0.0849	0~2.83	3.537
15	0~0.1909	0~6.36	1.572
25	0~0.531	0~17.67	0.5659
40	0~1.3572	0~45.2	0.2210
50	0~2.121	0~70.6	0.1415
80	0~5.43	0~180.9	0.05526
100	0~8.49	0~282.7	0.03537
150	0~19.09	0~636	0.01572
200	0~39.93	0~1,130.9	0.008842

Standard model

Size (mm)	Minimum range(m ³ /h) (Minimum flow velocity range is 0 to 0.5m/s)	Maximum range(m ³ /h) (Maximum flow velocity range is 0 to 10m/s)	Conversion factor K
25	0~0.884	0~17.6	0.5659
40	0~2.262	0~45.2	0.2210
50	0~3.534	0~70.6	0.1415
80	0~9.048	0~180.9	0.05526
100	0~14.14	0~282.7	0.03537

Velocity V (m/s) = $K \times Q$

K = Flow conversion factor = $1/3600 \times 4/(\pi D^2)$

Q = Flow rate (m³/h)

Flange rating

JIS 10K, JIS 20K, JIS 30K, JIS G3451 F12, JPI 150, JPI 300,

ANSI 150, ANSI 300, DIN PN10,

DIN PN16, DIN PN25 (size 2.5 to 200mm)

Ambient temperature

-10 to +60°C

Ambient humidity

10 to 90%RH

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

Water free treatment

Condensation is removed from process wetted materials surface.

Oil free treatment

Oil is removed from process wetted materials surface.

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. The maximum number of characters of the tag number is 16.

PHYSICAL SPECIFICATIONS**Finish**

Corrosion-preventive acrylic resin
(size 150mm and 200mm : case)
(Remote type : Terminal box)

Color

Light beige (Munsell 4Y7.2/1.3)

Materials

Measuring pipe : stainless steel SUS304

Flange

stainless steel SUS304

(size : 2.5 to 100mm)

carbon steel with rust resistant coating

(size : 150 and 200mm)

Case

Stainless steel SCS13

(size : 2.5 to 15mm)

stainless steel SUS304

(size : 25 to 100mm)

carbon steel SS400

(size : 150 and 200mm)

Terminal box

aluminum alloy (remote model)

Wetted Parts Materials**Lining**

PFA (size : 2.5 to 200mm)

Electrode

SUS316L, hastelloy C, titanium, tantalum, platinum-iridium, tungsten carbide, zirconium, nickel

Grounding ring

SUS316, hastelloy C, titanium, tantalum, platinum, zirconium

Gasket

PTFE (attached to grounding ring other than SUS316)

Electrode Structure

External insertion type

INSTALLATION**Electrical conduit connection****Integral type**

Wired to the converter

Remote type

G1/2(PF1/2) internal thread

1/2 NPT internal thread

CM20 internal thread

Pipe connection

Wafer (size : 25 to 100mm)

Flange (size : 2.5 to 200mm)

Nuts and bolts (for the wafer type)

Carbon steel S20C, stainless steel SUS304

Mounting position

Electrodes need to be mounted in a horizontal position.

Grounding

Grounding resistance : less than 100 Ω

Straight pipe length

Upstream side

A minimum five straight pipe diameters

A minimum 10 straight pipe diameters is required if a diffuser/valve/pump is installed.

Downstream side

Two straight pipe diameters is recommended.

Dedicated cable

(between Remote type detector and converter)

Length : max. 50m

Outside diameter : 11.4mm²

Structure : four-core shielded cable

For Converter

FUNCTIONAL SPECIFICATIONS

Type of protection

JIS C 0920 waterproof model

NEMA TYPE 4X

IEC PUBL 529 IP67

Power supply

High powered model

Driven by DC voltage from a dedicated power supply unit

SMP210 (DC 60V)

Standard model

DC 16 to 45V

Power consumption

High powered model : 8 W

Standard model : 0.1 W

Input signal

Flow signal

Electromotive force from the detector

Output signal

Analog output

High powered model

24 to 40mA DC to a dedicated power supply unit

SMP210

standard model

4 to 20mA DC

Digital output

DE (standard model only)

Analog or digital output is selectable.

Load resistance in SFC communication

Standard model

External power source for SFC communication

DC 16 to 45 V

Load resistance (Ω)=(Voltage of external power source for communication-16V)/0.0218

Display : LCD display

Main display

seven segment, six digit display

Display contents

- Flow volume in percentage
- Actual flow rate

Status display

Seven states

DISPLAY, DAMPING, AUTO ZERO, OUTPUT MODE, BAD XMTR STATUS, %, RATE

Data setting device

- Three key switches
- Display type change
- Damping time constant change
- Automatic zero adjustment

Unit of flow indication

- Volume flow
 - m³, l, cm³, B(barrel), KG(kilo-gallon)
- Mass flow
 - t, kg, g, lb(pound)
- Time
 - d, h, min, s

Damping time constant

- 1, 2, 3, 4, 5, 10, 20, 30, 50, 100s (response time reaches at 63.2% of the setting range)

Low-flow cutoff

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

Lightning protection

- 12kVm 1000A
- Equipped with the lightning arrester in the output terminal. (not built-in the dedicated power supply unit SMP210)

Ambient temperature

- 10 to +60°C

Ambient humidity

- 10 to 90%RH

PHYSICAL SPECIFICATIONS

Finish

- Standard
 - Corrosion-preventive acrylic resin.
- Corrosion-proof
 - Epoxy resin

Color

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

Housing material

- Aluminum alloy

Display cover

- Tempered glass, 10mm thickness

INSTALLATION

Electrical conduit connection

- G1/2(PF1/2) internal thread
- 1/2NPT internal thread
- CM20 internal thread

Mounting

- Integral detector / converter model
- wall mounting, 2 inch pipe mounting

Grounding

- Grounding resistance : less than 100Ω

For dedicated power supply unit SMP210**FUNCTIONAL SPECIFICATIONS****Type of protection**

For indoor mounting

Power supplyAC 100, 110, 120, 200, 220, 240V \pm 10%

Power supply frequency : 50/60Hz

Input signal

Flow signal

24 to 40mA DC signal proportional to the flow rate from the high powered type converter (SMT51A, SMT51C)

Output signal

Analog output

4 to 20mA DC

(load resistance : 0 to 600 Ω)

Pulse output

Open collector

Contact Capacity : DC 30V max., 100mA max.

Pulse frequency : 1700Hz max

Pulse width : 0.3 ms or 30 ms

Dropout

Adjustable between 0 to 10%of setting range. Below selected value, pulse output is cut.

Ambient temperature+5 to +45 $^{\circ}$ C**Ambient humidity**

10 to 90% RH

PHYSICAL SPECIFICATION**Color**

Black

Body material

Noryl

Weight

Approx. 800g

INSTALLATION**Mounting**

Wall mounting, Panel mounting, DIN rail mounting

Installation precautions

For full display of the performance of this product, select the most suitable location for installation in accordance with the following criteria.

Installation environment

- Do not install your electromagnetic flowmeter in a location close to large-current cables, motors, or transformers that may subject it to induction. Installation in such locations may cause machine failure or output error.
- Avoid a location with strong vibrations (100Hz, 2G {19.6m/S²} or over) or a highly corrosive atmosphere. Installation in such locations may break the neck of the detector or cause other machine failures.
- Avoid a location exposed to direct sunlight, wind, or rain. Installation in such locations may cause output error.

Fluids measured

Mount your electromagnetic flowmeter at a point where the conditions mentioned below are met with respect to the fluid to be measured. Failure to meet these requirements may cause output errors or output fluctuations.

- A point where the fluid to be measured has the electrical conductivity required for measurement (this depends on the converter used in combination with the meter) and where the distribution of conductivity is considered to be nearly uniform
- A point where the fluid to be measured is considered to be nearly uniform electromagnetically; e.g., if two liquids are mixed together in the upstream pipe, a point where the two liquids are considered to be uniformly mixed.
- If there is a substance that is mixed in, a point where the distribution of the mixture is considered to be nearly uniform.
- Do not use this electromagnetic flowmeter for the following fluids because measurement problems may arise even if their electrical conductivity, temperature, pressure, etc. are within the specifications for this device (refer to the "Standard Specifications" and "Model Number Configuration Table")
- Fluids that have sufficient electrical conductivity at high temperatures but do not have sufficient conductivity at room temperatures (approx. 20 $^{\circ}$ C) (Examples: fatty acid and soap)
- Certain fluids into which a surfactant is mixed (Example: rinses, shampoos, and CWM)
- Insulating adherents (Examples: oil, kaorinite, kaolin, and +calcium stearate)

MODEL SELECTION**SMT3000 GE Series Model Number Configuration Table/Outline Drawing Index**

Model	Model/Basic Model No.	Linig	Connection standard	Diameter (mm)	Model No. config. Table reference page	Outer dimensions drawings reference page
Standard model	Integral model SMT31A	PFA	Wafer/Flange	25 to 100	8	12 to 15
High powered model	Integral model SMT51A	PFA	Wafer/Flange	2.5 to 200	9	12 to 15
Standard/High powered model	Remote detector SMT31B	PFA	Wafer/Flange	2.5 to 200	10	16 to 18
Standard model	Remote converter SMT31C				11	11 to 20
High powered model	Remote converter SMT51C				11	11 to 20
Dedicated power supply for high powered mode	Dedicated power supply model SMP210				11	21
Dedicated Cable between detector and converter	Dedicated cable SMC11				11	22

Note:

Be sure to use dedicated power supply unit SMP210 for high powered models SMT51A and SMT51C

MODEL SELECTION

SMT3000 GE Standard model 25 to 100mm (Integral type)

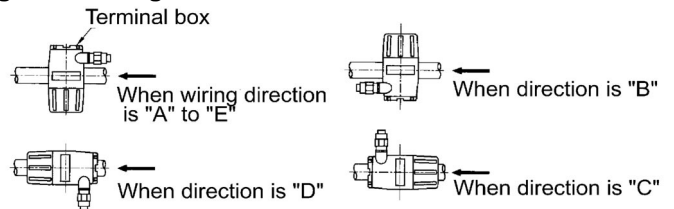
Basic model No.	SMT31A-		Selections									Options		
			I	II	III	IV	V	VI	VII	VIII	IX	X	XI	
I	Diameter	25mm	025											
		40mm	040											
		50mm	050											
		80mm	080											
		100mm	010											
II	Lining	PFA	P											
III	Piping connections	Wafer JIS10K	11											
		Wafer JIS16/20K	12											
		Wafer JIS30K	13											
		Wafer JIS3451	51											
		Wafer ANSI150	21											
		Wafer ANSI300	22											
		Wafer JPI150	61											
		Wafer JPI300	62											
		Wafer DIN PNE10	41											
		Wafer DIN PN16	42											
		Wafer DIN PN25	43											
		Flange JIS10K	J1											
		Flange JIS20K	J2											
		Flange JIS3451	G1											
		Flange ANSI150	A1											
		Flange ANSI300	A2											
		Flange JPI150	P1											
Flange JPI300	P2													
IV	Electrodes	SUS316L	L											
		Haistelloy C	C											
		Titanium	K											
		Zirconium	H											
		Tantalum	T											
		Nickel	N											
		Tungsten carbide	W											
		Platinum iridium	P											
V	Grounding rings	SUS316	S											
		Hastelloy C	C											
		Titanium	K											
		Zirconium	H											
		Tantalum	T											
		Platinum	P											
VI	Electrical connection/ Watertight gland	G1/2 internal thread/without watertight gland	A											
		G1/2 internal thread/with plastic watertight gland	B											
		G1/2 internal thread/with brass(Ni-plated) watertight gland	C											
		1/2NPT internal thread/without watertight gland	D											
		CM20 internal thread/without watertight gland	E											
VII	Display	With display card	A											
VIII	Installation/ Wiring direction *Refer to Fig.1	Upstream side(Horizontal piping mounting)	A											
		Downstream side (Horizontal piping mounting)	B											
		Horizontal piping mounting/right side viewed from upstream	C											
		Horizontal piping mounting/left side viewed from upstream	D											
		Upstream side(Vertical piping mounting)	E											
IX	Calibration	Standard	A											
X	Finish	Standard	X											
		Corrosion-resistant	2											
XI	Bolt/nuts	None	X											
		Carbon steel	1											
		SUS304	2											

Option	X	No option
	A	Calibration certificate
	B	Traceability certificate for detector
	C	Material sheet (only for electrodes and grounding rings)
	E	Water-free treatment
	F	Oil-free treatment
	G	With Gasket for plastic piping
	H	Non SI unit
	J	Tropicalization
	K	Attachment of the TAG number to the terminal box for detector
	L	Attaching the TAG number plate to the neck section for detector

Table of gasket for plastic piping

Diameter (mm)	25	40	0	50	80	100
gasket for plastic piping	10	14	0	19	35	45

Figure 1. Wiring direction



SMT3000 GE High powered model 2.5 to 200mm (Integral type)

Basic model No.	SMT51A-	Selections									Options		
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	

I	Diameter	2.5mm (For Flange type)	002
		5mm (For Flange type)	005
		10mm (For Flange type)	010
		15mm (For Flange type)	015
		25mm	025
		40mm	040
		50mm	050
		80mm	080
		100mm	100
		150mm (For Flange type)	150
		200mm (For Flange type)	200

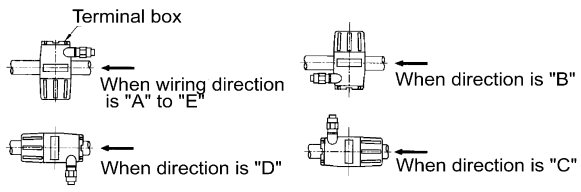
Option	X	No option
	A	Calibration certificate
	B	Traceability certificate for detector
	C	Material sheet (only for electrodes and grounding rings)
	E	Water-free treatment
	F	Oil-free treatment
	G	With Gasket for plastic piping
	H	Non SI unit
	J	Tropicalization
	K	Attachment of the TAG number to the terminal box for detector
	L	Attaching the TAG number plate to the neck section for detector

II	Lining	PFA	P
III	Piping connection	Wafer JIS10K	11
		Wafer JIS16/20K	12
		Wafer JIS30K	13
		Wafer JIS3451	51
		Wafer ANSI150	21
		Wafer ANSI300	22
		Wafer JPI150	61
		Wafer JPI300	62
		Wafer DIN PN10	41
		Wafer DIN PN16	42
		Wafer DIN PN25	43
		Flange JIS10K	J1
		Flange JIS20K	J2
		Flange JIS10K	J4
		Flange JIS20K	J5
		Flange JIS3451	G1
		Flange ANSI150	A1
		Flange ANSI300	A2
		Flange JPI150	P1
		Flange JPI300	P2

Table of gasket for plastic piping

Diameter (mm)	2.5 to 15	25	40	50	80	100	150	200
gasket for plastic piping	10	10	14	19	35	45	80	120

Figure 2. Wiring direction



IV	Electrodes	SUS316L	L
		Haistelloy C	C
		Titanium	K
		Zirconium	H
		Tantalum	T
		Nickel	N
		Tungsten carbide	W
		Platinum iridium	P

V	Grounding rings	SUS316	S
		Hastelloy C	C
		Titanium	K
		Zirconium	H
		Tantalum	T
		Platinum	P

VI	Wiring connection	G1/2 internal thread/without watertight gland	A
		G1/2 internal thread/with plastic watertight gland	B
		G1/2 internal thread/with brass(Ni-plated) watertight gland	C
		1/2NPT internal thread/without watertight gland	D
		CM20 internal thread/without watertight gland	E

VII	Display	With display card	A
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VIII	Installation/ Wiring direction *Refer to Fig.2	Upstream side(Horizontal piping mounting)	A
		Downstream side (Horizontal piping mounting)	B
		Horizontal piping mounting/right side viewed from upstream	C
		Horizontal piping mounting/left side viewed from upstream	D
		Upstream side(Vertical piping mounting)	E

IX	Calibration	Standard	A
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X	Finish	Standard	X
		Corrosion-resistant	2
XI	Bolt/nuts	None	X
		Carbon steel for wafer type only	1
		SUS304 for wafer type only	2

*When ordering, make sure to inform us of power supply voltage and frequency.

SMT3000 GE Standarded/High powered model 2.5 to 200mm (Remote type)

Basic model No.	SMT31B-	Selections								Options	
		I	II	III	IV	V	VI	VII	VIII	IX	X

I	Diameter	2.5mm	Flange style and high powered model only	002
		5mm		005
		10mm		010
		15mm		015
		25mm	Standard / high powered model only	025
		40mm		040
		50mm		050
		80mm		080
		100mm		100
		150mm	Flange style and high powered model only	150
200mm	200			

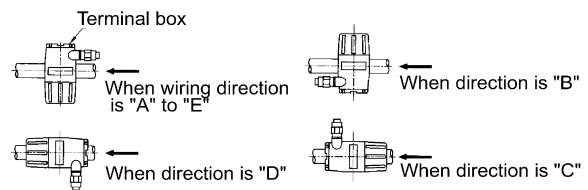
Option	X	No option
	A	Calibration certificate
	B	Traceability certificate for detector
	C	Material sheet (only for electrodes and grounding rings)
	E	Water-free treatment
	F	Oil-free treatment
	G	With Gasket for plastic piping
	L	Attaching the TAG number plate to the neck section for detector

Table of gasket for plastic piping

Diameter (mm)	2.5 to 15	25	40	50	80	100	150	200
gasket for plastic piping	10	10	14	19	35	45	80	120

II	Lining	PFA	P
III	Piping connections	Wafer JIS10K	11
		Wafer JIS16/20K	12
		Wafer JIS30K	13
		Wafer JIS3451 F12 For size 80mm or over	51
		Wafer ANSI150	21
		Wafer ANSI300	22
		Wafer JPI150	61
		Wafer JPI300	62
		Wafer DIN PIN10	41
		Wafer DIN PN16	42
		Wafer DIN PN25	43
		Flange JIS10K	J1
		Flange JIS20K	J2
		Flange JIS10K For 10mm flange	J4
		Flange JIS20K For 10mm flange	J5
		Flange JIS3451 F12 For size 80mm or over	G1
		Flange ANSI150	A1
		Flange ANSI300	A2
		Flange JPI150	P1
		Flange JPI300	P2

Figure 3. Wiring direction



IV	Electrodes	SUS316L	L
		Haistelloy C	C
		Titanium	K
		Zirconium	H
		Tantalum	T
		Nickel	N
		Tungsten carbide	W
		Platinum iridium	P

V	Grounding rings	SUS316	S
		Hastelloy C	C
		Titanium	K
		Zirconium	H
		Tantalum	T
		Platinum	P

VI	Wiring connection	G1/2 internal thread/without watertight gland	A
		G1/2 internal thread/with plastic watertight gland	B
		G1/2 internal thread/with brass(Ni-plated) watertight gland	C
		1/2NPT internal thread/without watertight gland	D
		CM20 internal thread/without watertight gland	E

VII	Installation/ Wiring direction *Refer to Fig.3	Upstream side(Horizontal piping mounting)	A
		Downstream side (Horizontal piping mounting)	B
		Horizontal piping mounting/right side viewed from upstream	C
		Horizontal piping mounting/left side viewed from upstream	D
		Upstream side(Vertical piping mounting)	E

VIII	Calibration	Standard	A
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IX	Finish	Standard	X
		Corrosion-resistant	2
X	Bolt/nuts	None	X
		Carbon steel (For wafer type only)	1
		SUS304 (For wafer type only)	2

Smart MagneW Two-wire SMT3000 GE Standard model converter (Remote type)

(Detector to be married: SMT31B size 25 to 100 mm)

Basic Model No.	SMT31C-		Selections	<input type="checkbox"/>	-	Optional selections	<input type="checkbox"/>	Options	
Wiring connection	G1/2 internal thread/ without watertight gland	A						X	None
	G1/2 internal thread/ with plastic watertight gland	B						B	Traceability certificate
	G1/2 internal thread/ with brass(Ni-plated) watertight gland	C						H	Indication other than SI unit
	1/2NPT internal thread/ without watertight gland	D						J	Tropicalization treatment
	CM20 internal thread/ without watertight gland	E						K	Tag on the case
Installation/ wiring direction	Wall mounting with standard bracket	G							
	2 inch pipe mounting with standard bracket	H							
Finish	Standard paint	X							
	Corrosion-proof paint	2							

Smart MagneW Two-wire SMT3000 GE High powered model converter (Remote type)

(Detector to be married: SMT31B size 2.5 to 200 mm)

(Need dedicated power supply SMP210)

Basic Model No.	SMT51C-		Selections	<input type="checkbox"/>	-	Optional selections	<input type="checkbox"/>	Options	
Wiring connection	G1/2 internal thread/ without watertight gland	A						X	None
	G1/2 internal thread/ with plastic watertight gland	B						B	Traceability certificate
	G1/2 internal thread/ with brass(Ni-plated) watertight gland	C						H	Indication other than SI unit
	1/2NPT internal thread/ without watertight gland	D						J	Tropicalization treatment
	CM20 internal thread/ without watertight gland	E						K	Tag on the case
Installation/ wiring direction	Wall mounting with standard bracket	G							
	2 inch pipe mounting with standard bracket	H							
Finish	Standard paint	X							
	Corrosion-proof paint	2							

Dedicated Power Supply unit for SMT51A/SMT51C

Basic Model No.	SMP210-		Selections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Power supply	AC100V	A						
	AC110V	C						
	AC120V	E						
	AC200V	G						
	AC220V	I						
	AC240V	K						
Output	4 to 20mA DC with open collector pulse output	B						
	1 to 5VDC with open collector pulse output	D						
Contact output	None	X						
Option	None	X						

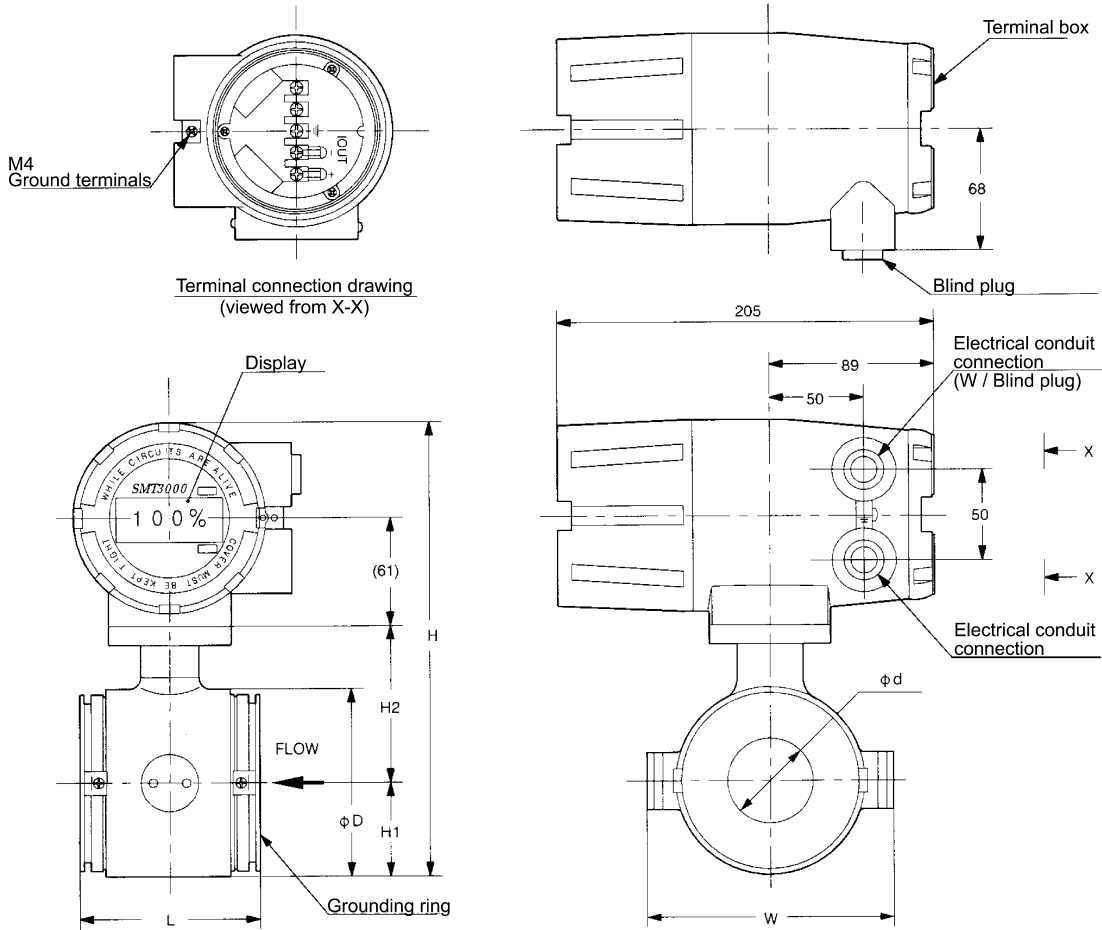
Note: In case of using SMT51C or SMT51A, the SMP210 is necessary.

Dedicated Cable for SMT

Basic Model No.	SMC11		Selections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cable length	2m	02				
	3m	03				
	4m	04				
	5m	05				
	10m	10				
	15m	15				
	20m	20				
	30m	30				
	40m	40				
	50m	50				
Terminals (Detector side)	Without terminals	X				
	With terminals	A				
Terminals (Converter side)	Without terminals	X				
	With terminals	A				

DIMENSIONS

Integral type, Wafer style (SMT31A, SMT51A)




Terminal connection table

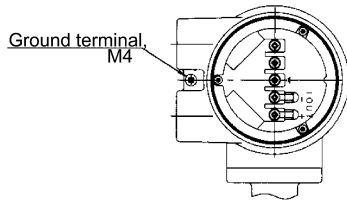
Symbol	Description		
I out <table style="display: inline-table; vertical-align: middle;"><tr><td style="text-align: center;">+</td></tr><tr><td style="text-align: center;">-</td></tr></table>	+	-	Analog output
+			
-			
	Ground		

Nominal size		25	40	50	80	100
Face-to-face	L	94	98	104	130	150
	H	215.5	234.5	251.5	281.5	315.5
Height	H1	34	43.5	52	67	79.5
	H2	69	78.5	87	102	123.5
Case width	W	98	117	134	164	189
Real size	d	23	36	47.5	75	94
Case outer diameter	D	68	87	104	134	159
Weight (kg)		3.7	4.4	5.2	7.7	10.9

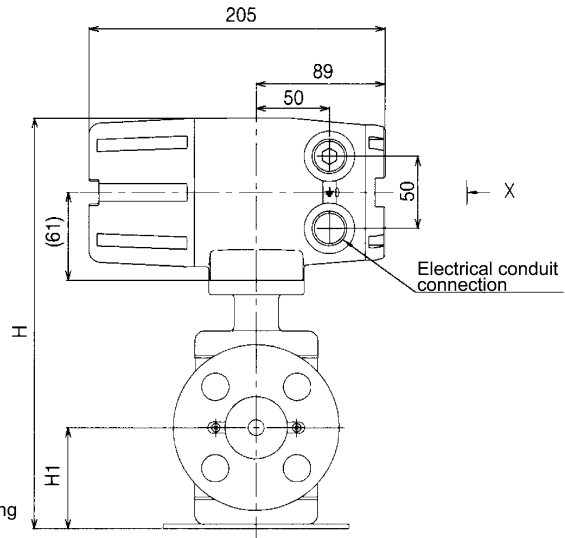
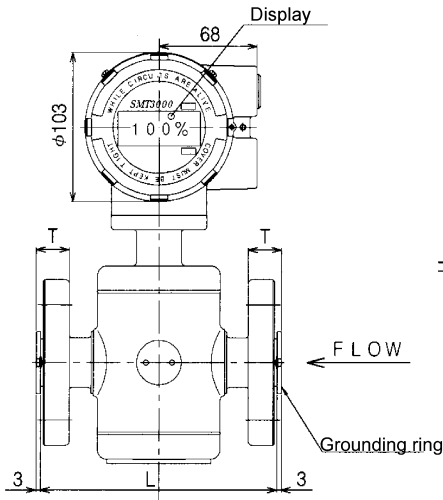
Integral type, Flange style (SMT31A, SMT51A)
2.5 to 15mm

Terminal connection table

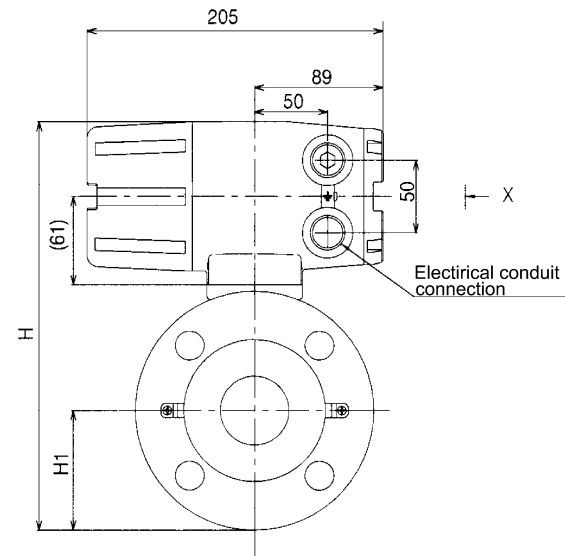
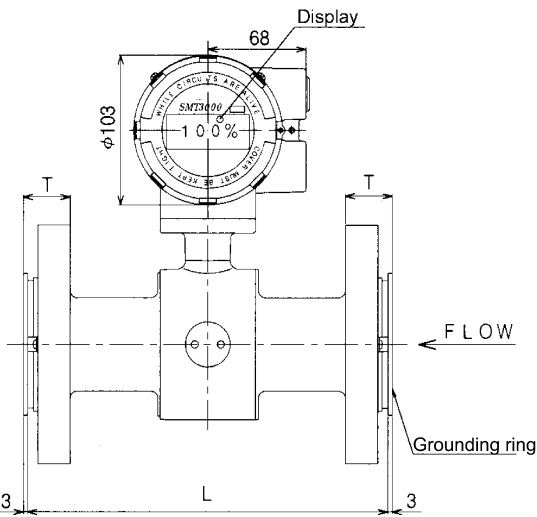
Symbol	Description
I OUT	Analog output
	Ground



Terminal connection drawing
 (viewed from X)



25mm



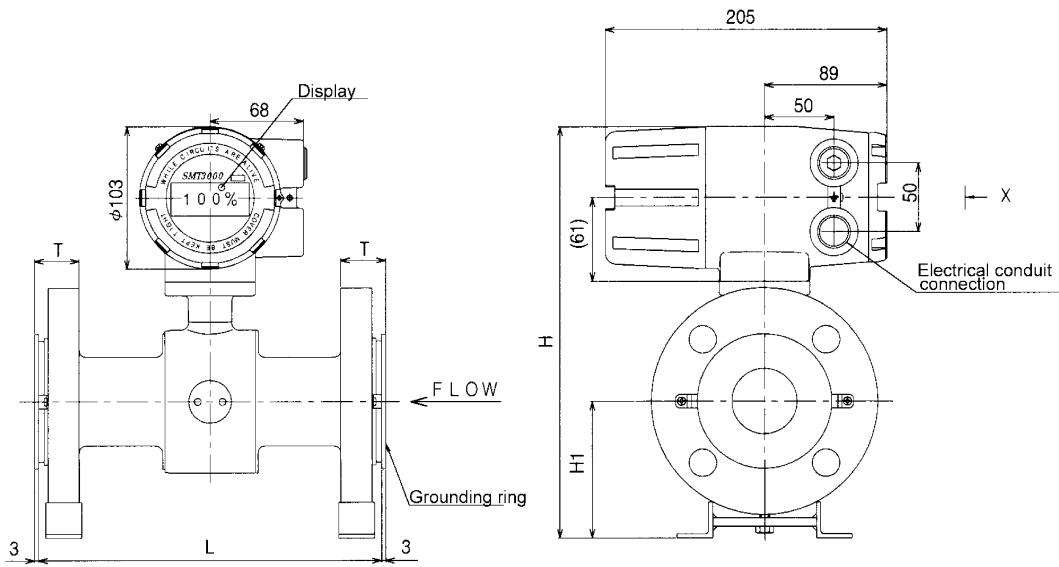
Weight for 10mm flange (kg)

Diameter Flange	2.5mm	5mm	10mm
JIS 10K	7.0	7.3	7.1
JIS20K	7.1	7.4	7.2
JIS30K	7.9	8.2	8.0

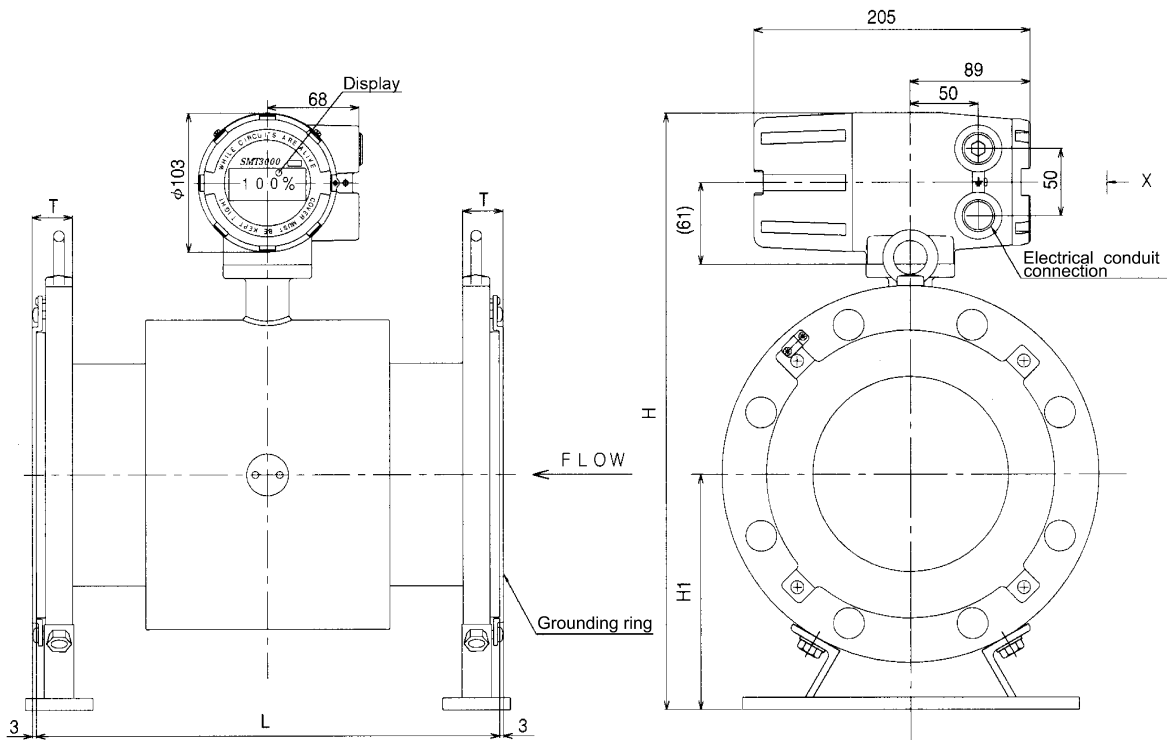
Weight (kg)

Diameter Flange	2.5mm	5mm	10mm	15mm	25mm
JIS 10K	7.1	7.4	7.2	7.3	6.9
JIS20K	7.3	7.6	7.4	7.5	7.2
JIS30K	8.3	8.6	8.4	8.5	8.0
ANSI 150	6.7	7.1	6.7	6.9	6.1
ANSI 300	7.2	7.4	7.2	7.3	7.2
JPI 150	6.7	7.1	6.7	6.9	6.1
JPI 300	7.2	7.4	7.2	7.3	7.2

Integral type, Flange style (SMT31A, SMT51A)
40 to 100mm



150, 200mm (SMT51A)



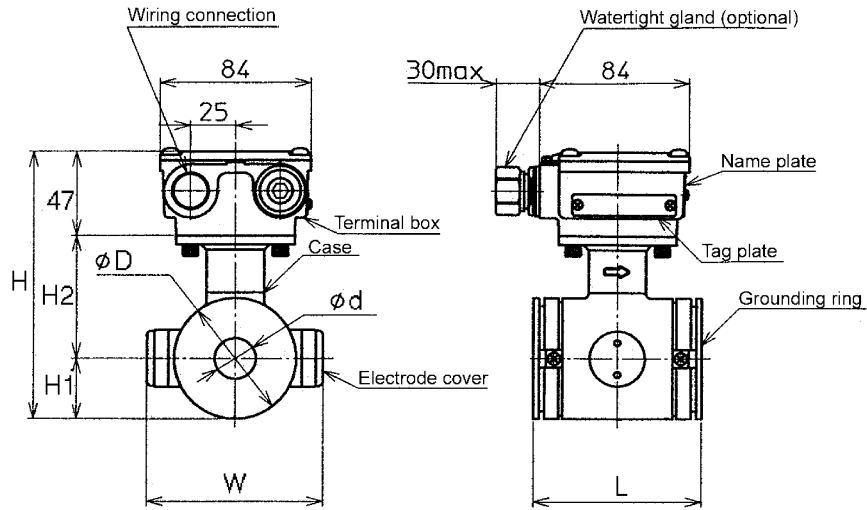
Weight (kg)

Flange \ Diameter	40mm	50mm	80mm	100mm	150mm	200mm
JIS 10K	8.1	10.1	14.2	20.4	34.2	50.0
JIS20K	8.4	10.2	16.5	23.9	41.5	60.0
JIS30K	10.8	11.9	20.2	28.8	54.1	87.2
JIS G3451 F12	-	-	14.2	20.4	34.2	50.0
ANSI 150	7.6	10.5	17.1	25.3	37.0	62.0
ANSI 300	9.9	12.0	21.1	34.4	56.0	91.0
JPI 150	7.6	10.5	17.1	25.3	37.0	62.0
JPI 300	9.9	12.0	21.1	34.4	56.0	91.0

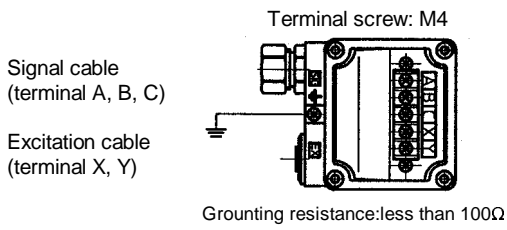
Integral type, Flange style dimensions

Flange rating	Dimension	Diameter										
		2.5mm	5mm	10mm	15mm	25mm	40mm	50mm	80mm	100mm	150mm	200mm
JIS 10K	L	160	160	160	200	200	200	200	200	250	300	350
	T	19.5	19.5	19.5	19.5	23.5	25.5	25.5	27.5	27.5	30	30
	H	290	290	290	290	245	276	290	325	356	441	486
	H1	70	70	70	70	63	85	90	110	120	175	196
	H2	108	108	108	108	69	79	87	102	124	156	181
JIS 20K	L	160	160	160	200	200	200	200	200	250	300	350
	T	21.5	21.5	21.5	21.5	25.5	27.5	27.5	31.5	33.5	36	38
	H	290	290	290	290	245	276	290	334	365	455	498
	H1	70	70	70	70	63	85	90	119	129	189	208
	H2	108	108	108	108	69	79	87	102	124	156	181
ANSI 150	L	160	160	160	200	200	200	200	200	250	300	350
	T	17.5	17.5	17.5	17.5	23.5	26	27.5	32	32	33.5	36.5
	H	290	290	290	290	236	268	288	328	367	440	494
	H1	70	70	70	70	54	77	88	113	131	174	204
	H2	108	108	108	108	69	79	87	102	124	156	181
ANSI300	L	160	160	160	200	200	200	200	200	250	300	350
	T	20.5	20.5	20.5	20.5	26	29	30.5	36.5	40	45	49.5
	H	290	290	290	290	244	285	296	339	381	463	516
	H1	70	70	70	70	62	94	96	124	145	197	226
	H2	108	108	108	108	69	79	87	102	124	156	181
JPI 150	L	160	160	160	200	200	200	200	200	250	300	350
	T	17.5	17.5	17.5	17.5	23.5	26	27.5	32	32	33.5	36.5
	H	290	290	290	290	236	268	288	328	367	440	494
	H1	70	70	70	70	54	77	88	113	131	174	204
	H2	108	108	108	108	69	79	87	102	124	156	181
JPI 300	L	160	160	160	200	200	200	200	200	250	300	350
	T	20.5	20.5	20.5	20.5	26	29	30.5	36.5	40	45	49.5
	H	290	290	290	290	244	285	296	339	381	463	516
	H1	70	70	70	70	62	94	96	124	145	197	226
	H2	108	108	108	108	69	79	87	102	124	156	181

Remote type, Wafer style (SMT31B)



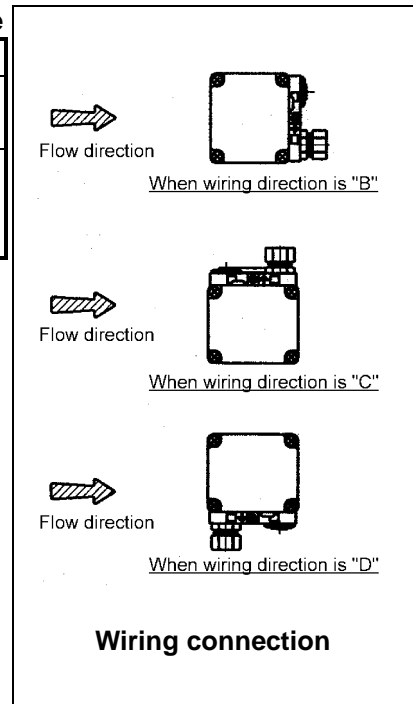
Nominal size		25	40	50	80	100
Face to face	L	94	98	104	130	150
Height	H	150	169	186	216	250
	H1	34	43.5	52	67	79.5
	H2	69	78.5	87	102	123.5
Case width	W	98	117	134	164	189
Size	d	23	36	47.5	75	94
Case outer diameter	D	68	87	104	134	159
Weight (kg)		2.2	2.9	3.8	6.7	9.4



Terminal

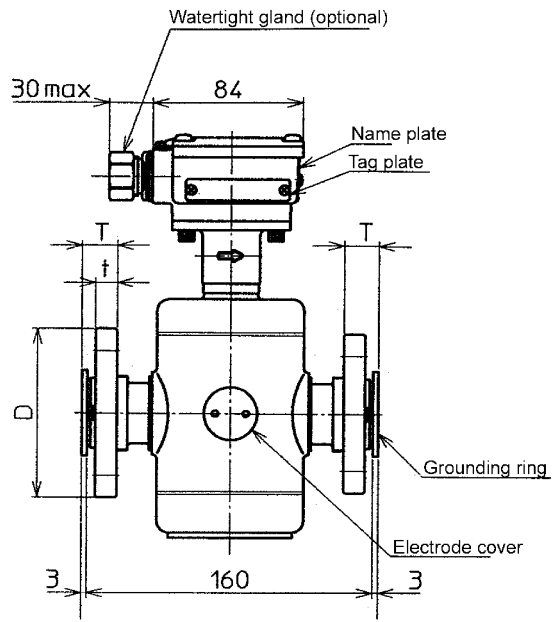
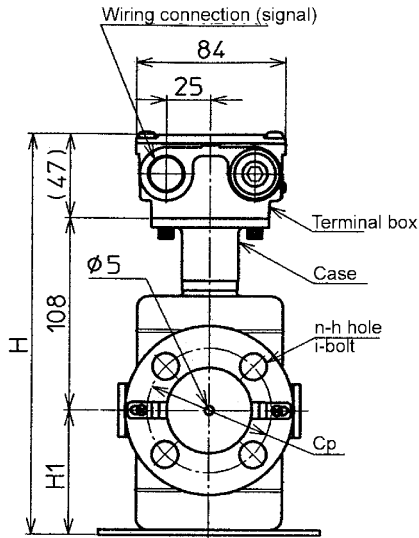
Terminal connection table

Symbol	Description
X	Excitation terminal
Y	
A	Flow rate signal terminal
B	
C	

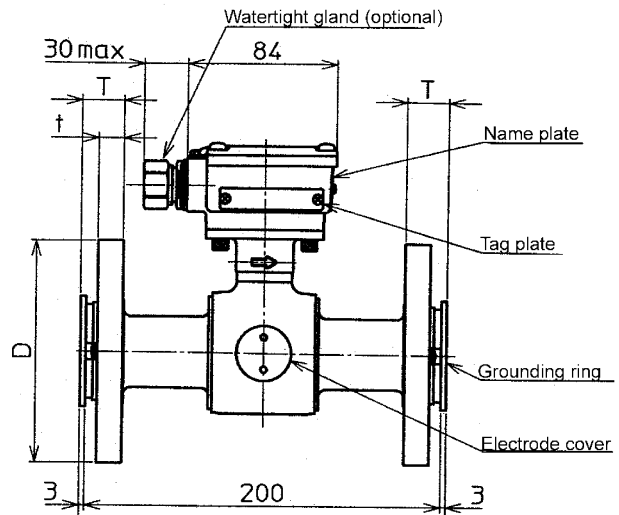
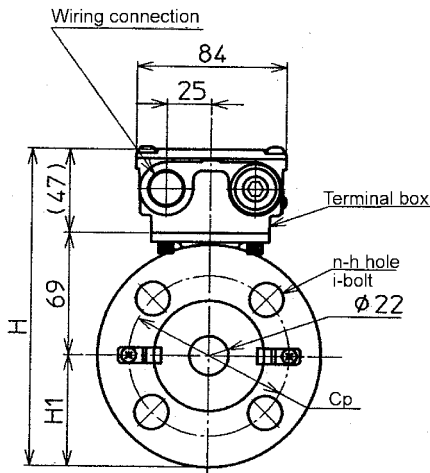


Wiring connection

Remote type, Flange style (SMT31B)
2.5 to 15mm



25mm



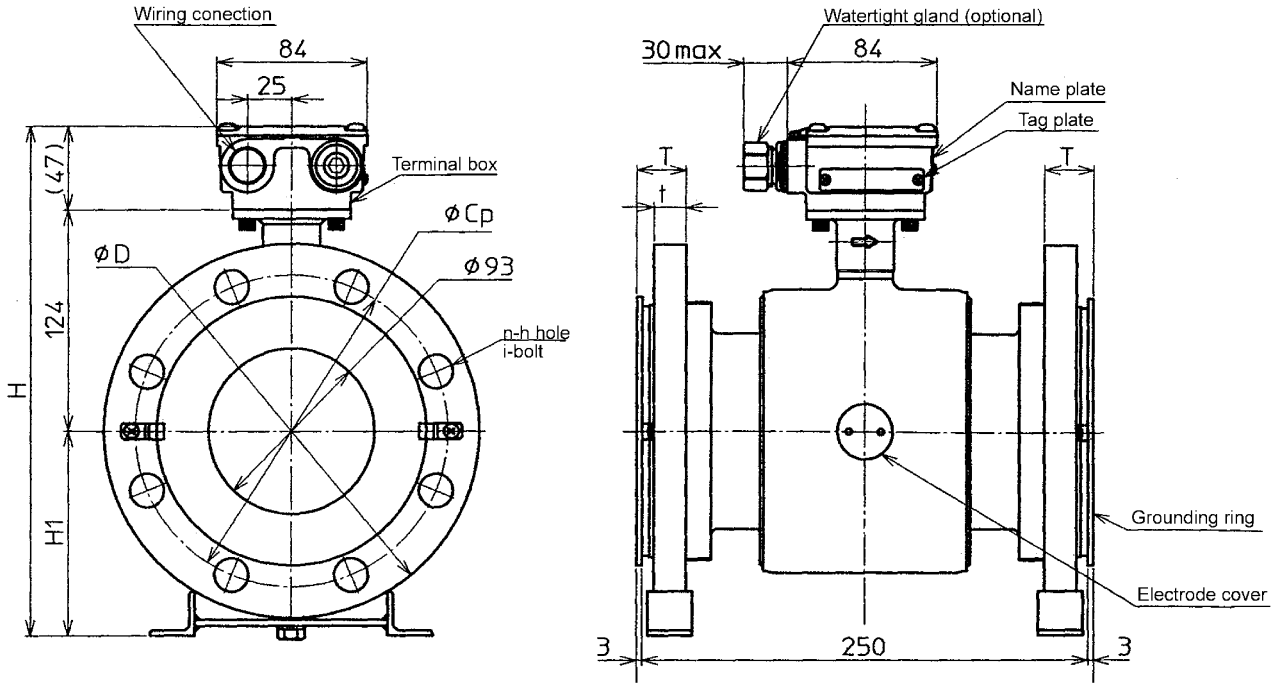
Weight for 10mm flange (kg)

Size	2.5mm	5mm	10mm
JIS 10K	5.4	5.7	5.5
JIS 20K	5.6	5.9	5.7

Weight (kg)

Diameter	2.5mm	5mm	10mm	15mm	25mm
JIS 10K	5.5	5.8	5.6	5.7	5.3
JIS20K	5.7	6.0	5.8	5.9	5.6
ANSI 150	5.1	5.6	5.1	5.3	4.5
ANSI 300	5.6	5.8	5.6	5.7	5.6
JPI 150	5.1	5.5	5.1	5.3	4.5
JPI 300	5.6	5.8	5.6	5.7	5.6

Remote type, Flange style (SMT31B)
40 to 200mm

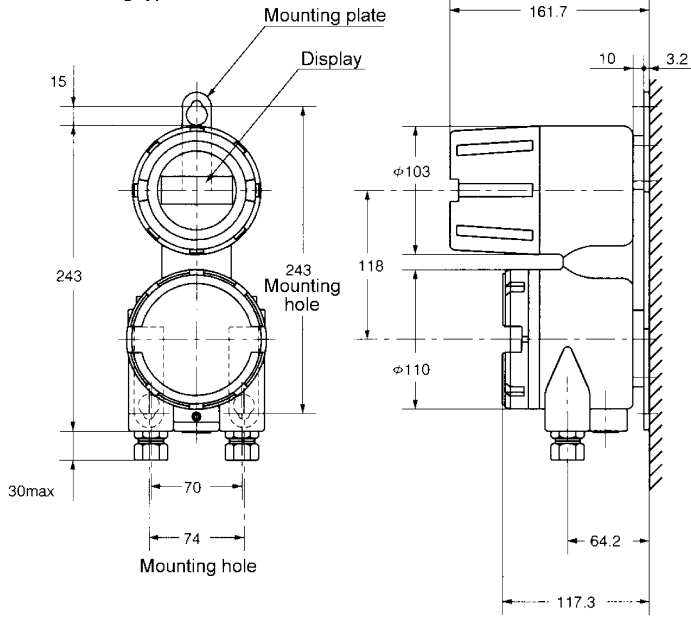


Weight (kg)

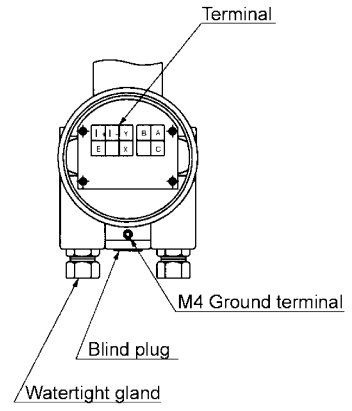
Flange \ Diameter	40mm	50mm	80mm	100mm	150mm	200mm
JIS 10K	6.5	8.5	12.6	18.8	32.6	48.4
JIS20K	6.8	8.6	14.9	22.3	39.9	58.4
JIS G3451 F12	—	—	13.4	18.4	32.6	51.4
ANSI 150	6.0	8.9	15.5	23.7	35.4	60.4
ANSI 300	8.3	10.4	18.5	33.8	54.4	89.4
JPI 150	6.8	8.9	15.5	23.7	35.4	60.4
JPI 300	8.3	10.4	19.5	32.8	54.4	89.4

Remote type converter (SMT31C, SMT51C)

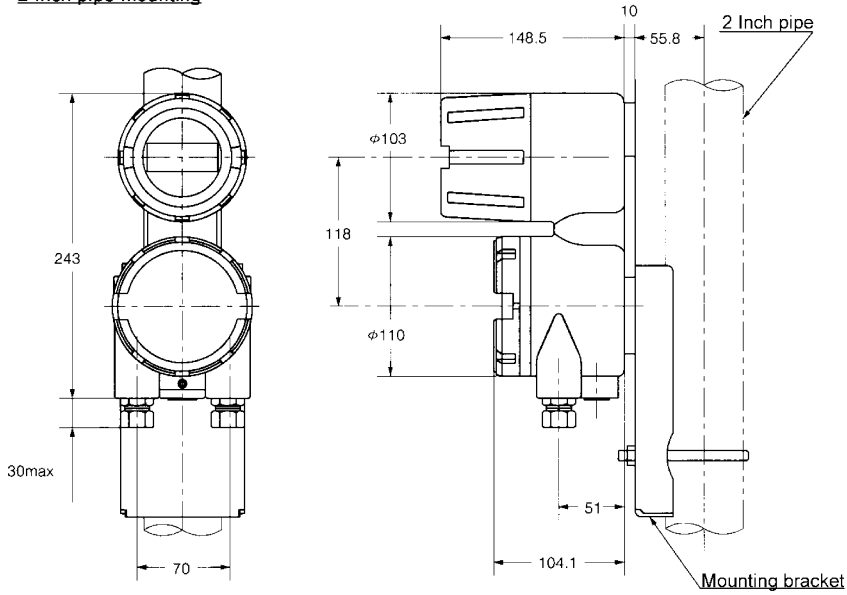
Wall mounting type



Terminal connection



2 Inch pipe mounting



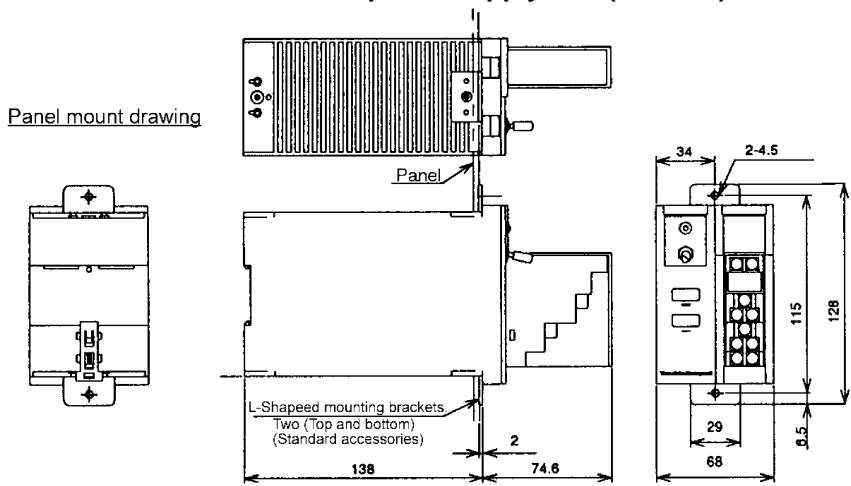
Terminal connection table

Symbol	Description	
I	+	Analog output
	-	
E	Ground	
X	Excitation terminal	
Y		
A	Flow rate signal terminal	
B		
C		

Remote type, Flange style dimensions

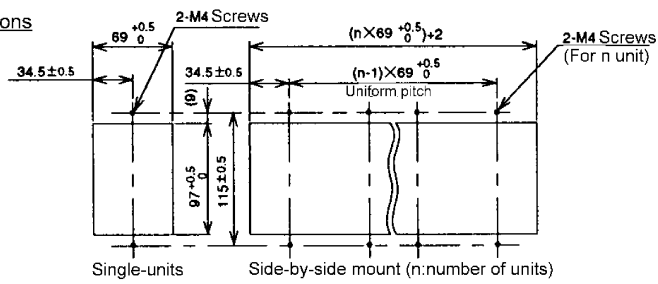
Flange rating	Dimension	Diameter										
		2.5mm	5mm	10mm	15mm	25mm	40mm	50mm	80mm	100mm	150mm	200mm
JIS 10K	L	160	160	160	200	200	200	200	200	250	300	350
	T	19.5	19.5	19.5	19.5	23.5	25.5	25.5	27.5	27.5	30	30
	H	225	225	225	225	179	211	224	259	291	378	424
	H1	70	70	70	70	63	85	90	110	120	175	196
	H2	108	108	108	108	69	79	87	102	124	156	181
JIS 20K	L	160	160	160	200	200	200	200	200	250	300	350
	T	21.5	21.5	21.5	21.5	25.5	27.5	27.5	31.5	33.5	36	38
	H	225	225	225	225	179	211	224	268	300	392	436
	H1	70	70	70	70	63	85	90	119	129	189	208
	H2	108	108	108	108	69	79	87	102	124	156	181
ANSI 150	L	160	160	160	200	200	200	200	200	250	300	350
	T	17.5	17.5	17.5	17.5	23.5	26	27.5	32	32	33.5	36.5
	H	225	225	225	225	170	203	223	262	302	377	432
	H1	70	70	70	70	54	77	89	113	131	174	204
	H2	108	108	108	108	69	79	87	102	124	156	181
ANSI300	L	160	160	160	200	200	200	200	200	250	300	350
	T	20.5	20.5	20.5	20.5	26	29	30.5	36.5	40	45	49.5
	H	225	225	225	225	178	220	230	273	316	400	454
	H1	70	70	70	70	62	94	96	124	145	197	226
	H2	108	108	108	108	69	79	87	102	124	156	181
JIS G3451	L	-	-	-	-	-	-	-	200	250	300	350
	T	-	-	-	-	-	-	-	25.5	25.5	30.5	30.5
	H	-	-	-	-	-	-	-	269	300	329	376
	H1	-	-	-	-	-	-	-	120	129	126	148
	H2	-	-	-	-	-	-	-	102	124	156	181
JPI 150	L	160	160	160	200	200	200	200	200	250	300	350
	T	17.5	17.5	17.5	17.5	23.5	26	27.5	32	32	33.5	36.5
	H	225	225	225	225	170	203	223	262	302	377	432
	H1	70	70	70	70	54	77	89	113	131	174	204
	H2	108	108	108	108	69	79	87	102	124	156	181
JPI 300	L	160	160	160	200	200	200	200	200	250	300	350
	T	20.5	20.5	20.5	20.5	26	29	30.5	36.5	40	45	49.5
	H	225	225	225	225	178	220	230	273	316	400	454
	H1	70	70	70	70	62	94	96	124	145	197	226
	H2	108	108	108	108	69	79	87	102	124	156	181

Dimensions of the dedicated power supply unit (SMP210)



Terminal	Connection
1	Input “+” line
2	Input “-” line
3	—
4	Analog output, “+” line
5	Analog output, “-” line
6	Pulse output, “+” line
7	Pulse output, “-” line
8	Power H
9	GND
10	Power N

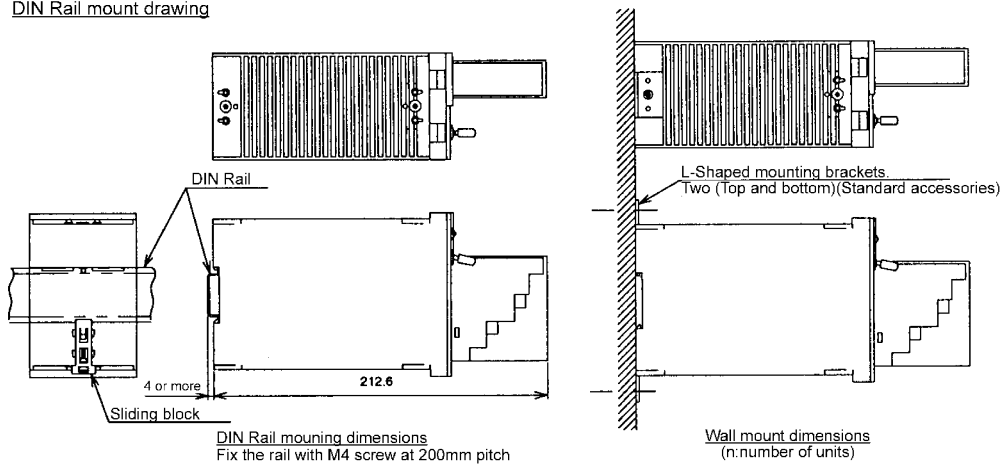
Panel cutout dimensions



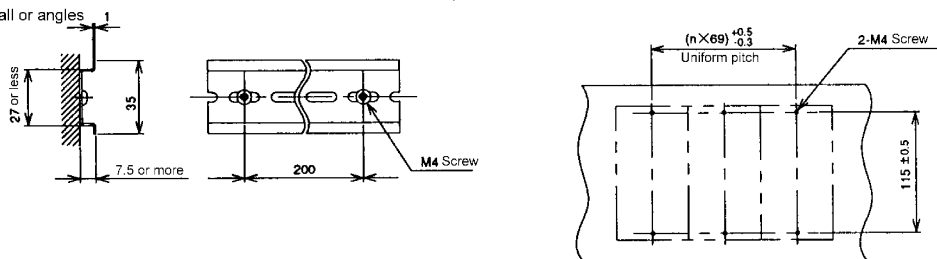
1	2
	3
4	5
	6
7	8
9	10

Terminal layout

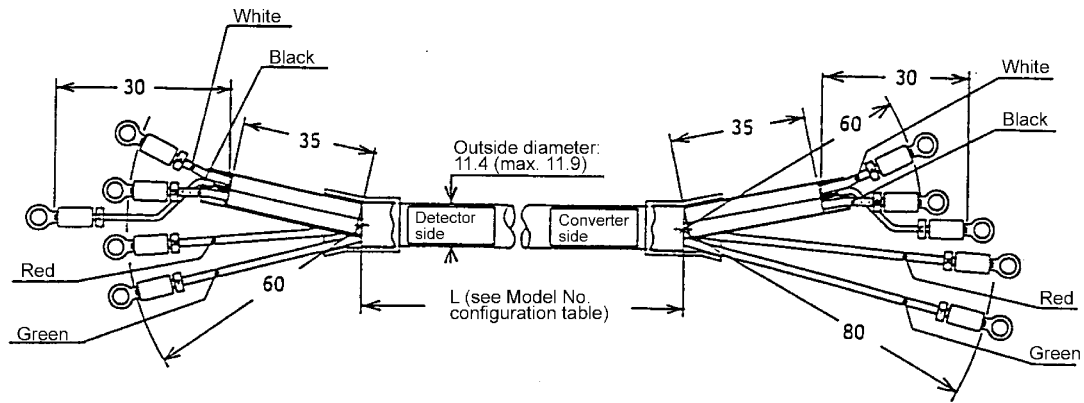
DIN Rail mount drawing



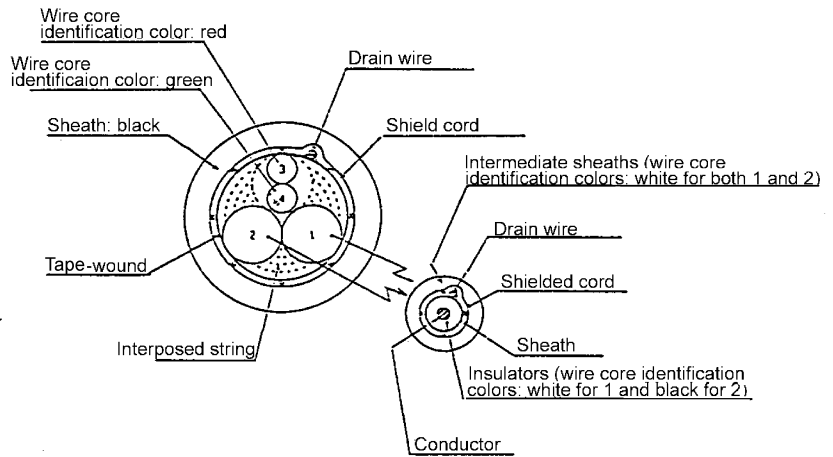
Wall or angles



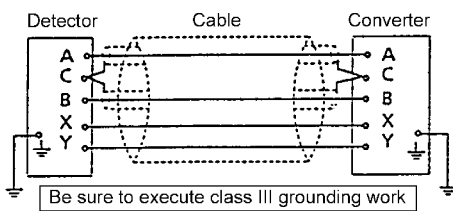
Special cable model SMC11 for separate type



Cable cross-section



Connection diagram



Standard specifications

Four-core shielded cable (outside diameter of 11.4mm)
For details, refer to the cross-section drawing.

Wire terminal : for M4
Weight : approx. 1.8kg/10m

CODE in additional specifications	Cable length L
02	2m
03	3m
04	4m
05	5m
10	10m
15	26m
20	20m
30	30m
30	40m
50	50m

Combination with attachments



SMT3000 GE

4-20mA DC
or pulse



Multi-panel meter PCM13

- Preset counter function
- Momentary/integrated flow rate display
- Alarm issuing function
- Distributor function
- Isolation output, etc.

4-20mA DC



Universal indicating alarm PCA13

- Alarm output function
- Input/Output scaling function
- Isolation output

4-20mA DC
or pulse



Integrating report printer TPG/TPM

- Automatic printing of daily, monthly, and annual reports
- Calendar and clock function
- Alarm output function
- Resetting function
- Distributor function

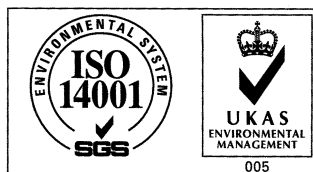
Yamatake Corporation

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Certificate No. Q17862



Certificate No. E8318
For Shonan Factory

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