



Versatile and inexpensive Coriolis Flowmeter

# VR<sub>mass</sub>

Transmitter : EV9201

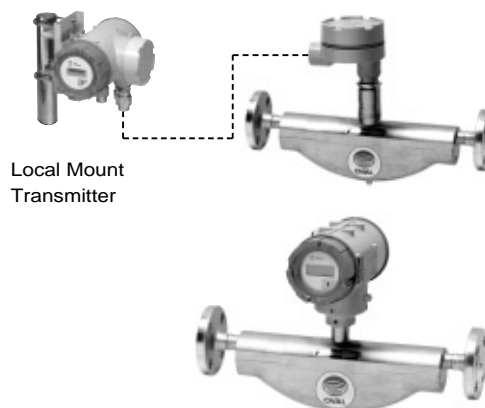
GENERAL SPECIFICATION  
GS.No.GBN061E-6

## ■ GENERAL

The VR<sub>mass</sub> is a user-friendly general-purpose Coriolis mass flowmeter that measures the mass flow directly. Backed by OVAL's accumulated sensing technology combined with the latest electronic know-how, it offers a high price/performance ratio and accurate mass flowmetering for a broad range of industrial and laboratory applications.

## ■ FEATURES

1. The sensor assembly is all welded stainless steel double-tube construction.  
Long service life is attributed to the absence of moving parts.
2. You can reconfigure transmitter parameters using a finger touch on the touch panel.
3. Easy to clean. When installed in a vertical run, it drains of itself.
4. Compact design reduces piping space requirements.
5. Absence of moving parts justifies its use for long life and ease of handling.
6. Communication interface is standard with all models.
7. Explosionproof configuration permits installation in a hazardous location.



Local Mount  
Transmitter

## ■ GENERAL SPECIFICATIONS

### ● Sensor unit

| Item                         |                         | Description  |              |              |            |                           |
|------------------------------|-------------------------|--|--------------|--------------|------------|---------------------------|
| Combined sensor model        |                         | CV006  | CV010        | CV015        | CV025      | CV050                     |
| Nominal size                 |                         | 10mm or 1/2"   | 15mm or 1/2" | 15mm or 1/2" | 25mm or 1" | 40mm or 1-1/2" 50mm or 2" |
| Materials                    | Wetted                  | SUS316L  |              |              |            |                           |
|                              | Housing                 | SUS304   |              |              |            |                           |
| Process connection           |                         | JIS 10, 20, 30K, ANSI/JPI 150, 300 RF, Ferrule   |              |              |            |                           |
| Applicable fluid             |                         | Liquid   |              |              |            |                           |
| Density range                |                         | 0.3 to 2.0g/mL   |              |              |            |                           |
| Temp. Range                  | Non-explosionproof type | Integrally mounted type : -25 to +125°C Separately mounted type : -40 to +125°C                          |              |              |            |                           |
|                              | Explosionproof type     | -20 to +125°C  |              |              |            |                           |
| Max. Operating pressure      |                         | 7.9MPa max. (at room temp.) Depends on process connection press. rating as well as temp./press. ratings. |              |              |            |                           |
| Flow direction               |                         | Forward flow only  |              |              |            |                           |
| Explosionproof configuration |                         | Depends on transmitter ratings.  |              |              |            |                           |

※ : Compliance with high pressure gas regulations is not applicable.

### ● Transmitter

| Item                                |             | Description  |
|-------------------------------------|-------------|--|
| Mode                                |             | EV9201   |
| Rangeability                        | Flowrate    | See general performance table (page 2).  |
|                                     | Temperature | Integrate type : -25 to +125°C Separate type : -40 to +125°C (-20 to +125°C in the Explosionproof. model)  |
| Power supply                        |             | 85 to 264VAC 50/60Hz or 20 to 30VDC  |
| Power consumption                   |             | Max. 25VA  |
| Ambient temperature                 |             | -20 to +50°C (Without dew condensation)  |
| Transmission length (separate type) |             | Max. 5m (exclusive cable used)   |
| Explosionproof configuration        |             | Combined explosionproof [Exd (ib) II BT3]  |
| Dust and waterproof configuration   |             | IP65   |
| Mounting                            |             | Integrally or separately mounted   |
| Display                             |             | 8-digit (7-segment) LCD display  |
| Weight                              |             | 4.6kg approx.(5.8kg approx., separate type)  |
| Communication interface             |             | Bell 202   |
| Status input                        |             | Remote zero or optional feature/contact-closure input (Form "a" contact)<br>Voltage pulse "0:" 1.5V max. "1:" 15V min.<br>Output impedance 2.2kΩ |
| Pulse output                        |             | Open collector output (10V min. to 30V max. 50mA DC)<br>FS: 0.1 to 10000Hz   |
| Analog output                       |             | 4 to 20mA DC (max. load 600Ω)<br>2 outputs from instant. flowrate (mass) and temp.<br>Additional damping: 0 to 200 sec.                          |
| Status output                       |             | Open collector output (Normal: ON Error: OFF)<br>Select one from error, flow direction, or hi/low alarm.   |
| Drive control voltage output        |             | DC voltage output (testing output)   |

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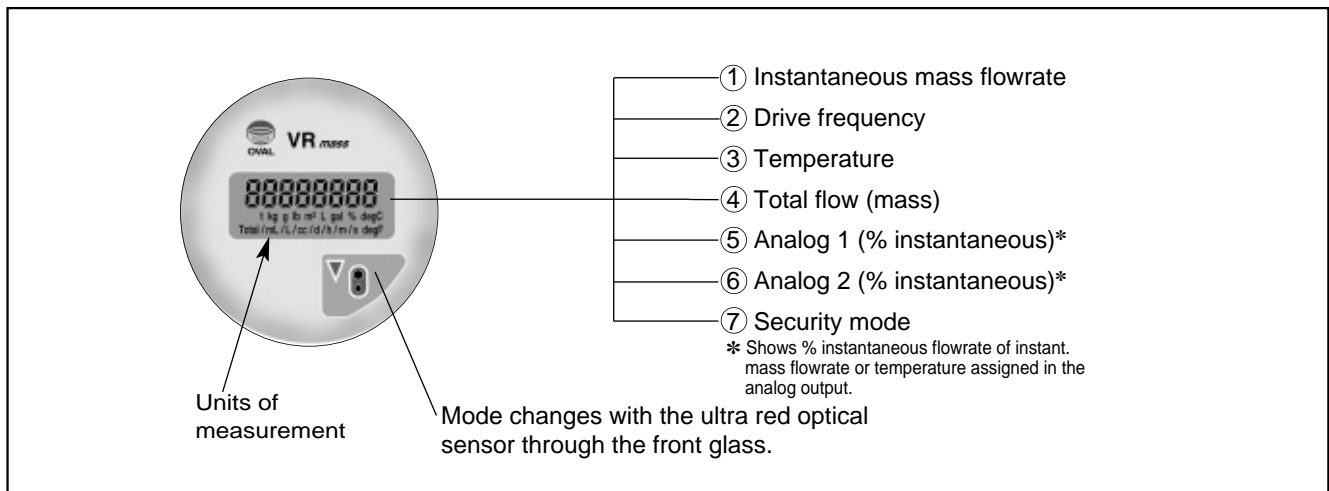
■ GENERAL PERFORMANCE

| Item  |                                | Description  |       |       |       |       |
|---|--------------------------------|--|-------|-------|-------|-------|
| Sensor model                                    |                                | CV006  | CV010 | CV015 | CV025 | CV050 |
| Flow range                                      | Allowable max. flowrate (kg/h) | 1200   | 3840  | 9600  | 28800 | 96000 |
|   | Max. service Flowrate,(kg/h)   | 600  | 1920  | 4800  | 14400 | 48000 |
|   | Min. Flowrate, (kg/h)          | 24   | 76.8  | 192   | 576   | 1920  |
|   | Min. Flow range, (kg/h)        | 60   | 192   | 480   | 1440  | 4800  |
| About flow range                                |                                | Min. flowrate: Down to 1/25 of max. service flowrate<br>Max. service flowrate: With water, a flowrate with 0.1MPa pressure loss<br>Use within max. service flowrate in normal use.<br>Max. allowable flowrate: Max. serviceable flowrate (twice the max. service flowrate)<br>Use within the conditions free from cavitation and flashing. |       |       |       |       |
| Pressure loss (Water: at max. service flowrate) |                                | 0.1MPa approx.   |       |       |       |       |

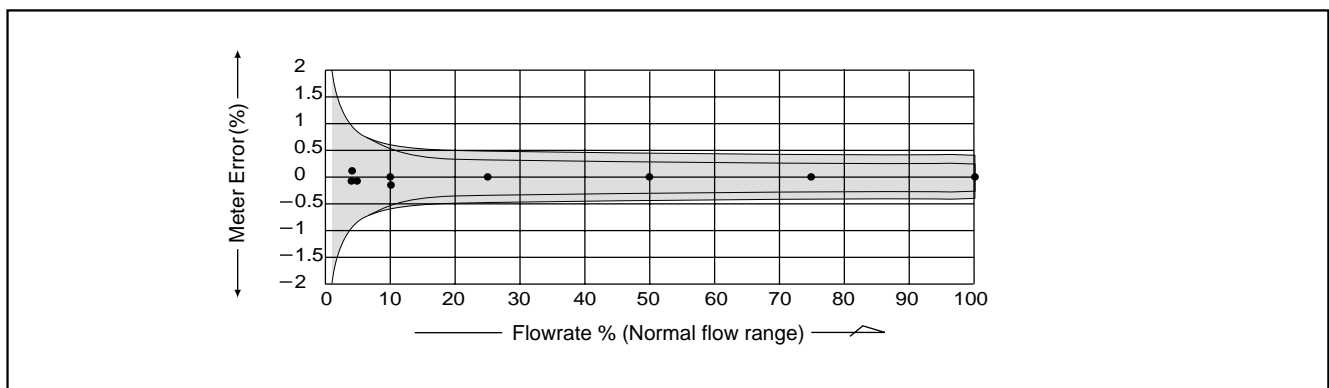
| Item              |                         | Description                       |
|-------------------|-------------------------|-----------------------------------|
| Transmitter model |                         | EV9201                            |
| Mass flowrate     | Factory calib. accuracy | ±0.4%±zero stability error*       |
|                   | Reproducibility         | ±0.2%±1/2 zero stability error*   |
|                   | Zero stability          | 0.02% of max. service flowrate    |
| Temp. accuracy    |                         | ±1°C±0.2% of RD                   |
| Analog accuracy   |                         | ±0.1% of the accuracy above of FS |

$$* \text{ Zero stability error} = \frac{\text{Zero stability (kg/min.)} \times 100\%}{\text{Flowrate (kg/min.) at measurement}} \times 100\%$$

■ DISPLAY

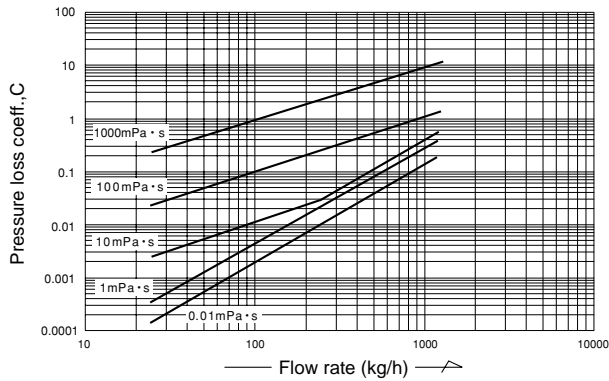


■ METER ERROR

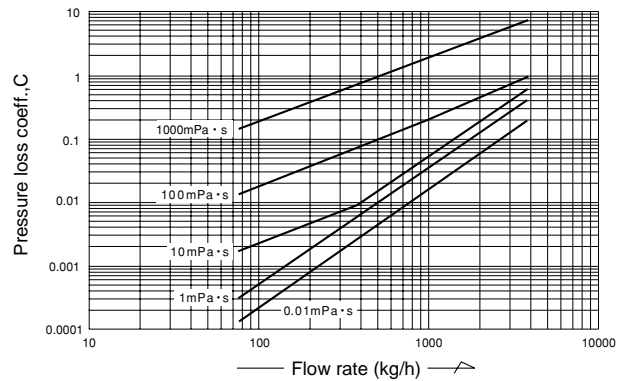


■ PRESSURE LOSSES

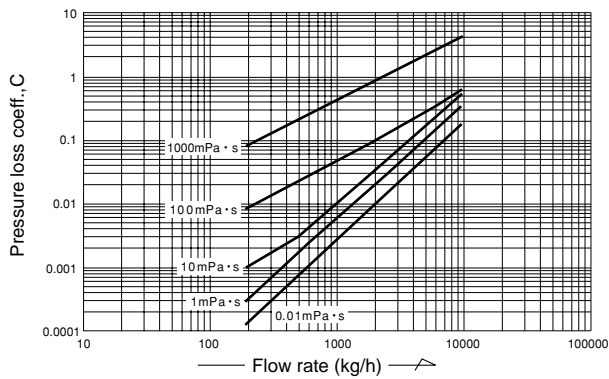
CV006



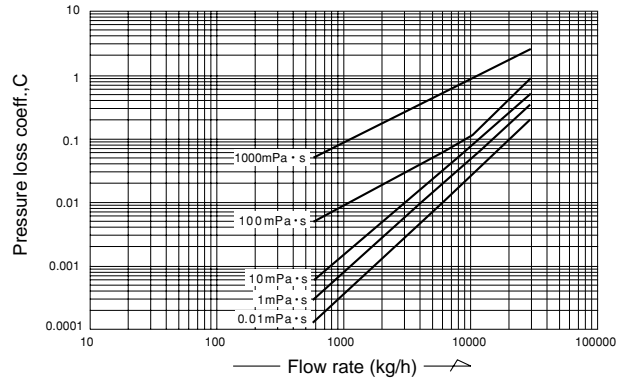
CV010



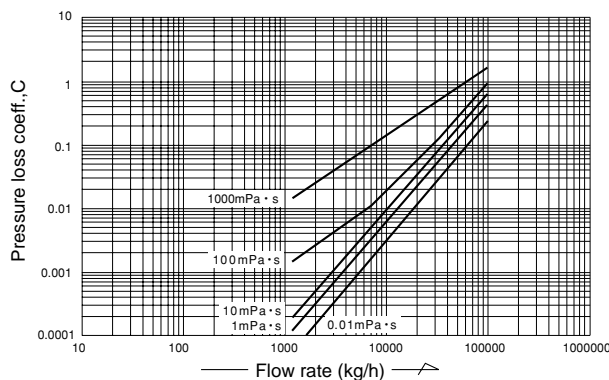
CV015



CV025



CV050



**How to determine pressure loss**

1. Find the pressure loss factor C from flowrate (kg/h) and viscosity (mPa·s) of parameter. Dividing the obtained value C by specific gravity d (1 for water) gives the pressure loss. That is,

$$\Delta P = \frac{C}{d} \text{ (MPa)}$$

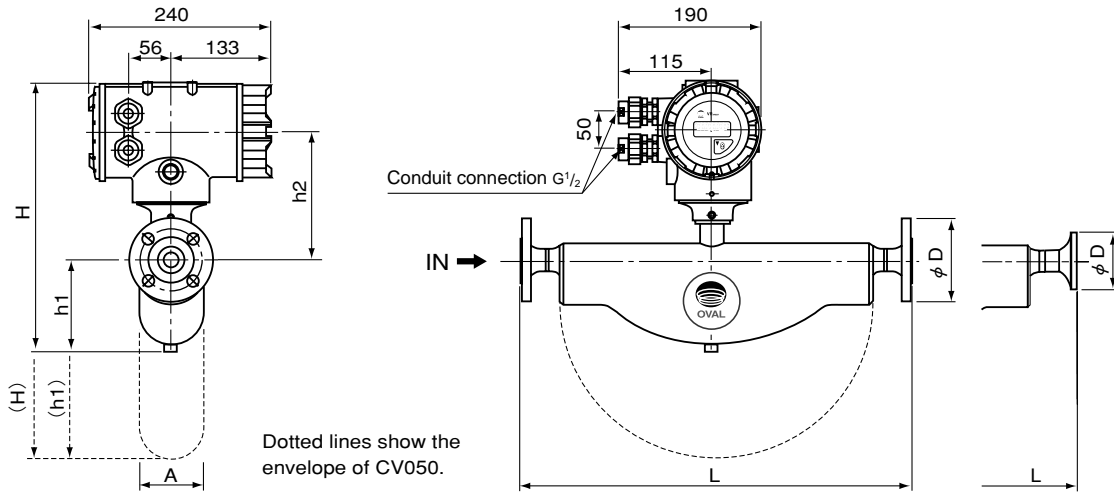
2. For high viscosity liquids not shown in these graphs, Calculate the pressure loss by the following formula:

$$\Delta P_2 = C \times \frac{\mu_2}{\mu_1} \times \frac{1}{d}$$

- where  $\Delta P_2$ : Pressure loss of high viscosity liquid (MPa)  
 $\mu_2$ : Viscosity of high-viscosity liquid (mPa·s)  
 d: Specific gravity of high-viscosity liquid (1 for water)  
 $\mu_1$ : Max. viscosity shown in the graph (mPa·s)  
 C: Pressure loss factor found from the max. viscosity curve at a given flow rate (kg/h).

■ **OUTLINE DIMENSIONS** [Unit in mm]

● **Transmitter Integral type**

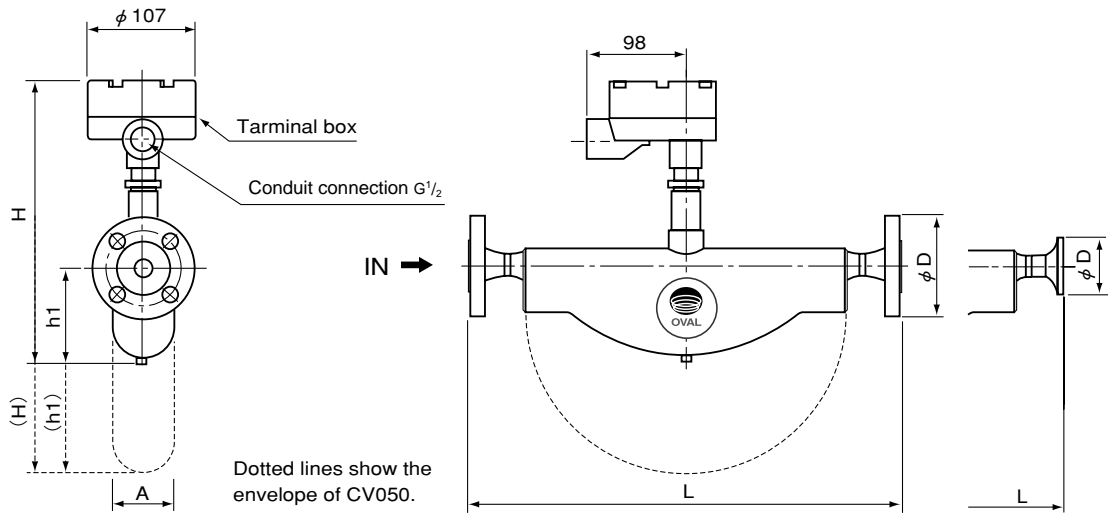


| Model  | Flanged connection |     |     |              |     |     |     |     |     |     |             | Ferrule             |     |      | Weight (kg) |
|--------|--------------------|-----|-----|--------------|-----|-----|-----|-----|-----|-----|-------------|---------------------|-----|------|-------------|
|        | JIS 10 K           |     |     | ANSI/JPI 150 |     |     | H   | h1  | h2  | A   | Weight (kg) | Connection          | L   | øD   |             |
|        | Nominal size       | L   | øD  | Nominal size | L   | øD  |     |     |     |     |             |                     |     |      |             |
| CV006  | 10                 | 343 | 90  | 1/2"         | 369 | 89  | 342 | 94  | 183 | 59  | 8.3         | 10A                 | 333 | 34   | 6.2         |
| CV010  | 15                 | 380 | 95  | 1/2"         | 406 | 89  | 339 | 94  | 180 | 59  | 8.6         | 15A                 | 380 | 34   | 7.1         |
| CV015  | 15                 | 486 | 95  | 1/2"         | 512 | 89  | 430 | 168 | 196 | 91  | 12.6        | 15A                 | 476 | 34   | 10.9        |
| CV025  | 25                 | 569 | 125 | 1"           | 601 | 108 | 425 | 175 | 184 | 91  | 15.2        | 25S (ISO), IDF 1S   | 559 | 50.5 | 12.1        |
| CV050A | 40                 | 626 | 140 | 1-1/2"       | 660 | 127 | 576 | 323 | 187 | 125 | 33.8        | 38S (ISO), IDF 1.5S | 606 | 50.5 | 30.3        |
| CV050B | 50                 | 626 | 155 | 2"           | 663 | 152 | 576 | 323 | 187 | 125 | 34.2        | 51S (ISO), IDF 2S   | 606 | 64   | 30.3        |

※ : Irrespective of flange rating, a flange thickness having a higher rating is selected as long as the flange O.D. and bolt holes remain the same.

■ OUTLINE DIMENSIONS [Unit in mm]

● Transmitter Separate Type

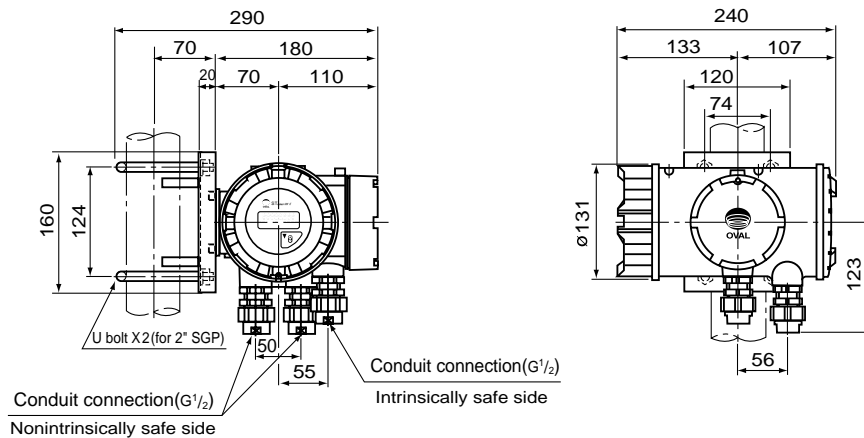


| Model  | Flanged connection |     |     |              |     |     |     |     |     | Weight (kg) |
|--------|--------------------|-----|-----|--------------|-----|-----|-----|-----|-----|-------------|
|        | JIS 10 K           |     |     | ANSI/JPI 150 |     |     | H   | h1  | A   |             |
|        | Nominal size       | L   | φD  | Nominal size | L   | φD  |     |     |     |             |
| CV006  | 10                 | 343 | 90  | 1/2"         | 369 | 89  | 301 | 94  | 59  | 4.7         |
| CV010  | 15                 | 380 | 95  | 1/2"         | 406 | 89  | 298 | 94  | 59  | 5.0         |
| CV015  | 15                 | 486 | 95  | 1/2"         | 512 | 89  | 389 | 168 | 91  | 9.0         |
| CV025  | 25                 | 569 | 125 | 1"           | 601 | 108 | 384 | 175 | 91  | 11.6        |
| CV050A | 40                 | 626 | 140 | 1-1/2"       | 660 | 127 | 535 | 323 | 125 | 30.2        |
| CV050B | 50                 | 626 | 155 | 2"           | 663 | 152 | 535 | 323 | 125 | 30.6        |

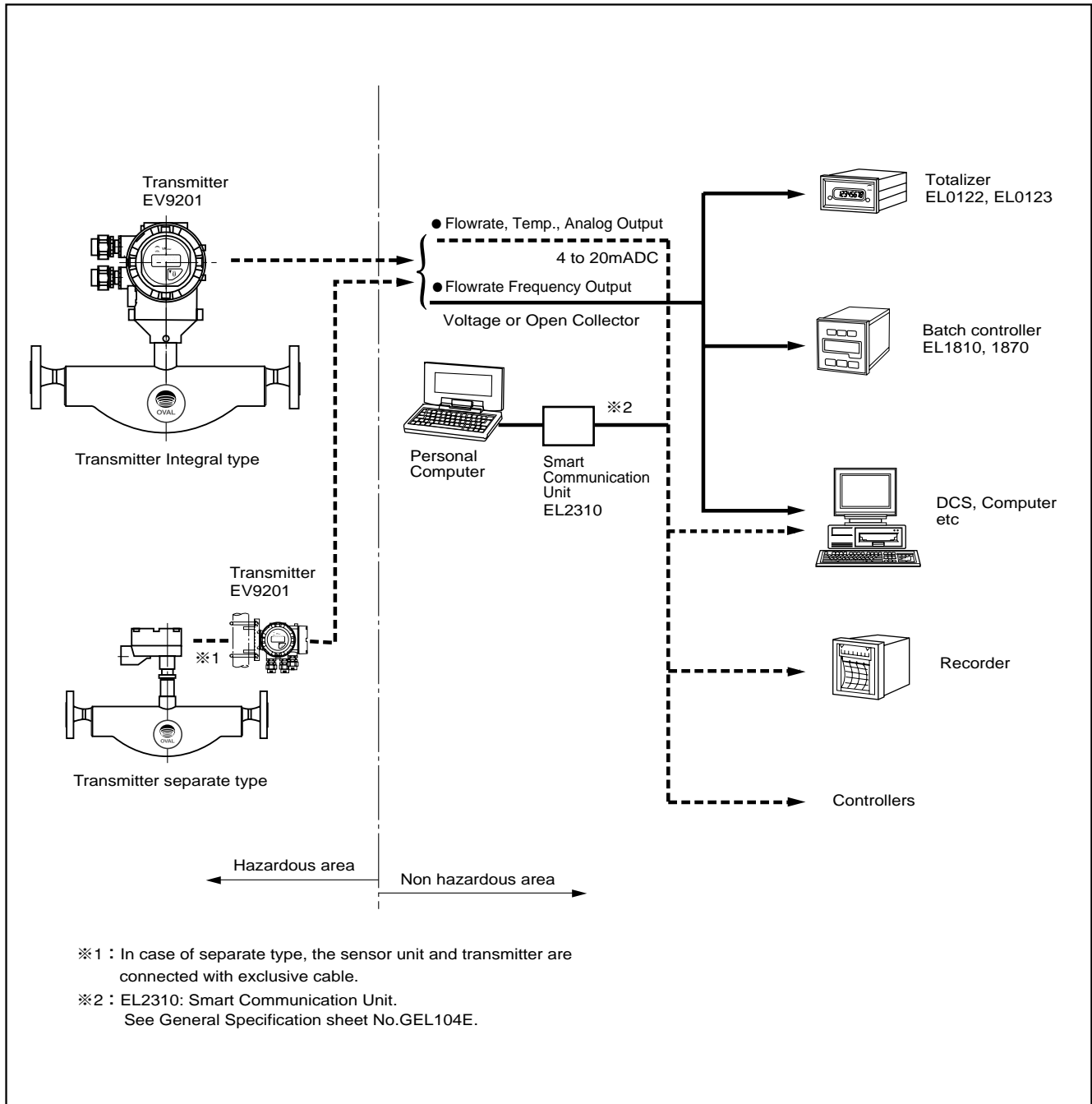
| Connection          | Ferrule |      | Weight (kg) |
|---------------------|---------|------|-------------|
|                     | L       | φD   |             |
| 10A                 | 333     | 34   | 2.6         |
| 15A                 | 380     | 34   | 3.5         |
| 15A                 | 476     | 34   | 7.3         |
| 25S (ISO), IDF 1S   | 559     | 50.5 | 8.5         |
| 38S (ISO), IDF 1.5S | 606     | 50.5 | 26.7        |
| 51S (ISO), IDF 2S   | 606     | 64   | 26.7        |

※ : Irrespective of flange rating, a flange thickness having a higher rating is selected as long as the flange O.D. and bolt holes remain the same.

Local Mount Type Transmitter  
<Stanchion Type>

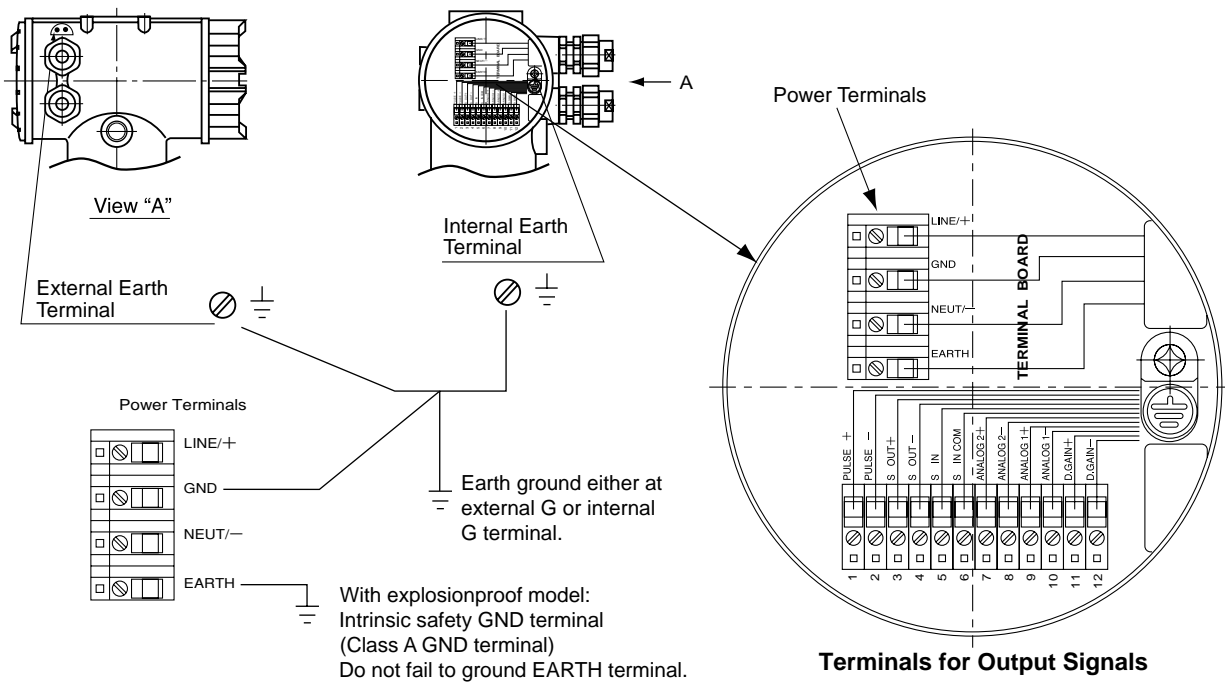


■ HOOKUP WITH RECEIVING INSTRUMENTS



■ WIRING CONNECTIONS WITH SOPHISTICATED TYPE EV9201

● Transmitter Integral Type



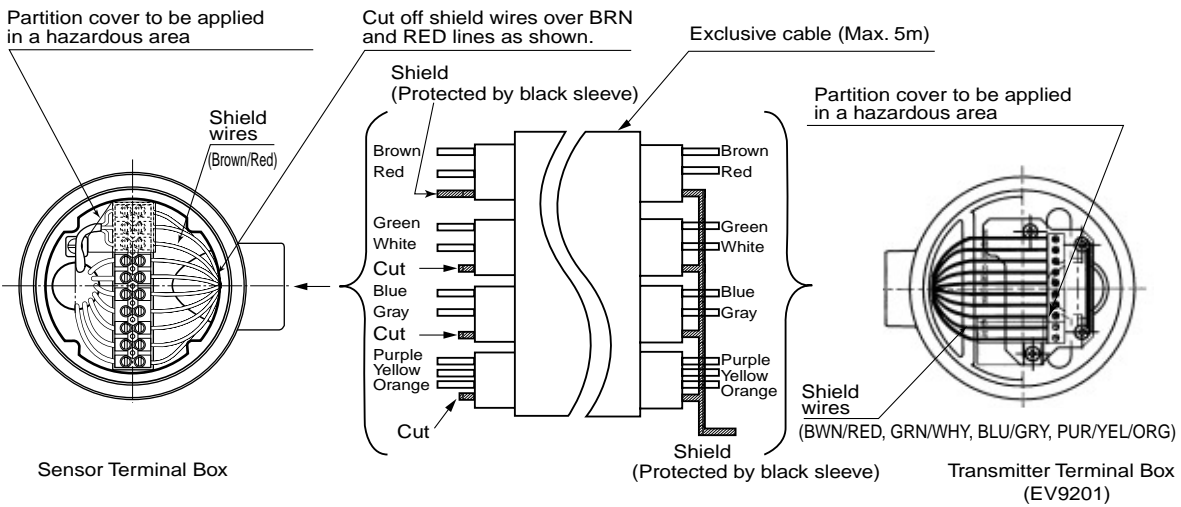
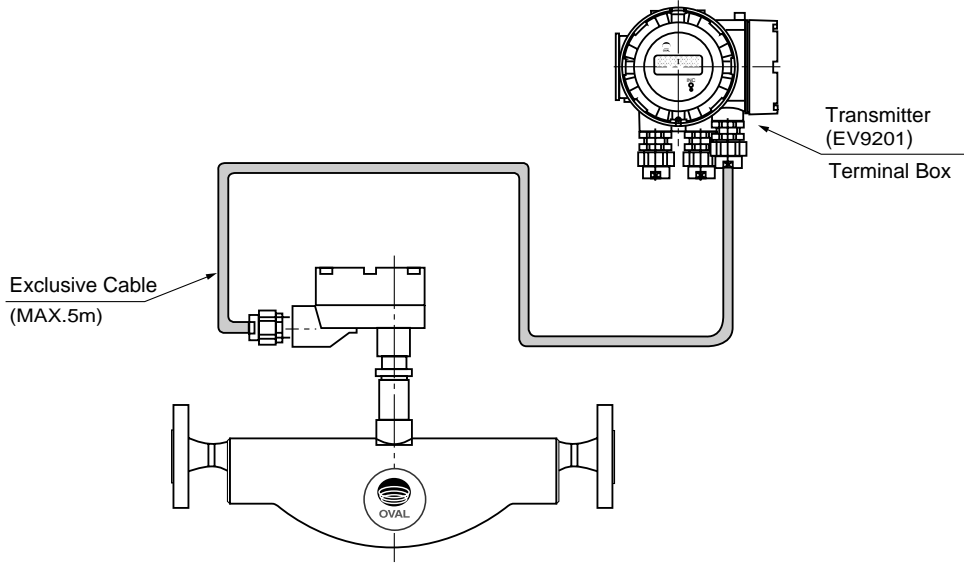
● Remote Output Signal Connection Terminals

| Item          | Terminal No. | Label    | Description                           | Remarks   |                     |  |
|---------------|--------------|----------|---------------------------------------|---|---------------------|--|
| Output Signal | 1            | PULSE +  | Pulse output                          | 1. Use shielded twisted pairs AWG24-16 for output wiring.<br>2. Max. load resistance is 600Ω for analog output 1 and 2.<br>3. Frequency output (voltage pulse) transmission length is<br>Max. 10m (at 10kHz)<br>Max. 100m (at 1kHz)<br>Max. 1km (at 100Hz). |                     |  |
|               | 2            | PULSE -  |                                       |   |                     |  |
|               | 3            | S OUT +  | Status output, Open collector output  |   |                     |  |
|               | 4            | S OUT -  | Normal: ON; Abnormal: OFF             |   |                     |  |
|               | 5            | S IN     | Status input (Form "a" contact input) |   |                     |  |
|               | 6            | S IN COM |                                       |   |                     |  |
|               | 7            | ANALOG2+ | Analog output 2                       |   |                     |  |
|               | 8            | ANALOG2- |                                       |   |                     |  |
|               | 9            | ANALOG1+ | Analog output 1                       |   |                     |  |
|               | 10           | ANALOG1- |                                       |   |                     |  |
|               | Power        |          | LINE/+                                |   | Power (in DC power) | Do not fail to ground GND and EARTH terminals. |
|               |              |          | GND                                   |   | Earth ground        |  |
|               |              | NEUT/-   | Power                                 |   |                     |  |
|               |              | EARTH    | Class "A" earth ground work           |   |                     |  |

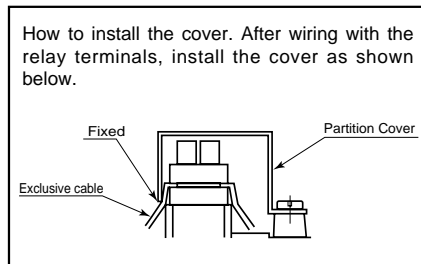
● Terminals to Sensor

| Item                  | Cable Color | Label    | Description   | Remarks |
|-----------------------|-------------|----------|---|---------|
| Sensor to Transmitter | Black       | SHIELD   | Bundle BWN/RED, GRN/WHT, BLU/GRY, ORG/PUR/YEL shield wires. |         |
|                       | Brown       | (+)DRIVE | Flow tube drive output                                      |         |
|                       | Red         | (-)DRIVE |   |         |
|                       | Orange      | TEMP B   | Temp. Input   |         |
|                       | Yellow      | TEMP b   | Temp. Input   |         |
|                       | Green       | (+)LPO   | Left position pickoff input                                 |         |
|                       | Blue        | (+)RPO   | Right position pickoff input                                |         |
|                       | Purple      | TEMP A   | Temp. Input (Inner side)                                    |         |
|                       | Gray        | (-)RPO   | Right position pickoff input                                |         |
|                       | White       | (-)LPO   | Left position pickoff input                                 |         |

● Transmitter Separate Type



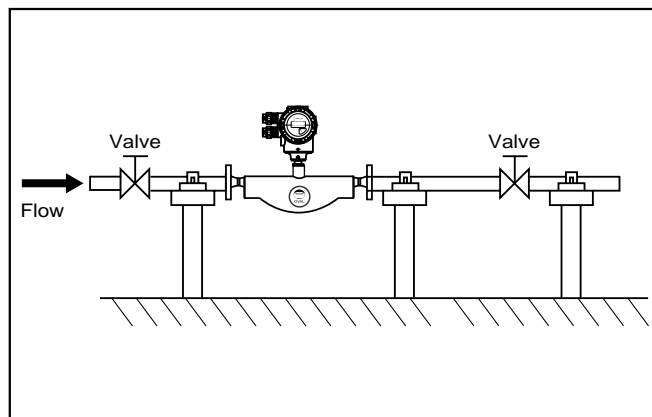
- NOTES
1. Do not fail to use exclusive cable.
  2. Shield wire preparation
    - (1) Transmitter end: Bundle the shield wires corresponding with brown/red, green/white, blue/grey, purple/yellow/orange and slip a black sleeve over them as shown in the figure, exercising care to avoid potential contact with the housing and other conductive parts.
    - (2) Sensor end: Slip a black sleeve over the shield wires corresponding with brown/red pair cable as shown in the figure, exercising care to avoid potential contact with the housing and other conductive parts. Clip all other shield wires.



**■ STANDARD INSTALLATION**

**1. Typical Installation (See figure at right.)**

- 1) Avoid pipeline stresses on the VR<sub>mass</sub>.
- 2) The VR<sub>mass</sub> should be supported near and between connections to the process pipelines.
- 3) Avoid supporting the VR<sub>mass</sub> body directly.
- 4) Pipeline should be arranged such that the VR<sub>mass</sub> is constantly filled with the process fluid. Avoid, however, to install it in a pocket where slurries may build up.
- 5) Provide a valve downstream of the meter to allow zeroing by obtaining a true zero flow. We recommend to provide another valve upstream of the meter for servicing or maintenance.



**2. Precautions at Installation**

- 1) Locate the VR<sub>mass</sub> at least one meter from large transformers, motors, or other sources of electromagnetic induction. Also avoid installation near the sources of excessive vibration, such as motors and pumps.
- 2) If it is desired to make a measurement of a process fluid requiring heat retention, heat trace may be applied directly to the sensor body. Heat trace should be held below 125°C. Explosionproof models require the temperature to be held below their maximum allowable levels.

- 3) The sensor unit is of gastight construction. To prevent dew condensation inside in a low temperature application, it is filled with argon gas. For this reason, avoid dropping or giving it impact shocks.
- 4) In a horizontal run, install the sensor unit with the transmitter up as shown in the figure.
- 5) A control valve should be located downstream of the VR<sub>mass</sub>.

In an arrangement where cavitation may possibly take place, locate it at least 5 meters away.

**3. Prevention of Cavitation**

Cavitation if it takes place during measurement causes loss of meter accuracy, or results in dispersion of obtained measurements. For these reasons, maintain line pressure high enough to prevent cavitation upstream and downstream of the meter during measurement.

$$P_d = 3\Delta P + 1.3P_v \text{ (MPa[absolute])}$$

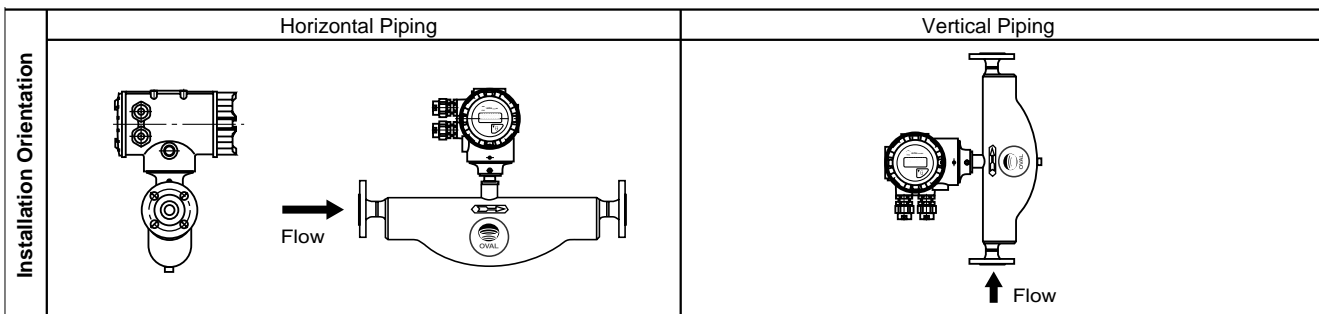
P<sub>d</sub>: Downstream pressure (MPa[absolute])

ΔP: Pressure loss across the meter (MPa)

P<sub>v</sub>: Steam pressure of the process fluid at measurement (MPa[absolute])

**4. Physical Orientation**

May be installed in a horizontal or vertical line. Physical orientation in Horizontal Piping is standard in liquid service.



Do not forget to specify the physical orientation when you order.

## ■ PRODUCT CODE EXPLANATION

### ● Sensor Unit

| Item                     | Product Code |   |   |   |   |   |   |   |   |   |   |   | Description |                    |           |                            |
|--------------------------|--------------|---|---|---|---|---|---|---|---|---|---|---|-------------|--------------------|-----------|----------------------------|
|                          | ①            | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ |             |                    |           |                            |
| Model                    | C            | V |   |   |   |   |   |   |   |   |   |   |             | VRmass             |           |                            |
| Nom. size                |              |   |   |   |   |   |   |   |   |   |   |   |             | JIS                | ANSI, JPI | Ferrule                    |
|                          | 0            | 0 | 6 |   |   |   |   |   |   |   |   |   |             | 10mm               | 1/2"      | Ferrule 10A                |
|                          | 0            | 1 | 0 |   |   |   |   |   |   |   |   |   |             | 15mm               | 1/2"      | Ferrule 15A                |
|                          | 0            | 1 | 5 |   |   |   |   |   |   |   |   |   |             | 15mm               | 1/2"      | Ferrule 15A                |
|                          | 0            | 2 | 5 |   |   |   |   |   |   |   |   |   |             | 25mm               | 1"        | Ferrule 25 (ISO), IDF1S    |
|                          | 0            | 5 | 0 |   |   |   |   |   |   |   |   |   |             | 40mm               | 1•1/2"    | Ferrule 38 (ISO), IDF 1.5S |
|                          | 0            | 5 | 0 |   |   |   |   |   |   |   |   |   |             | 50mm               | 2"        | Ferrule 51 (ISO), IDF2S    |
| Construction             | A            | - |   |   |   |   |   |   |   |   |   |   |             | CV050 (40mm)       |           |                            |
|                          | B            | - |   |   |   |   |   |   |   |   |   |   |             | CV050 (50mm)       |           |                            |
|                          | C            | - |   |   |   |   |   |   |   |   |   |   |             | Local installation |           |                            |
| Material                 |              |   | S | S | - |   |   |   |   |   |   |   |             | SUS316L            |           |                            |
| Connection type          |              |   |   |   |   |   |   |   |   |   |   |   |             | 3                  |           | Flange connection          |
|                          |              |   |   |   |   |   |   |   |   |   |   |   |             | 4                  |           | Ferrule connection         |
| Connection standard      |              |   |   |   |   |   |   |   |   |   |   |   |             | 0                  |           | In case of without flange  |
|                          |              |   |   |   |   |   |   |   |   |   |   |   |             | 1                  |           | JIS                        |
|                          |              |   |   |   |   |   |   |   |   |   |   |   |             | 2                  |           | ANSI                       |
|                          |              |   |   |   |   |   |   |   |   |   |   |   |             | 3                  |           | JPI                        |
|                          |              |   |   |   |   |   |   |   |   |   |   |   |             | 4                  |           | Ferrule                    |
| Pressure rating          |              |   |   |   |   |   |   |   |   |   |   |   |             | 0                  |           | In case of without flange  |
|                          |              |   |   |   |   |   |   |   |   |   |   |   |             | 1                  |           | 10K                        |
|                          |              |   |   |   |   |   |   |   |   |   |   |   |             | 2                  |           | 20K, 150Lb                 |
|                          |              |   |   |   |   |   |   |   |   |   |   |   |             | 3                  |           | 30K, 300Lb                 |
| Transmitter Installation |              |   |   |   |   |   |   |   |   |   |   |   |             | K                  |           | Integrally mounted         |
|                          |              |   |   |   |   |   |   |   |   |   |   |   |             | R                  |           | Separately mounted         |

### ● Transmitter

| Item                  | Product Code |   |   |   |   |   | Supplementary Code |   |   |   |   |   | Description |                         |   |   |
|-----------------------|--------------|---|---|---|---|---|--------------------|---|---|---|---|---|-------------|-------------------------|---|---|
|                       | ①            | ② | ③ | ④ | ⑤ | ⑥ | ⑦                  | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ |             |                         |   |   |
| Model                 | E            | V | 9 | 2 | 0 | 1 | -                  |   |   |   |   |   |             | Local mount transmitter |   |   |
| Type of Construction  |              |   |   |   |   |   |                    |   |   |   |   |   |             | K                       |   | Integrally mounted type                                 |
|                       |              |   |   |   |   |   |                    |   |   |   |   |   |             | R                       |   | Separately mounted type                                 |
| Power supply          |              |   |   |   |   |   |                    |   |   |   |   |   |             | 6                       |   | 20 to 30 VDC  |
|                       |              |   |   |   |   |   |                    |   |   |   |   |   |             | 7                       |   | 85 to 264 VAC 50/60Hz                                   |
| Analog output         |              |   |   |   |   |   |                    |   |   |   |   |   |             | M                       | M | 2 mass flow outputs (one output inclusive)              |
|                       |              |   |   |   |   |   |                    |   |   |   |   |   |             | M                       | T | Mass flow + Temperature                                 |
|                       |              |   |   |   |   |   |                    |   |   |   |   |   |             | M                       | X | 1 Mass flow output only (voltage pulse output selected) |
| Frequency output      |              |   |   |   |   |   |                    |   |   |   |   |   |             | 1                       |   | Mass flow voltage pulse (option)                        |
|                       |              |   |   |   |   |   |                    |   |   |   |   |   |             | 3                       |   | Mass flow open collector pulse                          |
| Explosionproof rating |              |   |   |   |   |   |                    |   |   |   |   |   |             | 0                       |   | Nonexplosionproof                                       |
|                       |              |   |   |   |   |   |                    |   |   |   |   |   |             | 1                       |   | TIIS (domestic ex.) Temp. Grade T3                      |
|                       |              |   |   |   |   |   |                    |   |   |   |   |   |             | 2                       |   | ATEX (available in near future)                         |
|                       |              |   |   |   |   |   |                    |   |   |   |   |   |             | 7                       |   | NEPSI (China explosionproof)                            |

NOTE: If voltage pulse output is chosen for pulse output, analog output 2 is not serviceable; be sure to select code "X" in code No. 10.

■ PLEASE SUPPLY THE FOLLOWING INFORMATION WHEN YOU INQUIRE:

|  |  |
|--|--|
| <b>1. Process fluid</b> (※1)                       | Name_____ Sp.gr._____ Viscosity_____ Concentration_____ %  |
| <b>2. Flow range</b>                               | Max._____ Normal_____ Full scale_____ <input type="checkbox"/> kg/h <input type="checkbox"/> Other_____  |
| <b>3. Fluid temperature</b>                        | Max._____°C Normal_____°C Min._____°C  |
| <b>4. Operating pressure</b>                       | Max._____ MPa Normal_____MPa Min._____MPa  |
| <b>5. Ambient temperature</b>                      | Max._____°C Min._____°C  |
| <b>6. Fluid flow direction</b>                     | <input type="checkbox"/> Left → Right <input type="checkbox"/> Right → Left <input type="checkbox"/> Bottom → Top ( <input type="checkbox"/> Top → Bottom)                                 |
| <b>7. Nominal size</b>                             | <input type="checkbox"/> _____mm <input type="checkbox"/> _____inch  |
| <b>8. Required accuracy</b>                        | ±_____ % of reading ±_____ % of full scale   |
| <b>9. Process connection</b>                       | <input type="checkbox"/> Flanged connection(Flange rating) <input type="checkbox"/> Ferrule connection   |
| <b>10. Explosionproof</b>                          | <input type="checkbox"/> Required <input type="checkbox"/> Not required  |
| <b>11. Power supply</b>                            | Power_____V <input type="checkbox"/> AC <input type="checkbox"/> DC  |
| <b>12. Output specifications</b>                   | <input type="checkbox"/> Pulse output  |
|  | <input type="checkbox"/> Volt. pulse: [0]: 1.5V [1]: 15VDC min. Out. impedance: 2.2kΩ  |
|  | <input type="checkbox"/> Open collector: Min. 10V to Max. 30VDC, 50mA  |
|  | <input type="checkbox"/> Output frequency: Any point from 0.1 to 10000Hz at full scale   |
| <input type="checkbox"/> Analog output             | 4 to 20mA DC Max. load: 600Ω   |
|  | 2 outputs from instant. flow rate or temp.   |
| <input type="checkbox"/> Additional damping        | 0 to 200s. (variable)  |
| <b>13. Output in an error</b>                      | <input type="checkbox"/> Downscale <input type="checkbox"/> Upscale  |
| <b>14. Companion receiver</b>                      | <input type="checkbox"/> Totalizer <input type="checkbox"/> Indicator <input type="checkbox"/> Recorder <input type="checkbox"/> Flow controller <input type="checkbox"/> Batch controller |
|  | <input type="checkbox"/> Computer <input type="checkbox"/> Others  |
| <b>15. Transmission length</b>                     | Sensor unit ( _____ )m Transmitter ( _____ )m Receiving instrument   |
| <b>16. Exclusive cable length</b>                  | In case of separate mounted type _____ m (Max. 5m)   |
| <b>17. In case of a separated type transmitter</b> | <input type="checkbox"/> Stanchion type w/bracket and 2" U bolts   |
| <b>18. No. of units required</b>                   |  |
| <b>19. Application</b>                             |  |
| <b>20. Other considerations</b>                    |  |

※1 : Special fluids, such as high viscosity fluids and slurries, should be stated precisely and in detail.

The specification as of Nov., 2009 is stated in this GS Sheet. Specifications and design are subject to change without notice.

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