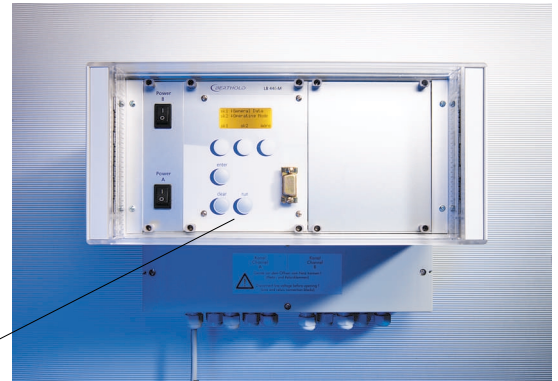


Super-Sens Ultrasensitive Scintillation Probe

Product Description

The Super-Sens is an extremely sensitive scintillation probe for gamma rays. It is used for a variety of applications with the following radiometric measurement technologies:

- 1. Level - Switch**
- 2. Continuous Level Gauge**
- 3. Density Meter**

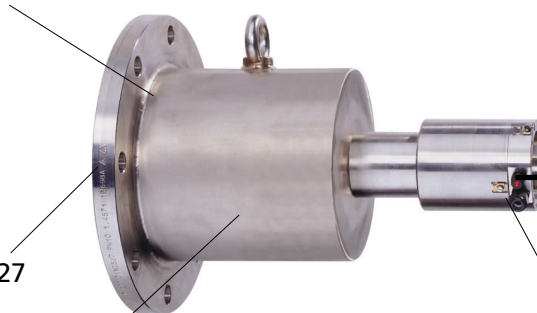


The Super-Sens Ultrasensitive Scintillation Probe can be connected to all standard 2-wire evaluation units from BERTHOLD TECHNOLOGIES, such as the LB 440 (Continuous Level Gauge) or the LB 444 (Density Meter).

Large scintillation crystal:

- high sensitivity
- requires very low gamma source activities
- small source shielding with low weight

standard-flange DIN 2527



2-wire loop connection:
power supply and signal on
the same wires

integrated collimator:

- low background
- superior signal-to-noise ratio
- reduces the influence coming from radiation interference

Ex-protection according to ATEX requirements:

- flameproof enclosure
- intrinsically safe
- dust ignition proofed

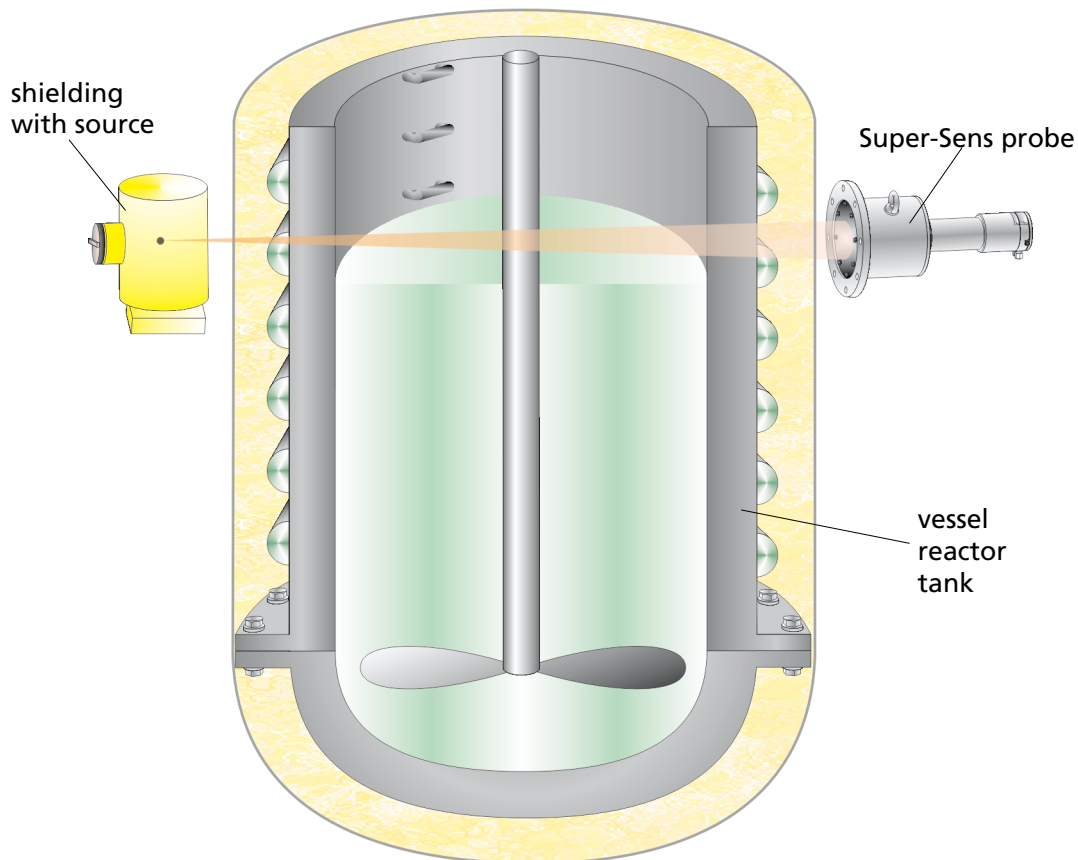
Super-Sens Ultrasensitive Scintillation Probe

1. Level Switch

With the Super-Sens probe you can even measure on large vessels or pipes with thick walls. For standard applications you can use extremely low source activities. This enables the use of small shieldings with small control areas.

For smaller vessels with thin wall thickness the use of "Exempt-Sources" is possible. "Exempt-Sources" use very small source activities and they are license free in countries like the USA and Japan.

- Benefits:**
- can be used on extremely thick walled vessels
 - vessels with large inner diameters and measuring paths
 - "Exempt-Source" applications are possible



Super-Sens Ultrasensitive Scintillation Probe

2. Continuous Level Gauge

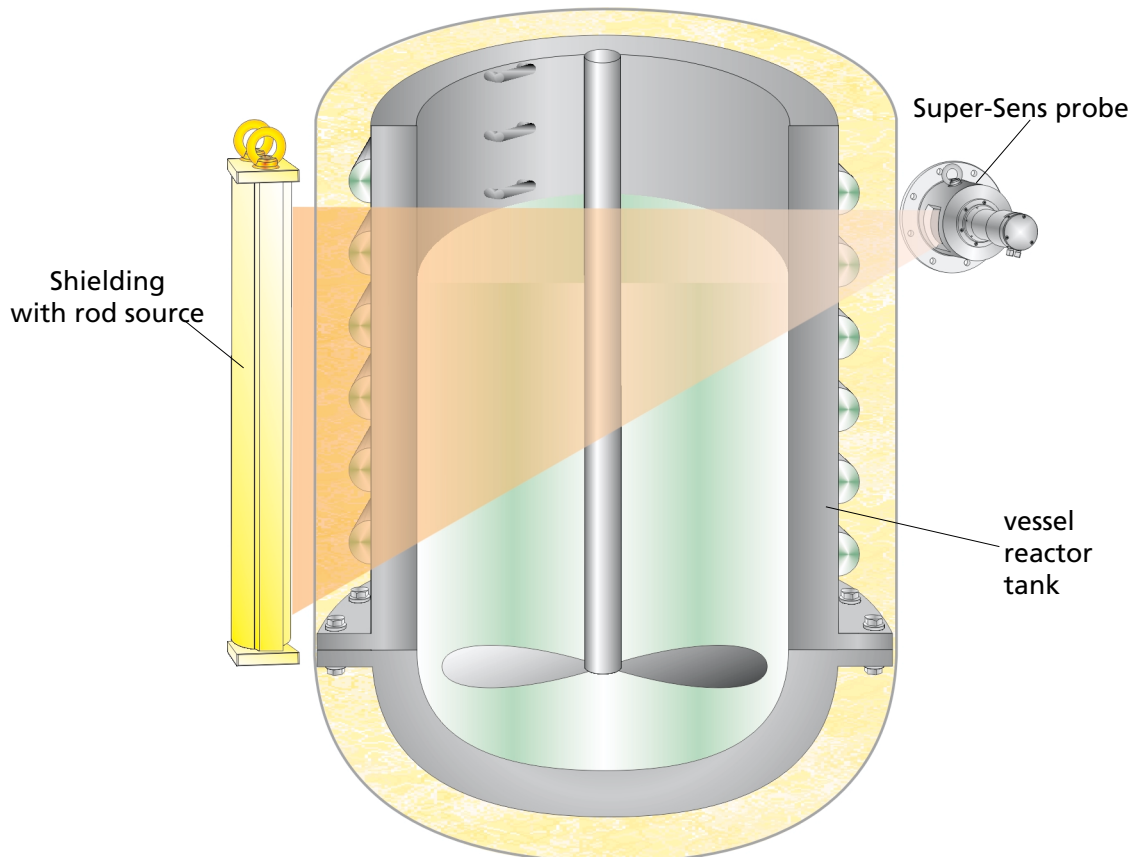
Due to the outstanding sensitivity of the Super - Sens probe as well as its superior radiation exposure protection, it is not necessary to replace the existing gamma source due to end of its useful life. In fact, using the Super-Sens provides the capability of actually extending the existing source life-thus saving costly replacement and disposal! This also avoids costly mechanical rebuilding. The existing

rod sources can be used past their normal active life using the Super-Sens!

For new standard applications you can use extremely low source activities. This enables the use of small shieldings with small control areas.

For smaller, thin walled vessels the use of "Exempt-Sources" is possible.

- Benefits:**
- relatively small shieldings can be used with low weight
 - existing rod sources can be used in many cases
 - lower cost probe change out instead of more costly source replacement / disposal



Super-Sens Ultrasensitive Scintillation Probe

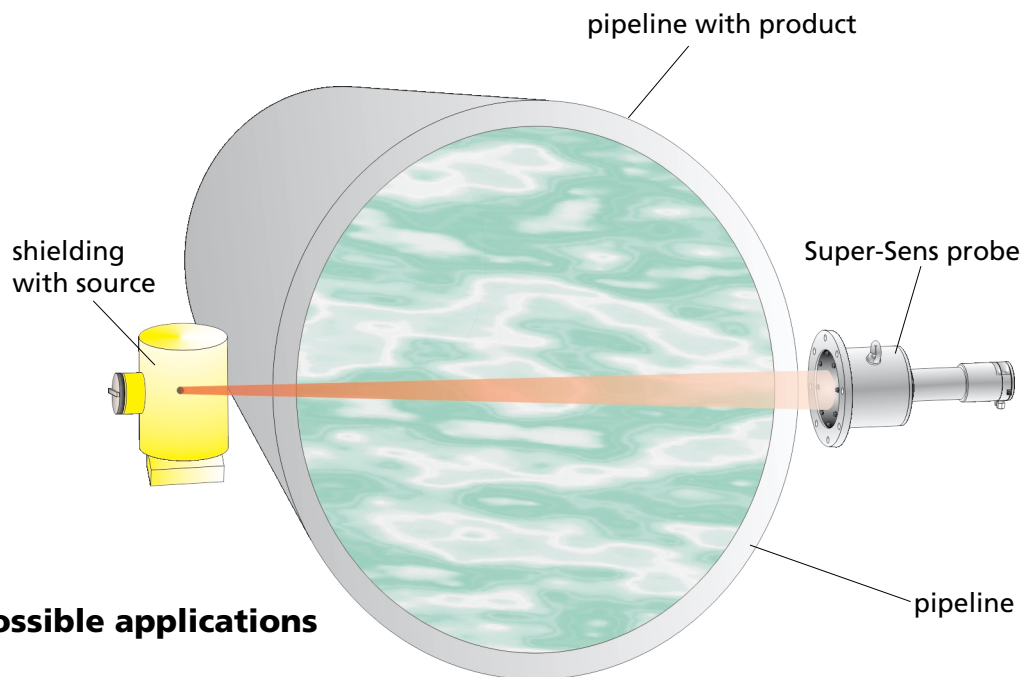
3. Density Meter

With the Super-Sens probe you can measure the density or concentration on significantly thicker pipes as well. Standard applications can become realized with far lower source activities.

For smaller thin walled pipes or vessels, the use of "Exempt-Sources" is possible. "Exempt-Sources" have a very low source activity and they are license free in countries like the USA and Japan.

Benefits:

- measurements on large pipe diameters possible
- use of "Exempt-Sources" is possible



Some possible applications include:

- dredgers
- large oil-pipelines
- large vessels in the chemical industry

BERTHOLD TECHNOLOGIES is a world leader in non-contacting radiometric level and density measuring techniques.



BERTHOLD TECHNOLOGIES GmbH & Co.KG · Calmbacher Straße 22 · D-75323 Bad Wildbad
phone +49 (0)7081/177-0 · fax +49 (0)7081/177-100
www.BertholdTech.com · Industry@BertholdTech.com

Berthold Super Sens LB 4430 / LB 5430

High Sensitivity – Low Background

The detectors LB 4430 and LB 5430 make it easy to reduce the necessary source activity. Their sensitivity to Gamma radiation is extremely high; however, this also means that they are highly sensitive to environmental radiation (background) and its fluctuation. The **Berthold Super Sens** detector is equipped with a lead shielding which significantly reduces interference due to background and its fluctuation. As a result of the lower „background level“ the required „useful signal“, and thus the necessary source activity, can be reduced even further.

The combination of high sensitivity **and** low background allows lowest source activities.

Essential Features

- Extremely high sensitivity to Gamma radiation
- Lead shielding to reduce the background
- Compact design
- Stainless steel housing

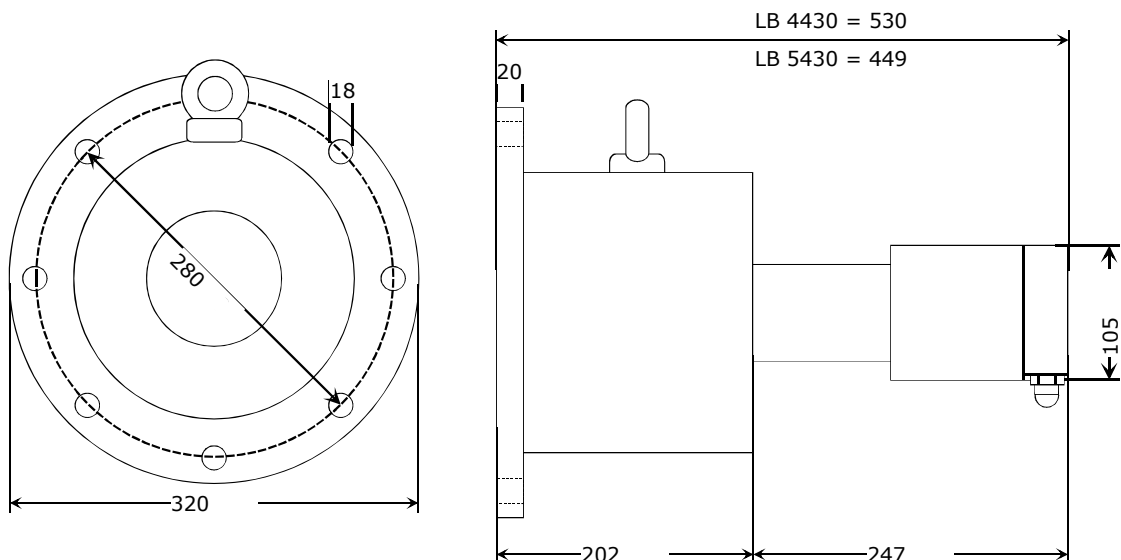
Fields of Application

- Limit measurements, e.g. on high-pressure reactors
- Level measurements
- Density measurements on large pipelines, e.g. dredgers and ore suspensions.

Technical Data:

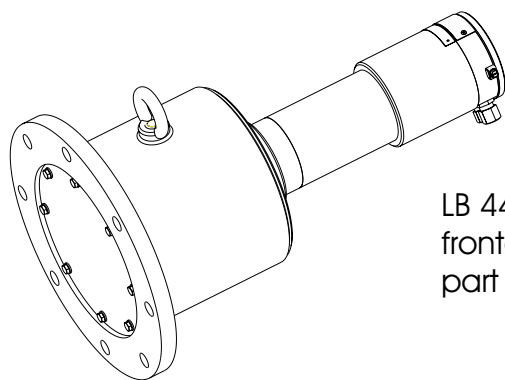
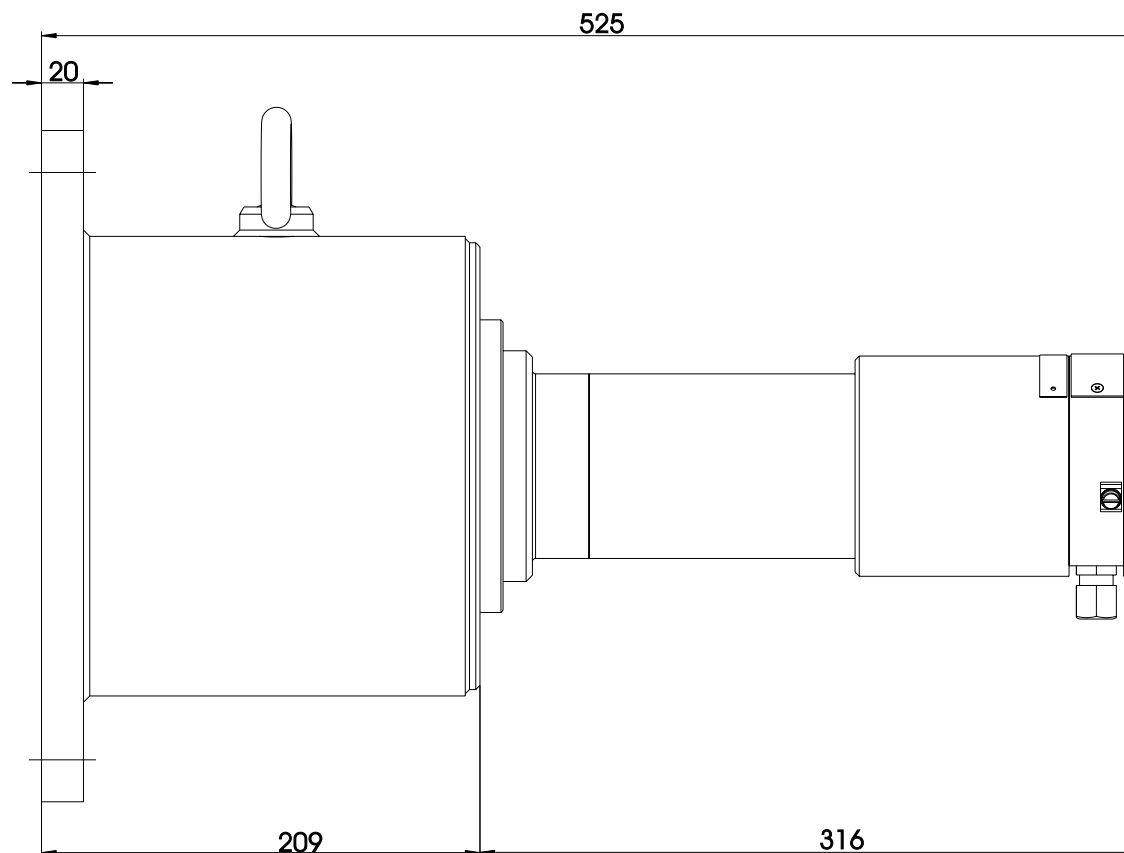
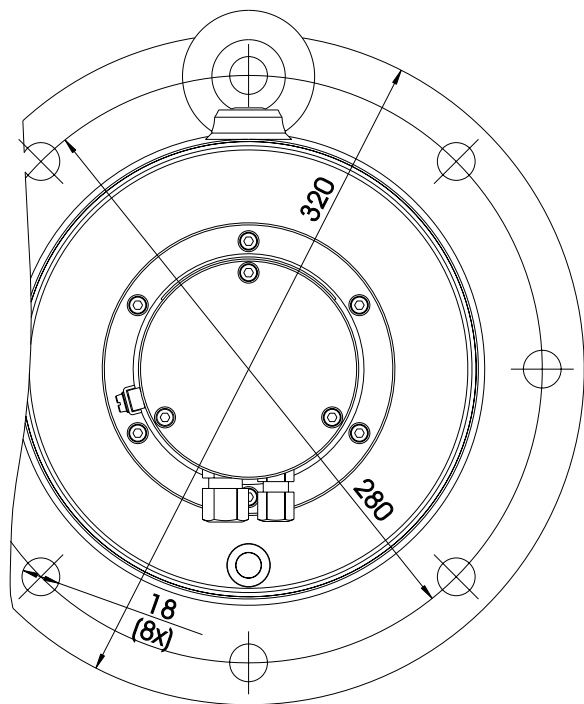
	LB 4430	LB 5430
Dose rate for 1000 cps ⁻¹		
for Cs-137		0.14 µSv/h
for Co-60		0.2 µSv/h
Operating temperature		-20 ...50°C
Storage temperature		-40°C...+ 55°C
Mounting flange		ND 200, NP 6 DIN 2527
Housing		stainless steel
Evaluation units	LB 440, LB 441, LB 442, LB 444	
Protection type	ATEX Ex IIG EEx ib d II C T6 / EEx de II C T6 / IP 65	IP 65
Weight	approx. 54 kg	approx. 52 kg

Dimensions:



Super-Sens

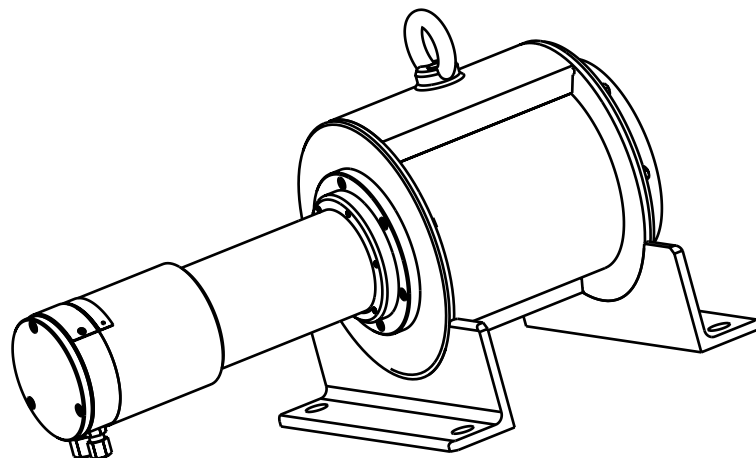
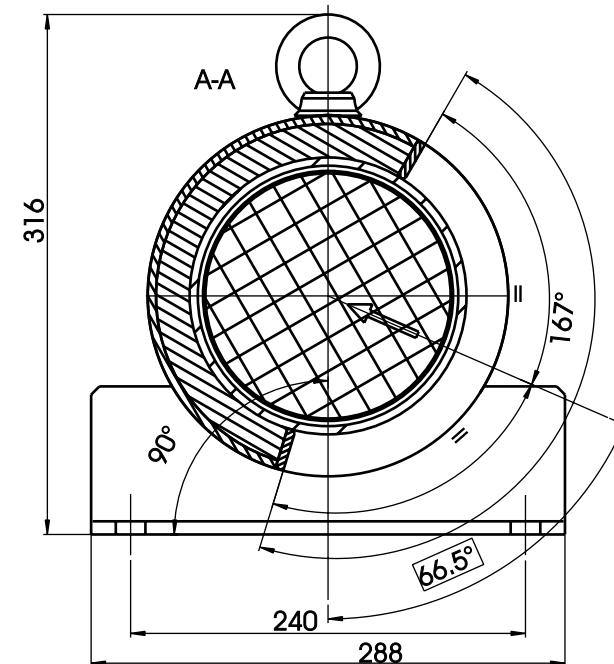
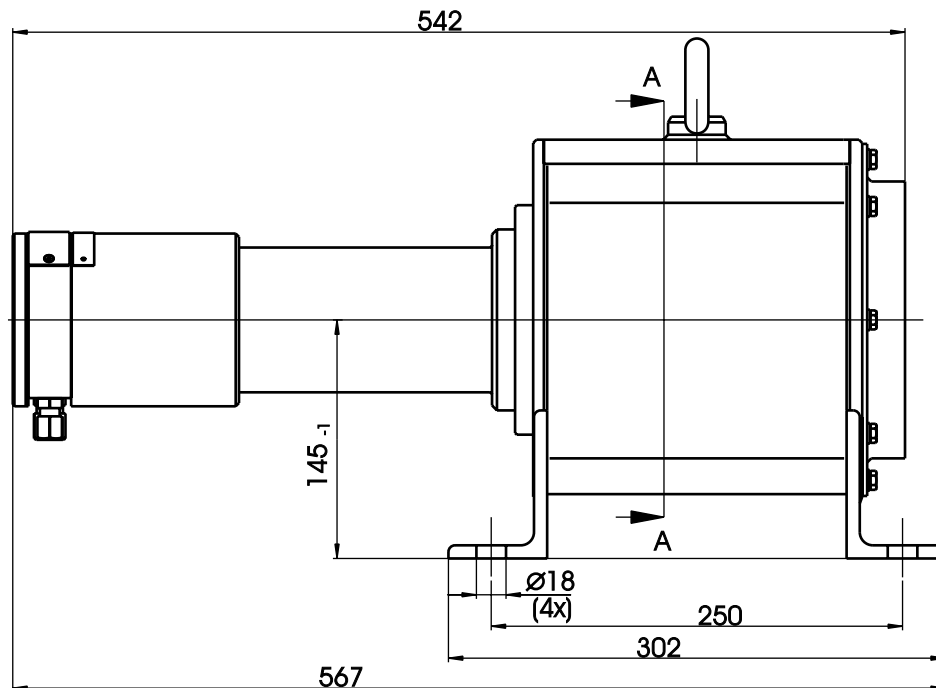
for Level Switch and Density Meter / für Grenzstand- und Dichte-Messung



LB 4430 Super-Sens 150/150
frontal irradiation / stirnseitiger Einstrahlung
part number / Ident. Nr.: 38430

Super-Sens

for continuous level gauge / für kontinuierliche Füllstandmessung



Gewicht ca. 60 Kg
weight approx. 60 kg

LB 4431 Super-Sens 150/150
side irradiation / seittl. Einstrahlung
part number / Ident. Nr.: 40408