Electric Cylinder

Series **LZB/LZC**

It can be operated like an air cylinder.

### Series LZB

- **Model**: LZB
- **Max. thrust**: 196 N
- **Max. speed**: 200 mm/s
- **Lead screw**: Slide screw: ø8, ø12
- **Stroke**: 25, 40, 50, 100, 200

### Series LZC

- **Model**: LZC
- **Max. thrust**: 200 mm/s
- **Lead screw**: Slide screw: ø8, ø12
- **Stroke**: 25, 40, 50, 100, 200

### Model Selection
- System Chart: P.976
- Model Selection: P.977
- Electric Cylinder/LZB: P.978
- Electric Cylinder/LZC: P.984
- L2B/C Vertical Application Specifications: P.988
- Accessories: P.989

### Accessories
- Auto Switch Proper Mounting Position (Detection at Stroke End) and Its Mounting Height: P.990
- Mounting and Moving Auto Switches: P.991

--

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
System Chart

Series LZ

- PLC (Terminal box type) (Supplied by customer)
- Directional control driver for electric cylinder Series LC3F2
- 24 VDC power supply (Supplied by customer)
- Cable for control terminal LC3F2-1-C2-□-1 (Option) (See page 994.)
- Auto switch D-M9 (Option)
- Terminal box (Supplied by customer)
- Cable for motor output terminal LC3F2-1-C3-□-1 (Option) (See page 994.)
- Electric cylinder Series LZB/LZC
- AC power supply Noise filter, Insulator, Relay, etc. (Supplied by customer)
- Cable for power supply terminal LC3F2-1-C1-□-1 (Option) (See page 994.)

Series LZ

LZ

L52408

PLC (Terminal box type)

(L Supplied by customer)

24 VDC power supply

(Supplied by customer)

Directional
control driver for
electric cylinder

Series LC3F2

Cable for control terminal
LC3F2-1-C2-□-1
(Option) (See page 994.)

Auto switch
D-M9 (Option)

Terminal box
(Supplied by
customer)

Cable for motor output terminal
LC3F2-1-C3-□-1
(Option) (See page 994.)

AC power supply
Noise filter,
Insulator,
Relay, etc.
(Supplied by
customer)

Cable for power supply terminal
LC3F2-1-C1-□-1
(Option) (See page 994.)

Electric cylinder
Series LZB/LZC

976

P0975-P0992-E.qxd 10.12.15 11:53 AM Page 976
Series LZB/LZC

Model Selection

Note: These graphs are made using actual data. Therefore, these graphs are to be used as a reference and are not a guarantee of product's performance in any case. The graphs may change depending on the operating condition or environment.

Horizontal Motion of Pressing Force

Model selection condition 1
Used as a force-pressing. 60 N or greater pressing force is required.

Model selection result 1
From Graph 1, LZB/C(3)'s lead 2 is applicable. (Pressing force: 80 N)

Graph 1
[Speed-Thrust] Relationship Graph

Model selection condition 2
Used as a transfer. 60 N transfer thrust and 40 mm/s transfer speed are required.

Model selection result 2
From Graph 2, LZB/C(5)'s lead 6 mm and lead 12 mm are applicable. But, speed at the end with 60 N load will be 100 mm/s for lead 6 mm and 60 mm/s for lead 12 mm. Select a suitable product in accordance with the customer's equipment.

Graph 2
[Speed-Thrust] Relationship Graph

Horizontal Transfer

Graph 3
[Speed-Thrust] Relationship Graph

Graph 5
[Speed-Thrust] Relationship Graph
Electric Cylinder Series LZB

How to Order

With auto switch

LZB B 3 L - 100 A 3
LDZB B 3 L - 100 A 3 - M9B

Built-in magnet

Mounting style
- B: Basic style
- L: Axial foot style
- F: Rod flange style
- U: Rod trunion style

Cylinder size
- 3: Equivalent to ø16 cylinder
- 5: Equivalent to ø25 cylinder

Note: Equivalent to 0.4 MPa, theoretical output (lead 2)
For details, refer to page 977 "Speed – Thrust Graph".

Thread lead (mm)
- L: Lead 2
- M: Lead 6
- H: Lead 12

Stroke (mm)
Refer to "Standard Stroke" table.

Standard Stroke

<table>
<thead>
<tr>
<th>Cylinder size</th>
<th>Standard stroke (mm)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3, 5</td>
<td>25, 40, 50, 100, 200</td>
</tr>
</tbody>
</table>

* Other intermediate strokes can be manufactured upon receipt of order.
(Maximum manufacturable stroke: 200 mm)
* Maximum stroke: 150 mm
* Thread lead L (lead 2 mm) only

Applicable Auto Switches

<table>
<thead>
<tr>
<th>Type</th>
<th>Switch</th>
<th>Wiring (Output)</th>
<th>Load voltage</th>
<th>Auto switch model</th>
<th>Lead wire length (m)*</th>
<th>Pre-wired connector</th>
<th>Applicable load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grommet</td>
<td>Yes</td>
<td>3-wire (NPN)</td>
<td>5 V</td>
<td>M9N</td>
<td>nil</td>
<td>IC circuit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-wire (PNP)</td>
<td>12 V</td>
<td>M9P</td>
<td>nil</td>
<td>PLC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-wire</td>
<td>24 V</td>
<td>M9B</td>
<td>nil</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

* Lead wire length symbols: 0.5 m — nil
1 m ........ M
3 m ......... L
5 m ........ Z

* Solid state auto switches marked "<" are produced upon receipt of order.

電気シリンダシリーズ LZB

注文方法

自動スイッチつき

LZB B 3 L - 100 A 3
LDZB B 3 L - 100 A 3 - M9B

ビルトインマグネット

マウントスタイル
- B: 基本スタイル
- L: 軸フットスタイル
- F: ロッドフランジスタイル
- U: ロッドトリューションスタイル

シリンダーサイズ
- 3: ø16シリンダ EQUIVALENT
- 5: ø25シリンダ EQUIVALENT

メモ: 0.4 MPa、理論的出力 (lead 2)
詳細は977ページ "スピード – フルスイングチャート" を参照してください。

スレッド長さ (mm)
- L: スレッド 2
- M: スレッド 6
- H: スレッド 12

ストローク (mm)
"標準ストローク" で参照してください。

標準ストローク

<table>
<thead>
<tr>
<th>シリンダーサイズ</th>
<th>標準ストローク (mm)***</th>
</tr>
</thead>
<tbody>
<tr>
<td>3, 5</td>
<td>25, 40, 50, 100, 200</td>
</tr>
</tbody>
</table>

***他の中間ストロークは注文後製造可能です。
(最大製造可能なストローク: 200 mm)
***最大ストローク: 150 mm
***スレッド長さ L (スレッド 2 mm) でのみ

適用可能なオートスイッチ

<table>
<thead>
<tr>
<th>テイプ</th>
<th>スイッチ</th>
<th>仕様</th>
<th>电压 (V)</th>
<th>電圧</th>
<th>軸スイッチモデル</th>
<th>トウゲ長さ (m)*</th>
<th>前方に搭載されたコネクター</th>
<th>適用する負荷</th>
</tr>
</thead>
<tbody>
<tr>
<td>グロメット</td>
<td>Yes</td>
<td>3-wire (NPN)</td>
<td>5</td>
<td>M9N</td>
<td>nil</td>
<td>IC circuit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-wire (PNP)</td>
<td>12</td>
<td>M9P</td>
<td>nil</td>
<td>PLC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-wire</td>
<td>24</td>
<td>M9B</td>
<td>nil</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* トウゲ長さ符号: 0.5 m — nil
1 m ........ M
3 m ......... L
5 m ........ Z

* 固定電流スイッチはマーク "<" で示されます。
1. Do not apply any lateral load to the rod of the LZB series. When applying a lateral load, use a guide to avoid the load from being applied to the rod.

2. Auto switch mounting

There are 4 grooves on the outside surface of the cylinder tube, indicating the auto switch installation range. Mount the auto switches within the range shown below.

Note 1) Equivalent to 0.4 MPa, theoretical output (lead 2)
Note 2) In the table speeds are shown without a load, as rated speed, and thrusts are shown as rated thrust based on the pressure force.
Note 3) Speed will vary as they are affected by a load. Refer to page 977 for model selection.

+ Refer to page 991 for mounting bracket mass.
Series LZB

Dimensions

Note) Grounding must be performed. For details, refer to the back of page 484.

J.S.T. Mfg Co., Ltd.-made, ring terminal insulated with nylon N1.25-M4 or equivalent

Lead wire
UL1007 AWG22
(Red-Blue)

- The electrical entry direction is different depending on the product.

Axial foot style/L(D)ZBL3

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Rod side mounting nut
(Part no.: SN-020B)

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26

M20 x 1.5

Width across flats 26

Motor side mounting nut
(Part no.: LZ-NT30)

Thread length 8

M30 x 1.5

Hexagon width across flats 26
Caution for using a trunnion bracket

In the event of mounting a trunnion bracket, fix it to the position illustrated below before using.

- Conditions for using a trunnion bracket are as follows:
  - Maximum stroke: 150 mm
  - Thread lead L (lead 2 mm) only
Series LZB

Dimensions

Note: Grounding must be performed. For details, refer to the back of page 484.

L(D)ZBB5

- The electrical entry direction is different depending on a product.

Rod flange style/L(D)ZBF5

Motor side mounting nut
(Part no.: LZ-NT45)

Motor side male thread: L

Hexagon width across flats 60
Hexagon width across flats 61

2 x M4 x 0.7
(For GND connection)

2 x ø7

Lead wire
UL1007 AWG22
(Red-Blue)

M32 x 2

M10 x 1.25

Thread length 12

Hexagon width across flats 21

Hexagon width across flats 21

Motor side mounting nut
(Par...
**Dimensions**

**Rod trunnion style/L(D)ZBUS**

![Diagram of rod trunnion style](image)

- **M10 x 1.25**
  - Thread length 12
- **M32 x 2**
  - Hexagon width across flats 21
  - Width across flats 41
- **M46 x 1.5**
  - Hexagon width across flats 36
  - Width across flats 38

**Note:**

- **26.5**: 1177
- **35**: 17.5
- **14.5**: 14
- **12**: 20
- **ø22**: 12
- **ø55**: 16
- **ø43**: 35

**Caution for using a trunnion bracket**

In the event of mounting a trunnion bracket, fix it to the position illustrated below before using.

![Diagram of trunnion bracket installation](image)

- **Auto switch installation range**
- **4 x grooves**

**Conditions for using a trunnion bracket are as follows:**

- Maximum stroke: 150 mm
- Thread lead L (lead 2 mm) only
Electric Cylinder
Series LZC

How to Order

With auto switch
LZC B 3 L - 100 A 3
LDZC B 3 L - 100 A 3 H - M9B

Built-in magnet
Mounting style
B Basic style
L Axial foot style

Cylinder size
3 Equivalent to ø16 cylinder
5 Equivalent to ø25 cylinder

Note) Equivalent to 0.4 MPa, theoretical output (lead 2)

Thread lead (mm)
L Lead 2
M Lead 6
H Lead 12

Stroke (mm)
Refer to "Standard Stroke" table.

Motor type
A DC motor

Standard Stroke

<table>
<thead>
<tr>
<th>Cylinder size</th>
<th>Standard stroke (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3, 5</td>
<td>25, 40, 50, 100, 200</td>
</tr>
</tbody>
</table>

* Other intermediate strokes can be manufactured upon receipt of order. (Maximum manufacturable stroke: 200 mm)

Applicable Auto Switches

For detailed auto switch specifications, refer to pages 1077 through to 1085.

<table>
<thead>
<tr>
<th>Type</th>
<th>Electrical entry</th>
<th>Wiring (Output)</th>
<th>Load voltage</th>
<th>Auto switch model</th>
<th>Lead wire length (m)</th>
<th>Pre-wired connector</th>
<th>Applicable load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grommet</td>
<td>Yes</td>
<td>3-wire (NPN)</td>
<td>5 V</td>
<td>M9N</td>
<td>● ● ● ○ ○ ○ ♦</td>
<td>L12</td>
<td>IC circuit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-wire (PNP)</td>
<td>12 V</td>
<td>M9P</td>
<td>● ● ● ○ ○ ○ ♦</td>
<td>M9B/LZ</td>
<td>Relay PLC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-wire</td>
<td>24 V</td>
<td>M9B</td>
<td>● ● ● ○ ○ ○ ♦</td>
<td>M9B/LZ</td>
<td></td>
</tr>
</tbody>
</table>

* Lead wire length symbols:
  0.5 m ------- Nil (Example) M9B9
  1 m ------- M M9B8M
  3 m ------- L M9B8L
  5 m ------- Z M9B8Z

* Solid state auto switches marked "♦" are produced upon receipt of order.

984

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
## Electric Cylinder Series LZC

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>LZC3L</th>
<th>LZC3M</th>
<th>LZC3H</th>
<th>LZC5L</th>
<th>LZC5M</th>
<th>LZC5H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>ø8</td>
<td>ø12</td>
<td>ø8</td>
<td>ø12</td>
<td>ø12</td>
<td>ø12</td>
</tr>
<tr>
<td>Lead screw</td>
<td>2</td>
<td>6</td>
<td>12</td>
<td>2</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Rated speed with no load (mm/s)</td>
<td>33</td>
<td>100</td>
<td>200</td>
<td>33</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Rated thrust (N)</td>
<td>80</td>
<td>43</td>
<td>24</td>
<td>196</td>
<td>117</td>
<td>72</td>
</tr>
<tr>
<td>Stroke (mm)</td>
<td>25, 40, 50, 100, 200</td>
<td>25, 40, 50, 100, 200</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main body (kg)</td>
<td>0.72 + (0.03/50 stroke)</td>
<td>1.72 + (0.16/50 stroke)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral load for rod end (at maximum stroke) (kg)</td>
<td>0.1</td>
<td>0.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating ambient temperature (°C)</td>
<td>5 to 40 (No condensation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor</td>
<td>D-M9N, M9P, M9B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicable directional control driver model</td>
<td>LC3F212-5A6</td>
<td>LC3F212-5A5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicable auto switch model</td>
<td>D-M9N, M9P, M9B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Equivalent to 0.4 MPa, theoretical output (load 2)
Note 2) In the table speeds are shown without a load, as rated speed, and thrusts are shown as rated thrust based on the pressure force.
Note 3) Speed will vary as they are affected by a load. Refer to page 977 for model selection.

### Allowable Lateral Load for Rod End

![Graph of Allowable Lateral Load for Rod End](image)

- Refer to page 989 for mounting bracket mass.
**Series LZC**

**Dimensions**  
Note: Grounding must be performed. For details, refer to the back of page 484.

**L(D)ZCB3**

![Diagram of L(D)ZCB3](image)

**Cover specification**

- Fully covered: F  
- Partially covered: H

**Axial foot style: L**

![Diagram of Axial foot style: L](image)

---

**Foot (Rod cover side)**

- 2 x ø4.5
- 45
- 53

**Foot (Housing side)**

- 2 x ø4.5
- 45
- 53
- 10
**Dimensions**

Note: Grounding must be performed. For details, refer to the back of page 484.

L(D)ZCB5

When extended

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>10</td>
</tr>
</tbody>
</table>

When retracted

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>20</td>
</tr>
</tbody>
</table>

Effective thread depth 4

4 x M4 x 0.7

Effective thread depth 8

4 x M5 x 0.8

Effective thread depth 12

M10 x 1.25

Hexagon width across flats 17

19.5

26.5

58

Auto switch mounting groove

26.5

58

Rod end male thread: L

M10 x 1.25

Effective thread depth 12

M10 x 1.25

Effective thread depth 8

M10 x 1.25

Effective thread depth 4

4 x M4 x 0.7

Effective thread depth 6

2 x M8 x 1.0

J.S.T. Mfg Co., Ltd.-made, ring terminal insulated with nylon

UL1007 AWG22 (Red-Blue)

Lead wire

UL1007 AWG22 (Red-Blue)

2 x M4 x 0.7

Depth 3 (For GND connection) Max

2 x M6 x 1.0

Note)

- Lead wire
- Lead wire

Cover specification

- Fully covered: F
- Partially covered: H

Axial foot style: L

Foot (Rod cover side)

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>76</td>
</tr>
</tbody>
</table>

Foot (Housing side)

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.7</td>
<td>16.7</td>
</tr>
</tbody>
</table>

When extended

When retracted

J.S.T. Mfg Co., Ltd.-made, ring terminal insulated with nylon

N1.25-M4 or equivalent

UL1007 AWG22 (Red-Blue)

Lead wire

UL1007 AWG22 (Red-Blue)

2 x M4 x 0.7

Depth 3 (For GND connection) Max

2 x M6 x 1.0

Note)

- Lead wire
- Lead wire

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
Series LZB/LZC

LZB/C Vertical Application Specifications

Some of series LZ can be used in vertical applications. However, please check before using vertically.

Never apply a force exceeding the prescribed force.
When a force exceeding the transfer thrust is applied, the cylinder and directional control driver (LC3F2) may be damaged.

Model which can be used vertically

- L(D)ZB3L- A3
- L(D)ZC3L- A3
- L(D)ZB5L- A5
- L(D)ZC5L- A5

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>L(D)ZB3L</th>
<th>L(D)ZC3L</th>
<th>L(D)ZB5L</th>
<th>L(D)ZC5L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed (mm/s)</td>
<td>P.977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer thrust (Vertically) (N)</td>
<td>40</td>
<td>40</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Holding force* (N)</td>
<td>25, 40, 50, 100, 200</td>
<td>5 to 40</td>
<td>No condensation</td>
<td></td>
</tr>
<tr>
<td>Standard stroke (mm)</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Operating ambient temperature (°C)</td>
<td>5 to 40</td>
<td>5 to 40</td>
<td>5 to 40</td>
<td>5 to 40</td>
</tr>
<tr>
<td>Motor</td>
<td>DC motor</td>
<td>DC motor</td>
<td>DC motor</td>
<td>DC motor</td>
</tr>
<tr>
<td>Applicable directional control driver model</td>
<td>LC3F212-5A3</td>
<td>LC3F212-5A5</td>
<td>LC3F212-5A3</td>
<td>LC3F212-5A5</td>
</tr>
</tbody>
</table>

* Holding force
Holding force means the force which cannot be dropped even if a load should be applied vertically when a cylinder is stopped. Therefore, for example, holding is not possible when turning off the power supply once a cylinder has been activated. Additionally, a load may be dropped due to external impacts or vibrations.

P.977 Refer to the graph on speed – thrust.
Electric Cylinder Series LZB/LZC

Accessories

LZB

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>With auto switch</td>
<td>Switch mounting band, switch mounting bracket (one included per one switch)</td>
</tr>
<tr>
<td>Foot style</td>
<td>Rod side foot bracket, motor side foot bracket</td>
</tr>
<tr>
<td>Flange style</td>
<td>Flange bracket, rod side mounting nut</td>
</tr>
<tr>
<td>Trunnion style</td>
<td>Trunnion bracket, Rod side mounting nut (designed for trunnion)</td>
</tr>
</tbody>
</table>

LZC

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot style</td>
<td>Rod side foot bracket, motor side foot bracket</td>
</tr>
</tbody>
</table>

Accessory Bracket

Mounting nut

<table>
<thead>
<tr>
<th>Name</th>
<th>Part no.</th>
<th>Applicable series</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>d</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rod side mounting nut</td>
<td>SN-020B</td>
<td>LZB3</td>
<td>26</td>
<td>30</td>
<td>25.5</td>
<td>M20 x 1.5</td>
<td>8</td>
</tr>
<tr>
<td>Motor side mounting nut</td>
<td>SN-040B</td>
<td>LZB5</td>
<td>38</td>
<td>42</td>
<td>38</td>
<td>M30 x 1.5</td>
<td>10</td>
</tr>
<tr>
<td>Rod side mounting nut</td>
<td>SN-060B</td>
<td>LZB5</td>
<td>41</td>
<td>47.5</td>
<td>40.5</td>
<td>M32 x 2.0</td>
<td>10</td>
</tr>
<tr>
<td>Motor side mounting nut</td>
<td>SN-080B</td>
<td>LZB5</td>
<td>50</td>
<td>60</td>
<td>52</td>
<td>M48 x 2.5</td>
<td>10</td>
</tr>
</tbody>
</table>

Rod end nut

<table>
<thead>
<tr>
<th>Name</th>
<th>Part no.</th>
<th>Applicable series</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>d</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT-015A</td>
<td>LZC13</td>
<td>11.5</td>
<td>9.8</td>
<td>M6 x 1.0</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NT-03</td>
<td>LZC15</td>
<td>19.6</td>
<td>16.5</td>
<td>M10 x 1.25</td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mounting Bracket/Part No.

<table>
<thead>
<tr>
<th>Series</th>
<th>LZB3</th>
<th>LZB5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rod side foot</td>
<td>LZB-LR3 (64 g)</td>
<td>LZB-LR5 (121 g)</td>
</tr>
<tr>
<td>Motor side foot</td>
<td>LZB-LM3 (64 g)</td>
<td>LZB-LM5 (126 g)</td>
</tr>
<tr>
<td>Flange</td>
<td>LZB-F3 (40 g)</td>
<td>LZB-F5 (120 g)</td>
</tr>
<tr>
<td>Rod side trunnion</td>
<td>CMS-T020B (40 g)</td>
<td>CMS-T040B (100 g)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Series</th>
<th>L zb</th>
<th>L zb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rod side foot</td>
<td>LZC-LR3 (21 g)</td>
<td>LZC-LR5 (71 g)</td>
</tr>
<tr>
<td>Motor side foot</td>
<td>LZC-LM3 (10 g)</td>
<td>LZC-LM5 (27 g)</td>
</tr>
</tbody>
</table>

Note) Bracket mounting nuts are not included. Please purchase mounting nuts matched to each bracket separately.

989

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
**Series LZB/LZC**

Auto Switch Proper Mounting Position (Detection at Stroke End) and It's Mounting Height

Solid state auto switch

D-M9

LDZB

### Auto Switch Mounting Position/Height

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDZB:3</td>
<td>20</td>
<td>19</td>
<td>24</td>
</tr>
<tr>
<td>LDZB:5</td>
<td>33</td>
<td>33</td>
<td>32</td>
</tr>
</tbody>
</table>

### Operating Range of Auto Switch *

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDZB:3</td>
<td>3</td>
</tr>
<tr>
<td>LDZB:5</td>
<td>5</td>
</tr>
</tbody>
</table>

### Minimum Stroke for Auto Switch Mounting

<table>
<thead>
<tr>
<th>Model</th>
<th>1 pc.</th>
<th>2 pcs. (Different sides)</th>
<th>2 pcs. (Same sides)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDZB:3</td>
<td>10</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>LDZB:5</td>
<td>10</td>
<td>15</td>
<td>45</td>
</tr>
</tbody>
</table>

* The operating range is a guide including hysteresis, but is not guaranteed. There may be substantial variation depending on the surrounding environment (assuming approximately ±30% dispersion).

LDZC

### Auto Switch Mounting Position for Stroke End Detection

<table>
<thead>
<tr>
<th>Model</th>
<th>A1</th>
<th>A2</th>
<th>B1</th>
<th>B2</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDZC:3</td>
<td>4.5</td>
<td>17.5</td>
<td>41.5</td>
<td>28</td>
</tr>
<tr>
<td>LDZC:5</td>
<td>7</td>
<td>37</td>
<td>20</td>
<td>44</td>
</tr>
</tbody>
</table>

### Operating Range of Auto Switch *

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDZC:3</td>
<td>2</td>
</tr>
<tr>
<td>LDZC:5</td>
<td>2</td>
</tr>
</tbody>
</table>

### Minimum Stroke for Auto Switch Mounting

<table>
<thead>
<tr>
<th>Model</th>
<th>1 pc.</th>
<th>2 pcs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDZC:3</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>LDZC:5</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

* The operating range is a guide including hysteresis, but is not guaranteed. There may be substantial variation depending on the surrounding environment (assuming approximately ±30% dispersion).
Mounting and Moving Auto Switches (Series LDZB Only)

\section*{Caution}
1. Tighten the screw under the specified torque when mounting the auto switch.
2. Set the auto switch mounting band perpendicularly to cylinder tube.

![Correctly attached vs Incorrectly attached]

\section*{Mounting the Auto Switch}
1. Attach a switch bracket to the switch holder.
   (Fit the switch bracket to the switch holder.)
2. Mount an auto switch mounting band to the cylinder tube.
3. Set the switch holder (1.) between the reinforcing plates of the band mounted to the cylinder.
4. Insert an auto switch mounting screw in the hole of the reinforcing plate through the auto switch holder, and thread it into the other plate. Tighten the screw temporarily.
5. Remove the set screw attached to the auto switch.
6. Attach a switch spacer to the auto switch.
7. Insert the auto switch with the switch spacer from the back of the switch holder.
   (Insert the auto switch with an angle of approximately 10 to 15°. See figure 1.)
8. To secure the auto switch, tighten the switch mounting screw with the specified torque (0.8 N·m to 1.0 N·m).

\section*{Adjusting the Auto Switch Position}
1. Unloosen the auto switch mounting screw 3 turns to adjust the auto switch set position.
2. Tighten the auto switch mounting screw as described above (8.) after adjustment.

\section*{Removing the Auto Switch}
1. Remove the auto switch mounting screw from the switch holder.
2. Move the auto switch back towards the position where it stops at the lead wire side.
3. Hold up the lead wire side of the auto switch at the angle of around 45°.
4. Maintain the angle, and pull back the auto switch obliquely at the same angle.

Figure 1. Auto switch insert angle

Auto Switch Mounting Bracket/Part No.

<table>
<thead>
<tr>
<th>Applicable series</th>
<th>Mounting bracket</th>
<th>Mounting band</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDZB-3</td>
<td>BJ3-1</td>
<td>BM2-025</td>
</tr>
<tr>
<td>LDZB-5</td>
<td>BJ3-1 Switch holder, Switch spacer</td>
<td>L1ZB45-0318</td>
</tr>
</tbody>
</table>

Order one auto switch mounting bracket and one auto switch mounting band per one auto switch.
Series LZB
Specific Product Precautions

Caution

1. Mount the auto switches at the center of the operating range.
Check ON and OFF points before setting auto switches so that positions can be detected at the center of the operating range. If mounted at the end of the operating range, the signal detection will be unstable.

2. Be aware of the environment temperature and thermal cycle.
Operate auto switches and auto switch cylinders within the operating temperature range. The reliability of the auto switches may be adversely affected, especially, when they are exposed to thermal shock, severe temperature and humidity cycle etc.

3. Be aware of the suitability of oil, chemicals etc.
Resin and rubber materials are used for the auto switches and auto switch mounting brackets. Therefore, if there are chemicals such as oil or organic solvents in the environment, the resin and rubber materials may be adversely affected.

4. During maintenance, securely tighten the switch mounting screws periodically.
Use auto switch mounting brackets with the proper tightening torque. In addition, securely tighten the auto switch mounting screws periodically.

5. Be careful not to pull or strain the lead wires.
Be careful not to apply excess tensile force (over 10 N) to the auto switches. Also, adjust the position of the auto switches by sufficiently loosening the auto switch mounting screws (3 turns or more).

6. Do not use the auto switches in environments with strong vibration and impact.
Do not use the auto switches in environments where excess vibration and impact force outside of the specifications are applied.

7. Be sure to use a switch spacer and a switch bracket.
Confirm that a switch spacer is mounted to the end of the auto switch before fastening the auto switch. If the switch bracket is not mounted, the auto switch may move after installation.