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## Unit Specification

KVMB11201

Electrical Displacement Control

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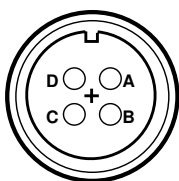
### GENERAL DESCRIPTION

This device is an electrohydraulic pump stroke control which uses mechanical feedback to establish closed loop control of the swashplate angle of Sauer-Danfoss Series 42 PV.

Pump Phasing With EDC Manual Operator (MO)

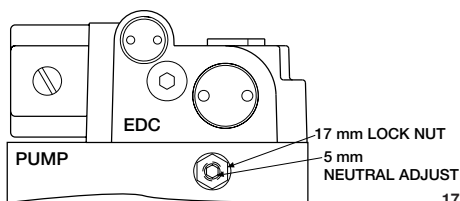
Pump Rotation	MO Rotation	Control Port Goes High	Pump Flow Out Port
CW	Towards Connector	X2	A
CCW	Towards Connector	X2	B

### ELECTRICAL CONNECTION

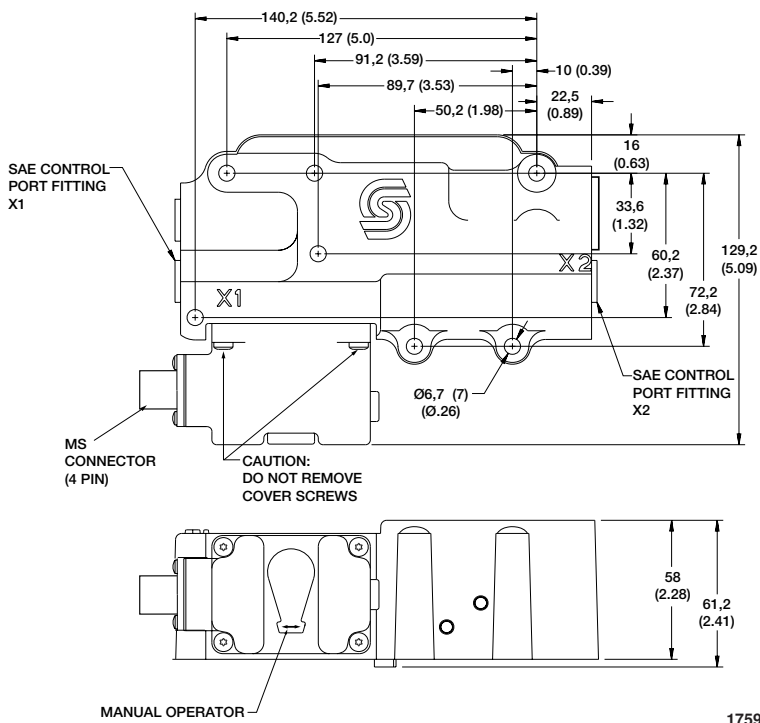


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Pin Orientation of 4-pin, 90° MS Mating Connector. Part No. MS3108E-14S-2S (Sauer-Danfoss Kit No. K08106).

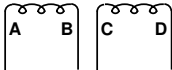
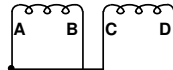
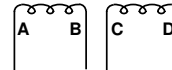


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Dimensions of the KVMB11201 in Millimeters (Inches).

### ELECTRICAL CHARACTERISTICS

		One of Dual Coils		Dual Coils in Parallel		Dual Coils in Series		Produces Flow Out of Pump Port
								
PUMP SHAFT ROTATION	Clockwise	A or C		A and C		A		A
	Clockwise		B or D		B and D		D	B
	Counterclockwise	A or C		A and C		A		B
	Counterclockwise		B or D		B and D		D	A
ELECTRICAL REQUIREMENTS	Start Current	A/B 14 mA with 0.3 Vdc		14 mA with 0.13 Vdc		7 mA with 0.25 Vdc		
	Full Stroke Current	A/B 85 mA with 1.7 Vdc		85 mA with 0.75 Vdc		43 mA with 1.55 Vdc		
	Start Current	C/D 14 mA with 0.23 Vdc		(These Vdc levels are at 75°F (24°C). At this temperature the coil resistance is approximately 16 Ω for C/D and 20 Ω for A/B.)				
	Full Stroke Current	C/D 85 mA with 1.36 Vdc						

MAXIMUM CONTINUOUS VOLTAGE @ 93.9°C (200°F): 6 Vdc, if one coil or parallel, 12 Vdc, if coils in series.

The EDC is designed to be controlled from a dc current source or voltage source. Pulse width modulation (PWM) is not required. But if a PWM signal is used, it is preferred to avoid a carrier frequency < 200 Hz. Do not use a pulse current of more than 120% of that required for full output.

## MOUNTING

### WARNING

*Exercise care when placing the valve on a surface before mounting on a transmission. Dropping or otherwise forcefully setting the valve down may damage the pin.*

First, thoroughly clean all external surfaces of the pump with steam or solvent before removing the manual control or the blanking plate that comes with pump. Then remove the manual control or plate from the pump with a T 30 internal wrench.

When mounting the control, it is recommended that a new mounting gasket be used. To aid in mounting, place the gasket onto the control. The gasket is designed to maintain and align itself to the control.

Refer to the Pump Summing Link drawing. When mounting the control, first align the pump summing link. This will require engaging the summing link to the spool and lightly pushing on the spool in the direction shown in Figure 1. When the summing link is properly positioned it must be held approximately parallel to the pump shaft when mounting the control (see Figure 2). The summing link will not stay in this position; it must be held. Now place the control onto the pump and guide the summing link pin into the control link arm.

### WARNING

*Ensure positive pin engagement. Failure to do so may result in unexpected pump output, and the vehicle may move.*

Install the mounting bolts. When going from a manual control or cover plate to an EDC, new mounting bolts are required because of the different lengths. The EDC mounting bolts and gasket are found in mounting Kit Number KK16601.

The kit includes a gasket (Part Number 4800252), four Torx head bolts (m6x50) (Part Number 5000003) and three bolts (m6x60) (Part Number 5000004). Use wrench T 30 for installing bolts. Bolts should be torqued to 16 - 21 N•m (12 - 15 ft • lb).

Other mounting kits are available. They offer different mounting gaskets which will change the pump response time. The following kits are listed with response time (full to full) differences:

1. KK16601 (standard), gasket Part Number 4800252 response time 1 - 2 seconds at 200 psid charge pressure.
2. KK16602, gasket Part Number 4800467 response time 2 - 4 seconds at 200 psid charge pressure.
3. KK16603, gasket Part Number 4800254 response time 0.6 - 1 seconds at 200 psid charge pressure.

## PUMP SUMMING LINK

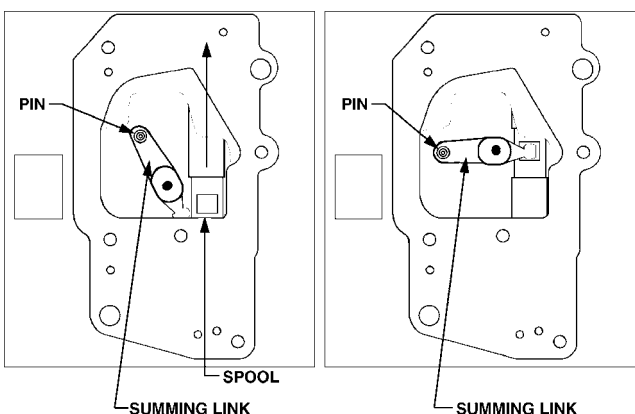


Figure 1: Unaligned

Figure 2: Aligned

## PUMP NEUTRAL ADJUSTMENT

### WARNING

*To adjust neutral requires operating the pump. Take the necessary safety precautions, such as having unnecessary personnel stand away from the machine. Maximum system pressure may occur upon start up, and the machine may move. Ensure that the operator is not in a position to be injured should the machine move.*

Use the following procedure to bring the pump to neutral if required. It may be necessary to disconnect the electrical source to ensure that no electrical signal is present.

1. Install a 600 psi gauge into the charge pressure gauge port on the pump, and loosen the hex lock nut on the neutral adjustment screw (see page 1) using a 17 mm wrench.
2. Slowly increase the prime mover speed to rated rpm. Using a 5 mm internal hex wrench, slowly turn the neutral adjustment screw clockwise or counterclockwise until the transmission does not operate. Note that charge pressure should drop with forward or reverse stroking of the pump. Slowly turn the neutral adjustment screw clockwise until charge pressure decreases.
3. Slowly turn the neutral adjustment screw counterclockwise, observing the wrench angle rotation, until charge pressure decreases again. Now turn the neutral adjustment screw clockwise half the amount of the rotation observed. This should be the center of neutral.
4. Hold the neutral adjustment screw and securely tighten the hex lock nut to 13.5 - 21.6 N•m (10 - 16 ft • lb.). Note that if a motor is used that does not have a manifold, neutral should be adjusted (steps 2 - 3) by observing the motor shaft rotation without a load.