

CATALOG No.1017

MODEL No.784·785
No.787S·789

MODEL No.784E·787SE·789E
No.787ME·789PE

Differential pressure gauge

*Differential pressure gauge
with electric contacts*



DIFFERENTIAL PRESSURE GAUGES AND SWITCHES



ASAHI GAUGE MFG. CO., LTD.
JAPAN

Differential gauge specifications

Item	Model	Differential pressure scale MPa	One-side pressure resistance MPa	Standard pressure (pressure resistance) Mpa	Central angle of differential pressure scale	Wet parts material	Size	Casing		Connection Thread Note 2
Bourdon-tube eccentric type	784	0-0.08 0-1	Up to the standard pressure	Within 5 times of differential pressure scale MAX 5	About 90°	BS SUS316	Note 3 150	Metal screw lid	A type	G 3/8 G 1/2
									B type	G 3/8 G 1/2
									D type	G 3/8 G 1/2
Sealed type	785	0-1.5kPa 0-0.03MPa	Up to the differential pressure scale	MAX 0.5	270°	BS+ NBR	100	Metal screw tightening	A type	G 3/8 G 1/2
									B type	G 3/8 G 1/2
									D type	G 3/8 G 1/2
Bellows type	787S	0-1kPa 0-4kPa	MAX 0.04	MAX 1	270°	SUS316 +NBR	150	Metal screw lid	Pipe-mounting	G 3/8 G 1/2
									Panel-mounting	G 3/8 G 1/2
	789	0-5kPa 0.6MPa	Less than the graduation 0.05, is 0.3, others are 1	MAX 5	270°	SUS316 +NBR Note 4	100 150	Metal screw lid	Pipe-mounting	RC 1/4
									Panel-mounting	RC 1/4
									Pipe-mounting	RC 1/4
									Panel-mounting	RC 1/4

Specifications of the differential pressure gauge with contacts and the differential gauge switches

Item	Model	Differential pressure scale MPa	Contact type	Note 5 Indication	Size	Number of contacts	Electric characteristics			
							Rating	Insulation resistance	Voltage resistance	
Bourdon-tube eccentric type	784E	0-0.08 0-1	Pointer contacts	Yes	150	1 or 2	AC100V 0.5A	DC500V 50h or more	AC1500V 1 minute between case and terminals	
Bellows type	787SE	0-1kPa 0-4kPa	Pointer contacts	Yes	150	1 or 2				
	789E	0-5kPa 0-0.6MPa								
	787ME	0-0.02 0-0.6	Micro switch	Yes	150	1				Resistance load AC250V 5A
	789PE	0-0.03 0-0.6	Reed switch	Yes	100	1 or 2				Resistance load AC250V 0.5A

Note 1: One side pressure resistance means the allowable maximum over differential pressure.

Note 2: Special thread can be manufactured.

Note 3: 100 is available.

Note 4: Products of fluoro rubber and chloroprene rubber is available in addition to NBR.

Note 5: Product without the indicating scale is called the differential pressure switch.

Note 6: Product for the current capacity 10A is available.

Note 7: Product with the micro switch of 0-5 to 0-15kPa 1 SPDT without indication is available. Specify as 789M.

Note 8: Double scale of SI unit (inner) and Another unit (outer) is available.

Note 9: Diaphragm type of differential pressure switch is for more than 0.1MPa.

When ordering

Specify the model, differential pressure scale (range), standard pressure, L or H on the standard pressure side and the number of pressure equalizing valve (with or without the over pressure safety valve).

Description

A differential pressure gauge is used to measure the pressure difference from two different measuring ports and indicates the differential pressure on the dial.

Application

- Measurement of the tank level
- Flow rate measurement of the pipe line (Flow rate graduation is available.) by combining with an orifice
- Detection of the filter clogging

Cautions to use differential pressure gauges

- The standard pressure is scaled as (+) graduation when it is on the L side.
- It may cause the indication failure if the excessive pressure over one-side pressure resistance is loaded onto only one of the pressure connection ports, therefore the use of manifold valve is recommended.
- Normal differential pressure range should be 1/2 to 2/3 of the maximum value.
- For Model 787S and 789, release air through the air vent located on the top.

Features

Model () means to be equipped with contacts	Name	Features
784 (784E)	Bourdon-tube eccentric type differential pressure gauge	<ul style="list-style-type: none"> Two Bourdon-tubes receive pressure from two ports respectively and the difference of displacement is indicated by the link mechanism. Wet parts are available all in SUS316. 784E is the differential pressure gauge with the pointer contacts.
785	Sealed type differential pressure gauge	<ul style="list-style-type: none"> The case applies the enclosed structure, and the differential pressure between element internal pressure and case internal pressure is indicated by the link mechanism. Low-range-differential pressure. Applicable for clean non-corrosive gas.
787S (787SE) (787ME)	Bellows type differential pressure gauge (Low-range-differential pressure gauge)	<ul style="list-style-type: none"> Inside and outside of one bellows receives pressure from two places, and the difference of displacement is indicated by the link mechanism. 787SE is the differential pressure gauge with the pointer contacts. 787ME is the differential pressure gauge with the micro switch. High pressure resistance.
789 (789E) (789PE)	Bellows type differential pressure gauge	<ul style="list-style-type: none"> This gauge uses the same principle as 787S, but the differential range is comparatively wide. 789E is the differential pressure gauge with the pointer contacts. 789PE is the differential pressure gauge with the reed switch. High pressure resistance.

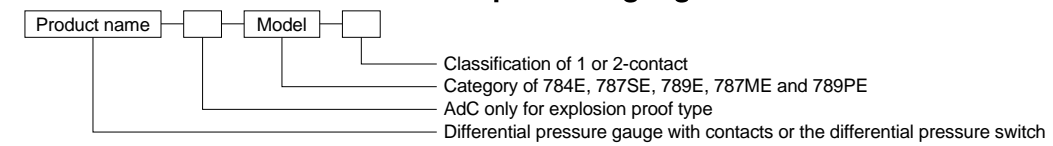
Model		Accuracy	Element	Case	Diaphragm	Allowable ambient temperature	Fluid	Remarks
BS	SUS							
784-A380 784-A480	784-A381 784-A481	±2% FS	Bourdon-tube	ADC black	Applicable	BS -30-50°C SUS -30-100°C	Liquids Gases	With standard pressure scale.
784-B380 784-B480	784-B381 784-B481							
784-D380 784-D480	784-D381 784-D481							
785-A350 785-A450	—							
785-B350 785-B450	—	±1.6% FS	Alcove	AC black	Inapplicable	-30-50°C	Clean air, non-corrosive gases	
785-D350 785-D450	—							
—	787S-A381P 787S-A481P							
—	787S-A381L 787S-A481L							
—	789-D951P 789-D951L	±1.6% FS	Bellows	ADC black SUS 304 stock ADC black	Applicable depending on the condition However, for over the differential pressure 0.05MPa	-5- 45°C	Liquids Gases	When the high one side pressure resistance is required, use the pressure equalizing valve with an over pressure safety valve.
—	789-D981P 789-D981L							
—	—							
—	—							

Product weights are listed in the drawings on page 3 and 4.

ON/OFF differential	Accuracy			Setting scale	Contact adjustment method	Contact adjustment range	Pressure-resistance explosion-proof type Adc-w MPa (Internal only)	Lead cable outlet	Remarks
	Indication	Setting	Repeatability						
MAX 1% F.S.	±2% F.S.	±1.6% F.S.	0.5% F.S.	Common with the indication scale	Internal or external	0-100% F.S.	Inapplicable	Waterproof terminal box conduit G1/2 with JIS 15C gland packing.	One-side pressure resistance, standard pressure, scale central angle (indication), wet parts materials and case are the same as the differential pressure gauge in the above table. 787ME follows 789.
	±1.6% F.S.								
MAX 10% F.S.	±1.6% F.S.	±3% F.S.	1% F.S.	About 50°	Internal	Upper limit: 10-100% Lower limit: 0-90%	0.02, 0.05, 0.08, 0.1, 0.2, 0.4, 0.6		
MAX 5% F.S.	±2% F.S.	±1% F.S.	1% F.S.	Common with the indication scale	Internal		Inapplicable		

Product weights are listed in the drawings on page 5 and 6.

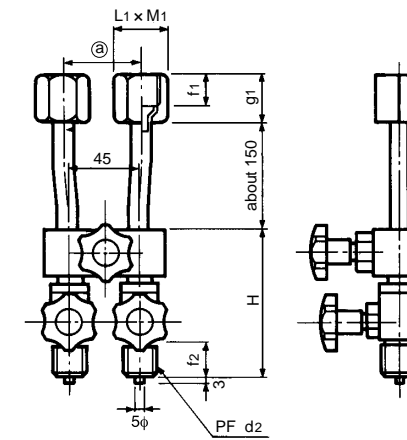
Product number of the differential pressure gauge with contacts and differential pressure switch



These specifications are subject to change without notice for improvement.

Equalizing valve 21BV

It is inevitable to use a pressure-equalizing device to load the equal pressure to both inlet ports of the differential pressure gauge.



On your order of the equalizing valve:

Material	Model	d2 x d2	f1	g1	L1 x M1	f2	H
SUS	21BV-U33	3/8 x 3/8	16	25	24 x 28	18	77
	21BV-U44	1/2 x 1/2	18	27	26 x 30	20	79
Bs	21BV-B33	3/8 x 3/8	16	25	24 x 28	18	77
	21BV-B44	1/2 x 1/2	18	27	26 x 30	20	79

- Specify the model and the differential pressure gauge model to attach when ordering.
- When the high one side pressure is loaded, use the pressure equalizing valve with an over pressure safety valve.
- Dimension of (a) part varies depending on the differential pressure gauge type.
- Withstand pressure is 10MPa

Contacts and wiring method

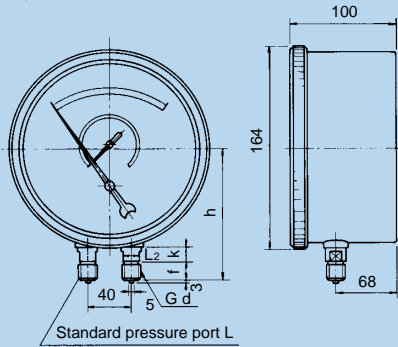
Model	Contacts	Wiring method
Pointer contact type 784E 787SE 789E	Upper limit one contact H	
	Lower limit one contact L	
	Upper and lower limits 2 contacts HL	
Reed switching type 789PE	Upper limit one contact H	
	Lower limit one contact L	
	Upper and lower limits 2 contacts HL	
Microswitching type 787ME	Upper limit one contact H	
	Lower limit one contact L	
	Upper and lower limits 2 contacts HL	

Differential pressure gauge •

Model 784 Bourdon-tube eccentric type

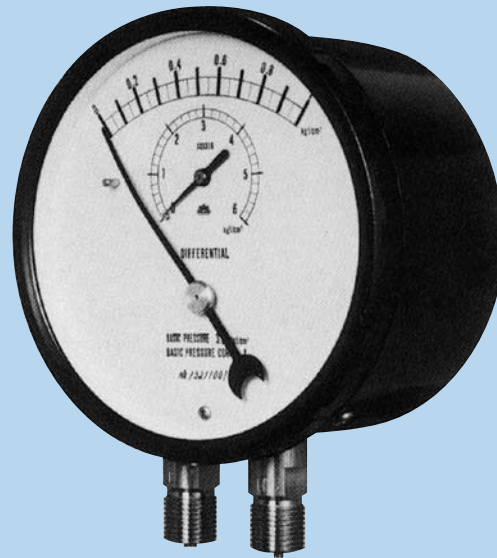
Weight: About 2.3kg
(B type)

A type

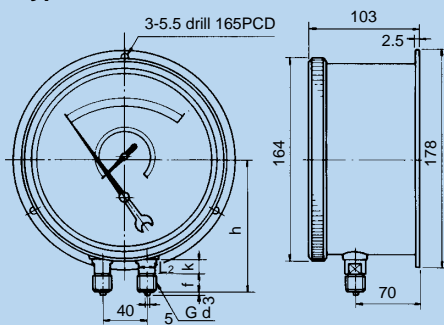


A type

Connection thread d	f	K	L ₂	h
G 3/8	18	12	14	114
G 1/2	20	12	17	116



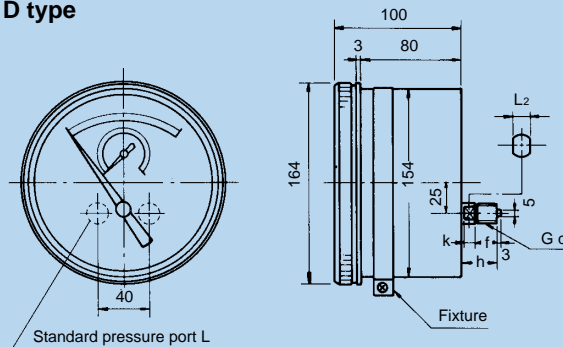
B type



B type

Connection thread d	f	K	L ₂	h
G 3/8	18	12	14	114
G 1/2	20	12	17	116

D type



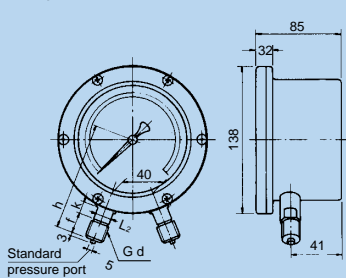
D type

Connection thread d	f	K	L ₂	h
G 3/8	18	12	17	42
G 1/2	20	12	17	44

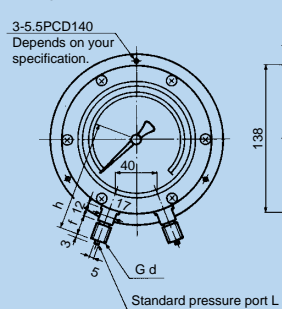
Model 785 Enclosed type

Weight: About 1.5kg

A type



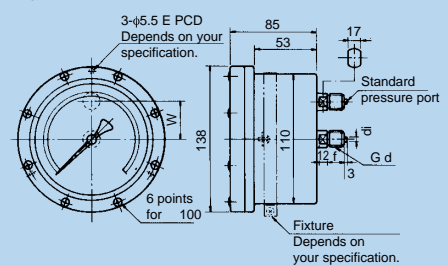
B type



A type/B type

Connection thread d	f	K	L ₂	h
G 3/8	18	12	17	98
G 1/2	20	12	17	100

D type



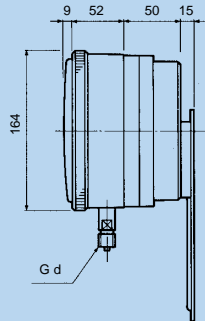
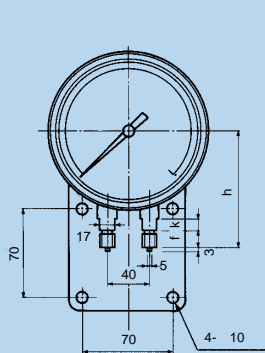
D type

Connection thread d	f
G 3/8	18
G 1/2	20

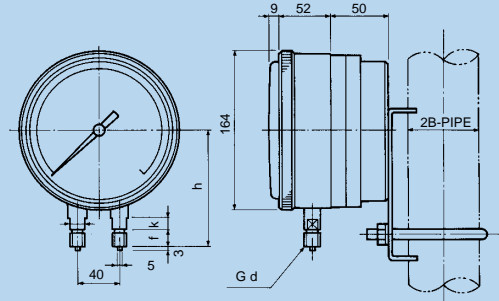
Model 787S Bellows type

Weight: About 5kg

Panel mounting type



Pipe stand mounting type

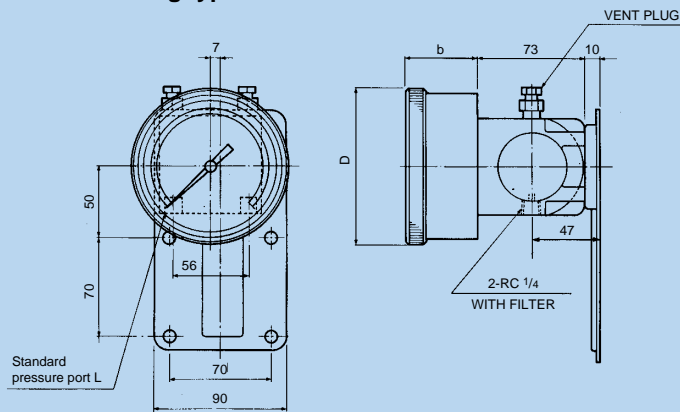


Connection thread d	f	K	h
G 3/8	18	12	114
G 1/2	20	12	116

Model 789 Bellows type

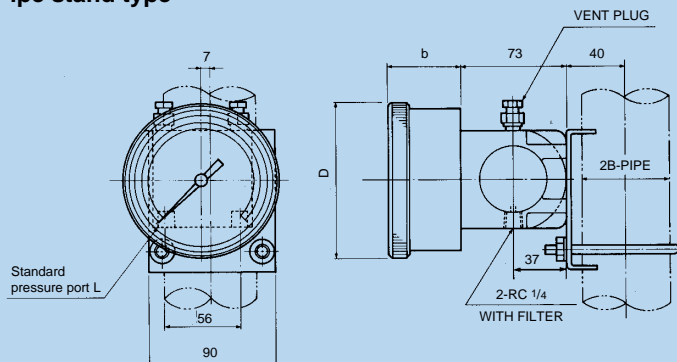
Weight: About 2.7kg for 100
About 3.2kg for 150

Panel mounting type

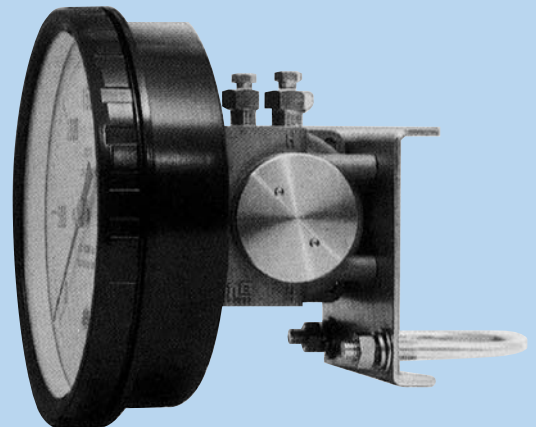


Size	D	b	Model
100	112	50	789-D951L
150	164	52	789-D981L

Pipe stand type



Size	D	b	Model
100	112	50	789-D951P
150	164	52	789-D981P



Note: G 3/8 (M) and G 1/2 (M) threads for the pressure inlet part are available.

Differential pressure gauge with contacts

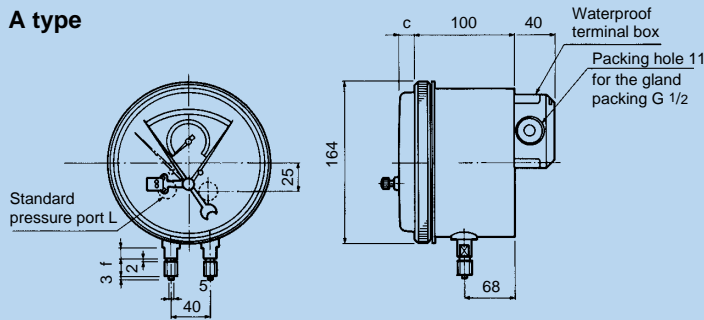
Model 784E

Bourdon-tube eccentric type with pointer contacts

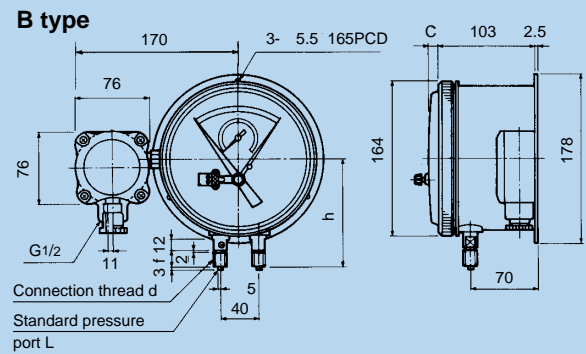
Weight: About 2.6kg (B type)

Contact number	C	Connection thread d	f	h
1 contact	9	G 3/8	18	114
2 contacts	15	G 1/2	20	116

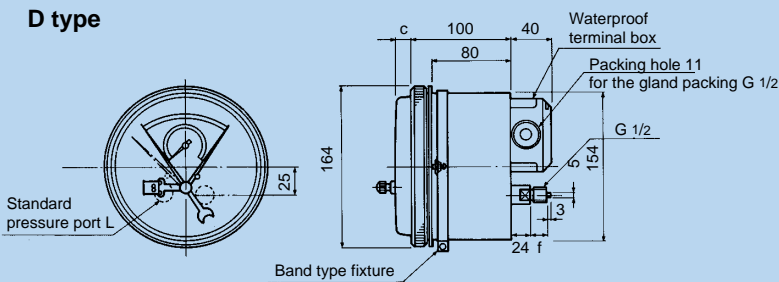
A type



B type



D type



			SUS	
			A type	B type
G 3/8	1 contact	784E-A381-1	2 contacts	784E-A381-2
G 3/8	1 contact	784E-B381-1	2 contacts	784E-B381-2
G 3/8	1 contact	784E-D381-1	2 contacts	784E-D381-2

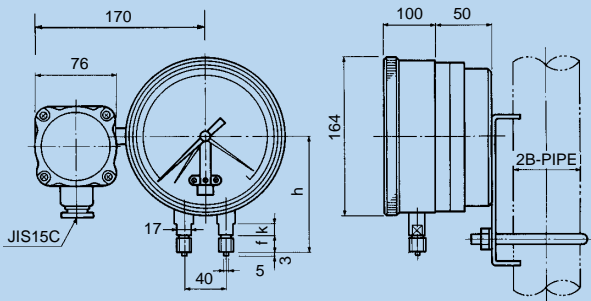
Model 787SE

Bellows type with contacts

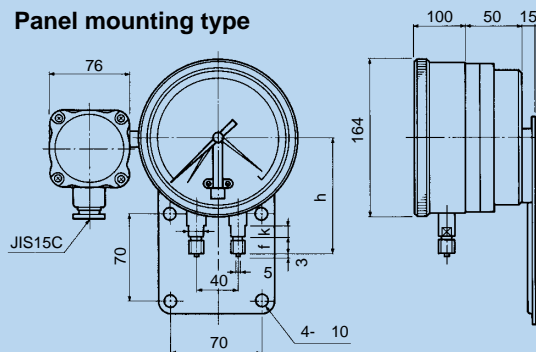
Panel mounting type

Weight: About 5.4kg

Pipe stand mounting type



Connection thread d	f	K	h
G 3/8	18	12	114
G 1/2	20	12	116

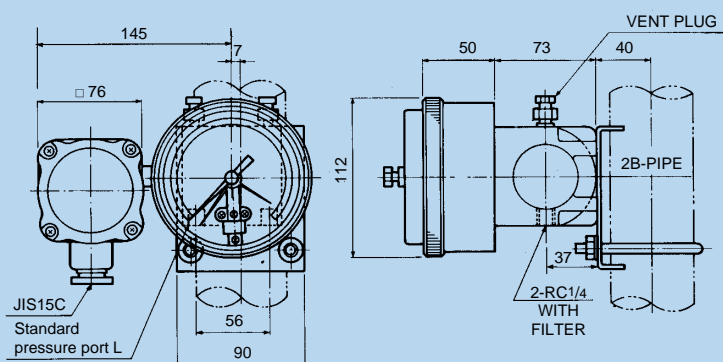


			Panel mounting		Pipe stand mounting		
			G 3/8	G 1/2	G 3/8	G 1/2	
1 contact	787SE-A381L-1	2 contacts	787SE-A381L-2	1 contact	787SE-A481L-1	2 contacts	787SE-A481L-2
1 contact	787SE-A481P-1	2 contacts	787SE-A481P-2				

Model 789E

Bellows type with pointer contacts

Weight: About 3kg



Pipe stand mounting	1 contact	789E-D951P-1
	2 contacts	789E-D951P-2
Panel mounting	1 contact	789E-D951L-1
	2 contacts	789E-D951L-2

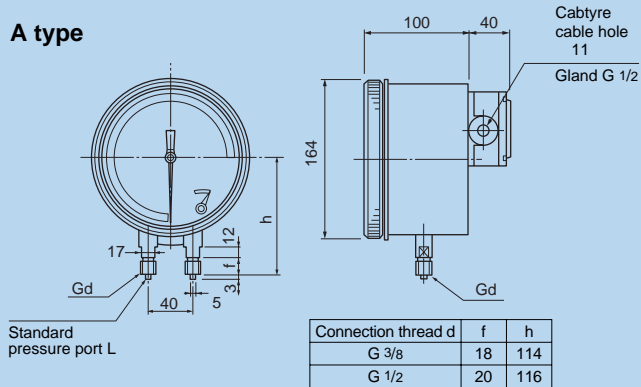
For the mounting dimensions in the case of panel mounting, refer to the drawing of Model 789.

Note: G 3/8 (M) and G 1/2 (M) threads for the pressure inlet part are available.

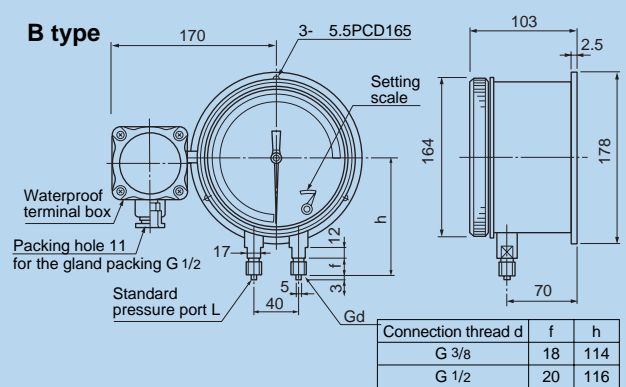
Model 787ME With micro switch

Weight: About 4.1kg
(B type)

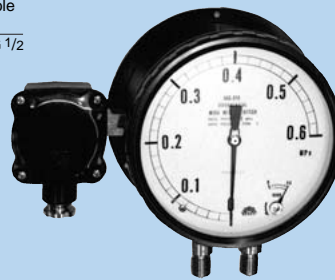
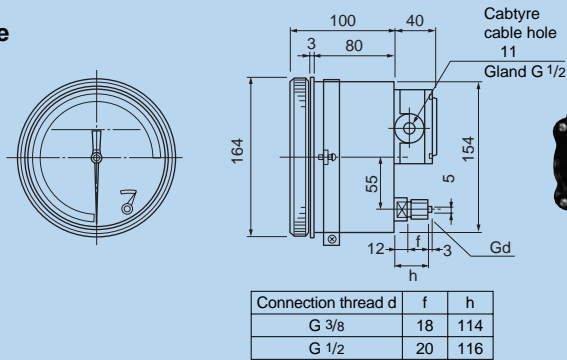
A type



B type



D type



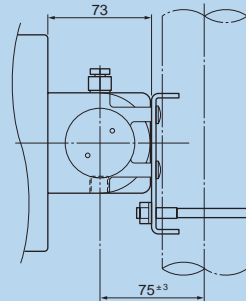
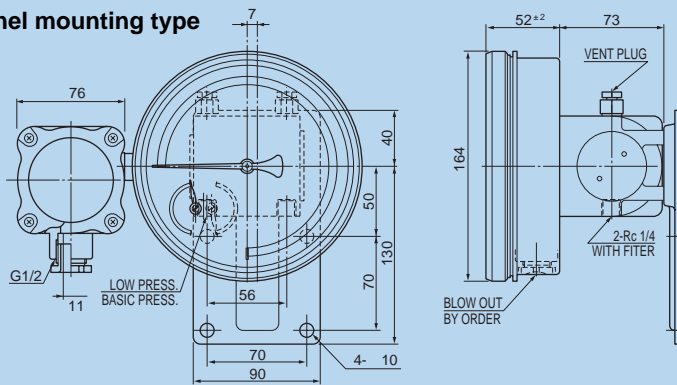
A type	G 3/8	1 contact	787ME-A381-1
		2 contacts	787ME-A381-2
G 1/2	1 contact	787ME-A481-1	
	2 contacts	787ME-A481-2	
B type	G 3/8	1 contact	787ME-B381-1
		2 contacts	787ME-B381-2
G 1/2	1 contact	787ME-B481-1	
	2 contacts	787ME-B481-2	
D type	G 3/8	1 contact	787ME-D381-1
		2 contacts	787ME-D381-2
G 1/2	1 contact	787ME-D481-1	
	2 contacts	787ME-D481-2	

Note: 2-contact is not supplied with the indication scale.
(Setting scale only)

Model 789ME With micro switch

Pipe stand mounting type Weight: About 3kg

Panel mounting type



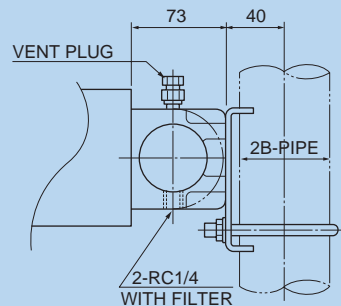
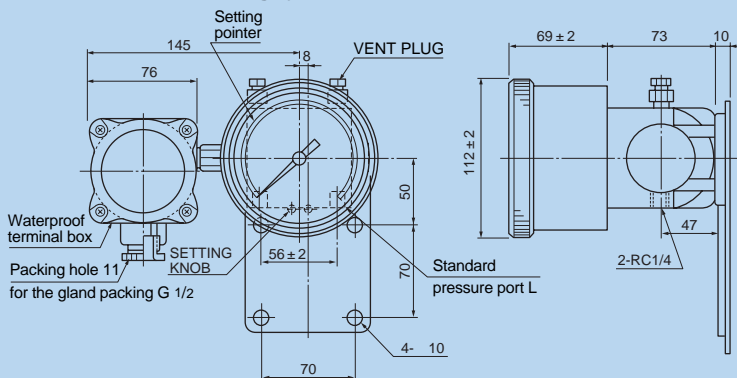
Pipe stand mounting	1 contact	789ME-D951P-1
	2 contacts	789ME-D951P-2
Panel mounting	1 contact	789ME-D951L-1
	2 contacts	789ME-D951L-2

Model 789PE With reed switch

Pipe stand mounting type

Weight: About 3kg

Panel mounting type



Pipe stand mounting	1 contact	789PE-D951P-1
	2 contacts	789PE-D951P-2
Panel mounting	1 contact	789PE-D951L-1
	2 contacts	789PE-D951L-2