

## DK 100 / StG 3 DK 100 / StG 3-PD

### DATA SHEET

#### Description

Preferential application of this combination of a throttle valve with an actuator or positioner from HEINZMANN is gas engine control. Engine speed and power of the engines can be influenced by controlling the mixture amount. In special applications it can additionally be used as gas valve for air-fuel-ratio control. Alternatively application as bypass valve for turbochargers is possible.

Usually it is used for stationary engines. Over and above its robust construction makes it fit for mobile heavy duty applications as well.

A multipolar magnetised permanent magnet is facing a multipolar armature radial. That kind of design allows generating powerful torque in 4Q-operation. A return spring is mounted on the output shaft to ensure setting to a zero position in case of voltage loss.

The armature is optimised for lowest heat build-up. The design enhances heat transfer and allows a wide working temperature range. Additionally, the positioner electronic can be liquid cooled.

Result of the direct acting gearless function is a very fast response time. A high precision contactless feedback system allows high-grade position control of the throttle.

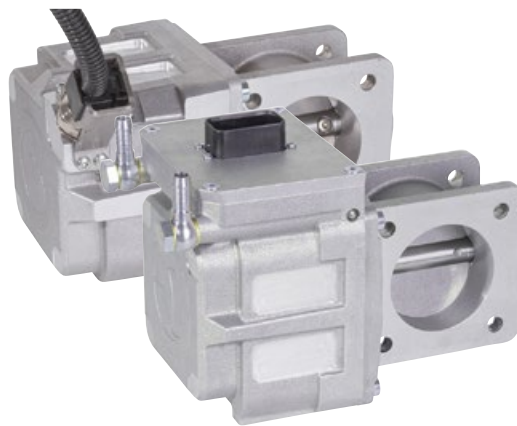
Application of special materials and long-duration lubricants assure maintenance-free operation and long service life. Mounting of the actuator is possible in any fitting position.

The robust and enduring model with IP6K9K degree of protection allows operation under roughest ambient conditions.

As standard there are three different throttle valve diameters available.

#### Application range

- ➔ Gas, diesel and dual-fuel engines, suitable for heavy-duty engines
- ➔ Gas and steam turbines



#### Features

Available as actuator or positioner version

Can be used as throttle valve or turbo bypass

Quick response time

Contactless high precision feedback

Robust and enduring construction with minimal axial bearing load

Wide working temperature range up to 150 °C

Completely maintenance-free

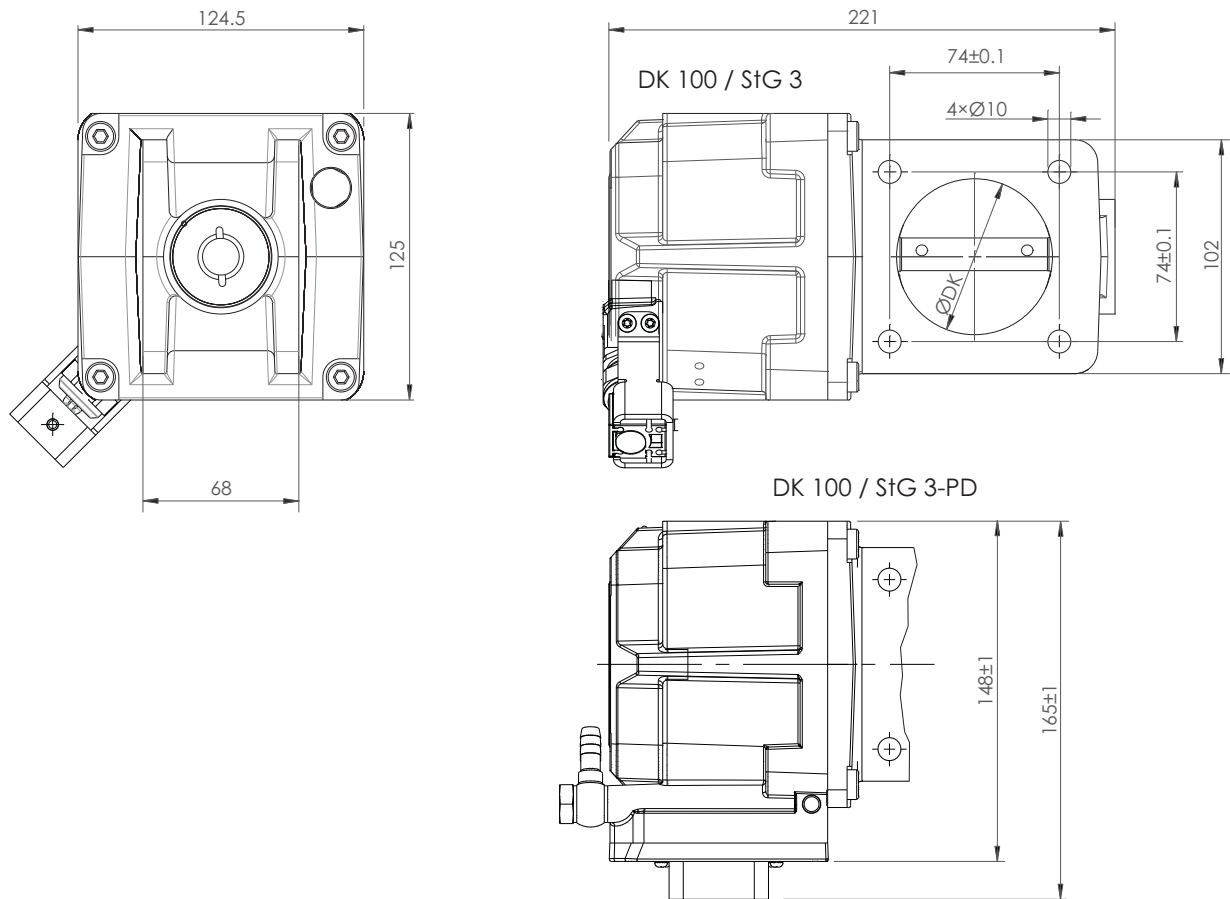
IP6K9K degree of protection

Any mounting position possible

Standard dimensions of flange

Applicable for a wide range of gas qualities (e.g. natural gas, landfill gas, biogas, propane)

## Dimensions



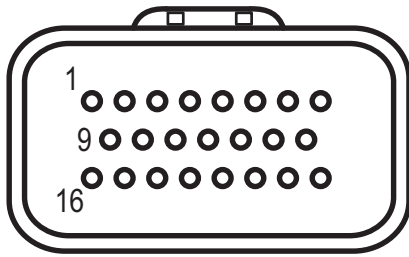
## Technical data

Steady state torque	1.5 Nm		
Maximum torque	3 Nm		
Rotation	72°		
Response time *)	< 40 ms		
Supply voltage	16 ... 32 VDC, nominal 24 VDC		
Sensor supply	4.5 ... 5.5 VDC		
Positioner input	voltage, current, CAN bus		
Current consumption	max. 6 A		
Steady state current	3 A		
Diameter (ØDK)	Ø 48 mm	Ø 60 mm	Ø 68 mm
Engine power range **)	approx. 50 ... 100 kW	approx. 60 ... 150 kW	approx. 70 ... 250 kW
Boost pressure	max. 5.8 bar abs.		
Actuator housing pressure resistance	±0.35 bar		
Operating temperature	-40 ... +150 °C (StG 3, StG 3-PD liquid cooled positioner electronic) -40 ... +110 °C (StG 3-PD without cooling)		
Storage temperature	-40 ... +160 °C		
Degree of protection	IP6K9K		
Weight	approx. 6.5 kg		

\*) For actuator version depending on controller

\*\*\*) Power range for naturally aspirated engines. For turbo charged engines 50 up to 150 % higher, depending on boost pressure.  
Variants on request.

## Pin assignment



TYCO 23-pin,  
view on plug side

Pin	Signal	Signal type or range
1	Power supply (+)	24 V
2	Auxiliary power out	24 V, 0.7 A
3	RS-232 TX	Communication
4	Setpoint input	4 ... 20 mA or 0.5 ... 4.5 V, type selection via pin 19
5	Digital input 1	Run enable
6	PWM shield	-
7	Digital input 2	discrete
8	Power output	5 V, 50 mA
9	Throttle position feedback	0.5 ... 4.5 V
10	Digital input 4 (-), isolated	PWM or discrete
11	RS-232 RX	Communication
12	GND	0 V
13	CAN high	Communication
14	CAN shield	-
15	GND	0 V
16	Power supply GND	0 V
17	GND	0 V
18	Digital input 4 (+), isolated	PWM or discrete
19	Analogue input 1	Selection of analogue input type of pin 4: pull-down to pin 20: 4 ... 20 mA, open: 0.5 ... 4.5 V
20	Analogue input 1 GND	0 V
21	CAN low	Communication
22	Digital input 3	discrete
23	Status output	discrete

## Certificates

On request

*Subject to alterations. ©HEINZMANN GmbH & Co. KG, 2020*



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