Digital speed control unit for
medium and large engines and turbines

HEINZMANN®
thinking in drive and control

PRIAMOS DC 1

DATA SHEET

Description

DC 1 PRIAMOS is HEINZMANN's most proven digital speed control. Advantageously installed in lots of applications for years and brought up to date ever since DC 1 performs fast action and precise speed control.

DC 1-03

DC 1 is intended to work with HEINZMANN's motor driven actuators in 4Q-operation. To achieve remarkably high torques DC 1 offers the option to supply the driver stage separately with higher voltage than the control unit. This allows to use HEINZMANN's high capacity actuators at their full performance eliminating any overload of the controller electronics.

Additionally version DC 1-04 is able to drive up to 3 independent actuators. This opens possibilities for speed control combined with dual fuel control application even on V-engines.

Actual engine speed is taken by inductive pickup. To keep up operation in case of failure, a redundant second pickup can be applied. Optionally use of a Hall type pickup is possible.

DC 1-04

Besides speed control, DC 1 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 etc.

Several error recognition, indication and reporting functions are provided. One common alarm output and two further fatal error alarm outputs complete the scope. The firmware allows configuration of input/output allocation as well as activation and parameterisation of functions.

For configuration DC 1 uses HEINZMANN's serial interface for connection with DcDesk 2000. CAN bus for communication with other devices is available optionally.

Features

- Driving up to 3 actuators with DC 1-04 allows dual fuel application even on V-engines
- Higher voltage applicable for driving stage
- Variable starting fuel adjustment, depending on engine temperature
- Temperature dependent idling speed
- Fuel limitation depending on boost pressure and engine speed
- Speed ramp for increasing or decreasing speed
- Load regulation system
- Marine certified

Applications

- Diesel & gas engines
- Dual fuel combustion
- Gensets
- Gas & steam turbines
- Heavy-duty vehicles
- Vessels
- Traction control systems

Applicable actuators

- StG 16/30/40 with DC 1-03 for engine power < 5 MW
- StG 64/90 with DC 1-03 for engine power 5 ... 10 MW
- 2× StG 90 with DC 1-04 for V-engine
- StG 180 with DC 1-04 for engine power < 15 MW

Certificates

Marine certificates DNV, ABS, KR

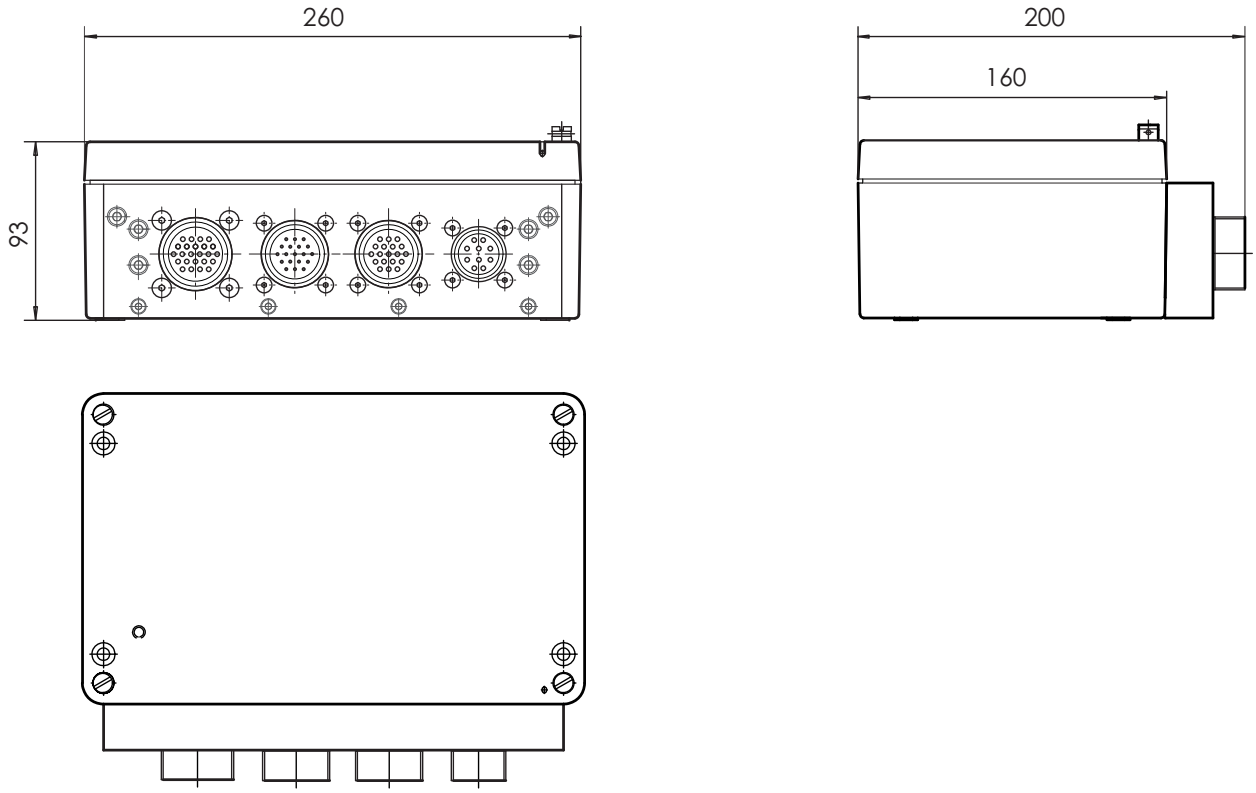
Technical data

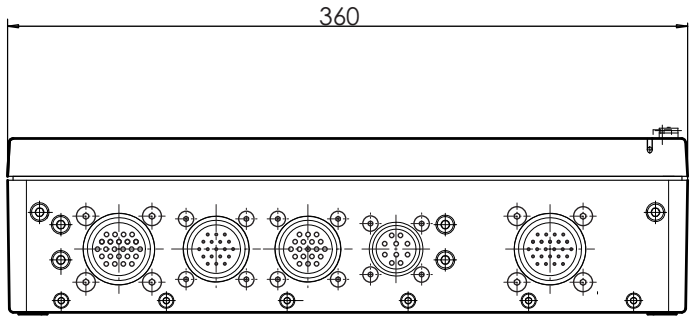
General specification	DC 1-03	DC 1-04
Supply voltage	nom. 24 VDC	nom. 24 VDC (8 ... 32 VDC), control unit
		nom. 36 VDC (18 ... 40 VDC), actuator driving stage
Current consumption control unit	0.25 A (plus actuator current)	0.34 A (plus actuator current)
Degree of protection	IP55	
Operating temperature	-40 ... +70 °C	
Vibration	3.2 mm pp at 5 ...25 Hz,	2 mm pp at 5 ... 13.2 Hz,
	4g at 26 ... 100 Hz,	0.7g at 13.3 ... 50 Hz,
		1g at 51 ... 100 Hz
Permissible ambient humidity	< 95 % rel. at 55 °C	
Weight	approx 3.5 kg	approx. 5.2 kg
Wiring	plug ITT Cannon CA-COM	

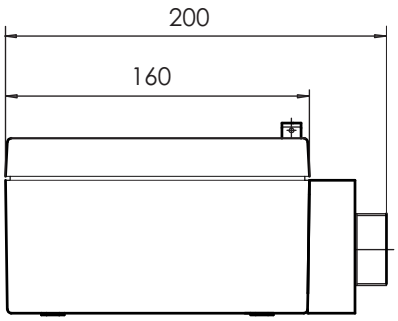
I/O specification	DC 1-03	DC 1-04
Pickups	2× inductive, 30 ... 9000 Hz, 0.4 ... 30 VAC, Hall-type pickup optional	
Sensor supplies	2× 5 VDC, 50 mA 1× 8.2 VDC, 90 mA (HEINZMANN hand programmer)	
Actuator output	1× 2Q/4Q PWM, 2 kHz, 9 A, max. 12 A for 60 s	1× 2Q/4Q PWM, 2 kHz, 9 A, max. 12 A for 60 s, 2× 4Q PWM, 2 kHz, 6.5 A, max. 12 A for 60 s
Analogue inputs	5× 0 ... 5 V or 4 ... 20 mA	8× 0 ... 5 V or 4 ... 20 mA
	2× temperature Pt 1000, Ni 1000, NTC	
Analogue outputs	2× 0 ... 5 V or 4 ... 20 mA	
Digital Inputs	10× binary, galvanically insulated	
	2× PWM or binary, configurable	1× PWM or binary, configurable
Digital outputs		2× binary
	3× PWM or binary, configurable	
	1× low-side switch with current readback, I_L < 2 A	
	2× low-side switch with freewheeling diode, I_L < 0.5 A	
	1× high-side switch (overspeed), I_L < 1.8 A, configurable	
	1× common alarm, 2× fatal error (invers control ready)	
Wiring	Plug Cannon	

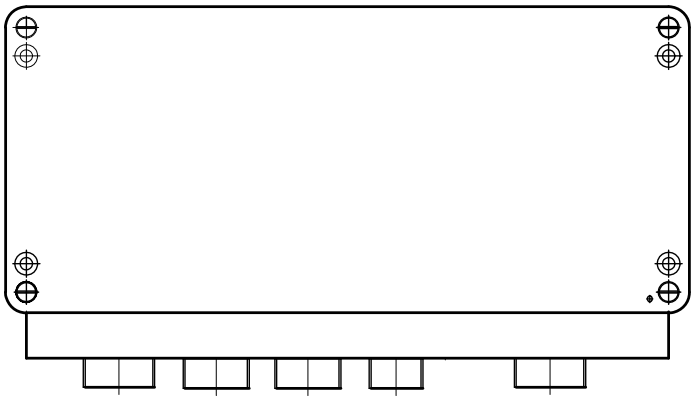
Dimensions

DC 1-03









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