

DK 100 / StG 3

DK 140 / StG 3⁺

DK 200 / StG 3⁺

DATA SHEET

Description

Combining the StG 3 actuator with a throttle valve, these devices are ideal for use as part of the control of gas or dual-fuel engines. The throttle valves are available with several cross-sections.

In special cases, the devices can also be used to control air-fuel-ratio or alternatively as turbo bypass valve.

The design is suitable for many gas types such as natural gas, landfill gas, biogas, or propane. An admixture of H₂ up to 30 % is permissible.

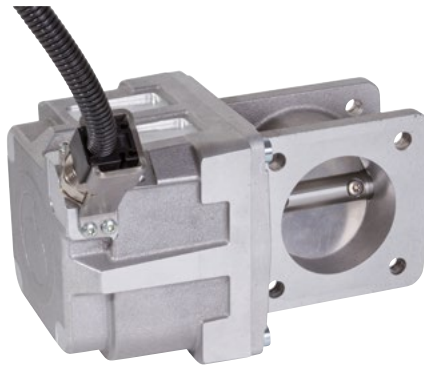
Their robust and enduring design also makes the device applicable without restriction for mobile heavy-duty applications.

Uniformly strong torques over the entire range of adjustment are enabled by the special design of the solenoid system. The armature is optimised for lowest heat build-up. Additionally, the design enhances heat transfer to the outside and so allows a wide working temperature range.

In principle, each device is equipped with a return spring which ensures that a zero position is reached in the event of power supply failure. Optionally, they are available without springs.

The result of the direct acting mode of operation without gears are extremely short reaction times. A contactless feedback system provides an electrical analogue signal of the precise throttle position to any external control device.

Application of special materials and long-duration lubricants assure maintenance-free operation and long service life. Mounting of the device is possible in any fitting position. The robust and enduring design with IP6K9K degree of protection allows operation under roughest ambient conditions.



Features

- Direct acting without gears
- Quick response time
- Enhanced service life due to optimised bearing
- Working temperature range up to 150 °C possible
- Suitable for any gas type (natural gas, landfill gas, biogas, propane), admixture of H₂ up to 30 % possible
- Applicable as throttle valve as well as turbo bypass

Application range

- Small and medium-sized diesel or gas engines

Certificates

On request:
CSA, ATEX, marine approval

Technical data

Actuator	StG 3	StG 3+
Mode of operation	4Q	4Q
Angle of rotation	72°	72°
Max. torque without return spring	approx. 3 Nm	approx. 6 Nm
Torque in steady state without return spring	ca. 1.5 Nm	ca. 3 Nm
Torque of return spring	0.50 ... 0.82 Nm	0.50 ... 0.82 Nm
No load response time (depending on controller)	< 40 ms	< 40 ms
Working voltage of armature	nom. 24 VDC 18 ... 32 VDC	nom. 24 VDC 18 ... 32 VDC *)
Max. permissible current consumption	6 A	6 A
Max. permissible current in steady state	3 A	3 A
Power supply position sensor	5 ±0.1 VDC	5 ±0.1 VDC
Position signal (0 ... 100 %)	0.5 ... 4.5 V	0.5 ... 4.5 V
Degree of protection / actuator	IP6K9K	IP6K9K
Degree of protection / plug	IP67	IP67
Weight	approx. 5.5 kg	approx. 5.5 kg
Ambient temperature	-20 ... +100 °C 150 °C on request	-20 ... +100 °C

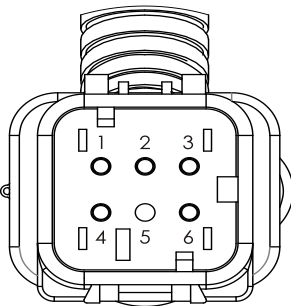
*) with voltage supply < 24 VDC temperature-related derating of maximum torque

Throttle valve	DK 100	DK 100	DK 100	DK 140	DK 200 *)
Diameter	Ø 48 mm	Ø 60 mm	Ø 68 mm	Ø 85 mm	Ø 80, 90, 100 and 110 mm
Engine power range nom. **)	approx. 50 ... 100 kW	approx. 60 ... 150 kW	approx. 70 ... 250 kW	approx. 140 ... 250 kW	approx. 100 ... 350 kW
Permissible gas pressure max.	5.8 bar (abs.)	5.8 bar (abs.)	5.8 bar (abs.)	8 bar (abs.)	4 bar (abs.)

*) Version with enhanced operating temperature available on request

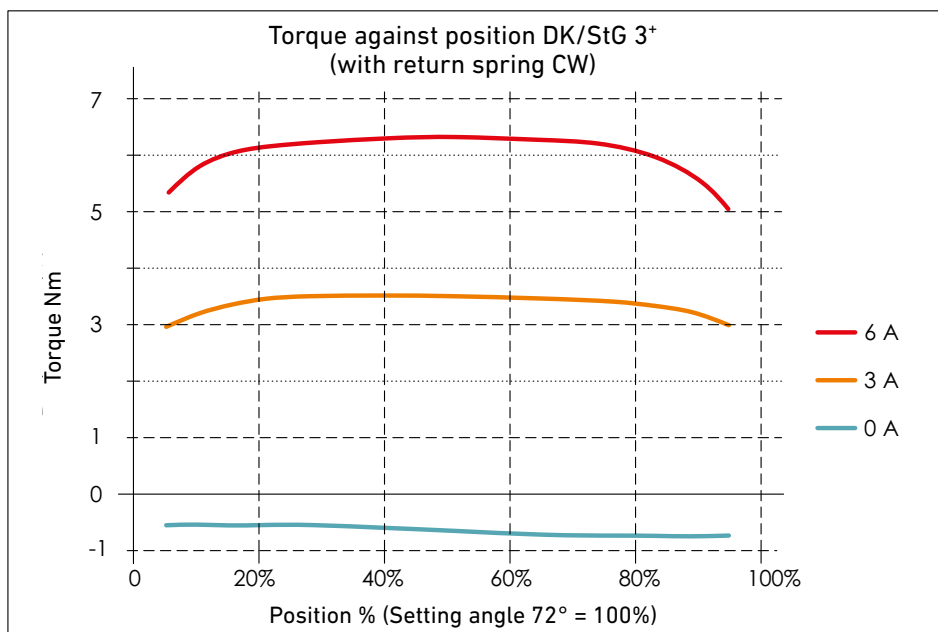
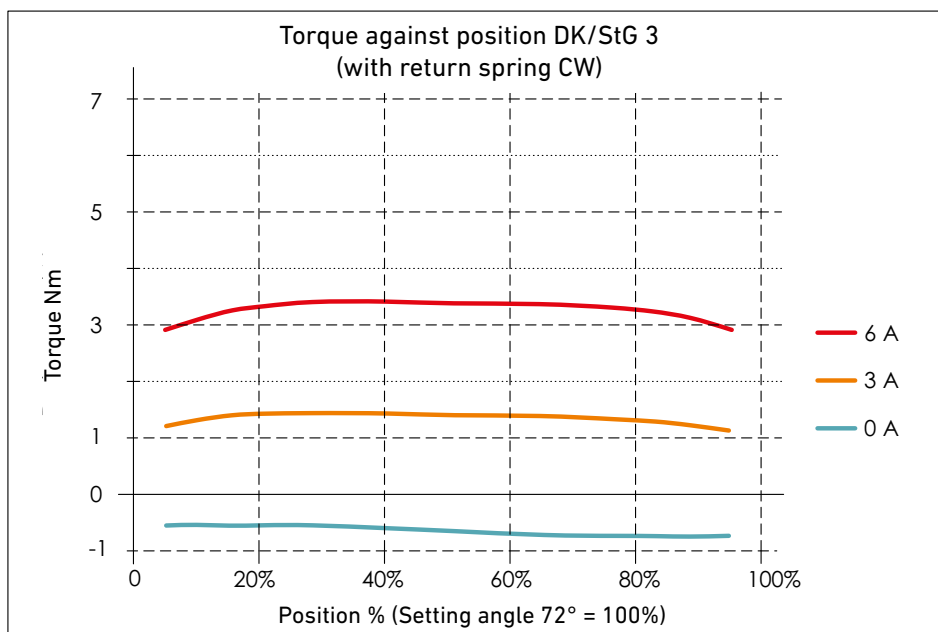
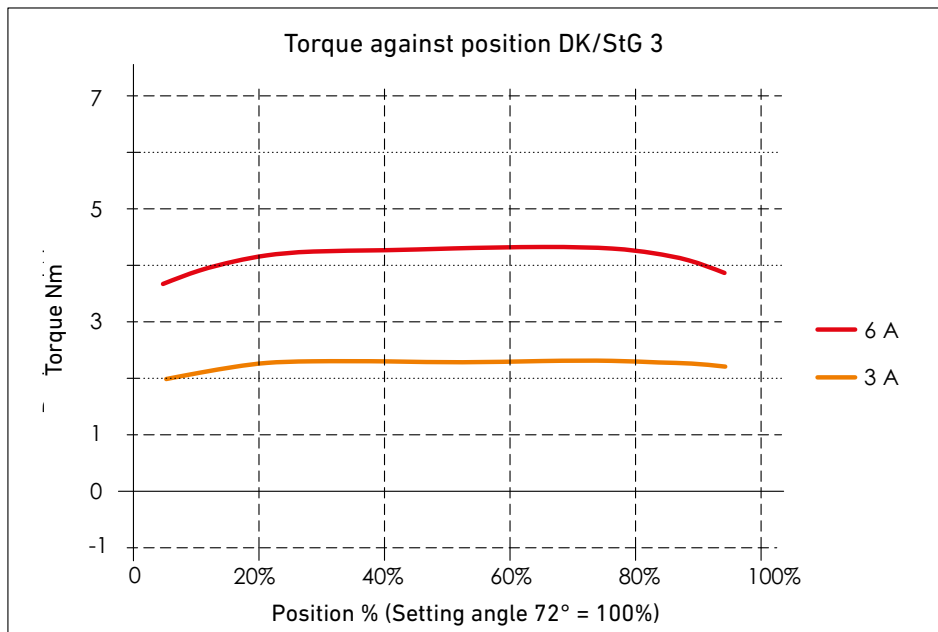
**) Power range for naturally aspirated engines. For turbo charged engines 50 up to 150 % higher, depending on boost pressure. Variants on request.

Pin assignment



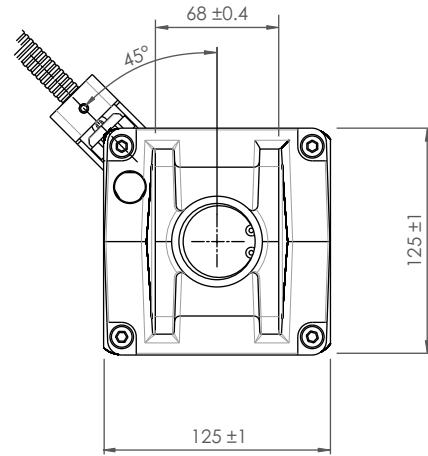
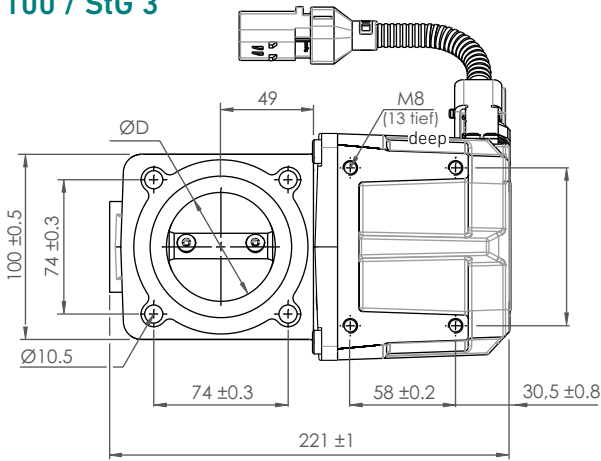
Connector	AMPSEAL 16 (6 pin)
1	Power supply position sensor
2	GND position sensor
3	Position feedback signal
4	Armature (-)
5	(not connected)
6	Armature (+)

Characteristic curves



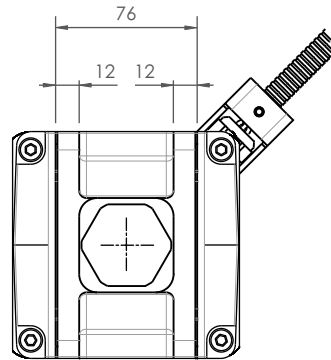
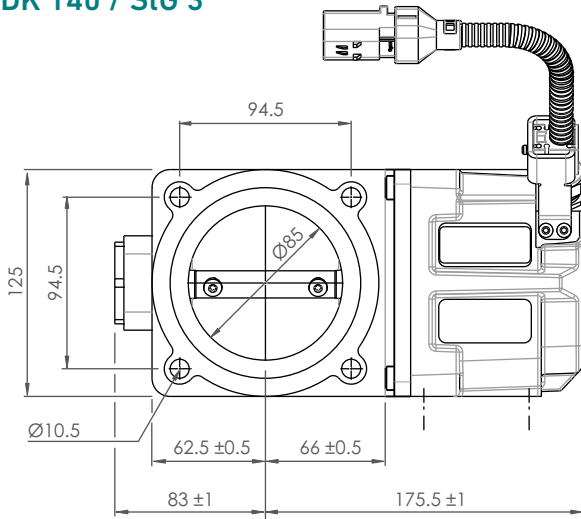
Dimensions

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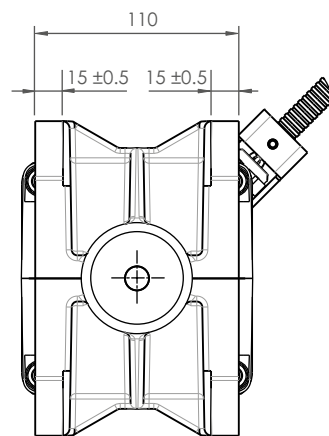
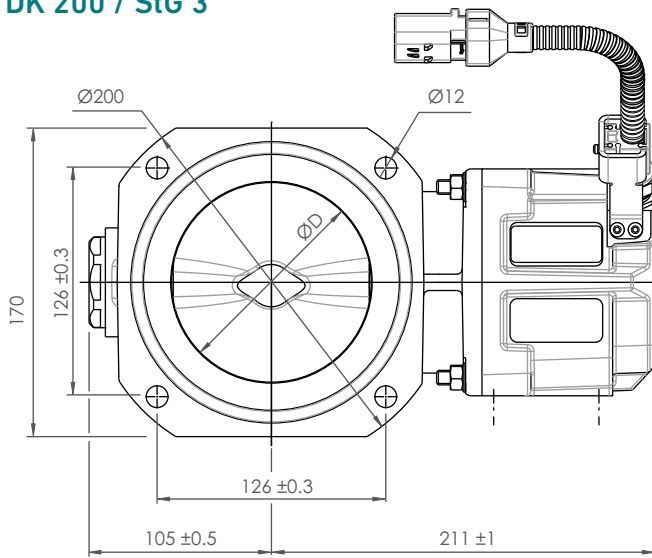
DK 100 - gasket, article no.: 462-24-001-00

DK 140 / StG 3+



DK 140 - gasket, article no.: 463-24-000-00

DK 200 / StG 3+



DK 200 - o-ring, article no.: 001-12-204-00