

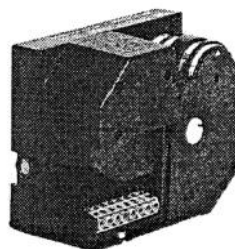
# Air Damper Actuators

for dampers of oil and gas burners

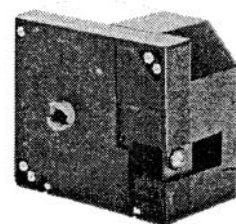
**SQN9...**



FM739



SQN9... (rear,  
covers removed)



SQN9... (front,  
covers fitted)

- Reversible electric actuator with a torque ranging from 0.8 Nm to 2.4 Nm
- Running times from 4 s to 12 s
- Gear train can be disengaged
- Position indication
- Easy-to-adjust limit and auxiliary switches

### Use

Actuators for the control of air dampers of oil or gas burners of small to medium capacity.

There are versions for one-wire, two-wire and modulating control, depending on the type of load controller used (refer to the respective data sheets covering the different types of burner controls).

### Technical Data

Type of current	AC	Limit and auxiliary switches	
Operating voltage and frequency	refer to «Type Summary»	• Rated voltage	AC 24 V...250 V
Drive motor	synchronous motor	• Switching capacity	
Power consumption	8 VA	– under load «on»,	
External prefuse		with no load «off»,	
(to be fitted on site)	6.3 AT	at $\cos \varphi = 0.9$ :	
		– starting current	14 A
		– operating current	2 A
Angular rotation	0...90° max.	– under load «on»,	
Mounting position	optional	under load «off»	
		at $\cos \varphi = 0.9$ :	
Perm. ambient temperature		– starting current	7 A
– Operation	-20...+60°C	– operating current	1 A
– Storage	-50...+60°C		
Direction of rotation	clockwise or anticlockwise	Number of limit change-over switches	2
Running time	4...12 s (refer to «Type summary»)	Number of auxiliary change-over switches	3 max.
		Weight	approx. 550 g

### Type Summary

Diagram no.	Sequence of operations	Direction of rotation <sup>2)</sup>	Running time at 50 Hz <sup>1)</sup> for 90° angular rotation	Nominal / starting torque	AC 220 V -15%... 240 V +10% 50...60 Hz	AC 100 V -15%... 110 V +10% 50...60 Hz
			s	Nm	Type reference	Type reference
S1	F1	anticlockwise	4	0.8	<b>SQN90.140B2799</b>	–
S1	F1	clockwise	4	0.8	<b>SQN91.140B2799</b>	<b>SQN91.140B1799</b>
S1	F1	anticlockwise	12	2.4	<b>SQN90.240B2799</b>	–
S2	F2, F3	anticlockwise	12	2.4	<b>SQN90.220A2799</b>	<b>SQN90.220A1799</b>
S3	F4	anticlockwise	10	2.0	<b>SQN90.350A2799</b>	<b>SQN90.350A1799</b>
S4	F2, F3	anticlockwise	12	2.4	<b>SQN90.203A2799</b>	–
S5	F2, F3	anticlockwise	12	2.4	<b>SQN90.204A2799</b>	–

1) At 60 Hz frequency, the running times are approx. 17 % shorter  
2) When facing the drive shaft and at 0° start position

## Ordering

When ordering, please give type reference according to «Type summary».

## Mechanical Design

The robust casing is made of impact-proof and heat-resistant plastic and accommodates the reversible synchronous motor with the gear train, which can be **disengaged**, the camshaft, the relays (depending on the version) and the cam switch section, which is linked to the connecting terminals via a printed circuit.

Scales next to the cams facilitate the setting of the switching points. A scale at the end of the camshaft indicates the actual position of the shaft.

**Protection against electric shock hazard must be assured through the installation!**

## Internal Diagrams

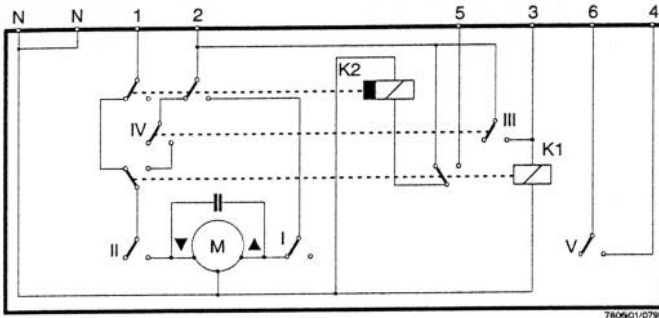


Diagram S1

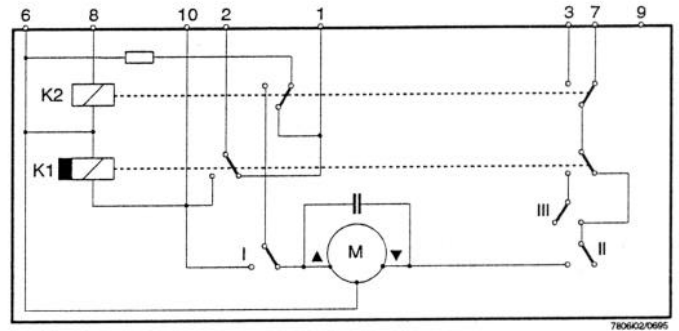


Diagram S2

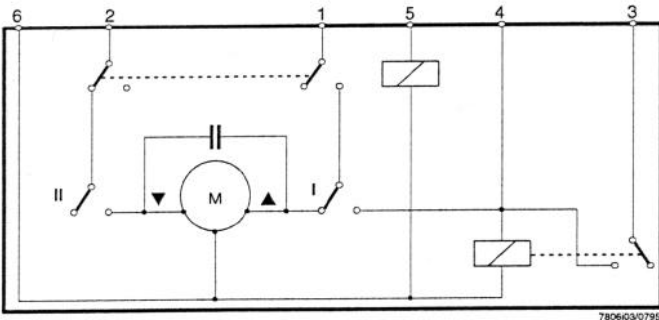


Diagram S3

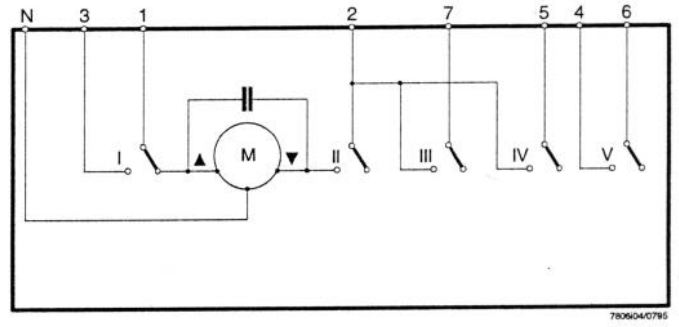


Diagram S4

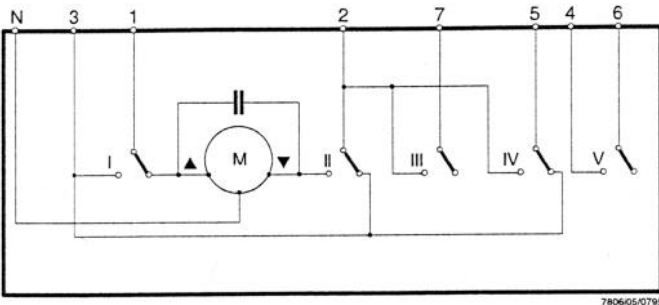
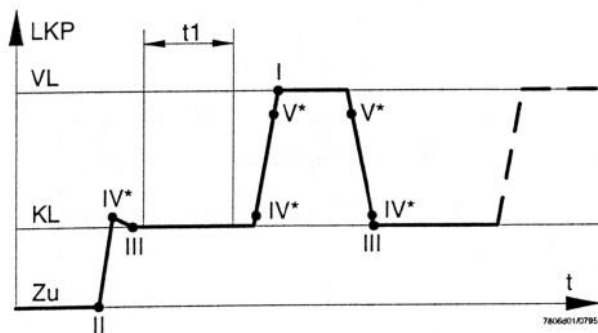
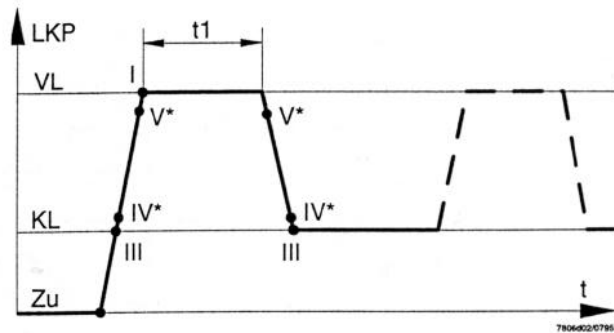


Diagram S5

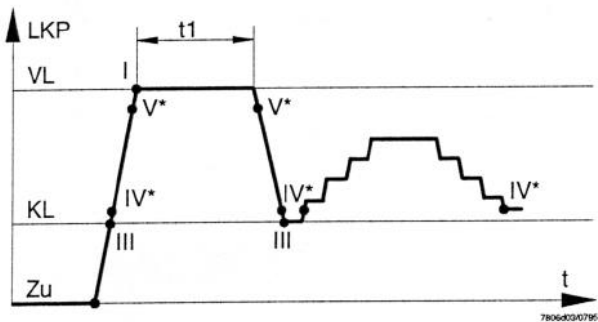
# Sequence of Operations



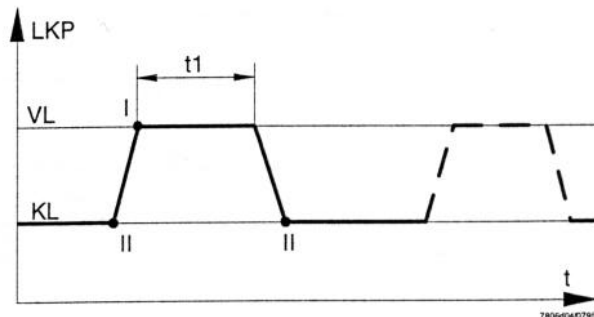
Sequence of operations F1



Sequence of operations F2



Sequence of operations F3



Sequence of operations F4

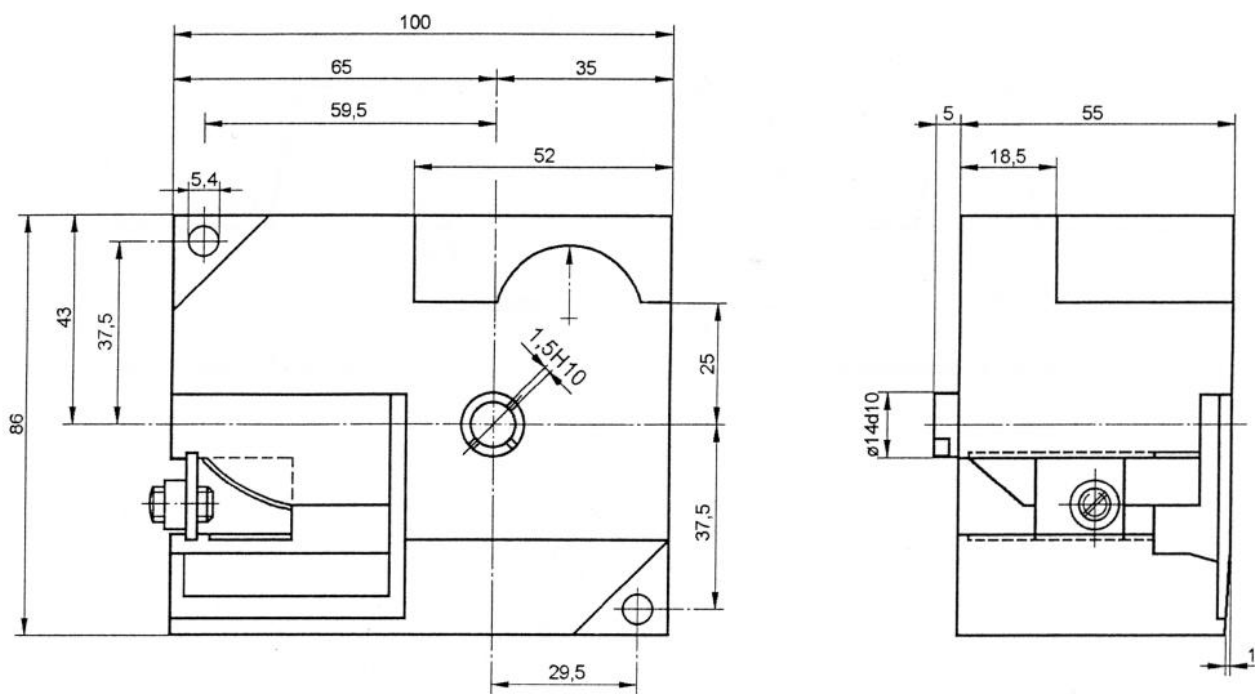
## Legend

- LKP Air damper position
- t Time
- $t_1$  Pre-purge time of burner control
- KL Low-flame
- VL High-flame
- I...V Cam switch or auxiliary changeover switch
- \* Cam switch positions do not apply to diagram S2

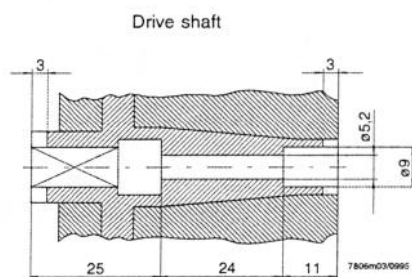
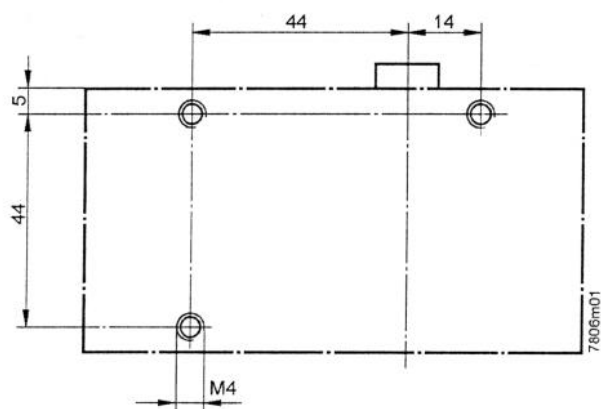
# Dimensions

Dimensions in mm

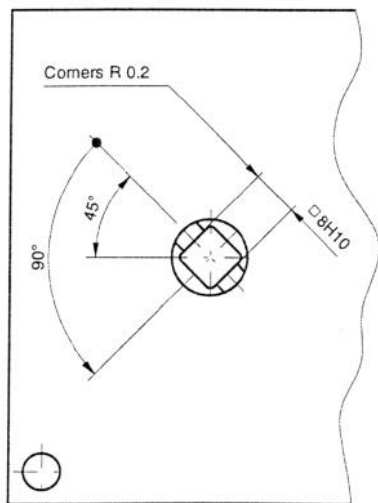
With terminal cover removed



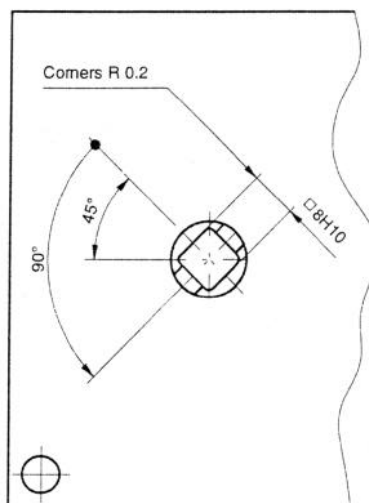
Schematically



SQN90...



SQN91...



Position of drive shaft in 0° start position