

Micro Differential Pressure Gage

NEW

Manostar Gage FR51A Panel installation compact type Micro Differential Pressure Gage

Utility model registration
No.2027772

RoHS compliant

- Compact and lightweight type
- Even when the pressure becomes excessive, the original mechanism avoid damage to moving parts.
- Small hysteresis is realized by the silicone rubber diaphragm
- The pointer is not fluctated by the original band-linked mechanism



FR51AHV
(horizontal scale type)



FR51AVV
(vertical scale type)



FR51ACV
(colored horizontal scale type)

<Example of main use field>

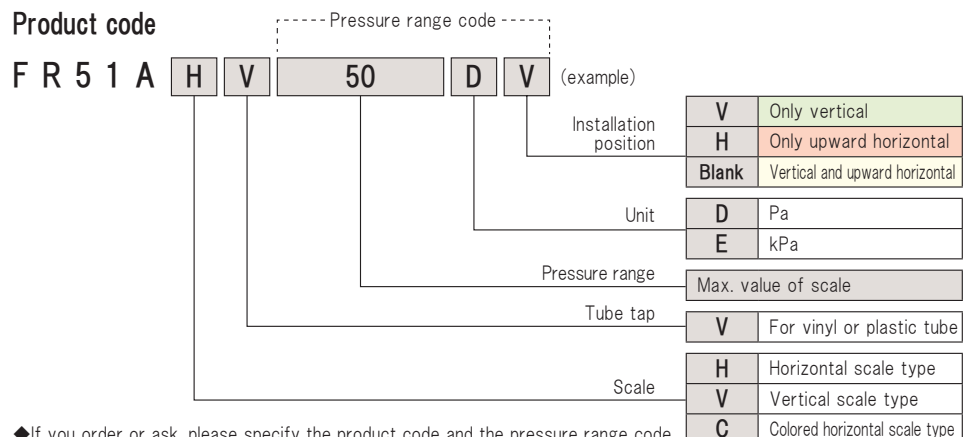
Manufacturing machine parts of semi-conductors
Measuring negative pressure in bag filter and differential pressure in air conditioners
Monitoring of pressure loss in filters
Production lines of precision machine
Air conditioning control system of factory

<Example of use>

Measuring inner pressure of indoor equipments
Detector of a pressure loss in an air filter
Detector of a pressure loss in a bag filter
Measuring of dynamic pressure in a ventilator and an exhauster
Measuring the inside pressure of clean rooms

* (refer to p.93)

Product code



◆ If you order or ask, please specify the product code and the pressure range code.

WO81

WO70

FR51A

MS30

MS61A

MS65

EB3C

EMD8

EMD7

EMT6

EMT1

EMTGPI

EMT1H

EMP5

EMA3

EMRT1

HWS15

Combination of Manosys

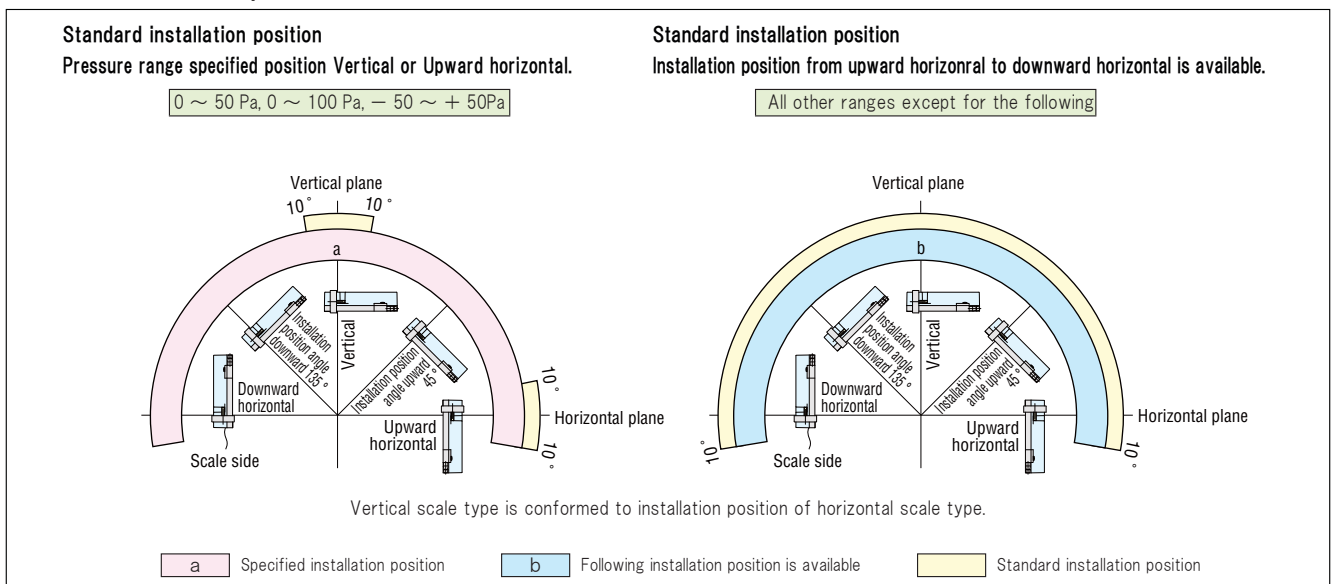
Accessories

Application Cautions for use Maintenance

Specification

Types	Horizontal scale type		Vertical scale type		Colored horizontal scale type	
	FR51A H V		FR51A V V		FR51A C V	
Pressure units	Pa, kPa		Material of the outer case	Acrylic resin and polycarbonate		
Pressure measuring method	Measuring differential pressure		Withstanding vibration	5 to 10 Hz Amplitude : 10 mm, 10 to 50 Hz Acceleration : 39 m/s ² (each two hours on triaxial directions)		
Pressure receiving element	Diaphragm		Withstanding impact	100 m/s ² (each six times on triaxial directions)		
Gas to be measured	Air or non-corrosive gas (not liquid)		Applicable piping	Vinyl, plastic tube or rubber tube (I.D. 4)		
Shape of scale	Edgewise type (scale length : approximately 45 mm)		The part of connector	Integrated formation (tube tap)		
Medium and ambient temperature	- 10 to + 50 °C (no freezing)		Tube tap polarity	The part of tube tap is marking "H" on high pressure side and "L" on low pressure side.		
Ambient humidity	90 % RH or less (no dewing)		Mass	Approximately 90 g		
Withstanding pressure of instrument body	50 kPa (refer to p.104)					
Accessory	One set of installation nuts					
Pressure range codes	Pressure ranges	Standard installation positions (refer to following)	Accuracy (at 23 °C)	Material of pressure receiving element	Withstanding pressure of receiving element (refer to p.104)	
50 DH	0 ~ 50 Pa	Upward horizontal (fixed)	± 2.5 % FS	Silicone rubber	20 kPa	
50 DV		Vertical (fixed)				
100 DH	0 ~ 100 Pa	Upward horizontal (fixed)				
100 DV		Vertical (fixed)				
200 D	0 ~ 200 Pa	Installation position from upward horizontal to downward horizontal is available.				
300 D	0 ~ 300 Pa					
500 D	0 ~ 500 Pa					
1000 D	0 ~ 1000 Pa					
2 E	0 ~ 2 kPa					
3 E	0 ~ 3 kPa					
5 E	0 ~ 5 kPa					
+ - 50 DH	- 50 ~ + 50 Pa	Upward horizontal (fixed)				
+ - 50 DV		Vertical (fixed)				
+ - 100 D	- 100 ~ + 100 Pa	Installation position from upward horizontal to downward horizontal is available.				

FR51A Installation position



- ◆ In ordering out of above mentioned installation position, please order us or our agency beforehand. It must be adjusted before the factory shipment.
- ◆ In case of ordering standard installation position, you do not specify installation position. Please specify pressure range code in the specification table.

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- MS30
- MS61A
- MS65
- EB3C
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- EMD7
- EMT6
- EMT1
- EMTGP1
- EMT1H
- EMP5
- EMA3
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- Accessories
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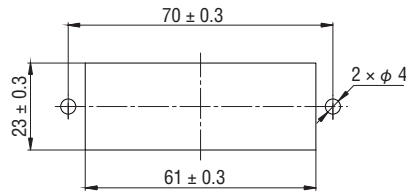
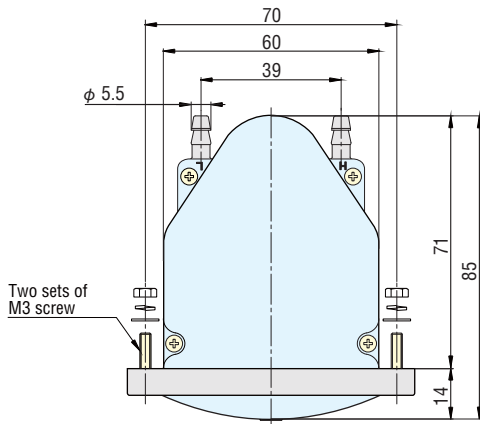
Combination of Manosys

Accessories

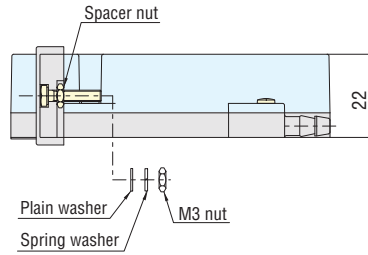
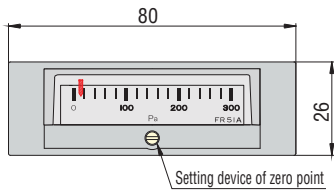
Application
Cautions for use
Maintenance

Outline drawing

FR51AHV(horizontal scale type)

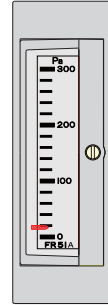


Max. thickness installed panel 4 mm
Panel cut size

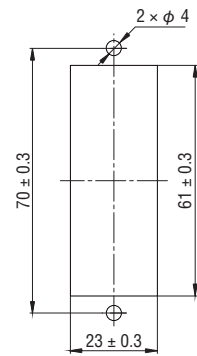


Caution If you install the instrument on the panel without spacer nut, the instrument body will be broken.

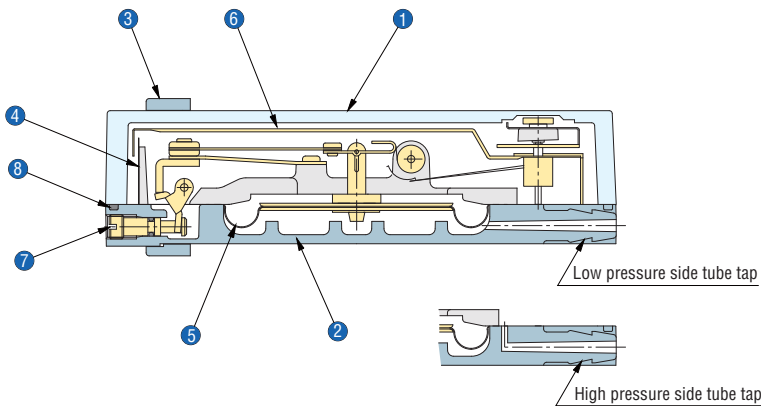
FR51AVV (vertical scale)



FR51AVV type outline size is same with FR51AHV type.



Main structure



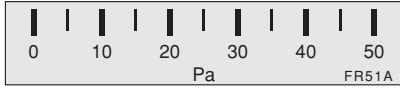
No.	Name
1	Clear cover
2	Base
3	Grille
4	Scale plate
5	Diaphragm
6	Pointer
7	Setting device of zero point
8	Cover packing

FR51A

Scale table of Manostar Gage FR51A model

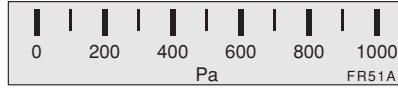
FR51AHV, CV(horizontal scale type)

Single pressure range

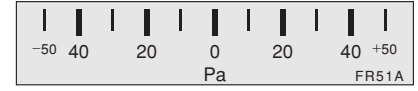


Pressure range	Min. scale
0 ~ 50 Pa	5 Pa

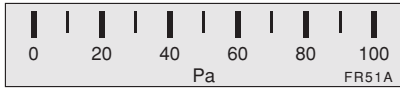
(actual size)



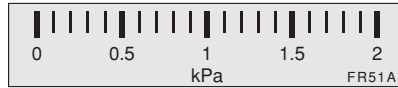
Pressure range	Min. scale
0 ~ 1000 Pa	100 Pa



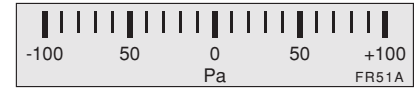
Pressure range	Min. scale
-50 ~ +50 Pa	10 Pa



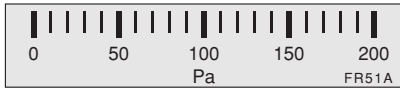
Pressure range	Min. scale
0 ~ 100 Pa	10 Pa



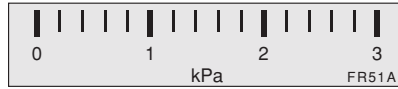
Pressure range	Min. scale
0 ~ 2 kPa	0.1 kPa



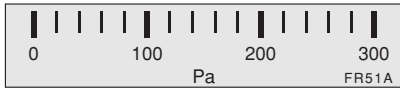
Pressure range	Min. scale
-100 ~ +100 Pa	10 Pa



Pressure range	Min. scale
0 ~ 200 Pa	10 Pa



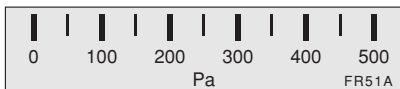
Pressure range	Min. scale
0 ~ 3 kPa	0.2 kPa



Pressure range	Min. scale
0 ~ 300 Pa	20 Pa

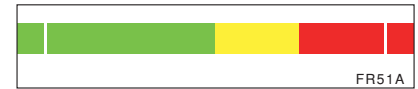


Pressure range	Min. scale
0 ~ 5 kPa	0.5 kPa



Pressure range	Min. scale
0 ~ 500 Pa	50 Pa

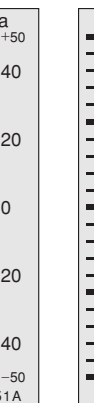
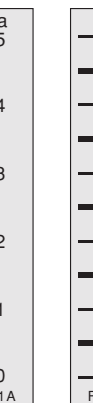
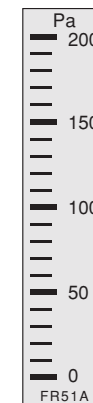
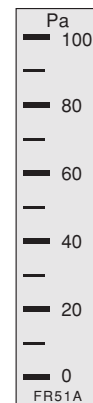
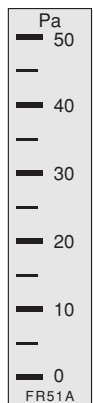
Colored horizontal scale



Pressure range	Color
All pressure range	Green 0
	Yellow 50%FS
	Red 75%FS

FR51AVV(vertical scale type)

Single pressure range



Pressure range
0 ~ 50 Pa

Pressure range
0 ~ 100 Pa

Pressure range
0 ~ 200 Pa

Pressure range
0 ~ 300 Pa

Pressure range
0 ~ 500 Pa

Pressure range
0 ~ 1000 Pa

Pressure range
0 ~ 2 kPa

Pressure range
0 ~ 3 kPa

Pressure range
0 ~ 5 kPa

Pressure range
-50 ~ +50 Pa

Pressure range
-100 ~ +100 Pa

Zero point center range

- WO81
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Product Warranty

Warranty Period

This product warranty is valid for one year from the date of delivery to a place specified by an ordering party who has transacted directly with Yamamoto Electric Works Co., Ltd.

Coverage

If a product breaks down due to a reason for which we are responsible during the warranty period and you return the product to us, we will either repair or replace the product free of charge.

This warranty does not cover:

- (1) Usage of the product under any inappropriate conditions or environment contrary to what is described in our product catalog, specifications or manual.
Handling or usage of the product other than as described in our product catalog, specifications or manual.
- (2) Breakdown due to a reason other than a fault within our product.
- (3) Any product that has been modified or repaired by a party other than us.
- (4) Any breakdown due to a reason that was not foreseeable based on scientific and technical standards applied at the time of shipment.
- (5) Any breakdown due to a reason not attributable to us such as a natural calamity or other disaster.

These terms of warranty represent our entire liability with respect to the product, and we shall have no liability for any other loss arising in connection with a breakdown of the product.

*This product warranty is only valid within Japan.

This document is a translation from the original Japanese version, and the original Japanese version has priority over this translation.

Be sure to refer to the original Japanese for the details of this warranty.



Caution

The Japanese original document shall always take precedence over the translated versions.

You should be sure to refer to the Japanese original document.

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