

Technical Specifications - Comparison

S7 Switch vs. S9 Switch vs. SWD Switch

BENCHMARKING - S6 Vs S7 Vs S9				
S.No	PARAMETERS	SPECIFICATIONS		
		S6 : LVDT SWITCH	S7: SWITCH	S9: AY QM
19	MAX PRESSURE	210 bar	<= 400 bar dyn.	210bar
20	ADJUSTMENT	± 1.5 mm	>= ± 2.5 mm	>= ± 2.5 mm
21	NOMINAL STROKE MAX	22 mm	15 mm	20.5mm
22	OVER STROKE MAX		1.5 mm	1.5 mm
23	PROTECTION CLASS	IEC 144 class IP65	IP65 DIN 40050	IP65 DIN/IP67 M12
24	VIBRATION 0...500 Hz		MAX 20g	
25	SHOCK		MAX 50g	
26	SEALINGS		FKM u. NBR	NBR, FKM
27	SURFACE PROTECTION OF		FeZnB (LAYER THICKNESS	Zn
	IRON PARTS		4 TO 8 µm	
28	GROUTING		PU	
29	REPEATABILITY	< 0.02 mm		<0.05mm
30	SUPPLY VOLTAGE RIPPLE	4V PK TO PK		
31	VOLTAGE DROP AT MAX LOAD	< 2.2 V		
32	LEAKAGE CURRENT	< 5 mA		
33	MAX SWITCHING FREQUENCY	<= 10 Hz		
34	CE	YES	YES	YES
35	SWITCHING POINT	Single	Single	single
36	Position Switch Type	LVDT	inductive	inductive

CE Certification for Anayang Sensor done

Cover Verification : FEA Results

Fatigue Life calculation at Load case 1: Port T=0 bar

Calculator Output	Fatigue Strength Reduction Factor		K_f	1.22	$1+(K_t-1)^q$
	Total Correction Factor		K_{Total}	0.79	$K_a*K_b*K_c*K_d*K_e$
	Maximum Nominal Stress	Mpa	S'_{Max}	48.82	S_{max}/K_t
	Minimum Nominal Stress	Mpa	S'_{Min}	0.00	S_{min}/K_t
	Mean Stress	Mpa	S_m	24.41	$(S'_{max}+S'_{min})/2$
	Alternating Stress	Mpa	S_a	24.41	$(S'_{max}-S'_{min})/2$
	Fatigue Strength at 1E6 Cycles Notched	Mpa	S''_e	62	S'_e/K_f Collin's Approach
	Fatigue Properties for Notched	Mpa	S'_f	854	S_f , Basquin's Constant
	Fatigue Properties for Notched		b'	-0.18	$\text{Log}(S'_e/S'_f)/\text{Log}(2E6)$, Basquin's Constant
	Equivalent Alternating Stress at Zero Mean	Mpa	S_{Zm}	27.16	Since standard SN Curve is at Zero Mean
	Life	Cycles	N_f	1.01E+08	Number of Cycles to Failure

Fatigue Life calculation at Load case 2: Port T= 243.6 bar

Calculator Output	Fatigue Strength Reduction Factor		K_f	1.22	$1+(K_t-1)^q$
	Total Correction Factor		K_{Total}	0.79	$K_a*K_b*K_c*K_d*K_e$
	Maximum Nominal Stress	Mpa	S'_{Max}	49.76	S_{max}/K_t
	Minimum Nominal Stress	Mpa	S'_{Min}	0.00	S_{min}/K_t
	Mean Stress	Mpa	S_m	24.88	$(S'_{max}+S'_{min})/2$
	Alternating Stress	Mpa	S_a	24.88	$(S'_{max}-S'_{min})/2$
	Fatigue Strength at 1E6 Cycles Notched	Mpa	S''_e	62	S'_e/K_f Collin's Approach
	Fatigue Properties for Notched	Mpa	S'_f	854	S_f , Basquin's Constant
	Fatigue Properties for Notched		b'	-0.18	$\text{Log}(S'_e/S'_f)/\text{Log}(2E6)$, Basquin's Constant
	Equivalent Alternating Stress at Zero Mean	Mpa	S_{Zm}	27.75	Since standard SN Curve is at Zero Mean
	Life	Cycles	N_f	8.93E+07	Number of Cycles to Failure

Technical Specifications - Comparison

S7 Switch vs. S9 Switch vs. SWD Switch

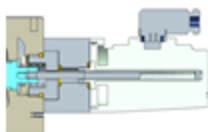
BENCHMARKING - S6 Vs S7 Vs S9				
S.No	PARAMETERS	SPECIFICATIONS		
		S6 : LVDT SWITCH	S7: SWD SWITCH	S9: AY QM
1	SUPPLY VOLTAGE	10...35 V DC	20...32 V DC	21.4V...26.4V DC
2	REVERSE POL. PROTECTION		YES	Yes
3	OUTPUTS		2 WITH ALTERNATING	2 with alternating
			FUNCTION, PNP	function PNP,
4	MAX. OUTPUT LOAD	250/300 mA	<= 400 mA; DUTY RATIO 100%	<= 400 mA; DUTY RATIO 100%
5	SHORT CIRCUIT PROTECTION	YES	YES, LOAD SHORT UNLIMITED	Yes
6	DELAY		<= 15 ms	
7	TURN ON TIME		<= 25 ms	
8	HYSTERESIS	< 0.15 mm	<= 0.05 mm	<0.15mm
9	ELECTRICAL CONNECTOR	Pg 7 Plug	M12x1 / 4 POLE	DIN 43650/M12
10	PIN 1	NORMAL OPEN	+ SUPPLY	+ SUPPLY
11	PIN 2		NORMAL CLOSED	NORMAL CLOSED
12	PIN 3		0 V	0V
13	PIN 4	NORMAL CLOSED	NORMAL OPEN	NORMAL OPEN
14	OPERATING TEMPERATURE	-20...+80 °C	-25...+80 °C	-20...+80 °C
15	STOCKING TEMPERATURE		-40...+100 °C	-25...+80 °C
16	THERMAL SHIFT	<= 3 µm/°C	<= ± 0.1 mm	< ± 0.15mm
	(0...+ 80 °C)			
17	EMC	AS PER 89/336/EEC	DIN EN 61000-6-1/2/3/4,	2004/108/EMC
			AUG. 2002	
18	HUMIDITY		0...95% REL.	
			(NACH DIN40040)	
19	MAX. PRESSURE	210 bar	<= 400 bar dyn.	210bar

NEW - DG4V3/5- *- S7 - Spool Monitor

- New Monitor Switch valve option
- Replaces the DG4V3/5 S6
- M12 industry standard connection
- CE marked EMC 2004/108/EC
- Simplified design
- Easier assembly
- Less components
- Available with the following spools 0, 2, 3, 6, 22, 23, 35, 52.
- Phase In/Phase Out Complete
- Pricing.....

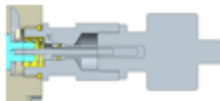
- 7% LOWER PRICE ADDER

Old Design S6



Special body
Special Armature Rod
Body Plug
Switch Adaptor/
mount.

New Design S7



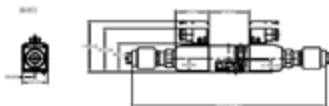
Standard body
Standard Armature Rod
Press Fit Pressure Tube
Switch Adaptor/
mount.



NEW - DG4V-3/5-S9 with spool Monitoring Switch 4/3 valves (both sides monitoring)

Applications for plastic machine and machine tool industry security requirements,

- Integrated inductive proximity switch, no mechanical contact;
- Normal close/Normal Open output signal optional;
- Switch Short circuit /overload protection;
- Reverse polarity protection;
- No dynamical seal;



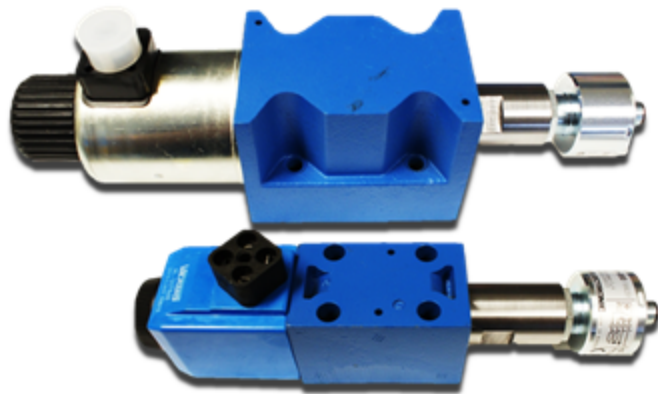
VALVE CHARACTERISTICS

Items	Technical data
Max Pressure(P,A,B)	DG4V3: 350 bar; DG4V5: 315bar;
Max Pressure (T)	DG4V-3: 210bar; DG4V-5: 160bar
Max Flow:	DG4V-3: 80 l/min; DG4V-5: 120 l/min
Oil Temperature:	-20°C ~ 70°C
IP Class:	IP 65(DIN 43650)
Seal :	FKM
EMC :	DIN EN61000-6-1/3

SWITCH CHARACTERISTICS

Items	Technical data
Supply voltage:	24V±20% DC
Voltage drop:	≤2.5V
Zero load current:	≤40mA
Max load current:	≤400mA
Residual voltage:	≤1V
Repeat accuracy (@ 25°C)	±0.02mm
Hysteresis (@25°C)	±0.05mm
Thermal drift (0→+80°C)	±0.15mm

NEW - DG4V3/5- *- S7 - Spool Monitor



NEW - DG4V-3/5-S9 with spool Monitoring Switch 4/3 valves now available (both sides monitoring)



6040517-001	DG4V-3-0C-M-S9D2-UH5-60
6040516-001	DG4V-3-2C-M-S9D2-UH5-60
6041080-001	DG4V-3-2N-M-S9D2-UH5-60
6039622-001	DG4V-3-2N-M-S9D2-U-SA5-60
6040506-001	DG4V-3-6C-M-S9D2-UH5-60
6041079-001	DG4V-3-8C-VM-S9D2-UH5-61
6039623-001	DG4V-5-2NJ-M-S9D2-U-EO5-20
6040860-001	DG4V-5-6CJ-M-S9D2-UH5-20