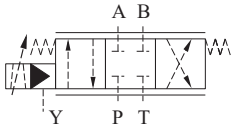
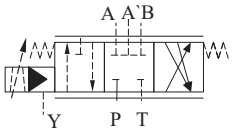
temporary data sheet

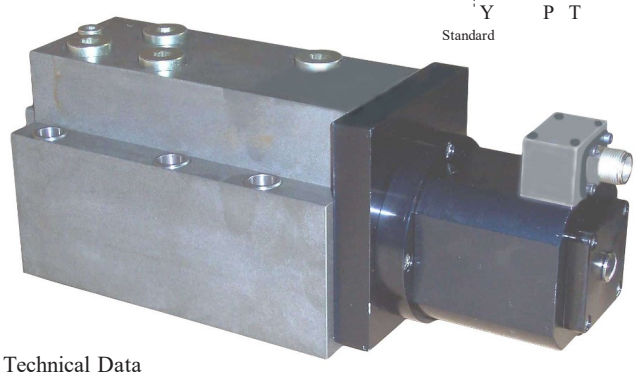
Elektrohydraulic Servovalves
Typ HVM 250



Standard



2 Rücklauf-kanten



Special features:
- high reliability
- without LVDT
- easy service
- robust construction
- high dynamic response
- relatively insensitive to contamination
- variable metering orifices only
- Q max = 400l/min at Δp =70bar
- p_{max} = 315 bar

General description:

Type	:	electrical input stage, linear motor sliding spool system
Control main spool	:	actuated pilot spool located in 4-way sliding and correlated to the same
Style of mounting	:	subplate / Cetop 08
Mounting position	:	unrestricted
Weight	:	15 kg

Technical Data

1. Hydraulic Data (definition according to DIN 24311)

.1	rated pressure	p_N	=	315	[bar]
.2	operating pressure	$p_{b\ min}$	=	5	[bar]
		$p_{b\ max}$	=	315	[bar]
.2.1	return line pressure	$p_{r\ max}$	=	35 % p_b	
.2.2	pressure in Y	$p_{Y\ max}$	=	10	[bar]
.3	max. pressure (static test pressure)	p_{max}	=	450	[bar]
.4	rated flow at Δp = 70 bar	Q_N	=	250/400	[l/min]
.5	quiescent flow, max. at pn	Q_{01+02}	<	5% Q_N	[l/min]
.6	internal max. leakage at p_n = 210 bar	Q_L	<	100	[cm^3/min]
.7	hysteresis	H	<	3% i_N	(without Dither)
				2% i_N	(with Dither)
.8	threshold sensitivity	E	<	0,2% i_N	(without Dither)
				0,1% i_N	(with Dither)
.9	threshold span	S	<	1,5% i_N	(without Dither)
			<	1% i_N	(with Dither)
.10	linearity deviation		<	2% i_N	
.11	step response time 10% - 90%		<	4 ms	
.12	flow symmetry -Q_N zu +Q_N		<	-10..+20%i_N	
.13	pressure gain (see diagram)	V_P	>	0,2 P_b / 1% i_N	
.14	overlap, standard	h	=	-1...+3% i_N	
.15	operating temperature range	δ_M	=	253...353	[K]
.15.1	temperature drift		≤	1% i_N / 50K	
.16	viscosity range of fluid	γ_{min}	=	10...1000 mm^2/s approximate value normal: ISO VG 10...ISO VG 46	
.17	filtration of fluid		<	class 4-5 class 15/14/11	to NAS 1638 or to ISO 4406
.18	fluid standard		=	HLP-hydraulic oils as per DIN 51524 Part 2 (Special equipments possible)	

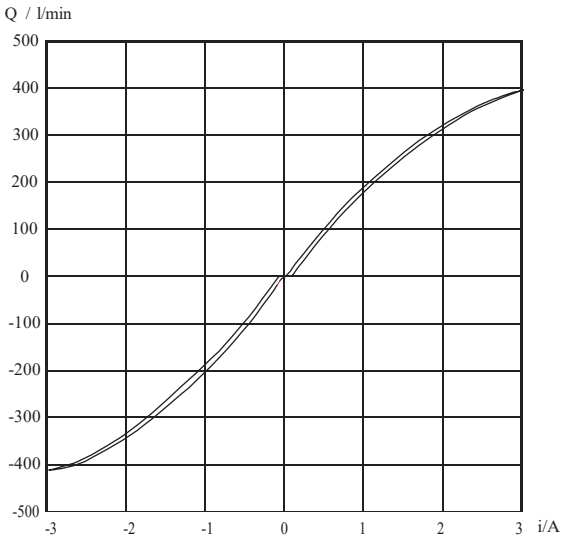
status 04/2005

Schneider Servohydraulics GmbH
Südstraße 4 | D-32457 Porta Westfalica
office@schneider-servohydraulics.com
www.schneider-servohydraulics.com

2. Diagram s HVM 250

Flow rate-signal function

Δp = 70bar



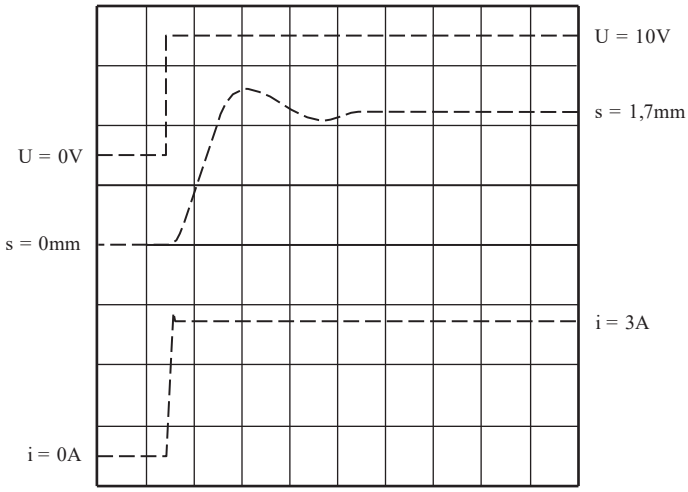
Step response time

at 210bar

– – – desired value 5V/Div.

– – – spool stroke 1V/Div.

– – – current 2V/Div.



Time = 5ms/Div.
step response for spool stroke 10%-90% = 3,76 ms

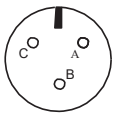
status 04/2005

Schneider Servohydraulics GmbH
Südstraße 4 | D-32457 Porta Westfalica

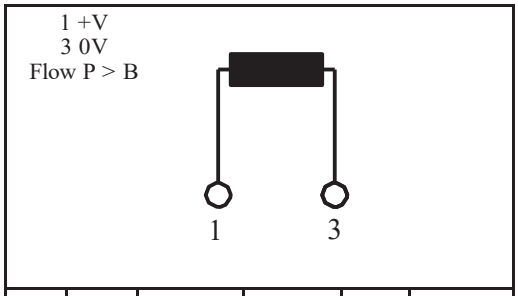
office@schneider-servohydraulics.com
www.schneider-servohydraulics.com

3. Electrical Data

3.1 Electrical Data without Electronic

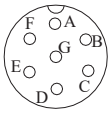


Connector M8

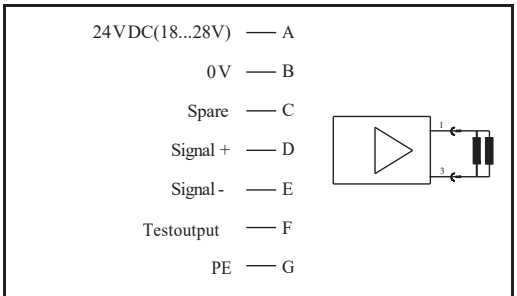


coil type		inductance	rated current	resis-tance	volzage
1	1 coil	3,4 mH	± 3000 mA	5 Ω	15 V

3.2 Electrical Data with Electronic

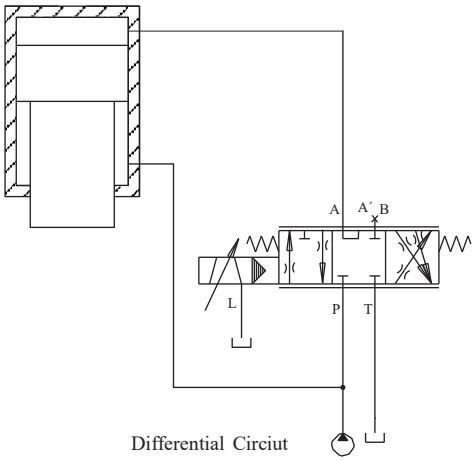


connector 7 pol.
DIN 43563

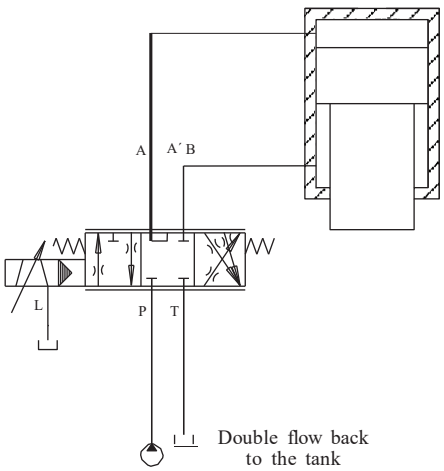


Input	E1	E2	E3	E4	E5	Flow
Signal D>E	+10V	4mA	20mA	+10mA	+20mA	P>A
	0V	12mA	12mA	0mA	0mA	0
	-10V	20mA	4mA	-10mA	-20mA	P>B

Flied of application::



Differential Circiut



Double flow back
to the tank

status 01/2005

Order Information

HVM 250 - 400 - 1200 - XX - E1

Model

250

Rated flow

QN at Δp =70 bar
250 l/min
400 l/min

Seal material

1 Perbunan
2 Viton
3 Butyl
4 Vulkollan
5 Ethylen-Propylen

Resistance / coil [R20]

15 Ω

Overlap

0 Zero overlap
1 Positiv overlap
2 Negativ overlap

Amount of overlap

positive or negative
1..9

Design letter

assigned by manufacturer

Elektronic

E1 Voltage input ±10V
E2 Current input 4...20mA P > A
E3 Current input 4...20mA P > B
E4 Current input ±10mA P > A
E5 Current input ±20mA P > A

5.Accessories:

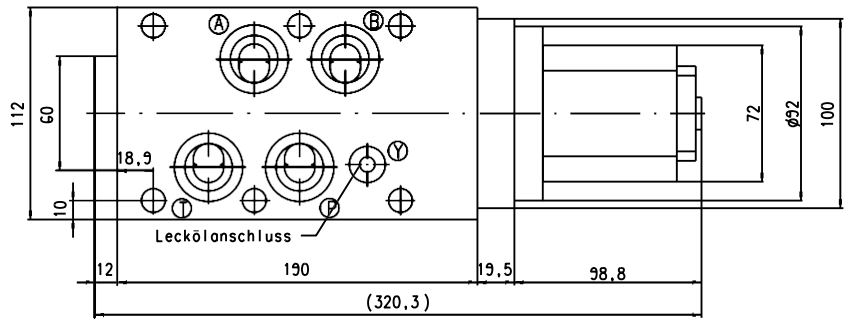
Description			Order No.
Connector	3pol. with cable 2mtr.	KE 79-3406-52-03	10249
Connector 90°	3pol. with cable 2mtr.	KE 79-3408-52-03	10250
Connector	7pol.	KECA 06 COM 14S 7S	21855
Box-Amplifier		BOE XXX-025-0-5-1A	36738

Important remarks:
Valve mounting surface must be flat within 0,02mm and smoothness not to exceed 6µm. Easy hydraulic Zero adjustment by means of Allen key S8 DIN 911. Max. permissible drain line pressure 10 bar. Valves with modified characteristics available. Modifications, which serve technical progress, remain reserving.

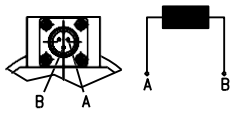
status 4/2005

Schneider Servohydraulics GmbH
Südstraße 4 | D-32457 Porta Westfalica
office@schneider-servohydraulics.com
www.schneider-servohydraulics.com

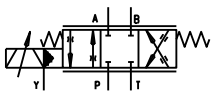
Anschlußbild: ISO 4401-08-07-0-94
Cetop R 35 H 4.2-4-Size 08

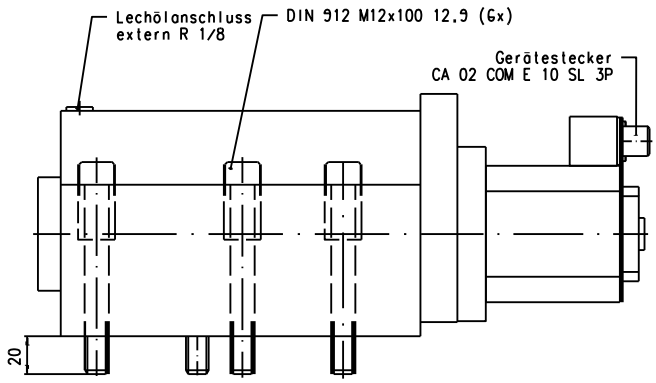


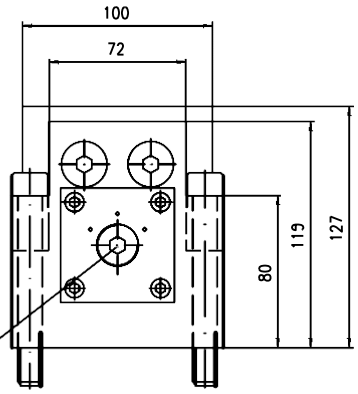
Ansicht auf
Gerätestecker



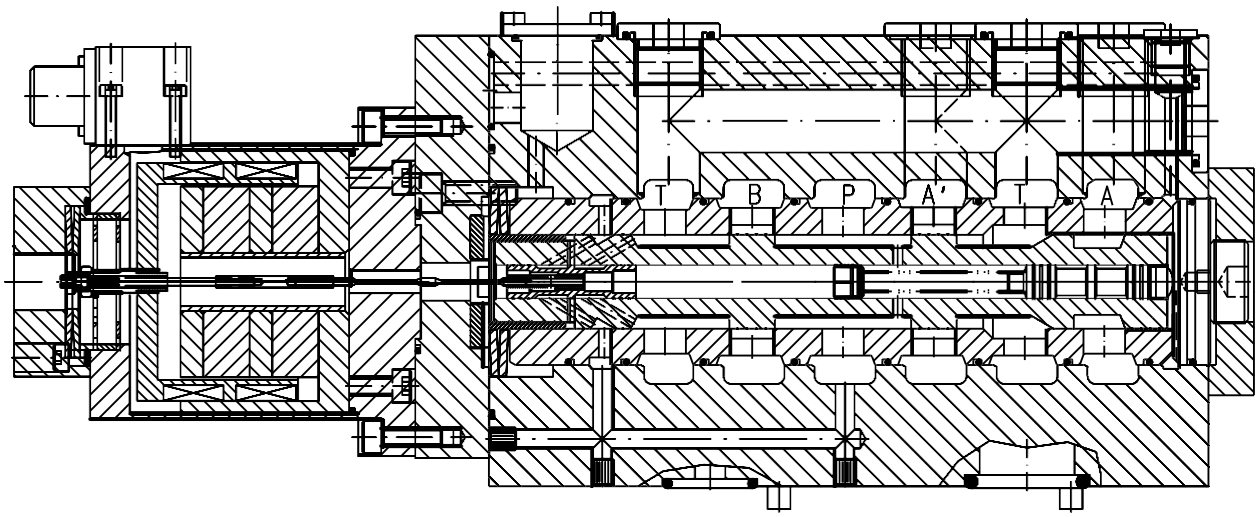
Bei angelegter Spannung
+A und -B ist hydraulisch
Anschluss P mit B verbunden.







SW8 zur Justage des hydraulischen Nullpunktes
mittels Sechskantschraubendreher S8 DIN 911



Angaben ohne Einheiten in mm
All dimensions without unit in mm

Nur zur Information / Only for information

Änderungsindex / Amendment index		
–		
	Datum / Date	Name / Name
dwg.	07.12.04	Mer.

Ventil / Valve

HVM 250-400-1200-0A

Id.- Nr.

Jos. Schneider Optische Werke GmbH
Ringstr. 132 55543 Bad Kreuznach
Germany

Schneider KREUZNACH