DC 7

DATA SHEET

Description

HEINZMANN's DC 7 is a digital speed control for industrial diesel engines of different origin. Its basic purpose is application in vehicles as excavators, trucks or agricultural machinery off- and on-road. Robust and enduring design makes DC 7 ideal for such tasks. Additionally the unit is resistant to diesel fuel, engine oil, cooling liquids, salt or cleaning agents and any similar substances in engine environment.

Heart of the control unit is a very rapid and highly powerful microprocessor. The firmware is stored permanently in a flash-ROM.

An inductive pickup takes actual engine speed. To keep up operation in case of failure a second pickup can be applied redundant. Alternatively the engine speed signal can be taken from the engine alternator.

Besides speed control DC 7 is able to provide various additional control, limiting and safety functions evaluating further sensors on engines. This may be starting fuel limitation or engine stop in case of some temperature excursion e.a.

Several error recognition, indication and reporting functions are provided. For major alarm one of the digital outputs is applicable. The firmware allows configuration of input/output allocation as well as activation and parameterisation of functions.

Setpoint adjusters may be analogue like an electronic foot pedal or digital type and can communicate with DC 7 via different types of I/Os. For configuration DC 7 uses HEINZMANN's serial interface for connection with DcDesk 2000. For communication with other devices the control unit is equipped with serial interface and CAN bus.

A PWM signal drives the actuator for fuel metering in 2Q-operation. For resetting actuators must be equipped with an appropriate return spring. Actuators can be HEINZMANN's StG 20XX series actuators or linear actuators LA 25 or LA 30.

DC 7 is able to drive BOSCH EDC pump directly.

Applications

- On- and off-road vehicle applications
- Diesel engines
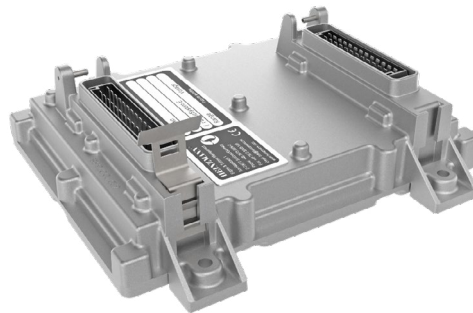
Features

On- and off-road industrial vehicle application

Robust and enduring design

Proven reliability

Resistant to any substances in engine environment

Two separate pickups possible, tachometer signal applicable

Ambient pressure sensor on board optionally

Idling and maximum speed control, velocity limitation and regulation for vehicle applications

Reduction of start-up smoke by various starting fuel limitation functions (fixed or variable, temperature dependent or starting sequence with starting speed ramp)

PID mapping of governors dynamic characteristic according to speed and load

Easy parameterisation via HEINZMANN DcDesk 2000 communication tool or hand programmer

Temperature compensation of feedback
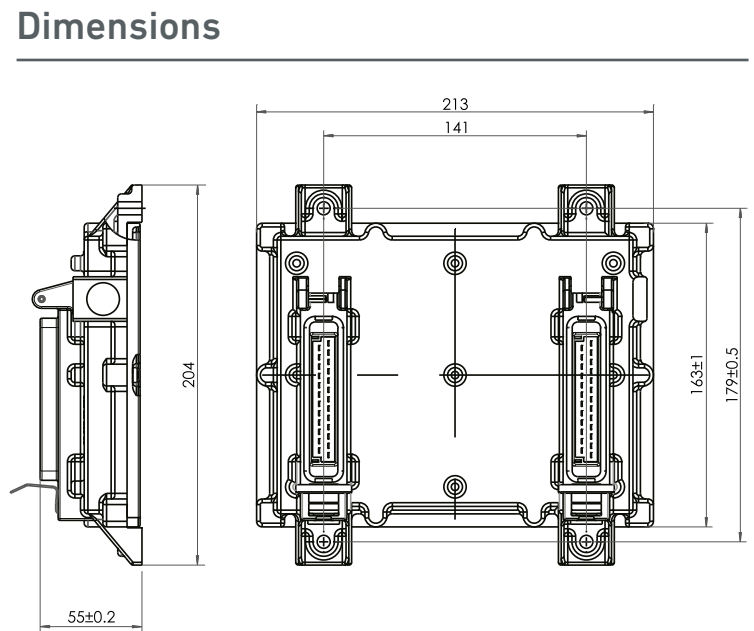
2Q-operation of actuator

Applicable actuators

- BOSCH EDC pump
- HEINZMANN actuators
  StG 2010, StG 2040, StG 2080
- HEINZMANN linear actuators
  LA 25 and LA 30

Certificates

CE, Automotive

Dimensions

213
141
204
163±1
179±0.5
55±0.2

Technical data

General specification	
Supply voltage	18 … 36 VDC (nom. 24 VDC)
Current consumption	Nom. 7 A, max. 11 A for 60 s
Degree of protection	IP66K, IP X7, IP X9 DIN 40050
Operating temperature	-40 … 85 °C
Permissible ambient humidity	98 % at 55 °C
Vibration	10…20 Hz: 2 mm, 21…63 Hz: 0.24 m/s, 64 … 2000 kHz: 9g
Weight	approx. 1.4 kg
Wiring	Plug AMP-827 050

I/O specification	
Pickups	2× inductive, 25 … 9000 Hz, 0.5 … 30 VAC
Sensor supplies	1× 5 V, 30 mA ; 2× 5 V, 15 mA
Sensors	Optional ambient pressure sensor on board
Actuator output	2Q, PWM, nom. 7 A, max. 11 A for 60 s
Analogue inputs	4× 0 … 5 V, 220 kΩ, each optionally configurable as binary input, dep. on hardware variant 3× temperature, Pt 1000, Ni 1000, NTC
Digital Inputs	6× binary, additionally up to 4× binary configured analogue inputs 2× configurable as PWM input, max. 500 Hz 1× configurable as frequency input ISO 11786 for velocity e.g. tachometer signal

Digital outputs	7× binary
	    1× high-side, 4 A
	    1× low-side, 4 A
	    5× low-side, 0.5 A
	    2× optionally configurable as PWM input, max. 500 Hz
	    1× optionally configurable as looping pickup signal
	1× alarm lamp

Communication	1× CAN 2.0B, ISO 11898 CAN protocol: HEINZMANN CAN protocol, CANopen, DeviceNet, SAE J1939 Other protocols on request RS485 optional, Modbus, dep. on hardware variant
Configuration tool	HEINZMANN standard serial interface for HEINZMANN DcDesk2000