**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.

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<td>HELENOS IV</td>
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**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

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**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
- Adaptation 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
## 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

- Pickup: 2 (0.4 ... 100 Vpp / 25 ... 12000 Hz for inductive sensors)
- Analogue: 4 (0 ... 5 V or 4 ... 20 mA)
- Temperature: 2 (PT200, PT1000, NTC, NI1000 (opt. 0 ... 5 V or 4 ... 20 mA))
- Digital: 4 (24 VDC, active high)

#### Outputs

- Analogue: 2 (4 ... 20 mA)
  - 2 (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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