



- Measuring range:  
0-25 to 500 ppm/FTU  
(0-2.5 to 50 EBC)
- Measurement accuracy:  $\pm 2\%$  f.s.d.
- $p_{max}$ : 16 bar  
 $t_{max}$ : 100 °C (short-time 120 °C)  
optional 150 °C (short-time 170 °C)
- Different connections and nominal sizes
- Material: stainless steel 1.4571
- Analogue output: 4-20 mA
- 3 alarm contacts
- Colour compensated (double beam method)
- Good product quality



KOBOLD offices exist in the following countries:

**ARGENTINA, AUSTRIA, BELGIUM, BRAZIL, CANADA,  
CHINA, COLOMBIA, FRANCE, GREAT BRITAIN, NETHERLANDS,  
POLAND, SWITZERLAND, USA, VENEZUELA**

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**Model:**  
ATS-K



**Description of turbidity sensor:**

The model KOBOLD ATS-K is a high precision 2-beam scattered light sensor. It uses the light scattered in the forward direction (11°) and the transmitted light to measure the particles. The sensor is manufactured from stainless steel and has been designed for fitting in process pipework.

The process medium is penetrated by a focussed beam of light. The light scattered by the particles in the medium is sensed by the receiver optics at an angle of 11° by four silicon photodiodes. At the same time the unscattered light is absorbed as transmitted light by another photodiode. Unwanted light can thus be compensated for. Due to the small scattering angle, transmitted light and scattered light practically follow the same path in the medium, which means that product-specific noise variables such as colour or changes in colour of the carrier medium, as well as window soiling can be compensated for. The sensor uses visible (VIS) and near infrared (NIR) light from 400 to 1100 nm.

**Application Examples:**

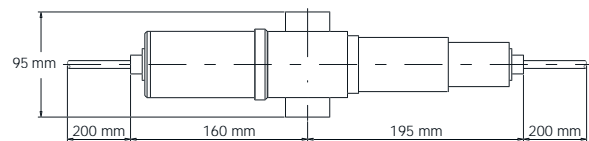
- Oil in water
- Separator control
- Water in oil
- Filter control
- Particle concentration
- Phase separation
- Quality control
- Crystallization techniques
- Sedimentation
- Drinking water/waste water
- Gas bubbles

**Technical Details:**

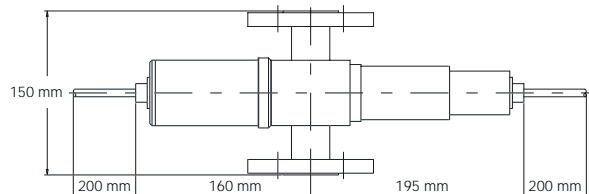
Principle of measurement:	2-beam scattered light technique (11°)
Measuring range:	0-25 to 500 ppm
Measurement accuracy:	±2% of set upper range value
Process temperature:	0-100 °C, optional 150 °C
Ambient temperature:	0-40 °C
Process pressure:	16 bar
Material:	1.4571/316 Ti, optional TFMC
Seals:	silicone/FPM/EPDM/Kalrez®
Window:	borosilicate glass, optional sapphire
OPL (optical path length):	40 mm
Process connections:	DIN/ANSI flange/NPT/pipe thread/dairy thread
Nominal sizes:	DN 25, DN 50, 1", 2"
Light source:	approx. 3-5 years service life
Wavelength:	400-1100 nm
Protection type:	IP 65 (optics case V4A)
Certification:	CE, GS
Weight:	
pipe thread, NPT screw thread, dairy thread DN 25:	approximately 3.5 kg
dairy thread DN 50:	approximately 4.4 kg
1" ANSI flange, DIN flange DN 25:	approximately 6.0 kg
2" ANSI flange, DIN flange DN 50:	approximately 8.8 kg

**Dimensions:**

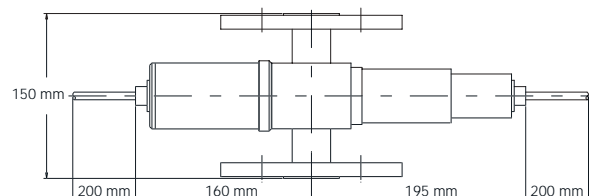
ATS-K 1" pipe thread



ATS-K Flange DN25



ATS-K Flange DN50





**Function and operation of transmitter:**

The transmitted light and scattered light signals generated in the sensor are amplified in the KOBOLD transmitter ATT-K to produce a weighted ratio. The measured variable thus created is proportional to the total volume of particles in the carrier medium.

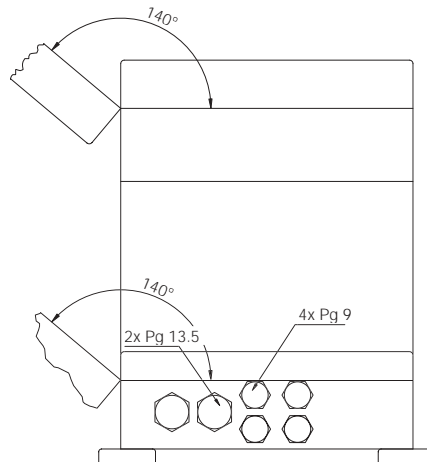
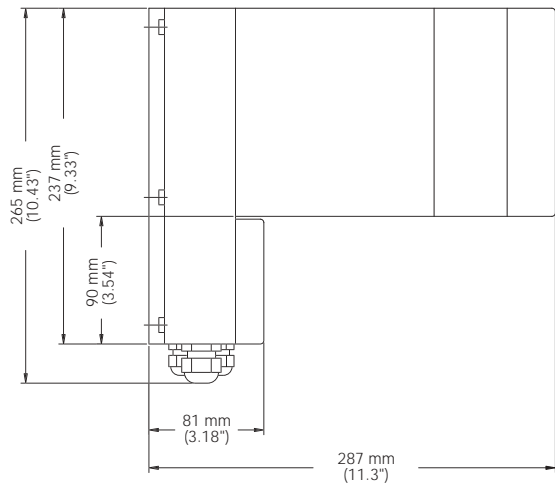
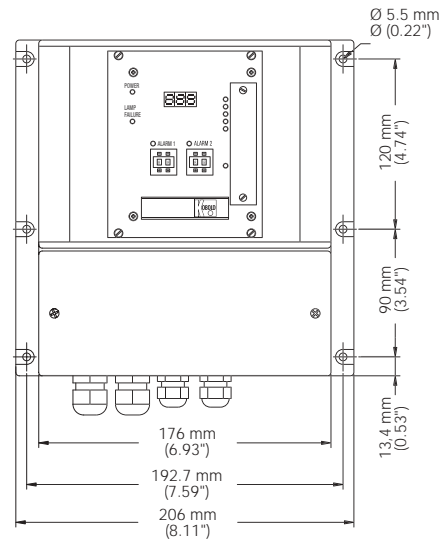
Two independently adjustable switch points as well as a mA output are available for alarm signalling, or control and regulating. An additional relay output (FAIL-SAFE) signals lamp or system failures. Basic system calibration is carried out as standard in ppm DE (mg infusorial earth / L water). The device may also be calibrated to FTU (Formazin Turbidity Standard) or to EBC (European Brewery Convention) if required.

**Technical Details:**

- Measuring ranges: 0 - 25 to 500 ppm  
0 - 10 to 200 FTU  
0 - 2.5 to 50 EBC
- Accuracy: <1% f.s.
- Response time (T90): 1 second
- Ambient temperature: 0 - 50 °C
- Panel housing: HxWxD: 128.4 x 106.3 x 190 mm  
19" 3HE, 21 TE (panel mounting)  
cut-out: 106 x 116 mm
- Read-out display: digital, 3-position
- Alarms: 2 (floating changeover contact)
- Alarm setting: in 1% steps of measuring range
- FAIL-SAFE: floating changeover contact
- Cable length: max. 150 m
- Output: 4 - 20 mA (electrically isolated)
- Load: max. 500 Ω
- Power supply: 115/230 V<sub>AC</sub>, 24 V<sub>AC</sub>/V<sub>DC</sub>,  
47...64 Hz
- Power consumption: 30 VA
- Protection type: panel housing IP 40  
field housing IP 66
- Certification: CE, GS
- Weight: approximately 2 kg  
with field housing 4.1 kg

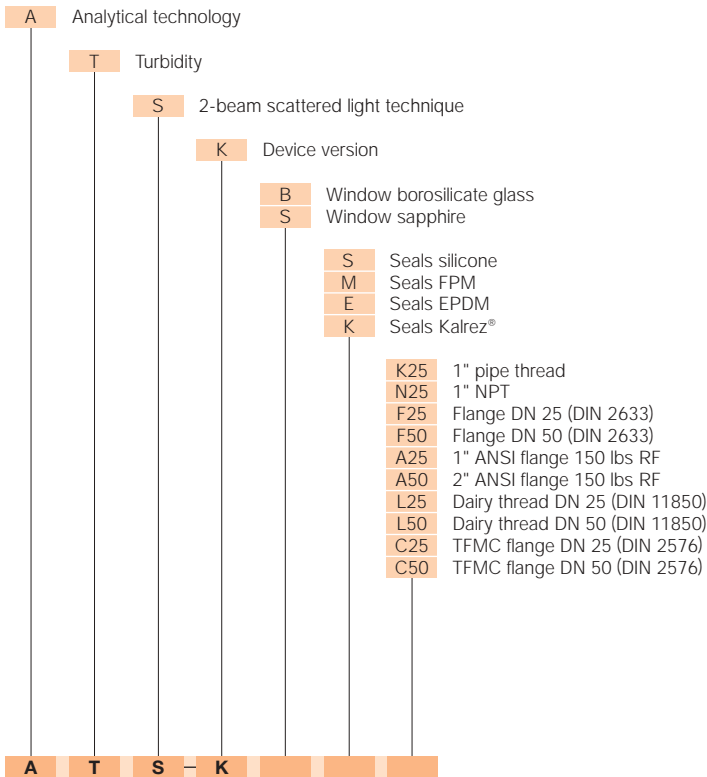
**Dimensions:**

ATT-K field housing



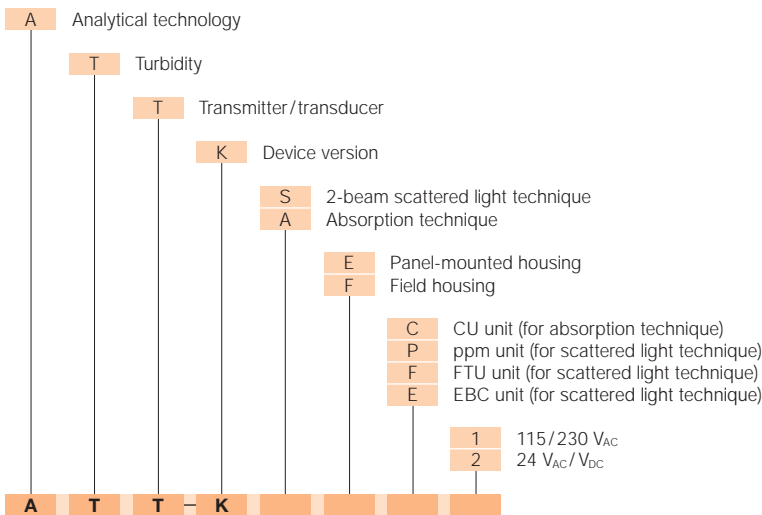


**Type code Turbidity sensor ATS-K**



**A complete turbidity measurement system comprises of turbidity sensor, transmitter and cable.**

**Type code Transmitter ATT-K**



**Type code cable ATK-K**

