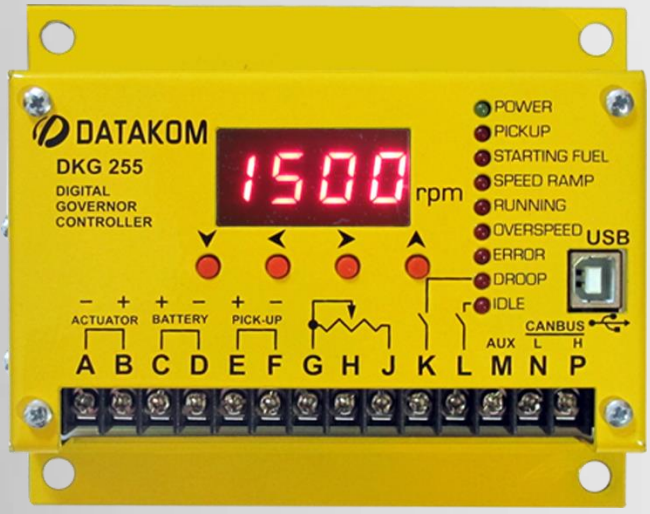


DKG-255

DIGITAL SPEED CONTROLLER

DESCRIPTION

The DKG-255 is a microprocessor controlled digital speed control unit designed to control the engine speed with fast and accurate response to load changes.

The DKG-255 connects to a forward acting proportional electric actuator and a magnetic speed sensor. It is also capable of picking-up the speed signal from the alternator voltage, removing the need for a MPU unit. It controls a wide variety of engines in constant speed (isochronous) or droop modes.

The DKG-255 offers programmable parameters to adjust IDLE and RATED speed settings. The IDLE speed mode is selected with an external switch.

The automatic PID speed regulation function controls the dynamic performance of the unit and allows stable operation with most engine types.

The unit is able to adjust automatically its PID settings, simplifying the programming process and improving the dynamic response quality.

An external speed trim potentiometer may be connected to the unit to adjust the engine speed from a remote location.

The auxiliary speed adjustment input allows voltage controlled speed trimming for synchronizing and load sharing applications.

If an adequate speed signal is not supplied to the unit, the speed signal monitoring circuit will detect this and shut-off the actuator output in order to prevent any damage.

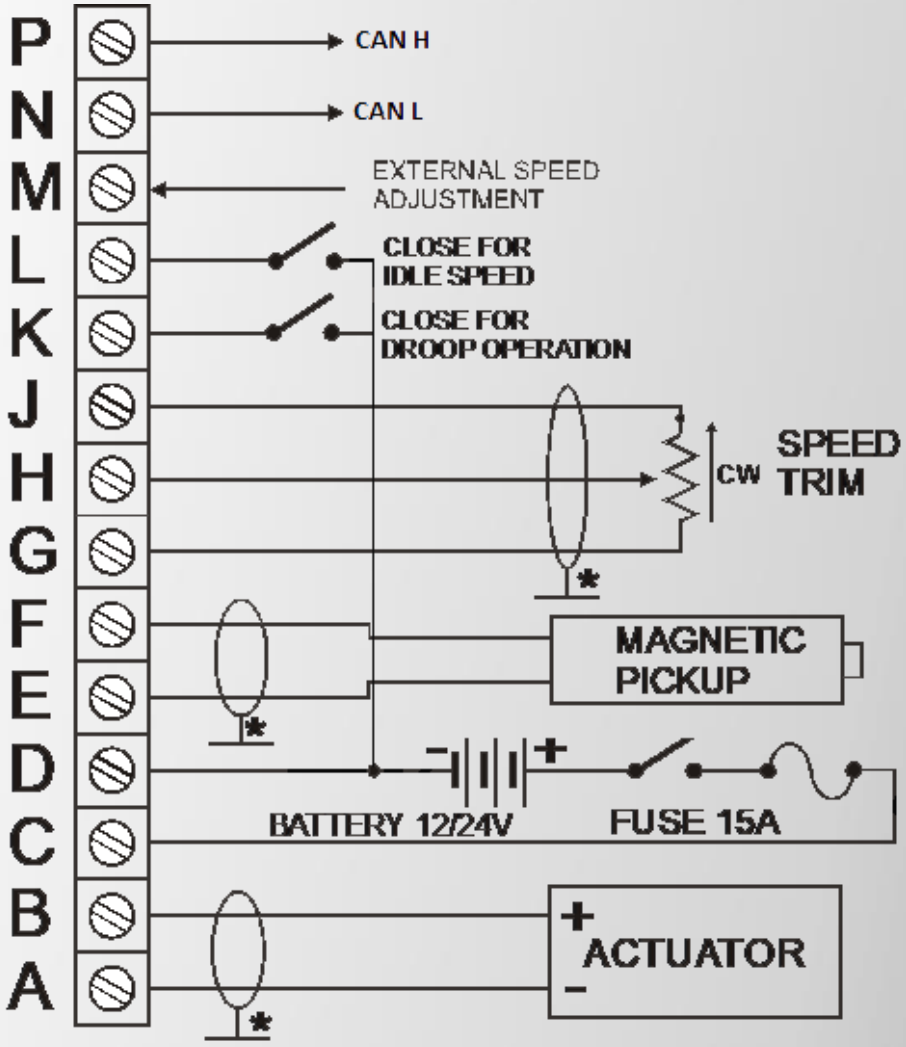
The unit is capable to deliver actuator currents as high as 10 Amps. However, the output current limiting circuit will protect the unit against output short circuit or overload.

Protection against reverse battery connection and transient voltages are provided.

FEATURES

- ***Automatic PID Setup functionality***
- ***Microprocessor controlled***
- ***12 and 24V operation***
- ***Capable of governing various engines***
- ***Forward acting actuator output***
- ***Fast and accurate response***
- ***Starting fuel adjustment***
- ***Speed ramp adjustment***
- ***Adjustable rated and idle speeds***
- ***Isochronous and droop operation***
- ***Gain and stability adjustments***
- ***External speed adjustment capability***
- ***Synchronizing and load sharing input***
- ***Switch mode output circuit***
- ***10 Amps continuous current output***
- ***Speed sensor failure detection***
- ***Battery reverse voltage protection***
- ***Output short circuit protection***
- ***Rugged design***
- ***Enamel protected electronic circuit***
- ***Small dimensions (130x110x27mm)***
- ***Low cost***

INSTALLATION DIAGRAM



TECHNICAL SPECIFICATIONS

DC Supply Range: 10.0 to 33.0 V-DC
Current consumption: 100mA max (actuator not connected)
Speed input range: 40 Hz to 8000 Hz.
Speed signal amplitude: 1.5 to 300 VAC-RMS
Speed signal input impedance: 2 M- ohms
External speed trim:
5 K-ohms trimpot between terminals G and J
External speed trim range: ± 6% min @3000Hz
Auxiliary input (terminal M):
Input voltage range: 0 to 10VDC
Input impedance: 150 k-ohms.
Adjustment range: ±25% min @3000 Hz
Steady state speed accuracy: ±0.2 %
Droop adjustment range: 1 to 5% minimum
Actuator output: 10 Amps continuous max
Operating temp.: -20°C (-4°F) to 70 °C (158°F).
Storage temp.: -30°C (-22°F) to 80 °C (176°F).
Maximum humidity: 95% non-condensing.
Dimensions: 130 x 110 x 27 mm (WxHxD)
Weight: 350 g (approx.)
Mounting: any position, vertical preferred