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 p. sheet for LKB/LKB-F
Ambient temperature ............. 20°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 50 .............. 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 inch² (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

<table>
<thead>
<tr>
<th>Internal connection</th>
<th>Solenoid</th>
<th>Solenoid common</th>
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<tbody>
<tr>
<td>Power supply</td>
<td>Supply 24 VDC</td>
<td>Supply 0 VDC</td>
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<tr>
<td>PLC input signals</td>
<td>De-Energized valve</td>
<td>Energized valve</td>
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<tr>
<td>PLC output signal</td>
<td>Pressure alarm</td>
<td>Solenoid valve</td>
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</table>

AS-Interface 31/62 node
Sensor board
Terminal strip

<table>
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<tr>
<th>Internal connection</th>
<th>Solenoid</th>
<th>Solenoid common</th>
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</thead>
<tbody>
<tr>
<td>Bus cable</td>
<td>ASI +</td>
<td>ASI -</td>
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</table>

AS-Interface bits assignment

DI0 Feedback #1 De-Energized valve
DI1 Feedback #3 Energized valve
DI2 Feedback #5 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

<table>
<thead>
<tr>
<th>Bar</th>
<th>Torque lb-ft</th>
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<tbody>
<tr>
<td>43.5</td>
<td>32.5</td>
</tr>
<tr>
<td>58.0</td>
<td>44.3</td>
</tr>
<tr>
<td>72.5</td>
<td>56.1</td>
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<tr>
<td>87.0</td>
<td>66.4</td>
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<tr>
<td>101.5</td>
<td>76.7</td>
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<td>116.0</td>
<td>87.0</td>
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Dimensions

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<tr>
<th>Size</th>
<th>1.25&quot;</th>
<th>3&quot;</th>
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<tbody>
<tr>
<td>øA</td>
<td>2.54</td>
<td>2.94</td>
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<tr>
<td>øB</td>
<td>3.82</td>
<td>3.82</td>
<td>3.82</td>
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<tr>
<td>C</td>
<td>4.37</td>
<td>4.37</td>
<td>4.37</td>
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<tr>
<td>L</td>
<td>10.35</td>
<td>10.35</td>
<td>10.35</td>
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<tr>
<td>d</td>
<td>0.31</td>
<td>0.39</td>
<td>0.47</td>
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<tr>
<td>Weight (lb)</td>
<td>3.53</td>
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