

New Release

KOFLOC
Kyoto

PI mass flow controller

MODEL ST-500 SERIES

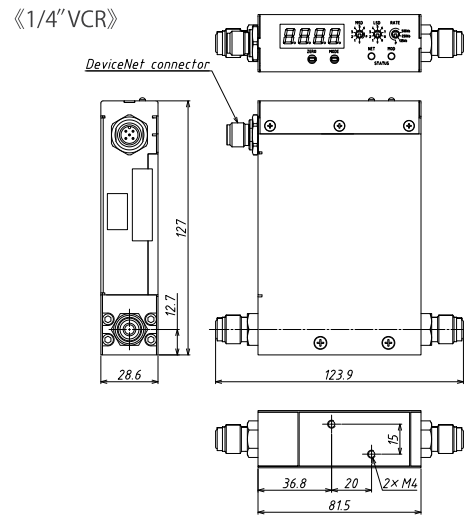
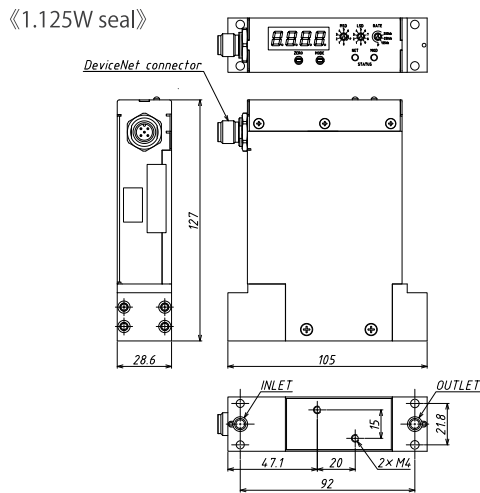
- **PI ... Pressure Insensitive (ST-500 only)**
Stable control of the gas flow without effect by pressure fluctuations.
- **Metal sealed MFC adopting a diaphragm valve, which is electropolished and covered with an oxide coating to be compatible with corrosive fluids.**
- **The controller supports DeviceNet[®], EtherCAT[®], RS485 communication.**
(ST-550 only)
- **Gas panel mount, W seal/C seal joint compatible.**
- **Measurement with a high set-point accuracy is offered. Responses in 1 sec in the full range of flow control.**
- **Multi-range function using a dedicated app. (30~100%F.S.)**



Standard Specifications

MODEL	ST-500 (With PI function)		ST-550 (No PI function)	
Sensor type	Thermal sensor		Thermal sensor	
Valve type	Proportional solenoid valve (normally closed)		Proportional solenoid valve (normally closed)	
Full-scale flow rate (N ₂ equivalent)	10SCCM~10SLM	30SLM	10SCCM~10SLM	30SLM
Control range	2~100%F.S.		2~100%F.S.	
Response	Within 1 sec		Within 1 sec	
Accuracy	±1%S.P. (10~100%F.S.)		±1%S.P. (10~100%F.S.)	
	±0.1%F.S. (2~10%F.S.)		±0.1%F.S. (2~10%F.S.)	
Repeatability	±0.2%F.S.		±0.2%F.S.	
Operating differential pressure	50~300kPa	200~300kPa	50~300kPa	200~300kPa
Max. inlet pressure	300kPa(G)		300kPa(G)	
Proof pressure	1MPa(G)		1MPa(G)	
PI function	Overshoot ±2%F.S.		-	
He Leak rate	≤1 × 10 ⁻¹¹ Pa·m ³ /s		≤1 × 10 ⁻¹¹ Pa·m ³ /s	
Allowable ambient temperature	5~50°C		5~50°C	
Accuracy guarantee temperature	15~40°C		15~40°C	
Allowable storage temperature	0~60°C		0~60°C	
Allowable ambient humidity	0~80%RH (No dew condensation)		0~80%RH (No dew condensation)	
Materials of parts in contact with gases	SUS316L, PTFE, Au, Co-Ni		SUS316L, PTFE, Au, Co-Ni	
Electrical connection (RS485 only)	-		D-sub 9 pins, RJ45 connector, 2 pcs	
Flow rate setting signal (RS485 only)	-		0 to 5VDC (Input impedance:Approx.1MΩ) or 4 to 20mA (Input impedance:Approx.250Ω)	
Flow rate output signal (RS485 only)	-		0 to 5VDC (Load resistance:10kΩ or more) or 4 to 20mA (Load resistance:500Ω or less)	
Digital interface	DeviceNet [®] / EtherCAT [®]		RS485 / DeviceNet [®] / EtherCAT [®]	
Power supply	11~25VDC (5VA max)		11~25VDC (5VA max)	
Joint and face-to-face dimensions	1.125"W seal 92mm		1.125"W seal 92mm	
	1.125"C seal 92mm		1.125"C seal 92mm	
	Equivalent to 1/4 VCR		Equivalent to 1/4 VCR	
Weight	Approx. 1,000 g		Approx. 1,000 g	

※Accuracy assured with N₂ gas. ※The specification of PI function is for supply pressure in the fluctuations of ±3 psi at SV 5 to 100% F.S.
※Specifications and appearance are subject to change without notice.



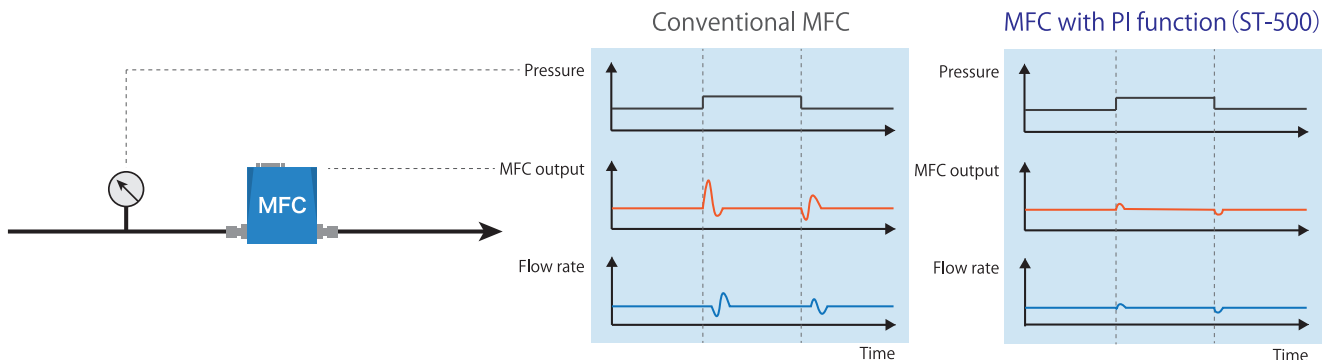
PI function (ST-500 only)

Conventional mass flow controllers react to pressure fluctuations of the supply side too sensitively, causing problems of unstable control, such as a momentary large change of the flow rate.

ST-500 is a mass flow controller that is newly equipped with a PI (Pressure Insensitive) function to solve the problems. Incorporating a pressure sensor at the input stage of the flow rate sensor, the new controller detects pressure fluctua-

tions, compares pressures before and after the fluctuations, and adjusts the valve opening degree in real time, so that the flow rate control can be stable against pressure fluctuations.

The controller is suited for gas supply processes where stability and accuracy are needed such as semiconductor manufacturing equipment.



Ordering

MODEL	Digital interface	Fittings	Fluid	Full-scale flow rate	Calibration temperature	Setting signal ※ST-550 R4 only	Operating pressure
ST-500	D : DeviceNet®	1/4VCR			0°C	V : 0-5V	H : 150~300kPa
ST-550	E : EtherCAT® R4 : RS485 ※ST-550 only	1.125"W seal 1.125"C seal			20°C	I : 4-20mA	L : 50~149kPa
Illustrative example	ST-500	D	1/4VCR	N ₂	10SLM	0°C	H

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