Customer: ALPS EUROPE DISTRIBUTION

Attention: 
Your ref. No.: 
Your Part No.: EC11E15204A3

SPECIFICATIONS

ALPS':

MODEL: EC11E15204A3
Spec. No.: 
Sample No.: F3301563M

RECEIPT STATUS
RECEIVED
By Date
Signature
Name
Title

ALPS ELECTRIC CO., LTD.

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DSG'D K. Abe
APP'D S. Sato
ENG. DEPT. DIVISION

Sales

B6523
01003#03A (EA)
1. THIS SPECIFICATIONS APPLY TO EC11E15204A3 ROTARY ENCODERS.

2. CONTENTS OF THIS SPECIFICATIONS.
   F3301563M
   LA2110E

3. MARKING
   • MARKING ON ALL UNITS
     • DATE CODE

• CAUTION

Regardless of the suggested applications of these products being introduced in the specifications, when using them for equipment and devices requiring a high degree of safety, respective manufacturers will please preserve safety of the planned equipment and devices by providing necessary protective circuits and redundancy circuits and reconfirm if safety is being duly preserved.

Products being introduced in the specifications have been designed and manufactured for applications to ordinary electronic equipment and devices such as the AV equipment, electric home appliances, office machines and communications equipment. Consequently, when employing these products for applications requiring a high degree of safety and reliability such as the medical equipment, aviation and aircraft equipment, space equipment and burglar alarm equipment, the using manufacturers will please thoroughly study the proprieties of these products for the planned applications.

Although we are exerting our best efforts to maintain the quality of these products, we cannot guarantee that they will never cause short circuiting and open circuitry. Therefore, when designing an equipment or device with which the priority is given to the safety, you will please carefully study the influences to the whole equipment of a single function failure of Potentiometers and Encoders in advance to make out a fail-safe design providing.
1. General

1-1. Scope

This specification applies to small size low-profile rotary encoder (incremental type) for microsccopic current circuits, used in electronic equipment.

1-2. Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests is as follows:

- Ambient temperature: 15°C to 35°C
- Relative humidity: 25% to 85%
- Air pressure: 860 to 1060 hPa

If there is any doubt about the results, measurements shall be made within the following limits:

- Ambient temperature: 20 ± 2°C
- Relative humidity: 63% ± 5%
- Air pressure: 880 to 1080 hPa

1-3. Operating temperature range

-40°C to +85°C

1-4. Storage temperature range

-40°C to +85°C

2. Construction

2-1. Dimensions

Refer to the attached drawing.

3. Mounting

3-1. Mounting method

D.C. 6V 10mA (I0A MIN)

4. Electrical characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
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</thead>
<tbody>
<tr>
<td>A. B.C.D</td>
<td>Output signal format</td>
</tr>
<tr>
<td>2. Phase-different signals</td>
<td>Details shown in (Fig. 1).</td>
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<td>Shaft rotational direction</td>
<td>Output polarity</td>
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<tr>
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<td>C.</td>
<td>Slide noise</td>
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<tr>
<td>B (B-C)</td>
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<tr>
<td>B (B-C)</td>
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<tr>
<td>Slide noise</td>
<td>Output</td>
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<td>3.5V</td>
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ALPS ELECTRIC CO., LTD.

APPL: CH: CS: DS: TITLE: 11 mm rotary encoder

Y. OYOSHI K. SATOH Y. ISAWA

F3301563M (1/5)

ALPS ELECTRIC CO., LTD.

APPL: CH: CS: DS: TITLE: 11 mm rotary encoder

Y. OYOSHI K. SATOH Y. ISAWA

F3301563M (2/5)
### 5. 規格書 [Mechanical characteristics]

<table>
<thead>
<tr>
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<th>概要</th>
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<td>5-2</td>
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<td>5-4</td>
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### 6. 耐久性 [Endurance characteristics]

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### 7. 感度 [Sensitivity]

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### ALPS ELECTRIC CO., LTD.

ALPS ELECTRIC CO., LTD.

Y. YOSHIDA M. SATOH Y. ISAWA

DOCUMENT NO. F3301563M

SYNCH DATE 96-03-15 APPD. 96-03-15

ALPS ELECTRIC CO., LTD.

Y. YOSHIDA M. SATOH Y. ISAWA

DOCUMENT NO. F3301563M

SYNCH DATE 96-03-15 APPD. 96-03-15
Resistance to soldering heat

There shall be no deformation or cracks in molded part.
No excessive abnormality in rotational feeling.

Soldering conditions

Manual soldering

- Soldering temperature: 350°C
- Application time of soldering iron: within 30s

Dip soldering

- Soldering temperature: 260°C ± 5°C
- Immersion time: within 5s

Printed wiring board: Both-sided covered laminate board with thickness of 1.0mm.

Flux:
- Specific gravity: 0.92 or more.
- Flux shall be applied to the board using a bubble foam type fluxer.
- The flux shall be soaked in the flux bubble only to the 2/3 of its thickness.

Preheating:
- Surface temperature of board: 100°C or less.
- Preheating time: within 2 min.

Apply the above soldering process for 1 or 2 times.
NOTES
BUSHING MATERIAL: ZINC ALLOY DIE CASTING
SHAFT MATERIAL: ALUMINUM

(SW01) ENCODER

THE POSITION OF TRADE MARK IS OPTIONAL.

(TOLERANCES UNLESS OTHERWISE SPEC

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<th>B</th>
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<tbody>
<tr>
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<td>±0.3</td>
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<td>L100 ±0.5</td>
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| ANGULAR DIMENSION | 5° |

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ALPS ELECTRIC CO., LTD.

DSGD. MIURA 2000-05-31 SCALE 2:1
CHKO. M. SATOH 2000-05-31 TITEL
APPD. S. MIZOBUTI 2000-05-31 UNIT DOCUMENT NO.
SYMB DATE APPD CHKO DSGD MM LA2110E

F3301563M