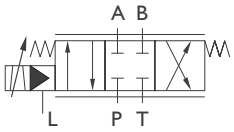
Schneider KREUZNACH

Elektrohydraulic Servovalves Typ HVM 090



Symbol

Special features:
- high reliability
- easy service
- robust construction
- high dynamic response
- relatively insensitive to contamination
- variable metering orifices only
- Qmax = 70l/min at Δp =70bar
- $p_{max.}$ = 315 bar

General description:

Type	:	electrical input stage, torque motor, sliding spool system
Control	:	torque motor actuated pilot spool
main spool	:	located in 4-way sliding and correlated to the same
Style of mounting	:	subplate / Cetop 05
Mounting position	:	unrestricted
Weight	:	2,8kg

Technical Data

1. Hydraulic Data (definition according to DIN 24311)

.1	rated pressure	p_N	=	210	[bar]	
.2	operating pressure	$p_{b\ min}$	=	10	[bar]	*in case of internal connection
		$p_{b\ max}$	=	315	[bar]	from L to T max.static pressure
.2.1	return line pressure	$p_{r\ max}$	=	35 % p_b *		10 bar continuously
.2.2	in case of separate leakage line	$p_{L\ max}$	=	10	[bar]	
.3	max. pressure (static test pressure)	p_{max}	=	450	[bar]	
.4	rated flow at Δp = 70 bar	Q_N	=	10/20/40/60/70	[l/min]	
.5	quiescent flow, max. at pn	Q_{02}	<	2% Q_N		
.6	internal max. leakage at p_n = 210 bar	Q_L	<	50	[cm^3/min]	
.7	hysteresis	H	<	5% i_N 3% i_N	(without Dither) (with Dither)	
.8	threshold sensitivity	E	<	0,5% i_N 0,2% i_N	(without Dither) (with Dither)	
.9	threshold span	S	< <<	2% i_N 1% i_N	(without Dither) (with Dither)	
.10	linearity deviation		<	10% i_N		
.11	flow symmetry -Q_N zu +Q_N		<	-10..+20% i_N		
.12	pressure gain (see diagram)	V_N	>	0,3 P_b / 1% i_N		
.13	overlap, standard	h	=	+3...+7% i_N		
.14	operating temperature range	δ_M	=	253...353	[K]	
.14.1	temperature drift		≤	2% i_N / 50K		
.15	viscosity range of fluid	γ_{min}	=	10...1000 mm^2/s approximate value normal: ISO VG 10...ISO VG 46		
.16	filtration of fluid		<	class 4-5 class 15/14/11	to NAS 1638 or to ISO 4406	
.17	fluid standard		=	HLP-hydraulic oils as per DIN 51524 Teil 2 (Special equipments possible)		

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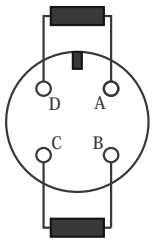
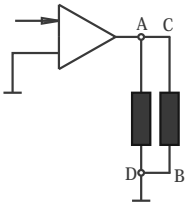
3.Electrical Data

3.1 Electrical Data without Electronic

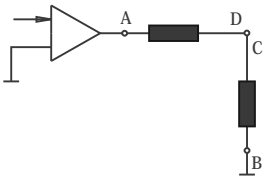


A or C +V
D or B 0V
flow from P to B

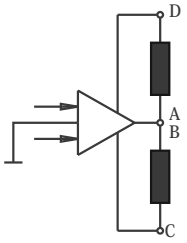
technical Data
per coil,
2 coils operated



Standard version
coils parallel
A+C: +V, D+B: 0V
flow from P to B



Special equipment
Coils serially
A: +V, B: 0V
flow from P to B



Special equipment
A,B to C >
A,B to D:
flow from P to A

coil type	inductance / coil	rated current	resistance	power	rated current	resistance	power	rated current	resistance	power	rated current	resistance	power
1	86 mH	± 325 mA	11,5Ω	1,35 W	± 650 mA	6 Ω	2,7 W	± 325 mA	23 Ω	2,7 W	650 mA	11,5Ω	5,4 W
2	320 mH	± 150 mA	60 Ω	1,35 W	± 300 mA	30 Ω	2,7 W	± 150 mA	120 Ω	2,7 W	300 mA	60 Ω	5,4 W

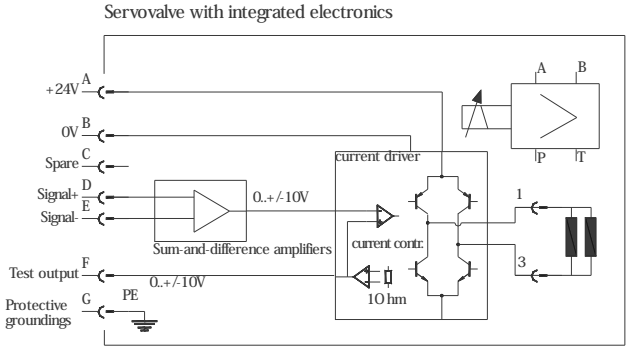
.2.1 Electrical Data with Electronic

Power supply:	24V DC (18V ... 28V)
Current:	350mA max.
Input signal:	-10V ... 0,0 ... +10V
Input resistance:	100 kohm
Signal direction:	from Pin D to Pin E
Internal coil current:	300mA ... 0mA ... –300mA
Test signal output:	3Volt ... 0V ... –3Volt
Valve oil flow:	100% ... 0% ... –100%
Flow direction:	+10V = P > A and B > T
	0,0V = Valve closed
	-10V = P > B and A > T

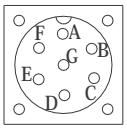
Reminds:
To avoid potential drifting problems, connect Pin E with low resistance (< 10 ohm) to Pin B.
The electrical-hydraulic working direction can be changed to reversed connection on Pin D and Pin E

Cable recommendation:
twisted pair cable up to cable length 25 mtr.:
Type LiYCY 3x2x0,5 mm² or LiYCY4x2X0,5mm², if you will use the test signal out.
up to cable length 200 mtr.:
Type LiYCY 3x2x0,75 mm² or LiYCY 4x2x 0,75 mm², if you will use the test signal out.

.2.2 Bloc diagram



connector 7 pol.
DIN 43563



View on the valve
Pins visible

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