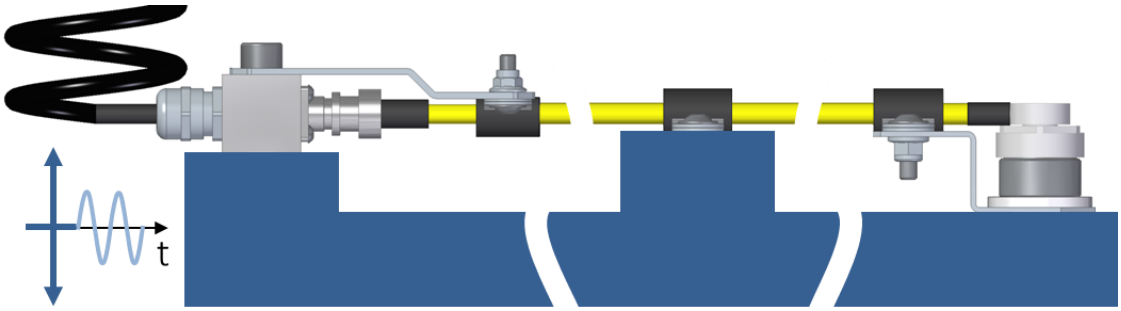
Assembly instructions signal cable LC

Particular attention should therefore be paid to cable laying, as force gauge screws are also used where vibrations or impulses, e.g. on machine elements or assemblies. As a result, there may be increased stress on the connectors, the premature failure of which is to be prevented by subsequent measures.

The following figure shows an example of the design of a robust and sustainable routing of a cable route on a moving assembly. The elements available for this purpose are explained below.



Please be sure to follow the instructions for installation in chapter 4 to ensure a durable and reliable function of the cable route.

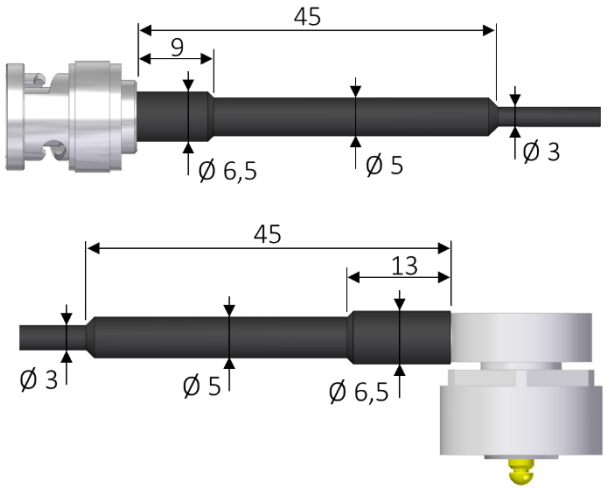
1. Signal line

The LC signal cable is a special cable for the transmission of charge shifts. For this purpose, the coaxial cable is equipped with appropriate "Low Noise" properties to minimize triboelectric effects caused by movement of the cable.

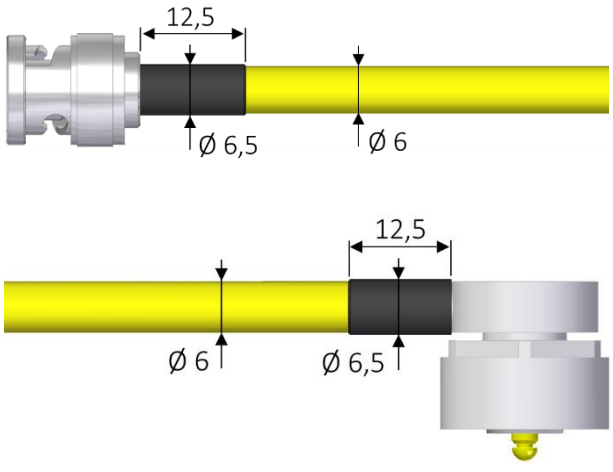
1.1. Angled sensor connector

The signal line in the version with angled sensor connection can be equipped with or without a protective tube. The advantage of the protective hose is increased mechanical robustness and media resistance. One disadvantage is the more inflexible installation.

Without protective sleeve



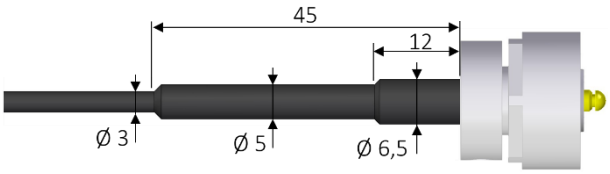
With protective sleeve



The protective hose is the "Festo PUN 6x1" brand. For fixation, there are e.g. Pipe clamps with rubber insert according to DIN 3016 Form D1 in the dimension 6x15 mm are in question.

1.2. Axial sensor connection

If the angled sensor connection is not an option for reasons of installation space, a version with axial cable outlet is also available.



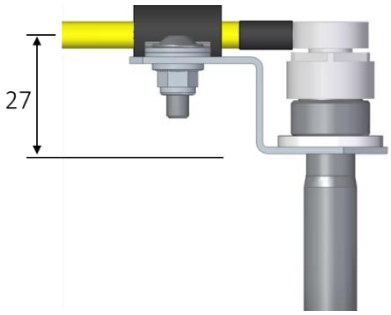
2. Strain relief on the sensor connection

When mounting the PiezoBolts PB, attention should be paid to mechanical strain relief and anti-rotation protection of the connectors. The following installation instructions serve to ensure compliance with the intended use.

If the mounting option of the cable catch on the assembly is not available, the accessory set "Bracket Set for Signal Line LC" can be used with angled sensor connection. Here, the strain relief of the cable takes place within the framework of the sensor mounting.

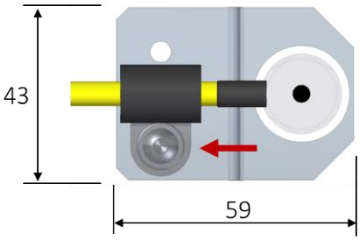
For PB12: Bracket set for signal cable LC12 (04.10015)

Side view

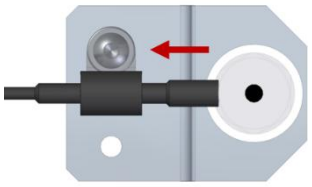


Top

With protective sleeve

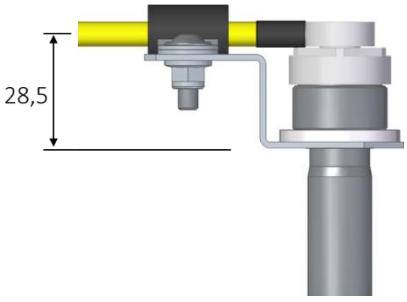


Without protective sleeve



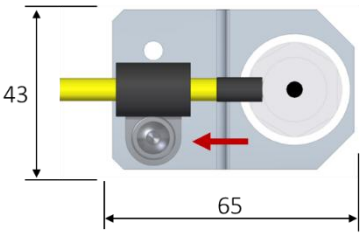
For PB16: Bracket set for signal cable LC16 (04.10016)

Side view

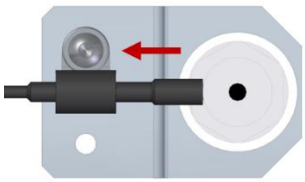


Top

With protective sleeve

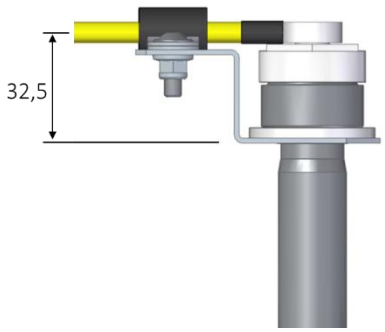


Without protective sleeve



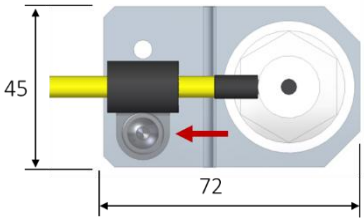
For PB20: Bracket set for signal cable LC20 (04.10017)

Side view

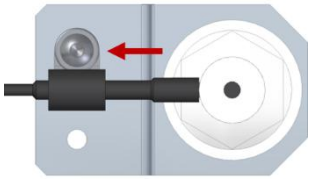


Top

With protective sleeve



Without protective sleeve

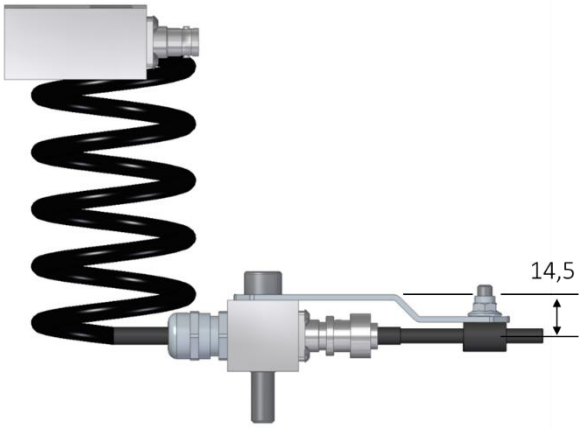


3. Strain relief on the spiral cable connection

At least the end of the spiral cable module where the sensor is located could be subjected to increased stress due to vibration or pulse. The accessory set "Bracket Set for Spiral Cable LCS & LBS" (item no. 04.10018) is used for this purpose to increase robustness. In this case, the strain relief of the cable is applied as part of the spiral cable fastening. The scope of delivery includes two clamps with different clamp diameters for signal lines with and without protective hose. Depending on the configuration used, a mounting hole with suitable spacing is available.

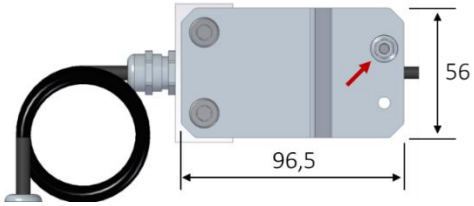
Signal cable LC without protective hose

Side view



Top

From above



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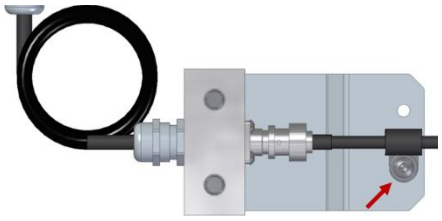
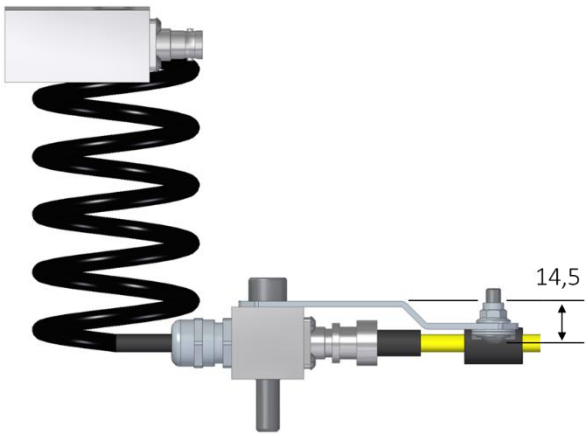


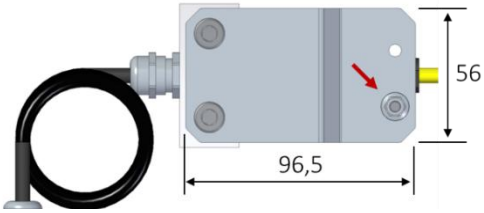
Signal cable LC with protective hose

Side view

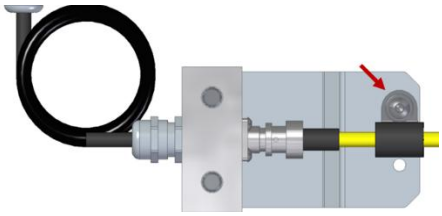


Top

From above



From below



4. Instructions for installation

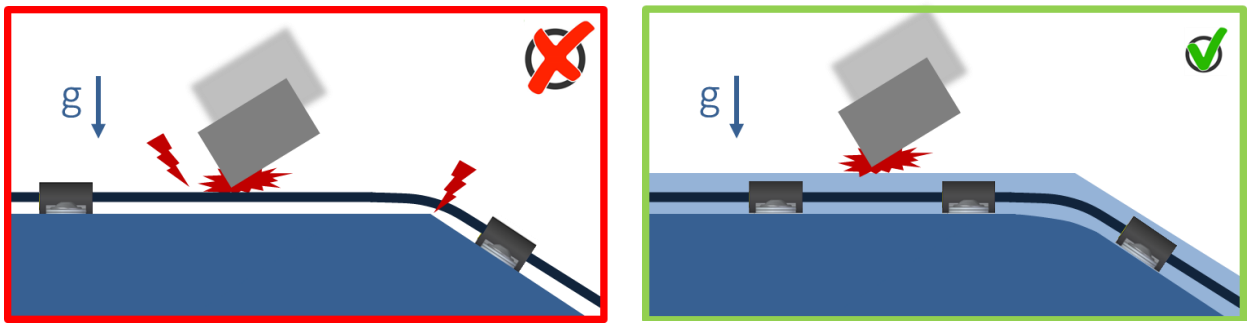
Due to the principle, the cable structure consists of several materials, namely plastics and copper, which have different mechanical properties. Every time the cable is moved, there is displacement inside the cable, which results in a certain amount of wear, especially of the insulating plastic layers.

Cable movements can also be generated by their own dynamics on moving assemblies. These are often characterized by many oscillating cycles, which can result in failure after only a short operating time due to the above-mentioned wear principle.

Therefore, especially on moving assemblies, cable routing should be as straight as possible and absolutely without cable loops. Here, in particular, mass forces would lead to highly localized loads, which destroy the cable structure during operation.

Sharp-edged cable fastenings can also lead to premature failure. We therefore recommend, for example clamps with rubber insert DIN 3016 Form D1. Please refrain from using cable ties, on the one hand because of the relatively sharp outer edges, and on the other hand because of the possible cable crushing.

Furthermore, depending on the intensity of the accelerations that occur, the cable fastening should be chosen more tightly in order to limit the momentum of the movement.



In general, it is recommended to embed the cables in the surrounding construction. For example, the protruding material protects the cable from collisions with other components, e.g. during assembly or maintenance work as well as against falling parts. Especially when routed over edges, the cable otherwise represents an exposed weak point. In addition to sufficient rounding of the edge, attention should also be paid to a suitable cable fastening.