SAUER DANFOSS

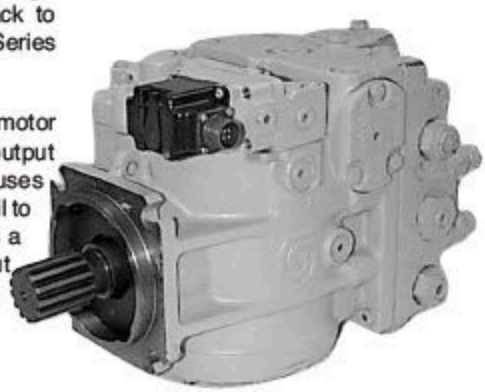
KVEB
Electrical Displacement Control For Series 90 - PV

BLN-95-9060-4 **Issued**: November 2003

DESCRIPTION

The KVEB Electrical Displacement Control (EDC) is a two-stage electrohydraulic pump stroke control which uses mechanical feedback to establish closed loop control of the swashplate angle of Sauer-Danfoss Series 90 Pumps.

The first stage, the MCV116 Pressure Control Pilot (PCP) is a torque-motor actuated, double-nozzle flapper valve that produces a differential output pressure proportional to the applied electrical signal. The second stage uses the differential pressure to drive its unique spool arrangement and port oil to the pump servo cylinders. The second-stage spool configuration allows a null deadband (for machine safety) in the pump's output while maintaining optimum dynamic response to control commands.



KVEB Electrical Displacement Control (EDC) Mounted On A Series 90 - PV.

FEATURES

- Servo control deadband independent of signal null deadband: offers safety combined with accurate and responsive control
- Resistance to the environment: standard silicone oil filled torque motor, environmentally sealed first/second stage interface, full environmental testing
- Minimum long term null shift
- Dual coil torque motor can be used to sum two command sources
- Optional current (mA) ranges
- Intrinsically Safe option for use in hazardous areas (4 to 20 mA). See Control Option, page 6

ORDERING INFORMATION

The KVEB Electrical Displacement Control is ordered by specifying the pump size and pilot type as shown in Table A. **Note, KVEBXXXXX replaces KVEAXXXXX.**

TABLE A. INFORMATION NECESSARY TO SPECIFY THE EDC.

KVEB	X	XX	XX
BASE DEVICE			
	CONFIGURATION		
		PUMP SIZE	
			PILOT STYLE

1. CONFIGURATION

MODEL CODE	CURRENT RANGE (mA)
A	4-20 (single coil)
B	14-85 (dual coil)
E*	14-85 (dual coil)
S**	4-20 (single coil)

2. PUMP SIZE

MODEL CODE	PUMP SIZE
03	30 or 42 cc
05	55 cc
07	75 cc
10	100 cc
13	130 cc Pump S/N < 92 - 19
14	130 cc Pump S/N Γ92 -19
18	180 or 250 cc

3. PILOT (NOT ALL SHOWN)

MODEL CODE	PILOT STYLE
02	MS Connector (14-85 mA)
04	Packard Connector (14-85 mA)
07	MS Connector (4-20 mA)
09	Deutsch Connector (14-85 mA)
99	MS Connector (4-20 mA Intrinsically Safe)

* High response, no pressure limiter (PL) orifices, annular housing
** Intrinsically Safe

KVF

Flow Control Servovalve (FCS)

BLN-95-9061-4 **Issued:** February 2004

DESCRIPTION

The KVF Flow Control Servovalve is a precision servovalve that provides an output flow rate proportional to a low power electrical input signal. It features a torque motor-actuated, double-nozzle flapper pressure control pilot valve mated to a pressure-actuated, spring-centered boost valve module of a unique double-spool configuration.

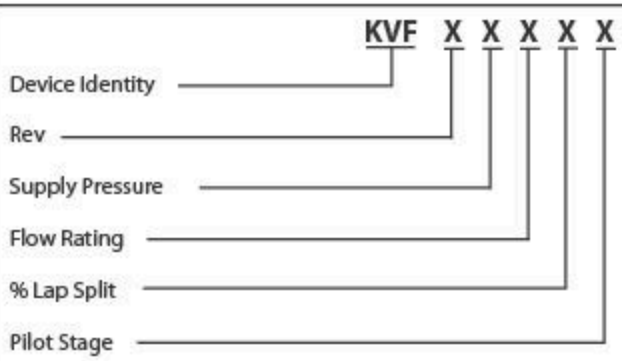
The design of this servovalve does not require a centering feedback spring and ball for spool position. The servovalve's pilot stage is a stand-alone, closed loop pressure control valve which uses internal hydraulic pressure reactions to achieve its closed loop control characteristics.

This combination was selected to provide fabrication economies resulting in true servovalve performance at proportional valve pricing. The KVF Servovalve's steady state/dynamic response characteristics are compatible with industrial feedback control system applications.

FEATURES

- Self-contained pressure feedback, eliminates requirement for feedback spring and ball for spool position
- ISO 4406 filtration rating of 18/15 (Nominal 10 micron filtering provides dependable performance)
- Standard manual operator assists with operation and system diagnostics
- Requires low power dc current to drive rated flow; ±20 mA, ±40 mA, ±100 mA, ±150 mA, or ±220 mA, are standard options. The ±20 mA, can be driven directly from PLC.
- Does not require PWM drive for dither but is directly compatible with other drives
- 4 to 20 mA version is configured such that 4 mA = 0 flow and 20 mA = maximum flow
- Unique two spool main body design allows for factory adjustment of null pressures at each working port
- Units available in standard line-to-line or overlapped configuration in all flows from 1 1/4 gpm to 20 gpm at no additional cost
- Installation dimensions common to all servovalves
- Pricing is independent of flow capability
- Four connector option: MS, 2-pin WP, 4-pin WP, or 2-2 pin WP
- Easily connected for unidirectional use from 2 1/2 gpm to 35 gpm at 1000 psi rating
- Adaption maniflods available for conversion to other valve patterns
- Dual spool design provides added safety shut down if contamination causes failure of either spool
- Capability of separating control source from main stage supply to accommodate high back pressure applications

ORDERING INFORMATION



Ordering specifications for standard models.

DEVICE IDENTITY
The modle code for this device is KVF.

MODEL CODE	SUPPLY PRESSURE
A	500 to 3000 psi
C	200 to 1000 psi
D	500 to 3000 psi with separate pilot drain
E	2500 to 3000 psi
F	500 to 3000 psi w/o cylinder port orifices
G	500 to 3000 psi w/o cylinder port orifices and with pilot drain