

## HELENOS DC 2-02

### DATA SHEET

#### Description



The DC 2-02 is HEINZMANN's second generation of digital HELENOS controls for medium-speed engines and turbines. This highly efficient speed governor is based on a 32-bit microprocessor.

The DC 2-02 control unit offers up to six analogue inputs, four analogue outputs, four up to eight digital inputs and three up to seven digital outputs beside two input channels for inductive speed sensors. An optional CAN or CAN/Modbus module extension provides the interface for external communication.

In combination with HEINZMANN's small and medium range actuators or the Bosch EDC™ pump the DC 2-02 control unit provides the ideal solution for small- and medium-speed engines and turbine applications.

The advanced DC 2-02 hardware is fully compatible with its predecessor. All DC 2-01 software versions can be used without any change.

#### Actuators

HELENOS DC 2-02 is the central control unit of the HELENOS family of digital control systems. The different systems vary in the combination with applicable actuators. HEINZMANN supplies a wide range of actuators for any size, type and make of engine.

For more information please refer to the leaflet *HEINZMANN Actuators* and the respective data sheet or manual.

HELENOS Systems	Actuator(s)
HELENOS I	StG 6/10
HELENOS II	StG 2010/2040/2080
HELENOS III	StG 16/30/40
HELENOS IV	Bosch EDC™
HELENOS V	StG 2005DP/2040DP

#### Applications

- ➔ Stationary applications, e.g. generator sets or power stations
- ➔ Marine applications, including twin engine operations
- ➔ Locomotive applications
- ➔ Agricultural machines, such as harvestors or tractors
- ➔ Heavy duty vehicles and special vehicles, e.g. crawlers, mobile cranes
- ➔ Gas, water and steam turbines

#### Certificates

Maritime classification societies: GL, DNV, BV  
Further certificates on request

#### Features

Start fuel limitation with respect to engine temperature for an optimum fuel quantity during start and run-up phase and reduction of start-up smoke to a minimum

Adaption of governors dynamic characteristic (PID) to speed, load and engine temperature

Speed ramp for slowly changing of speed value and anti stick-slip device for locomotive applications

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

Fuel limitation depending on speed, boost pressure, temperatures and further parameters for optimal load factor and in order to protect the engine

Speed dependent monitoring of oil pressure with or without engine stop for engine protection

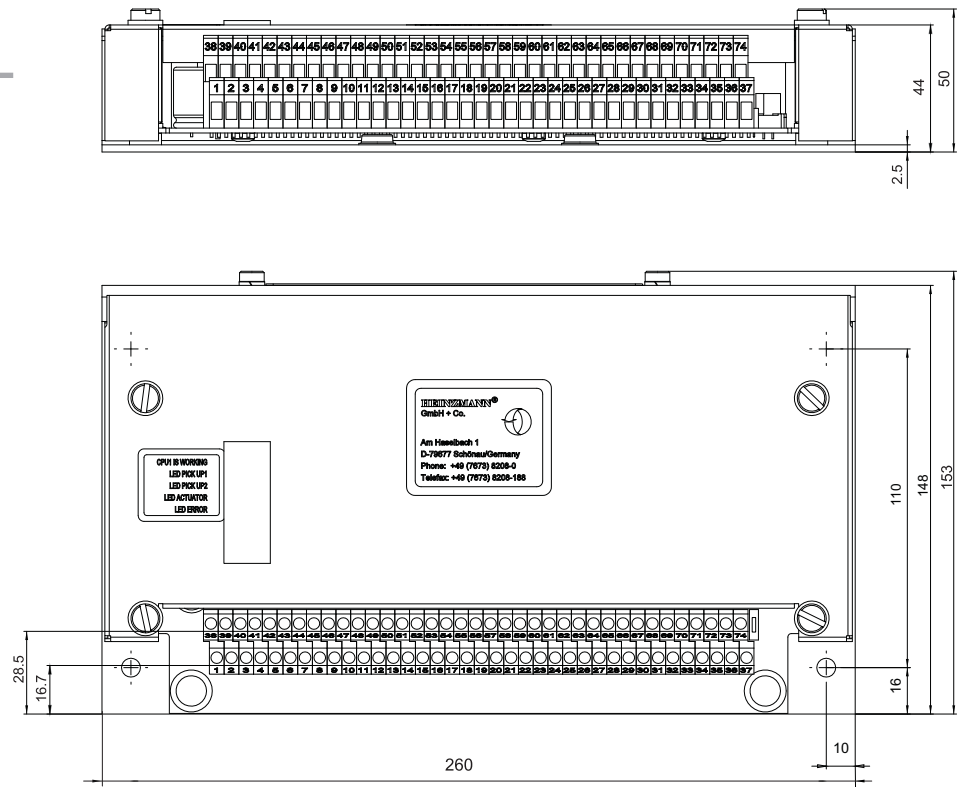
Governor and sensor monitoring

Communication via CAN bus

Simple parameterisation with HEINZMANN DcDesk 2000 communication tool or hand programmer

Error logging

## Dimensions



## Technical data

### General specification

Supply voltage	24 VDC
Operating voltage range	12 ... 32 VDC
Supply current	200 mA (plus actuator current)
Operating temperature range	-40 ... 70 °C
Protection level	IP 00 or IP 55
Connections	IP 00: screw terminal IP 55: plug ITT Cannon CA-COM
Vibration	0.7g / 2 ... 100 Hz
Humidity	95 % rel. humidity at 55 °C
Insulation	> 1 MΩ at 48 VDC
Weight	IP 00: 1.2 kg IP 55: 3 kg
Compliances	EN61000-6-2:2005, EN61000-6-4:2007

### I/O specification

Inputs	Outputs	Configurable I/O	Communication interface
Pickup	Analogue	Digital/PWM	on-board
2	2	4	(optional)
0.4 ... 100 Vpp / 25 ... 12000 Hz for inductive sensors	4 ... 20 mA	24 VDC input or 0.4 A output low side, 0 ... 100 %, short circuit protected	(optional)
Analogue	2	5 VDC or 12 VDC	(optional)
4	2	24 VDC or 12 VDC	
0 ... 5 V or 4 ... 20 mA	0 ... 5 V or 0 ... 10 V		
Temperature	Digital/PWM		
2	1		
PT200, PT1000, NTC, NI1000 (opt. 0 ... 5 V or 4 ... 20 mA)	2.5 A, low side, 0 ... 100 %, short circuit protected		
Digital	Digital		
4	2		
24 VDC, active high	4 A, high side, short circuit protected		
Outputs	Sensor supply		
Analogue	1		
2	5 VDC or 12 VDC		
4 ... 20 mA			
0 ... 5 V or 0 ... 10 V			
Digital/PWM			
1			
2.5 A, low side, 0 ... 100 %, short circuit protected			
Digital			
2			
4 A, high side, short circuit protected			
Sensor supply			
1			
5 VDC or 12 VDC			
Configurable I/O			
Digital/PWM			
4			
24 VDC input or 0.4 A output low side, 0 ... 100 %, short circuit protected			
Communication interface			
on-board			
1			
HEINZMANN Service Interface			
(optional)			
1			
CAN 2.0B			
(optional)			
1			
Modbus RS422 / RS485			

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