Regulateurs Europa
Member of the HEINZMANN Group

Series AK9

DATA SHEET

Description



The AK9 is an electrically driven governor test stand for permanent installation. The purpose of the rig is to assist in adjusting, servicing and testing the performance of hydraulic speed governors and hydraulic actuators. The test stand has been designed to simulate diesel engine operating conditions; the governor and test stand forming a closed loop system.

For the setting–up and testing of hydraulic actuators the test stand can also operate in open loop mode. In that instance the drive speed is set at, and controlled from, the stand itself.

The basis of the test stand is a sophisticated PLC. The PLC controls a frequency converter which in turn drives a 5.5 kW electric motor. The governor or actuator is directly driven by the electric motor.

When in closed loop mode, the test stand simulates a diesel engine. This means that the “load” on the engine is simulated by the test stand. If the set speed of the governor is altered the governor output will change momentary to increase or decrease the amount of “fuel” applied. This will cause the drive speed to change accordingly. Also, if the simulated load on the test stand is changed the output position of the governor will change to maintain the set speed.

Features

- For testing of governors and actuators of all major brands
- All electric 5.5 kW drive
- Includes oil supply to fill the governor under test
- Governor oil may be circulated and pre-heated
- Operated from a 15” colour touch screen HMI
- The HMI shows:
  Speed
  Governor output position
  Oil pressure
  Solenoid voltage
  Speed setting air pressure
  Actuator current
- Includes 4 ... 20 mA speed setting driver
- Operates in open and closed loop mode

Specification

Drive motor	5.5 kW electric motor, controlled from a frequency controller Drive shaft and base adaptors to any governor are available
Governor drive speed	100 ... 2.000 rpm
Acceleration rate	50 ... 500 rpm
Governor oil system	Motor driven oil pump, immersion heater and filter to fill and circulate whilst governor is under test and empty after test. The oil pump also provides pressurised oil for testing load control devices. Capacity of the oil tank 32 litres. Oil pressure adjustable from 5 ... 10 bar.
Pneumatic system	The test stand requires 8 bar air supply for: Air connection for speed setting signal, 0.2 ... 7.5 bar Air connection for boost fuel limit signal, 0.0 ... 4.0 bar Air connection for start booster test; air pressure equal to supply pressure
Dimensions	Wide 900 mm, height 1800 mm, depth 1250 mm (allows 800 mm extra to open the service door). The test stand is mounted on swivel castors with vibration damping feet.
Weight	650 kg
Supply	440 VAC 3 Ph 50/60 Hz (230 VAC 3 Ph 50/60 Hz upon request) Fused 32 Amp
Electrical equipment and functions	Operation of 24 VDC series wound speed setting motor Operation of 24 VDC PM type speed setting motor Operation of 115 / 230 VAC series wound speed setting motor Operation of RE 4 ... 20 mA speed setting device Operation of Woodward® 4 ... 20 mA speed setting device Variable supply (0 ... 24 VDC) for and operation of stop and start fuel limit solenoids Operation of 115/230 VAC operated solenoids Variable supply 0 ... 24VDC Available at 4 mm sockets Magnet charger for setting-up RE actuators Variable current source (0 ... 1.000 mA) for testing actuators
Operation	The test stand is operated by means of a 15" TFT colour touch screen, 15 illuminated push buttons and 3 potentiometers for adjustable level settings. Set points for pressure, temperature, drive speed, load, etc. can be entered as a digital value or set by means of the set point potentiometer.
Instrumentation	Analogue pressure gauges for speed setting pressure, fuel limit pressure, governor oil pressure and oil pressure from load control device
Digital indication at the main HMI	Drive speed Governor output shaft position Speed setting air pressure, accuracy 0.05 bar mA command and feedback signal to final driver Fuel limit pressure, accuracy 0.05 bar. Governor oil pressure, accuracy 0.1 bar Governor oil temperature (when circulating) Voltage stop or start fuel limit solenoid supply Voltage variable supply Voltage at voltmeter input Actuator current
Digital indication at the screen, mounted in the front panel	Drive speed and the speed setting parameter of the governor being under test
Output signal	Two 0 ... 10 VDC signals are available representing speed and governor output for external measurement

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