

⚠ Caution

(1) Please consult with Murata representative prior to using our products for the applications requiring especially high reliability what defects might directly cause damage to other party's life, body or property (listed below).

- 1) Aircraft equipment
- 2) Aerospace equipment
- 3) Undersea equipment
- 4) Nuclear control equipment
- 5) Medical equipment
- 6) Transportation equipment (automobiles, trains, ships, etc.)
- 7) Traffic signal equipment

- 8) Disaster prevention/crime prevention equipment
 - 9) Data-processing equipment
 - 10) Applications of similar complexity or with reliability requirements comparable to the applications listed in the above.
- (2) Be sure to provide an appropriate fail-safe function on your product to prevent a second damage that may be caused by an abnormality or failure related to our product.

⚠ Caution for Using**1. Installation and Electrical Connection of Sensor**

(1) When installing sensor, tighten the nut at the torque levels less than 1.0N.m (10kgf.cm as reference). The exceeded force might damage the screw thread of sensor.

(2) Please use the recommended connector which is indicated No.3 paragraph (Outline and dimension). When connectors other than this are used, poor contact and connector part destruction may occur.

2. Cleaning

Can not be cleaned by any solvents due to the open construction.

3. Operating Environmental Conditions

(1) Uncontrolled mechanical force except usual rotation on the shaft of product, may cause big change of electrical characteristic, big increase of rotational torque or mechanical damage of product.

Therefore, please pay your attention on the following points for your design.

Please design your coupler by holding shaft bush to avoid exceeded radial or thrust shaft force of sensor.

(2) Do not use the rotary position sensor under the conditions listed below. If you use the rotary position sensor in the conditions listed below, please consult with Murata representative prior to using.

- 1) Corrosive gasses atmosphere (Ex. Cl₂, H₂S, NH₃, SO₂, NO_x, etc.)
- 2) In liquid (Ex. water, oil, medical liquid, organic solvent, etc.)
- 3) Dusty/dirty atmosphere
- 4) Direct sunlight
- 5) Static voltage nor electric/magnetic fields
- 6) Direct sea breeze
- 7) Other variations of the above

4. Storage Conditions

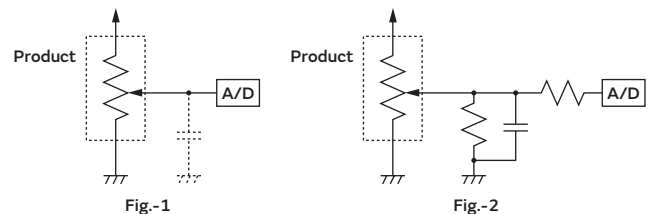
(1) To ensure the electrical conductivity of the connector, store that the temperature is -10 to +40°C and the relative humidity is 30 to 85%RH, and use within six months after delivery.

If you are going to use a product which has been stored for more than six months, please check its electrical conductivity in advance.

- (2) Do not store in or near corrosive gases.
- (3) Do not store under direct sunlight.

5. Circuit Design and Other**(1) Connecting Impedance**

The rotary position sensor is designed the condition shown on Fig.-1, that is connecting the output terminal and A/D port of the microprocessor directly. In other words, connecting impedance presuppose certain M ohm and the contact resistance are set high. Therefore, please make sure the connecting impedance should not to be less than 10M ohm if you use the circuit shown on Fig.-2.

**(2) Noise Suppression**

To minimize the processing error which occur in rare cases, when data is installed through the product and noise influence from wiper contact and/or outside, please note the following points and program your software.

- 1) Data install should be done plural times and applied the mean value.
- 2) Data considered as error should be invalid.
- 3) Data should be re-installed if something occurs.

(3) Cautions to Use Grease or Oil

In case of using grease or oil on connecting shaft or gear which are connected to the rotary position sensor, please prevent grease or oil coming into the rotary position sensor. If grease or oil puts into the rotary position sensor, the rotary position sensor may deviate from the specified characteristics.