

Instruction for Use

021720/03/14

Wind Transmitter compact

4.3519.xx.140 ... 961



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1 Models

Order - No.	Electrical Output	Measuring range	Heating power	Connection
4.3519.00.140 4.3519.00.840*	0...20 mA	0...50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm ²
4.3519.00.141	4...20 mA	0...50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm ²
4.3519.00.161	0...10 V	0...50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm ²
4.3519.00.167	0...2 V	0...50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm ²
4.3519.00.173	0...5 V	0...50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm ²
4.3519.00.361	0...10 V	0...3 m/s max. 13,8 V @ >3m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm ²
4.3519.00.441	4...20 mA	0...40 m/s	20 W	3 m PUR -Cable 6 x 0,25 mm ²
4.3519.00.641	4...20 mA	0...60 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm ²
4.3519.00.740	0...20 mA	0...50 m/s	20 W	7 pol. Plug
4.3519.00.741	4...20 mA	0...50 m/s	20 W	7 pol. Plug
4.3519.00.761	0...10 V	0...50 m/s	20 W	7 pol. Plug
4.3519.00.773	0...5 V	0...50 m/s	20 W	7 pol. Plug
4.3519.00.961	0...10 V	0...15 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm ²
4.3519.01.140	0...20 mA	0...50 m/s	20 W	1,5 -3 m Spiral Cable LiYY 6x0,14 mm ²
4.3519.02.141	4...20 mA	0...50 m/s	10 W	2 m Cable 6 x 0,56 mm ²
4.3519.04.441	4...20 mA	0...40 m/s	20 W	0,95 m PUR- Cable 6 x 0,25 mm ²
4.3519.05.141	4...20 mA	0...50 m/s	20 W	15 m Cable LiYCY 6 x 0,25 mm ²
4.3519.05.161	0...10 V	0...50 m/s	20 W	15 m Cable LiYCY 6 x 0,25 mm ²
4.3519.05.641	4...20 mA	0...60 m/s	20 W	15 m Cable LiYCY 6 x 0,25 mm ²
4.3519.10.441	4...20 mA	0...40 m/s	Without heating	12 m Cable LiYCY 6 x 0,25 mm ²
4.3519.20.141	4...20 mA	0...50 m/s	10 W	12 m Cable LiYCY 6 x 0,25 mm ²
4.3519.39.141	4...20 mA	0...50 m/s	20 W	12 m Cable LiYCY 6 x 0,25 mm ² with cable lug at the shield
4.3519.40.140	0...20 mA	0...50 m/s	60 W	12 m Cable LiYCY 6 x 0,5 mm ²
4.3519.40.141	4...20 mA	0...50 m/s	60 W	12 m Cable LiYCY 6 x 0,5 mm ²
4.3519.40.161	0...10 V	0...50 m/s	60 W	12 m Cable LiYCY 6 x 0,5 mm ²
4.3519.40.167	0...2 V	0...50 m/s	60 W	12 m Cable LiYCY 6 x 0,5 mm ²
4.3519.40.173	0...5 V	0...50 m/s	60 W	12 m Cable LiYCY 6 x 0,5 mm ²
4.3519.40.740	0...20 mA	0...50 m/s	60 W	7 pol. Plug
4.3519.40.741	4...20 mA	0...50 m/s	60 W	7 pol. Plug
4.3519.40.761	0...10 V	0...50 m/s	60 W	7 pol. Plug

* Counter nut inverse-mounted, see figure 6.

2 Application

The wind transmitter detects the horizontal wind speed. The measured values are available at the output as analogue voltage or current signal to control for instance wind power plant.

An electronically-regulated heating system has been installed in some models (see chapter 1) for winter time use, in order to prevent the ball-bearing and the external rotation parts from freezing.

Thanks to the 60-Watt-heating as well as to the optimized regulating characteristic, model no. 4.3519.40.xxx is especially suited for the extremely difficult application in high mountains or at other critical sites, where icing is to be expected.

3 Mode of Operation

The cup star (in ball bearing) is set into rotation by the wind. An opto-electronic speed scanning produces a frequency which is transformed into an analogue signal by an integrated measuring transformer.

The outer parts of the instrument are made of corrosion-resistant materials. Labyrinth gaskets protect the parts inside the instrument against precipitations.

4 Recommendation Site Selection / Standard Installation

In general wind measurement instruments should be able to detect the wind conditions of a large area. In order to obtain comparable values when determining the surface wind, measurements should be taken at a height of 10 meters over an even area with no obstacles. An area with no obstacles means that the distance between the wind direction transmitter and an obstacle should be at least 10 times the height of the obstacle (s. VDI 3786). If it is not possible to fulfil this condition then the wind direction transmitter should be set up a height where local obstacles do not influence the measured values to any significant extent (approx. 6-10 m above the obstacle). The wind direction transmitter should be set up in the centre of flat roofs and not on the edge in order to avoid any preferential directions.

5 Installation

Attention:

Storing, mounting and operation under weather conditions is permissible only in vertical position, as otherwise water can get into the instrument.

Remark:

When using fastening adapters (angle, traverses, etc.) please take a possible effect by turbulences into consideration.

Caution:

The device may only be supplied with a power supply of the „Class 2, limited power“.

5.1 Mechanical Mounting

The mounting of the transmitter could be done for example at a support with a boring of PG 21 or on hangers with a boring of 29 mm Ø.

Tools:

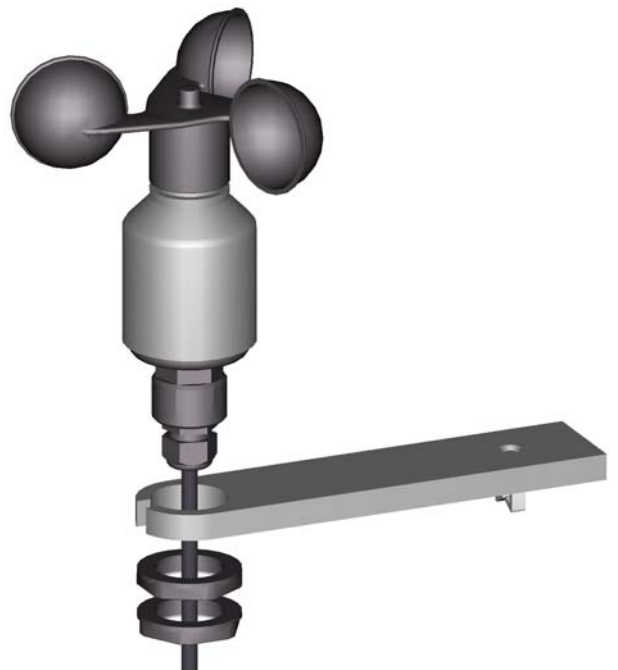
Hexagonal wrench SW36

Procedure:

1. Push cable/ plug connector of the wind transmitter through the borehole of the mast, tube, arm etc.
2. Put wind transmitter on mast, tube, arm etc.
3. Safeguard the wind direction transmitter by two hexagonal nuts (PG21, SW 36).

Remark:

The support is not included in delivery.



5.2 Electrical Mounting

For electrical connection please refer to the connecting diagram.

5.3 Plug mounting

Applies only to instruments with connection „plug“.

Coupling socket, Typ:Binder, Serial 423, EMC with cable clamp

Cable connection: without cable shield

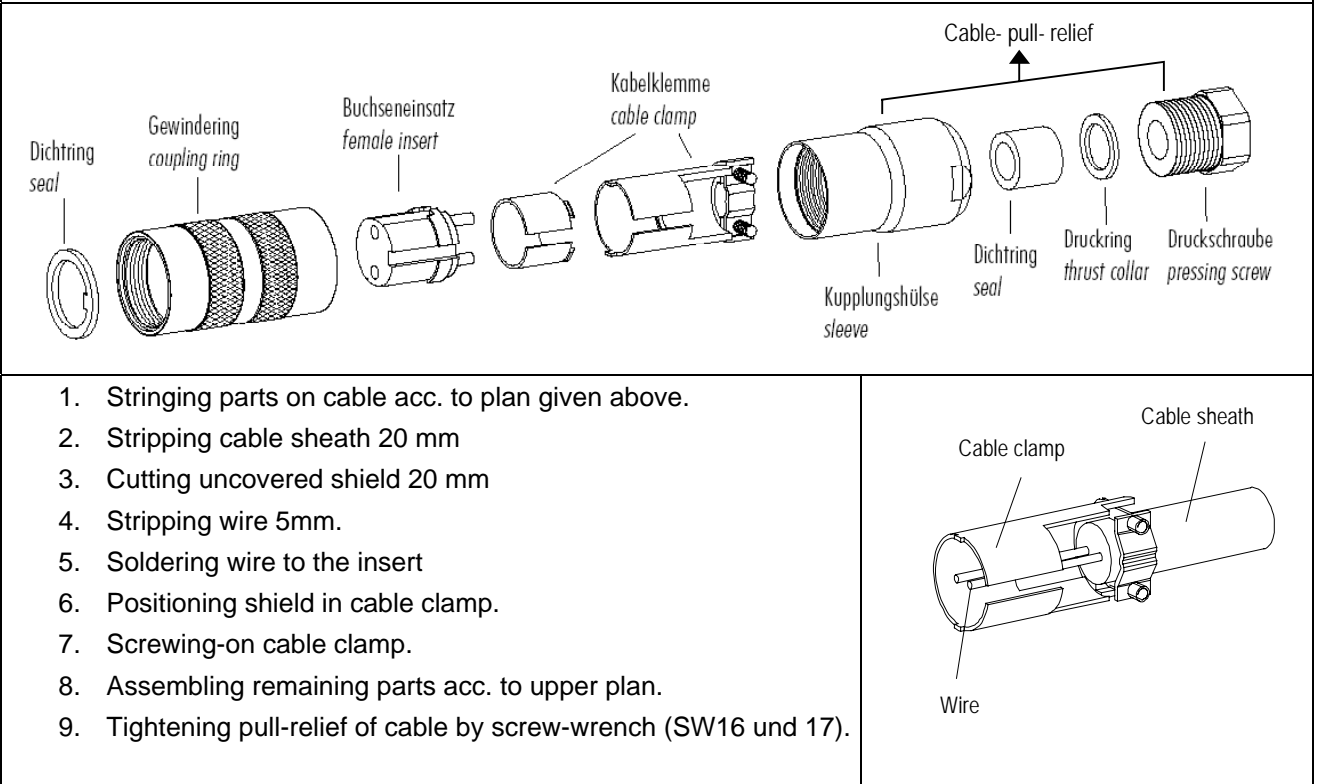


Figure 1: plug mounting

6 Connecting Diagram

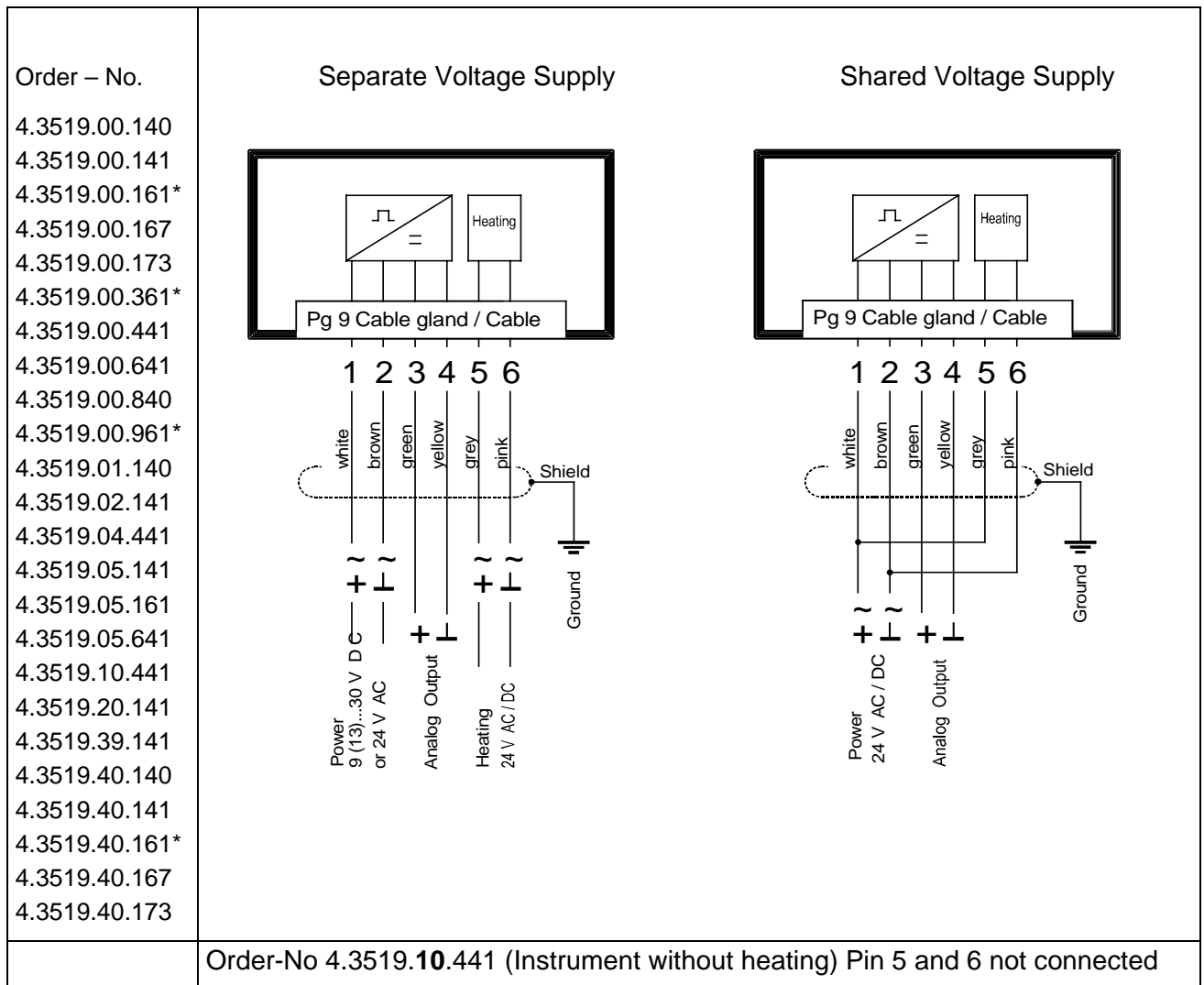


Figure 2: Connecting Diagram for Models with fixed Connecting Cable

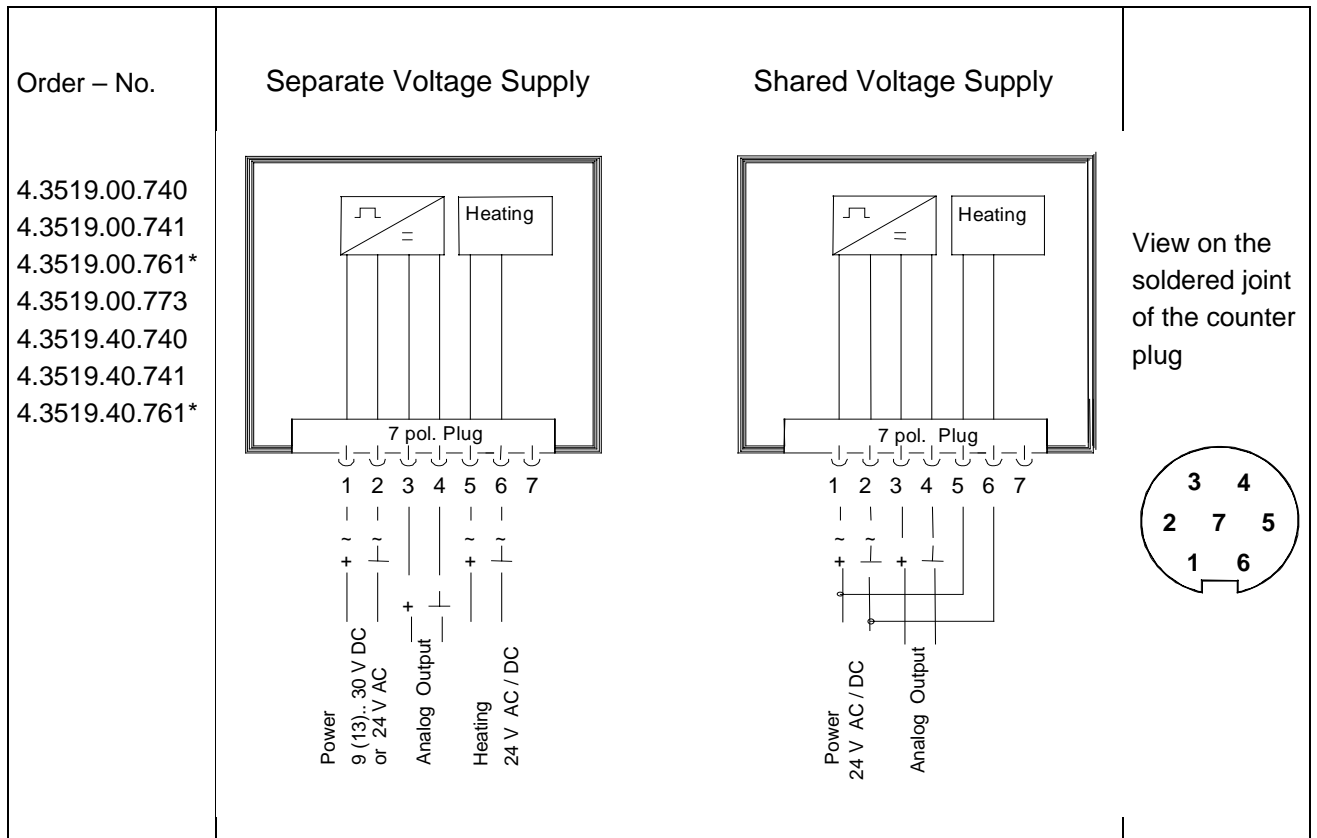


Figure 3: Connecting Diagram for Models with Connector

7 Maintenance

After proper mounting the instrument works maintenance free.

Heavy pollution can clog up the slit between the rotating and the stationary parts of the wind transmitter. This slit must be kept clean.

Cleaning

For the cleaning of the device should use a damp cloth without chemical cleaning agents are used.

8 Technical Data

Measuring range	See model
Resolution	0,1 m/s
Starting velocity	0,5 m/s
Accuracy	$\pm 0,5$ m/s or $\pm 3\%$ of measuring value
Delay distance	< 3,5 m (acc. to DIN ISO 17713-1)
Measuring principle	Opto-electronic (slotted disc)
Electrical output	See model
Load for current output (mA) for current output (V)	max. 500 Ohm (for operating voltage > 15 V DC) min. 1 K Ω
Electrical supply for electronics	
	U: 9...30 V DC oder 24 V AC/DC I: 0,05A P: 1,5 W
*für 0 -10 V output	U: 13...30 V DC oder 24 V AC/DC I: 0,05A P: 1,5 W
Electrical supply for heating	
4.3519.00/01/02/04/05/20/39.xxx	U: 24V AC/DC, 45...65Hz I: 0,83A P: 20 W
4.3519.20.xxx	U: 24V AC/DC, 45...65Hz I: 0,42A P: 10 W
4.3519.40.xx	U: 24V AC/DC, 45...65Hz I: 2,5A P: 60 W
Operating voltage heating	-40°C...70°C
Survival speed	maximally 80 m /s, 30 minutes
Connection	See model
Dimensions	See dimensional drawing
Montage	For ex. onto mast tube with receptacle thread Pg 21 or boring \varnothing 29 mm
Protection	IP 55
Weight	0,40 – 0,75 kg depending on model
Material	
Housing	Aluminium (AlMgSi1)
Cup star	Synthetic, with fibre glass (PC-GF10)
Bottom	Synthetic (POM H2320)

9 Dimension diagram

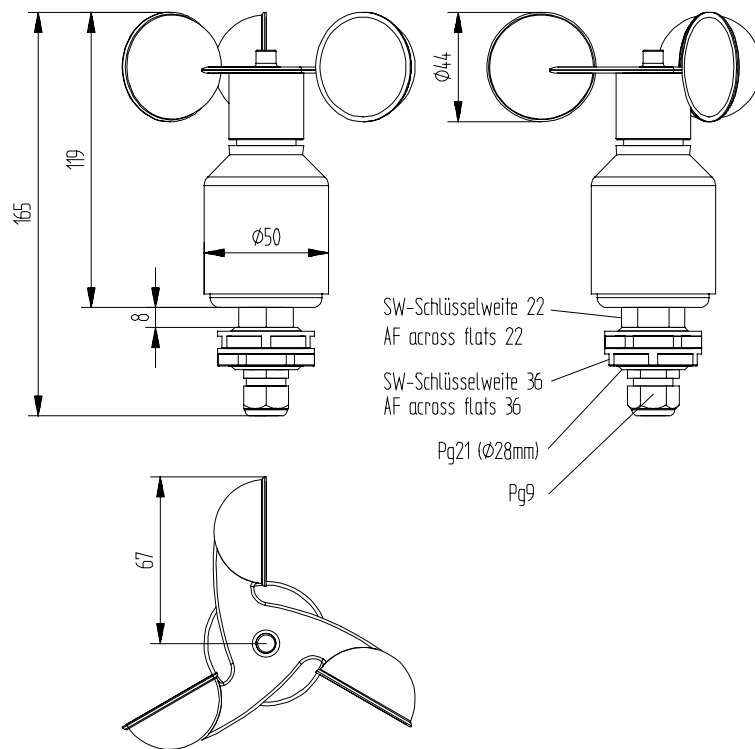


Figure 4: Dimensional Drawing Model cable gland

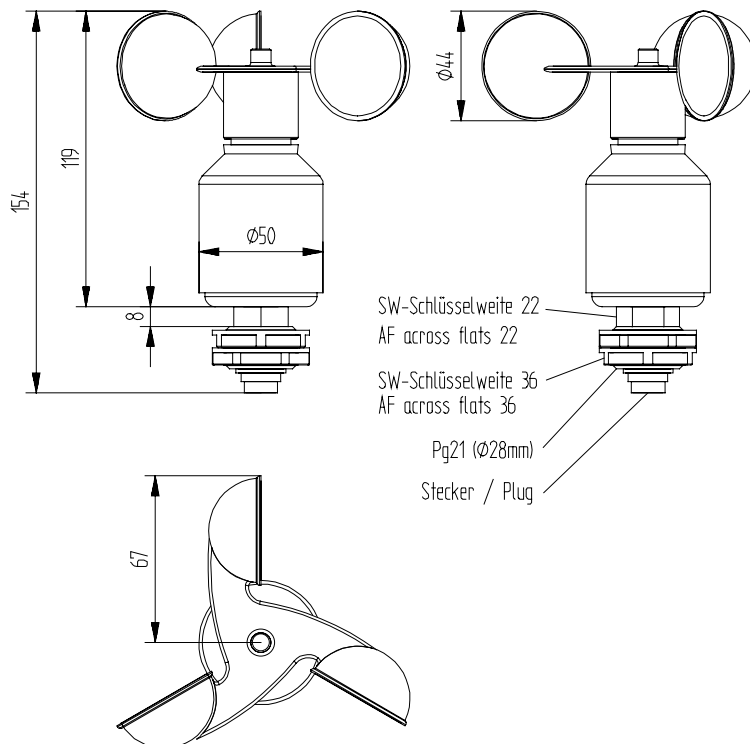


Figure 5: Dimensional Drawing Model plug

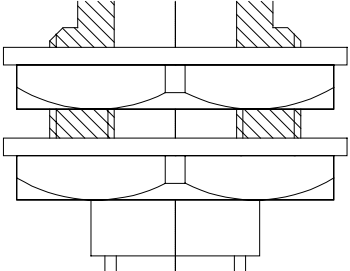
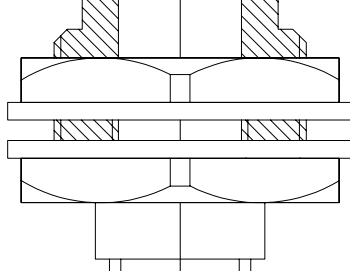
	4.3129.xx.xxx	4.3129.00.840
Assembly condition of the counter nut ex works	 <p>Technical drawing showing the assembly condition of the counter nut for part 4.3129.xx.xxx. It features a central shaft with a nut and a counter nut. The counter nut is positioned above the nut, and the shaft passes through both. The drawing shows the internal threads and the contact surfaces between the components.</p>	 <p>Technical drawing showing the assembly condition of the counter nut for part 4.3129.00.840. It features a central shaft with a nut and a counter nut. The counter nut is positioned above the nut, and the shaft passes through both. The drawing shows the internal threads and the contact surfaces between the components.</p>

Figure 6: Counter nut

