

JANUS Analogue Positioning Systems

DATA SHEET

Description

The HEINZMANN Positioning Systems are complements of the HEINZMANN Electronic Governors that have proved their efficiency and reliability in decades of service. They can be used directly for a wide range of control applications or in combination with superior control systems for control purposes of any kind.

For this the Analogue Positioning System JANUS supports a great variety of different actuators.

In positioning systems, there is a proportional correlation between the position of the actuator output shaft and an input signal.

The input signal, i.e. the position setpoint for the actuator output shaft is sent via an opto-isolator and a selection switch to an actual/setpoint comparator receiving the actual value from the actuator feedback. Subsequent signal processing is performed by a PID position control circuit.

The position control circuit incorporates a 4-quadrant amplifier by which the actuator can be electrically driven in either direction. This will ensure optimum utilisation of the actuator's rotational force together with very low current consumption in steady state operation which will also reduce heat build-up in the actuator. Moreover response time is shortened to a minimum.

An enable switch has been provided by which the actuator drive can be de-energised completely and manipulated without force in case of blocking.

The feedback signal, i.e. the output shaft position signal, is available either as a current signal or, alternatively, as a voltage signal. It can be used for further processing or for indicating actuator position.

Application range

- ➔ Fuel injection pumps
- ➔ Throttle valves
- ➔ Mixers
- ➔ Any similar control application



Features

Input, alternatively current signal, voltage signal or PWM signal

Low current consumption and heat build-up in steady state

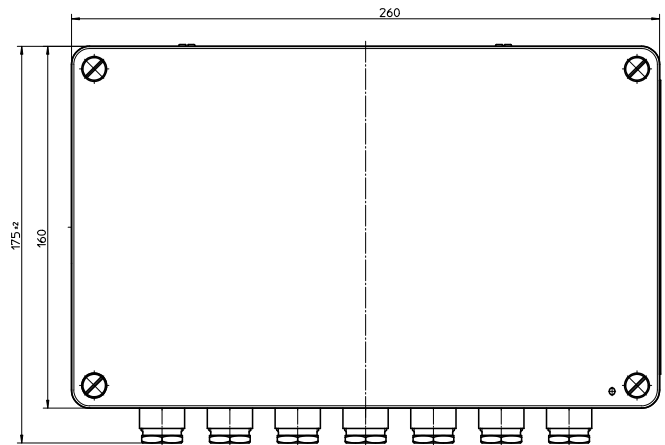
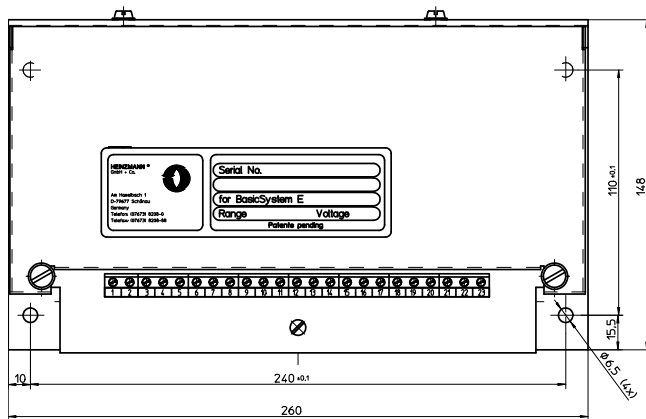
4-quadrant amplifier, ensuring optimum actuating power

Short response time

Current limitation in case of blocking to prevent actuator overheating

Easy separation of the actuator drive from electrical power supply, enabling manipulation of the actuator and linkage without force in case of blocking

Dimensions



Technical data of applicable actuators

Actuators with gears	StG 6-01	StG 6-02V	StG 10-01	StG 16-01	StG 30-01	StG 40-01
Rotation angle actuator shaft	36°	36°	36°	42°	42°	42°
Maximum torque *)	ca. 4 Nm	ca. 6 Nm	ca. 10 Nm	ca. 15 Nm	ca. 28 Nm	ca. 44 Nm
Holding moment	ca. 1.3 Nm	ca. 2 Nm	ca. 3.3 Nm	ca. 5 Nm	ca. 9 Nm	ca. 14.5 Nm
Response time 0 - 100 % without load	ca. 70 ms	ca. 75 ms	ca. 80 ms	ca. 120 ms	ca. 170 ms	ca. 190 ms

Direct working Actuators	StG 2010-01	StG 2040-01	StG 2080-01
Rotation angle actuator shaft	36°	36°	36°
Maximum torque *)	ca. 1.4 Nm	ca. 6.5 Nm	ca. 11 Nm
Holding moment	ca. 0.45 Nm	ca. 2.2 Nm	ca. 4 Nm
Response time 0 - 100 % without load	ca. 45 ms	ca. 50 ms	ca. 60 ms

*) The maximum torque is only provided for a limited period. After 20 seconds the control unit reduces the corresponding actuator current to 50 % of the max. value to prevent overheating (in case of blocking e.g.).

Technical data

Operating voltage	nom. 24 V DC, 0.2 A + actuator currents
Operating range	18 ... 35 V DC
Residual ripple	max. 10 % at 100 Hz
Permissible voltage dip at maximum current load	max. 10 % at control unit
Setpoint setting	0 ... 20 mA an 22 Ω 4 ... 20 mA an 22 Ω 0 ... 200 mA an 3 Ω 0 bis 5 V an 50 k Ω 0 bis 5 V an 50 k Ω PWM-Signal 0 ... 100 % an 2 k Ω
Output signal (position signal) 0 ... 100 %	4 ... 20 mA 1.5 ... 5 V DC
Protection grade	IP 00 IP 55
Permissible ambient temperature	-40° C ... +70° C
Permissible humidity	IP 00: 80 % IP 55: 100 %
Weight	IP 00: ca. 1.2 kg IP 55: ca. 3 kg

Variants

- ➔ With rotation angle 90°:
StG 16.90, StG 30.90 and StG 40.90
- ➔ Explosion-proof designs - Ex „d“:
StG 30.90 and StG 40.90,
StG 2010, StG 2040 and StG 2080
- ➔ Positioner types with integrated electronics available optionally

Certificates

CE, ATEX (see „Variants“)

Subject to alterations.
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