

Speed Control Unit

ESD5100 SERIES

The ESD5100 Series speed control unit is designed to precisely control engine speed with rapid responses to transient load changes. The ESD is compatible with all GAC proportional actuators except the ACB2001 electric actuator since this high torque actuator also requires current limiting. Ruggedly built to withstand all engine environments, the ESD will control a wide variety of engines in an isochronous or droop mode. Simplicity of installation and adjustment was foremost in the design.

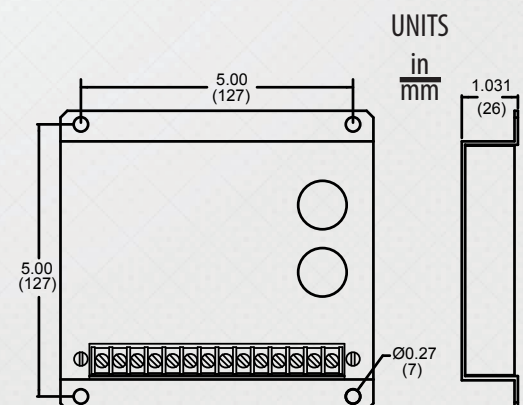


FEATURES

- Simple Installation and Adjustability
- Auxiliary Accessory Input
- Idle Speed Circuit
- Adjustable PID
- 10 VDC Supply for Accessories
- 10 Amp Drive Circuit
- Isochronous, Droop, & Variable Speed Operation

SELECTION CHART / DIMENSIONS

| | Standard Features | Temperature Compensated | EFC Reverse Acting | EFC Forward Acting | Light Force | Soft Coupling | Speed Detection Circuit |
|----------|-------------------|-------------------------|--------------------|--------------------|-------------|---------------|-------------------------|
| ESD5111 | • | | | | | | |
| ESD5111T | | • | | | | | |
| ESD5119 | | | • | | • | | |
| ESD5120 | | | | • | • | | |
| ESD5131 | | | | | | • | • |



ACCESSORIES

Magnetic Speed Pickups



The Magnetic Speed Sensor detects when ring gear teeth, or other ferrous projections, pass the tip of the sensor. Electrical impulses are produced by the sensor's internal coil and sent to the speed control unit. The signal from the magnetic speed sensor, teeth per second (Hz.), is directly proportional to engine speed. Speed sensors are available in various lengths in both U.S. and metric threads. Wire leads, military connectors, automotive connectors or stud terminals are also available. Over 30 styles currently available.

SPECIFICATIONS

Performance

| | |
|--------------------------------|----------------------------------------|
| Isochronous Operation | ±0.25% |
| Speed Range | 1 - 7.5 KHz Continuous |
| Speed Drift with Temperature | ±0.5% |
| Idle Speed Adjust CW | Min. 1200 Hz. Below Set Speed |
| Idle Speed Adjust CCW | Min. 4100 Hz. Below Set Speed |
| Droop Range | 1 - 5% Regulation |
| Droop Adj. Max. (K-L Jumpered) | 875 Hz., ±75 Hz per 1.0 A change |
| Droop Adj. Min. (K-L Jumpered) | 15 Hz., ±6 Hz per 1.0 A change |
| Speed Trim Range | ±200 Hz |
| Remote Variable Speed Range | 500 - 3.7 KHz |
| Terminal Sensitivity | |
| J | 115 Hz., ±15 Hz/Volt @ 5 KΩ Impedance |
| L | 735 Hz., ±60 Hz/Volt @ 65 KΩ Impedance |
| N | 148 Hz., ±10 Hz/Volt @ 1 MΩ Impedance |
| P | 10 VDC Supply @ 20 mA Max |

Environmental

| | |
|-----------------------------|--------------------------------------|
| Operating Temperature Range | -40 °F to +185 °F (-40 °C to +85 °C) |
| Relative Humidity | up to 95% |
| Vibration | 1 G @ 20 - 100Hz |
| All Surface Finishes | Fungus Proof and Corrosion Resistant |

Electrical

| | |
|--------------------------------------|--------------------------------------------------------------------------------|
| Power Supply | 12 or 24 ±20% VDC Battery Systems (Transient and Reverse Voltage Protected) |
| Polarity | Negative Ground (Case Isolated) |
| Power Consumption | 100 mA (No Actuator Current) |
| Actuator Current Range @ 77°F (25°C) | 10 Amps Continuous |
| Speed Signal Range | 1.0 - 50 VAC |
| Speed Signal | 1.0 - 120 VRMS |

Compliance / Standards

| | |
|--------|-----------------------------------|
| Agency | CE Requirements / RoHS Compliance |
|--------|-----------------------------------|

Physical

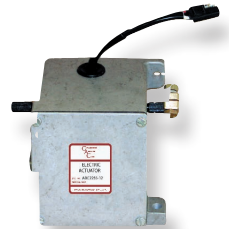
| | |
|------------|------------------------------------|
| Dimensions | See front page |
| Weight | 1.2 lb (0.544 kg) |
| Mounting | Any Position, Vertically Preferred |

OPTIONS

GAC ACTUATORS

GAC actuators incorporate fast response, multi voltage usage, and a field proven electromechanical design that allows for precise control when coupled with GAC's speed control devices. All of GAC actuators are easy to install with no maintenance required.

- Throttle Body
- Pump Mounted
- Engine Mounted
- Universal



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