P-510 Purgemeter



DESCRIPTION

The P-510 is a metal-body purgemeter for large flow rates with the same face-to-face dimension as the P-200 for small flow rates. Suitable for liquids and gases.

MAJOR APPLICATIONS

General purpose (large flow rate)

STANDARD SPECIFICATIONS

Measuring fluid		Gases Liquids
Measuring range	Air	Min. 2.5 to 25 L/min (nor) Max. 60 to 600 L/min (nor) Air at 0°C, 0 MPa (1atm)
	Water	Min. 0.1 to 1 L/min Max. 3 to 30 L/min Water with a density of 1.0 g/cm³ and viscosity of 1.0 mPa • s
		• When selecting a flow range, refer to "Index & Quick Reference for P Series Purgemeters" (TG-S0001). • When selecting a flow range, refer to the standard flow rate table.
Range ability		10:1
Indication accuracy		±5% F.S.
Fluid pressure		Max. 0.8MPa
Fluid temperature		Max. 120°C (Depends on the gasket material)
Material	Wetted part	SCS14/SUS304 (Standard), SCS14/SUS316
	Tapered tube	Heat-resistant glass
	Gasket	Nitrile rubber (NBR) (Max. 80°C) Chloroprene rubber (CR) (Max. 80°C) Fluoro rubber (Max. 120°C) Ethylene-propylene rubber (EPDM) (Max. 80°C) • The maximum fluid temperature for each gasket material may vary depending on usage and ambient conditions.
	Mounting plate	SPCC, C2801P, SUS304
	Cover	Acryl
Process Connection		Rc : 3/8" (Standard), 1/4", 1/2", 3/4", 1" NPT : 1/4", 3/8", 1/2", 3/4", 1" SW : 3/8" VCR : 3/8", 1/2", 3/4" Flange: 10A, 15A (1/2), 20A (3/4), 25A (1)
Mounting		Screw (M3) mount on panel front (Standard) Lock nut mount on panel front Bezel mounting Panel embedded mounting Flange connection With stand
Mass		approx. 1.6 kg

ALARM CONTACT AND OUTPUT

Type		Availability
Reed switch type alarm unit	General	○
	UL-approved	○
PAU optical alarm unit		○

For CE approval, refer to "Index & Quick Reference for P-Series Purgemeters" (TG-S0001).

STANDARD FLOW RATE TABLE

When the fluid pressure is other than 0 MPa, refer to "Index & Quick Reference for P Series Purgemeters" (TG-S0001).

For Alarm output codes of 0 or E		
Air (0MPa,0℃)	Pressure loss (kPa)☆1	Water
2.5 to 25 L/min (nor)	3 or less	
3 to 30 L/min(nor)	3 or less	0.1 to 1 L/min
5 to 50 L/min (nor)	5 or less	0.2 to 2 L/min
10 to 100 L/min (nor)	16 or less	0.3 to 3 L/min
20 to 200 L/min (nor)	15 or less	0.5 to 5 L/min
30 to 300 L/min (nor)	16 or less	1 to 10 L/min
40 to 400 L/min (nor)	25 or less	1.5 to 15 L/min
50 to 500 L/min (nor)	40 or less	2 to 20 L/min
60 to 600 L/min (nor)	60 or less	3 to 30 L/min☆3

For Alarm output codes of A to D				
Air (0MPa,0℃)	Pressure loss (kPa)☆1	Alarm setting range	Water	Alarm setting range
5 to 50 L/min (nor)☆2	3 or less	10 to 40 L/min (nor)	0.2 to 2 L/min☆2	0.4 to 1.6 L/min
10 to 100 L/min (nor)	5 or less	20 to 80 L/min (nor)	0.3 to 3 L/min	0.6 to 2.4 L/min
20 to 200 L/min (nor)	15 or less	40 to 160 L/min (nor)	0.5 to 5 L/min	1 to 4 L/min
30 to 300 L/min (nor)	16 or less	60 to 240 L/min (nor)	1 to 10 L/min	2 to 8 L/min
40 to 400 L/min (nor)	25 or less	80 to 320 L/min (nor)	1.5 to 15 L/min	3 to 12 L/min
50 to 500 L/min (nor)	40 or less	100 to 400 L/min (nor)	2 to 20 L/min	4 to 16 L/min
60 to 600 L/min (nor)	60 or less	120 to 480 L/min (nor)	3 to 30 L/min☆3	6 to 24 L/min

Although other flow rate specifications are available, some flow ranges need to be changed.
Contact us for details.
Low pressure loss type of production and I are available. Contact us for details.
Pressure loss of liquid, please contact.
☆ 1 : It becomes the pressure loss during the valve fully open
☆ 2 : float material is the PVC
☆ 3 : It will be manufactured only viscosity 1.0 mPa • s

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BASIC MODEL CODE

Model Code												Descriptions	Notes
P-51	□	–	□	□	–	□	□	–	□	□			
Flow direction	0											Bottom rear → Top rear (Standard)	Select this code for normal conditions.
	9											Special	
Valve		–	0									Not provided	Refer to "Index & Quick Reference for P Series Purgemeters" (TG-S0001).
		–	L									Inlet (gas for atmospheric pressure scale)	
		–	U									Outlet (gas for pressure scale or for negative pressure on the secondary side)	
		–	Z									Special	
Alarm output				0								Not provided	Refer to "Index & Quick Reference for P Series Purgemeters" (TG-S0001). Specify two alarm output codes for two-point alarm. Example: P – 51□ – □ BD – □□ – □□
				A								Reed switch (LO)	
				B								Reed switch (LC)	
				C								Reed switch (HO)	
				D								Reed switch (HC)	
				E								PAU alarm unit provided	
				Z								Special	
Wetted parts material					–	4						SCS14/SUS304 (Standard)	
					–	6						SCS14/SUS316	
					–	Z						Special	
Gasket material							N					Nitrile rubber (NBR) (Standard)	
							C					Chloroprene rubber (CR)	Select this code for ammonia gas.
							F					Fluoro rubber	
							E					Ethylene-propylene rubber (EPDM)	
							Z					Special	Rubber material only
Process connection								–	R	2		Rc 1/4" (With R 3/8" × Rc 1/4" adapter)	Screw (M3) mount on panel front or piping installation For "RZ," specify connection standard & size separately.
										3		Rc 3/8" (Standard)	
										4		Rc 1/2" (With R 3/8" × Rc 1/2" adapter)	
										5		Rc 3/4" (With R 3/8" × Rc 3/4" adapter)	
										6		Rc 1" (With R 3/8" × Rc 1" adapter)	
										Z		Special (With R 3/8" × □" adapter)	
								–	L	2		Rc 1/4" (With R 3/8" × Rc 1/4" adapter)	Lock nut mounting on panel front For "LZ," specify connection standard & size separately.
										3		Rc 3/8"	
										4		Rc 1/2"	
										5		Rc 3/4"	
										6		Rc 1" (With R 3/8" × Rc 1" adapter)	
										Z		Special (With R 3/8" × □" adapter)	
								–	N	2		NPT 1/4" (F) (With R 3/8" × NPT 1/4" (F) adapter)	Screw (M3) mount on panel front or piping installation
										3		NPT 3/8" (F)	
										4		NPT 1/2" (F) (With R 3/8" × NPT 1/2" (F) adapter)	
										5		NPT 3/4" (F) (With R 3/8" × NPT 3/4" (F) adapter)	
										6		NPT 1" (F) (With R 3/8" × NPT 1" (F) adapter)	
								–	M	2		NPT 1/4" (F) (With R 3/8" × NPT 1/4" (F) adapter)	Lock nut mounting on panel front
										3		NPT 3/8" (F)	
										4		NPT 1/2" (F)	
										5		NPT 3/4" (F)	
										6		NPT 1" (F) (With R 3/8" × NPT 1" (F) adapter)	
								–	S	3		3/8"SW	
								–	V	3		3/8"VCR (Male connector)	
										4		1/2"VCR (Male connector)	
										5		3/4"VCR (Male connector)	Screw (M3) mount on panel front or piping installation
								–	Z	Z		Special	Specify connection standard & size separately.
Connection standard, rating & flange face								–	JR			JIS 10K RF	For "ZR" or "ZF," specify connection standard & rating separately.
									JF			JIS 10K FF	
									AR			ASME Class 150 RF	
									AF			ASME Class 150 FF	
									PR			JPI Class 150 RF	
									PF			JPI Class 150 FF	
									ZR			Special (RF)	
									ZF			Special (FF)	
Connection size											3	10A	
											4	15A (1/2)	
											5	20A (3/4)	
											6	25A (1)	

OTHER AVAILABLE OPTIONS

You can specify the following options:

Two-point alarm, alarm setting on the front face, length of reed switch lead wire, double graduations, special graduations, rubber joint type, other joint types, etc. For details, refer to "Index & Quick Reference for P Series Purgemeters" (TG-S0001).

*Specification is subject to change without notice.

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Model Code												Descriptions	Notes
P-51	1	–	□	□	–	□	□	–	□	□			
Flow direction	1											Bottom → Top	
Valve		–	0									Not provided	A valve will be installed extemally. Refer to "Index & Quick Reference for P Series Purgemeters" (TG-S0001).
		–	L									Inlet (gas for atmospheric pressure scale)	
		–	U									Outlet (gas for pressure scale or for negative pressure on the secondary side)	
Alarm output				0								Not provided	Refer to "Index & Quick Reference for P Series Purgemeters" (TG-S0001). Specify two alarm output codes for two-point alarm. Example: P – 51□ – □ BD – □□ – □□
				A								Reed switch (LO)	
				B								Reed switch (LC)	
				C								Reed switch (HO)	
				D								Reed switch (HC)	
				E								PAU alarm unit provided	
				Z								Special	
Wetted parts material					–	4						SCS14/SUS304 (Standard)	
					–	6						SCS14/SUS316	
					–	Z						Special	
Gasket material							N					Nitrile rubber (NBR) (Standard)	
							C					Chloroprene rubber (CR)	Select this code for ammonia gas.
							F					Fluoro rubber	
							E					Ethylene-propylene rubber (EPDM)	
							Z					Special	Rubber material only
Process connection								–	R		2	Rc 1/4" (With R 3/8" × Rc 1/4" adapter)	Screw (M3) mount on panel front or piping installation For "RZ," specify connection standard & size separately.
											3	Rc 3/8" (Standard)	
											4	Rc 1/2"	
											5	Rc 3/4"	
											6	Rc 1"	
											Z	Special (With R 3/8" × □" adapter)	
									N		2	NPT 1/4" (F) (With R 3/8" × NPT 1/4" (F) adapter)	Screw (M3) mount on panel front or piping installation
											3	NPT 3/8" (F)	
											4	NPT 1/2" (F)	
											5	NPT 3/4" (F)	
											6	NPT 1" (F)	
								–	Z	Z		Special	Specify connection standard & size separately.
Connection standard, rating & flange face								–	JR			JIS 10K RF	For "ZR" or "ZF," specify connection standard & rating separately.
									JF			JIS 10K FF	
									AR			ASME Class 150 RF	
									AF			ASME Class 150 FF	
									PR			JPI Class 150 RF	
									PF			JPI Class 150 FF	
									ZR			Special (RF)	
									ZF			Special (FF)	
Connection size											3	10A	
											4	15A (1/2)	
											5	20A (3/4)	
											6	25A (1)	

OTHER AVAILABLE OPTIONS

You can specify the following options:

Two-point alarm, alarm setting on the front face, length of reed switch lead wire, double graduations, special graduations, rubber joint type, other joint types, etc. For details, refer to "Index & Quick Reference for P Series Purgemeters" (TG-S0001).

ORDERING INFORMATION

Basic model code	Items to be specified
P-51 □ - □□ - □□ - □□	① Fluid name – ② Flow range – ③ Press. – ④ Temp. – ⑤ Mounting option – ⑥ Other options
(Select in the model code table.)	(Refer to "Index & Quick Reference for P Series Purgemeters" (TG-S0001).)

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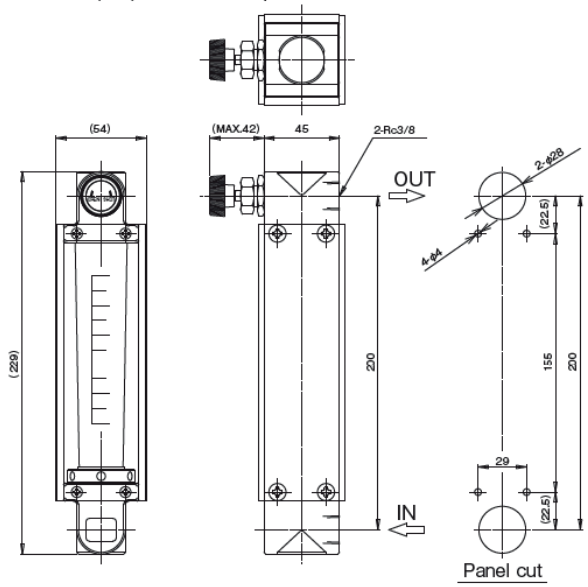
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DIMENSIONS

Standard type

P — 510 — U0 — 4N — R3

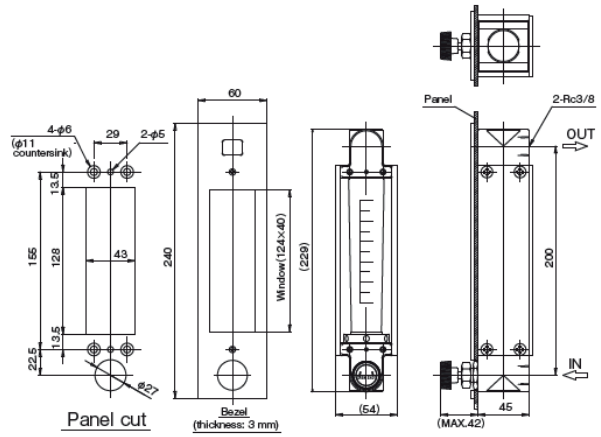
■ Screw (M3) mount on the panel front ■ Valve at the outlet



Bezel installation type

P — 510 — L0 — 4N — R3

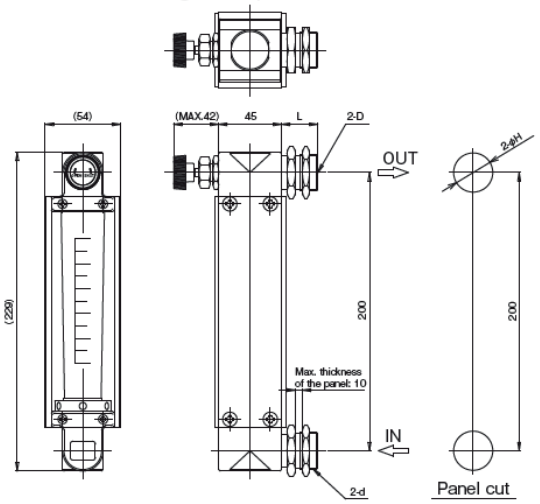
■ Bezel installation (Mounting option code: D)
■ Valve at the inlet



Panel mount type

P — 510 — U0 — 4N — L3

■ Lock nut mounting on the panel front ■ Valve at the outlet



Standard material

Parts name		Standard material	Available material
Body	○	SCS14	—
Tapered tube	○	Heat-resistant glass	—
Float＊1	○	SUS304,PTFE	SUS316
Gasket	○	Nitrile rubber (NBR)	Fluoro rubber, Chloroprene rubber (CR), Ethylene-propylene rubber (EPDM)
Spindle	○	SUS304	SUS316
Valve	○	SUS304	SUS316
Mounting plate＊2		SPCC	SUS304
Cover		Acryl	—

Parts marked "○" come in contact with the measuring fluid.
＊1 We will select a proper material for your application.
＊2 C2801P is used when the alarm output code is one of A to D.
SUS316 may be used instead of SUS304 due to production reasons.
ASTM or AISI materials equivalent to JIS materials may be used due to production reasons.

Panel cut dimensions

For the panel mount type, hole diameters vary depending on connection sizes and standards. For specific dimensions, see the table below.

Connection size		Dia-meter	Rear length	Connection size		Dia-meter	Rear length
D	d	H	L	D	d	H	L
Rc3/8	M26	28	26	Rc3/4	M36	38	28
3/8NPT	M26	28	26	3/8SW	M20	22	(34)
Rc1/2	M30	32	26	3/8VCR	M28	32	(38)
1/2NPT	M30	32	26	1/2VCR	M28	32	(38)

Note: Use non-magnetic material for the panel when the alarm output code is one of A to D.

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