

ARES

Digital Speed Control Systems for Industrial Vehicles



Control Unit



DC 7



DC 5



StG 2005 DP



LA 25

Range of applications

- ✓ Construction machines
- ✓ Agricultural machines
- ✓ Special purpose vehicles
- ✓ Mining machines

ARES

Digital speed control systems for industrial vehicles

Whenever industrial engines are used in machines or special purpose vehicles, the speed governors are faced with a particularly wide range of requirements. HEINZMANN speed governors are designed to satisfy all these requirements in an outstanding way.

Vehicles equipped with industrial engines, e.g., tractors, mobile cranes, etc., are used in different operating modes, such as on-road operation, driving during work or stationary operation. For each operating mode, the governor is expected to satisfy varying conditions with regard to governing mode, maximum torque, droop, setpoint ranges, and other functions.

HEINZMANN actuators operate exclusively electrically. Some of the control unit and actuator combinations allow bi-directional torque output. Power consumption is kept extremely low. In addition, the actuators are equipped with a non-contact feedback system.

Size-P inline injection pumps by Bosch, supplied with EDC actuator mounted directly on the pump, may be combined with HEINZMANN control units. In accordance with agreements between the companies of Bosch and HEINZMANN, delivery of the control device is taken over by HEINZMANN together with customer services such as training, application, and service for application cases in the field of industrial engines.



ARES Benefits

- ✓ **Controllers specifically designed for vehicles application**
- ✓ **Series of digital controls with high IP protection level**
- ✓ **Controls are suitable for direct mounting on engine or frame**
- ✓ **Units are using HEINZMANN non-contact feedback. Applicable actuators are the well-proven products: StG 2005 DP, StG 2040 DP and linear actuators LA 25, LA 30 and LA 35.**
- ✓ **Choice of reliable actuators in various sizes**



APPLICATIONS

HEINZMANN digital speed control systems for industrial vehicles are proven since decades. They operate in vehicles of well know manufactures. Typical applications are

- Agricultural machines (e.g. tractors, harvesters)
- Construction machineries
- Mobile cranes
- Military off-road applications
- Mining machines

DIGITAL CONTROL UNITS

HEINZMANN's digital control systems are acknowledged for their high flexibility, which meets all customer needs and requirements.

They are known for their long life cycle and proven reliability and can be used for any size, type or make of machine. All digital control units in the HEINZMANN range offer excellent governing performance.

Programming can be done by means of HP 03 hand held programmer, or using the enhanced features of HEINZMANN's DcDesk PC program. Both can be used for setup, temporary monitoring and troubleshooting.



ORION DC 12

DC 12 is HEINZMANN's latest member of the ORION family of digital controls for small and medium-sized high-speed engines.

This highly efficient microprocessor based speed governor is small in size and intended for direct engine mounting. Additionally it offers 4Q-operation.

- ✓ Speed control for direct mounting at small and medium-sized engines, 4Q-operation



DC 12

ORION DC 10

The economically advantageous ORION DC 10 control unit, with protection grade IP66, is tailored for direct engine mounting without panel and can be used for small combustion engines.

- ✓ Speed control for direct mounting at small combustion engines



DC 10

ORION DC 7

HEINZMANN's DC 7 is a digital speed control for diesel engines applied in industrial on- and off-road vehicles. Besides it is able to provide various additional control, limiting and service functions.

- ✓ Speed and engine control for construction machinery (e.g. excavators, trucks or agricultural)



DC 7

DC 5

The DC 5 is a digital control for large diesel engines in industrial vehicles. Robust, enduring and resistant to any substance in engine environment it is fit and proper for extreme rough conditions. Numerous flexible I/Os allow to evaluate several measured engine values for enhanced control during operation.

- ✓ Speed and engine control for heavy-duty vehicle application



DC 5

Overview – control units

	DC 12	DC 10	DC 7	DC 5
Communication	CAN	CAN optional	CAN	2x CAN
Inputs*	1 inductive pick up, 1 Hall type pick up (via MFP), 1 MFP, 3 analogue, 3 binary, 2 temperature	1 Hall type pick up (via MFP), 1 Hall type pick up (via MFP), up to 6 MFP, 1 temperature	2 inductive pick up, 4 analogue, 6 binary, 3 temperature	2 inductive pick up, 7 analogue, 7 binary 2 binary or PWM (via MFP), 4 temperature
Outputs*	Actuator drive PWM, 4Q, 1 analogue, 1 binary, 2 sensor supply	Actuator drive PWM, 2Q, 1 analogue (via MFP), 1 binary (via MFP), 1 sensor supply	Actuator drive PWM, 2Q, 7 binary, 1 alarm, 3 PWM, 3 sensor supply	Actuator drive PWM, 2Q, 1× analogue (via MFP), 10× binary, 1× alarm, 2× binary or frequency (via MFP), 1× binary or PWM (via MFP)

* MFP = Multifunctional ports

4Q = working bidirectionally; 2Q = working unidirectionally/spring return

ACTUATORS

LA Series

Linear versions: LA 25/LA 30/LA 35

Actuators of the series LA work in 2Q-operation. Actuation is produced by magnetic force, restoring force comes from a return spring. The range of strokes of this linear actuators runs from 12.5 mm up to 19.5 mm. The range of actuating powers runs from 25 N up to 35 N.

The non-contact actuator position feedback provides precise positioning on the total range of adjustment even in oily ambient conditions. Mounting is performed on pumps front side using an adaptor.



LA 30

StG 2005 DP / StG 2040 DP

DP versions of the StG 2000 series are designed for direct mounting at diesel conventional block type fuel injection pumps and driven by digital control units.

Main applications are industrial diesel engines from 100 to 1.000 kW. They combine a compact design and high-dynamic performance. Maximal fuel rack stroke is 24.5 mm. These actuators are mainly used to replace integrated mechanical governors on diesel and dual-fuel engines, thus enhancing the engines with the additional features of an electric governor.

- 0.8 and 5.6 Nm
- 32°/36° rotation
- directly mounted



StG 2040 DP



StG 2005 DP

Overview – actuators

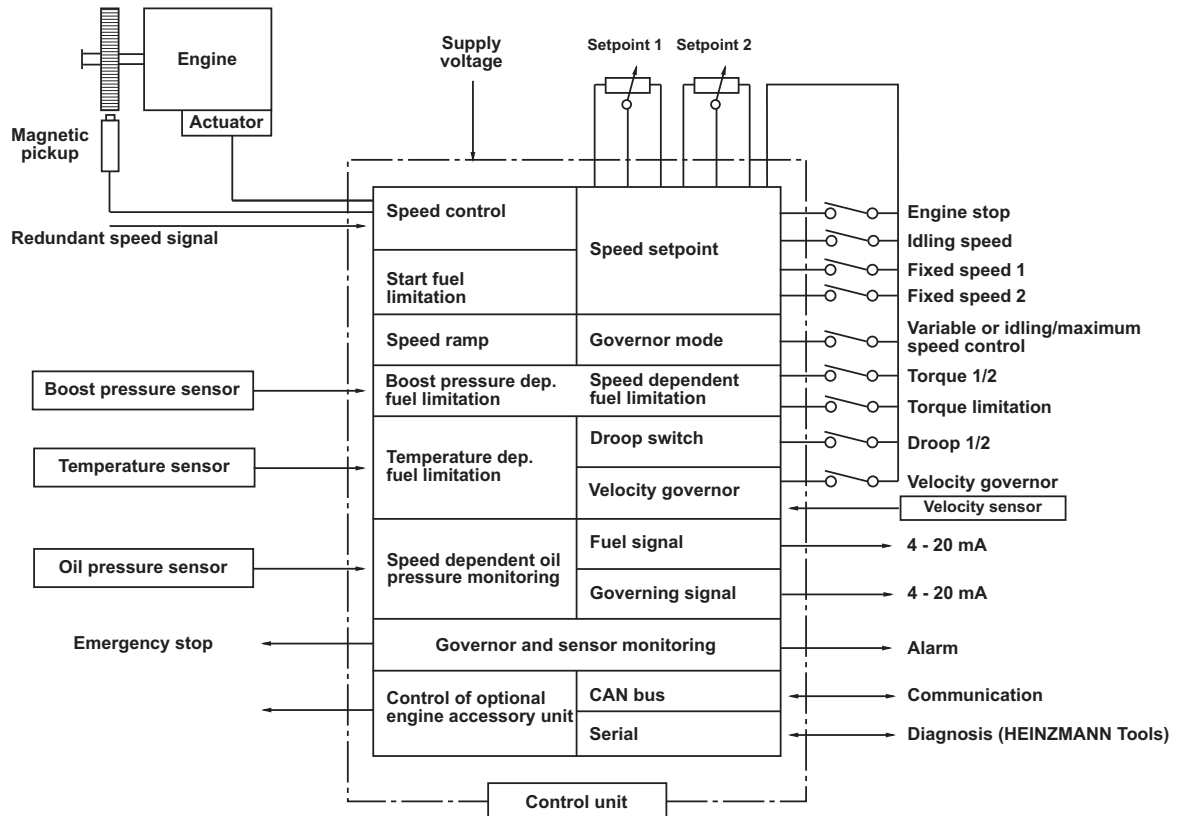
	StG 2005 DP	StG 2040 DP	LA 25	LA 30	LA 35
Angle/Length of stroke	32°	36°	19.5 mm	15.5 mm	12.5 mm
Torque/Force	0.8 Nm	5.6 Nm	25 N	30 N	35 N
Application	Inline injection pump				
Direction of operation*	L/R	L/R	F/B	F/B	F/B
Drive principle	4Q	4Q	2Q	2Q	2Q

* L/R = Left/Right, F/B = Forward/Backward

For further information refer to the respective data sheets.

Functional block diagram of an industrial engine application (vehicle)

The functional block diagram below gives an example. Depending on governor size, functionality and casing protection type, there are various models of control units available.



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since 1897

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