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

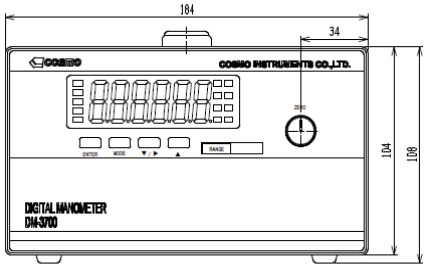
	Description
Digital Display	0000 to ±9999
Comparator Output	5 outputs: Limits (HH、HI、LO、LL) and GO
8 Channels	8 individual programmable comparators
Reading Holds	The reading can be held at any time.
Peak value hold / Bottom value hold	The peak value in pressure rise and the bottom value in pressure drop 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

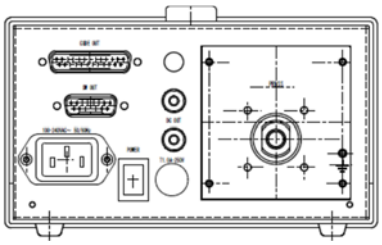
		Standard	
		Differential Pressure	**Gauge Pressure**
Measuring Media		Air / Non-corrosive gas	Air / Non-corrosive gas / Liquid
Sensing Element		Beryllium copper	SUS630
Transducer		Inductance type	Capacitance type
Accuracy *2	**Accuracy**	±0.15 % of F.S. ±1digit *1	
	Temperature Characteristic at Zero 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		380 ms Max. (99 % of F.S.) *3	110 ms Max. (99 % of F.S.)
Digital Display		0000 to ±9999	
Sampling Time		200 ms	
Comparator Output		HH, HI, GO, LO, LL (Relay contact output)	
Analog Output		The analog voltage 1, 2 or 5 VDC corresponding to the Pressure Range is output. (5 and 10 VDC are optionally available.) Ripple: Within 10 mV peak to peak	
BCD Output		Option (Open collector, TTL)	
Power Source		100 to 240 VAC multi-power supply ±10 %, 50/60 Hz 1.0 A	
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	

*1. Accuracy of drip-proof model: ±0.25% of F.S.±1digit
*2. Linearity, repeatability, and hysteresis are included.
*3. The response time in the range of 0 to 200 Pa is approx. 540 ms.

■ 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

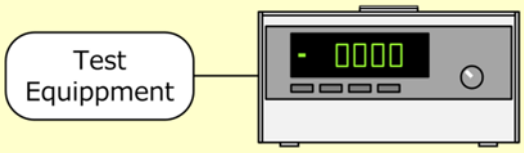
One-Stop-Testing eliminates duplicate tests. As a result, cost will be reduced and delivery time will be shortened. That contributes to customers' smoother international business transactions.

■ Applications

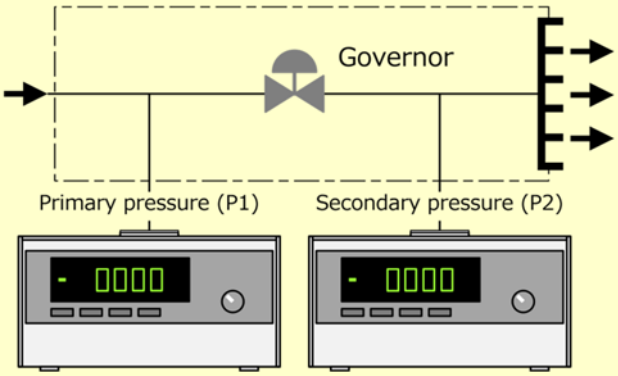
Pressure Measurement

▮ 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



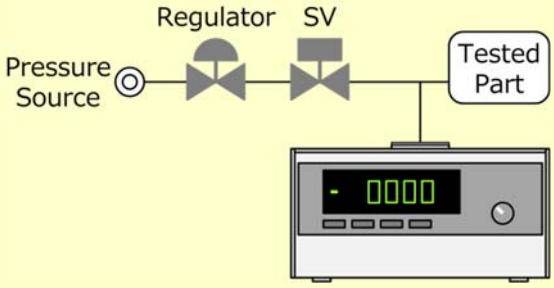
▮ Controlling the governor pressure of gas pressure burner



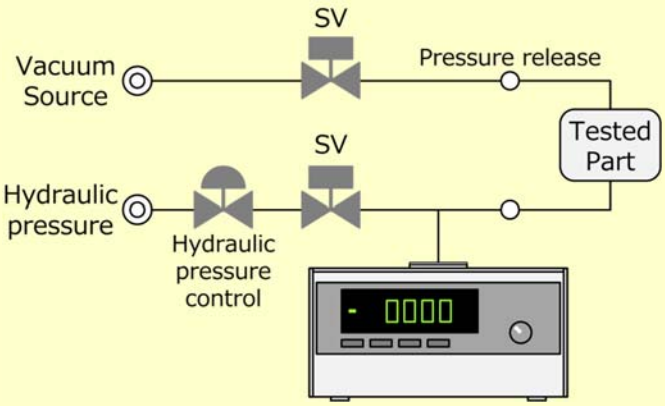
Leak Measurement

▮ Gauge pressure decay method

- ▶ Leak test of factory piping



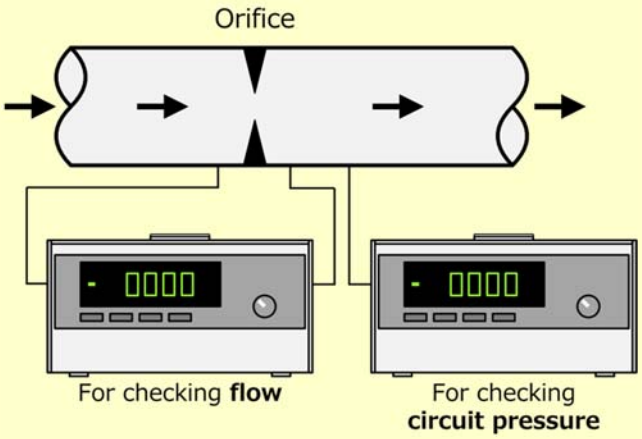
▮ Gauge pressure (hydraulic pressure) decay method



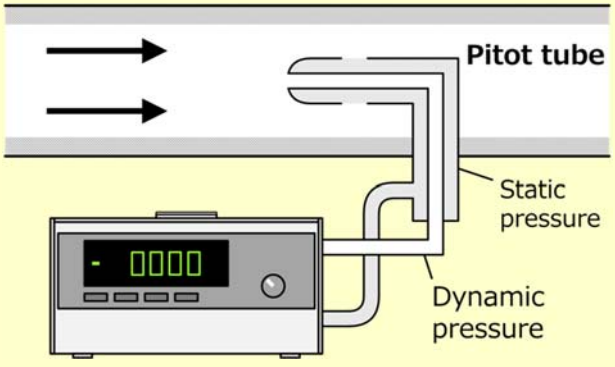
Flow Measurement

▮ Measuring orifice flow

- ▶ Checking blockage of piping

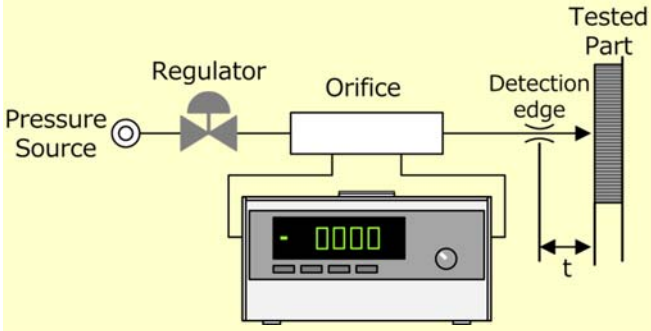


▮ Measuring air velocity and flow rate through pitot tube

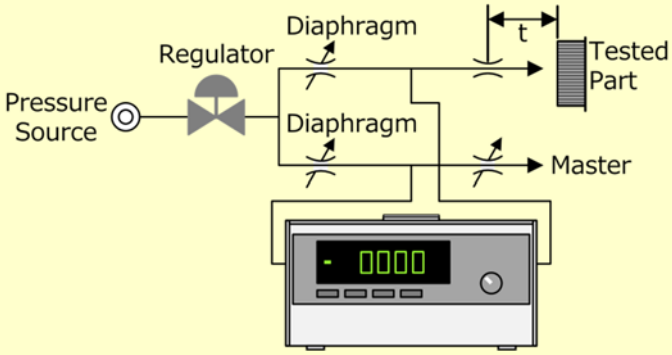


Dimension Measurement

Measuring flatness with flow rate micrometer



Measuring with back pressure (differential pressure) micrometer



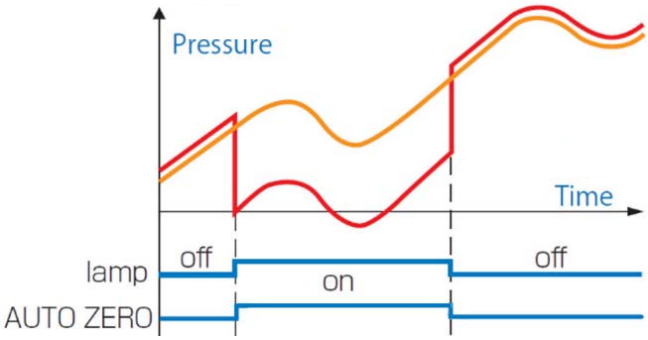
■ Introduction of Features

Comparators

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

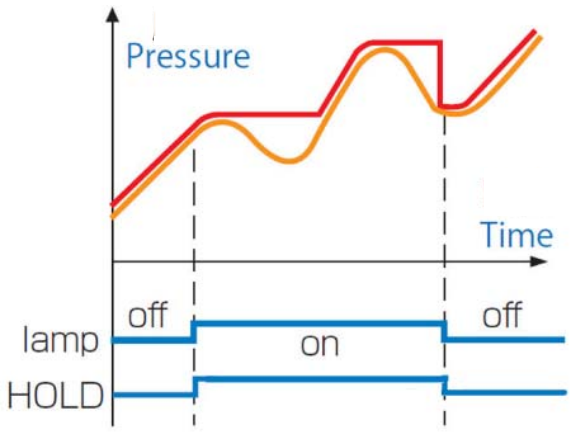
Auto-Zero

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

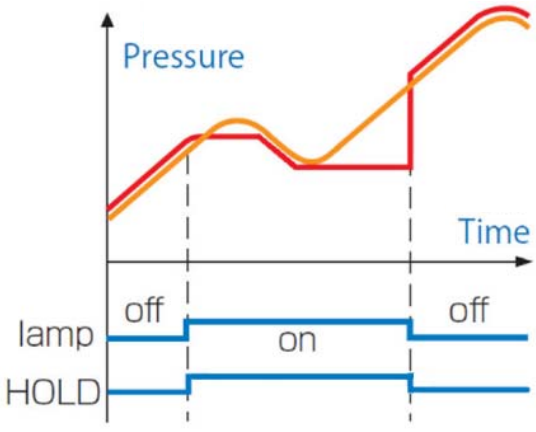


Peak Value Hold and Bottom Value Hold

- The peak value in pressure rise and the bottom value in pressure drop can be held.



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.VA)

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

	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) *1
C	Sensor Cable Length	**L1**	3 m (Standard)
		LX1	1 m
		LX5	5 m
		LX10	10 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 Digits	**Q**	Change of the minimum display digit (Only for the ranges that include 1) *2
	Mounting Brackets	**P**	Mounting Brackets
D	Power Cord (Standard accessory)	**VA**	125 VAC 3m power cord
		VE	250 VAC 2 m power cord
		VK	250 VAC 2 m power cord (Mandatory for Chinese customers)

*1. Accuracy of S2 model: ±0.25% of F.S.±1digit.
*2. The analog output is amplified to 10 V.

■ Pressure Ranges

Standard

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

Pressure/Vacuum

Range Code	Sensor	Measurement Range	Range Code	Sensor	Measurement Range
X2PD	Differential pressure	0 to ±200 Pa	**X50KD**	Differential pressure	0 to ±50 kPa
X5PD	Differential pressure	0 to ±500 Pa	**X50KG**	Gauge pressure	0 to ±50 kPa
X1KD	Differential pressure	0 to ±1 kPa	**X100KD**	Differential pressure	0 to ±100 kPa
X2KD	Differential pressure	0 to ±2kPa	**X100KG**	Gauge pressure	0 to ±100 kPa
X5KD	Differential pressure	0 to ±5kPa	**X200KG**	Gauge pressure	-100 to 200 kPa
X10KD	Differential pressure	0 to ±10kPa	**X500KG**	Gauge pressure	-100 to 500 kPa
X20KD	Differential pressure	0 to ±20kPa			

Since the lowest calibration point for all the Cosmo products is -90 kPa, the guaranteed range is down to -90 kPa as well.

The contents in this document are as of March 2020. The specifications are subject to change without notice.

Cosmo Instruments Co., Ltd.

2974-23 Ishikawa, Hachioji, Tokyo 192-0032 Japan

http://www.cosmo-k.co.jp/

Phone: +81-(0)42-642-1357 Fax: +81-(0)42-646-2439

China:	Cosmo (Shanghai) Trading Co., Ltd.	+86-(0)21-6575-6880
	Shanghai, Tianjin, Guangzhou, Chongqing, Changchun, and Wuhan	
Korea:	Cosmo Korea Co., Ltd.	+82-(0)32-623-6961
Taiwan:	Taiwan Cosmo Instruments Co., Ltd.	+886-(0)2-2707-3131
Malaysia:	COSMOWAVE SDN.BHD.	+60-(0)3-51626677
Thailand:	Cosmowave Technology Co., Ltd.	+66-(0)2-7361667
Indonesia:	Pt. Cosmowave	+62-(0)21-42900043
Vietnam:	Cosmowave Technology Co.,Ltd. Vietnam Representative Office	+84-(0)47876085

India:	Cosmo Instruments India Pvt. Ltd. Head Office	+91-(0)124-421-0946
	Cosmo Instruments India Pvt. Ltd. South Zone Regional Office	+91-(0)9663384423
	Cosmo Instruments India Pvt. Ltd. Pune - Chakan Office	+91-(0)20-6933-2345
	Cosmo Instruments India Pvt. Ltd. - Chennai Office	+91-(0)9994364454
Germany:	Cosmo EU Solutions Technology GmbH	+49-(0)212-383671-71
USA:	Cosmo Solutions Technology, Inc.	+1-248-488-2580
Mexico:	Cosmo De Mexico	+52 472 748 62 94
Brazil:	Tex Equipamentos Eletronicos Ind. Com. Ltda.	+55-(0)11-4591-2825
Australia:	Industrial Research Technology Pty. Ltd.	+61-(0)412-176-674