



Fuel saving by accurate control of the fuel rack system

ASAC is a high performance actuator, designed for fuel rack positioning on diesel engines in conjunction with all versions of the DEGO speed governor systems.

ASAC features

The nominal continuous output torque is 120Nm for ASAC 120 and 420Nm for ASAC 420. The peak torque for the actuators, during the first 2s of actuation, is 260Nm and 800Nm.

A useful feature that comes with the all-electric concept is the possibility to move the fuel rack at engine standstill. Together with the **Fuel Pump Motion** program in the DEGO governor the maintenance of the fuel pumps is much simplified leading to less downtime and better control of the fuel injection.

The actuator is maintenance free. The motor and the resolver feedback system are brushless and the gear is lifetime lubricated.

The actuator is provided with mechanical and electrical max- and min stops. This means safe operation of the external shut-down system in case of a malfunction in the actuator system.

The resolver feedback system is rugged (no bearings) and at the same time provides a feedback signal to the governor with high resolution and linearity.

The command and feedback signals are standardized allowing the ASAC system to be controlled by other governors or control devices giving a command signal in analog format (4-20mA), PWM format or via a CANOpen fieldbus communication.

Concept

The **actuator** system is based on an advanced control unit together with an actuator. The system covers all typical marine and land based engines with traditional camshaft driven fuel pumps.

The actuator control unit is installed close to but not on the engine. It contains a communication and supervision module together with a power amplifier.

The actuator is installed on the engine and consists of a brushless AC servo motor, a high precision gearbox, a junction box, an arm that is connected to the fuel rack and a foot that is mounted on the engine.

The dimensions and required cabling are compatible with the previous ABB ASAC actuators (ASAC 70, ASAC 200 and ASAC 400).

Upgrade and retrofit

The DEGO is designed for efficient retrofits of legacy hydraulic and electrical governors.

An upgrade can be done during normal sailing without any downtime for the operator.



Technical Data

Actuator type	ASAC 120	ASAC 420
Type number	2613 4120	2613 4420
Nominal Continuous Torque	120 Nm	420 Nm
Peak torque	260 Nm	840 Nm
Angular movement	20-60° Adjustable	
Direction of Rotation	CW or CCW	
Weight	20.0 kg	49.0 kg
Dimensions	Height = 240 mm Width = 190 mm Length = 240 mm	Height = 308 mm Width = 280 mm Length = 500 mm
Enclosure	IP 54	
Ambient temperature	70°C	
Ambient humidity	98% Non-condensing	
Vibration	2-25Hz 1.6mm; 25-100Hz 4.0g	
Response time (36°)	200-250 ms	300 ms
Positioning accuracy	3 arcmin (0.05°)	
Backlash	Nil	
Lost motion	Less than 3 arcmin	
Nominal Current	11.5A	15A
Peak Current	20A	30A
Nominal Voltage	48V	180V
Position feedback	Resolver	
Limit switch	One proximity homing switch	
Motor temp sensor	PTC	
Certifications	DNVGL, Lloyds Register, Bureau Veritas CE (On request)	