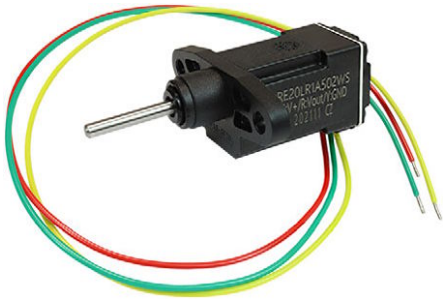
Mounting and Handling Recommendations for REC 20 LR Series Linear Position Sensors

The following instructions contain all the required information for a commissioning and a safe operation of Vishay Sfernice REC 20 LR series motion transducers.

Caution: The information given here is derived from product datasheets.



1. INTRODUCTION

The REC 20 LR series has been developed and qualified use in industrial applications under conditions defined in the products' technical specification. For outdoor usage, please contact Vishay for further information regarding specific environmental conditions.

Terms, definitions, and test procedures are in accordance with VRCI-P-100A.

2. INSTALLATION AND STARTUP

The sensor should only be installed by technical personnel in observance of all relevant safety regulations.

Non-observance of the installation instructions will cancel any product guarantee or liability claims.

In the event of a transducer defect or failure, all personal protection measures must be taken before start-up.

The specified supply voltage is to be applied only at the relevant terminals.

Non-observance of the output configuration could result in destruction of the device and loss of product guarantee.

Admissible supply conditions and protection are defined in the transducers' datasheet.

3. MOUNTING INSTRUCTIONS

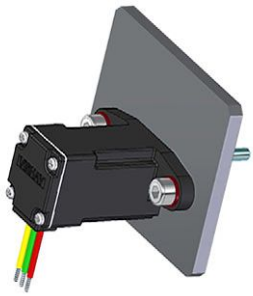
A Vishay Sfernice motion transducer is a precision instrument with high measuring sensitivity, which can be achieved only by means of appropriate mechanical installation. Therefore, applying abnormal external mechanical forces (such as radial force on the shaft, extreme axial force at end-stops positions, any direction forces on the housing) should be avoided.

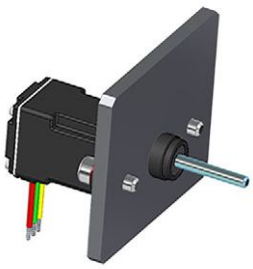
The stroke and initial position must be adjusted to ensure that the sensor works in TET (theoretical electrical travel).

The stops cannot be used during operating mode.

3.1 Mounting Type

The housing of the REC 20 LR includes a flange to allow for fixation by screws:





We recommend using two D4 mm (ISO4762) pan-head screws with support washers (ISO7089).

Assemble the part using a torque wrench with a tightening torque of 1 Nm (quality of screw: 8.8; support material: aluminum).

3.2 Warning

During assembly, the creation of a radial load on the shaft must be avoided.

In addition, the shaft fixation has to be defined to avoid a radial shaft load.

If a misalignment is expected, we preconize the use of a mechanical device, such as the following rod ends:

4. ELECTRICAL CONNECTION

4.1 Output Device

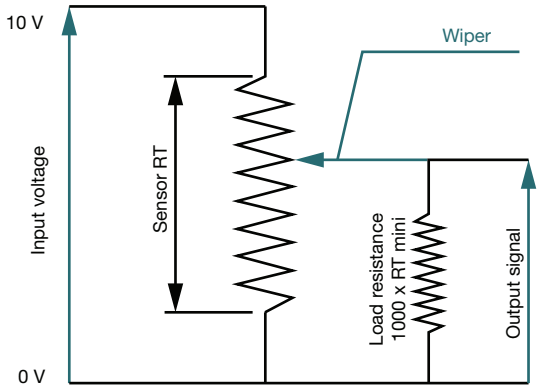
The output device is flying lead wires, whose ends are tinned with an SnAgCu alloy. These wires can be soldered on a PCB or other device.

The recommended soldering conditions are:

- Soldering material: Sn96Ag3.5Cu0.5 alloy
- Temperature soldering iron: 350 °C
- Max. heating time (by solder): 6 s

Flying lead wires are defined in accordance with IPC/WHMA-A-620A, Class 2.

4.2 Electrical Circuit



The recommended load resistance is defined by the datasheet.

5. ELECTRICAL PARAMETERS AND PERFORMANCE

The definition of the electrical parameters is in accordance with VRCI-P-100A.

The product must be used in the defined area (TET).

Product life performance has been qualified to the following conditions:

- Ambient temperature
- Travel from 5 % to 95 % of AET (actual electrical travel)
- 3 Hz

Other conditions may affect the operating life.

The dynamic contact resistance is a normal drift that can be observed during operating life without impacting the product's performance.

6. ENVIRONMENTAL CONDITIONS OF USE

6.1 Temperature

The product has been designed for use under the conditions defined in the technical datasheet. If a specific environment requires rapid temperature changes, it must be validated by our technical services.

6.2 Sealing and Humidity

The level of sealing is indicated by the technical datasheet. General conditions are in accordance with standard CEI. 60529.

6.3 Pressure

Due to the technology used, the product is not sensitive to pressure.

In the case of unusual conditions, please contact Vishay for further information.

6.4 Vibration and Shock

The product has been designed to be used under the conditions defined in the technical specifications. Its optimal performance will only be reached if the mounting instructions are respected.

6.5 Chemical Attack

The external materials used have been chosen to ensure the integrity of our product during use in a normal environment.

6.6 Magnetic Fields

Due to the technology utilized, the transducer is not sensitive to strong magnetic or electromagnetic fields in close vicinity.

7. SHELF LIFE

7.1 General Storage Recommendations

Careful attention must be paid when storing the components before use. High and very low environmental temperatures, high humidity, corrosive gases, and more might affect the solderability of the terminals and the function of the package.

The notes listed below should be observed:

- Keep the product in its original packaging
- Do not store the product in the vicinity of corrosive gases such as hydrogen sulfide, sulfuric acid, chlorine, or ammonia. The oxidation of the metals caused by such toxic gases may affect solderability
- Avoid exposure to direct sunlight and dust

7.2 Inspection or Control Before Use

The product can be stored for two years and used without any additional control. Beyond this period, the product's main parameters (linearity, electric stroke, etc.) have to be verified before use.

In there is any doubt in regard to the storage conditions, or after a long storage period, we also recommend testing the solderability before use.