

ACTUATOR

LKS 170

FOR AIR DAMPERS ON SINGLE, DUAL STAGE AND
MODULATING BURNERS

PRODUCT HANDBOOK



APPLICATION

The LKS 170 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

DESCRIPTION

A synchronous motor powers an output shaft and a 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.

FEATURES

Electric actuator up to 2.8 Nm

- **Drive times: 5 ... 30 sec.**
- **Variants:** - clockwise or counter clockwise rotation
 - with integrated electronic circuitry
 - shaft version
- **Output shaft, can be decoupled**
- **Particularly slim housing, output perpendicular to the housing**
- **Position indicator**
- **Easily adjustable limit and auxiliary switches**
- **Synchronous motor**

TECHNICAL DATA

SPECIFICATION

Type overview

Clockwise rotation ¹⁾

Diagram 2)	Shaft 3)	Drive time 4)	Load torque 5)	Holding torque	Voltage 6)	Type	Remarks
Nr.	Nr.	s	Nm	Nm	V		
S2	1	13	2,4	1,3	230	LKS 170-06 A 1-13 S2	
S2	1	5	1,2	1,0	230	LKS 170-07 A 1-5 S2	
S3	1	5	1,2	1,0	230	LKS 170-08 A 1-5 S3	

Counter-clockwise rotation ¹⁾

Diagram 2)	Shaft 3)	Drive time 4)	Load torque 5)	Holding torque	Voltage 6)	Type	Remarks
Nr.	Nr.	s	Nm	Nm	V		
S2	1	5	1,2	1,0	230	LKS 170-02 B 1-5 S2	
S2	1	13	2,4	1,3	230	LKS 170-11 B 1-13 S2	
S3	1	5	1,2	1,0	230	LKS 170-12 B 1-5 S3	

Legend

- 1) when viewing from direction A (see dimensional drawing)
- 2) see "Circuit diagrams"
- 3) see "Dimensional drawing"
- 4) at 50 Hz for 90°
at 60 Hz, Drive times are about 20 % shorter

- 5) under nominal conditions
under extreme conditions (e.g. +60 °C, 230V -15%) the torques will be 25% lower
- 6) +10% -15%; 50...60Hz
at -15%; torque reduced by approx. 20% at undervoltage

Technical Data

Housing

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

Drive motor

- reversible synchronous motor

Clutch

- the gear can be separated from the engine by turning a 3mm Allen key 30°.

Switch point setting

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

Position indicator

- via co-rotation scale

Connection system

- fixed cable connection with 9-in plug, cable outlet either straight or from the side

Gearing

- spur gearing, maintenance-free

Drive shaft

- Standard plastic, interior square 8 mm, output shaft is perpendicular to the device

Fitting and fastening

- fastened with 2 M 5 screws

PCBs

- for all electrical functions, increased conductor thickness

Mains voltage

- 230 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

- IP 00, housing partly open via snap hook (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, 10, 13, 15, 26, 30 sec for 90°

Limit and auxiliary switches

- max. 5 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

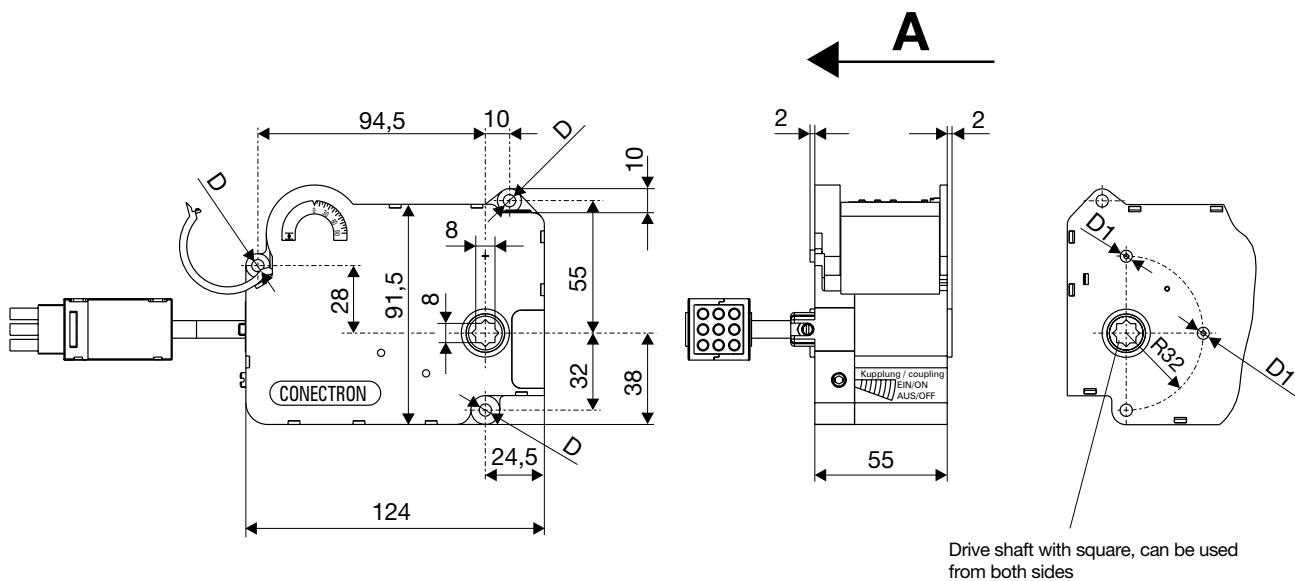
- operation 0 ... +60° C
- transport and storage -20 ... +60° C

Condensation, icing and exposure to water not permitted

Weight

- approx. 500 g

DIMENSIONAL DRAWING



D) Fixing hole through-hole 5,1 mm inside dia

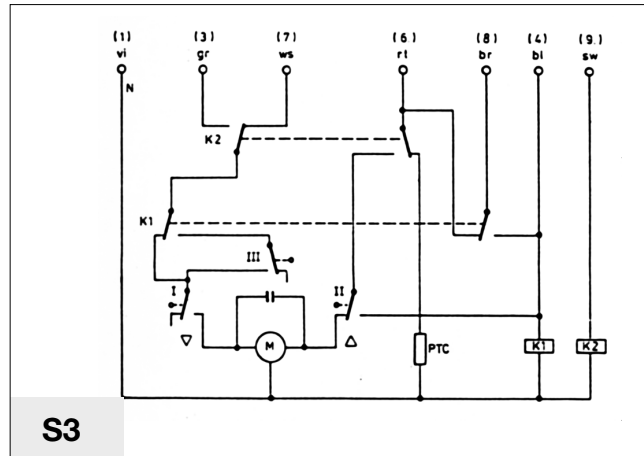
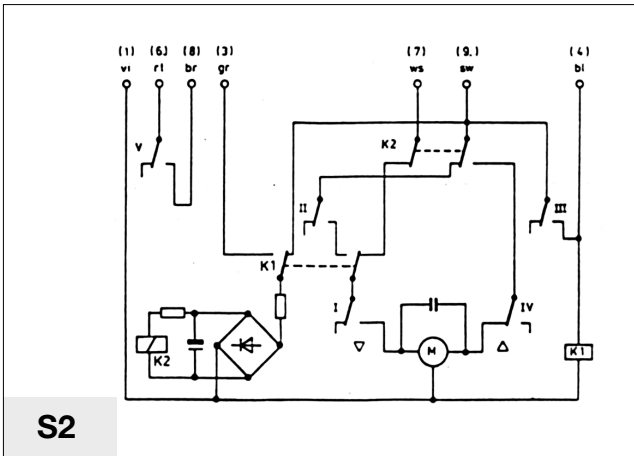
D1) Centering burrs 5,0 mm inside dia

INSTALLATION AND OPERATION

INSTALLATION AND FINAL CHECKOUT

- 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.
- Electromagnetic emissions must be checked on a case by case basis.

CIRCUIT DIAGRAMS



VARIOUS

STANDARDS AND APPROVALS

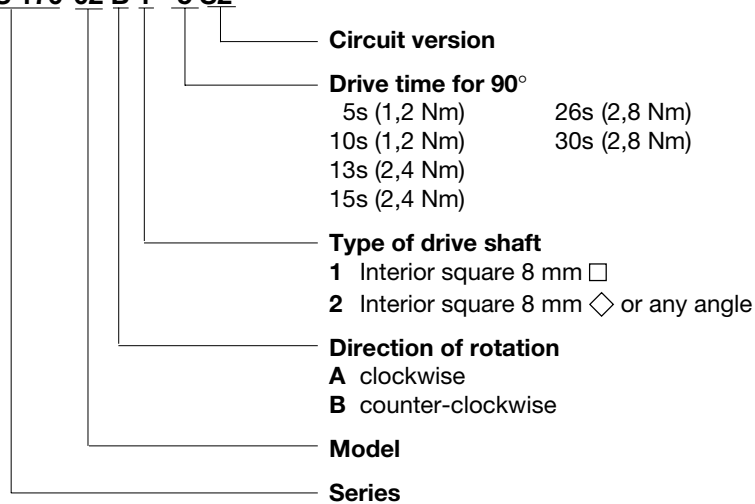
Conformity

- 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

ORDERING INFORMATION

Not for creation of new type

LKS 170-02 B 1 - 5 S2



ACCESSORIES

Potentiometer - retrofit set can be supplied as an insert, Ohmic value approx. 1k at an angle of rotation of 90° on the output shaft.

Cable length approx. 50 cm.

Order no: ZPN 170 - 01

Honeywell

Honeywell Burner & Boiler Control Europe

Satronic AG

Honeywell-Platz 1

CH-8157 Dielsdorf

Switzerland

Phone +41 1 855 22 11

Fax +41 1 855 22 22