

**EQUO** Series

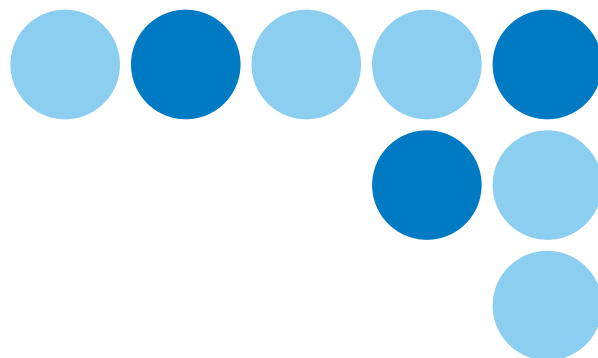
**Air Flow Sensor**

D6FZ-FGT200  
D6FZ-FGT500  
D6FZ-FGS1000

**Air Flow Station**

D6FZ-FGX21

**OMRON**



# AIR FLOW SENSOR

**It's time to visualize  
compressed air!**



Air Flow Sensor  
D6FZ-FGS1000



Air Flow Sensor  
D6FZ-FGT200  
D6FZ-FGT500



Air Flow Station  
D6FZ-FGX21

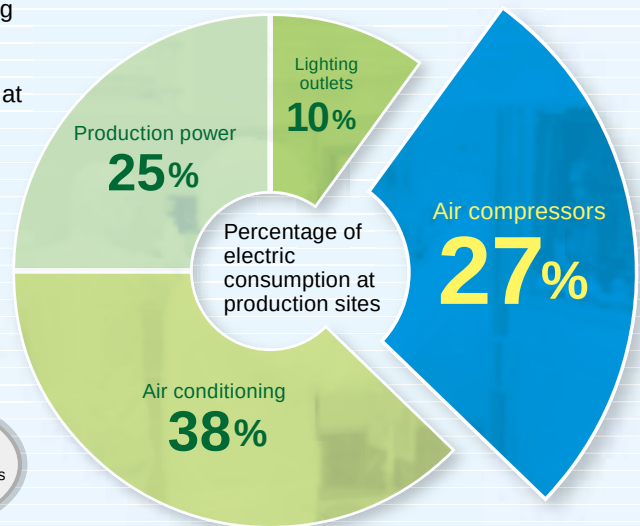
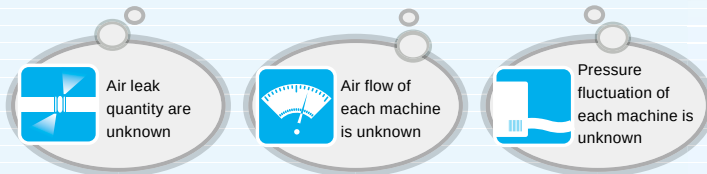
**realizing**

# Visualization of Air Flow, Pressure, Leakage quantity enable more Energy Savings in production site.

Air compressors consume a much electrical energy in production sites. Production sites, however, prioritize improving productivity, and so energy conservation for compressed air have not much progressed. To advance further energy saving at production site, "visualizing compressed air" is a major step in on-site improvements.

**Air compressors shares 27% of total electrical energy.**

Despite energy saving activity of air compressors...



Note: Shows the status of use at Omron production sites

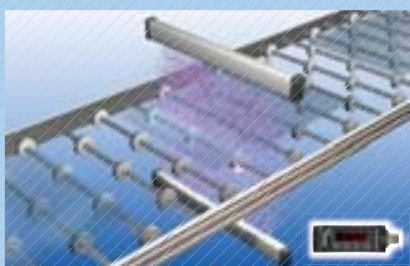
**As air is invisible, so there is much waste.**



**Increased energy conservation is possible in a variety of applications**

## Idling stop for ionizer

D6FZ-FGT



By stopping the supply of compressed air with a magnetic valve when there is no work, the quantity of compressed air usage is reduced. At the same, the flow sensor monitors the quantity of compressed air supplied to ensure that it is within a specified range. Therefore, the sensor can help maintain and improve quality.

## Flow management for molding machines

D6FZ-FGT

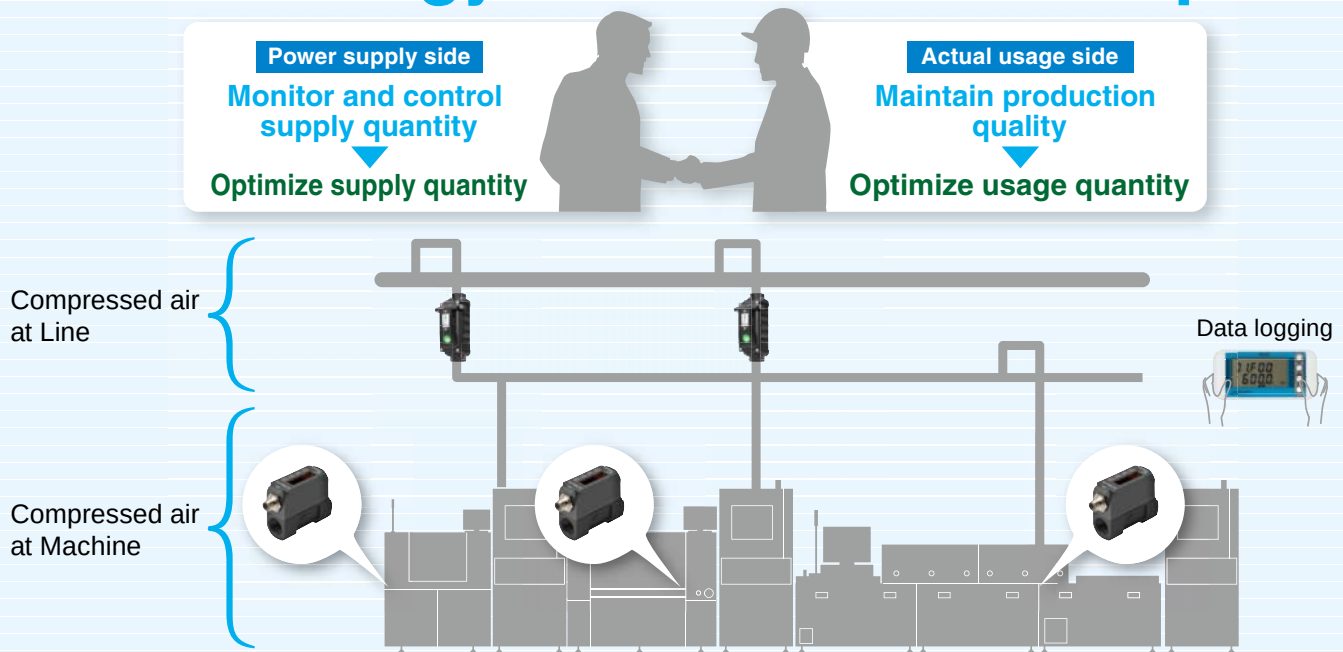
D6FZ-FGS



By prioritizing the monitoring of molding machines and other machines that use large quantity of compressed air, energy conservation can be advanced effectively.

Consequently

Require cooperation both supply side and usage side for visualization. Lead to **reduction of electric energy** or **maintenance of quality**.



Identify the waste that had previously been invisible, and further advance the energy saving of compressed air.

**Approach 1**  
**Identifying the leakage quantity**

Visualizing air leakage in non-operational time

**Approach 2**  
**Identifying the usage quantity**

Visualizing air quantity in operational time

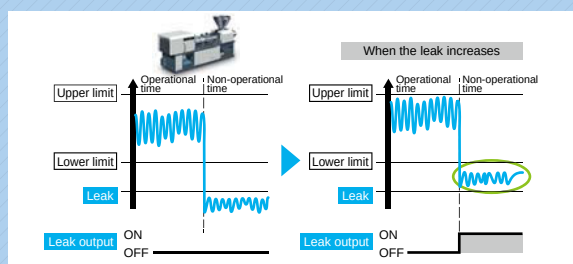
**Approach 3**  
**Identifying the excessive supply pressure**

Visualizing the pressure fluctuation in operational time

**Leakage management for machines**

D6FZ-FGT

D6FZ-FGS



By setting the leak threshold value, the proper timing for leak repairs can be identified.

**Flow and pressure management for production line**

D6FZ-FGS



By monitoring the usage quantity and pressure fluctuations for each production line, bottleneck line or machine can be identified in order to advance on-site improvements and energy conservation.

# The best product to measure compressed air at **Line**

## D6FZ-FGS1000

1  
Leakage

2  
Usage

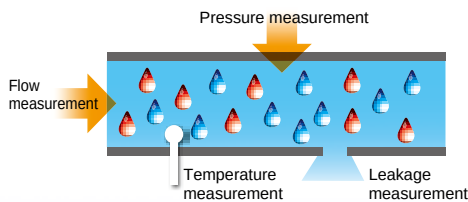
3  
Pressure

Pipe size: Rc1/2 (25A)  
(Bushing can be used to convert down to 15A)

### Multiple sensing

#### Simultaneous measurement of Leakage, usage and pressure

Equipped with multiple sensing functions  
With 1 sensor, the compressed air conditions can be identified.

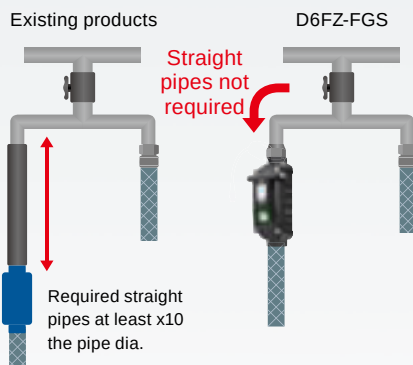


### Simple setting

#### Mountable to curved pipe or coupler

Silencer

The built-in silencer eliminates ultrasonic noise and turbulence flow. It makes installation work easy because straight pipes not required.



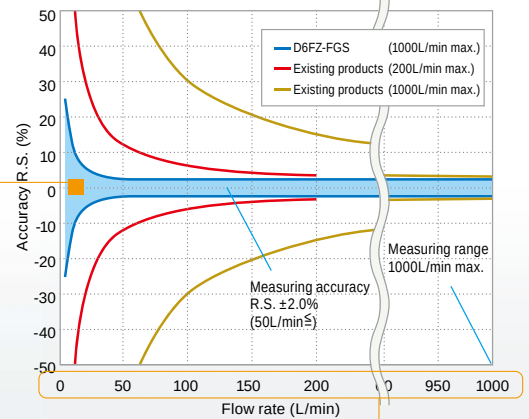
### High accuracy

#### High accuracy flow measurement

High measuring accuracy of  $\pm 2\%$  R.S. ( $50\text{L/min} \leq$ ) is achieved.

#### High accuracy

##### Flow rate measuring accuracy



\* Data is a comparison with Omron conditions  
(as of November 2012)  
Check the actual use environment before use.

#### Wide range flow measurement

Wide range

Wide measuring range of 1~1000L/min is achieved.

#### Tolerant of oil and mist

#### Ultrasonic sensor

Featuring ultrasonic sensor  
It can be installed to rusty pipe, and measured gas discharged from oil flooded compressor.

#### Main functions

- Analog output (2 outputs)
- Pulse output (2 outputs)
- RS-485 communications
- IP64
- Operation indicator
- Threshold value (peak/bottom/leak)
- Alarm hold

#### Functional comparison

|                      |                          |                      |                         |
|----------------------|--------------------------|----------------------|-------------------------|
| Flow measurement     | Leakage measurement      | Pressure measurement | Temperature measurement |
| Curved pipe mounting | Tolerant of oil and mist | Station connection   | Multi-sensor connection |



# The best product to measure compressed air at Machine

- 1 Leakage
- 2 Usage
- 3 Pressure

D6FZ-FGT200/500



200L type Pipe size: 8A(Rc1/4) 500L type Pipe size: 15A(Rc1/2)

## Easy to see

### 11 segment 8 digit LCD display

The characters are easy to recognize, and integrated flow rate can be checked with one glance.



Clear integrated flow rate



Averaging count setting

### Reversing the display

You can reverse the display direction to match the installation direction. Always use one of the specified installation directions.



Press and hold to reverse.

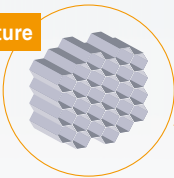
\* Note: Omron survey (as of June 2013)

## Other Features

### Flow straightener Honeycomb structure

Honeycomb structure with a high performance of flow straightening keep pressure loss low.

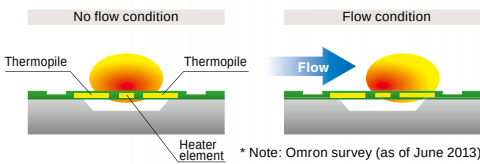
#### Honeycomb structure



## High accuracy

### High accuracy flow measurement

Using Omron's MEMS chip, the highest accuracy in the industry\* of  $\pm 2\%$  F.S. (50L/min $\leq$ ) is achieved.



### Leakage measurement

At a low flow rate (<50L/min),  $\pm 0.5\%$  F.S. high accuracy measurement is achieved. Air flow (money amount) that is discarded as leakage when machines are in non-operational time can be identified.



### Zero reset

Using the zero reset, seasonal or day/night variation in the flow rate can be identified.



Press and hold.

#### Main functions

- Analog output (1 output)
- Pulse output (2 outputs)
- RS-485 communications
- IP65
- Display
- Threshold value (peak/bottom/leak)
- Peak//Bottom hold
- Auto-tuning
- Key lock

#### Functional comparison

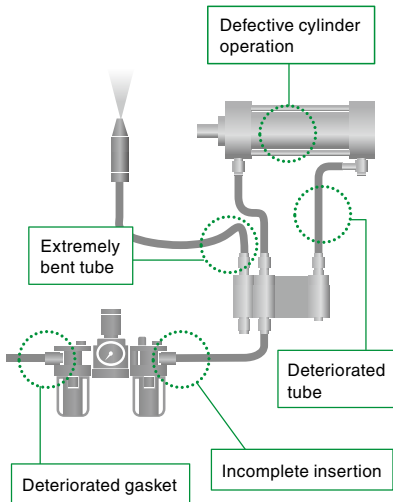
|                      |                          |                      |                         |
|----------------------|--------------------------|----------------------|-------------------------|
| Flow measurement     | Leakage measurement      | Pressure measurement | Temperature measurement |
| Curved pipe mounting | Tolerant of oil and mist | Station connection   | Multi-sensor connection |

# Energy-Saving activity examples

## Protecting the leakage

### Repair tubing and fitting against air leaks

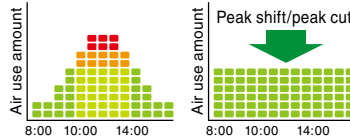
Identifying the flow rate and repairing pipes reduces the air lost to waste.



## Reducing the air quantity used

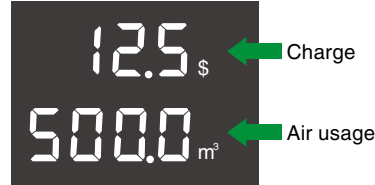
### Charging based on air usage

Management of consumption rate and charging based on usage helps to continuous activities for energy saving.



Seeing the air flow during operational time identifies the use amount

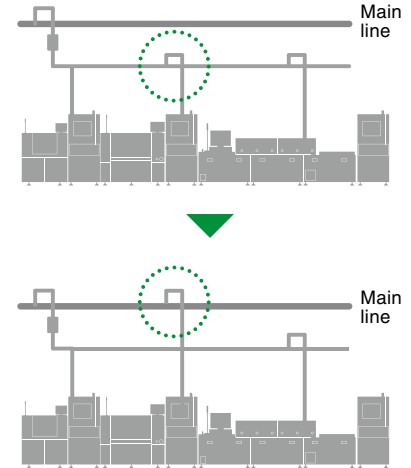
Example: Charging based on usage



## Reducing the supply pressure

### Rearranging the pipe distribution

The machine its supply pressure fluctuate widely should be changed piping as below, and then stabilize and turn down supply pressure.



# The PC Software can easily analyze Logged Data

Enables further activity for energy saving to monitor the data of Air Flow Station and analyze the data of Multi Data Viewer Light Software.

## At Production Line:

Data monitoring and storing by Air Flow Station

The Air Flow Station enables easy data logging



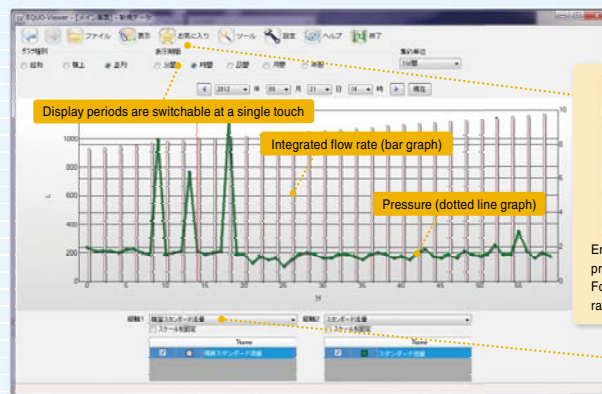
Save the data to SD card

Start data logging with a single press of a button

Free The PC software

## Multi Data Viewer Light

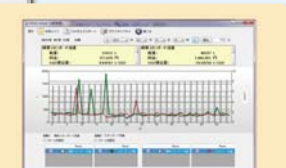
This software is suits for the display of time period, such as by minute, hour, day, etc. The integrated flow rate is displayed as a bar graph, and the momentary flow rate/pressure using a dotted line graph, so a summary can be identified at a glance.



Download the PC Software Station Utility from the following OMRON website (<http://www.fa.omron.co.jp/station-u-e>).

## In the office:

Data storing and analyzing by PC

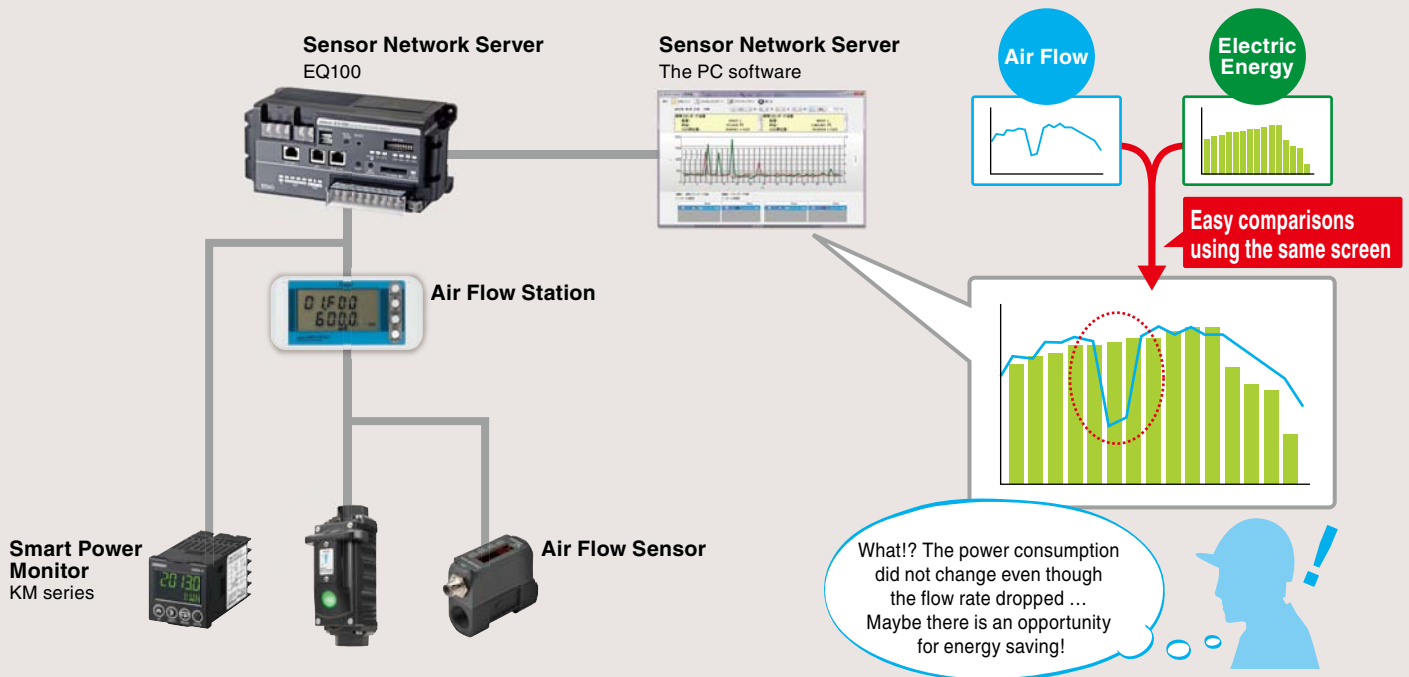


Check box enables only the desired data to be displayed

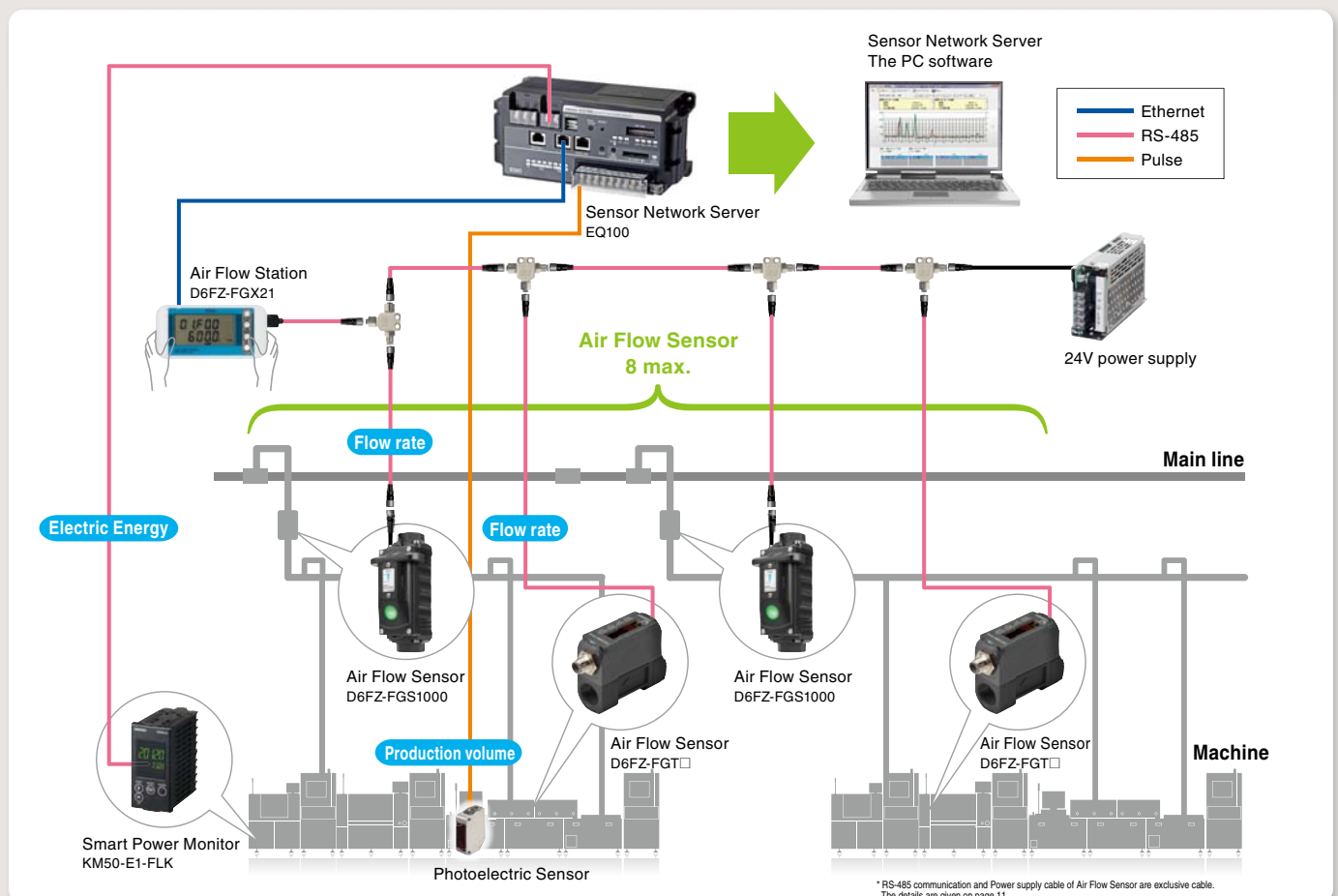


# Find the Energy Efficiency by logging the data simultaneously both electric consumption and production volume.

The results of simultaneous measurement, show the following



## ■ System layout example



## List of specifications

### Units

| Appearance                                                                         | Product name                                                                                                                                                                                                         | Model          |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
|   | Air Flow Sensor<br>(200L type)                                                                                                                                                                                       | D6FZ-FGT200    |
|   | Air Flow Sensor<br>(500L type)                                                                                                                                                                                       | D6FZ-FGT500    |
|   | Air Flow Sensor<br>(1000L type, cable length: 0.2m)                                                                                                                                                                  | D6FZ-FGS1000   |
|   | Air Flow Station<br>(Cable length 1.5m, including T-branch connector cable)                                                                                                                                          | D6FZ-FGX21     |
|  | Air Flow Sensor Set (1000L type)<br><ul style="list-style-type: none"> <li>• Air Flow Sensor (1000L type)</li> <li>• Air Flow Station</li> <li>• T-branch connector</li> <li>• Single-end wire cable (3m)</li> </ul> | D6FZ-FGS1000-S |

### Option (sold separately)

| Appearance                                                                          | Product name                                                                                                                                                   |                  |                          | Model      |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------|------------|
|  | T-branch connector                                                                                                                                             |                  |                          | D6FZ-FC02  |
|  | (Air Flow Sensor D6FZ-FGT only)<br>Mounting bracket<br><ul style="list-style-type: none"> <li>• Mounting bracket: 1</li> <li>• Plus screw (M3): 4</li> </ul>   |                  |                          | D6FZ-FC03  |
|  | (Air Flow Station D6FZ-FGX21 only)<br>Mounting magnet*<br><ul style="list-style-type: none"> <li>• Mounting magnet: 2</li> <li>• Plus screw (M3): 2</li> </ul> |                  |                          | ZN9-EM01-S |
|  | Single-end wire cable                                                                                                                                          | Cable length 3m  | M12 connector<br>(8 pin) | D6FZ-JD3A  |
|                                                                                     |                                                                                                                                                                | Cable length 10m |                          | D6FZ-JD10A |
|                                                                                     |                                                                                                                                                                | Cable length 20m |                          | D6FZ-JD20A |
|  | Double-end connector cable                                                                                                                                     | Cable length 3m  | M12 connector<br>(8 pin) | D6FZ-JD3B  |
|                                                                                     |                                                                                                                                                                | Cable length 5m  |                          | D6FZ-JD5B  |
|                                                                                     |                                                                                                                                                                | Cable length 10m |                          | D6FZ-JD10B |
|                                                                                     |                                                                                                                                                                | Cable length 20m |                          | D6FZ-JD20B |

\* When magnets are used, the maximum vibration resistance is 55Hz.



## Ratings

### Air Flow Sensor

| Item                                             |                  | Model  | D6FZ-FGT200                                                                                                                                                                                                                                                                    | D6FZ-FGT500   |
|--------------------------------------------------|------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Applicable fluid                                 |                  |        | Air, nitrogen (N <sub>2</sub> )* <sup>1</sup>                                                                                                                                                                                                                                  |               |
| Working pressure                                 |                  |        | 0.75MPa (withstand pressure 1.5MPa)                                                                                                                                                                                                                                            |               |
| Measurement range* <sup>2</sup>                  |                  |        | 0 to 200L/min                                                                                                                                                                                                                                                                  | 0 to 500L/min |
| Measurement accuracy range* <sup>2</sup>         |                  |        | 2 to 200L/min                                                                                                                                                                                                                                                                  | 5 to 500L/min |
| Display Resolution* <sup>2</sup>                 |                  |        | 1L/min                                                                                                                                                                                                                                                                         |               |
| Accuracy* <sup>2</sup>                           |                  |        | ±2.0%F.S. at 50L/min or more                                                                                                                                                                                                                                                   |               |
|                                                  |                  |        | ±0.5%F.S. at less than 50L/min                                                                                                                                                                                                                                                 |               |
| Temperature characteristic                       |                  |        | ±3%F.S.                                                                                                                                                                                                                                                                        |               |
| Repeat accuracy                                  |                  |        | ±1%F.S.                                                                                                                                                                                                                                                                        |               |
| Operating temperature                            |                  |        | Operation: -10 to 60°C / Storage: -20 to 70°C (no condensation or icing)                                                                                                                                                                                                       |               |
| Operating humidity                               |                  |        | Operation: 25 to 90%RH / Storage: 0 to 90%RH (no condensation or icing)                                                                                                                                                                                                        |               |
| Shock resistance                                 |                  |        | 150 m/s <sup>2</sup> in 6 directions (+/-X, +/-Y, and +/-Z directions), 3 times each                                                                                                                                                                                           |               |
| Pressure loss                                    |                  |        | 2kPa max.                                                                                                                                                                                                                                                                      | 4kPa max.     |
| Power supply voltage                             |                  |        | 12 to 24 VDC ±10% ripple (p-p) 10% max.                                                                                                                                                                                                                                        |               |
| Current consumption                              |                  |        | 120mA max.                                                                                                                                                                                                                                                                     |               |
| Functions                                        |                  |        | Momentary flow / Integrated flow / Reversing display / Zero point Adjustment / Peak and Bottom Hold / Key Lock / Eco Mode / Scaling (Analog Output) / Judgement Hysteresis / Teaching                                                                                          |               |
| Display                                          |                  |        | 11-segment digital display (Red), RUN / FUN / THR (Yellow), Out1 / Out2 (Yellow), Key Lock (Yellow), Flow unit (Green), Flow unit in reversed display (Yellow)                                                                                                                 |               |
| Output                                           | Output interface | Analog | Current output 4 to 20mA (1 contact), maximum load resistance 300Ω max.                                                                                                                                                                                                        |               |
|                                                  |                  | ON/OFF | Open collector output (2 outputs) 26.4 VDC 50mA max.<br>ON residual voltage 2V max.<br>(Outputs can be selected from judgement output, pulse output and unit error output)                                                                                                     |               |
|                                                  |                  | RS-485 | 2-wire half duplex communication, start-stop synch method<br>Baud rate: 9.6k/19.2k/38.4k/115.2kbps, data bit length: 7/8bit,<br>stop bit length: 1/2bit, parity: none/even/odd,<br>termination resistor (120Ω): ON/OFF,<br>communications protocol: compatible with CompoWay/F |               |
|                                                  | Output values    |        | Momentary flow, Integrated flow, Judgement output *3, Unit error output                                                                                                                                                                                                        |               |
| Degree of protection                             |                  |        | IP65                                                                                                                                                                                                                                                                           |               |
| Installation Direction and Straight Pipe Section |                  |        | A straight pipe section must be provided during installation and piping if the Sensor is installed horizontally and the display is on the top. *4                                                                                                                              |               |
| Connection bore diameter                         |                  |        | Rc1/4 (8A)                                                                                                                                                                                                                                                                     | Rc1/2 (15A)   |
| Material                                         |                  |        | Main unit: PBT / Flow channel: Zinc                                                                                                                                                                                                                                            |               |
| Dimensions                                       |                  |        | 30(W) × 77(D) × 63.7(H) mm                                                                                                                                                                                                                                                     |               |
| Weight (in package)                              |                  |        | Approx. 400 g (500 g)                                                                                                                                                                                                                                                          |               |
| Accessories                                      |                  |        | Instruction Sheet                                                                                                                                                                                                                                                              |               |

\*1. Clean Dry Gas (must not contain large particle e.g. dust, oil and mist)

\*2. Converted value assuming the accumulated flow quantity following conditions

std (factory default) : 20°C at 1 atmospheric pressure 101.3kPa, nor : 0°C at 1 atmospheric pressure 101.3kPa

\*3. To prevent chattering, a judgement output is made when the judgement continues for one minute or longer.

\*4. The accuracy will depend on the length of the straight pipe section. Refer to *Flow rate accuracy characteristics* for a length of straight pipe on page 12 for details.

| Item                      |                       |                              | Model                                                                                                                                                                                                                                 | D6FZ-FGS1000 |
|---------------------------|-----------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Applicable fluid          |                       |                              | Air, nitrogen (N <sub>2</sub> )                                                                                                                                                                                                       |              |
| Working pressure          |                       |                              | 0.99MPa max.                                                                                                                                                                                                                          |              |
| Measurement               | Flow <sup>*1</sup>    | Detection range              | 1 to 1,000L/min (std)                                                                                                                                                                                                                 |              |
|                           |                       | Resolution                   | 0.1L/min                                                                                                                                                                                                                              |              |
|                           |                       | Accuracy                     | ±2.0% of reading at 50 L/min (std) or more <sup>*2</sup>                                                                                                                                                                              |              |
|                           |                       |                              | ±0.1%F.S. at less than 50L/min                                                                                                                                                                                                        |              |
|                           | Pressure              | Detection range              | 0 to 0.99MPa                                                                                                                                                                                                                          |              |
|                           |                       | Accuracy                     | ±2%F.S.                                                                                                                                                                                                                               |              |
|                           | Temperature           | Detection range              | −10 to 60°C                                                                                                                                                                                                                           |              |
| Accuracy                  |                       | ±1.5% (absolute temperature) |                                                                                                                                                                                                                                       |              |
| Resistance to environment | Operating temperature |                              | −10 to 60°C (no condensation or icing)                                                                                                                                                                                                |              |
|                           | Operating humidity    |                              | 35 to 85%RH (no condensation or icing)                                                                                                                                                                                                |              |
|                           | Vibration resistance  |                              | 10 to 55Hz double amplitude: 0.7mm, Acceleration: 50m/s <sup>2</sup> in X, Y and Z directions (80min)                                                                                                                                 |              |
|                           | Shock resistance      |                              | 150 m/s <sup>2</sup> in 6 directions (+/-X, +/-Y, and +/-Z directions), 3 times each                                                                                                                                                  |              |
| Pressure loss             |                       |                              | Direct piping:10kPa max. (0.5MPa, at maximum flow)<br>Using coupler (TL type by NAGAHORI INDUSTRY CO., LTD.):<br>10kPa max. (0.5MPa, at maximum flow)                                                                                 |              |
| Power supply voltage      |                       |                              | 16 to 24 VDC ±10% ripple (p-p) 10% max. (Using single unit),<br>24 VDC ±10% ripple (p-p) 10% max. (Using multiple units) <sup>*3</sup>                                                                                                |              |
| Power consumption         |                       |                              | 2W max.                                                                                                                                                                                                                               |              |
| Measurement cycle         |                       |                              | Approx. 62.5ms                                                                                                                                                                                                                        |              |
| Display                   | Display method        |                              | Status display by 2-color LED (illumination/blinking)                                                                                                                                                                                 |              |
|                           | Diplay value          |                              | Presence or absence of current-carrying, flow and error alarm                                                                                                                                                                         |              |
| Output                    | Output interface      | Analog                       | Current output 4 to 20mA (2 contact) <sup>*4</sup> Max. load resistance 270Ω max.                                                                                                                                                     |              |
|                           |                       | ON/OFF                       | Open drain output (2 outputs) <sup>*5</sup> 24 VDC 50mA max.<br>ON residual voltage 1.5V max., OFF leakage current 50μA max.                                                                                                          |              |
|                           |                       | RS-485                       | 2-wire half duplex communication, start-stop synch method<br>Baud rate: 115.2kbps (fixed), Data bit length: 8 bits (fixed), stop bit length: 1 bit (fixed), parity: even (fixed), communications protocol: compatible with CompoWay/F |              |
|                           | Outpus values         |                              | Momentary standard flow, Integrated standard flow, pressure, unit error output                                                                                                                                                        |              |
| Degree of protection      |                       |                              | IP64 (except the case with the switch cover removed)                                                                                                                                                                                  |              |
| Wiring connection         |                       |                              | M12 connector (8-pin)                                                                                                                                                                                                                 |              |
| Connection bore diameter  |                       |                              | Rc1 (25A) bushing enables conversion to 15A and 20A                                                                                                                                                                                   |              |
| Material                  |                       |                              | Cable: PVC (Polyvinyl Chloride); Main unit: Aluminum die-cast; Display: Acrylic                                                                                                                                                       |              |
| Dimensions                |                       |                              | 64(W) × 93(D) × 195(H) mm (excluding flange)                                                                                                                                                                                          |              |
| Weight (in package)       |                       |                              | Approx. 1.2 Kg (Approx. 1.7 Kg)                                                                                                                                                                                                       |              |
| Accessories               |                       |                              | Instruction Sheet                                                                                                                                                                                                                     |              |

\*1. Converted value assuming the accumulated flow quantity under the conditions of 20°C at 1 atmospheric pressure 101.3kPa.

\*2. Does not include pressure and temperature accuracy. Conversion accuracy to the standard flow is ±2.5% of reading (at 20°C, 0.5 MPa).

\*3. Make sure to ground the 0V terminal, and do not ground the 24V(+) terminal. There is a risk of malfunction.

\*4. Analog output comprise the momentary standard flow rate and pressure.

\*5. The integrated standard flow of the pulse output can be selected from 1, 10 (factory default), 100, or 1000 L(std)/P.

## Air Flow Station

| Item                              | Model | D6FZ-FGX21                                                                                                                          |
|-----------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------|
| Connectable sensor                |       | D6FZ-FGT200 / D6FZ-FGT500 / D6FZ-FGS1000                                                                                            |
| Maximum number of mounted Sensors |       | 8 units <sup>*1</sup>                                                                                                               |
| Display                           |       | 7-seg. 5-digit 2-step LCD display, auxiliary information indicator displays                                                         |
| Recording interval                |       | 1 s, 2 s, 5 s, 10 s, 20 s, 30 s, 1 min.                                                                                             |
| Displayed data                    |       | Momentary flow rate, integrated flow rate, pressure, temperature, charge/CO <sub>2</sub> conversion value                           |
| Recorded data                     |       | Momentary flow rate, integrated flow rate, volume flow rate, pressure, temperature                                                  |
| Operation function                |       | Conversion of integrated flow rate to charge/CO <sub>2</sub>                                                                        |
| Recording mode                    |       | Continue mode <sup>*2</sup> , Ring mode <sup>*3</sup>                                                                               |
| External output                   |       | Alarm output (Photocoupler output) <sup>*4</sup>                                                                                    |
| Communication interface           |       | Ethernet (10BASE-T, 100BASE-TX)                                                                                                     |
| Internal storage device           |       | Internal memory: Approx. 4200 data items when 1 unit is connected, approx. 650 data items when 8 units are connected                |
| External storage device           |       | SD card (to save measured values and to save/read set values), Recommended SD card: HMC-SD291 (manufactured by OMRON) <sup>*5</sup> |
| Power supply voltage              |       | DC input: 24 VDC±10% ripple (p-p) 10% max.                                                                                          |
| Current consumption               |       | 80 mA max.                                                                                                                          |
| Operating temperature             |       | Without Ethernet: -10°C to 40°C (no condensation or icing), with Ethernet: 0°C to 40°C (no condensation or icing)                   |
| Operating humidity                |       | 35 to 85%RH (no condensation or icing)                                                                                              |
| Storage humidity/temperature      |       | -15°C to 60°C, 20% to 85%RH (no condensation or icing)                                                                              |
| Insulation resistance             |       | 20 MΩ (500 VDC)                                                                                                                     |
| Withstand voltage                 |       | 1000 VAC, 50/60 Hz, 1 min.                                                                                                          |
| Vibration resistance              |       | 10 to 150 Hz, 0.7 mm double amplitude, acceleration: 50 m/s <sup>2</sup> for each in X, Y and Z directions for 80 min               |
| Shock resistance                  |       | 150 m/s <sup>2</sup> in 6 directions (+/-X, +/-Y, and +/-Z directions), 3 times each <sup>*6</sup>                                  |
| Material                          |       | ABS                                                                                                                                 |
| Degree of protection              |       | IP30                                                                                                                                |
| Mounting                          |       | Magnet mounting, screw mounting, hook                                                                                               |
| Dimensions                        |       | 117.2(W) × 24.6(D) × 56.8(H) mm (Except protruding part)                                                                            |
| Weight (in package)               |       | Approx. 150 g (Approx. 500 g)                                                                                                       |
| Accessories                       |       | Instruction Sheet, Startup Guide, T-branch connection cable <sup>*7</sup> , Alarm Output Connector <sup>*8</sup>                    |

\*1. Up to 8 units can be connected when the recording cycle is 2 seconds or longer; up to 4 units when the recording cycle is 1 second.

\*2. Automatically writes the data to the SD memory card when the internal memory reaches its capacity and continues recording until the SD card memory capacity reaches its limit.

The unit stops operation if there is no SD memory card inserted when the internal memory reaches its capacity, or when it is write protected. (Recording can be resumed after inserting an SD memory card and outputting the data to it at a press of button.)

The factory default is continue mode. Use the PC software to change the recording mode.

\*3. Continues the recording of the latest measured values until the internal memory reaches its capacity. (If the internal memory capacity exceeds the capacity, data is overwritten from the oldest one in the memory.)

\*4. Output when the range of upper/lower limit of the air flow that has been set in threshold setting mode is exceeded.

\*5. You can temporarily read and write data with an SD card that complies with SD/SDHC card standards and was made by another company, but the SD card may suddenly not be recognized, preventing you from accessing the data.

\*6. When using a mounting magnet, be sure to install it in a location where shock is not applied.

\*7. A T-branch connector to connect to D6FZ-FC02.

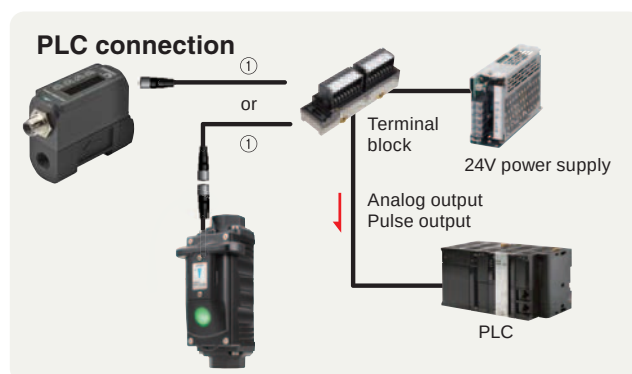
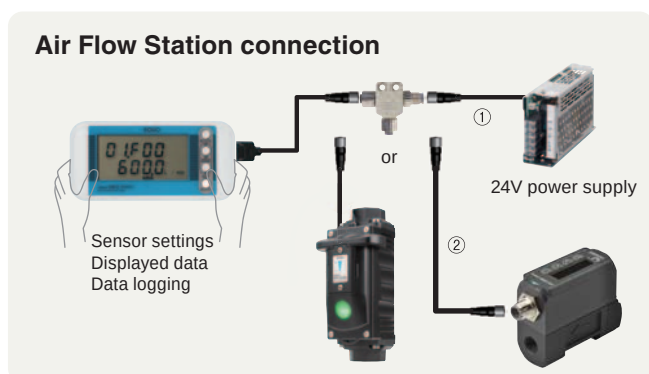
\*8. OMRON's XW4B-02B1-H1 connector

## Connection

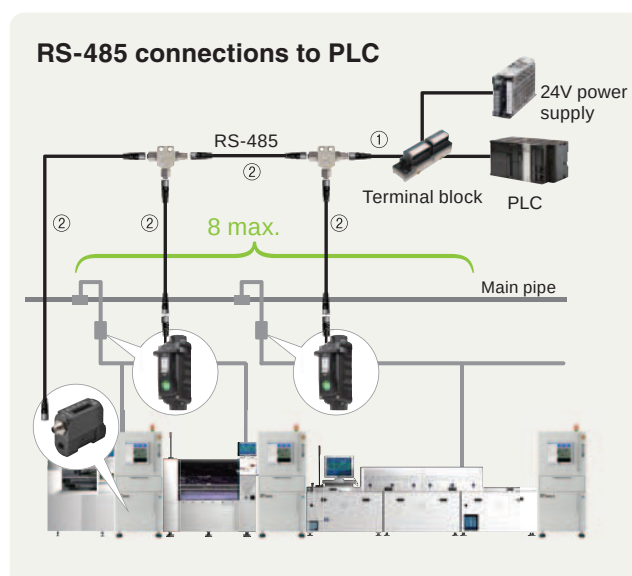
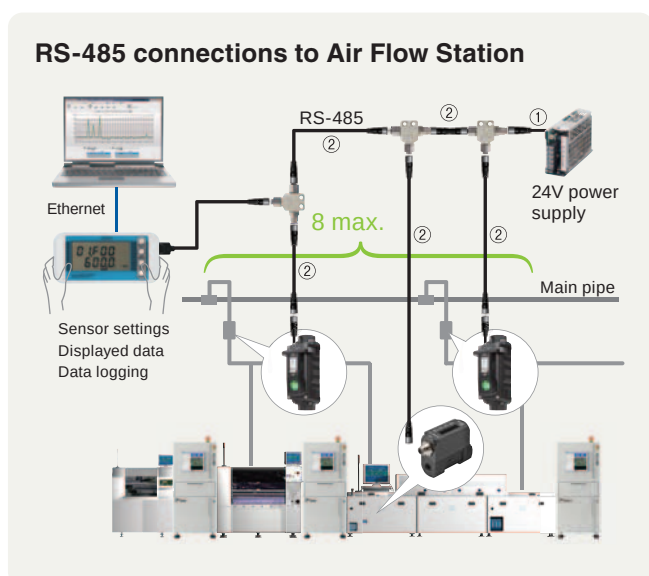
### Connection diagram

[with 1 sensor]

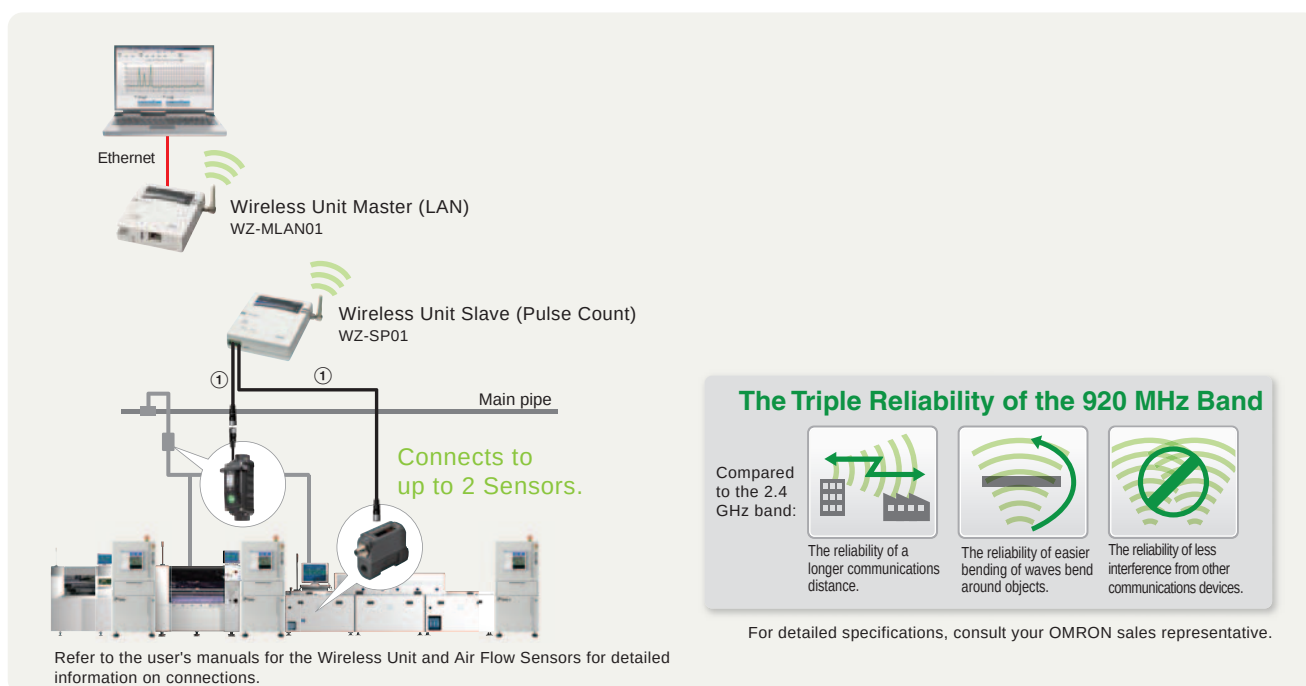
- ① Single-end wire cable
- ② Double-end connector cable



[Data communications with multiple sensor connections]



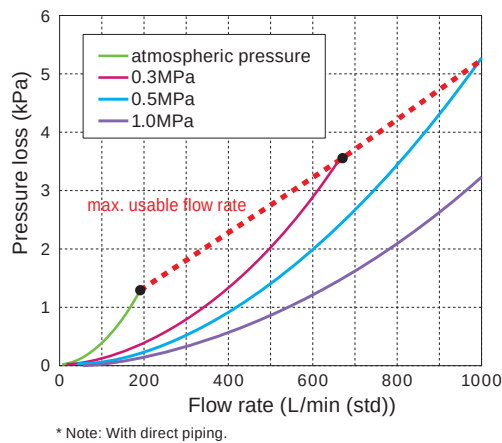
[Wireless Data Collection]



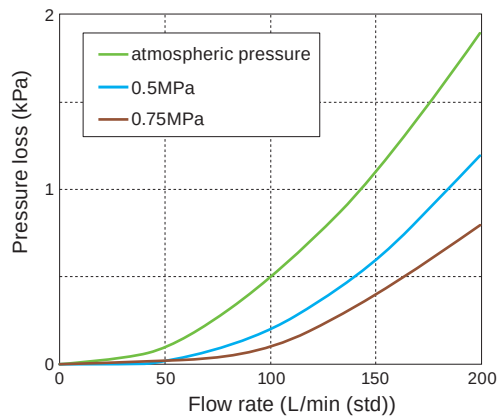
Characteristics data

Pressure loss\* (typical example)

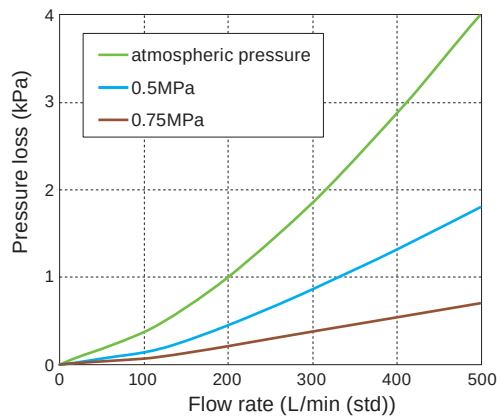
D6FZ-FGS1000



D6FZ-FGT200



D6FZ-FGT500



Min. and max. flow rate conversion table (typical example)

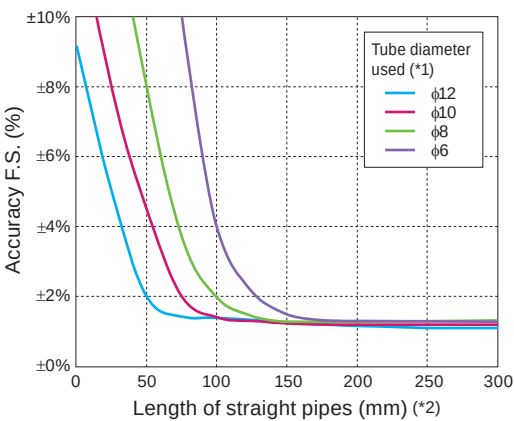
D6FZ-FGS1000

| Temperature [°C] | Pressure [MPa] | Min. flow rate [L/min (std)] | Max. flow rate [L/min (std)] |
|------------------|----------------|------------------------------|------------------------------|
| 20               | 0.3            | 3.96                         | 667.37                       |
|                  | 0.5            | 5.93                         | 999.94                       |
|                  | 0.7            | 7.91                         | 1000.00                      |
| 25               | 0.3            | 3.89                         | 656.17                       |
|                  | 0.5            | 5.83                         | 983.17                       |
|                  | 0.7            | 7.78                         | 1000.00                      |
| 30               | 0.3            | 3.83                         | 645.35                       |
|                  | 0.5            | 5.74                         | 966.96                       |
|                  | 0.7            | 7.65                         | 1000.00                      |

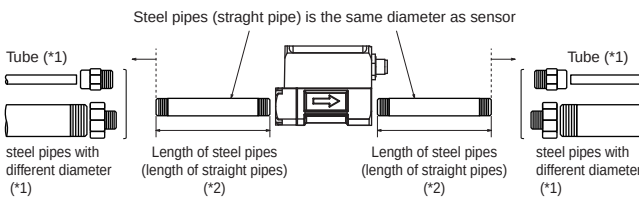
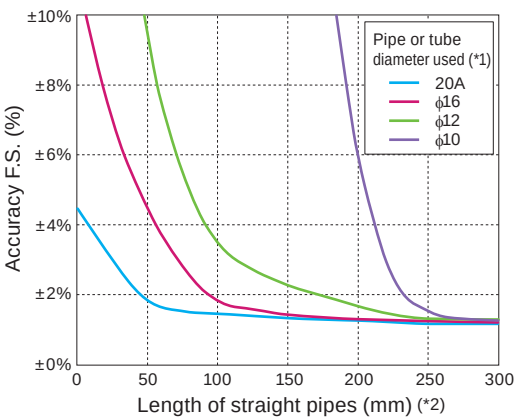
Flow rate accuracy characteristics for a length of straight pipe  
<D6FZ-FGT only>

The following graph shows the flow rate accuracy characteristics for a length of straight pipe (reference information).

D6FZ-FGT200



D6FZ-FGT500





## Safety Precaution

Read the agreement when ordering.

### Air Flow Sensor

#### Warning

This device cannot be used to detect people either directly or indirectly for the purpose of assuring safety.

Do not use the product as a detector for personal safety.



The use of flammable gases may cause explosion.

Do not use the product with flammable gases.



Electric shock may occur. Do not connect the product to a AC power supply.



#### Caution

Do not use in an ambient atmosphere or environment that exceeds the ratings.

Injury may occur due to explosion.

Flow rate and pressure must be within the range of use.



<D6FZ-FGT only>

If water drop, oil, mist and dust flow in the body, it may mis-measurement and destruction. Use clean fluid. Dust and mist can affect the characteristics of Sensor or damage the Sensor. Install a filter and mist separator on the upstream tube. Moreover, install an air flow sensor after removing the dust remaining in pipe by something like air blow.



### Precautions for Correct use

#### Precaution for piping

<D6FZ-FGT only>

Applicable diameter : D6FZ-FGT200 / 8A, D6FZ-FGT500 / 15A

When piping, be sure to use a same diameter steel pipe for the body conduit (straight pipe / elbow).

If piping different diameter pipes or using the fittings for air tubing is required, be sure to use the straight same diameter steel pipes with the body at both ends directly to make measurement accuracy better.

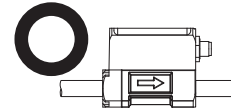
For details to p.12, "Flow rate accuracy characteristics for a length of straight pipe".

#### Precaution for mounting

##### Mounting position

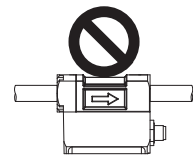
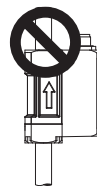
- Be sure to mount the body horizontally, otherwise the detection accuracy might be worse.
- Don't mount the body facing the control panel downward. Otherwise, the mist and dust in the pipe accumulates and it might cause breakdown.

##### <Correct mounting>



- Mounting the body horizontally
- Control panel Upward

##### <Incorrect mounting>



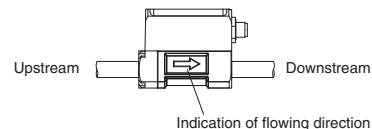
- Mounting the body Vertically

- Control panel Downward

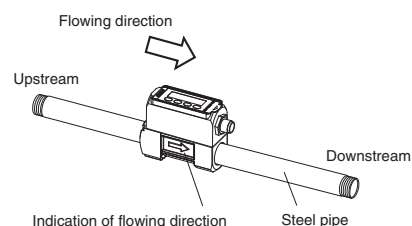
##### Flowing direction

- An arrow in the side of the body indicates the direction where air flows.
- Be sure to check the direction of the arrow before mounting.
- Mounting in the opposite direction causes mis-measurement.

##### <The indication of the body>



##### <The relationship between flowing direction and mounting direction>



### Air Flow Station

#### Warning

The mounting magnets provided with the product have strong magnetism. If the product is mounted using these magnets, anyone wearing a heart pacemaker must not operate the product; or the product must not be in proximity of such a person.



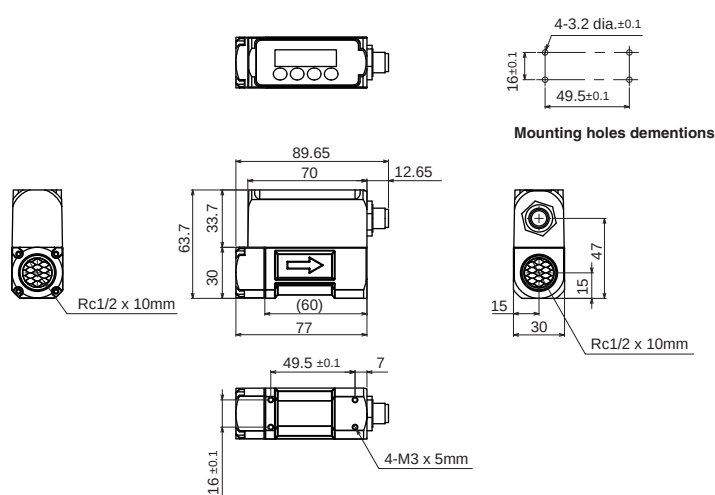
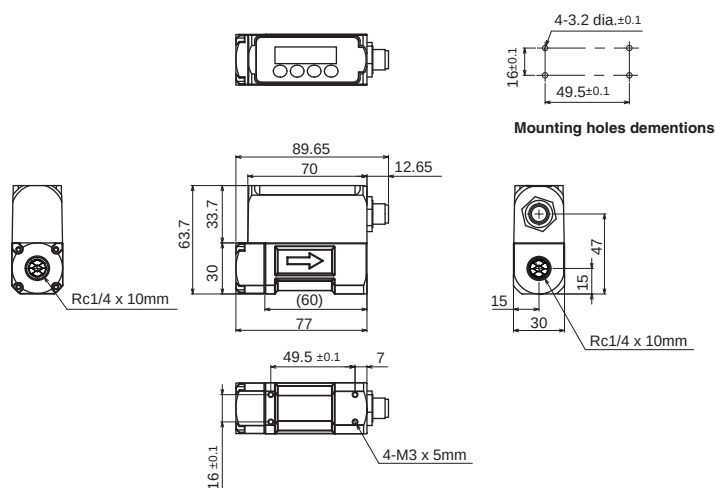
This product contains lithium batteries. Serious injury may occur due to fire or explosion. Do not attempt to disassemble the product, deform it by applying pressure, heat it in a high temperature (100°C or more), or burn it for disposal.



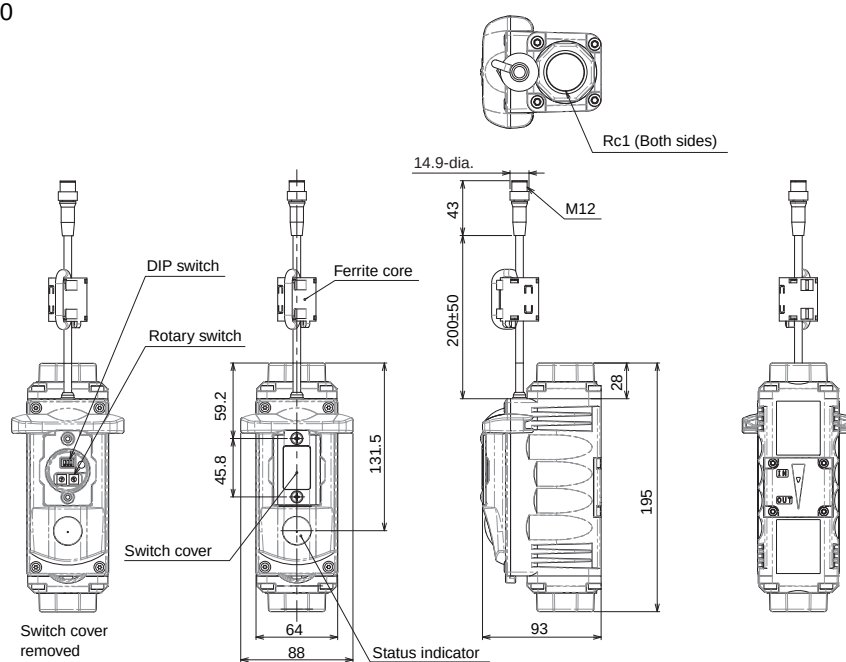
Air Flow Sensor  
D6FZ-FGT200

For products with the **CAD data** mark, the data for the 2-dimensional CAD drawings and 3-dimensional models is available. The CAD data can be downloaded at [www.fa.omron.co.jp](http://www.fa.omron.co.jp).

(unit: mm)  
Unspecified dimensions tolerances: Tolerance class IT16



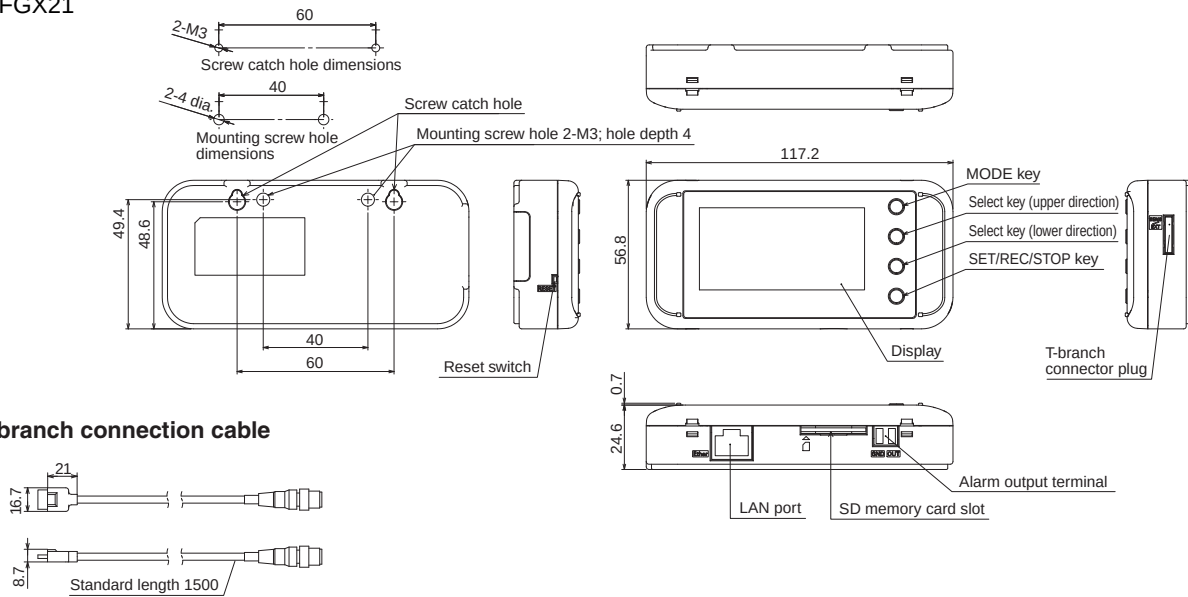
D6FZ-FGS1000



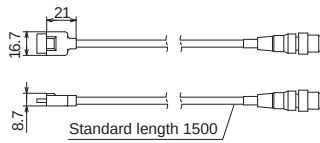
**CAD data**

## Air Flow Station D6FZ-FGX21

CAD data

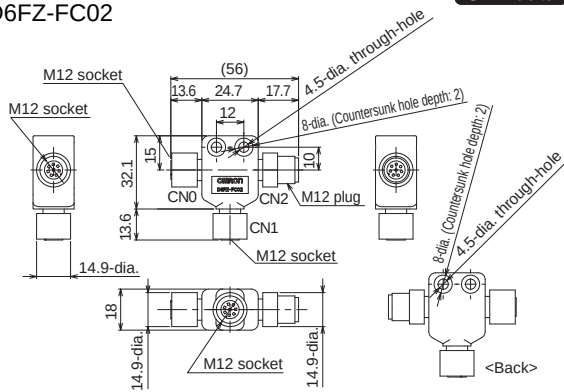


### T-branch connection cable



## T-branch connector D6FZ-FC02

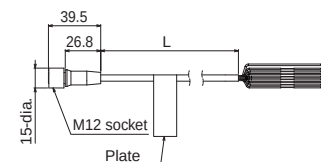
CAD data



### Single-end wire cable

D6FZ-JD3A (L=3m)  
D6FZ-JD10A (L=10m)  
D6FZ-JD20A (L=20m)

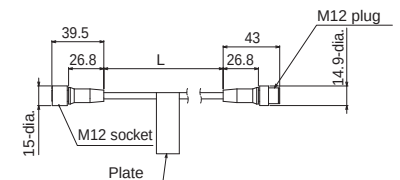
CAD data



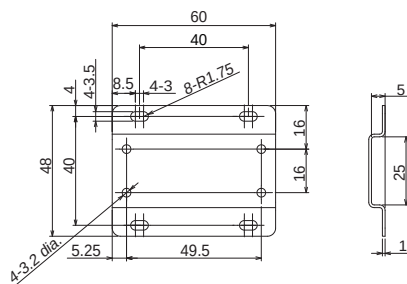
### Double-end connector cable

D6FZ-JD3B (L=3m)  
D6FZ-JD5B (L=5m)  
D6FZ-JD10B (L=10m)  
D6FZ-JD20B (L=20m)

CAD data



## Mounting bracket D6FZ-FC03



MEMO

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