

ACTUATOR

LKS 131

FOR AIR DAMPERS ON SINGLE, DUAL STAGE AND  
MODULATING BURNERS

PRODUCT HANDBOOK



APPLICATION

The LKS 131 air damper actuator is designed to be fitted to multi-stage or modulating oil and gas burners with fully closed position.

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# GENERAL

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## DESCRIPTION

A synchronous motor powers an output shaft and a backlash-free cam shaft via a gear reducer.

The cam shaft operates limit and auxiliary switches. The

position at which one of the limit or auxiliary switches operates can be adjusted steplessly within the operating range using the associated cam disc. Spindle-driven cams, which can be adjusted with a screwdriver, are available.

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## FEATURES

Electric actuator up to 0.6 Nm

- Drive times: 3 ... 38 sec.
- Variants:
  - clockwise or counter clockwise rotation
  - with integrated electronic circuitry
  - shaft version
- Internal position indicator
- Easily adjustable limit and auxiliary switches
- Synchronous motor

# TECHNICAL DATA

## SPECIFICATION

### Type overview

counter clockwise rotation <sup>1)</sup>

| Diagram<br><sup>2)</sup> | Shaft<br><sup>3)</sup> | Drive<br>time<br><sup>4)</sup> | Load torque<br><br><sup>5)</sup> | Holding<br>torque | Voltage<br><br><sup>6)</sup> | Type                           | Remarks<br><br><sup>7)</sup>      |
|--------------------------|------------------------|--------------------------------|----------------------------------|-------------------|------------------------------|--------------------------------|-----------------------------------|
| Nr.                      | Nr.                    | s                              | Nm                               | Nm                | V                            |                                |                                   |
| S3                       | 2                      | 5                              | 0,6                              | 0,4               | 230                          | <b>LKS 131-05</b> B 2-5 S3     |                                   |
| S3.1                     | 2                      | 5                              | 0,6                              | 0,4               | 230                          | <b>LKS 131-08</b> B 2-5 S3.1   | Without plug                      |
| S6                       | 2                      | 5                              | 0,6                              | 0,4               | 230                          | <b>LKS 131-09</b> B 2-5 S6     | On/off movement only              |
| S3                       | 2                      | 38                             | 0,6                              | 0,4               | 230                          | <b>LKS 131-12</b> B 2-38 S3    |                                   |
| S8                       | 6                      | 15                             | 0,6                              | 0,4               | 230                          | <b>LKS 131-15</b> B 6-15 S8    | Limit switch and potentiometer 1k |
| S5                       | 6                      | 15                             | 0,6                              | 0,4               | 230                          | <b>LKS 131-16</b> B 6-15 S5    |                                   |
| S20-2                    | 6                      | 38                             | 0,6                              | 0,4               | 230                          | <b>LKS 131-17</b> B 6-38 S20-2 | With special 8 mm shaft           |
| S3                       | 6                      | 5                              | 0,6                              | 0,4               | 230                          | <b>LKS 131-18</b> B 6-5 S3     | With special 8 mm shaft           |

### Legend

- |                                                            |                                                                                 |
|------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1) when viewing from direction A (see dimensional drawing) | 5) under nominal conditions                                                     |
| 2) see "Circuit diagrams"                                  | under extreme conditions (e.g. +60 °C, 230V -15%) the torques will be 25% lower |
| 3) see "Dimensional drawing"                               | 6) +10% -15%; 50...60Hz                                                         |
| 4) at 50 Hz for 90°                                        | at -15%; torque reduced by approx. 20% at undervoltage                          |
| at 60 Hz, Drive times are about 20 % shorter               | 7) Standard: Lever-operated cam                                                 |

### Technical Data

#### Housing

- impact-proof, heat-resistant synthetic material
- Colour: black

#### Drive motor

- reversible synchronous motor

#### Switch point setting

- via stepless cam setting, spindle-driven cam with superimposed scale

#### Position indicator

- via co-rotating scale (under the cover)

#### Connection system

- fixed cable connection with 9-pin plug

#### Gearing

- spur gearing, maintenance-free

#### Output shaft

- standard plastic, interior square 8 mm

#### Fitting and fastening

- Fastened from inside via tapped M 5 through-holes

#### PCBs

- for all electrical functions, increased conductor thickness

#### Mains voltage

- 230 V -15% +10% or
- 110 V -15% +10%

#### Mains frequency

- 50 Hz or 60 Hz

#### Safety class

- II VDE 0631

#### Power consumption

- approx. 9 VA

#### Duty cycle

- 50% in 2 minutes

#### Interference suppression

- N (according to VDE 0785)

#### Actuating angle

- max. 90°

#### Mounting position

- any

#### Protection

- IP40, with appropriate design of the cable entries and screw fastening (DIN 40050)

#### Cable connection

- via 9-pin AMP socket connector

#### Direction of rotation

- see "Type overview"

#### Torque and holding torque

- see "Type overview"

#### Drive times

- 5, 15, 38 sec. for 90°

#### Limit and auxiliary switches

- max. 7  
operation with adjustable cam discs, cams coloured in normal way:
  - blue fully closed position
  - orange low load
  - red high load
  - black spare switches for additional functions
- switching voltage  
AC 24....230 V
- switching capacity  
with inductive loads 250 VA

#### Ambient temperature

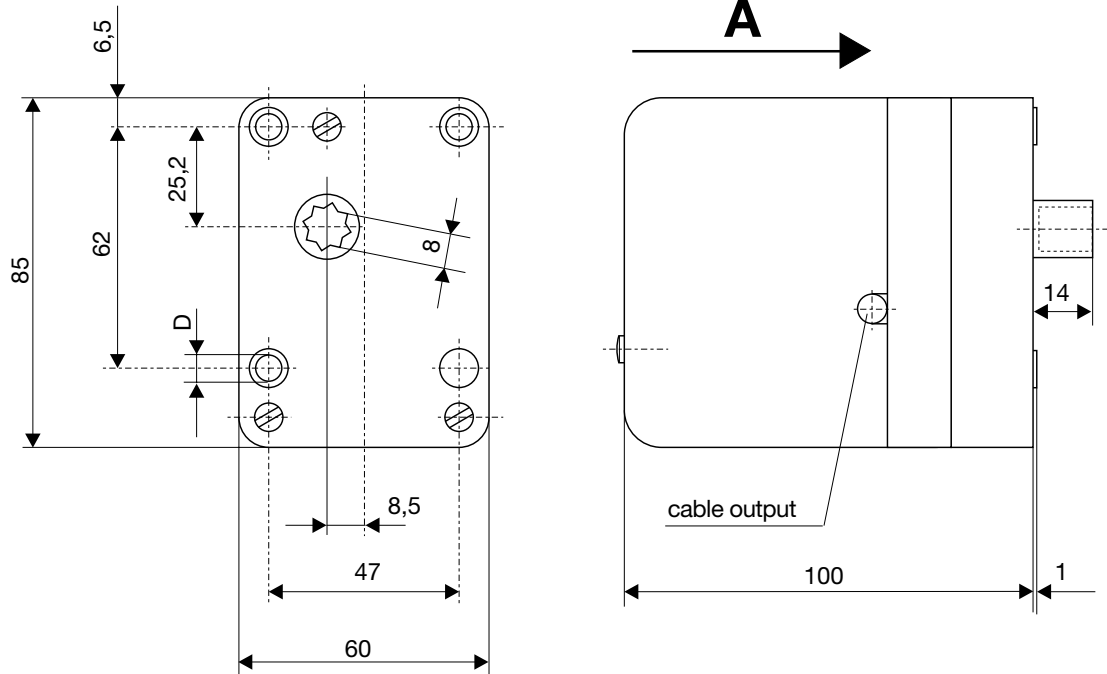
- operation 0 ... +60° C
- transport and storage -20 ... +60° C

#### Condensation, icing and exposure to water not permitted

#### Weight

- approx. 500 g

## DIMENSIONAL DRAWING



D) Fixing hole  
through-hole 5,3 mm inside dia

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# INSTALLATION AND OPERATION

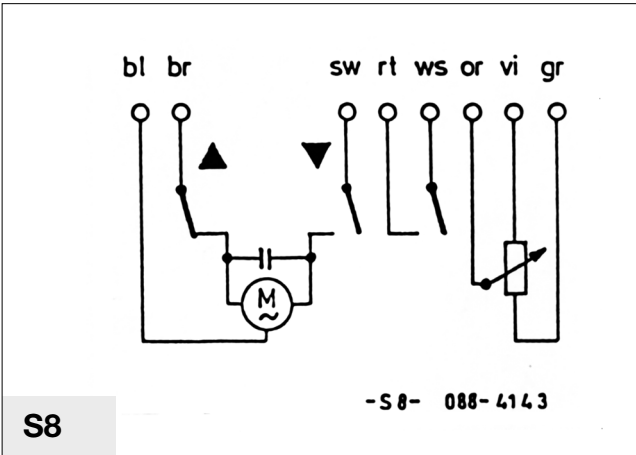
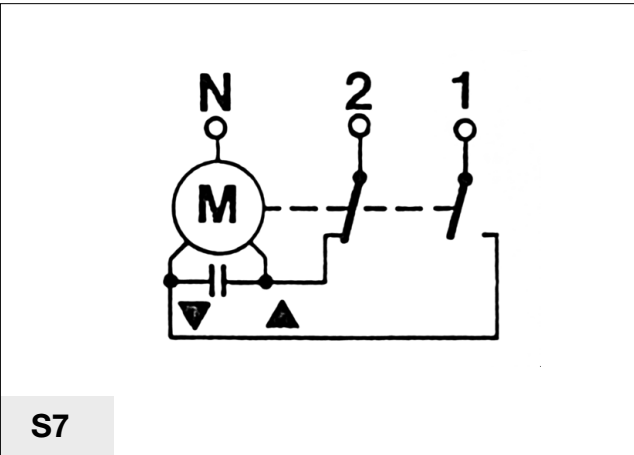
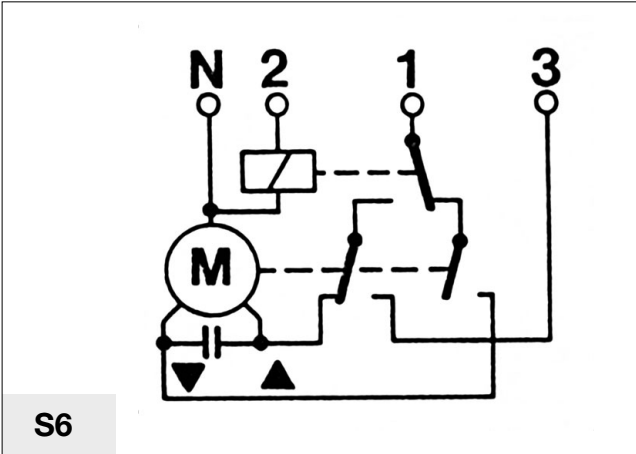
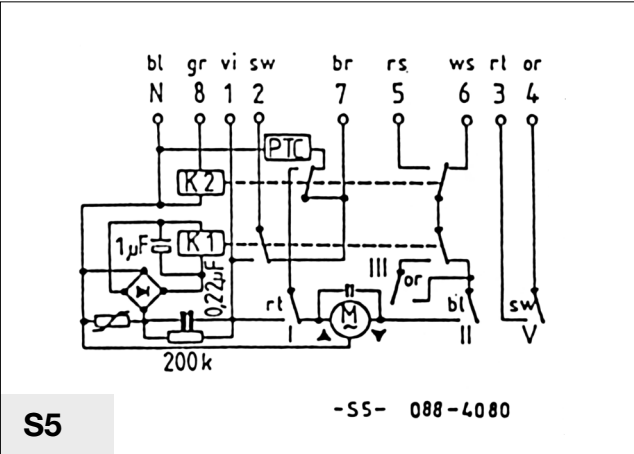
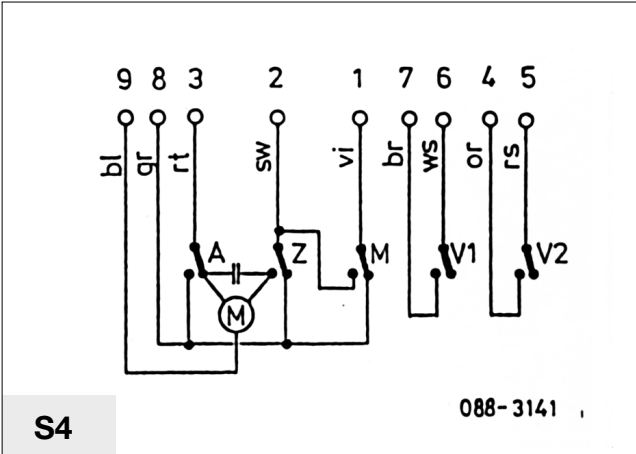
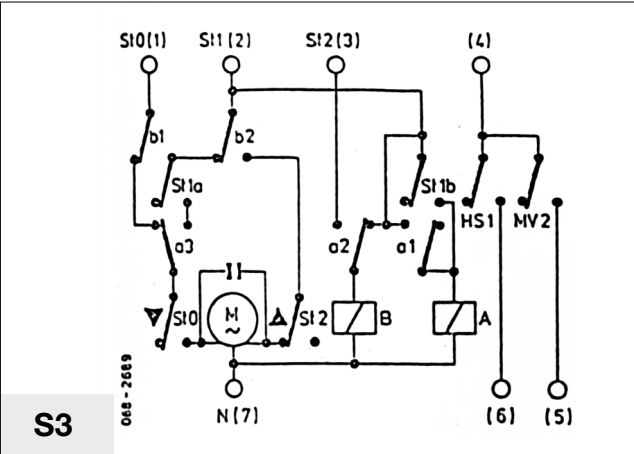
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## INSTALLATION AND FINAL CHECKOUT

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- The regulations and standards applicable in each particular case must be observed.
- Installation and commissioning must only be carried out by qualified technicians.
- Electrical wiring must comply with national and local regulations.
- Always lay the burner ignition cable separately and as remotely as possible from the device and other cables.
- Carefully check all cabling and wiring prior to commissioning.
- Disconnect the actuators completely from the power supply when working close to terminals and connections.
- Screw the housing cover securely in place to provide shock-hazard protection on the actuator and all electrical connections.
- Electromagnetic emissions must be checked on a case by case basis.

CIRCUIT DIAGRAMS



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# VARIOUS

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## STANDARDS AND APPROVALS

### Conformity

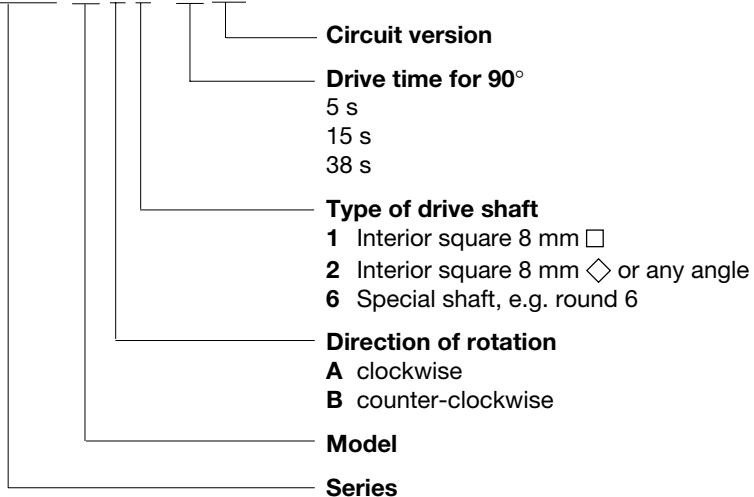
- In accordance with EU Directives 73/23/EU and 93/68/EU. Conforms to  
EN 60730 – 1 : 1991 A1 and A11 : 1991  
EN 60730 – 2 – 5 : 1991

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## ORDERING INFORMATION

Not for creation of new type

### **LKS 131-09 B 2 - 38 S3**



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## ACCESSORIES

Special versions with potentiometer on request