

## HYK-SVC-AO-3 伺服阀控制器

## HYK-SVC-AO-3 servo valve controllers

### 产品简介

### Product overview

伺服阀控制器 HYKSVC-AO-3 是为伺服阀而设计的一款控制电路,可以将客户的 PLC、工控机等前端控制器输出的三路控制信号,同时转换为伺服阀可接受的电流信号,且互不干扰,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。

HYKSVC-AO-3 servo valve controller is a control circuit especially designed for the servo valve. It can convert three-circuit 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, without mutual interference. 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.



### 安装尺寸 (单位: mm)

### Mounting dimension (unit: mm)

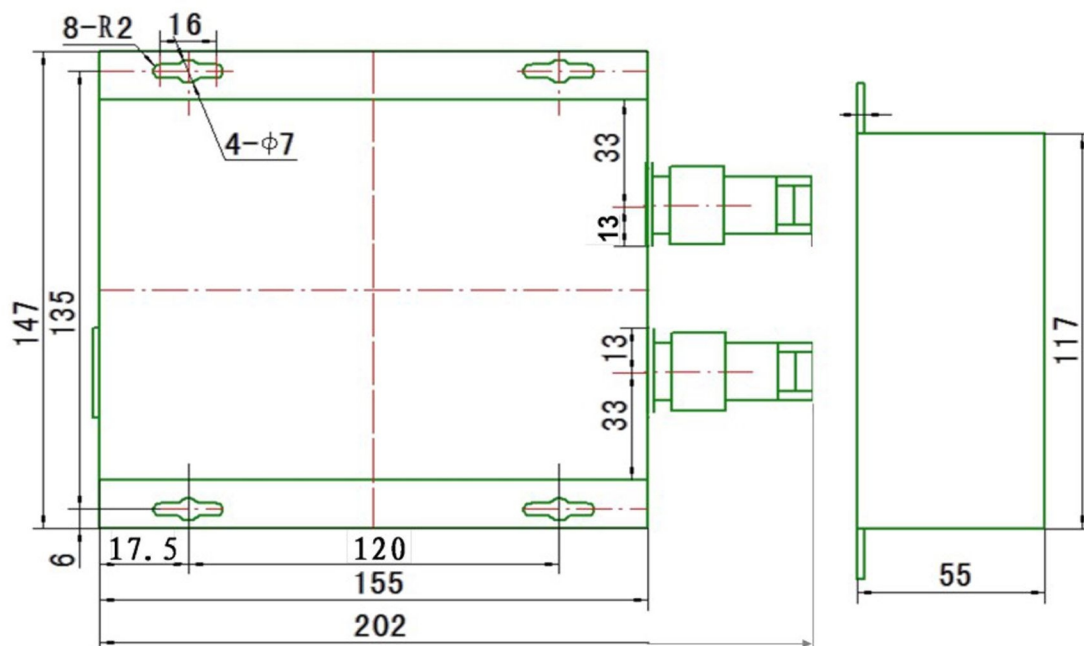


图 2-1 安装尺寸图 Fig. 2-1 Mounting Dimension Drawing

## 功能特性及技术参数

### Functional characteristics and technical parameters

使用条件 Service conditions	
供电 Power supply	参见供电选择 Refer to power supply selection
连接线 Connecting wire	建议采用每根大于或等于 0.3 平方毫米屏蔽电缆 The shielded cable greater than or equal to 0.3 mm <sup>2</sup> is recommended
环境温度 Ambient temperature	-20°C ~ 80°C
环境湿度 Ambient temperature	35-85%RH
环境气体 Environmental gas	周围无腐蚀性气体 No corrosive gas around
电磁干扰 Electromagnetic interference	周围无强的电磁干扰波 No strong electromagnetic interference around
振动 Vibration	无剧烈振动 No violent vibration

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	小于 90ppm/°C Less than 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: Disable-SVC Enable: 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 Zero bias	调整阀的零偏 Adjust zero bias of the valve
	增益 Gain	调整阀的增益 Adjust gain of the valve
保护 Protection	输入级 Input level	单向信号输入反接, 输出自动断开 Reverse connection of one-way signal input, automatic output disconnection ≤10V 限压输入, ≤100mA 限流输入 ≤10V input with limited voltage, ≤100mA input with limited current.
	输出级 Output level	1.5 倍 SV 限流输出 1.5 times of SV output with limited current

## 接线方式

## Wiring mode

### HYK-SVC-AO-3A01 ( $\pm 15\text{VDC}$ 供电)

### HYK-SVC-AO-3A01 ( $\pm 15\text{VDC}$ power supply)

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。

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

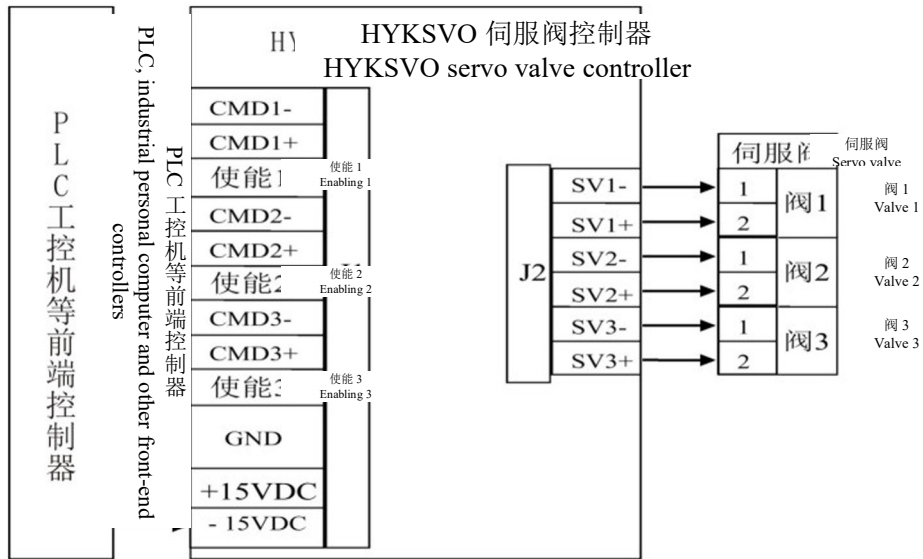


图 3-1 连接示意图

Fig. 3-1 Connection Diagram

注：前端控制器的“GND”、供电电源的“GND”要与 HYK-SVC-A0-3 控制器的“GND”共 GND

Note: “GND” of the front-end controller and “GND” of power supply shall share GND with “GND” of HYK-SVC-A0-3 controller.

控制器的面板放大图及接口定义

Enlarged View of Controller Panel and Interface Definition

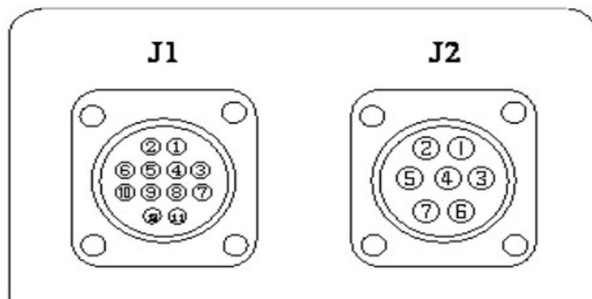


图 3-2 控制器前面板图

Fig. 3-2 Front Panel Diagram of Controller

表 3-1HYK-SVC-AO-3AO1 前面板接口定义

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

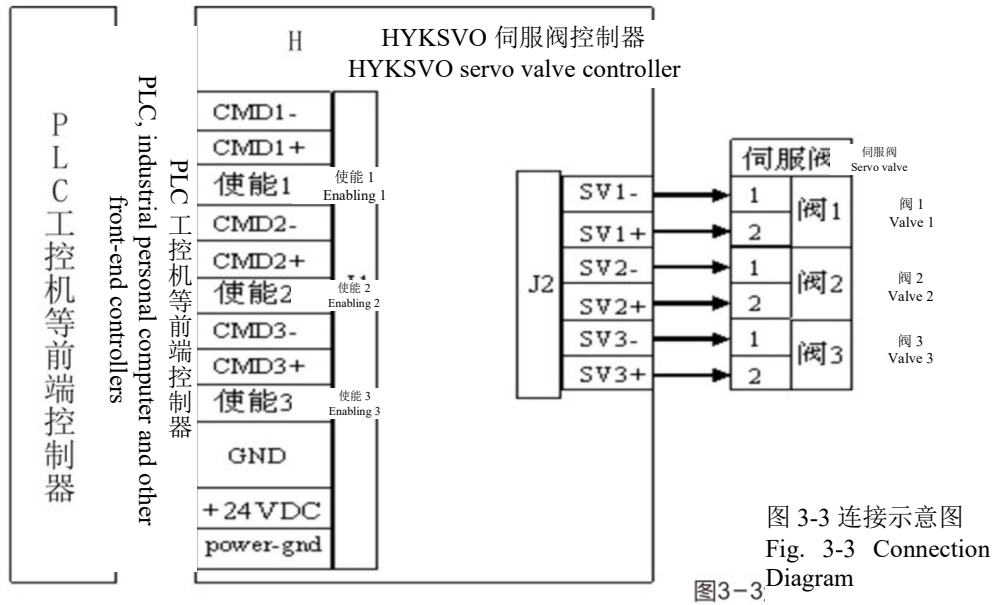
J1			J2		
标号 Label	定义 Definition	说明 Description	标号 Label	定义 Definition	说明 Description
1	CMD-	控制信号 1 负向输入端 Control negative input end of signal 1	1	SV1-	阀控电流 1 负向输出端 Negative output end of valve control current 1
2	CMD+	控制信号 1 正向输入端 Control positive input end of signal 1			
3	使能 1 Enabling 1	控制电流信号 1 的通断 Control on/off of current signal 1	3	SV2-	阀控电流 2 负向输出端 Negative output end of valve control current 2
4	CMD2-	控制信号 2 负向输入端 Control negative input end of signal 2			
5	CMD2+	控制信号 2 正向输入端 Control positive input end of signal 2	5	SV2+	阀控电流 2 正向输出端 Positive output end of valve control current 2
6	使能 2 Enabling 2	控制电流信号 2 的通断 Control on/off of current signal 2			
7	CMD3-	控制信号 3 负向输入端 Control negative input end of signal 3	7	SV3+	阀控电流 3 正向输出端 Positive output end of valve control current 3
8	CMD3+	控制信号 3 正向输入端 Control positive input end of signal 3			
9	使能 3 Enabling 3	控制电流信号 3 的通断 Control on/off of current signal 3			
10	信号地 Signal ground	GND			
11	+15VDC	+15V 接线端 +15V wiring terminal			
12	-15VDC	-15V 接线端 -15V wiring terminal			

**HYK-SVC-AO-3 AO2 (+24VDC 供电)**

**HYK-SVC-AO-3 AO2 (+24VDC power supply)**

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。

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



注：前端控制器的"GND"要与 HYK-SVC-AO-3 控制器的"GND"共 GND

Note: "GND" of the front-end controller shall share GND with "GND" of HYK-SVC-AO-3 controller.

控制器的面板放大图及接口定义

Enlarged View of Controller Panel and Interface Definition

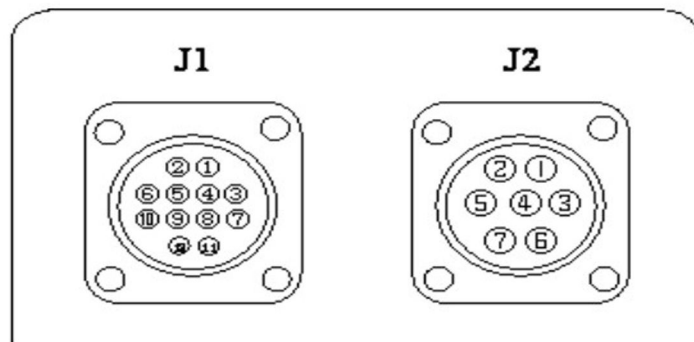


图 3-4 控制器前面板图

Fig. 3-4 Front Panel Diagram of Controller

表 3-1 HYK-SVC-AO-3 AO2 前面板接口定义

Table 3-1 Interface Definition of HYK-SVC-AO-3AO2 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 1 负向输入端 Control negative input end of signal 1	1	SV1-	阀控电流 1 负向输出端 Negative output end of valve control current 1
2	CMD+	控制信号 1 正向输入端 Control positive input end of signal 1	2	SV1+	阀控电流 1 正向输出端 Positive output end of valve control current 1
3	使能 1 Enabling 1	控制电流信号 1 的通断 Control on/off of current signal 1	3	SV2-	阀控电流 2 负向输出端 Negative output end of valve control current 2
4	CMD2-	控制信号 2 负向输入端 Control negative input end of signal 2	4	PE	接屏蔽 Shielding
5	CMD2+	控制信号 2 正向输入端 Control positive input end of signal 2	5	SV2+	阀控电流 2 正向输出端 Positive output end of valve control current 2
6	使能 2 Enabling 2	控制电流信号 2 的通断 Control on/off of current signal 2	6	SV3-	阀控电流 3 负向输出端 Negative output end of valve control current 3
7	CMD3-	控制信号 3 负向输入端 Control negative input end of signal 3	7	SV3+	阀控电流 3 正向输出端 Positive output end of valve control current 3
8	CMD3+	控制信号 3 正向输入端 Control positive input end of signal 3			
9	使能 3 Enabling 3	控制电流信号 3 的通断 Control on/off of current signal 3			
10	信号地 Signal ground	GND			
11	+24VDC	供电电源+24V 接线端 Power supply +24V wiring terminal			
12	Power-GND	供电电源+24V 参考地 Power supply +24V reference ground			

## 型号参数选择

### Model parameter selection

型号 Model	HYK-SVC-AO-3					
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"/>
	±100mA <input type="checkbox"/>	+4~+20mA <input type="checkbox"/>	+0~+10mA <input type="checkbox"/>	±40mA <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_____ <input type="checkbox"/> Required bandwidth of servo valve _____ 增益范围±20% <input type="checkbox"/> 或_____ <input type="checkbox"/> Range of gains ±20% <input type="checkbox"/> or _____ 零偏范围±10% <input type="checkbox"/> 或_____ <input type="checkbox"/> 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					