

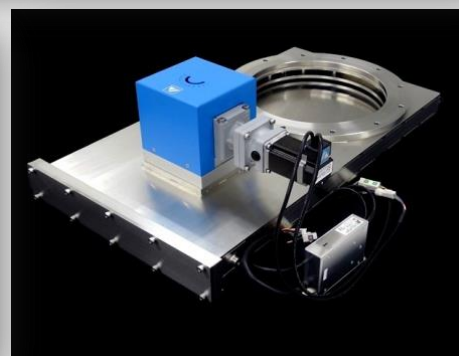
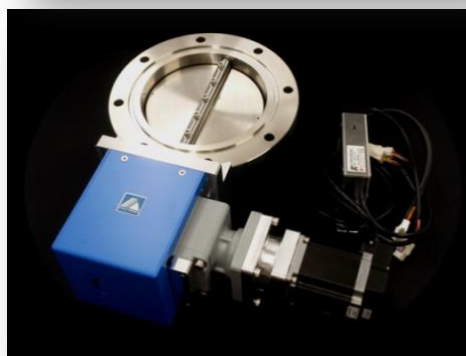
New Product



【 RoHScompliant】

# Automatic Pressure Control System

## *MP/APC Series Dual Controller FPC-151S*



*UPS standard equipped*



— Vacuous high technology is created —  
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**【RoHScompliant】**

## *New automatic pressure control system Controller*

*MBV-LD II -MP/APC · MEX-LD-MP/APC series*

### *FPC-151S*

#### **-Low-price, High-performance, Compact size, and Various functionality.-**

- ☆ In switching of APC mode and MPA mode, it enables more versatile control.
- ☆ Two valves can be controlled by a single controller FPC-151S.
- ☆ Parameter settings can be easy to connect a personal computer. Also, without connecting to the PLC, it is also possible to operate the system from a personal computer.
- ☆ It can completely seal our valve to be used in this system. Therefore can be full closed of the exhaust line as well as automatically controlling the pressure.
- ☆ UPS standard equipped
  - Power failure protection is enabled by adding optional UPS power supply.
  - If power failure occurred, the valve moves to the fully closed position automatically.

#### *1. APC mode (Auto pressure control mode)*

- ☆ Various control methods are selectable
  - ① Two valves are individually controlled by signals from the two vacuum gauges.
  - ② The two valves can be synchronized controlled by a signal from a single vacuum gauge.
  - ③ One valve can be controlled by switching the signal from two vacuum gages according to pressure.
  - ④ The two valves can be synchronized controlled by switching the signal from two vacuum gages according to pressure.
- ☆ This controller can be a wide range of pressure control by using the two vacuum gauge is switched according to the pressure.
- ☆ Setting of a parameter could also use a vacuum gauge of Log output as well as usual linear output.
- ☆ Automatic pressure control and multi-position control are both available.
  - From any position to target position can be fast and smooth pressure control.
- ☆ Maximum 8 segments (step) program by each valves can be made eight patterns.
  - The PID value can be set eight patterns every each segment., also more detailed pressure settings are available.
- ☆ P value of the PID control can be changed automatically according to the target pressure, and steadier pressure can control.

#### *2. MPA mode (Simplified pressure control mode)*

- ☆ By entering the current (4~20 mA or 0~10V) to the controller, it enable to operate between the fully closed - fully open to the linear.
- ☆ Pre-registered that had been 16 position (14 position other than fully- closed, fully- open), it will be able to move the valve disc with a signal from the outside.

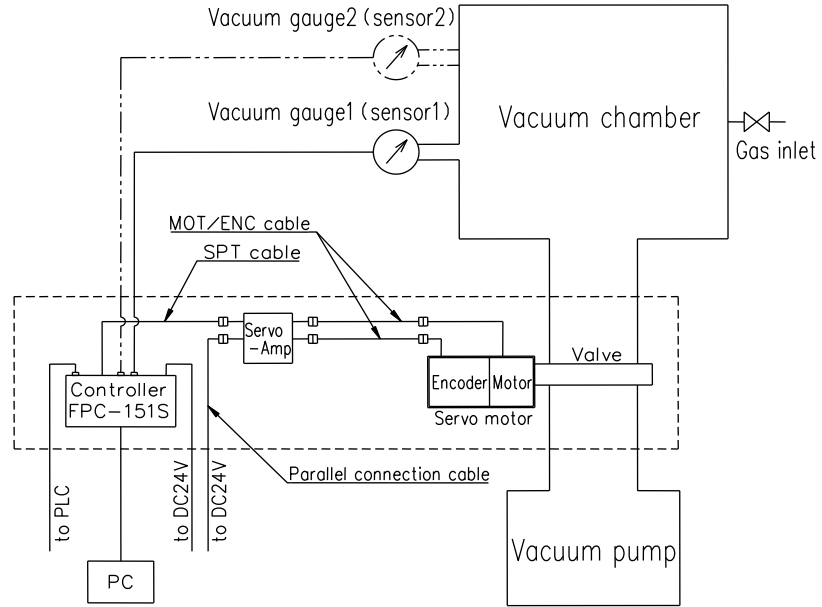
**【 About the controller production correspondences other than a standard 】**

Example : Mitsubishi Electric's AC servo motor MR-J3 series and MR-J4 series etc.

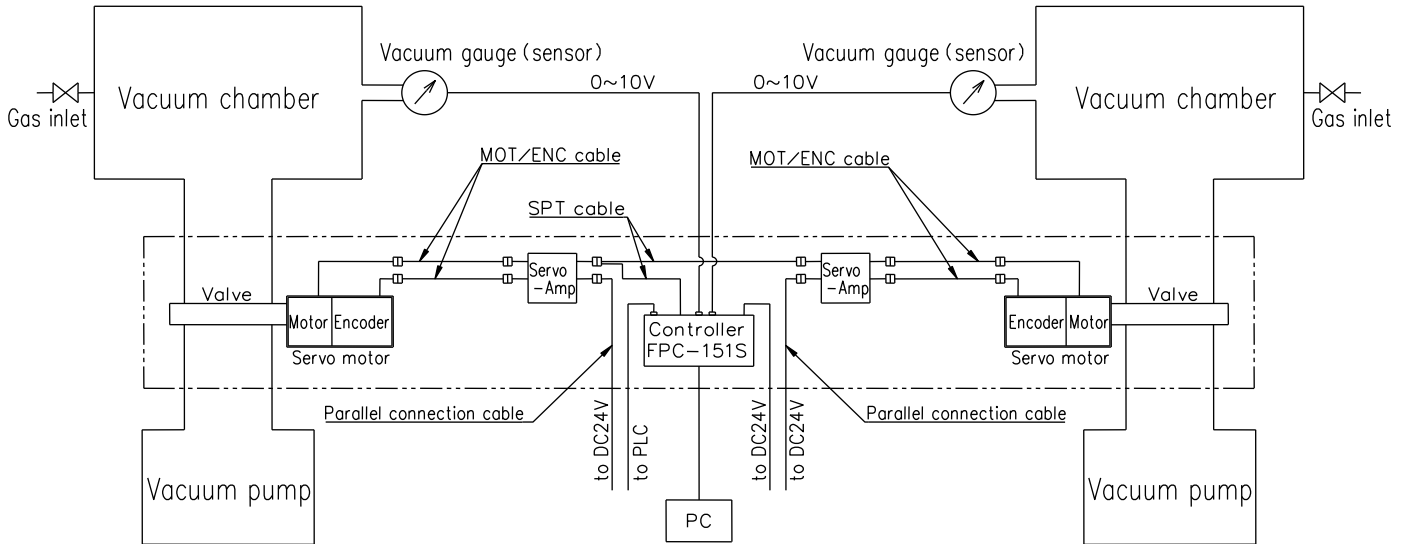
Yasukawa Electric's AC servo  $\Sigma$ -V series,  $\Sigma$ -7 series etc.

«APC mode»

【 System diagram—1 】

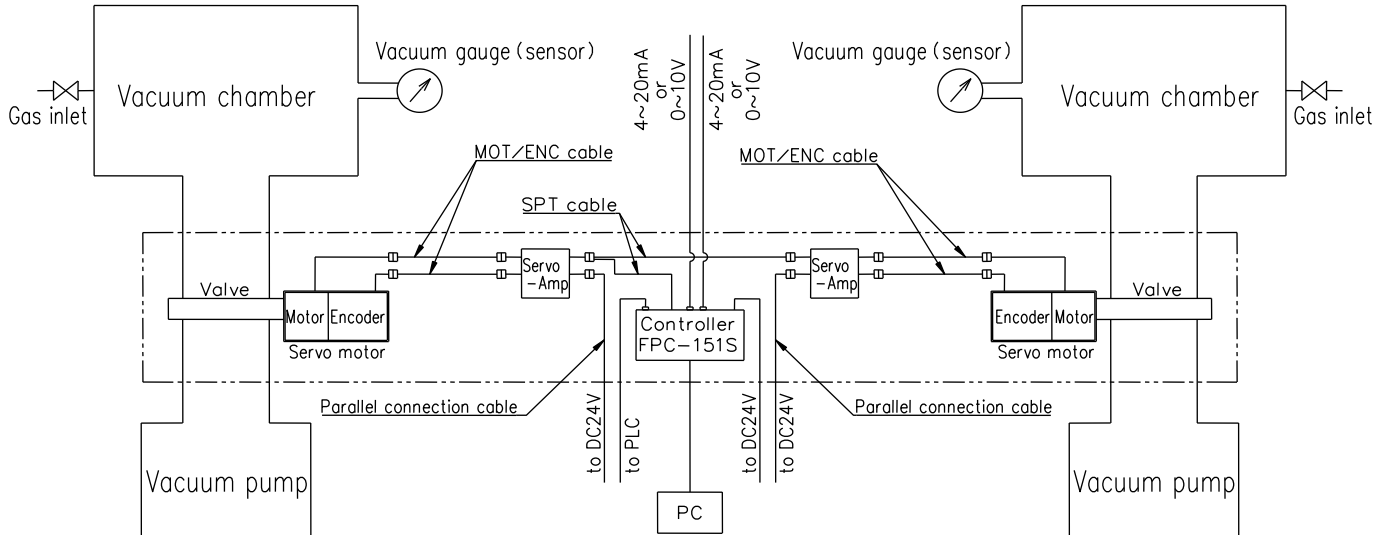


【 System diagram—2 】



《MPA mode》

【 System diagram—3 】



〈reference standard set prices 〉

Name · Model	1-axis control		2-axis control	
	qty	Basic price(yen)	qty 量	Basic price(yen)
Controller FPC-151S (attached software for setting)	1	¥ 120, 000	1	¥ 120, 000
Valve (with Servo amplifier) MBV-1LD II-MP-R	1	¥ 213, 000	2	¥ 426, 000
One set of cable	1	¥ 21, 500	2	¥ 43, 000
① MOT/ENC cable_4122202 (L=1. 0m)		①②③ qty 1		①②qty 2 ③qty 1
② Parallelconnection cable_4122306 (L=3. 0m)				
③ STP cable_4123400(L=0. 5m/0. 15m)				
	T/L	¥ 354, 500	T/L	¥ 589, 000

## 【 System configuration 】

### 1. Controller 「FPC-151S」

In APC mode, the valve can work fast and accurately when the output signal of vacuum gauge calculates automatically, also stable control.

Furthermore, by switching to MPA mode, current (4-20 mA) or voltage(0-10V) can be inputted directly, it can be made to operate linearly between fully-closed to fully-open.

Model	FPC-151S	
Input Power/ Current consumption	DC24V · 3A(Max) (vacuum gauge power supply is not supplied)	
Mode	APC mode	MPA mode
Control system	PID control	Position control according to the current command and voltage command.
Maximum resolution	0.1% of Sensor (vacuum gauge) FS	0.1% of Input current FS
Features	<ul style="list-style-type: none"> <li>Indicator of current pressure, target pressure, parameter settings of PID. These operation can be done easily on the personal computer.</li> <li>It can be operated with a personal computer other than the remote operation by input and output of an external signal.</li> <li>Setting and operating of the multi-position is possible on the touch panel except pressure control by PC. (maximum 14-position and at the fully closed, fully open)</li> </ul>	<ul style="list-style-type: none"> <li>4mA:(or 0V) fully-closed, 20mA(or 10V<sup>*1</sup>) fully-open, during which the valve disc will move linearly in response to the current value.</li> <li>The valve disc can be moved by an external signal to the 16-position which is set in the PC. (maximum 14-position and at the fully closed, fully open)</li> </ul>
	<ul style="list-style-type: none"> <li>Alarm output to servo system trouble. (Red LED)</li> </ul>	
External dimensions	31.6 × 142 × 172	
Option	<ul style="list-style-type: none"> <li>UPS Power supply (Controller connection exclusive cable included)</li> <li>Ethernet etc</li> </ul>	

\*1 Upper limit value (voltage at fully-open) of voltage input can be set between 0 ~ 10V.

### 2. Vacuum gauge

The vacuum gauge can have you just use a commercial article using now.

Please use a linear voltage output or Log voltage output.

Upper and lower limits of the voltage can be set between 0 ~ +10DCV.

### 3. Control Valve

Select the type according to specifications from our motor drive butterfly valves「MBV-LD II-MP series」 or Multi-position compact gate valves 「MEX-LD-MP series」.

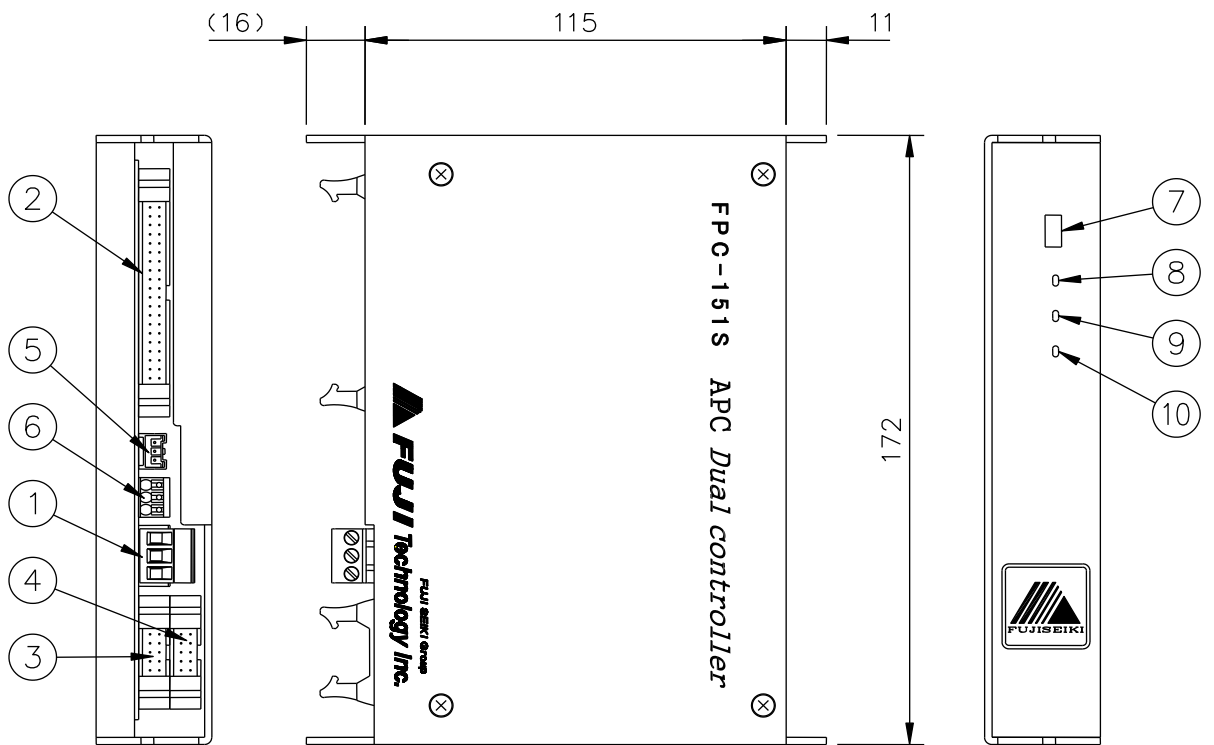
	Butterfly valve MBV-LD II-MP	Gate valve MEX-LD-MP
Leak rate	$1 \times 10^{-9} \text{ Pa} \cdot \text{m}^3 / \text{s} \leq$	$1 \times 10^{-10} \text{ Pa} \cdot \text{m}^3 / \text{s} \leq$
Availability	$10^5 \sim 10^{-6} \text{ Pa}$	
Gas contact material	SUS304	
Driven mechanism	AC servo-motor (built-in encoder)	
Input power/ Current consumption	DC24V · 3.2A(Max)	
Valve disc seal	Viton O-ring	
Valve rod seal	Viton O-ring	
Vacuum grease	Silicone grease or Klüberalfa GR	Klüberalfa GR
Critical temperature	Main body : 150°C, Motor : 40°C	
Diameter (mm)	25 ~ 300	70 ~ 400
Flange type	JIS ISO CF KF(NW)	JIS ISO CF

◇ Please refer to a catalogue of “the MBV-LD II-MP series” or “the MEX-LD-MP series” about the detailed specifications of the valve, the dimensions.

◇ “MBV-LD II-MP” valves leakage type (no valve disc seal) product is possible.

**Dimensions**

**Controller 『 F P C - 1 5 1 S 』**



No	NAME (Function)	No	NAME (Function)
1	Power supply DC24V in(CONNECTOR)	6	UPS(CONNECTOR)
2	REMOTE in/out(CONNECTOR)	7	Micro B(CONNECTOR) to PC
3	Analog in/out 1(CONNECTOR)	8	POWER(LED)
4	Analog in/out 2(CONNECTOR)	9	READY(LED)
5	Termi Bus(CONNECTOR)to Seavo-Amp	10	ALARM(LED)