SH3lc
Rotary to Linear Direct Drive Servo Valve

SH3lc Rotary Direct Drive Servo Valve

Product Overview

The Scylla SH3lc Rotary to Linear Direct Drive Servo Valve (RLDDV) uses a rotary motor to drive the valve spool to produce linear displacement, which in turns controls the opening and closing of the valve port, ultimately realizing the precise output of the flow. The SH3lc valve has the most compact volume, the lightest weight of the similar products, ultra-high anti-contamination ability and dynamic performance, while continuing the excellent low-pressure performance and high reliability of direct drive valves. The SH3lc rotary direct drive servo valve can be widely used in military, aerospace, testing, metallurgy, electric power, plastic machinery, woodworking machinery, robotics, rail transport, mobile platforms and other fields. The valve has a standard mounting Surface and electrical wiring. With its own excellent performance and competitive price, the SH3lc servo valve is a compelling platform in the miniature valve segment.

Key Features

- Customized onboard electronics with integrated spool position feedback
- Rated flow of up to 15 l/min
- Bandwidth of >130 Hz
- Step response < 2.5 ms
- Precision cut spool & sleeve design for high resolution flow metering
- Compact structure – next generation valve body
- Low power consumption

SH3lc Technical Data

General		
Design		Rotary Direct Drive Servo Valve
Actuation		Rotary-Linear
Size	mm	42 x 42 x 42.9
Interface Size		Miniature
Mounting Pattern		ISO 10372-04-04-0-92
Contamination Resistance		NAS 8
Ambient Temperature	°C	-20...+80
Mass	kg	0.2
Vibration Resistance	g	30, 3 axes
Hydraulic Data		
Max Operating Pressure	Bar	350 P, A, B, 100 T
Fluid		Hydraulic Oil DIN 51524-35
Fluid Temperature	°C	-20...+80
Viscosity	cSt	5-500
Rated Flow	l/min	5-15
Leakage at 210 bar	l/min	<0.1
Filtration		ISO 4406 (1999) 18/16/13
Static/Dynamic Data		
Response Time at 100% Step Input[3]	ms	<2.5
Frequency Response (±25% signal)	Hz	130
Hysteresis	%	<1
Threshold	%	<0.1
Null Shift	%	<0.2
Electronics Data		
Supply Voltage	(v)	22-30 (Typical 24)
Max. Current Draw	(A)	4.5 (chip shear event or high frequency operation)
Input Signal		±10V / ±10mA / ±20mA / 4…20mA (Other on request)
EM Compatibility		EN61000-6-2, EN55011: 1998+A1

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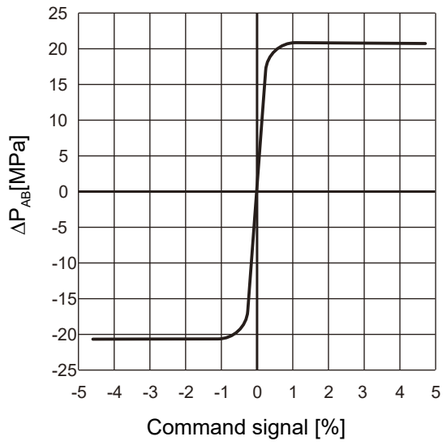
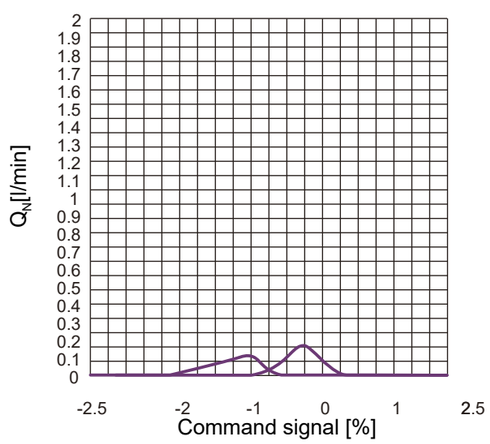
SH3lc Performance Graphs

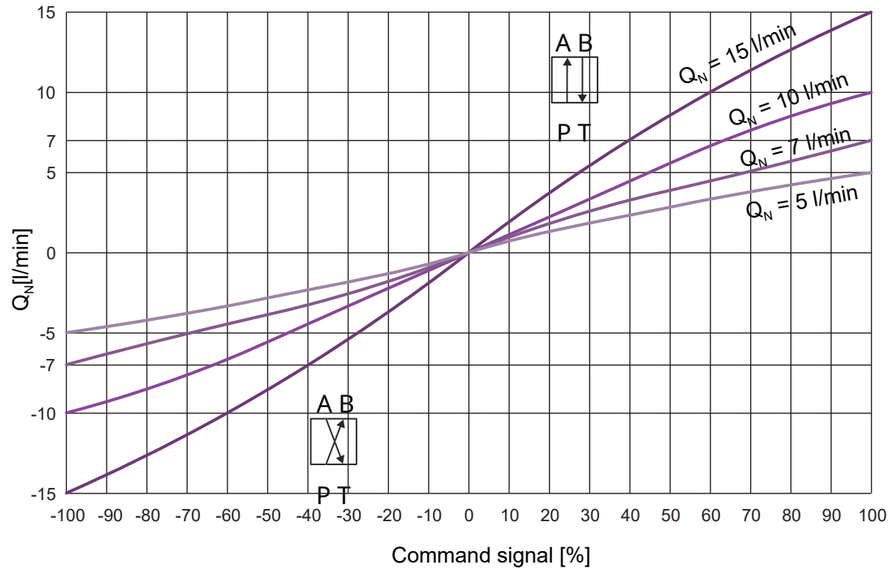
Pressure Gain



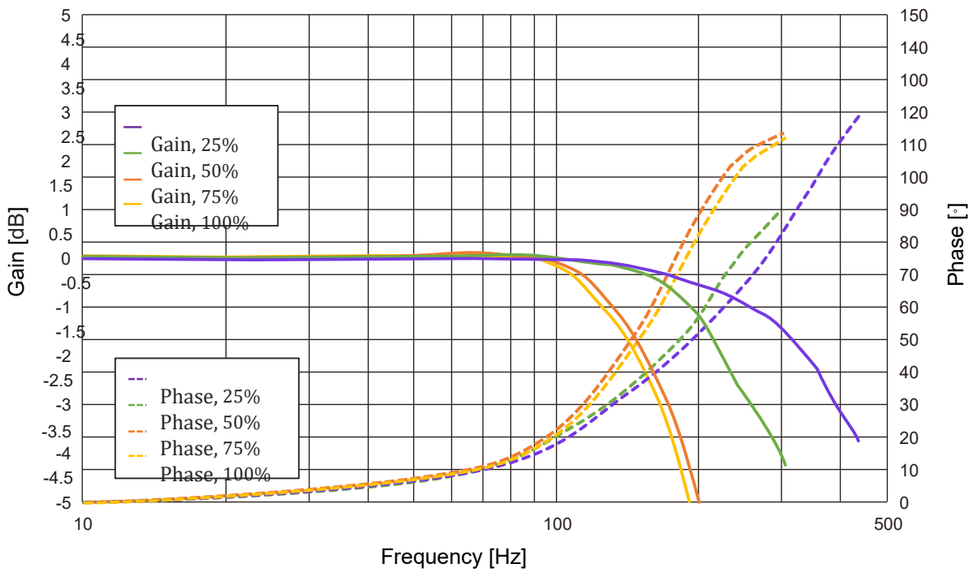
Internal Leakage



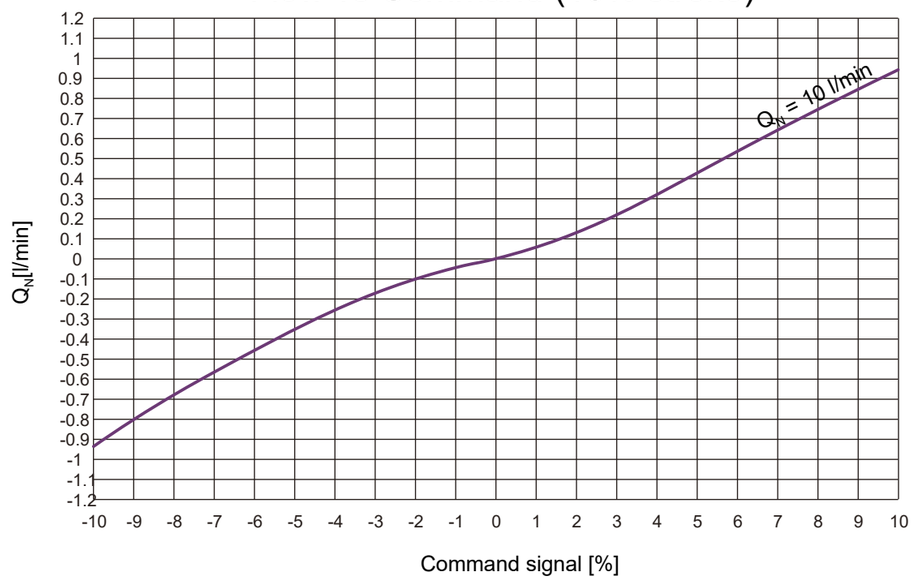
Flow vs Command



Frequency Response



Flow vs Command (10% stroke)



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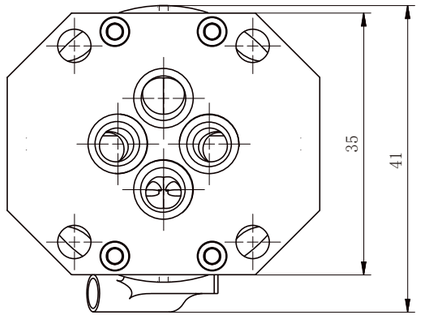
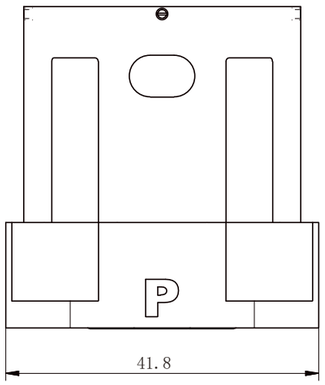
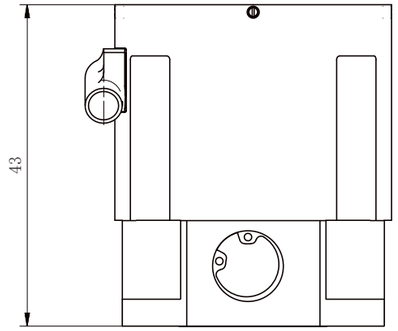
SH3lc Unit Dimensions.



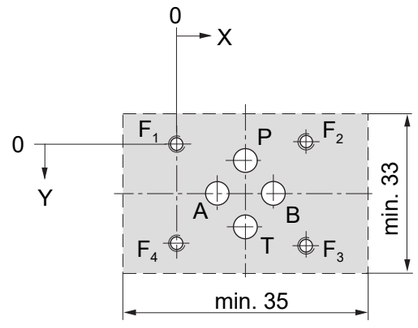




Mounting Surface Pattern

		P	A	B	T	F_1	F_2	F_3	F_4
Diameter Ø	mm	3.8	3.8	3.8	3.8	M4	M4	M4	M4
	in	0.15	0.15	0.15	0.15				
X Position	mm	11.9	5.8	18	11.9	0	23.8	23.8	0
	in	0.47	0.23	0.7	0.47		0.94	0.94	
Y Position	mm	7	13.1	13.1	19.2	0	0	26.2	26.2
	in	0.28	0.52	0.52	0.76			1.03	1.03

The mounting manifold must conform to ISO 10372-01-01-0-92 (without locating pin)
Surface flatness must be within 0.01/100
Surface finish must be better than 0.8 µm



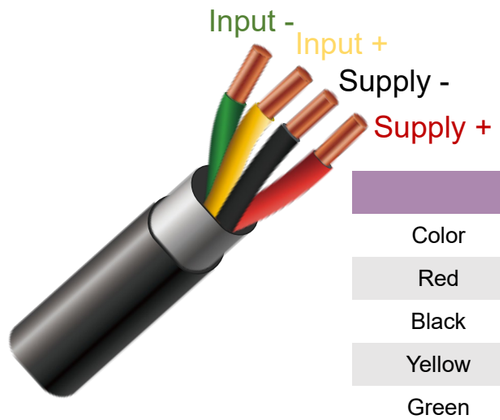
Bolts (F_1, F_2, F_3, F_4)

Type: M4 x 10 DIN EN ISO 4762-10.9
Required Torque: 3.9 Nm (2.9 ft-lbf)

O-rings (P, A, B, T)

Type: 6.07 x 1 (4 x ISO 3601-1-010)
Material: NBR, FKM

SH3lc Electronics Interface Diagrams



SH3lc Connection Diagram		
Color	Function	Description
Red	Supply +	+24 V
Black	Supply -	0
Yellow	Input +	Differential Input Signal +
Green	Input -	Differential Input Signal -

SH3lc Ordering Information

SH3lc	-	-	-	-	-	-		
Please inquire for other need	Rated flow (l/min)	Main spool type	Signals for 100% spool stroke	Electric interface	Seal material	Fail-safe function		
						X	No fail safe function	
						0	Null position defined without electrical signal	
					D	NBR		
					F	FKM		
				4	4 Pin			
			B	±10 V				
			C	±10 mA				
			E	±20 mA				
			S	4…20 mA				
		1	Zero-lap					
		3	Overlap					
	5	5						
	7	7						
	10	10						
	15	15						
X								