Core Technologies

Servo Valve Analyzer

Accurate, reliable - Data Acquisition and Control System for comprehensive Characterization of Servo Valves with full Software support.

SVA-101

Tests conducted

- Proof Pressure
- Leakage Flow
- Pressure Gain
- Threshold
- No Load
- Constant Delta-P, Flow
- Hysterisis & Null Bias

Parameters estimated

- Pressure Gain
- Hysterisis
- Threshold
- Peak Flow
- Rated Flow
- Null Bias
- Flow at +/- Peak
- Flow at Zero / Bias Current

Features

- Precision Constant Current Source for Servo Valve coil excitation.
- PID Control for Supply and Return Pressure.
- Standard Test Recipes
- Customization of Test Recipes through Password
- Graphical Representation of data
- Raw Data Display Panel
- Mimic Panel for Test Condition validations
- PC Connectivity via RS-232 serial port
- Centronix Port for Dot Matrix Printer interface
- Safety interlocks in Firmware
- Powerful PC based software for archival and report generation

Specifications are subject to change due to continuous product improvements and R&D at Core Technologies.

Sample Print out of real data in MS-Excel .

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** SERVO VALVE ANALYSER SVA-101 **

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TEST REPORT

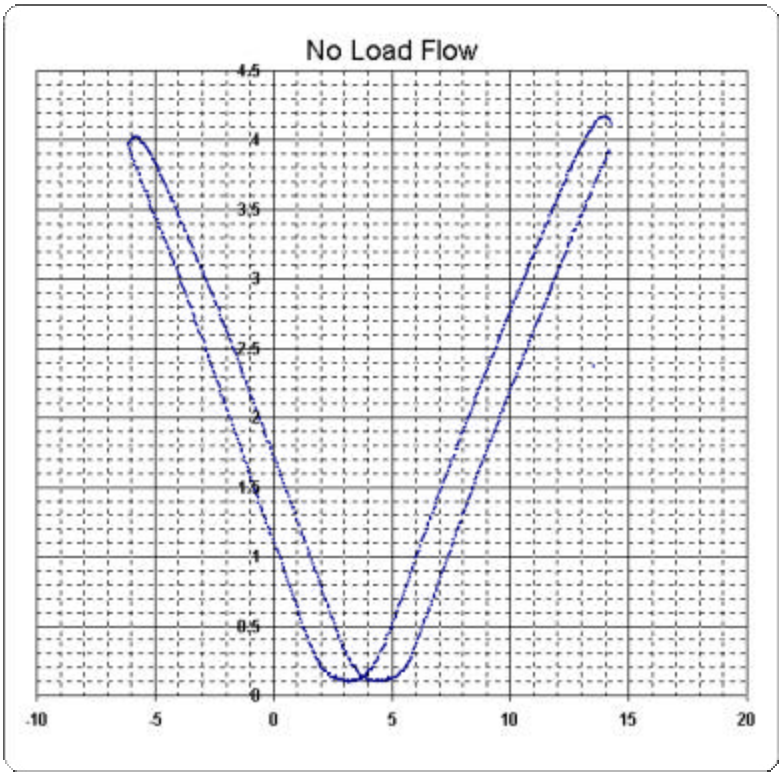
Mode :	AUTO		**Valve Id. :**	23	
Test :	No Load Flow		**Date :**	24/07/02	
Start Temp:	41.5	Deg.C.	**Time :**	15:35:15	

SET PARAMETERS :

Current Range :	20.0	mA	**+/- Peak :**	10.0	mA
Bias :	4.0	mA	**Scan Rate :**	Fast	
Supply Pressure:	3000	psi	**dP :**	N/A	
Load Valve :	Open		**Return Valve :**	Open	

RESULT :

Flow At + Peak :	4.110	lpm	**Date :**	24/07/02	
Flow At Bias :	0.180	lpm	**Time :**	15:37:45	
Flow At - Peak :	3.940	lpm	**End Temp :**	44.7	Deg.C.
Rated Flow :	4.020	lpm	**X Axis**	Current (mA)	
			Y Axix	Flow (lpm)	



Sample graph for one type of test with 400 samples for Current Vs. Flow

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TEST REPORT

Mode :	0	**Valve Id. :**	23
Test :	No Load Flow	**Date :**	23/07/02
Start Temp:	41.1 Deg.C.	**Time :**	10:16:44

SET PARAMETERS :

Current Range :	20.0	mA	**+/- Peak :**	10.0	mA
Bias :	4.0	mA	**Scan Rate :**	Fast	
Supply Pressure:	3000	psi	**dP :**	N/A	
Load Valve :	Open		**Return Valve :**	Open	

RESULT :

Flow At + Peak :	4.590	lpm	**Date :**	23/07/02	
Flow At Bias :	0.570	lpm	**Time :**	10:19:14	
Flow At - Peak :	4.790	lpm	**End Temp :**	44.1	Deg.C.
Rated Flow :	4.690	lpm			

OBSERVATIONS :

Sr.No.	Current (mA)	Flow (lpm)
1	14.282	4.59
21	13.251	4.39
41	12.250	4.01
61	11.218	3.60
81	10.188	3.17
101	9.155	2.73
121	8.160	2.27
141	7.137	1.80
161	6.110	1.30
181	5.114	0.79
201	4.077	0.56
221	3.041	0.58
241	2.052	0.83
261	1.009	1.38
281	0.018	1.90
301	-1.043	2.43
321	-2.063	2.95
341	-3.067	3.42
361	-4.107	3.90
381	-5.094	4.35

Sr.No.	Current (mA)	Flow (lpm)
401	-6.144	4.81
421	-5.132	4.57
441	-4.084	4.16
461	-3.079	3.71
481	-2.054	3.25
501	-1.06	2.8
521	0.264	2.29
541	1.019	1.77
561	2.029	1.27
581	3.055	0.78
601	4.059	0.55
621	5.131	0.59
641	6.089	0.84
661	7.116	1.36
681	8.136	1.86
701	9.166	2.33
721	10.19	2.8
741	11.204	3.23
761	12.232	3.66
781	13.246	4.07

Specifications:

(*Unless mentioned otherwise Specifications given below are applicable at 25^{o}C*)

Number of Channels:	8 standard. One Current, Four Pressure, One Flow and One Temperature.
Type of inputs:	RTD-Pt100, Strain Gauges Bridge, mV, Volts, Pulses. Current.
Resolution:	Temperature 0.1^{o}C, Flow 0.1 lpm, Pressure 1 mBar, Current 0.001 mA
Temperature Accuracy:	± (0.1% of Span ±0.1) ^{oC}.
Linearity:	Software correction to within ±1.0^{o}C
Zero drift:	± 0.02^{o}C/^{o} C change of ambient temperature
Span drift:	Less than ± 50 ppm/ °C
Calibration:	individual channel calibration of the system using simulators.
Scan Rate:	1.25 mSec / channel.
Data Storage capacity:	NV RAM for one set of data for seven tests.
Data Storage mode:	Time - date tagged sequential
Printer port features:	Centronics compatible formatted report printouts on Epson FX1050/800 or equivalent printers.
Serial Communication:	Optional RS-232 or RS-422 Data up load to IBM compatible PC (MS WINDOWS98) with PC as master. Uploaded data can be read in MS Excel.
User Interface:	User-friendly Key Board and display with Telephone type text entry for channel name, and other set up information.
Electrical:	Operated from mains 230V AC 50 Hz.
Environmental:	Operation from zero °C to 50°C ambient, RH 10 to 95% non-condensing
Mechanical:	Fully enclosed dust proof construction, 19" -9U (1U= 46 mm Approx.) rack mounting with 600 mm depth. Weight less than 7.5Kg.

Prerequisites:

The servo valve analyzer SVA-101 requires following systems to work with:

1. Hydraulic power pack capable of generating oil pressures upto 5000 psi continuously for 15 mins to ½ an hour capable of delivering flow upto 80 lpm with less than 5% pressure drop.
2. Hydraulic test stand fitted with manifold for servo valve under test and pressure loop circuit tubing with sensors and control valves (4 Nos.) for controlling port pressures. Independent degaussing supply and coil may be added if required.

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