

SFZ142 Direct drive servo valve



□ Features

- Small leakage (no pilot stage flow), low power consumption (low power consumption of linear force motor), suitable for multi-valve control systems
- Low hysteresis and high resolution make the system have good control accuracy
- Large spool driving force
- It has a median fail-safe function.
- The position of the spool can be monitored, which is beneficial to the operation and maintenance of the system
- With electrical zero adjustment function

□ Main Parameter

General parameters		
Operating medium		Mineral oil or other fluids according to DIN 51524
Viscosity range	mm ² /s	15 to 380 (30 to 45 recommended)
Oil temperature range	°C	-20 to +80 (recommended +40 to +50)
Storage temperature	°C	-20 to +80
Operating ambient temperature	°C	-30 to +70
Oil cleanliness		Maximum permissible degree of contamination of the oil, Class 6 per NAS 1638
Filtration accuracy		Recommended filter minimum filtration ratio β ₅ ≥75
Seal material		Nitrile rubber, fluorine rubber, or other sealing materials according to user needs
Installation Requirements		Anywhere installation
Weight	k g	6.3

Technical Parameters

Work Pressure		
Oil mouth P, A, B (X port external control) MPa		≤35
Oil mouth T (When the Y port is not used) MPa		≤5
Oil mouth T (When using the Y port) MPa		≤21
Rated flow (differential pressure ΔP=7 MPa) L/min	60	100
Zero bias	%	≤±2
Hysteresis loop	%	≤0.2
Resolution	%	≤0.1
Non-linearity	%	≤10
Asymmetry	%	≤10
Endleak	L/min	≤1.2
		≤2

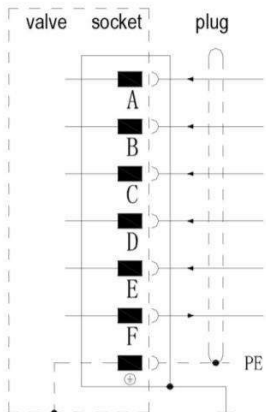
Amplitude bandwidth (-3dB)	Hz	≥30
Phase bandwidth(-90°)	Hz	≥40
Spool drive mode	Permanent Magnet Linear Force Motor Direct Drive	
Valve body structure	Single stage valve, 3-way, 4-way or 2×2-way, drain port Y optional	
Installation form	ISO4401 - 05 - 05 - 0 - 94	

Electrical Parameters

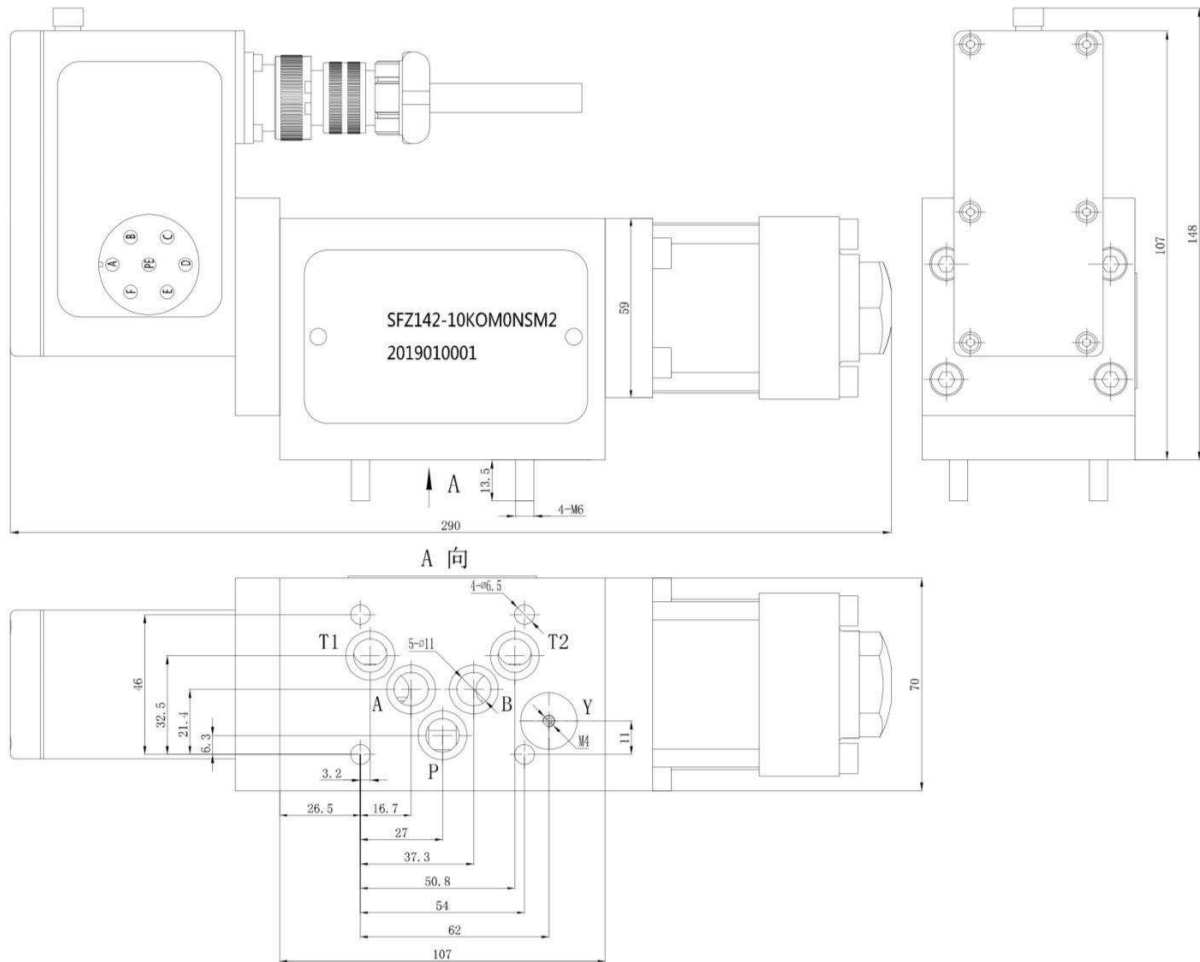
Valve protection class	Conforms to standards EN60 529, IP65		
Instruction signal	0~±10V	0~±10mA	4~20mA
Supply power	24VDC (22~28VDC)		
Socket	6+PE		
Command signal and spool displacement	The stroke of the spool is proportional to (UD - UE) When UD - UE=+10V, the spool is in the fully open position of P→A, B→T, and the spool is in the neutral position when the command signal is 0	The stroke of the spool is proportional to (ID - IE), when ID=+10mA, the spool is in the fully open position of P→A, B→T, and the spool is in the neutral position when the command signal is 0	Spool stroke is proportional to (ID - 12mA) When ID=+20mA, the spool is at the full open position of P→A, B→T When ID=+4mA, the spool is at the full open position of P→B, A→T open position
Main spool actual displacement output	Main spool displacement output IF - B=4~20mA, when the spool is in the neutral position, IF - B=12mA, when the valve port is fully open and P→B, A→T, IF - B=+4mA, when the valve port Fully open and P→A, B→T IF - B=+20mA		

Note: All signal lines must use shielded cables.

Electrical Wiring

	Function	Voltage command(0~±10VDC)	Current instruction(0~±10mA)	Current instruction(4~20mA)
	Power supply	24VDC (22~28VDC)		
	Power/signal ground	(0V)		
	Instruction signal	$U_{D-E}=0\sim\pm 10V$	$I_D=-I_E: 0\sim\pm 10mA, R_e=200\Omega$	$I_{F-B}: 4\sim 20mA, R_e=200\Omega$
	Anti-command signal	$R_e: 50k\Omega$	$I_E=-I_D: 0\sim\pm 10mA, R_e=200\Omega$	
	Spool actual displacement output signal	$I_{F-B}=4\sim 20mA$ 。When the spool is in the neutral position, $I_{F-B}=12mA$ 。The ground load impedance is 300-500Ω		
	Protective grounding			

□ **Dimensions and Interface**



- The installation surface of the valve complies with ISO4401-05-05-0-94, the roughness of the installation surface of the valve is not less than $\sqrt{1.6}$, and the flatness is less than 0.01mm.
- In order to ensure that the servo valve can work normally, the system must be flushed before trial operation.

□ **Spare Parts & Accessories**

Parts or accessories	Size or Specifications	Quantity
NBR O-rings		
For P, T, A and B ports	12.5×1.8	5
For Y port	12.5×1.8	1
Configuration plug (degree of protection IP65)	6+PE plug	1
Mounting screws	M6×60	4
Protective base	PP or 2A12	1



□ Ordering Information

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Rated flow	
When P _n =3.5MPa per section Q _n [L/min]	
60	60
10	100

Maximum Working Pressure and Body Material	
K	35 MPa

Valve Spool Type	
O	Four-way, zero opening, linear flow gain
A	Four-way, 1.5% ~ 3% positive overlap, linear gain
D	Four-way, 10% positive overlap, linear gain
Z	2×2-way, P→A, B→T; Y port back to oil tank
X	Customized on demand

The position of the spool when there is no control electric signal	
M	centre position
A	P→B, A→T (The minimum opening is 10% of full opening)
B	P→A, B→T (The minimum opening is 10% of full opening)
	Customized on demand

Power supply	
2	24VDC (18~32VDC)

Electrical signal when the valve is fully open		
	instruction signal	Spool displacement signal output
M	0~±10 V	4~20 mA
P	0~±10 mA	4~20 mA
S	4~20 mA	4~20 mA
Y	Customized on demand	

Valve socket	
S	6+PE socket

Seal material	
N	Nitrile Rubber (NBR) Standard Type
V	Viton (FPM)
	Customized on demand

Y port	
0	blocked by a plug
1	open, and built-in oil filter