



ISO 9001



Electrohydraulic Actuators for Gas and Air Valves

SKP11...



SKP11... actuator with VGG... gas valve



SKP11... actuator with VGF... gas valve

For supplementary data sheets, refer to «Use»

Electrohydraulic actuators designed for use with VG... gas valves and VL... air valves, delayed opening, rapid closing.

With or without auxiliary switch, low noise level, very low power consumption.

Safety shutoff valves (on / off), suited for the following types of media:

- Natural gas
- Town gas
- Liquid gas
- Air of low pressure

The SKP11... and this data sheet are intended for use by OEMs, which integrate the actuators in their products.

Use

Actuators for safety or emergency shutoff applications in gas networks of heating plant, laboratories or similar, where low **noise levels** are mandatory and where the valves are **continuously open** in normal operation.

In applications that call for very low electrical power consumption.

As safety shutoff actuators in connection with the following types of Landis & Staefa valves:

Type reference	Type of medium	Data sheet
VG...	<ul style="list-style-type: none"> • Natural gas • Town gas • Liquid gas 	7641
VR...	Slightly aggressive biogas	7633
VL...	<ul style="list-style-type: none"> • Cold air • Hot air 	7637

Type summary

Actuators

Mains voltage	Type reference	
	Without auxiliary switch	With auxiliary switch
AC 220...240 V	SKP11.211A27	SKP11.212A27
AC 100...110 V	Not in the range	SKP11.212A17

Valves

Refer to the data sheets listed under «Use».

Warning notes



To avoid injury to persons, damage to property or the environment, the following warning notes should be observed!

It is not permitted to open, interfere with or modify the actuators!

- Before performing any wiring changes in the connection area of the SKP11..., the actuator must be completely isolated from the mains supply!
- Ensure protection against electric shock on the actuator itself and on all electrical connections through appropriate mounting!
- Check wiring and all safety functions!

Mounting notes

- The relevant national safety regulations must be complied with!

Installation notes

- Installation and commissioning work may only be carried out by qualified staff!

Commissioning notes

Presetting of switch I for the «fully open» position

The SKP11... actuators are supplied with microswitch I preset and sealed with a blob of paint. The switching function is used for the «fully open» position of a 1½" Landis & Staefa valve (refer to «Use»).

SKP11... actuators with 1½" and 2" valves

No readjustments are required when using these valve sizes.

However, if valves with a nominal size of **more than 2"** are used with no readjustment, the flow rate will be slightly reduced.



SKP11... actuators with Landis & Staefa valves of 1" or smaller must be readjusted (shorter valve travel)!

Readjustment of switch I for the «fully open» position

Procedure

- Supply power to the SKP11...
- Turn adjusting screw for switch I in clockwise direction until the actuator is «fully open» and the oscillating pump is still running
- Turn adjusting screw I in anti-clockwise direction until the oscillating pump stops (audibly or with the help of an ammeter)
- Turn adjusting screw I another 90° ↶ in anti-clockwise direction

With the smaller valve sizes, the **position indicator** on the actuator does not travel across the full width of the viewing window to reach the «fully open» position.

The valve travel from the «fully closed» to the «fully open» position varies from 11 mm with the smaller valve sizes to 18 mm with the large valves.

Operating notes

In the «fully open» position, piston and stem perform a slow and small movement.

By briefly closing microswitch I and repumping at regular intervals, the actuator readjusts its position.

The return flow «A» closes, thus ensuring a low power consumption of the actuator.

Ordering

When ordering, please give the actuator's type reference.


Example:

SKP11.212A27 On / off actuator
for continuous operation,
with auxiliary switch,
operating on AC 230 V / 50 Hz



Please order the required Landis & Staefa valves as separate items. Actuator and valve are supplied unassembled.

Technical data

Mains voltage	AC 220 -15 %...240 V +10 %	Suitable media	²⁾
	AC 100 -15 %...110 V +10 %	Medium inlet pressure	²⁾
		Perm. medium temperatures	²⁾
Mains frequency	50...60 Hz ±6 %	Flow rate	²⁾
Power consumption in the «fully open» position	3 VA	²⁾ According to the types of valves used (refer to «Use»)	
Power consumption, depending on mains voltage	13.5...18 VA ¹⁾		
¹⁾ Only during the opening action and for short periods of time at cycling intervals (refer to «Operating notes»)		Travel	max. 18 mm
		On time	100 %
		Close time	≤ 0.8 s
		Cyclic travel in operation	approx. 0.6 mm
		Cyclic position readjustment	< 3 x / min.
Cable entry	2 knockout holes for Pg11 cable glands to DIN 46320, Nut with a max. thickness of 3 mm	Weight	approx. 1250 g
Auxiliary switch and switch I for the «fully open» position		Degree of protection	IP54, (when used with a Landis & Staefa valve)
— Switching capacity	6 (2) A, AC 250 V	Opening time for full travel, depending on nominal size	6...12 s ³⁾
— Setting range	4...96 % travel	³⁾ Extended opening time at ambient temperatures below 0 °C, can be compensated for by fitting an AGA63... heating element	
— Switching hysteresis	0.6 mm travel		
Environmental conditions			
Transport	IEC 721-3-2		
Climatic conditions	class 2K2		
Temperature range	-15...60 °C ³⁾	Perm. mounting orientation	from horizontal to vertical with head pointing upward in all positions
Humidity	< 95 % r.h.		
Mechanical conditions	class 2M2		
Operation	IEC 721-3-3		
Climatic conditions	class 3K5	CE conformity	
Temperature range	-15...60 °C ³⁾	According to the directives of the European Union	
Humidity	< 95 % r.h.	Electromagnetic compatibility EMC	
 Condensation, formation of ice and ingress of water are not permitted!		89 / 336 EEC incl. 92 / 31 EEC	
		Directive for gas-fired appliances	90 / 396 EEC

Function

Voltage present at terminal 1:

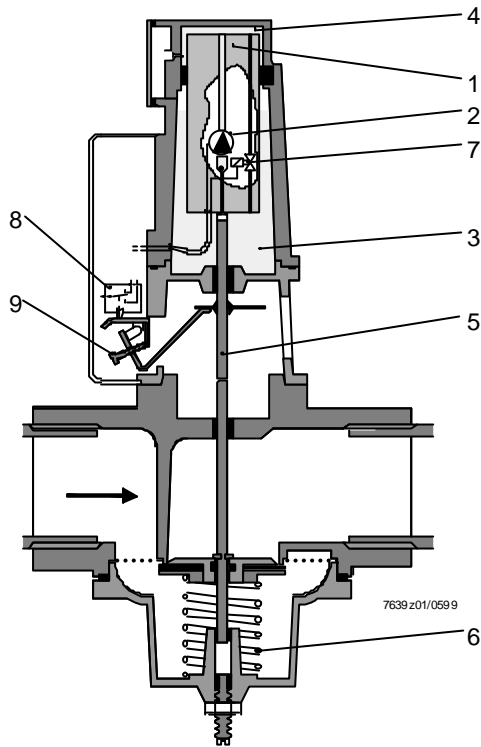
The stem of the SKP11... extends.

The actuator opens until the stem position according to switch I is reached and then maintains that position.

No voltage present at terminal 1:

The stem returns to the «fully closed» position, pushed back by the valve's return spring.

Actuator



The oscillating pump (2) accommodated in the piston (1) pumps oil from the reservoir (3) to the pressure side (4) of the piston.

The piston thrust thus generated acts via the stem (5) on the return spring (6) contained in the valve. The valve will open.

The oil reservoir is connected to the pressure chamber via a return line with a solenoid valve (7) which is open when de-energized.

In normal operation, the solenoid valve is energized, which means that the return line is shut.

In the power supply line to the pump, there is a switch (8) for the «fully open» position which is actuated by a disk on the actuator's stem and a lever.

An adjusting screw (9) is used to set the required stem position at which the contact of the microswitch opens, thus deactivating the oscillating pump and cutting off the supply of oil, but the solenoid valve in the return line remains shut. The actuator maintains that position.

To make use of the maximum opening travel, the microswitch is adjusted such that it switches off the oscillating pump just before the «fully open» position is reached and the piston comes to rest.

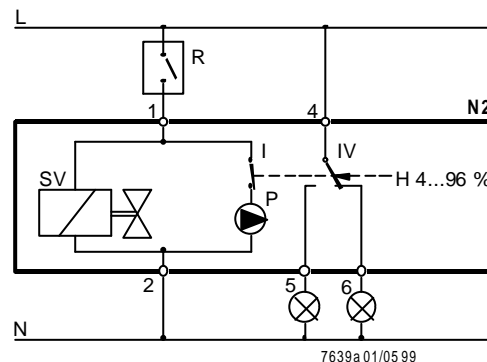
When power to the actuator is cut off, the return spring in the actuator pushes the piston back so that the oil contained in the pressure chamber returns to the reservoir via the return valve.

Assembly of SKP11... and valve (schematically)

Auxiliary switch

Potential-free changeover microswitch of identical design and function as the microswitch (8) located in the power supply line to the oscillating pump, with the same adjustment choices (refer to «Actuator»).

Connection diagram and internal diagram



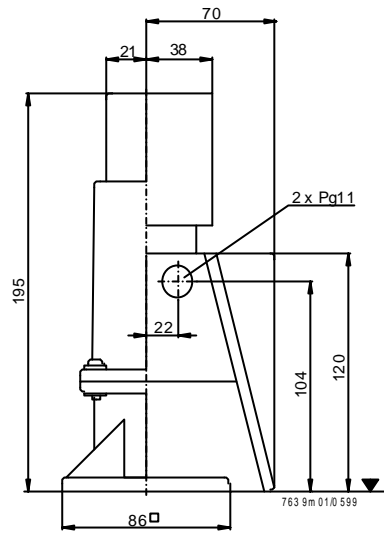
Legend and assignment of connection terminals

I Switch for the «fully open» position, factory-set (refer to «Commissioning notes»)
 IV Potential-free auxiliary switch (refer to «Technical data») Only with actuators using an auxiliary switch (refer to «Type summary»)

H Valve travel
 N2 SKP11... actuator
 P Electrohydraulic pump
 R External controller, switch, etc.
 SV Return valve

Dimensions

Dimensions in mm



▼ Contact surface for the valve