

Speed Controller

Operation Instruction

1. Overview

Speed controller offers such functions as precise and fast governing, maximum current restriction and protection, adjustable steady state speed droop, wider setting range for high and low speed, start fuel quantity restriction, raising speed time control, long-distance speed adjust, automatic parallel operation and so on. Normally after correctly installed, user can use without adjusting. It can control every kind of low and middle power engine together with actuator and sensor.

2. Technology Parameter

Supply voltage:	12VDC/24VDC
Current output:	<5A
Pulsating rate of revolution:	$\leq \pm 0.25\%$
High speed setting range:	1K~7.5KHz
Speed signal :	0.5~120VACRMS
Steady state speed droop:	0~5%
Rising speed time:	2~30 S(adjustable)
Speed fine-tune:	$\pm 200\text{Hz}$ (10K potentiometer)
Temperature drift:	$< \pm 0.5\%$
Environmental temperature:	$-30^{\circ}\text{C} \sim +70^{\circ}\text{C}$
Relative humidity:	$< 95\%$

3. Electric Wiring and installation

Speed governor should be installed in the protective housing without sharp pounding vibration and/or EMI. Its housing must be of reliable earthing.

Installation dimension of speed governor is shown in fig1.

4. Adjusting and testing

1) Before first time starting up the engine, user have to inspect and confirm ① If sensor and actuator installed correctly. ② If the speed adjusting system wiring correctly. ③ If controller technical parameter set correctly or be factory set. ④ If fuel (gas) supply system normally. This for prevent starting up failure or

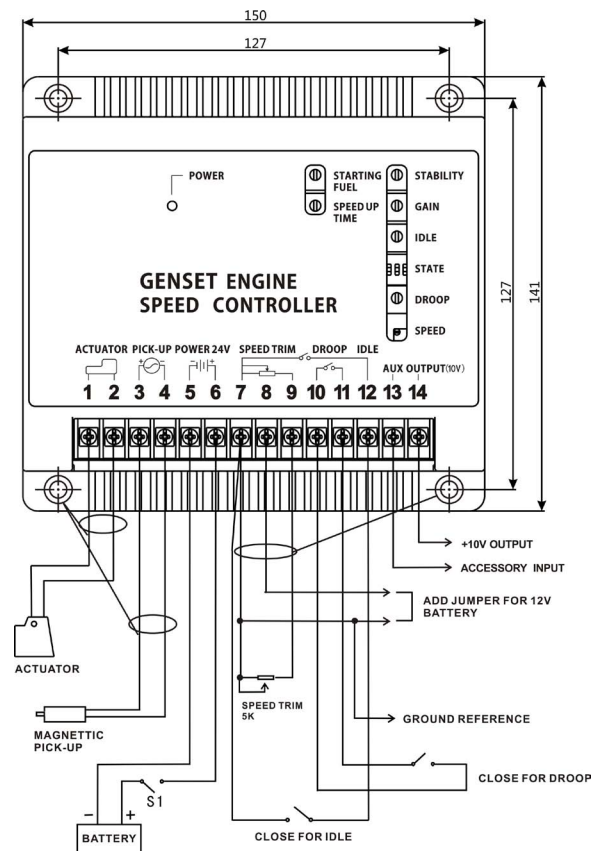


Fig1

Warning: Before first time starting up engine, user have to confirm the pump fuel rack at fuel cutoff position, confirm the fuel rack flexible and without jammed. This for avoid start up over speed damaging engine or injuries occurring.

2) Controller factory set: Idle speed(frequency): 1800Hz, Rated speed(frequency): 3200Hz. Relationship between frequency and speed is: f (frequency Hz) = n (rotate speed rpm) z (teeth number)/60.

3) Idle speed adjusting: Close the high and low speed switch at idle speed position. While engine working at idle speed state, clockwise rotate the idle potentiometer, speed increase, anti-clockwise rotate, speed decrease.

4) High speed adjusting: Open the high and low speed switch at high speed position. While engine working at high speed state, clockwise regulate high speed potentiometer, speed increase; anti-clockwise regulate, speed decrease.

5)Steady adjusting

①Gain potentiometer is used to adjust the respond speed.Clockwise rotate speed increase and anti-clockwise rotate speed decrease.

②Steady potentiometer is used to adjust the system respond time. Clockwise rotate, time shorten and anti-clockwise rotate, time lengthen.

③State switch is used to restrain the unsteady brought by some interfere. For example fire system, elastic coupling.

Normally adjusting process is :gain-steady-state. Way is set a state first, then adjust gain, steady potentiometer to make speed steady. If can not reach steady, set another state, then adjust gain and steady potentiometer till engine steady.

5.Guideline for Governor Breakdown Maintenance

1)Engine can not start up

Reason :

①Wiring wrong: power, actuator and sensor wiring wrong, power +,- polarity in reverse.

Eliminate: connect correctly by the wiring fig.

②Sensor gap installed too big: there is no speed rotate signal or signal too puniness.

Eliminate: install again, ensure the gap is 0.4mm~0.8mm.

③Power supply shortage: while starting up voltage lower than 18V(24V)/9V(12V)

Eliminate:charge up the battery or change for a new battery.

④Controller parameter set improper: low speed set too low or start up fuel quantity set too low. Eliminate:clockwise rotate low speed potentiometer and start up fuel quantity potentiometer properly.

⑤Malfunction of governor: actuator malfunction or controller malfunction.

Eliminate:power off,use multimeter measure the resistance of actuator, normally is about $4.5\Omega(24V)/2.5\Omega(12V)$. If resistance is 0 or infinity,actuator malfunction. Change for another actuator.

Confirm actuator and sensor is ok, while starting up engine, measure voltage of actuator out put terminals of controller. If voltage is 0,controller malfunction. Change for another controller.

⑥Others.

2) Engine unsteady

Reason:

①Controller parameter set unsuitable.

Eliminate: readjust by the way before.

②Problem of actuator connection: there is gap, the resistance of whole stroke nonuniform.

Eliminate:install again by the way instruction required.

③Interfere outside.

Eliminate:install the controller in the controller box,shield cable of sensor earthing.

④Others.

3) Over speed

Reason:

①Rack of pump jammed.

Eliminate: repair or change a pump.

②Pump fuel supply can not stop after actuator stop.

Eliminate: adjust the position of actuator sever. Make actuator lever 0 position corresponding pump fuel supply 0 position.

③Controller high speed value set too high.

Eliminate:anti-clockwise rotate high speed potentiometer properly, set the high speed value lower, set at rated value after starting up.

While using our engine electronic governor, if problem you cannot resolve occur, please connect with us.

Reminder: Our company has long-term production of matching speed controllers, actuators,MPU, etc., suitable for various engine power ranges and models.

Matching products

