



# Intelligent Reliability

## Alfa Laval Unique Control for Butterfly Valve

### Concept

Unique Control for butterfly valves is an actuator with integrated automation for all sizes of LKB butterfly valves. Unique Control is a hygienic, reliable solution with focus on simplicity. The Unique Control is a compliment to our existing range of actuators and control units and it provides the opportunity to upgrade existing installation. Unique Control is compatible with all major PLC systems. It is for use in food, dairy and brewery installations and in biopharmaceutical applications

### Working Principle

The Unique Control uses an air spring allowing operation at a significantly lower air pressure compared to a conventional mechanical spring. The integrated intelligent automation will by a one bottom push perform a self configuration involving valve size recognition as well as calibration to the provided operating air pressure. The actuator is designed for easy onsite configuration as either normally open (NO) or normally closed (NC). The maintenance free but serviceable actuator design is tested to perform above one million strokes. The Unique control has a 360 deg. indication light for visual status. It also provides the opportunity to monitor status of the operating air pressure identifying air leakage or failing air pressure.



### TECHNICAL DATA

#### Actuator

Max. air pressure . . . . . 116 PSI (8 bar)  
 Min. air pressure . . . . . 43.5 PSI (3 bar)  
 Working temperature . . . . . See pd sheet for LKB/LKB-F  
 Ambient temperature . . . . . 23°F to 140°F  
 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 (ø0.16 - ø0.31 in.)  
 Max. wire diameter . . . . . 0.0016 inch<sup>2</sup> (AWG 18)

#### Solenoid valve

Supply voltage . . . . . 24 VDC ± 10%, 1 W  
 Air supply . . . . . 43.5-116 psi (3-8 bar)  
 Type of solenoid . . . . . 4/2-ways  
 Number of solenoids . . . . . 1  
 Manual hold override . . . . . Yes  
 Push-in fittings . . . . . 0.24 inch or 1/4"

### 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" .

### Options

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

### Note

For further information: See also instruction manual ESE02126

### 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
PLC input signals	{	De-Energized valve	5
		Energized valve	6
		Pressure alarm	7
PLC output signal	{	Solenoid valve	8

#### AS-interface 31/62 node

##### Sensor board

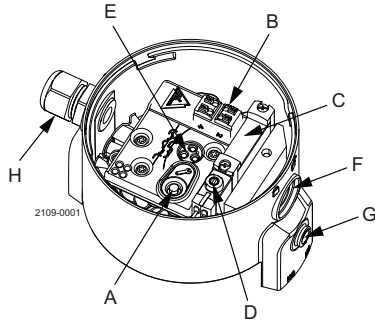
##### Terminal strip

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

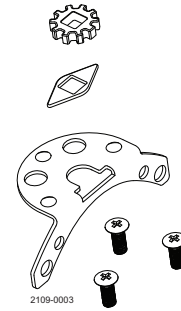
### AS-Interface bits assignment

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. Manual hold override
- E. LED indications
- F. Gore venting membrane
- G. Push-in fittings
- H. Cable gland entry

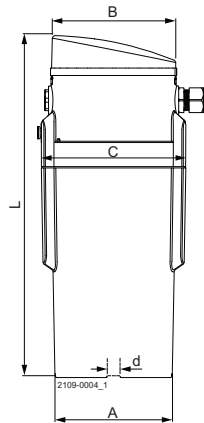


Bracket kit  
changeable coupling  
supporting 1" to 4" LKB valves

## Actuator performance

Bar	Torque lbf-ft
43.5	32.5
58.0	44.3
72.5	56.1
87.0	66.4
101.5	76.7
116.0	87.0

## Dimensions



Size	1-2½"	3"	4"
øA	3.54	3.54	3.54
øB	3.82	3.82	3.82
C	4.37	4.37	4.37
L	10.35	10.35	10.35
d	0.31	0.39	0.47
Weight (lb)	3.53	3.53	3.53

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