

PRODUCT INFORMATION

DIGITAL MANOMETER

**Wide pressure range from 200 Pa to 50 MPa.
Equipped with high-accuracy sensor excellent
in pressure-proof performance.**

DM-3700
Digital Manometer



■ Overview

- Sensors available for differential pressure, gauge pressure, pressure/vacuum, and absolute pressure. The absolute pressure and pressure/vacuum are optional.
- Covers wide range from 200 Pa (Micro) to 50 MPa (Extremely High).
- Comparators, Auto-Zero, Reading Holds, etc.
- ISO/IEC 17025 calibration required by TS16949 available.
- External sensor optionally available, which allows shorter piping to the DUT.
- Portable and fixable with dedicated brackets.
- Multi-power supply: 100 to 240 VAC

■ Features

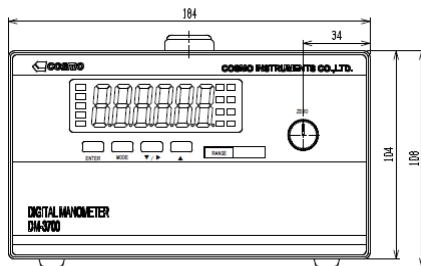
	Description
Digital Display	0000 to ±9999
Comparator Output	5 outputs: Limits (HH, HI, LO, LL) and IN
8 Channels	8 individual programmable comparators
Reading Holds	The reading can be held at any time.
Peak value hold / Bottom value hold	The peak value in pressure rise and the bottom value in pressure drop can be held.
Auto-Zero	With the current value set to zero, pressure changes after that can be displayed.
Analog Output	The analog voltage corresponding to the Pressure Range is output. (Amplifier optionally available)
Digital Output	BCD output board is optionally available. Data can be transferred to external equipment.
Keyboard Lock	The keyboard can be locked to prevent false operation.

■ Specifications

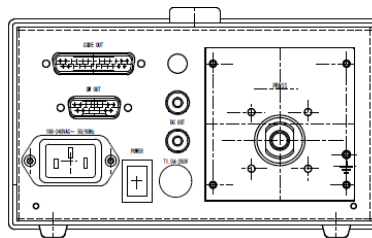
		Standard	
		Differential Pressure	Gauge Pressure
Measuring Media		Air / Non-corrosive gas	Air / Non-corrosive gas / Liquid
Sensing Element		Beryllium copper	SUS630
Transducer		Inductance type	Capacitance type
Accuracy	Accuracy	±0.15 % of F.S. ±1digit *	
	Temperature Characteristic at Zero Point	±0.03 % of FS/°C	
	Span Temperature Characteristic	±0.03 % of FS/°C	
Proof Pressure		Less than 50 kPa: 10 x F.S. 50 kPa or higher: 5 x F.S.	Less than 10 MPa: 2 x F.S. 10 MPa or higher: 1.5 x F.S.
Maximum Line Pressure		2 x Proof pressure	—
Response Time		350 ms Max. (99 % of F.S.)	110 ms Max. (99 % of F.S.)
Digital Display		0000 to ±9999	
Sampling Time		200 ms	
Comparator Output		HH, HI, IN, LO, LL (Relay contact output or photocoupler output)	
Analog Output		The analog voltage 0.5, 1 or 2 VDC corresponding to the Pressure Range is output. (5 and 10 VDC are optionally available.)	
BCD Output		Option (Open collector, TTL)	
Power Source		100 to 240 VAC multi-power supply	
Operating Temperature		5 to 40 °C	
Pressure Inlet Port		Rc1/8	
Size		184 (W)×108 (H)×232 (D) mm	
Weight		3.5 kg	
Panel-Cut Size		181.5 (W) x 101(H) mm	

* Accuracy of drip-proof model: 0.25% of F.S.±1digit

■ External Appearance



Front Panel



Rear Panel

Cosmo's ISO/IEC 17025 Calibration

What is ISO/IEC 17025?

ISO/IEC 17025 is an international standard providing the general requirements for testing and calibration capabilities. The calibration certificates issued by ISO/IEC 17025 accredited Cosmo Group Calibration Laboratory, Cosmo Instruments, are the global standard with high reliability.

Mutual Recognition Arrangement (MRA)

MRA is a multinational agreement for mutual recognition. The calibration results of MRA accredited calibration institutions are equally acknowledged by all mutual recognition organizations and are valid worldwide. This system is called One-Stop-Testing. Cosmo Group Calibration Laboratory has been accredited by MRA. Our ISO/IEC 17025 calibration certificates are the evidence of our technical competence and fairness.

Strengths of MRA Accredited Laboratory

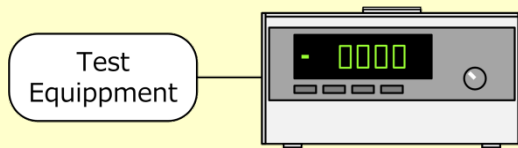
One-Stop-Testing eliminates duplicate tests. As a result, cost will be reduced and delivery time will be shortened. That contributes to customers' smoother international business transactions.

Applications

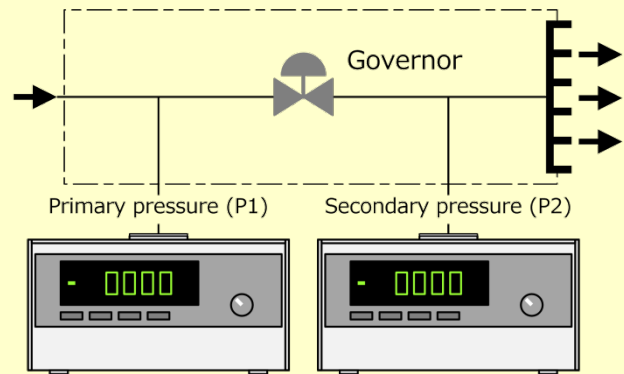
Pressure Measurement

Measuring the pressure inside of test equipment/furnace

- ▶ Inspecting the pressure gauge daily
- ▶ Monitoring the pressure inside of piping or container
- ▶ Measuring the pressure when the relief valve is open or closed
- ▶ Measuring the pressure inside of clean room
- ▶ Controlling the pressure inside of tank



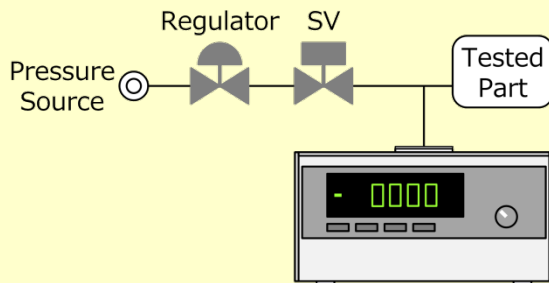
Controlling the governor pressure of gas pressure burner



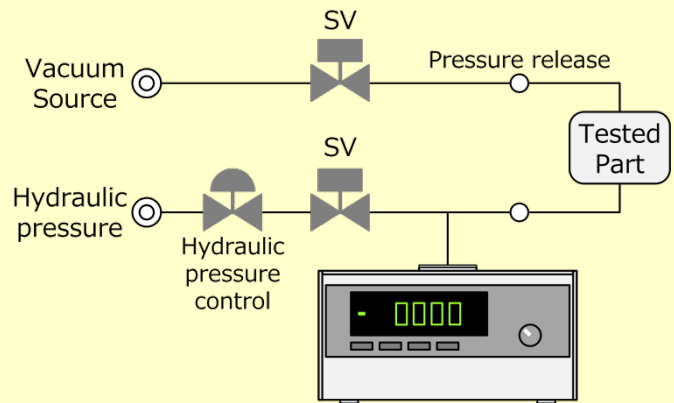
Leak Measurement

Gauge pressure decay method

- ▶ Leak test of factory piping



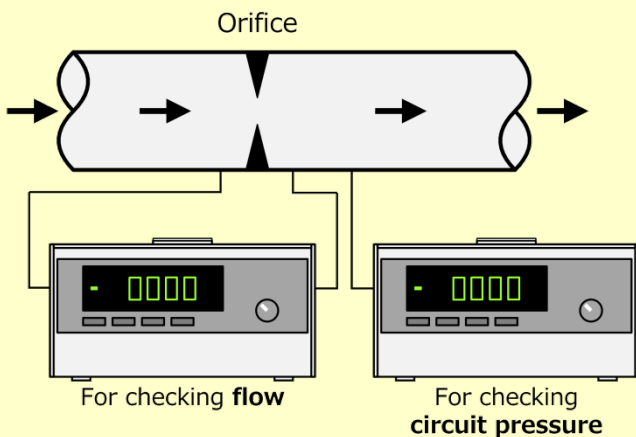
Gauge pressure (hydraulic pressure) decay method



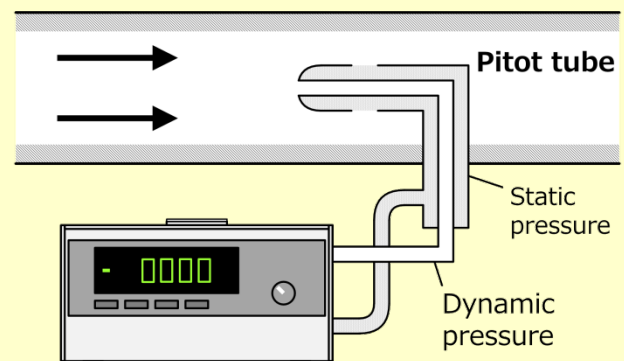
Flow Measurement

Measuring orifice flow

- ▶ Checking blockage of piping

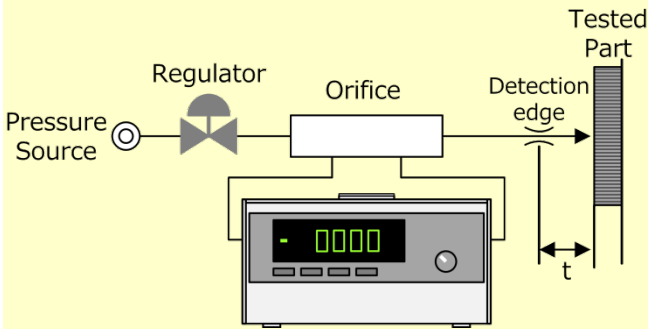


Measuring air velocity and flow rate through pitot tube

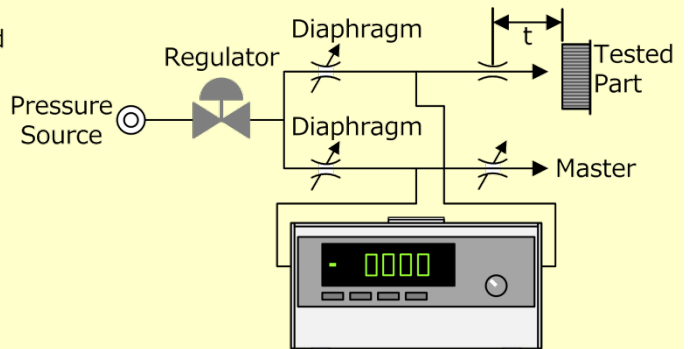


Dimension Measurement

- Measuring the dimension with flow rate air-micrometer



- Measuring the dimension with deflection air-micrometer



■ Introduction of Features

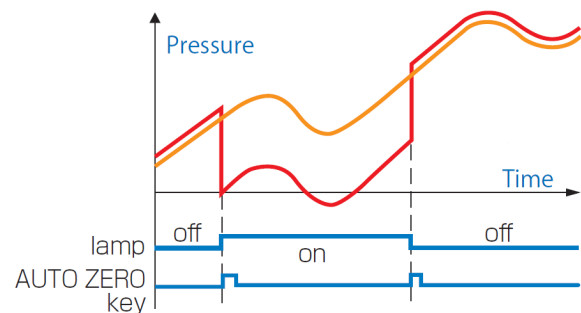
Comparators

- 8 comparators can be individually programmed. (8 channels)
- The comparators output 5 levels (HH, HI, IN, LO, LL) of contact signals.
- Relay contact output or photocoupler output.
- The LEDs (P1, P2, P3) corresponding to the selected channel light up.



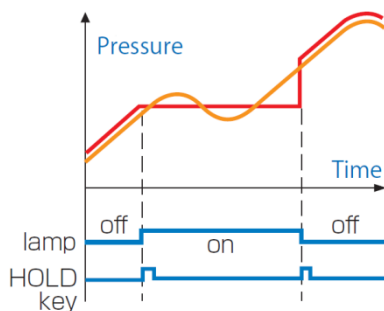
Auto-Zero

- With the current value set to zero, relative pressure changes can be measured.
- Convenient to check pressure variation.

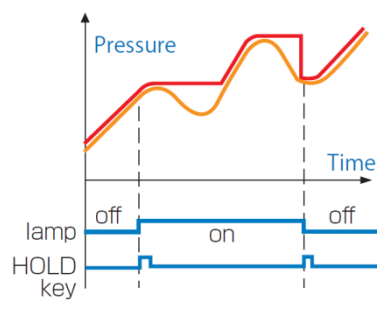


Holds

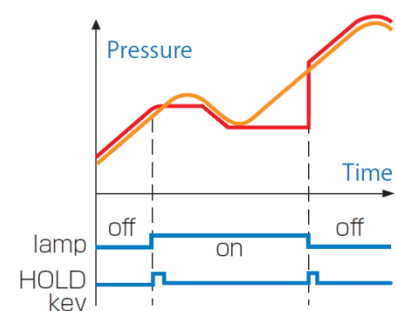
- The reading can be held at any time.
- The peak value in pressure rise and the bottom value in pressure drop can also be held.



Reading hold



Peak value hold



Bottom value hold

Model

DM-3700(A.BC.D)

A, B and C in the model notation are mandatory.

Example of model notation:

DM-3700(100KD.N.VG)

- Differential pressure 100 kPa
- Internal pressure sensor
- 100 VAC with power cord 3 m

	Category	Code	Description
A	Pressure Range		See the "Pressure Ranges" below.
B	Sensor	N	Internal pressure sensor (Standard)
		S1	External pressure sensor
		S2	External pressure sensor with drip-proof (Gauge pressure only) *
C	Sensor Cable Length	L1	3 m (Standard)
		LX	1 m to 10 m (Unit: m)
	BCD	D1	Open collector
		D2	TTL output
	Analog Output	F1	Analog output F.S. 5 V
		F2	Analog output F.S. 10 V
	Display	Q	Up to 9999
Mounting Brackets	P	Brackets for fixing	
D	Power Cord (Standard accessory)	VA	100 VAC with power cord 3 m
		VE	240 VAC with power cord 2 m
		VK	240 VAC with power cord 2 m (Mandatory for Chinese customers)

* Accuracy of S2 model: 0.25% of F.S.±1digit

Pressure Ranges

Standard

Range Code	Sensor	Measurement Range
2PD	Differential pressure	0 to 200 Pa
5PD	Differential pressure	0 to 500 Pa
1KD	Differential pressure	0 to 1 kPa
2KD	Differential pressure	0 to 2 kPa
5KD	Differential pressure	0 to 5 kPa
10KD	Differential pressure	0 to 10 kPa
20KD	Differential pressure	0 to 20 kPa
50KD	Differential pressure	0 to 50 kPa
50KG	Gauge pressure	0 to 50 kPa
100KD	Differential pressure	0 to 100 kPa
100KG	Gauge pressure	0 to 100 kPa
200KG	Gauge pressure	0 to 200 kPa
500KG	Gauge pressure	0 to 500 kPa
1MG	Gauge pressure	0 to 1 MPa
2MG	Gauge pressure	0 to 2 MPa
5MG	Gauge pressure	0 to 5 MPa
10MG	Gauge pressure	0 to 10 MPa
20MG	Gauge pressure	0 to 20 MPa
50MG	Gauge pressure	0 to 50 MPa
V2PD	Vacuum differential pressure	0 to -200 Pa
V5PD	Vacuum differential pressure	0 to -500 Pa
V1KD	Vacuum differential pressure	0 to -1 kPa
V2KD	Vacuum differential pressure	0 to -2 kPa
V5KD	Vacuum differential pressure	0 to -5 kPa
V10KD	Vacuum differential pressure	0 to -10 kPa
V20KD	Vacuum differential pressure	0 to -20 kPa
V50KD	Vacuum differential pressure	0 to -50 kPa
V50KG	Vacuum gauge pressure	0 to -50 kPa
V100KD	Vacuum differential pressure	0 to -100 kPa
V100KG	Vacuum gauge pressure	0 to -100 kPa

Pressure/Vacuum (Option)

Range Code	Sensor	Measurement Range
X2PD	Differential pressure	±200 Pa
X5PD	Differential pressure	±500 Pa
X1KD	Differential pressure	± 1 kPa
X2KD	Differential pressure	± 2 kPa
X5KD	Differential pressure	± 5 kPa
X10KD	Differential pressure	± 10 kPa
X20KD	Differential pressure	± 20 kPa
X50KD	Differential pressure	± 50 kPa
X50KG	Gauge pressure	± 50 kPa
X100KD	Differential pressure	± 100 kPa
X100KG	Gauge pressure	± 100 kPa
X200KG	Gauge pressure	± 200 kPa
X500KG	Gauge pressure	± 500 kPa

Since the lowest calibration point is -90 kPa, the measurement ranges on the Inspection Record follow it.

The contents in this document are as of December 2019. The specifications are subject to change without notice

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