P-820

GENERAL

Widely accepted for semi-conductor production process as well as P-810 model. Alarm contact by reed switch is additionally available.

MAJOR APPLICATIONS

Gas flow measurement in semi-conductor production equipment

STANDARD SPECIFICATION

Measuring object		Water and gases	
Measuring range	Air	Min. 4~20 mL/min(nor). Max. 12~60 L/min(nor).	· Air at 0 ℃, 0 MPa (1atm) · When selecting flow range, refer to standard flow rate table. · In case Op. Press of gas body is not 1atm, refer to page 1.
	Water	Min. 5~50 mL/min. Max. 0.2~2 L/min.	
Range ability		10:1	10:2 for some ranges
Accuracy		P-823: ±3 %F.S. P-821: ±5 %F.S.	
Max. Op. Press.		0.8 MPa	
Max. Op. Temp.		120 ℃	
Material		Std.	Option (Specify by model code)
	Body	SCS14	SUS316 (SUS316L is also available. Consult factory)
	Tapered tube	Heat-resistant glass	
	Packing	FPM(max.120 ℃)	CR(max.80 ℃)
	Support	SPCC	
	Cover	Acryl	
Connection	Std.	Rc1/4	Refer to Basic model code for details.
	Opt.	Rc1/8,NPT1/8,1/4,3/8SW, 1/4,3/8VCR etc.	
Mounting	Std.	Lock-nut mount onto panel front	Refer to ordering information for details.
	Opt.	Bezel installation,	
MASS (std. type)		0.6 kg(P-821)	

*: It is general data, and the maximum temperature may change by terms of use and environment.

ALARM OUTPUT

Type		Availability P-821	Availability P-823
Reed switch type alarm unit	General	○	○
	CE, UL Version	○	○
PAU Optical alarm unit		○	○

P-821 / STANDARD FLOW RATE TABLE

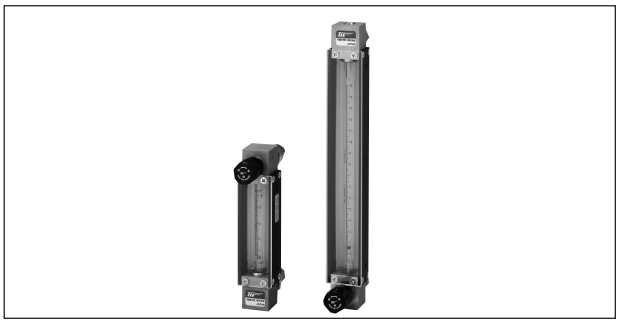
(In case Op. Press of gas is not 0 MPa, refer to page 1.)

In case alarm output code is 0, E			In case alarm output code is A to D			
Air (0 MPa,0 °C)		Water	Air (0 MPa,0 °C)	Alarm setting range	Water	Alarm setting range
4~20 mL/min(nor)						
6~30 mL/min(nor)						
10~50 mL/min(nor)						
10~100 mL/min(nor)†1						
20~200 mL/min(nor)						
30~300 mL/min(nor)						
50~500 mL/min(nor)						
0.1~1 L/min(nor)		5~50 mL/min	50~500 mL/min(nor)	100~400 mL/min(nor)	5~50 mL/min	10~40 mL/min
0.2~2 L/min(nor)		10~100 mL/min	0.1~1 L/min(nor)	0.2~0.8 L/min(nor)	10~100 mL/min	20~80 mL/min
0.3~3 L/min(nor)		20~200 mL/min	0.2~2 L/min(nor)	0.4~1.6 L/min(nor)	20~200 mL/min	40~160 mL/min
0.5~5 L/min(nor)		30~300 mL/min	0.3~3 L/min(nor)	0.6~2.4 L/min(nor)	30~300 mL/min	60~240 mL/min
1~10 L/min(nor)		50~500 mL/min	0.5~5 L/min(nor)	0.1~4 L/min(nor)	50~500 mL/min	100~400 mL/min
2~20 L/min(nor)		0.1~1 L/min	1~10 L/min(nor)†4	2~8 L/min(nor)	0.1~1 L/min†5	0.2~0.8 L/min
3~30 L/min(nor)†2			3~15 L/min(nor)	3~12 L/min(nor)		
10~50 L/min(nor)		0.3~1.5 L/min†3	6~30 L/min(nor)	6~24 L/min(nor)	0.3~1.5 L/min	0.3~1.2 L/min
12~60 L/min(nor)		0.4~2 L/min	10~50 L/min(nor)	10~40 L/min(nor)		

May be different depending on the scale length.
Available for flow rate less than shown on flow rate table. Contact us for further details.
†1 10:2 if range is less than 100 mL/min (nor).
†2 10:2 if range is more than 30 L/min (nor).
†3 10:2 if range is more than 1.5 L/min (nor).
†4 10:2 if range is more than 10 L/min (nor).
†5 10:2 if range is more than 1 L/min (nor).

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 Other Option).



P-823 / STANDARD FLOW RATE TABLE

(In case Op. Press at gas is not 0 MPa, refer to page 1.)

In case alarm output code is 0 and E			In case alarm output code is A to D			
Air (0 MPa,0 °C)		Water	Air (0 MPa,0 °C)	Alarm setting range	Water	Alarm setting range
5~50 mL/min(nor)						
10~100 mL/min(nor)						
20~200 mL/min(nor)						
30~300 mL/min(nor)						
50~500 mL/min(nor)						
0.1~1 L/min(nor)		5~50 mL/min	50~500 mL/min(nor)	100~400 mL/min(nor)	5~50 mL/min	10~40 mL/min
0.2~2 L/min(nor)		10~100 mL/min	0.1~1 L/min(nor)	0.2~0.8 L/min(nor)	10~100 mL/min	20~80 mL/min
0.3~3 L/min(nor)		20~200 mL/min	0.2~2 L/min(nor)	0.4~1.6 L/min(nor)	20~200 mL/min	40~160 mL/min
0.5~5 L/min(nor)		30~300 mL/min	0.3~3 L/min(nor)	0.6~2.4 L/min(nor)	30~300 mL/min	60~240 mL/min
1~10 L/min(nor)		50~500 mL/min	0.5~5 L/min(nor)	0.1~4 L/min(nor)	50~500 mL/min	100~400 mL/min
2~20 L/min(nor)		0.1~1 L/min	1~10 L/min(nor)	2~8 L/min(nor)	0.1~1 L/min	0.2~0.8 L/min
3~30 L/min(nor)			2~20 L/min(nor)	4~16 L/min(nor)		
			3~30 L/min(nor)	6~24 L/min(nor)		
5~50 L/min(nor)		0.15~1.5 L/min	5~50 L/min(nor)	10~40 L/min(nor)	0.15~1.5 L/min	0.3~1.2 L/min
6~60 L/min(nor)		0.2~2 L/min				

May be different depending on the scale length.

BASIC MODEL CODE

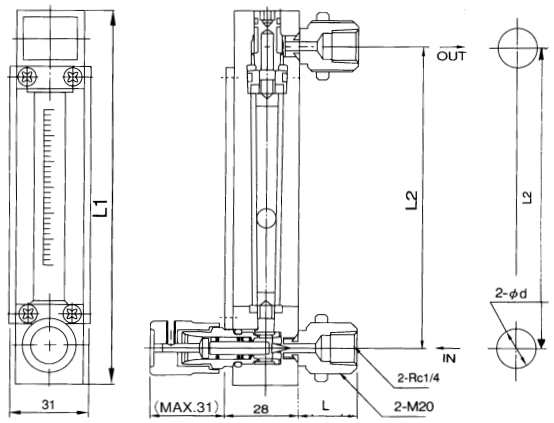
	L DIMENSION	VALVE	ALARM OUTPUT	WETTED PARTS MATERIAL	PACKING MATERIAL	CONNECTION TYPE	CONNECTION SIZE	EXAMPLE / DESCRIPTION	
P-82	1	-3	0	-6	F	-R	2		
							1	1/8	Only connection type code R and N can be selected.
							2	1/4 (Standard)	
							3	3/8	Only connection type code S and V can be selected.
							Z	Special	
						R		Rc thread (Standard)	Bezel installation is also possible. Refer to Mounting Option for details.
						N		NPT thread	
						S		SW	
						V		VCR	
						Z		Special	
					F			FPM(Standard)	
					C			CR	Select it for ammonia gas.
					Z				
				6				SCS14 (Standard)	
				E				SUS316/EP polished	High quality type
				Z				Special	
			0					Not provided	
			A					Reed switch alarm (LO)	See the page describing functions.
			B					Reed switch alarm (LC)	
			C					Reed switch alarm (HO)	
			D					Reed switch alarm (HC)	
			E					PAU ALARM UNIT provided	
			Z					Special	
		0						Not provided	
		1						Bellows valve provided at outlet (High grade valve)	Refer to valve position selection guide.
		2						Bellows valve provided at inlet (High grade valve)	
		3						Needle valve provided at outlet	
		4						Needle valve provided at inlet	
		Z						Special	
	1	115mm							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-82 □-□□-□□-□□	① Fluid name – ② Measuring range – ③ Press. – ④ Temp. – ⑤ Mounting Option – ⑥ Other Option
(Use model code table for selection)	(For details, refer to Advice for Your Product Selection.)

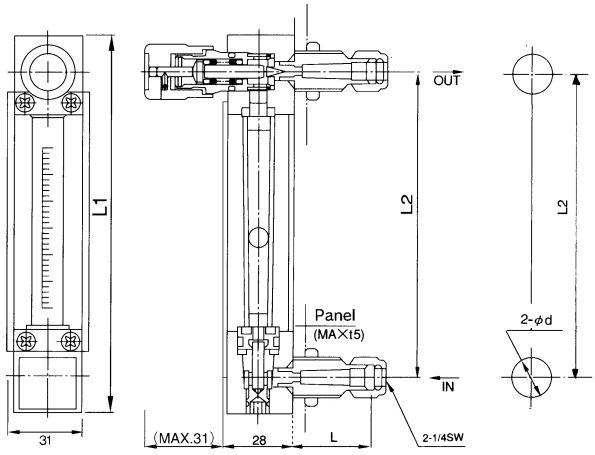
DIMENSIONS

● STANDARD TYPE (Rc 1/4 conn. Needle valve provided)
(P-82□-40-6F-R2, Valve provided at Inlet, Panel front lock-nut fixing)



PANEL CUT

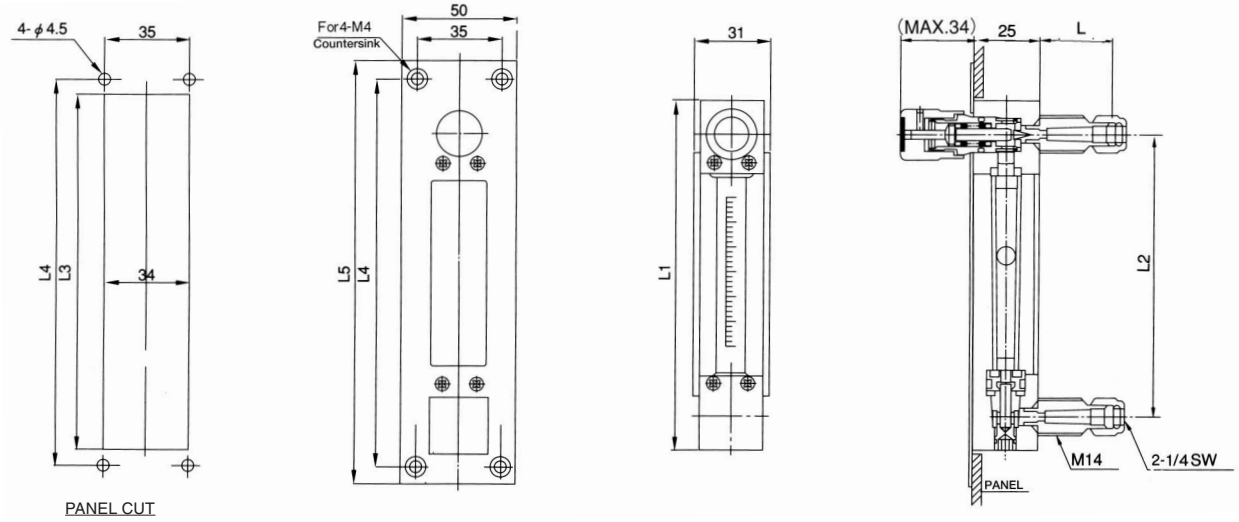
● STANDARD TYPE (SW 1/4 conn. Needle valve provided)
(P-82□-30-6F-S2, Valve provided at Outlet,
Panel front lock-nut fixing)



PANEL CUT

Caution) Use non-magnetize material for panel when ALARM OUTPUT code is A to D.

● BEZEL INSTALLATION TYPE
(P82□-30-□□-□□, Valve provided at Outlet, Bezel fixing.)
(Mounting Option code [D])



PANEL CUT

DIMENSION TABLE

Model	Dimension(mm)				
	L1	L2	L3	L4	L5
P-821	143	115	145	160	175
P-823	252	224	254	265	280

●Standard Material

Parts name		Standard material	Available material
Body	○	SCS14	—
Tapered tube	○	Heat-resistant glass	—
Float ＊	○	SUS316,Glass,Ruby	CR
Packing	○	FPM	—
Spindle	○	SUS316	—
Fitting	○	SUS316	—
Valve	○	SUS316	—
Mounting boad		SPCC	—
Cover		Acryl	—

Parts with "○" touch the measuring fluid.
＊:Proper material is to be selected, depending on specifications.
SUS316 instead of SUS304 may be used, due to certain production reasons.
Material like ASTM, or AIS equivalent to JIS material may be used due to certain production reasons.

PANEL CUT SIZE

Connection size	Hole dia (d) (mm)	Rear length L (mm)
Rc 1/8,NPT1/8	16	(22)
Rc 1/4,NPT1/4	22	(22)
1/4 SW	16	(29.5)
3/8 SW	22	(31.5)
1/4 VCR	22	(30)
3/8 VCR	32	(35.5)

● In case alarm output code is A to D

A	Reed switch alarm (LO)	See the page describing functions.
B	Reed switch alarm (LC)	
C	Reed switch alarm (HO)	
D	Reed switch alarm (HC)	

● In case alarm output code is E

E	PAU ALARM UNIT provided	See the page describing functions.