

Alfa Laval Unique Control

Butterfly valves

Introduction

The Alfa Laval Unique Control is a maintenance-free actuator with integrated control unit for most of Alfa Laval LKB Butterfly Valves. Reliable and straightforward, this automation solution complements the range of Alfa Laval actuators and control units, making it easy to upgrade existing installations. Highly durable, this actuator has been tested to perform above one million strokes and is compatible with all major programming logic controller (PLC) systems.

Application

This intelligent, hygienic actuator is designed for superior flow control in dairy, food, beverage, brewery, biotech, pharmaceutical and many other industries.

Benefits

- A single, integrated automation solution for Alfa Laval LKB Butterfly Valves
- Highly durable, reliable, all-in-one actuator
- Simplified auto setup for butterfly valve control
- Clearly visible 360° LED indication of valve operation
- Easy upgrade for manual and automated butterfly valves

Standard design

The Alfa Laval Unique Control actuator for butterfly valves is an intelligent sensing and control unit engineered as a single, integrated unit. It is available with a digital or AS-Interface. The actuator comes with a matching bracket kit for mounting on butterfly valves in sizes 1" - 4" or DN25 - DN100.

Working principle

The Alfa Laval Unique Control LKB actuator uses an air spring, enabling operation at a significantly lower air pressure than using a conventional mechanical spring. A single push of a button enables the actuator to perform easy, onsite self-configuration and calibration tasks according to the operating air pressure provided. The actuator also monitors the operating air pressure and will send alerts about issues that require attention in order to prevent any malfunctions, ensuring more uptime.



TECHNICAL DATA

Actuator

Max. air pressure:	800 kPa (8 bar)
Min. air pressure:	300 kPa (3 bar)
Working temperature:	See pd sheet for LKB/LKB-F
Ambient temperature:	-5°C to +60°C
Protection class:	IP66 and IP67
Air consumption (liters free air):	0.8 x p (bar)

Communication

Option 1:	
Interface:	Digital
Supply voltage:	24 VDC ± 10%
Option 2:	
Interface:	AS-Interface v2.1, 31 node
Supply voltage:	29.5V - 31.6 VDC
Slave profile:	7.F.F.F
Default slave address:	0
Option 3:	
Interface:	AS-Interface v3.0, 62 node
Supply voltage:	29.5V - 31.6 VDC
Slave profile:	7.A.7.7
Default slave address:	0

Sensor board

Power supply:	24 VDC, 1 W
Feedback signal #1:	De-energized valve
Feedback signal #2:	Energized valve
Feedback signal #3:	Pressure alert
Valve tolerance band:	Auto setup

PHYSICAL DATA

Materials

Actuator body:	Black Nylon PA 12 (composit)
Steel parts:	1.4301 (304) and 1.4404 (316)
Seals:	NBR

Compatible valves

LKB ISO:	25, 38, 51, 63.5, 76.1 and 101.6
LKB-2:	DN 25, 32, 40, 50, 65, 80 and 100

Cable connection

Main cable gland:	PG9 (ø4 - ø8 mm)
Max. wire diameter:	1.0 mm ² (AWG 18)

Solenoid valve

Supply voltage:	24 VDC ± 10%, 1 W
Air supply:	300-800 kPa (3-8 bar)
Type of solenoid:	4/2-ways
Number of solenoids:	1
Manual hold override:	Yes
Push-in fittings:	6 mm or 1/4"
Air quality:	Class 3,3,3 acc. DIN ISO 8573-1

Availability

The Unique Control is available with a digital or AS-Interface 31 and 62 node. Depending on the valve size, the matching bracket kit ordered together with the Unique Control allows it to be mounted on any butterfly valve size 1" through 4" (DN25 -DN100).

Options

Bracket kit 1" to 4" (One kit for each valve size).



Note! For further information: See also instruction manual ESE02126. Only to be mounted on LKB/LKB-F with welding ends

Electrical connection

Digital interface
Sensor board
Terminal strip

Internal connection	Solenoid	1
	Solenoid common	2
Power supply	Supply 24 VDC	3
	Supply 0 VDC	4
PL input signals	De-Energized valve	5
	Energized valve	6
	Pressure Alarm	7
PL output signals	Solenoid valve	8

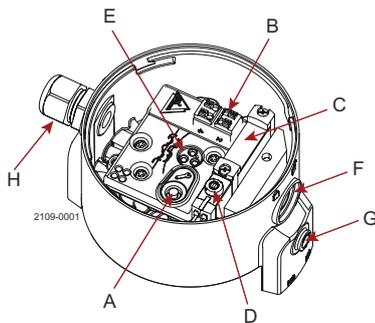
S-interface 31/62 node
Sensor board
Terminal strip

Internal connection	Solenoid	1
	Solenoid common	2
Bus cable	ASI +	3
	ASI -	4

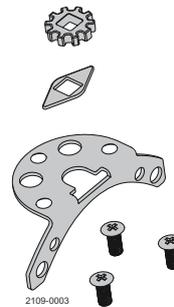
AS-Interface bits assignment

DI0	Feedback #1 De-Energized valve
DI1	Feedback #2 Energized valve
DI2	Feedback #3 NC
DI3	Feedback #4 pressure alarm
DO0	Out #1 NC
DO1	Out #2 Solenoid valve
DO2	Out #3 NC
DO3	Out #4 NC

Basic Design



- A. Push and play
- B. Terminal strip
- C. Solenoid valve
- D. Manuel hold override
- E. LED indications
- F. Gore venting membrane
- G. Push-in fittings
- H. Cable gland entry

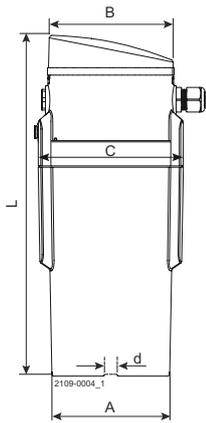


Bracket kit
changeable coupling
supporting 1" to 4" LKB valves

Actuator performance

Bar	Torque Nm
3	44
4	60
5	76
6	90
7	104
8	118

Dimensions (mm)



Size	25-63.5m DN25-50	76mm DN65-80	101.6mm DN100
øA	90	90	90
øB	97	97	97
C	111	111	111
L	263	263	263
d	8	10	12
Weight (kg)	1.6	1.6	1.6

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