

# Liquid Column Manometers



## OUTLINE

This is a manometer by which pressure is measured according to the height difference between the heights of two columns in connected glass tube, being applicable to the general measurement of vacuum, pressure and pressure differential. A U-tube type and inclined tube type are provided and are selected according to various applications and measuring ranges.

### U tube type

Measured with total or difference of height of both liquid level.

### Single tube type

It reads liquid level of glass tube side directly.

### Inclined tube type

It measures low pressure of about 0 ~ 3kPa (300mmH<sub>2</sub>O) by magnifying into 2 ~ 4 times.

## CLASSIFICATION

Type	Nominal length	Measuring range		Mounting	Model
		Water column	Mercury		
U-tube type	200 → 2000mm	0 ~ 2 → 0 ~ 20kPa	0 ~ 25 → 0 ~ 250kPa	Panel mounting type Surface mounting Standing type	PM11 PM12 PM13
U-tube type for commercial application	200 → 1000mm	0 ~ 200 → 0 ~ 1000mm		Surface mounting	PM16
Single tube type	300 → 2000mm	0 ~ 3 → 0 ~ 20kPa	0 ~ 40 → 0 ~ 250kPa	Panel mounting type	PM21
Inclined tube type	50 → 300mm	0 ~ 3 → 0 ~ 20kPa	—————	Panel mounting type	PM31 PM32 PM33
				Surface mounting	PM34 PM35 PM36
				Standing type	PM37 PM38 PM39

# U-tube type liquid column manometer

## SPECIFICATION • TYPE NO. CONSTITUTION

U-tube type liquid column manometer

PM 1

Type No. 1 2 3

Selection spec. 4 5 6 7 8

Additional spec. (Option) 9 10 11 12 13 14 15

3 Wetted parts material

Material	Withstand pressure
1 Hard vinyl chloride	0.3 MPa
2 304st.st. (general use)	0.5 MPa
3 304st.st. (high pressure use)	2.0 MPa

12 Nominal length

14	200
16	300
18	500
19	760
21	1000
23	1500
24	2000

15 Document

0	Nil
1	Please specify your requirement Drawing one sheet, Instruction manual, Inspection procedure, Mill sheet, Test report

8 Other additional spec.

0	Nil
1	Please specify your requirement Scale (Capacity), Adaptor for connection, Finishing, Mercury

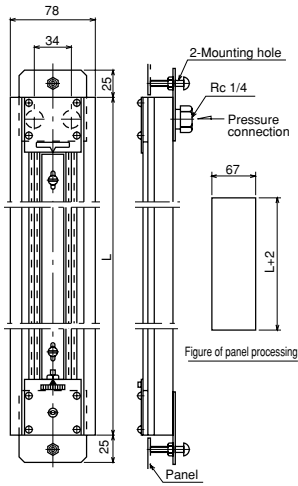
Type

1	Panel mounting type
2	Surface mounting
3	Standing type

Model	Type No.	Nominal length	Measuring range		Value of one graduation	Accuracy	Dimensions (mm)			Weight (kg)	
			Water column	Mercury			L	L <sub>1</sub>	H	PM11,12	PM13
PM11	PM□□-14□	200	0 ~ 2 kPa	0 ~ 25 kPa	0.02 kPa	1 graduation	380	406	418	1.4	5.6
	PM□□-16□	300	0 ~ 3	0 ~ 40			480	506	518	1.6	6.0
	PM□□-18□	500	0 ~ 5	0 ~ 60			680	706	718	2.1	6.9
PM12	PM□□-19□	760	—	0 ~ 100			940	966	978	2.7	7.9
	PM□□-21□	1000	0 ~ 10	0 ~ 130			1180	1206	1218	3.6	9.2
PM13	PM□□-23□	1500	0 ~ 15	0 ~ 200			0.5 kPa	1680	1706	1718	5.1
	PM□□-24□	2000	0 ~ 20	0 ~ 250	2180	2206	2218	6.6	14.2		

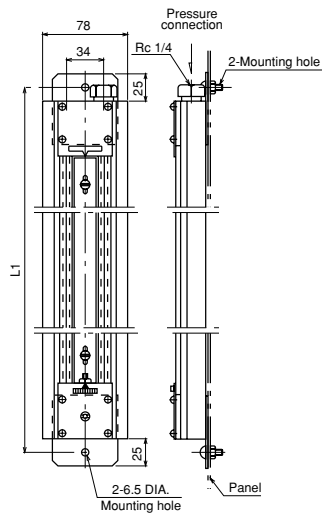
## DIMENSIONS

Panel mounting type



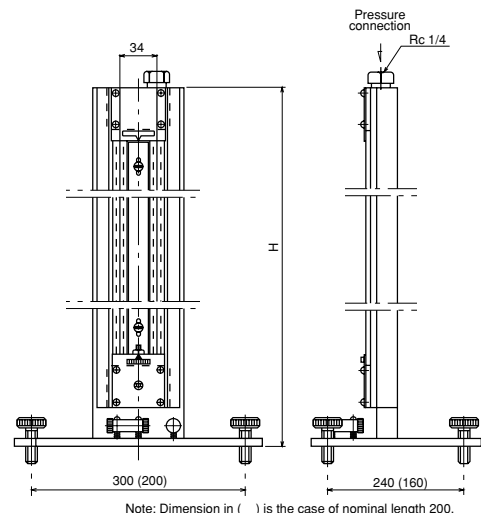
PM11-□□□

Surface mounting



PM12-□□□

Standing type



PM13-□□□

# ● U-tube type • Single tube type liquid column manometer ●

## SPECIFICATION • TYPE NO. CONSTITUTION

16	U-tube type liquid column manometer
21	Single tube type liquid column manometer

PM

1 6  
2 1

Type No.

1 2 3

Selection spec. 4 5 6 7

Additional spec. (Option) 8 9 10 11 12 13 14 15

12 Nominal length

14	200	PM16 only
16	300	
18	500	
19	760	PM21 only
20	800	PM16 only
21	1000	
23	1500	PM21 only
24	2000	PM21 only

3 Wetted parts material

	Material	Withstand pressure
1	Hard vinyl chloride	0.3 MPa
2	304st.st. (general use) PM21 only	0.5 MPa
3	304st.st. (high pressure use) PM21 only	2.0 MPa

15 Document

0	Nil
1	Please specify your requirement Drawing one sheet, Instruction manual, Inspection procedure, Mill sheet, Test report

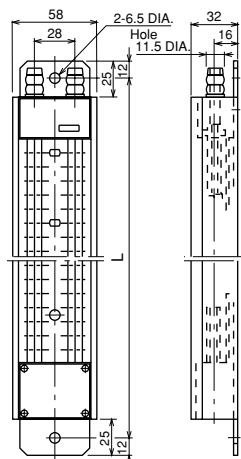
8 Other additional spec.

0	Nil
1	Please specify your requirement Mercury, scale specified (Capacity) (PM21 only) Adaptor for connection (PM21 only) Finishing (PM21 only)

Type	Model	Type No.	Nominal length	Measuring range		Value of one graduation	Accuracy	Dimension (mm)	Weight (kg)
				Water column	Mercury			L	
U-tube type	PM16	PM16-14□	200	0 ~ 200 mm		1 mm	2 mm	326	0.5
		PM16-16□	300	0 ~ 300				426	
		PM16-18□	500	0 ~ 500				626	
		PM16-20□	800	0 ~ 800				926	
		PM16-21□	1000	0 ~ 1000				1126	
Single tube type	PM21	PM21-16□	300	0 ~ 3 kPa	0 ~ 40 kPa	Water column 0.02 kPa Mercury 0.5 kPa	1 graduation	480	1.6
		PM21-18□	500	0 ~ 5	0 ~ 60			680	
		PM21-19□	760	—	0 ~ 100			940	
		PM21-21□	1000	0 ~ 10	0 ~ 130			1180	
		PM21-23□	1500	0 ~ 15	0 ~ 200			1680	
		PM21-24□	2000	0 ~ 20	0 ~ 250			2180	

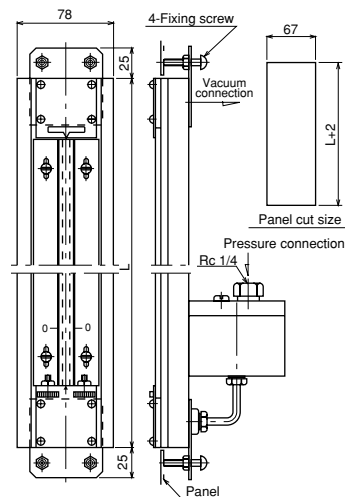
## DIMENSIONS

U-tube type



PM16-□□□

Single tube type



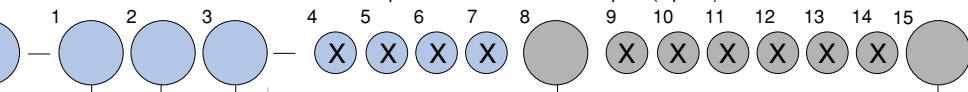
PM21-□□□

# Inclined tube type liquid column manometer (Panel • Surface mounting type)

## SPECIFICATION • TYPE NO. CONSTITUTION

Inclined tube type liquid column manometer

PM 3



Type No.

3 Wetted parts material

	Material	Withstand pressure
1	Hard vinyl chloride	0.3 MPa
2	304st.st. (general use)	0.5 MPa

15 Document

0	Nil
1	Please specify your requirement Drawing one sheet, Instruction manual, Inspection procedure, Mill sheet, Test report

Magnification • type	
1	2 • Panel mounting type
2	3 • Panel mounting type
3	4 • Panel mounting type
4	2 • Surface mounting
5	3 • Surface mounting
6	4 • Surface mounting

12 Nominal length

11	50	3 or 4 times only available
12	100	
13	150	
14	200	
15	250	2 or 3 times only available
16	300	2 or 3 times only available

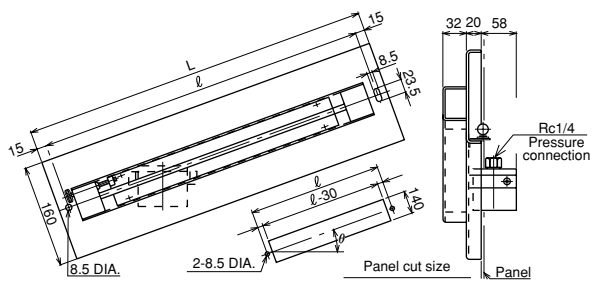
8 Other additional spec.

0	Nil
1	Please specify your requirement Scale specified (Capacity), Adaptor for connection, Color

Type	Type No.	Magnification	Nominal length	Measuring range (Water column)	Value of one graduation	Accuracy	Dimensions (mm)			Weight (kg)
							L	ℓ	θ	
Panel mounting type	PM32-11□	3	50	0 ~ 0.5 kPa	0.01 kPa	1 graduation	420	390	19°20'	4.5
	PM33-11□	4					470	440	14°30'	
	PM31-12□	2	100	0 ~ 1			470	440	29°42'	
	PM32-12□	3					570	540	19°20'	
	PM33-12□	4	150	0 ~ 1.5			670	640	14°30'	
	PM31-13□	2					570	540	29°42'	
	PM32-13□	3	200	0 ~ 2			720	690	19°20'	
	PM33-13□	4					870	840	14°30'	
	PM31-14□	2	250	0 ~ 2.5			670	640	29°42'	
	PM32-14□	3					870	840	19°20'	
	PM33-14□	4	300	0 ~ 3			1070	1040	14°30'	
	PM31-15□	2					770	740	29°42'	
	PM32-15□	3	1170	0 ~ 3			1020	990	19°20'	
	PM31-16□	2					870	840	29°42'	
PM32-16□	3		1170	1140	19°20'					
Surface mounting	PM35-11□	3	50	0 ~ 0.5 kPa	0.01 kPa	1 graduation	420	390	19°20'	5.6
	PM36-11□	4					470	440	14°30'	
	PM34-12□	2	100	0 ~ 1			470	440	29°42'	
	PM35-12□	3					570	540	19°20'	
	PM36-12□	4	150	0 ~ 1.5			670	640	14°30'	
	PM34-13□	2					570	540	29°42'	
	PM35-13□	3	200	0 ~ 2			720	690	19°20'	
	PM36-13□	4					870	840	14°30'	
	PM34-14□	2	250	0 ~ 2.5			670	640	29°42'	
	PM35-14□	3					870	840	19°20'	
	PM36-14□	4	300	0 ~ 3			1070	1040	14°30'	
	PM34-15□	2					770	740	29°42'	
	PM35-15□	3	1170	0 ~ 3			1020	990	19°20'	
	PM34-16□	2					870	840	29°42'	
PM35-16□	3		1170	1140	19°20'					

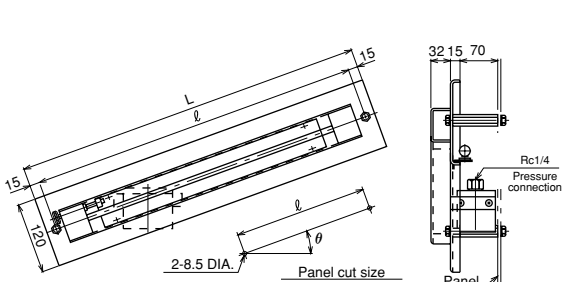
## DIMENSIONS

Panel mounting type



PM31-	□	□
PM32-	□	□
PM33-	□	□

Surface mounting



PM34-	□	□
PM35-	□	□
PM36-	□	□

# ● Inclined tube type liquid column manometer (Standing type) ●

## SPECIFICATION • TYPE NO. CONSTITUTION

Inclined tube type liquid column manometer

PM 3

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Type No.

3 Wetted parts material

	Material	Withstand pressure
1	Hard vinyl chloride	0.3 MPa
2	304st.st.(general use)	0.5 MPa

Magnification

7	2
8	3
9	4

12 Nominal length

11	50	3 or 4 times only available
12	100	
13	150	
14	200	
15	250	2 or 3 times only available
16	300	2 or 3 times only available

15 Document

0	Nil
1	Please specify your requirement Drawing one sheet, Instruction manual, Inspection procedure, Mill sheet, Test report

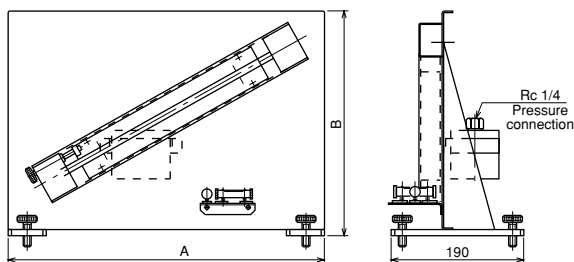
8 Other additional spec.

0	Nil
1	Please specify your requirement Scale specified (Capacity), Adaptor for connection, Color

Mounting	Type No.	Magnification	Nominal length	Measuring range (Water column)	Value of one graduation	Accuracy	Dimension (mm)		Weight (kg)
							A	B	
Stand 1 type	PM38-11□	3	50	0 ~ 0.5 kPa	0.01 kPa	1 graduation	400	239	—
	PM39-11□	4					460	229	
	PM37-12□	2	430	309					
	PM38-12□	3	540	289					
	PM37-13□	2	660	570					
Stand 2 type	PM39-12□	4	100	0 ~ 1	0.01 kPa	1 graduation	510	359	—
	PM38-13□	3	150	0 ~ 1.5			680	590	
	PM39-13□	4					860	770	
	PM37-14□	2	200	0 ~ 2			620	530	
	PM38-14□	3					830	740	
	PM39-14□	4					1060	970	
	PM37-15□	2	250	0 ~ 2.5			700	610	
	PM38-15□	3					970	880	
	PM37-16□	2					780	690	
	PM38-16□	3	300	0 ~ 3			1110	1020	

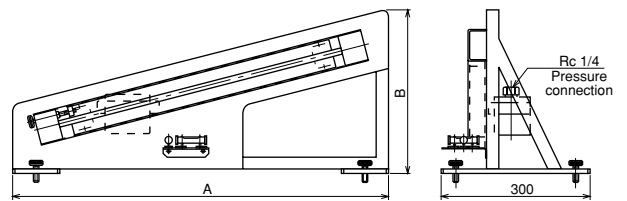
## DIMENSIONS

1 type



PM37-□□□  
PM38-□□□  
PM39-□□□

2 type



PM37-□□□  
PM38-□□□  
PM39-□□□