

Customer:

No. : SNS2012-4225

Date:

Attention:

Your ref. No.:

Your Part No.:

SPECIFICATIONS

ALPS Model : RD1010028A

ALPS Spec. No. : 5RD1010010

ALPS Sample No.:

RECEIPT STATUS
RECEIVED

By. Date

Signature

Name

Title

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ALPS ELECTRIC CO., LTD.

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E6001

ACY04-G03A (EA)

S P E C I F I C A T I O N S

1. THIS SPECIFICATIONS APPLY TO RD1010028 TPS.

2. CONTENTS OF THIS SPECIFICATIONS.

RD1010028
5RD1010010

3. MARKING

• MARKING ON ALL UNITS

• CAUTION

1. For the export of products which are controlled items subject to foreign and domestic export laws and regulations, you must obtain approval and/or follow the formalities of such laws and regulations.

2. Products must not be used for military and/or antisocial purposes such as terrorism, and shall not be supplied to any party intending to use the products for such purposes.

3. Unless provided otherwise, the products have been designed and manufactured for application to equipment and devices which are sold to end-users in the market, such as AV (audio visual) equipment, home electric equipment, office and commercial electronic equipment, information and communication equipment or amusement equipment. The products are not intended for use in, and must not be used for, any application of nuclear equipment, driving control equipment for aerospace or any other unauthorized use.

With the exception of the above mentioned banned applications, for applications involving high levels of safety and liability such as medical equipment, burglar alarm equipment, disaster prevention equipment and undersea equipment, please contact an Alps sales representative and/or evaluate the total system on the applicability. Also, implement a fail-safe design, protection circuit, redundant circuit, malfunction protection and/or fire protection into the complete system for safety and reliability of the total system.

4. Before using products which were not specifically designed for use in automotive applications, please contact an Alps sales representative.

5. The products shall be stored in the original packaging and kept at room temperature and humidity, out of direct sunlight, and away from any and all corrosive gas. The products shall be completely used as soon as possible, but no later than 6 months from the date of delivery.

Once product packaging is opened, the complete quantity of such products shall be promptly used.

| | |
|-----------|-------------------------------|
| CLASS.NO. | TITLE 規格書 SPECIFICATION |
|-----------|-------------------------------|

1. General requirements

1.1. Common atmospheric condition

Unless otherwise specified, standard conditions for measurement shall be set as follows.

| | |
|---------------------|----------------|
| Ambient temperature | 5 to 35 deg. C |
| Relative humidity | 45 to 83% RH |
| Air pressure | 88 to 106KPa |

If there is any doubt about the results, the measurement shall be performed with following conditions.

| | |
|---------------------|-----------------|
| Ambient temperature | 18 to 22 deg. C |
| Relative humidity | 60 to 70% RH |
| Air pressure | 88 to 106KPa |

2. Conditions

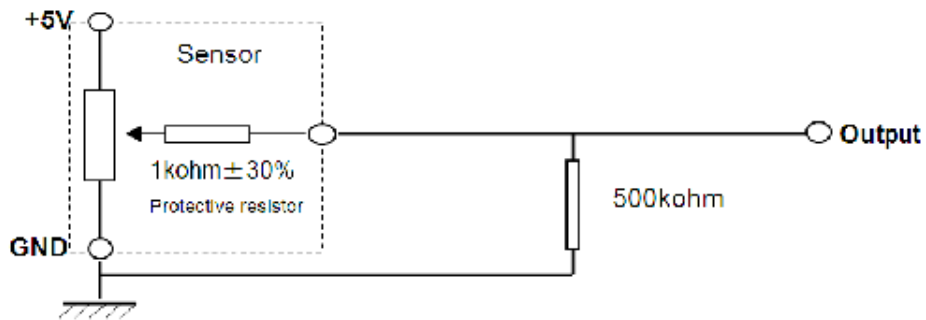
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|-------------------------------|-------------------|
| 2.1. Normal operating voltage | DC5 ± 0.2V |
| 2.2. Operating temperature | -40 to 150 deg. C |
| 2.3. Storage temperature | -40 to 150deg. C |

3. Initial performance

3.1. Electrical characteristics

| | |
|---------------------------|--|
| 3.1.1. Total resistance | 5 kΩ±30% |
| 3.1.2. Ideal Output taper | 0.9286% per degree of rotation |
| 3.1.3. Output index | 12% at 8° ±2° from Ref 0° position (ref. to attached product drawing) |
| 3.1.4. Output linearity | ±2% (throughout guaranteed output performance range) |
| 3.1.5. Output hysteresis | Less than 1% |

Output voltage measurement, the electric circuit at below shall be applied.



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|-------|-------|-------|-------|-------|--------------------------------|------------|-------------|-----------------------------------|
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| | | | | | APPD. | CHKD. | DSGD. | TITLE |
| | | | | | 2012.10.03 | 2012.10.02 | 2012.10.02. | 規格書 Position sensor specification |
| | | | | | K.Ishihara | Y.Fukuoka | M.Kolman | DOCUMENT NO. |
| SYMB. | DATE. | APPD. | CHKD. | DSGD. | | | | RD1010028A (1 / 3) |

| CLASS.NO. | | TITLE 規格書 SPECIFICATION | | | |
|---|-------|-------------------------------|------------|-------------|-----------------------------------|
| <p>3.2. Mechanical characteristics</p> <p>3.2.1. Operation torque More than 15mNm at Ref 0° position (Wind up direction) Less than 120 mNm at 90% output position</p> <p>3.2.1. Attachment screw No damage at 2Nm with M4.5x0.75 bolt with torque flat contacting surface.</p> <p>4. Performance after Durability testing</p> <p>4.1. Electrical characteristics</p> <p>4.1.1. Total resistance 5 kΩ±40%</p> <p>4.1.2. Output index 12% at 8° ±3.2° from Ref 0° position.</p> <p>4.1.3. Output linearity ±3% (throughout guaranteed output performance range)</p> <p>4.1.4. Output hysteresis Less than 2%</p> <p>4.2. Mechanical characteristics</p> <p>4.2.1. Operation torque More than 12 mNm at Ref 0° position (Wind up direction) Less than 150 mNm at 90% output position</p> <p>5. Testing condition</p> <p>5.1. Life test</p> <p>(1) Temperature +25 deg C to 135 deg C</p> <p>(2) Travel Full stroke (form Ref 0° to 90% output position)</p> <p>(3) Number of cycles 2 million</p> <p>(4) Frequency 3 Hz</p> <p>5.2. Dither test</p> <p>(1) Temperature +25 deg C to 135 deg C</p> <p>(2) Travel 2deg area around index output position</p> <p>(3) Number of cycles 10 million</p> <p>(4) Frequency 30 Hz</p> <p>5.3. Vibration</p> <p>(1) Temperature -40 deg C to 150 deg C cycling</p> <p>(2) Cycles 20h in 3 directions (Directions of X, Y, Z axis)</p> <p>(3) Acceleration 16 to 22 G (RMS)</p> <p>(4) Frequency 50 to 400 Hz</p> <p>(5) Operational position: Output index</p> | | | | | |
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