

## Series AK8

### DATA SHEET

#### Description

The AK8 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 direct 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

100–2000 r/min

**Acceleration rate**

50–500 r/min

**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 to 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 (allow 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 REGULATEURS EUROPA 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 0-24 Vdc. Available at 4 mm sockets.

Magnet charger for setting-up REGULATEURS EUROPA actuators.

Variable current source (0–1000 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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