SERVO-DRIVE for AVENTOS
Opens and closes automatically

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Opening and Closing Lift Systems in an Effortless Way

AVENTOS lift systems open with just a light touch – and then close again with the press of a button. An inspiring feature that is certain to impress, thanks to SERVO-DRIVE for AVENTOS, the electrical opening support for lift systems.
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SERVO-DRIVE for AVENTOS

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A light touch on the front using your hand or elbow is all that’s required to open doors with SERVO-DRIVE for AVENTOS.

Even large and heavy doors open effortlessly. For the user, this means easy access to the cabinet interior.

Comfortable and easy closing
Provided by the easy to reach switch on the cabinet side.

This enables the doors to close easily and ergonomically. The proven BLUMOTION function also ensures silent and effortless closing.
The Focus is on the User

Completely safe – even when closing
Even when the switch has just been pressed for closing – the closing procedure is halted immediately if the user again reaches into the cabinet and/or an object is placed between the cabinet and the door.

Completely under control
Even though lift systems open and close automatically, the motion can be interrupted at any time. In addition, lift systems with SERVO-DRIVE for AVENTOS can also be easily opened and closed manually at anytime, e.g. when there is a power outage.

Completely synchronized
Up to three drive units can be set for synchronized motion. Synchronization is ideal for multiple cabinets that share one wide door.

Collision avoidance
For corner applications, it is especially important that lift system fronts do not open simultaneously. Thanks to the “collision avoidance” function, you can set drive units so that only one front opens at a time.
Overview of Components

Lift mechanism
Blum distance bumper
Power supply and wall mount bracket
Cabling
Drive unit
Cover plate
SERVO-DRIVE switch
After lift mechanism installation and adjustment, SERVO-DRIVE components are attached to the lift mechanism and cabinet.

**Lift mechanism**
- SERVO-DRIVE-compatible lift mechanism with tool-free attachment of the drive unit. Please see AVENTOS brochure (LIT.1000) for more details.

**Drive unit**
- Attaches to the left lift mechanism
- Tool-free attachment
- Same drive unit used for AVENTOS lift mechanisms HF, HS and HL
- Drive unit with adapter plate for AVENTOS HK lift mechanism
- Additional setting features for synchronization and collision avoidance

**Cover plate**
- Covers the lift mechanism and drive unit
- Extendable to an internal depth of 350 mm to cover the universal cable

**SERVO-DRIVE switch**
- Attaches to both cabinet sides
- Wireless connection to the drive unit
- Frequency 2.4 GHz
- Certified for use worldwide

**Blum distance bumper**
- Distance bumpers ensure the required trigger path of 2 mm

**Cabling**
- Proven cabling components such as the SERVO-DRIVE universal cable, cable connectors and cable end protectors
- Easy, practically tool-free cabling

**Power supply**
- Proven SERVO-DRIVE power supply

**Wall mount bracket for power supply**
- For secure mounting

**Additional components for AVENTOS HS and HL**
- Cross stabilizer (new length and configuration)
- Modified lever activation
- Repositioned screw locations for lift mechanism mounting

Please see the AVENTOS brochure (LIT.AVT1000) for all other lift system components.
SERVO-DRIVE set

A Set includes:
- Drive unit
- 60” universal cable
- Cable connector
- Cable end protector (qty 2)

Part no.
SERVO-DRIVE set 21FA000

Cover set

B Set includes:
- SERVO-DRIVE cover plate (left)
- Cover plate (right)
- Non-handed cover cap (qty 2)
- SERVO-DRIVE switches (qty 2)
- Ø5 mm Blum distance bumper (qty 6)
- Color: gray

Part no.
Cover set 21F8000 NA

NOTE: For additional AVENTOS HF components and installation instructions, please see AVENTOS brochure (LIT. AVT1000)
Ordering Information

SERVO-DRIVE for AVENTOS HS

NOTE: For additional AVENTOS HS components and installation instructions, please see AVENTOS brochure (LIT. AVT1000)

SERVO-DRIVE set

A Set includes:
- Drive unit
- 60" universal cable
- Cable connector
- Cable end protector (qty 2)

Part no. 21FA000

Cover set

B Set includes:
- SERVO-DRIVE cover plate (left)
- Cover plate (right)
- Non-handed cover cap (qty 2)
- SERVO-DRIVE switches (qty 2)
- Ø5 mm Blum distance bumper (qty 4)
- Color: gray

Part no. 21S8000.NA

Arm assembly set

C Set includes:
- SERVO-DRIVE arm assembly (left)
- Standard arm assembly (right)
- Stabilizer rod cover cap (qty 2)

NOTE: Stabilizer rod cutting dimension for SERVO-DRIVE application is length = interior cabinet width minus 164 (6-7/16")

Part no. 21S3500.01

D Power Supply Set - see page 12

Dimensions in millimeters (inch equivalents as noted) © 2016 Blum, Inc. 9
### Ordering Information

#### SERVO-DRIVE set

**A** Set includes:
- Drive unit
- 60" universal cable
- Cable connector
- Cable end protector (qty 2)

Part no. **21FA000**

**NOTE:** For additional AVENTOS HL components and installation instructions, please see AVENTOS brochure (LIT. AVT1000)

#### Cover set

**B** Set includes:
- SERVO-DRIVE cover plate (left)
- Cover plate (right)
- Non-handed cover cap (qty 2)
- SERVO-DRIVE switches (qty 2)
- Ø5 mm Blum distance bumper (qty 4)
- Color: gray

Part no. **21L8000.NA**

#### Arm assembly set

**C** Set includes:
- SERVO-DRIVE arm assembly (left)
- Standard arm assembly (right)
- Stabilizer rod cover cap (qty 2)

**NOTE:** Stabilizer rod cutting dimension for SERVO-DRIVE application is length = interior cabinet width minus 164 (6-7/16”)

<table>
<thead>
<tr>
<th>Cabinet height</th>
<th>Part no.</th>
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</thead>
<tbody>
<tr>
<td>300 to 349</td>
<td><strong>21L3200.01</strong></td>
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<tr>
<td>350 to 399</td>
<td><strong>21L3500.01</strong></td>
</tr>
<tr>
<td>400 to 550</td>
<td><strong>21L3800.01</strong></td>
</tr>
<tr>
<td>450 to 580</td>
<td><strong>21L3900.01</strong></td>
</tr>
</tbody>
</table>

D Power Supply Set - see page 12
NOTE: For additional AVENTOS HK components and installation instructions, please see AVENTOS brochure (LIT. AVT1000)
SERVO-DRIVE switch

For adding additional activation switches to a SERVO-DRIVE for AVENTOS application.

- Up to six switches can be added per drive unit

NOTE: A switch can only be synchronized to one drive unit

Part no. 21P5020

SERVO-DRIVE power supply components

Supplies power to the drive units

- Energy Star Certified
- UL certified
- Can power up to 16 drive units
- Connect to switched GFCI outlet
- Cable length is six feet

NOTE: Three-prong power cord required

Part no. Z10NE020G

Three-prong power cord Z10M200U

Power supply set

Set includes:
- Power supply
- Wall mount bracket
- Three-prong power cord
- Cable connector
- Cable end protector (qty 3)
- Cable clips (qty 10)
- 19 feet universal cable
- Technical information

Part no. Z10NE02UG10

Output specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Output voltage</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Output power max.</td>
<td>72 W</td>
</tr>
<tr>
<td>Minimum load</td>
<td>None</td>
</tr>
<tr>
<td>Load regulation</td>
<td>2%</td>
</tr>
<tr>
<td>Ripple and noise</td>
<td>1% peak-to-peak maximum</td>
</tr>
<tr>
<td>Over voltage protection</td>
<td>At 33 VDC</td>
</tr>
<tr>
<td>Overload protection</td>
<td>10.5 A hiccup trip and restart mode with auto recovery</td>
</tr>
<tr>
<td>Short circuit protection</td>
<td>Continuous</td>
</tr>
</tbody>
</table>

Environmental information

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>32° F–104° F normal, derate from full capacity to 75% capacity from 104° F–140° F</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-4° F to 185° F</td>
</tr>
<tr>
<td>Protection</td>
<td>IP40</td>
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</table>

Input specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Input voltage</td>
<td>100-240 VAC</td>
</tr>
<tr>
<td>Input frequency</td>
<td>50-60 Hz</td>
</tr>
<tr>
<td>Input current</td>
<td>1.7 A</td>
</tr>
<tr>
<td>Inrush current</td>
<td>100 A maximum at 240 VAC</td>
</tr>
<tr>
<td>Protection class</td>
<td>Class I</td>
</tr>
<tr>
<td>Earth leakage current</td>
<td>3.5 mA maximum</td>
</tr>
</tbody>
</table>

General specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>≥ 87%</td>
</tr>
<tr>
<td>Switching frequency</td>
<td>65 kHz</td>
</tr>
<tr>
<td>No load loss (standby)</td>
<td>&lt; 0.5 W</td>
</tr>
<tr>
<td>Energy Star</td>
<td>Level V</td>
</tr>
</tbody>
</table>

Safety / Approvals

<table>
<thead>
<tr>
<th>Approval</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN / IEL</td>
<td>60950, 60335-1</td>
</tr>
<tr>
<td>UL</td>
<td>60950-1, 1310</td>
</tr>
</tbody>
</table>
Wiring Options

For wall cabinets

Insert cable for distribution into open slot
Insert cable for power into open slot

Rotate orange lever to lock into place
Slide cable end protector over exposed cable

NOTE: Ensure piercing pins are not damaged

For SERVO-DRIVE in wall and base cabinets
Drive unit preparation

Before SERVO-DRIVE for AVENTOS installation, the lift mechanism tension adjustment should be made and door operation balanced. The AVENTOS arm assembly must be in the completely open position for drive unit installation. Attach the opening angle stop (if required) only after drive unit installation and before the reference run.

Use the lift mechanism selection switch to select the appropriate lift system application.

Installation of universal cable

1. Lift orange universal cable lock lever
2. Insert universal cable (either end of the cable can be used)
3. Once cable is inserted, press down on universal cable lock lever
Drive unit installation

1. Insert the drive unit into back of lift mechanism and slide forward

2. Position drive unit into front of lift mechanism with locator pin

The drive unit can be locked when the orange slide is no longer visible in the view window.

3. To lock drive unit to the lift mechanism, slide the lift mechanism selection switch to the locked position (reference noted positions on drive unit). There will be an audible click when locked.
Installation of SERVO-DRIVE activation switch

The activation switch should be installed by pressing into the cabinet side with your hand. Do not use hammer to install.

NOTE: Use of boring template (M31.2000) recommended, see page 27

Installation of Blum distance bumpers

Install into door front. Use of four distance bumpers is recommended. Two may be sufficient for smaller, lighter doors.

Drive unit preparation

Before SERVO-DRIVE for AVENTOS installation, the lift mechanism tension adjustment should be made and door operation balanced.

Depending on lever arm position, set drive unit accordingly.

Installation of universal cable

1. Lift orange universal cable lock lever
2. Insert universal cable (either end of the cable can be used)
3. Once cable is inserted, press down on universal cable lock lever
Drive unit installation

1. Position drive unit onto lift mechanism with locator pin.

2. To lock drive unit to the lift mechanism, hold drive unit in place and press down the three orange lock tabs.
Overview of Functions

Start-Up

A Activating the SERVO-DRIVE switch

B Start reference run

Deactivation

E Reset Motion

F Reset Wireless

Additional Features

C Activating synchronization

D Activating collision avoidance

Function buttons layout

1 Drive unit
2 <Reset Motion> button
3 Motion LED
4 <SWITCH> button
5 <SYNC> button
6 <COLL> button
7 <Reset Wireless> button
8 Wireless LED
9 SERVO-DRIVE switch
Start-Up

A Activating the SERVO-DRIVE switch

Setting up the wireless connection between the SERVO-DRIVE switch and the drive unit. Each switch can only be assigned to one SERVO-DRIVE unit.

1. Press and hold the <SWITCH> button until the LED flashes
2. Press and hold the SERVO-DRIVE switch until the LED lights up continuously.

Repeat steps 1 and 2 for additional SERVO-DRIVE switches in the cabinet.

Additional Features

C Activating synchronization
For instructions on activating synchronization, see page 24

D Activating collision avoidance
For instructions on activating collision avoidance, see page 24

B Start reference run

The drive unit recognizes the required parameters using the reference run, setting both upper and lower limits for the motion of the door.

1. Reference run is required: LED flashes orange
2. Close the front manually
3. Press on front: The reference run starts automatically
4. Front opens and closes two times automatically: under no circumstances should you try to manually interrupt or stop the process

NOTE: If the reference run is interrupted, it should be reset. See reset motion on page 25 then restart reference run.
C Activating synchronization

Up to three drive units can be synchronized allowing them to move simultaneously. This function is required for several cabinets with one wide front.

1. Press and hold the <SYNC> button on the 1st drive unit until the LED flashes
2. Press and hold <SYNC> on the 2nd drive unit until the LEDs on both synchronized drive units light up continuously

NOTE: Repeat steps 1 and 2 for all additional drive units

D Activating collision avoidance

To avoid the collision of door fronts, drive units (six maximum) are linked so that only one door can be opened at a time. A door front is prevented from opening as long as a linked door front remains open.

1. Press and hold the <COLL> button on the 1st drive unit until the LED flashes
2. Close the door manually
3. Manually open the door of the unit to be linked
4. Press and hold <COLL> on the 2nd drive unit until the LED lights up continuously (the same will happen in the first cabinet)

NOTE: Repeat steps 1 through 4 for all additional cabinets
### Reset motion

Resets the reference run and enables a new reference run to be started.

<table>
<thead>
<tr>
<th>LED Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashes quickly</td>
<td>Press and hold the &lt;Reset Motion&gt; button using a pen (at least 3 seconds) until the LED flashes quickly</td>
</tr>
</tbody>
</table>

### Reset wireless

Deactivates all functions. All active SERVO-DRIVE switches, synchronization and collision avoidance settings for the respective drive unit are deleted.

<table>
<thead>
<tr>
<th>LED Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashes quickly</td>
<td>Press and hold the &lt;Reset Wireless&gt; button using a pen (at least three seconds) until the LED flashes quickly</td>
</tr>
</tbody>
</table>

### Motion LED signals

<table>
<thead>
<tr>
<th>LED Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashes orange</td>
<td>Reference run is required</td>
</tr>
<tr>
<td>Lights orange</td>
<td>Power available</td>
</tr>
<tr>
<td></td>
<td>Operating mode display</td>
</tr>
<tr>
<td></td>
<td>Reference run successfully completed</td>
</tr>
<tr>
<td>Flashes orange quickly</td>
<td>Reset motion confirmation</td>
</tr>
</tbody>
</table>

### Wireless LED signals

<table>
<thead>
<tr>
<th>LED Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashes green</td>
<td>Activation mode</td>
</tr>
<tr>
<td>Lights up green</td>
<td>Activation confirmation</td>
</tr>
<tr>
<td></td>
<td>Deactivation confirmation</td>
</tr>
<tr>
<td>Flashes green quickly</td>
<td>Last process was not completed successfully</td>
</tr>
</tbody>
</table>

[Diagram of LED signals]
Cover Cap and Battery Replacement

**Cover cap**

1. Remove battery carrier tray by pressing up or down on the battery display switch
2. Remove dead battery
3. Insert new battery
4. Replace battery carrier tray into switch housing

**Battery replacement**

- When battery power begins to weaken, the SERVO-DRIVE switch battery display flashes red
- Only use type CR2032 batteries from known manufacturers
- Make sure that the new battery is inserted correctly (note proper pole connections +/-)
- The SERVO-DRIVE switch battery cannot be recharged
- If the battery is inserted incorrectly, the SERVO-DRIVE switch battery display will flash red
**Assembly Aids**

SERVO-DRIVE switch boring template

- For easy installation of SERVO-DRIVE for AVENTOS switch
- Clamp assembly for secure boring

**Set includes:**
- Ø35 mm bit
- Torx driver bit (qty 2)

**Specifications**

| 1 | Set drilling depth |
| 2 | Align mark |
| 3 | Secure template to cabinet panel with clamp |
| 4 | Use provided Torx driver bit to bore hole |

**Mark switch location**

Part no.

| SERVO-DRIVE switch boring template | M31.2000 |

Dimensions in millimeters (inch equivalents as noted) © 2016 Blum, Inc. 23
<table>
<thead>
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<td>21L3900.01</td>
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<td>21FA000</td>
<td>8, 10, 12</td>
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<td>21P5020</td>
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<td>16</td>
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<tr>
<td>Z10NE020G</td>
<td>27</td>
</tr>
</tbody>
</table>
Why Choose Blum

Blum, Inc. is a leading manufacturer of functional hardware for the kitchen cabinet and commercial casework industries specializing in lift systems, concealed hinges and drawer runner systems. Virtually all of the hardware needed to assemble and make cabinets functional is available within the wide range of quality Blum products. Blum supports the U.S. market with a network of more than 150 dependable distributors, 40+ knowledgeable Blum sales representatives and an experienced customer service department.

Commitment to manufacturing in the U.S.

Blum manufactures many of its products in our 450,000 sq ft manufacturing, logistics and warehouse facility located in Stanley, North Carolina. Manufacturing closer to the customer allows Blum to react quickly to changing customer needs including unexpected surges in demand. Customer pickups and deliveries can be timed to better match their production schedules. Blum is committed to manufacturing in the U.S. for the U.S. market.

Product development at Blum considers all of the various customers who will come in contact with our products. With this “Global Customer Benefits” philosophy we strive to create advantages for all users.

Blum, Inc. is ISO 9001 certified which means that you are assured of consistent quality in every Blum product. What’s more they exceed the requirements of ANSI/BHMA standards for cycle life, static load and self-closing performance.