

## HYK 系列伺服控制器

### HYK series servo controllers

伺服控制器在伺服控制系统中，是接受系统指令和反馈的位置、速度、力、或者角位置、角速度、扭矩传感器的电信号，调制解析后输出伺服阀能接受的电信号。控制伺服阀提供相应的液压能（流量和压力）输出，带动伺服油缸或伺服马达等执行元件做功，从而达到控制机械的位置、速度、力、或者角位置、角速度、扭矩的目的。伺服控制器也是伺服系统的核心，它的精度决定了伺服控制系统的整体精度。

In the servo control system, the servo controller receives the position, speed and force instructed and fed back by the system, or electric signals of angular position, angular velocity and torque sensor, and outputs the electrical signal received by the servo valve after modulation analysis. It controls the servo valve to provide corresponding hydraulic energy (flow and pressure) output, and drives the servo cylinder or servo motor and other actuating elements to act so as to reach the purpose of controlling the position, speed, force, or angular position, angular velocity, and torque of the machine. The servo controller is also the core of the servo system, and its accuracy decides the overall accuracy of the servo control system.

### HYK-SVC-AO 系列伺服阀控制器

#### HYK-SVC-AO series servo valve controllers

##### 产品简介

##### Product overview

HYK-SVC-AO 伺服阀控制器（单通道，模拟开环）是专门为伺服阀而设计的一款控制电路，可以将客户提供 PLC、工控机等前端控制器输出的控制信号转换为伺服阀可以接受的信号，能够配合伺服阀调整相关参数,同时含外置调零偏、调增益、输入输出保护等功能。

HYK-SVC-AO servo valve controller (single channel, simulated open loop) is a control circuit especially designed for the servo valve. It can convert control signals output by PLC, industrial personal computer and other front-end controllers provided by customers into the signals that the servo valve can accept. Besides, it can cooperate with the servo valve to adjust relevant parameters and has such functions as external zero bias adjustment, gain adjustment, input and output protection.





性能 Performance		
静态 Static	线性度 Linearity	1%
	零偏 Zero bias	1%
	对称度 Symmetry	1%
	温漂 Warm-up drift	<90ppm/°C
动态 Dynamic	频宽 Band	≥200Hz 也可以根据客户特殊需要定制 ≥200Hz can also be customized according to the special needs of customers

物理特征 Physical characteristics	
重量 Weight	1.1kg
尺寸 Size	155mmX147mmX55mm (4 个安装孔) 155mm X 147mm X 55mm (4 mounting holes)

功能 Function	
输入 CMD Input CMD	参见控制信号选择 Refer to control signal selection
输出 SV Output SV	参见阀控电流选择 Refer to selection of valve control current
使能: Enabling: Disable-SVC	可以控制阀控电流的通断: 给 Disable-SVC Be able to control valve control current on/off: give Disable-SVC 一个 5V 信号, SV 输出断开; a 5V signal, SV output is off; Disable-SVC 接 GND 或空接时, SV 输出电流, 控制器正常工作 Disable-SVC is connected to GND or null, SV outputs current, and the controller works normally
低通滤波 Low pass filtering	可以减少干扰-80dB,根据客户要求来定截止频率 Be able to reduce -80dB disturbance; the cut-off frequency is determined as required by customers
信号调整 Signal adjustment	可以根据客户特殊需要选择 Be able to choose as required by customers
颤振 Flutter	改善伺服阀静态精度 Improve static accuracy of servo valve
调整 Adjustment	零偏 调整阀的零偏 Zero bias adjust zero bias of the valve 增益 调整阀的增益 Gain adjust gain of the valve
保护 Protection	输入级: 单向信号输入反接, 输出自动断开 $\leq 10V$ Input level: reverse connection of one-way signal input, automatic output disconnection $\leq 10V$ 限压输入, $\leq 100mA$ 限流输入。 Input with limited voltage, $\leq 100mA$ input with limited current. 输出级: 1.5 倍 SV 限流输出。 Output level: 1.5 times of SV output with limited current. 电源: 220VAC 插座 0.15A 熔断保险。 Power supply: 220VAC socket, 0.15A fuse. 内部 $\pm VCC$ 各有一个 0.5A 熔断保险。 There is a 0.5A fuse respectively in internal VCC $\pm$ .

## 接线方式

## Wiring mode

### HYK-SVC-AO1 (±15VDC 供电)

### HYK-SVC-AO1 (±15VDC power supply)

1、用户的前端控制器与该控制器以及阀的连接示意图如图 3-1 所示。

1. The connection diagram of the user's front-end controller with the controller and the valve is shown in Fig. 3-1.

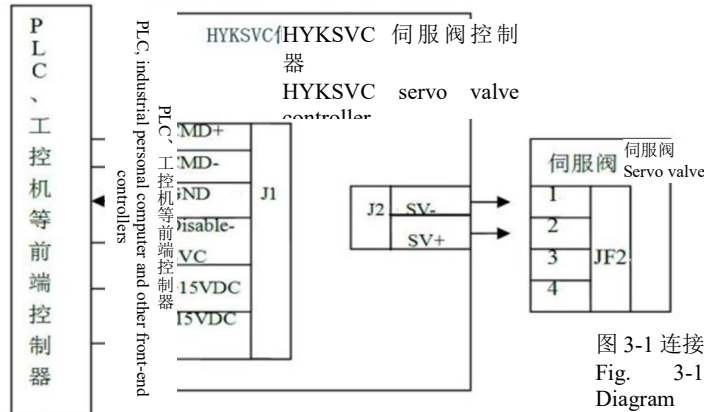


图 3-1 连接示意图  
Fig. 3-1 Connection Diagram

### 控制器的面板放大图及接口定义

### Enlarged View of Controller Panel and Interface Definition

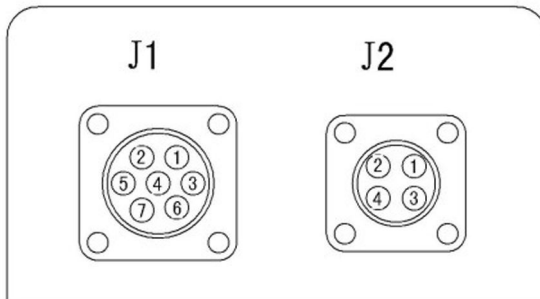


图 3-2 控制器前面板图  
Fig. 3-2 Front Panel Diagram of Controller

表 3-1 HYK-SVC-AO1 前面板接口定义

Table 3-1 Interface Definition of HYK-SVC-AO1 Front Panel

J1			J2		
标号 Label	定义 Definition	说明 Description	标号 Label	定义 Definition	说明 Description
1	CMD-	控制信号负向输入端 Control negative input end of signal	1	SV-	阀控电流负向输出端 Negative output end of valve control current
2	CMD+	控制信号正向输入端 Positive input end of control signal	2	SV+	阀控电流正向输出端 Positive output end of valve control current

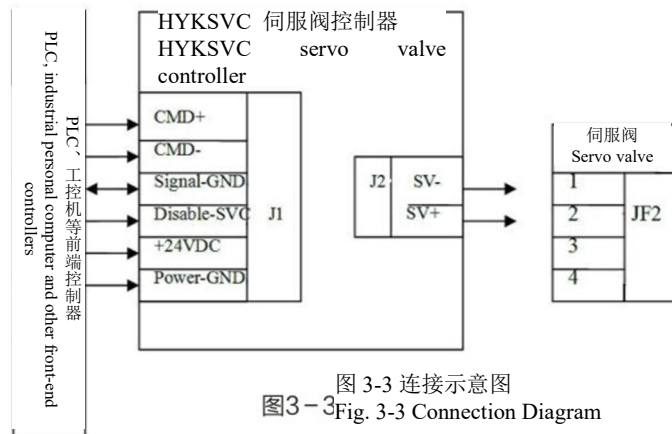
3	Disable-SVC	使能信号输入端, 控制电流的通断 Enable signal input end, control current on/off	3	空 Null	接屏蔽 Shielding
4	PE	接屏蔽 Shielding	4	PE	
5	GND	GND			
6	-15VDC	-15V 接线端 -15V wiring terminal			
7	+15VDC	+15V 接线端 +15V wiring terminal			

### HYK-SVC-A02 (+24VDC 供电)

### HYK-SVC-A02 (+24VDC power supply)

1、用户的前端控制器与该控制器以及阀的连接示意图如图 3-3 所示。

1. The connection diagram of the user's front-end controller with the controller and the valve is shown in Fig. 3-3.



控制器的面板放大图及接口定义

Enlarged View of Controller Panel and Interface Definition

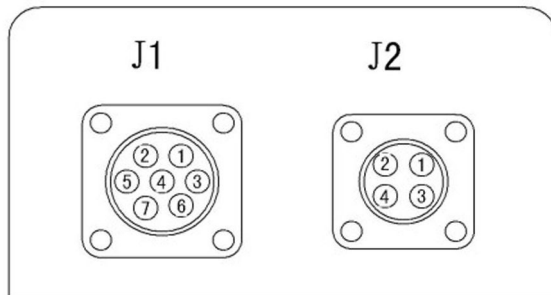


图 3-4 控制器前面板图

Fig. 3-4 Front Panel Diagram of Controller

表 3-2HYK-SVC-AO2 前面板接口定义

Table 3-2 Interface Definition of HYK-SVC-AO2 Front Panel

J1			J2		
标号 Label	定义 Definition	说明 Description	标号 Label	定义 Definition	说明 Description
1	CMD-	控制信号负向输入端 Control negative input end of signal	1	SV-	阀控电流负向输出端 Negative output end of valve control current
2	CMD+	控制信号正向输入端 Positive input end of control signal	2	SV+	阀控电流正向输出端 Positive output end of valve control current
3	Disable-SVC	使能信号输入端，控制电流的通断 Enable signal input end, control current on/off	3	空 Null	
4	PE	接屏蔽 Shielding	4	PE	接屏蔽 Shielding
5	GND	GND			
6	Power-GND	供电电源+24V 的参考地 Power supply +24V reference ground			
7	+15VDC	供电电源+24V 接线端 Power supply +24V wiring terminal			

**HYK-SVC-A03 (220VAC 供电)**

**HYK-SVC-A03 (220VAC power supply)**

1、用户的前端控制器与该控制器以及阀的连接示意图如图 3-5 所示。

1. The connection diagram of the user's front-end controller with the controller and the valve is shown in Fig. 3-5.

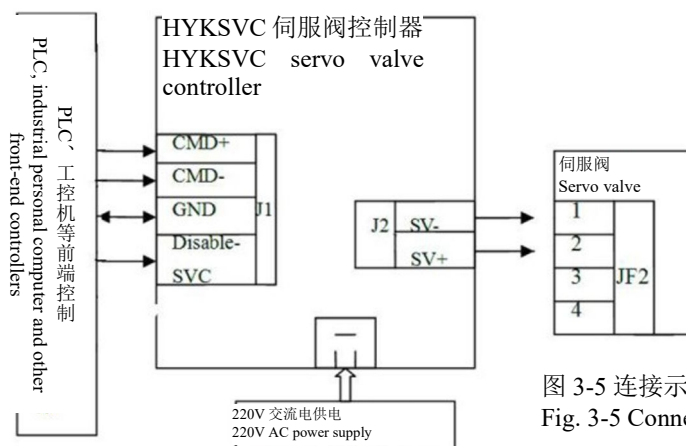


图 3-5 连接示意图  
Fig. 3-5 Connection Diagram

控制器的面板放大图及接口定义

Enlarged View of Controller Panel and Interface Definition

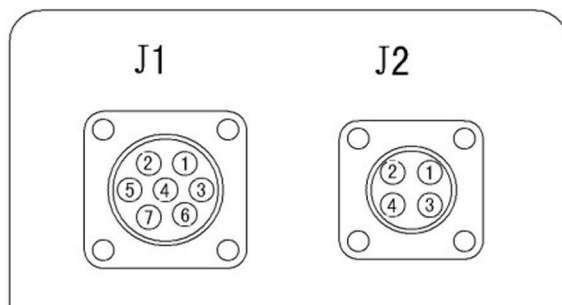


图 3-6 控制器前面板图

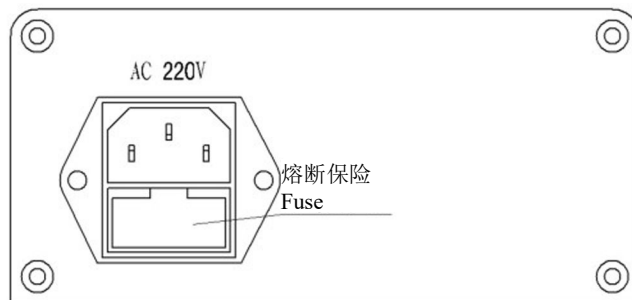


图 3-7 控制器后面板图

Fig. 3-6 Front Panel Diagram of Controller Fig. 3-7 Rear Panel Diagram of Controller

表 3-3 HYK-SVC-AO3 前面板接口定义

Table 3-3 Interface Definition of HYK-SVC-AO3 Front Panel

J1			J2		
标号 Label	定义 Definition	说明 Description	标号 Label	定义 Definition	说明 Description
1	CMD-	控制信号负向输入端 Control negative input end of signal	1	SV-	阀控电流负向输出端 Negative output end of valve control current
2	CMD+	控制信号正向输入端 Positive input end of control signal	2	SV+	阀控电流正向输出端 Positive output end of valve control current
3	Disable-SVC	使能信号输入端, 控制电流的通断 Enable signal input end, control current on/off	3	空 Null	
4	PE	接屏蔽 Shielding	4	PE	接屏蔽 Shielding
5	GND	GND			
6	空 Null				
7	空 Null				



## 型号参数选择

### Model parameter selection

型号 Model	HYK-SVC-AO			
供电 Power supply	1 (±15V 供电) <input type="checkbox"/>	1 (±15V power supply) <input type="checkbox"/>	2 (+24VDC 供电) <input type="checkbox"/>	2 (+24VDC power supply) <input type="checkbox"/>
控制信号 Control signal CMD	±10V <input type="checkbox"/>	±5V <input type="checkbox"/>	+0~10V <input type="checkbox"/>	+0~5V <input type="checkbox"/>
	±7.5mA <input type="checkbox"/>	±10mA <input type="checkbox"/>	±15mA <input type="checkbox"/>	±40mA <input type="checkbox"/>
	±100mA <input type="checkbox"/>	+4~+20mA <input type="checkbox"/>	+0~+10mA <input type="checkbox"/>	
	+0~+20mA <input type="checkbox"/>	其他_____	Miscellaneous_____	
阀控电流 Valve control current SV	-7.5mA~+7.5mA <input type="checkbox"/>	-15mA~+15mA <input type="checkbox"/>	-20mA~+20mA <input type="checkbox"/>	-40mA~+40mA <input type="checkbox"/>
	-60mA~+60mA <input type="checkbox"/>	-80mA~+80mA <input type="checkbox"/>	-100mA~+100mA <input type="checkbox"/>	其他_____
	Miscellaneous_____			
可选功能要求 (此项不需要的 请打 Requirements of optional functions (if this item is not needed, please tick “X”)	使能 <input type="checkbox"/> 颤振 <input type="checkbox"/> 滤波 <input type="checkbox"/>			
	Enable <input type="checkbox"/> Flutter <input type="checkbox"/> Filter <input type="checkbox"/>			
	伺服阀要求频宽_____			
	Required bandwidth of servo valve _____			
	增益范围±20% <input type="checkbox"/> 或_____			
	Range of gains ±20% <input type="checkbox"/> or _____			
	零偏范围±10% <input type="checkbox"/> 或_____			
	Range of zero bias ±10% <input type="checkbox"/> or _____			
	信号调整 <input type="checkbox"/> _____			
	Signal adjustment <input type="checkbox"/> _____			
常规参数 General parameters	控制信号: ±10V; 4~20mA			
	Control signal: ±10V; 4~20mA			
	阀控电流: -15mA~+15mA; -40mA~+40mA			
	Valve control current: -15mA~+15mA; -40mA~+40mA			
	可选功能: 调增益范围±20%			
	Optional function: gain range adjustment ±20%			
	调零偏范围±10%;含颤振			
	Adjustment of zero bias range± 10%; including flutter			