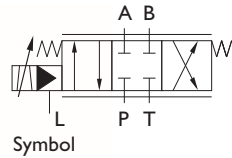
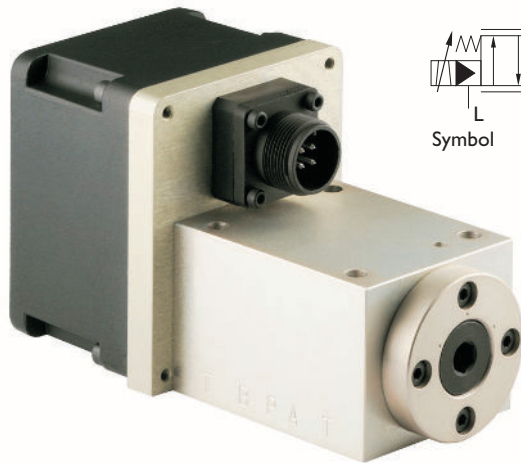


# HVM 057 Page 1/4

## Elektrohydraulic Servovalves Typ HVM 057



### Special features:

- high reliability
- easy service
- robust construction
- high dynamic response
- relatively insensitive to contamination
- variable metering orifices only
- $Q_{max} = 50\text{l/min}$  at  $\Delta p = 70\text{bar}$
- $p_{max} = 315\text{bar}$

### 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	:	1,75kg

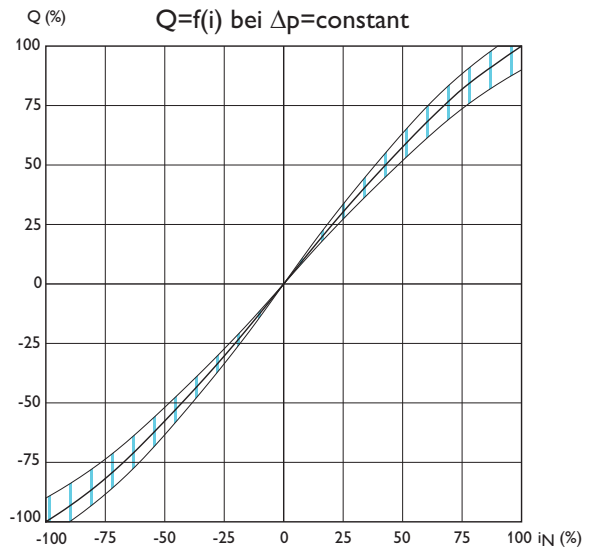
### Technical Data

#### 1. Hydraulic Data (definition according to DIN 24311)

.1	rated pressure	$p_N$	=	210	[bar]	
.2	operating pressure	$p_{b\ min}$	=	10	[bar]	
		$p_{b\ max}$	=	315	[bar]	
.2.1	return line pressure*	$p_{r\ max}$	=	35 % $p_b$		*in case of internal connection from L to T max.static pressure 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 $\Delta p = 70\text{ bar}$	$Q_N$	=	10/20/30/40/50	[l/min]	
.5	quiescent flow, max. at $p_N$	$Q_{01+02}$	<	4% $Q_N$		
.6	internal max. leakage at $p_N = 210\text{ bar}$	$Q_L$	<	50	[cm <sup>3</sup> /min]	
.7	hysteresis	H	<	4,5% $i_N$ 2% $i_N$	(without Dither) (with Dither)	
.8	threshold sensitivity	E	<	0,5% $i_N$ 0,1% $i_N$	(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% $i_N$		
.12	pressure gain (see diagram)	$V_P$	>	0,4 $P_b / 1\%$ $i_N$		
.13	overlap, standard	h	=	+1...+3% $i_N$		
.14	operating temperature range	$\delta M$	=	253...353	[K]	
.14.1	temperature drift		≤	2% $i_N / 50K$		
.15	viscosity range of fluid	$\gamma_{min}$	=	10...1000 mm <sup>2</sup> /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)		

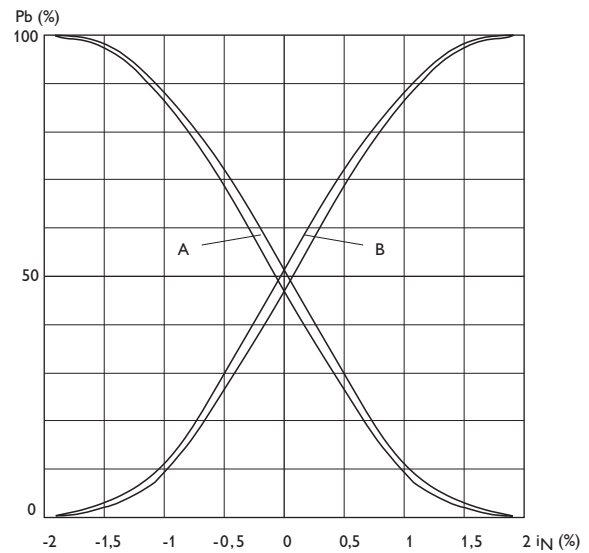
## 2. Diagrams HVM 057

Flow rate-signal function



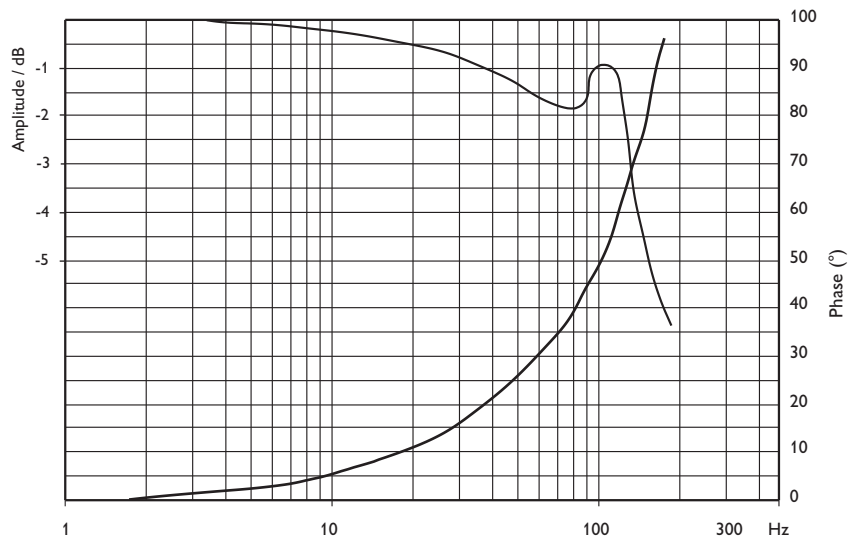
Pressure gain

$$V_p = \tan \alpha = \frac{\Delta p}{\Delta I}$$



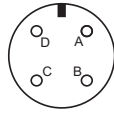
Frequency Response

P<sub>v</sub>: 210bar  
 — ±30% I

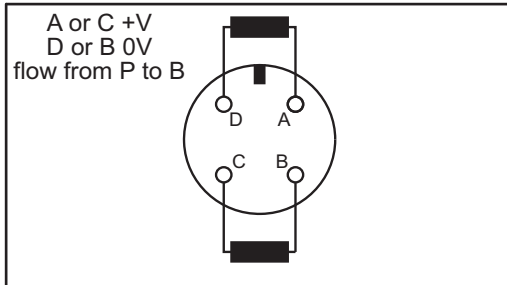


### 3. Electrical Data

#### 3.1 Electrical Data without Electronic

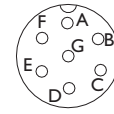


connector 4 pol.  
DIN 43563

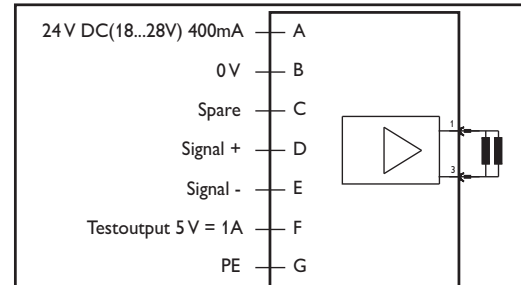


coil type		inductance	rated current	resistance	power
1	1 coil	86 mH	± 325 mA	11,5 Ω	1,35 W
	2 coil parallel	31,2 mH	± 650 mA	6 Ω	2,7 W
2	1 coil	320 mH	± 150 mA	60 Ω	1,35 W
	2 coil parallel	157 mH	± 300 mA	30 Ω	2,7 W

#### 3.2 Electrical Data with Electronic



connector 7 pol.  
DIN 43563



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

Order Information

## HVM 057 - 040 - 1200 - XX - E1

<b>Model</b>	057
<b>Rated flow</b>	QN at $\Delta p = 70$ bar 010 l/min 020 l/min 030 l/min 040 l/min 050 l/min
<b>Seal material</b>	1 Perbunan 2 Viton 3 Butyl 4 Vulkollan 5 Ethylen-Propylen
<b>Resistance / coil [R20]</b>	1 11,5 $\Omega$ 2 60 $\Omega$
<b>Overlap</b>	0 Zero overlap 1 Positiv overlap 2 Negativ overlap
<b>Amount of overlap</b>	positiv or negative 1..9
<b>Design letter</b>	assigned by manufacturer
<b>Elektronic</b>	E1 Voltage input $\pm 10V$ E2 Current input 4...20mA P > A E3 Current input 4...20mA P > B E4 Current input $\pm 10mA$ E5 Current input $\pm 20mA$

5. Accessories:

Description			Order No.
Connector	4pol.	KE-CA 06COM E 14 S2S	13018
Sub plate	NG 10	HZ 036	39671
scavenger plate	NG 10	HZ 061	39671
Box-Amplifier		BOE XXX-025-0-5-0A	46965

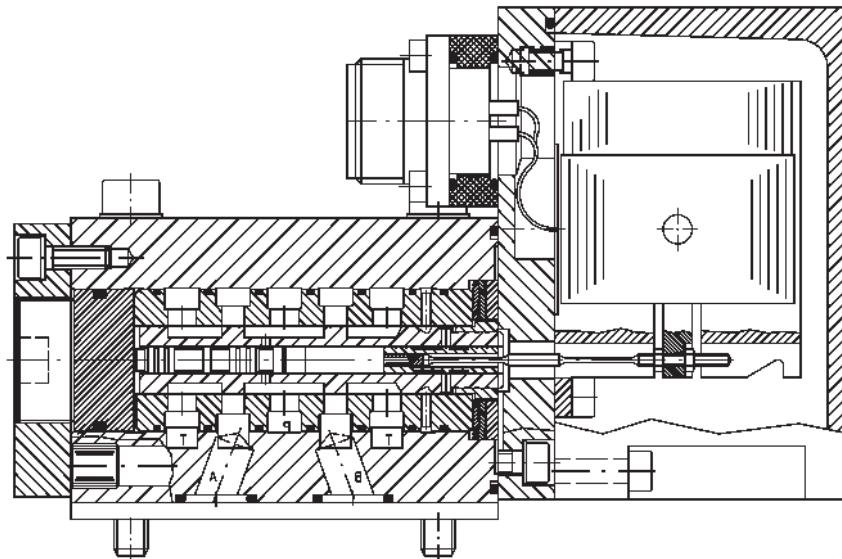
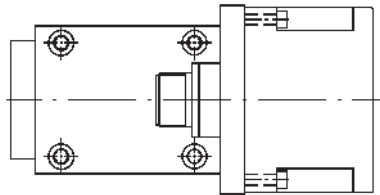
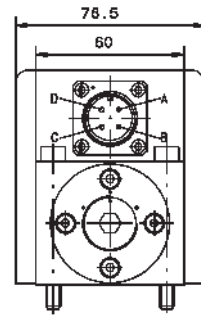
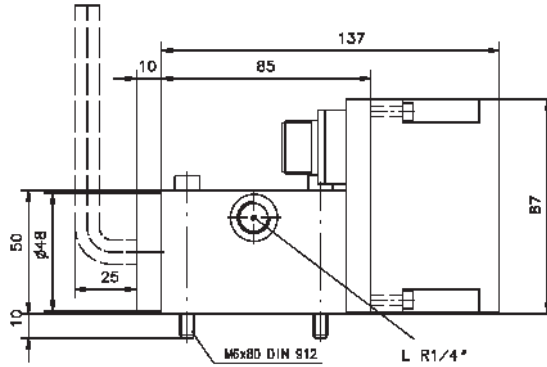
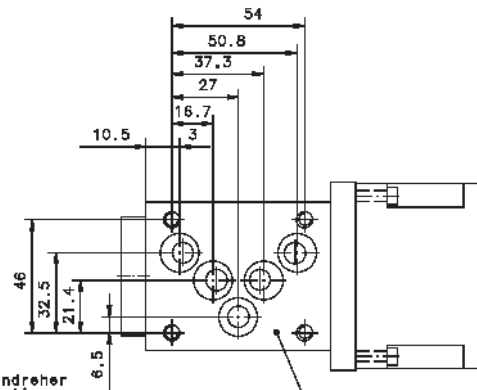
**Important remarks:**

**Valve mounting surface must be flat within 0,02mm and smoothness not to exceed 6 $\mu$ m. 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 01/2005

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Sechskanterschraubendreher  
DIN 911 s8 zum Justieren  
des hydr. Nullpunkt  
Justagebereich  $\pm 45^\circ$



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.	04.09.01	Dindorf

Ventil  
Valve

HVM 057-XXX-XXXX-XX

Id.- Nr.

-

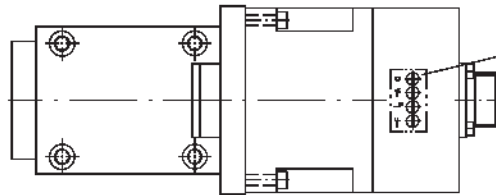
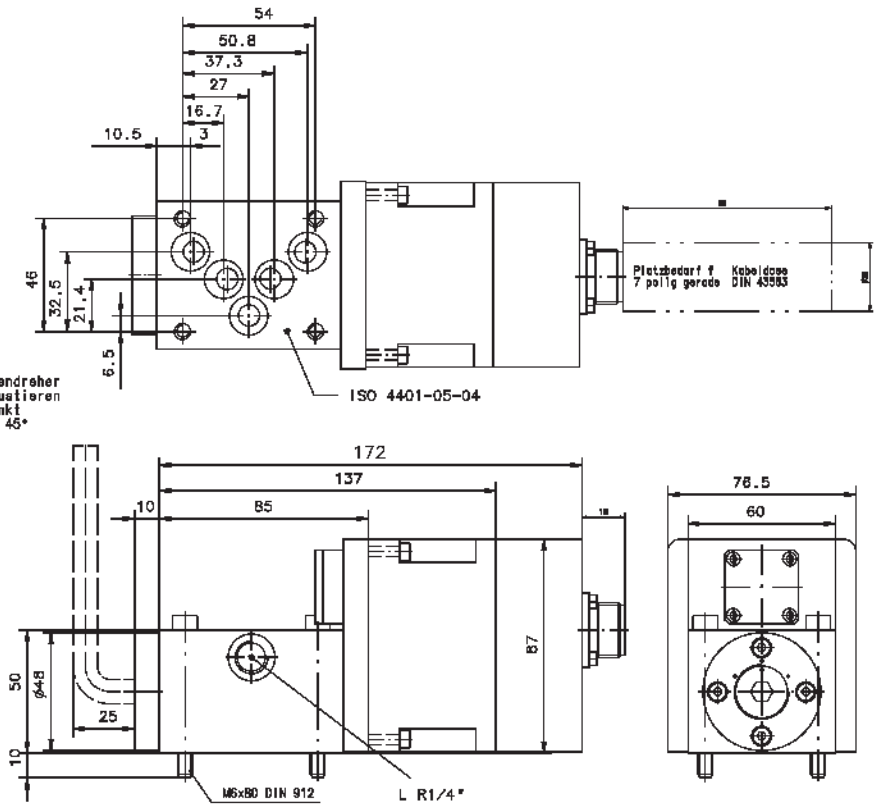
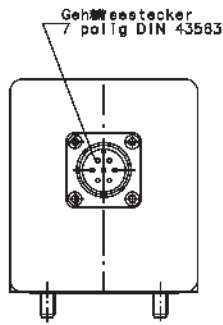
**Jos. Schneider Optische Werke GmbH**  
Ringstr. 132 55543 Bad Kreuznach  
Germany



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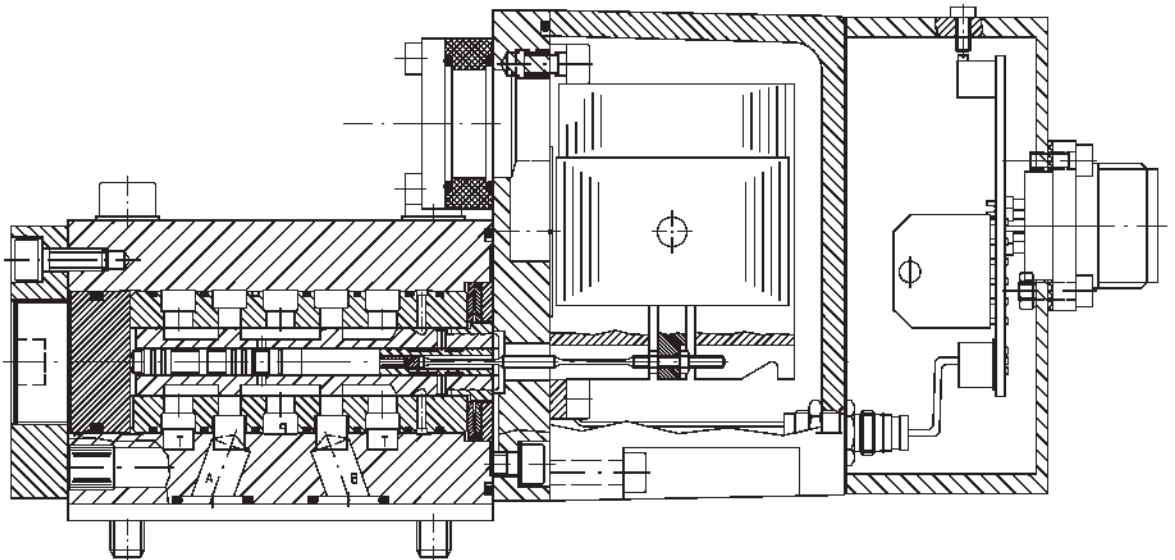
A	24 VDC ; 400 mA
B	0 V
C	Signal 0
D	± 10 V
E	0 V
F	Feedback
G	PE

Sechskantschraubendreher  
DIN 911 s8 zum Justieren  
des hydr. Nullpunkt  
Justagebereich ± 45°



Einsteckpotis Ventilelektronik

- ~F: Ditherfrequenz
- I: Nennstrom
- ~A: Ditheramplitude
- 0: Nullpunkt



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.	04.09.01 Dindorf

Ventil  
Valve

HVM 057-XXX-XXXX-XX-EX

Id.- Nr.

-

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