

Business Headquarter of BMTRI Precision Mechatronics Co., Ltd.

Address: No.4, Wangjing Road, Chaoyang District, Beijing

Post code: 100102

Telephone: 010-64738703/64739687/64739653

After-sales service: 010-64739687

Fax: 010-64739774

Website: www.jcsjm.com

E-mail: phsales@jcsjm.com

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SVA Series Servo Amplifier



北京机床研究所

BEIJING MACHINE TOOL RESEARCH INSTITUTE

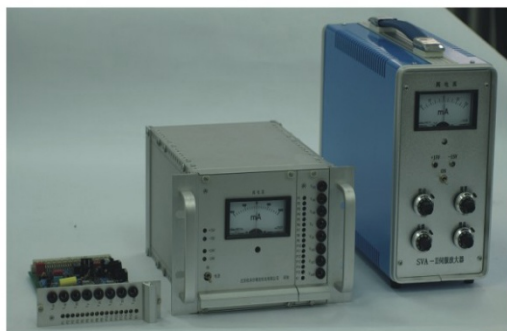


北京机床所精密机电有限公司

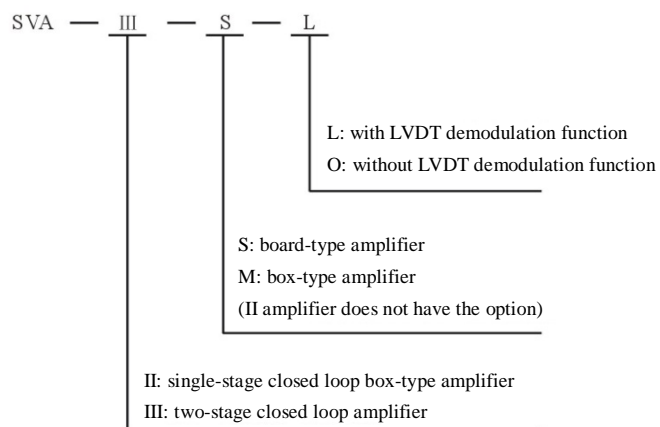
BMTRI PRECISION MECHATRONICS CO.,LTD.

Overview

SVA series servo amplifier is the special amplifier for driving and control of the electro-hydraulic servo valve. The series amplifier is mainly used for high precision control of the nozzle flapper servo valve, jet pipe servo valve and other electro-hydraulic servo valves. In the hydraulic system, the closed loop is formed with the measurement transducer, so as to control the position, speed, acceleration, force and other physical quantities.



Model description of the servo valve amplifier



SVA-II servo amplifier

SVA-II servo amplifier is a box-type amplifier with DC regulated power supply, which is mainly used for driving and single-stage closed loop control of the nozzle flapper servo valve and jet pipe servo valve. The portable independent chassis is adopted for the outline, and it is convenient for use. The potentiometer with the scale locking mechanism is adopted for the front panel, which facilitates commissioning observation. The user can select LVDT demodulation board as required, which is used in the closed loop control with LVDT testing sensor.

I. Main features:

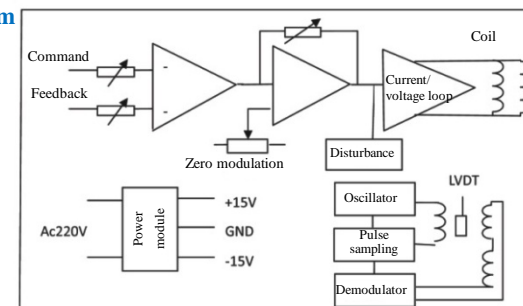
- Single-stage closed loop control of the hydraulic servo system
- Output can provide the current within 100mA, and has the overcurrent protection.
- The front panel can facilitate adjustment of zero modulation, gain, feedback quantity, disturbance and other parameters, and is arranged with the adjustment locking mechanism.
- The front panel ammeter displays the valve coil current.
- It is arranged with the linear DC voltage stabilizing circuit, and only AC220V needs to be connected.
- The independent plug is adopted for connection of the power supply, valve coil and LVDT sensor, and peripheral connection is convenient.



II. Main technical parameters:

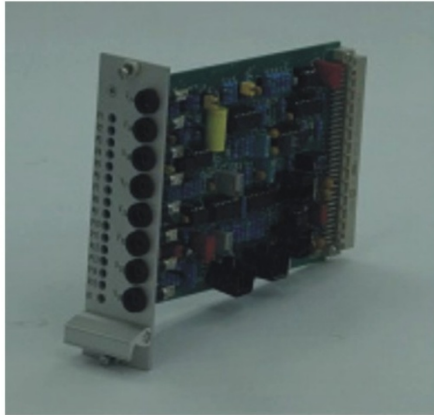
- Power supply: AC220V
 - Servo amplifier
 - Oscillator
 - Demodulator
 - Operating range: 0°C-50°C
 - External dimensions: 110x225x300mm
- Analog input: $\pm 10V$, 0-10V, 4-20mA
Proportional gain: 5-300mA/V
Frequency: 2500Hz
Ripple: $40mVp-p$
- Servo valve driving capability: $\pm 100mA$, 100 Ω
Disturbance signal: 200Hz 6Vpp
Amplitude: 6Vpp
Gain: 1-10Vdc/Vp-p

III. Block diagram



SV-III-S servo amplifier

SVA-III-S is an electro-hydraulic servo amplifier with the position demodulator, which is mainly used for three-stage valve control of LVDT position sensor. It has LVDT demodulator circuit, and can realize closed loop control with the servo valve coil. Meanwhile, it has the outer ring PID control function. Through different settings of the jumper, it can also be used for position closed loop control of the two-stage servo valve and LVDT sensor.



Potentiometer	Name
P1	Input adjustment
P2	Adjusting zero point
P3	Proportional gain adjustment
P4	Integrating gain adjustment
P5	Differential filter frequency adjustment
P6	Differential gain adjustment
P7	Disturbance frequency adjustment
P8	Disturbance amplitude adjustment
P9	Current restriction adjustment
P10	Inner ring gain adjustment
P11	Oscillation frequency adjustment
P12	Sampling pulse width adjustment
P13	Oscillation amplitude adjustment
P14	Demodulation amplitude adjustment
P15	Demodulation zero point adjustment

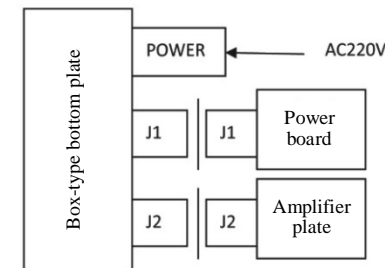
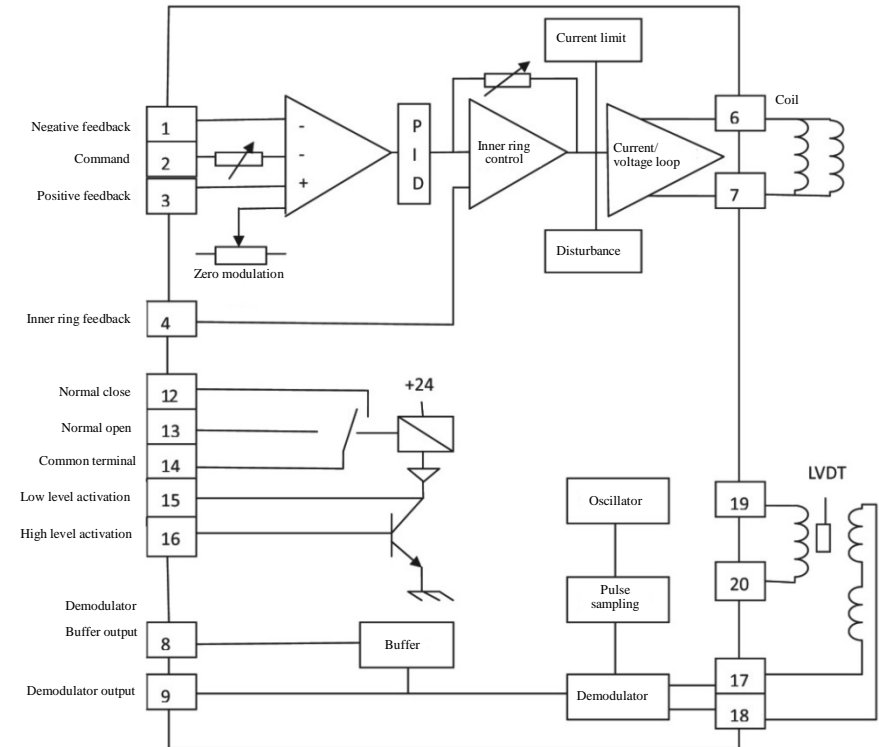
I. Main features:

- Three-stage servo valve closed loop control with LVDT position sensor
- Select the outer ring PID control through jumper setting
- Output current restriction
- Inner ring gain adjustable
- Convenient front panel test and parameter adjustment potentiometer

II. Main technical parameters:

- Power supply: independent $\pm 15V$ or $\pm 15V, \pm 24V$
- Oscillator
Frequency: 100-2500HZ Amplitude: 2-11Vpp
- Demodulator
Ripple: <40mVp-p (within the given excitation frequency range)
- Gain: 1-10Vdc/Vp-p Operating range: 0°C-50°C;
- External dimensions: 100X160mm

III. Block diagram



SV-III-M servo amplifier

SVA-III-M servo amplifier is the box-type amplifier integrated with SVA-III board-type amplifier and standard 19" power chassis. The control function is the same with SVA-III board-type amplifier. It is mainly used for three-stage valve control of LVDT position sensor. It has LVDT demodulator circuit, and can realize closed loop control with the servo valve coil. Meanwhile, it has the outer ring PID control function. Through different settings of the jumper, it can also be used for position closed loop control of the two-stage servo valve and LVDT sensor. It is equipped with the integrated linear power supply, and the user can directly supplies it to AC220V. The standard chassis is adopted for the outline, the front panel ammeter indicates the valve coil current, and it can facilitate commissioning observation.



Potentiometer	Name
P1	Input adjustment
P2	Adjusting zero point
P3	Proportional gain adjustment
P4	Integrating gain adjustment
P5	Differential filter frequency adjustment
P6	Differential gain adjustment
P7	Disturbance frequency adjustment
P8	Disturbance amplitude adjustment
P9	Current restriction adjustment
P10	Inner ring gain adjustment
P11	Oscillation frequency adjustment
P12	Sampling pulse width adjustment
P13	Oscillation amplitude adjustment
P14	Demodulation amplitude adjustment
P15	Demodulation zero point adjustment

I. Main features:

- Three-stage servo valve closed loop control with LVDT position sensor
- Select the outer ring PID control through jumper setting
- Output current restriction
- Inner ring gain adjustable
- Convenient front panel test and adjustment potentiometer
- Visually display valve coil current and power supply indication

II. Main technical parameters:

- Power supply: AC220V
 - Analog input: $\pm 10V$, 0-10V, 4-20Ma
 - Proportional gain: 5-300mA/V
 - Differential gain: 0.04-4mA-sec/V
 - Oscillator
 - Frequency: 100-2500HZ
 - Demodulator
 - Ripple: $< 40mVp-p$ (within the given excitation frequency range)
 - Operating range: 0°C-50°C;
- Loading capacity: $\pm 100mA$, 100 Ω
 Integral gain: 8-4000mA/V-sec
 Inner ring gain: 10-200mA/V
 Amplitude: 2-11Vpp
 Gain: 1-10Vdc/Vp-p
 External dimensions: 198 x 132x225mm

III. Block diagram

