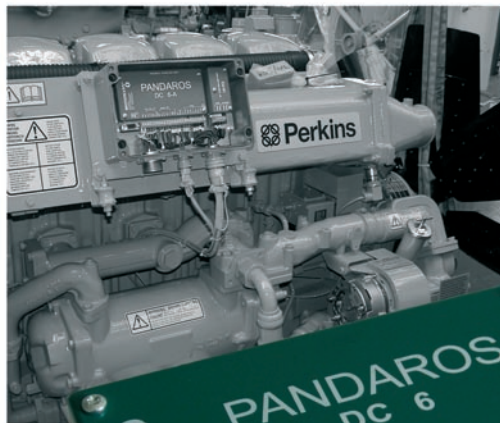


# PANDAROS I

## Digital Control System



Actuator StG 6



Hand Programmer HP 03



Control Unit PANDAROS IP55

Sensors

DG 6.6 up to DG 10.6

- ✓ Power generation
- ✓ Pump drives
- ✓ Locomotives
- ✓ Vehicles



## **PANDAROS I**

A new designed control system equipped with the latest digital technology, which can be used for a wide range of applications.

HEINZMANN offers a selection of PANDAROS Systems, which are based on several actuator series. No mechanical drive is required.

PANDAROS I is tailored for the power range up to 1 MW.



## **Features**

- ✓ **User configurable for stationary (generators, pumps, etc) or driving applications (industrial vehicles)**
- ✓ **Overspeed protection**
- ✓ **Continuous sensor diagnostic**
- ✓ **Programmable start fuel limitation**
- ✓ **Engine temperature, boost pressure and speed dependent fuel limitation**
- ✓ **Fixed or variable speed control**
- ✓ **Configurable speed setpoint inputs**
- ✓ **Additional analogue inputs for synchronizing and isochronous load sharing**
- ✓ **PID mapping according to speed, temperature and load**
- ✓ **Extended feedback accuracy for the rack position control**

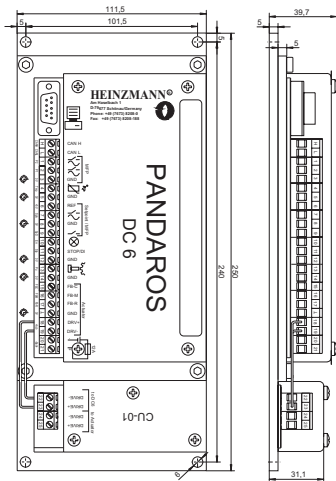


Programming can be done by means of HP 03 hand held programmer, or using the enhanced features of HEINZMANN's DcDesk 2000 PC program. Both can be used for setup, temporary monitoring and troubleshooting. In addition, the SATURN Remote Communication System is available.

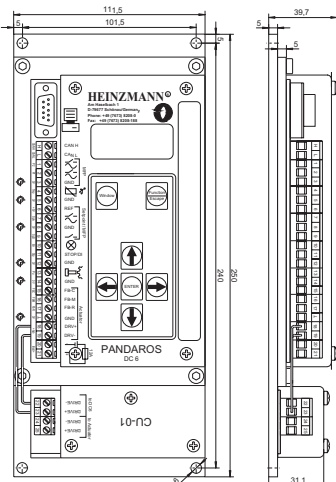
# PANDAROS I

## Dimensional Drawing

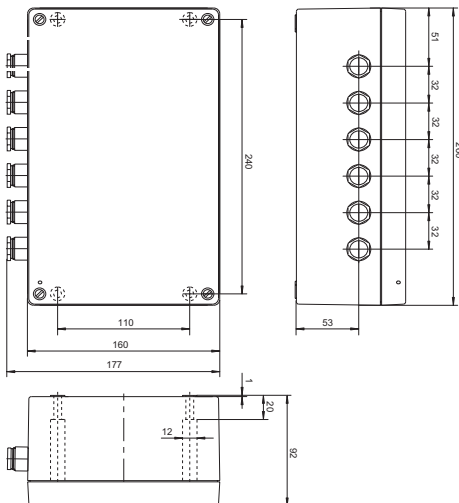
**IP 00**  
without  
integrated  
Programmer



**IP 00**  
with  
integrated  
Programmer



**IP 55**



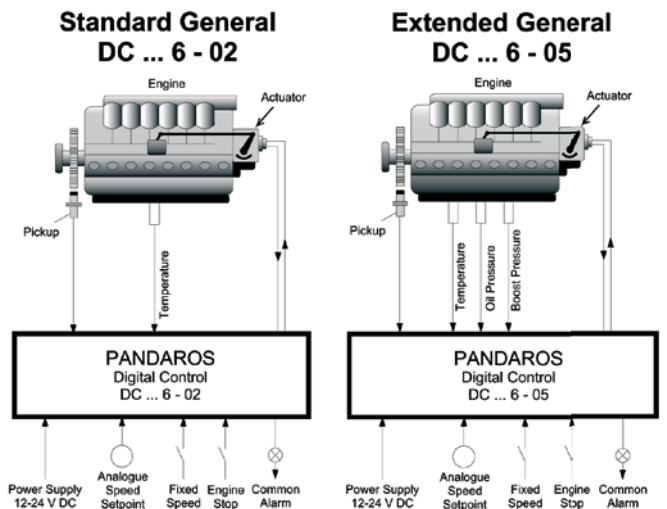
# Control Unit DG 6

## TECHNICAL INFORMATION

Operating voltage	24 V DC
Current consumption	max. 7A max. 11A for max. 60 seconds
Storage temperature	-40°C up to +85°C
Operation temperature	-40°C up to +80°C
Vibration resistance	max. +/-1.76 mm at 10 up to 21 Hz max. 0.24 mm at 21 up to 45 Hz max. 7 g at 45 up to 400 Hz
Shock	30 g, 11 ms- half-sine
Protection	IP00 up to IP55
Weight	approx. 0.5 kg

The extensive range of digital control units DC 6 is available for different sized electronically powered HEINZMANN actuators StG 6, StG 6-V and StG 10. The following overview outlines the variation of applications and different versions.

## Variants: Speed Governor General

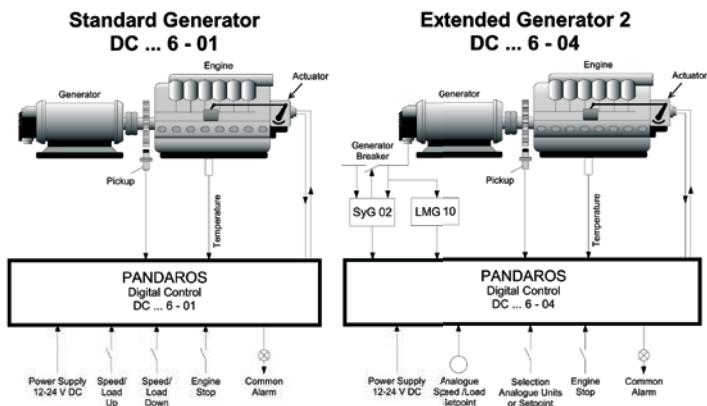


## Examples: Speed Governor / General

Connections for	DG 6-02	DG 6-05
	Standard	Extended
Actuator	•	•
Speed Sensor	•	•
Temperature Sensor	•	•
Oil Pressure Sensor		•
Boost Pressure Sensor		•
Analogue Speed/Load Setpoint	•	•
Engine Stop Switch	•	•
Fixed Speed Switch	•	•
Common Alarm Output	•	•
Communication/Diagnosis	•	•
Power Supply 12 V or 24 V	•	•

# PANDAROS I

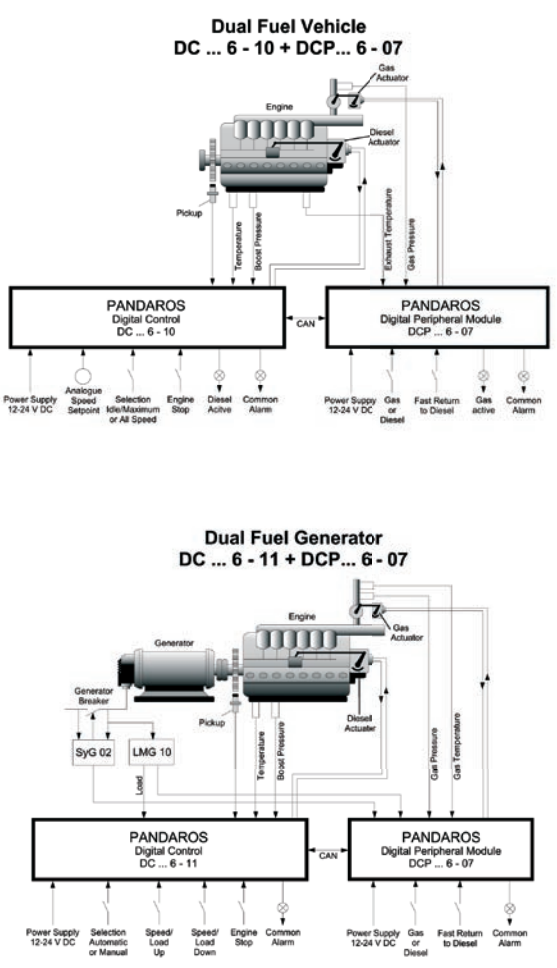
## Variants: Speed Governor for Generator Sets



Connections for	DG 6-01	DG 6-04
	Standard	Extended
Actuator	•	•
Speed Sensor	•	•
Temperature Sensor	•	•
Load Control Input		•
Synchronizing Input		•
Analogue Speed/Load Setpoint		•
Up/Down Speed/Load Setpoint Switches	•	
Engine Stop Switch	•	•
Setpoint or Load/Synch Switch		•
Common Alarm Output	•	•
Communication/Diagnosis	•	•
Power Supply 12 V or 24 V	•	•

Examples: Speed Governor / Generator

## Variants: Dual Fuel Speed Governor

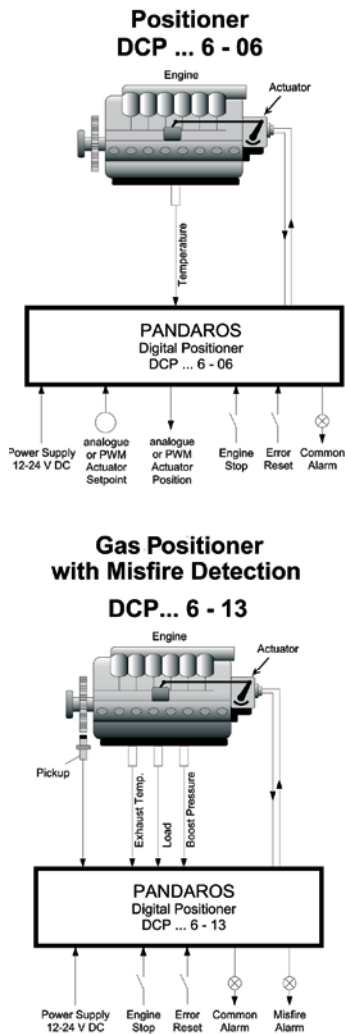


Connections for	DG 6-10	DG 6-07		DG 6-11
	Speed Governor	Peripheral Module		Speed Governor
	Dual Fuel Vehicle	Dual Fuel Generator		
	Diesel	Gas	Diesel	Gas
Actuator	•	•	•	•
Speed Sensor	•		•	
Coolant Temperature Sensor	•		•	
Alternative		•		•
Boost Pressure Sensor	•			
Gas Pressure Sensor		•		•
Measured Load			•	
Load Control Input				•
Synchronizing Input				•
Analogue Speed/Load Setpoint	•			
Up/Down Speed/Load Setpoint Switches			•	
Engine Stop Switch	•		•	
Fixed Speed Switch			•	
Idle/Max or All Speed Gov. Switch	•			
Auto or Manual Mode Switch			•	
Gas or Diesel Switch		•		•
Fast Return to Diesel Switch		•		•
Diesel Active Output	•			
Gas Active Output		•		
Common Alarm Output	•	•	•	•
Communication/Diagnosis	•	•	•	•
CAN Bus (HEINZMANN Protocol)	•	•	•	•
Power Supply 12 V or 24 V	•	•	•	•

Examples: Dual Fuel Speed Governor

# PANDAROS I

## Variants: Positioner / Peripheral Module



Connections for	DGP 6-06	DGP 6-07	DGP 6-13
	Positioner	Peripheral Module	Gas Positioner with Misfire Detection
Actuator	•	•	•
Speed Sensor		•	•
Temperature Sensor	•	•	•
Measured Load			•
Analogue Actuator Setpoint	• alternative	•	
PWM Actuator Setpoint	• alternative		
HEINZMANN CAN Actuator Setpoint		•	
Engine Stop Switch	•		•
Error Reset Switch	•		•
Analogue Actuator Position Output	• alternative		
PWM Actuator Position Output	• alternative		
Misfire Alarm Output			•
Up to 4 Analogue Inputs		• alternative	
Up to 3 PWM Inputs		• alternative	
Up to 2 Current Outputs		• alternative	
Up to 2 PWM Outputs		• alternative	
Up to 2 Digital Outputs		• alternative	
Common Alarm Output	•	•	•
Communication/Diagnosis	•	•	•
CAN Bus (HEINZMANN Protocol)*		•	
Power Supply 12 V or 24 V	•	•	•

\*connected to Control Unit

### Examples: Positioner / Peripheral Module

## Actuators StG 6 to StG 10

The power source of these HEINZMANN actuators is a DC disc motor whose torque is transmitted to the output shaft via a gearbox. To increase the lifetime of the actuators and eliminate the need for maintenance, specially developed materials and heavy duty lubricants are used throughout. In addition, the output shaft in each is fitted with a feedback eccentric cam that allows a sensor to read the position of the shaft without actually touching it. The sensor then transmits this information to the control unit.

If either actuator shaft is blocked, for example, because of an engine overload or a cylinder failure, a limiter reduces current to the actuator after 20 seconds, protecting it from overheating.

Technical Data	StG 6-01	StG 6-02	StG 10-01
Output shaft travel	36°		
Max. torque at output shaft (in stop direction) approx.	4 Nm	6 Nm	10 Nm
Torque in steady state condition.	1.3 Nm	2 Nm	3 Nm
Time for full travel (without load) approx.	70 ms	75 ms	80 ms
Current consumption of whole governor:			
• maximum current	5	5	5
• safe current in steady state condition	1.7	1.7	1.7
Storage temperature	-55°C to + 110°C		
Operation temperature	-40°C to + 90°C		
Humidity	up to 98%		
Protection grade	IP 55		
Weight (stand only)	3.0 kg	3.1 kg	3.8 kg



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## **Selection of HEINZMANN products**

### **Wide range of digital and analogue control units**



### **Different sizes of electrical actuators for 1Nm up to 500 Nm**



### **Electronic fuel control system (EFI) - control units from 4 cyl. up to 20 cyl. engines**



### **Range of analogue and digital generator management units**



### **Gas engine management**



### **Common rail systems**



### **Sensors & solenoids**



### **Digital control systems for gas turbines**



### **Hydraulic governors & actuators**



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