

Instruction for Use

021720/05/16

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 ¹⁾	0...20mA	0...50m/s	20W	12m Cable LiYCY 6 x 0,25mm ²
4.3519.00.141	4...20mA	0...50m/s	20W	12m Cable LiYCY 6 x 0,25mm ²
4.3519.00.161	0...10V	0...50m/s	20W	12m Cable LiYCYmittern8 6 x 0,25mm ²
4.3519.00.167	0...2V	0...50m/s	20W	12m Cable LiYCY 6 x 0,25mm ²
4.3519.00.173	0...5V	0...50m/s	20W	12m Cable LiYCY 6 x 0,25mm ²
4.3519.00.361	0...10V	0...3m/s max. 13,8V @ >3m/s	20W	12m Cable LiYCY 6 x 0,25mm ²
4.3519.00.441	4...20mA	0...40m/s	20W	3m PUR -Cable 6 x 0,25mm ²
4.3519.00.641	4...20mA	0...60m/s	20W	12m Cable LiYCY 6 x 0,25mm ²
4.3519.00.740	0...20mA	0...50m/s	20W	7 pol. Plug
4.3519.00.741	4...20mA	0...50m/s	20W	7 pol. Plug
4.3519.00.761	0...10V	0...50m/s	20W	7 pol. Plug
4.3519.00.773	0...5V	0...50m/s	20W	7 pol. Plug
4.3519.00.961	0...10V	0...15m/s	20W	12m Cable LiYCY 6 x 0,25mm ²
4.3519.01.140	0...20mA	0...50m/s	20W	1,5 -3m Spiral Cable LiYY 6x0,14mm ²
4.3519.02.141	4...20mA	0...50m/s	10W	2m Cable 6 x 0,56mm ²
4.3519.04.441	4...20mA	0...40m/s	20W	0,95m PUR- Cable 6 x 0,25mm ²
4.3519.05.141	4...20mA	0...50m/s	20W	15m Cable LiYCY 6 x 0,25mm ²
4.3519.05.161	0...10V	0...50m/s	20W	15m Cable LiYCY 6 x 0,25mm ²
4.3519.05.641	4...20mA	0...60m/s	20W	15m Cable LiYCY 6 x 0,25mm ²
4.3519.10.441	4...20mA	0...40m/s	Without heating	12m Cable LiYCY 6 x 0,25mm ²
4.3519.20.141	4...20mA	0...50m/s	10W	12m Cable LiYCY 6 x 0,25mm ²
4.3519.39.141	4...20mA	0...50m/s	20W	12m Cable LiYCY 6 x 0,25mm ² with cable lug at the shield
4.3519.40.140	0...20mA	0...50m/s	60W	12m Cable LiYCY 6 x 0,5mm ²
4.3519.40.141	4...20mA	0...50m/s	60W	12m Cable LiYCY 6 x 0,5mm ²
4.3519.40.161	0...10V	0...50m/s	60W	12m Cable LiYCY 6 x 0,5mm ²
4.3519.40.167	0...2V	0...50m/s	60W	12m Cable LiYCY 6 x 0,5mm ²
4.3519.40.173	0...5V	0...50m/s	60W	12m Cable LiYCY 6 x 0,5mm ²
4.3519.40.740	0...20mA	0...50m/s	60W	7 pol. Plug
4.3519.40.741	4...20mA	0...50m/s	60W	7 pol. Plug
4.3519.40.761	0...10V	0...50m/s	60W	7 pol. Plug
4.3519.41.741	4...20mA	0...75m/s	110W	7 pol. Plug
4.3519.41.742	4...20mA	0...50m/s	110W	7 pol. Plug

¹⁾ 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 60/110-Watt-heating as well as to the optimized regulating characteristic, model no. 4.3519.40/41.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. 6-10m 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 29mm Ø.

Tools:

Hexagonal wrench SW36.

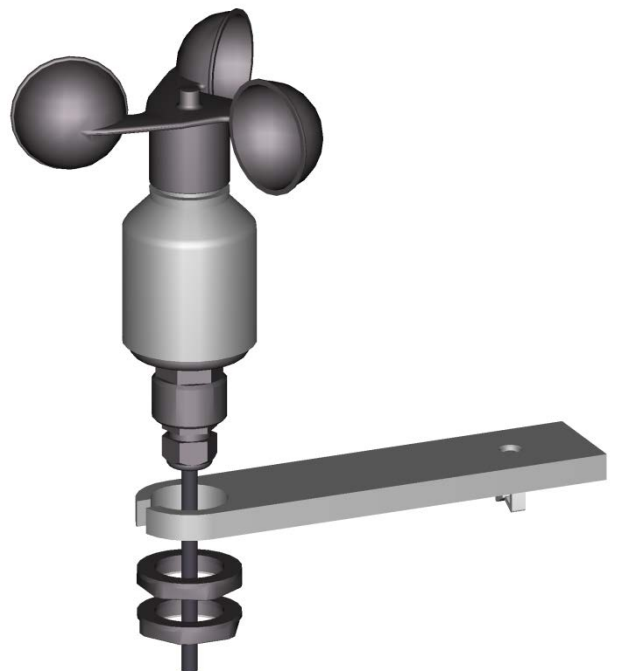
Procedure:

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).

Caution: The Hexagon nuts must be tightened to 6Nm.

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

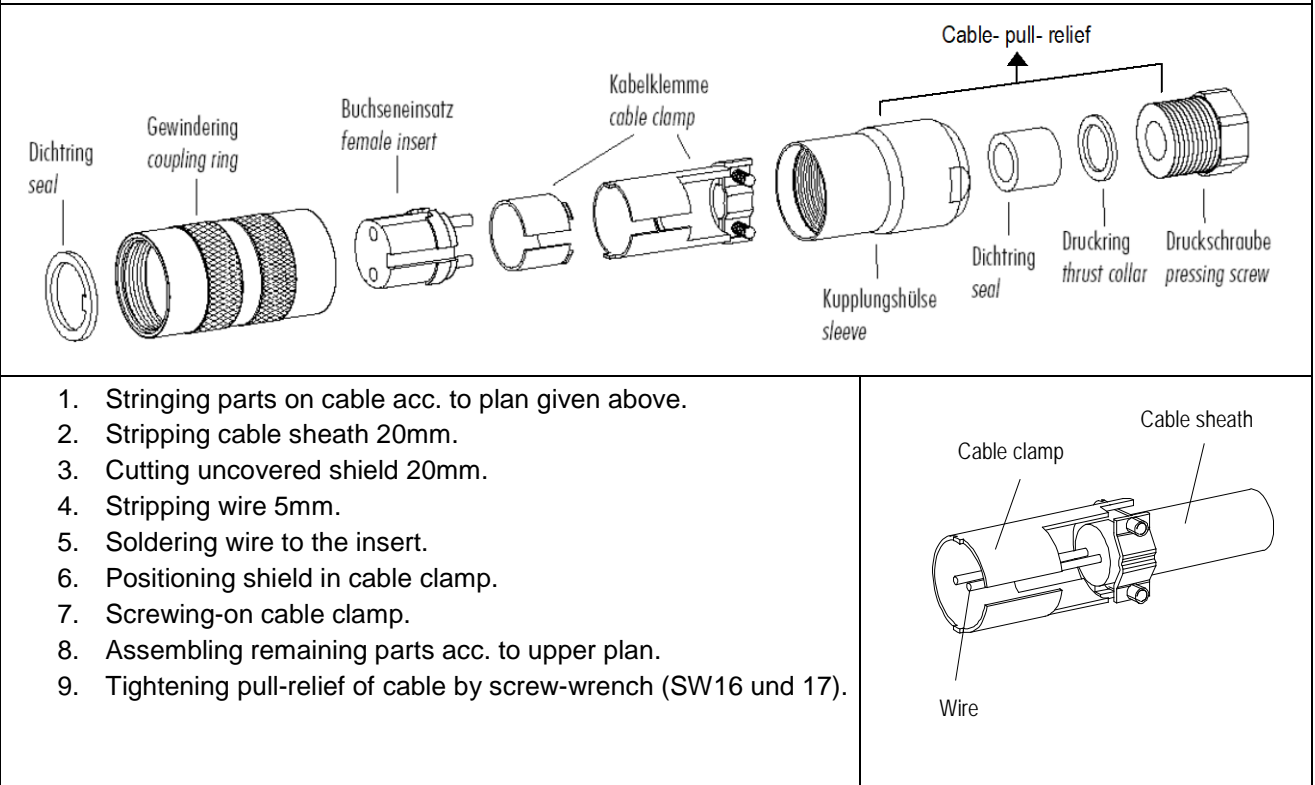


Figure 1: plug mounting

6 Connecting Diagram

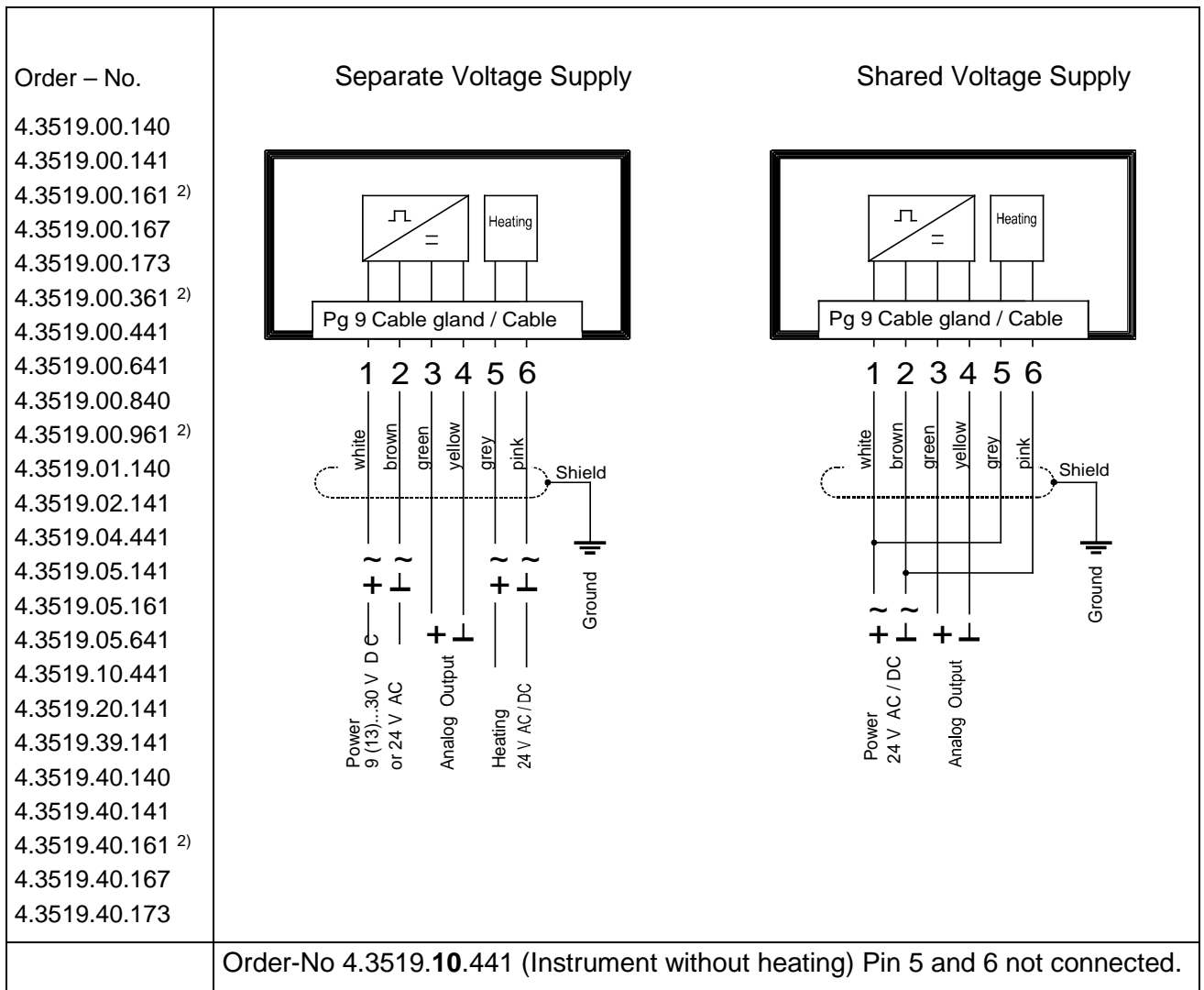


Figure 2: Connecting Diagram for Models with fixed Connecting Cable

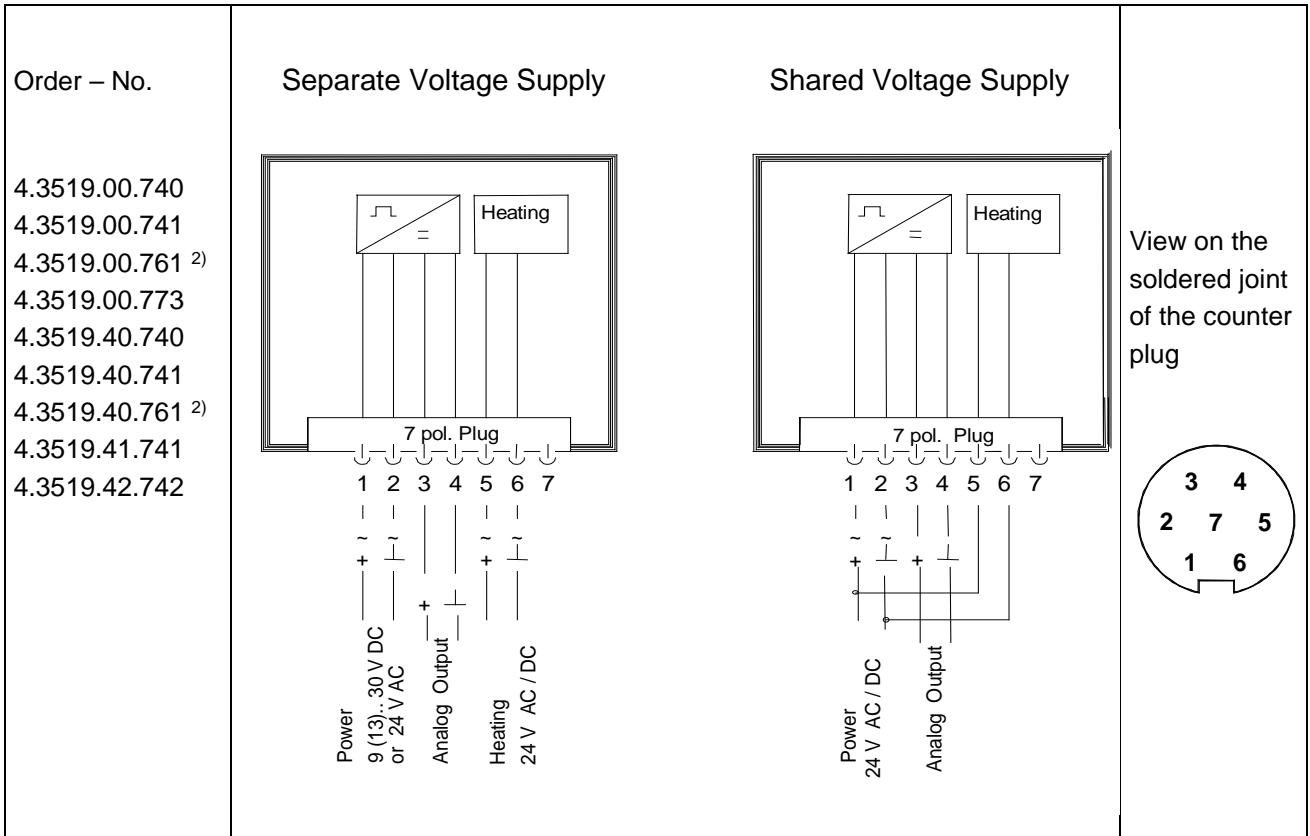


Figure 3: Connecting Diagram for Models with Connector

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	0,1m/s		
Starting velocity	0,5m/s		
Accuracy	± 0,5m/s or ± 3% of measuring value.		
Delay distance	< 3,5m (acc. to DIN ISO 17713-1).		
Measuring principle	Opto-electronic (slotted disc).		
Electrical output	See model.		
Load for current output (mA) for voltage output (V)	Max. 500Ohm (for operating voltage > 15V DC). Min. 1KΩ.		
Electrical supply for electronics			
	U: 9...30V DC oder 24V AC/DC	I: 0,05A	P: 1,5W
2) für 0 -10 V output	U: 13...30V DC oder 24V AC/DC	I: 0,05A	P: 1,5W
Electrical supply for heating			
4.3519.00/01/02/04/05/20/39.xxx	U: 24V AC/DC, 45...65Hz	I: 0,83A	P: 20W
4.3519.20.xxx	U: 24V AC/DC, 45...65Hz	I: 0,42A	P: 10W
4.3519.40.xx	U: 24V AC/DC, 45...65Hz	I: 2,5A	P: 60W
4.3519.41.741 / 742	U: 24V AC/DC, 45...65Hz	I: 4,5A	P: 110W
Operating voltage heating	-40°C...+70°C -50°C...+70°C (@4.3519.41.741 / 742)		
Survival speed	Maximally 80m /s, 30 minutes.		
Connection	See model.		
Dimensions	See dimensional drawing.		
Montage	For ex. onto mast tube with receptacle thread Pg 21 or boring Ø 29mm.		
Protection	IP 55		
Weight	0,40 – 0,75kg depending on model.		
Material			
	Housing	Aluminium (AlMgSi1).	
	Cup star	Synthetic, with fibre glass (PC-GF10).	
	Bottom	Synthetic (POM H2320).	

9 Dimension diagram

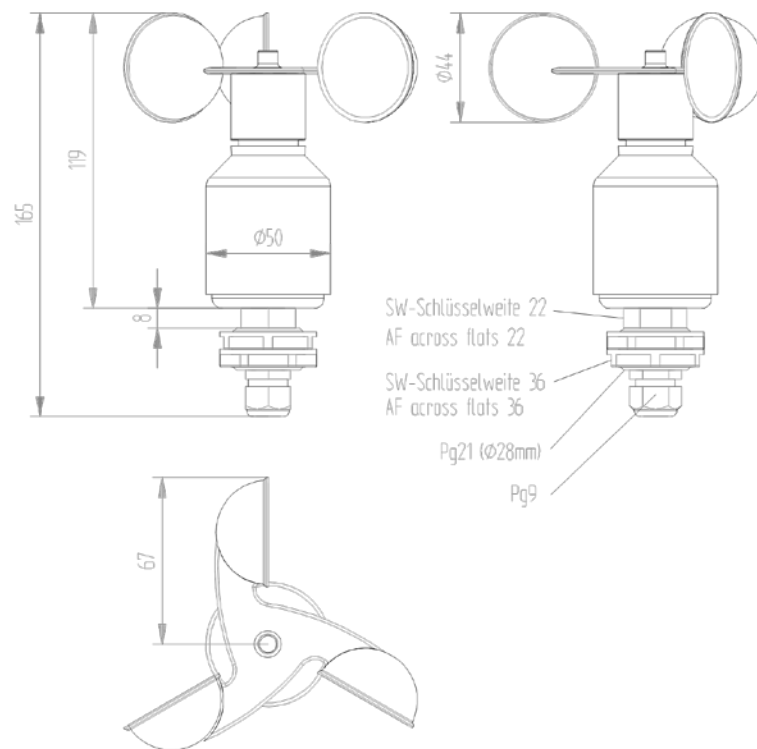


Figure 4: Dimensional Drawing Model cable gland

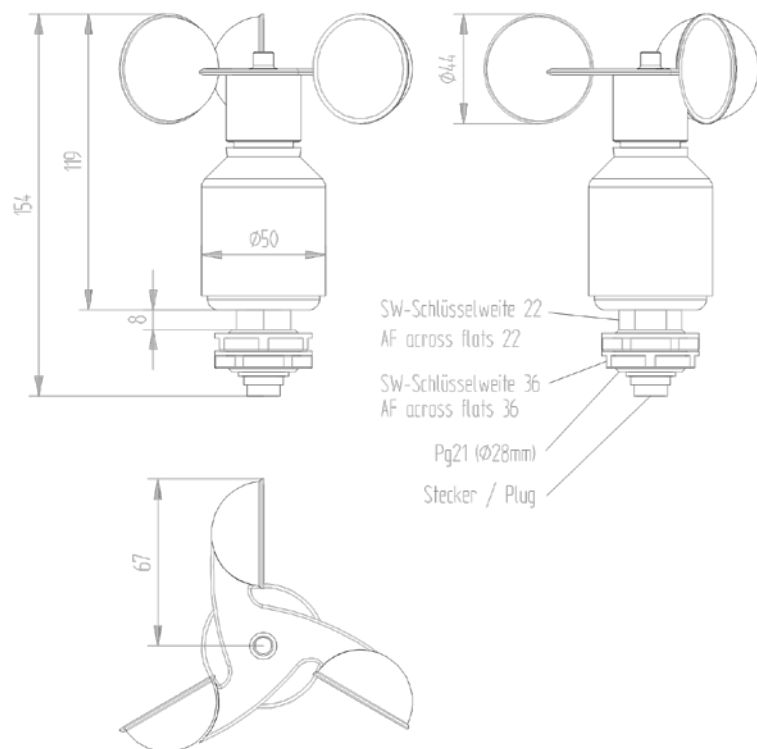


Figure 5: Dimensional Drawing Model plug

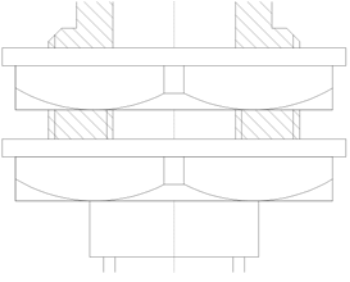
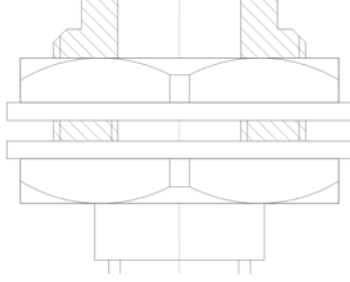
	4.3519.xx.xxx	4.3519.00.840
Assembly condition of the counter nut ex works	 <p>Technical drawing showing the assembly condition of the counter nut for part 4.3519.xx.xxx. It features a central vertical shaft with two counter nuts. The top counter nut is shown with a hatched section, indicating it is the part being examined. The drawing shows the internal profile of the counter nut and its fit on the shaft.</p>	 <p>Technical drawing showing the assembly condition of the counter nut for part 4.3519.00.840. It features a central vertical shaft with two counter nuts. The top counter nut is shown with a hatched section, indicating it is the part being examined. The drawing shows the internal profile of the counter nut and its fit on the shaft.</p>

Figure 6: Counter nut

