P-810

● Old model P-800-1

GENERAL

Provide optimum measurement of flow rate of various gases in semi-conductor production process. High reliability is ensured circumferential seals. Rich experiences in operation and use in various devices. Also available are the products with low-leakage and high-quality structure provided with electrolytic polishing.

MAJOR APPLICATIONS

Gas flow measurement in semi-conductor production equipments process

STANDARD SPECIFICATION

Measuring object		Liquids and gases	
Measuring range	Air	Min. 5~50 NmL/min. Max. 6~60 NL/min.	· Air at 0°C, 1atm · When selecting flow range, refer to standard flow rate table. · In case Op. Press at gas is not 1atm, refer to page 1.
	Water	Min. 5~50 mL/min. Max. 0.2~2 L/min.	
Range ability		10:1	
Accuracy		P-813: ±3%F.S. P-812: ±5%F.S.	
Max. Op. Press.		8kgf/cm²G(0.8MPa)	
Max. Op. Temp.		120°C	In case Viton seal
Material		Std.	Option (Specify by model code)
	Body	SCS14	SUS316 (SUS316L is also available. Consult factory)
	Tapered tube	Pyrex glass	
	Packing	Viton(max.120°C)	CR(max.80°C)
	Support	SUS304	
	Cover	Transparent PVC	
Connection	Std.	Rc1/4	Refer to Basic model code for details.
	Opt.	Rc1/8, NPT1/4, 1/4,3/8SW, 1/4, 3/8VCR etc.	
Mounting	Std. Opt.	Lock-nut mount onto panel front Bezel installation,	Refer to ordering information for details.
Weight (std. type)		0.6kg(P-813)	

ALARM AND ANALOG OUTPUT

Type		Availability P-812	Availability P-813	Reference pages
Reed switch type alarm unit	General	×	×	
	CE, UL Version	×	×	
PAU Optical alarm unit		○	○	51 page
Optical alarm unit		×	×	
Analog output unit		○	×	53~56 page

P-812 / STANDARD FLOW RATE TABLE

(In case Op. Press at gas is not 1atm, refer to page 1.)

In case alarm analog output code is O and E			
AIR(1atm, 0°C)		Water	
10~50	NmL/min		
20~100	NmL/min		
40~200	NmL/min		
60~300	NmL/min		
50~500	NmL/min		
0.1~1	NL/min	5 ~50	mL/min
0.2~2	NL/min	10~100	mL/min
0.3~3	NL/min	20~200	mL/min
0.5~5	NL/min	30~300	mL/min
1~10	NL/min	50~500	mL/min
2~20	NL/min	0.1~ 1	L/min
3~30	NL/min		
10~50	NL/min	0.3~1.5	L/min
12~60	NL/min	0.4~ 2	L/min

In case alarm output code is G, flow range is different. Consult for details.

OTHER AVAILABLE OPTIONS

You can specify the following options:
Two point alarm, reed switch lead wire length, double graduations, special graduations, built-in rubber joint type, built-in joint type, etc.
For details, refer to ⑥ Other Option on page 60).

P-813 / STANDARD FLOW RATE TABLE

(In case Op. Press at gas is not 1atm, refer to page 1.)

In case alarm analog output code is O and E			
AIR(1atm, 0°C)		Water	
5 ~50	NmL/min		
10~100	NmL/min		
20~200	NmL/min		
30~300	NmL/min		
50~500	NmL/min		
0.1~ 1	NL/min	5 ~50	mL/min
0.2~ 2	NL/min	10~100	mL/min
0.3~ 3	NL/min	20~200	mL/min
0.5~ 5	NL/min	30~300	mL/min
1 ~10	NL/min	50~500	mL/min
2 ~20	NL/min	0.1~ 1	L/min
3 ~30	NL/min		
5 ~50	NL/min	0.15~1.5	L/min
6 ~60	NL/min	0.2~ 2	L/min

In case alarm output code is G, flow range is different. Consult for details.

BASIC MODEL CODE

SERIES NAME	L DIMENSION	VALVE	ALARM ANALOG OUTPUT	WETTED PARTS MATERIAL	PACKING MATERIAL	CONNECTION TYPE	CONNECTION SIZE	EXAMPLE / DESCRIPTION
P-81	2	-3	O	-6	F	-R	2	

CONNECTION SIZE			
1	1/8	Only connection type code R and N can be selected.	
2	1/4 (Standard)		
3	3/8	Only connection type code S and V can be selected.	
Z	Special		

CONNECTION TYPE		
R	Rc thread (Standard)	Bezel installation is also possible. Refer to Mounting Option in page 57 for details.
N	NPT thread	
S	SW	
V	VCR	
Z	Special.	

PACKING MATERIAL		
F	Viton(Standard)	
C	CR	Select it for ammonia gas.
Z	Special	

WETTED PARTS MATERIAL		
6	SCS14 (Standard)	
E	SUS316/EP polished	High quality type
Z	Special	

ALARM ANALOG OUTPUT		
0	Not provided	
E	PAU ALARM UNIT provided	Refer to page 51.
G	PAS/IAU ANALOG OUTPUT UNIT	Refer to page 53.
Z	Special	

VALVE		
0	Not provided	
1	Bellows valve provided at outlet (High grade valve)	Refer to valve position selection guide (Page 61).
2	Bellows valve provided at inlet (High grade valve)	
3	Needle valve provided at outlet	
4	Needle valve provided at inlet	
Z	Special	

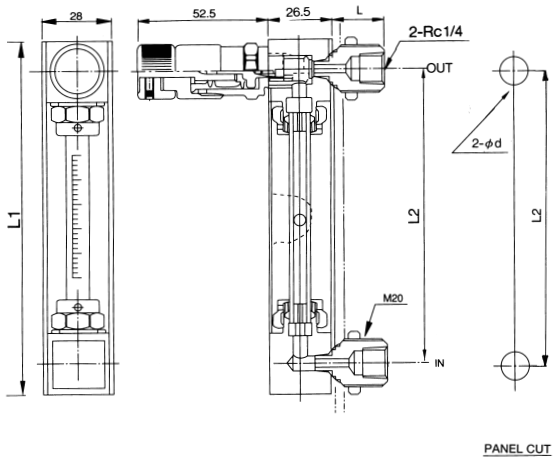
L DIMENSION		
2	145mm	Beware, as standard flow rate is different depending on this code.
3	224mm	
9	Special	

ORDERING INFORMATION

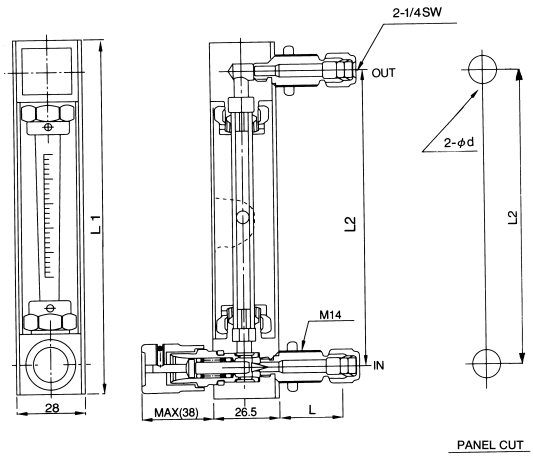
Basic model code	Designation items for detailed specifications
P-81□-□□-□□-□□	① Fluid name — ② Measuring range — ③ Press. — ④ Temp. — ⑤ Mounting Option — ⑥ Other Option
(Use model code table for selection)	(For specification procedure, refer to page 57)

DIMENSIONS

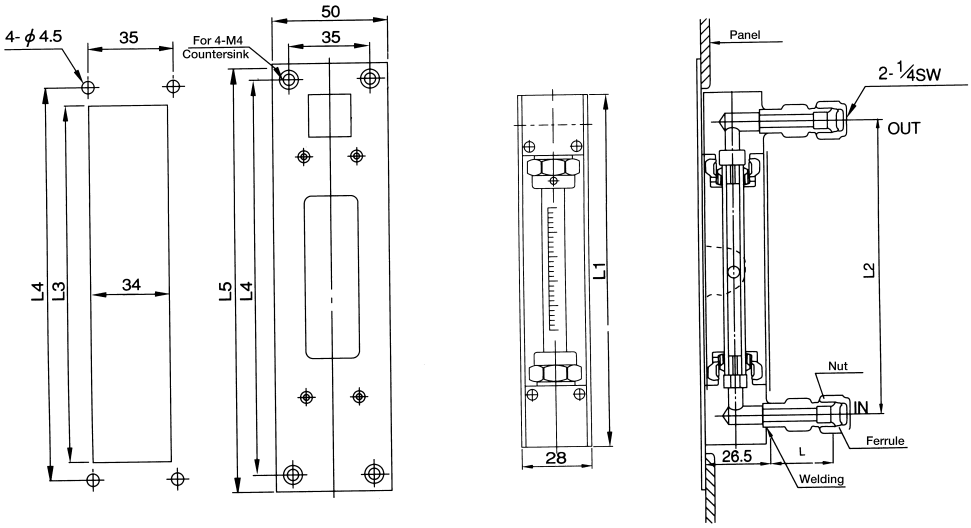
● STANDARD TYPE (Rc 1/4 conn. Bellows valve provided)
(P-81□-10-6F-R2 Valve provided at Outlet, Panel front lock-nut fixing)



● STANDARD TYPE (SW 1/4 conn. Needle valve provided)
(P-81□-40-6F-S2 Valve provided at Inlet,
Panel front lock-nut fixing)



● BEZEL INSTALLATION TYPE
(P81□-00-6F-S2, Valve not provided, Bezel fixing.)
(Mounting Option code D)



DIMENSION TABLE

Model	Dimension (mm)				
	L1	L2	L3	L4	L5
P-812	170	145	175	190	205
P-813	249	224	254	265	280

PANEL CUT SIZE

Connection size	Hole dia(d)(mm)	Rear dia L(mm)
Rc 1/8,NPT1/8	φ16	(20.5)
Rc 1/4,NPT1/4	φ22	(20.5)
1/4 SW	φ16	(28)
3/8 SW	φ22	(30)
1/4 VCR	φ22	(30)
3/8 VCR	φ32	(34.5)

● Standard Material

Parts name	Standard material	Available material
Body	SCS14	SUS316, SUS316L
Tapered tube	Pyrex glass	
Float	SUS316/Glass	Ruby
Packing	Viton	CR
Sealing press	SUS316	
Fitting	SUS316	
Valve	SUS316	
Mounting board	SUS304	
Cover	Transparent PVC	

Parts whose names are described in **bold letters** are in contact with fluids to be measured.

● In case alarm output code is E to G

E	PAU ALARM UNIT provided	Refer to page 51.
G	PAS/IAU ANALOG OUTPUT UNIT provided	Refer to page 53.