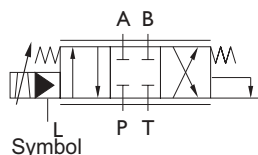


## Elektrohydraulic Servovalves Typ HVM 107


**Special features:**

- high reliability
- easy service
- electric feedback of the main spool
- high dynamic response
- internal or external pilot supply
- variable metering orifices only
- $Q_{max} = 250\text{ l/min}$  at  $\Delta p = 70\text{ bar}$
- $p_N = 315\text{ bar}$

**General description:**

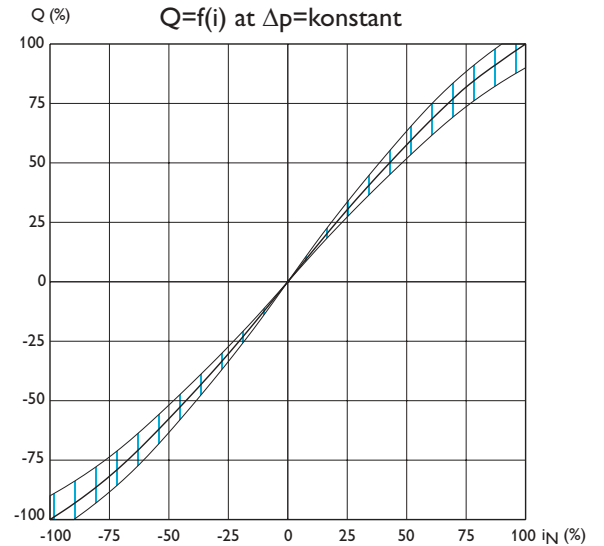
Type	:	two- or three-stage servovalve slighting spool only without fixed jet pipes or nozzles, servovalves model HVM 025 or HVM 055
Control	:	with inductive LVDT,
main spool	:	subplate
Style of mounting	:	unrestricted
Mounting position	:	14,5kg
Weight	:	

**Technical Data**
**1. Hydraulic Data (definition according to DIN 24311)**

.1	rated pressure	$p_N$	=	315	[bar]	
.2	operating pressure main stage	$p_{b \text{ min}}$	=	0	[bar]	(external pilot supply)
		$p_{b \text{ max}}$	=	420	[bar]	
	operating pressure pilot	$p_{b \text{ min}}$	=	10	[bar]	
		$p_{b \text{ max}}$	=	150	[bar]	
.2.1	backstroke pressure	$p_{r \text{ max}}$	=	315	[bar]	(external pilot supply)
	backstroke pressure	$p_{r \text{ max}}$	=	50	[bar]	(internal pilot supply)
.3	max. pressure (static test pressure)	$p_{max}$	=	500	[bar]	
.4	rated flow at $\Delta p = 70\text{ bar}$	$Q_N$	=	150/200/250	[l/min]	
.5	quiescent flow, max. at $p_N$	$Q_{01+02}$	<	3 % $Q_N$		
.6	internal max. leakage bei $p_N = 210\text{ bar}$	$Q_L$	<	200	[cm <sup>3</sup> /min]	
.7	hysteresis	H	<	0,5 % $i_N$		(with Dither)
.8	threshold sensitivity	E	<	0,2 % $i_N$		(with Dither)
.9	threshold span	S	<	0,4% $i_N$		(with Dither)
.10	linearity deviation		<	8% $i_N$		
.11	flow symmetry - $Q_N$ at + $Q_N$		<	7% $i_N$		
.12	pressure gain (see diagram)	$V_N$	>	1 $P_b / 1\%$ $i_N$		
.13	overlap, standard	h	=	-1...+3% $i_N$		
.14	operating temperature range	$\delta_M$	=	253...353	[K]	
.14.1	temperature drift		≤	3% $i_N / 50K$		
.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)		

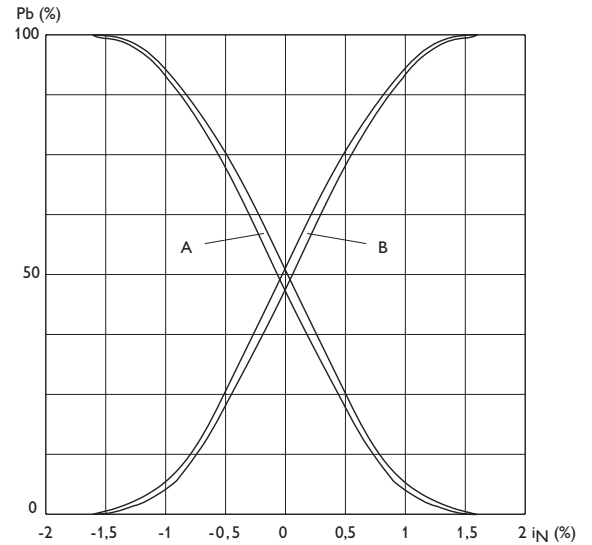
## 2. Diagrams HVM 107

Flow rate-signal function

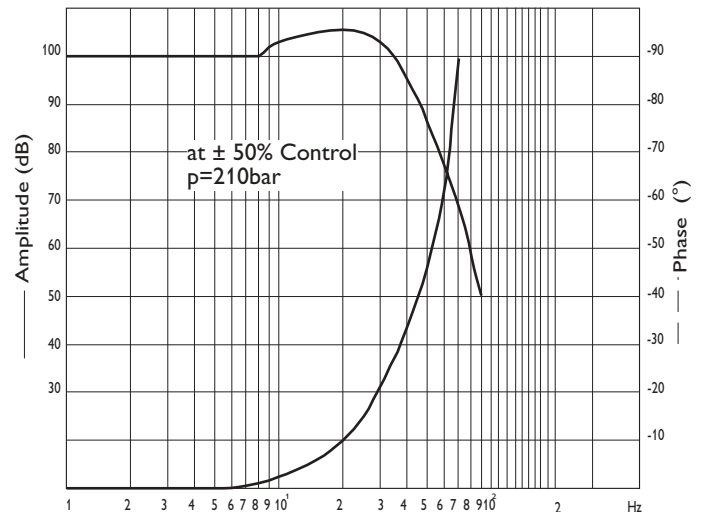
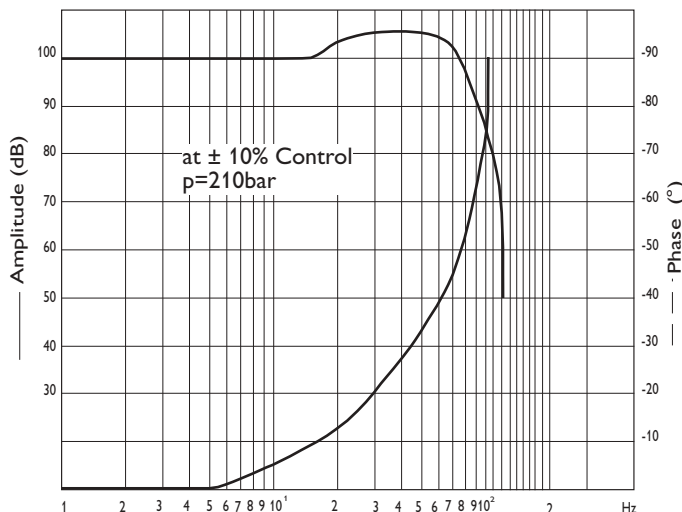


Pressure gain

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

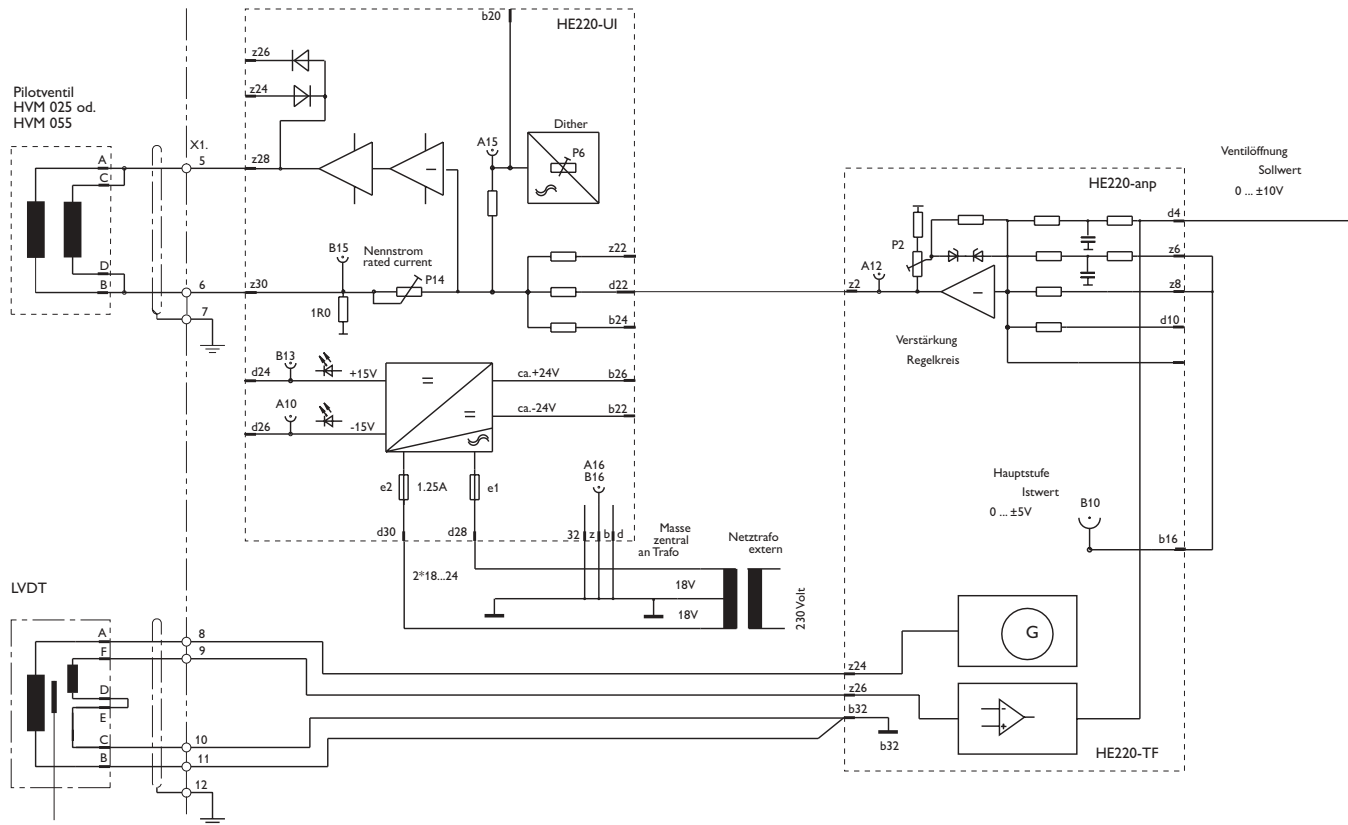


Frequency Response  
with Servovalve HVM 025-003-1211-0G



### 3. Electrical data

#### 3.1.1 Basic block diagram with PID-Amplifier HE 261

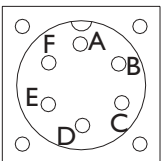


#### 3.1.2 Technical data of the LVDT

- impedance at the primary coil = 650 Ω/coil at 2,5kHz
- impedance at the secondary coil = 920 Ω at 2,5kHz
- input voltage = 6 V max.
- carrier frequency = 1..10 kHz
- sensitivity at 2,5 kHz = 98 mV/Vmm

for the electrical data of the amplifier and the servovalve see table for amplifier HE 261 and servovalve HVM 025 or HVM 055. Flow-direction of the main spool from P to B or from A to R, if there AC+ and BD 0 voltage at the servovalve.

connector 6 pol.  
DIN 43563



View on the valve pins visible

#### Cable recommendation:

- twisted pair cable up to cable length 25 mtr.:  
Type LiYCY 4x0,25mm<sup>2</sup>
- up to cable length 200 mtr.:  
Type LiYCY 4x0,75mm<sup>2</sup>

## Order Information

# HVM 107 - 120 - XXXX - X - X - X - X - XX

<b>Model</b> 107	<b>Design letter</b> assigned by manufacturer																				
<b>Rated flow</b> QN at $\Delta p = 70$ bar 150 l/min 200 l/min 250 l/min	<b>stroke of main spool (mm)</b> 1 $\pm 1$ 2 $\pm 1,8$																				
<b>Seal material</b> 1 Perbunan 2 Viton 3 Butyl 4 Vulkollan 5 Ethylen-Propylen	<b>Pilotvalve</b> 1 HVM 025-001 2 HVM 025-003 3 HVM 025-005 4 HVM 055-010																				
<b>Resistance / coil [R20](Servovalve)</b> 1 11,5 $\Omega$ 2 60 $\Omega$	<b>Electric</b> 1 without Electronic 2 with integrated Elektronik (in preparation)																				
<b>Overlap</b> 0 Zero overlap 1 Positiv overlap 2 Negativ overlap	<b>pilot supply</b>																				
<b>Amount of overlap</b> positive oder negative 1..9	<table border="1"> <thead> <tr> <th></th> <th>P</th> <th>T</th> <th>L</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>internal</td> <td>internal</td> <td>Block</td> </tr> <tr> <td>2</td> <td>external</td> <td>internal</td> <td>Block</td> </tr> <tr> <td>3</td> <td>external</td> <td>external</td> <td>Block</td> </tr> <tr> <td>4</td> <td>internal</td> <td>external</td> <td>Block</td> </tr> </tbody> </table>		P	T	L	1	internal	internal	Block	2	external	internal	Block	3	external	external	Block	4	internal	external	Block
	P	T	L																		
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2	external	internal	Block																		
3	external	external	Block																		
4	internal	external	Block																		

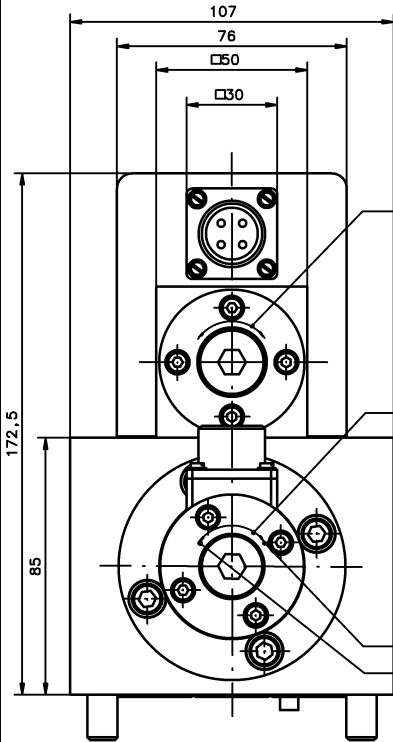
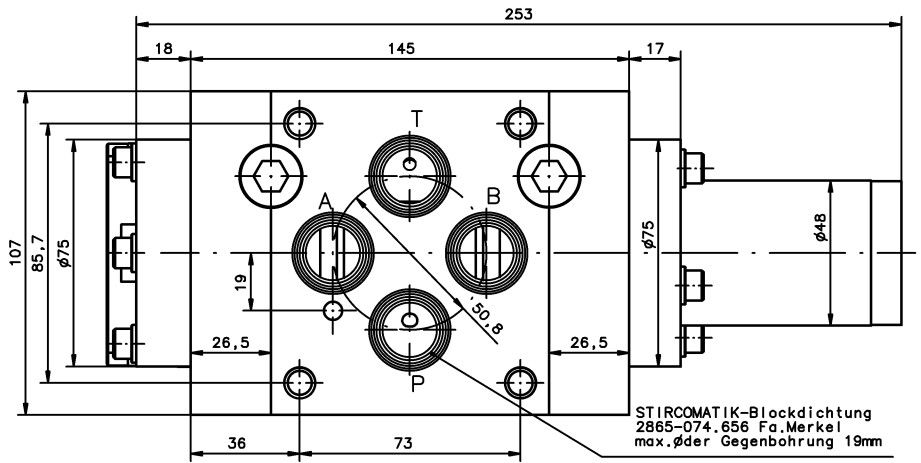
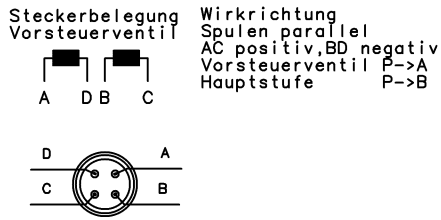
## 5. Accessories:

Description		Order No.
Connector	4pol. for Servovalve	CA06COM 14S2S 13018
Connector	6pol. for LVDTr	CA06COM 14S6S 13446
Sub plate	HVM 106	HZ 033 14264
scavenger plate	HVM 106	HZ 035 14258
Amplifier		HE 261-0XX-12801-3A 10300

## Important remarks:

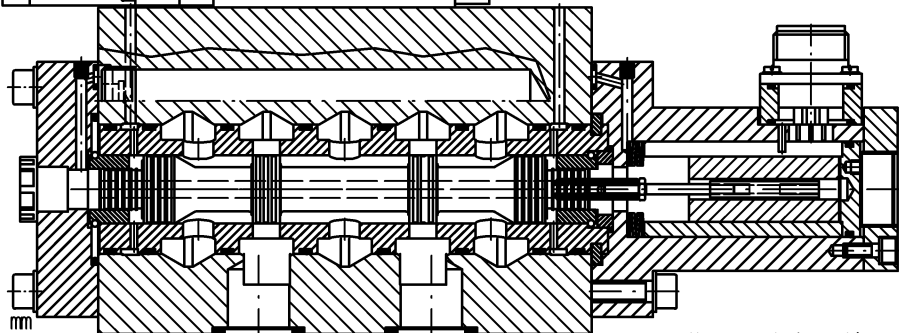
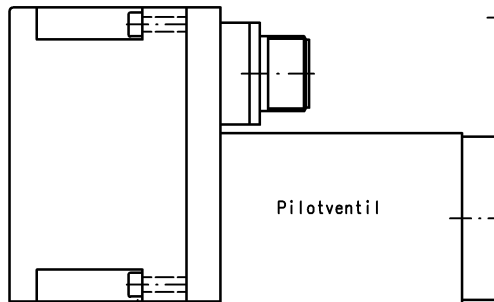
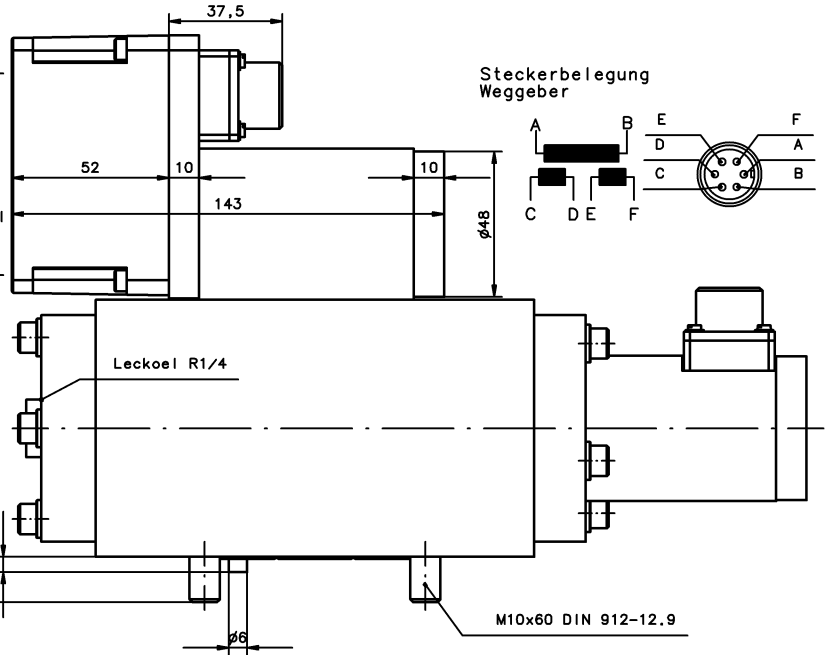
Valve mounting surface must be flat within 0,02mm and smoothness not to exceed 6 $\mu$ m. Easy hydraulic Zero adjustment by means of Allen key S8 DIN 911. Max. permissible drain line pressure 10 bar. Valves with modified characteristics available. Modifications, which serve technical progress, remain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

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Justage hydr. Null  
Vorsteuerventil  
max. ±60°

Justage hydr. Null  
Hauptstufe  
1 Umdrehung 0,5mm  
max. ±2 Umdrehungen



Angaben ohne Einheiten in mm  
All dimensions without unit in mm

Nur zur Information / Only for information

Änderungsindex / Amendment index		
-		
Datum Date	Name Name	
29.10.01	Dindorf	

Ventil  
Valve

**HVM 107-XXX-XXXX-X-X-X-XX**

Id.- Nr.

-

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

