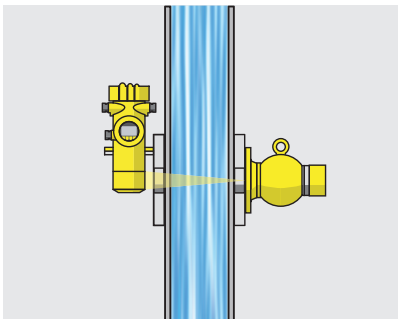
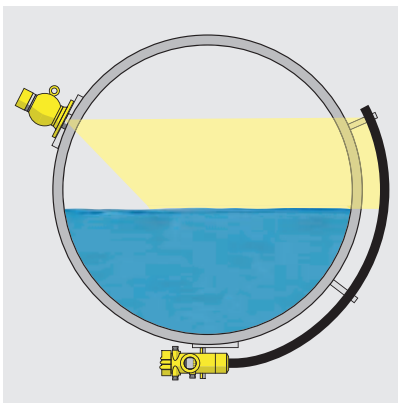




Radiation-based



Area of application

The radiation-based sensors of the PROTRAC series enable precise measurement of liquids and bulk solids under extreme process conditions such as high temperatures and pressures or aggressive media. They can detect level, point level, interface, density or mass flow contactlessly and reliably without interfering with the process. Radiation-based measurement is the solution in applications where other measuring principles reach their limits.

Measuring principle

A minimally radioactive isotope emits focused gamma rays. The sensor, which is mounted on the opposite side of the process, receives this radiation. Because gamma rays are attenuated when penetrating matter, the sensor can calculate the level, point level, density or mass flow from the intensity of the incoming radiation.

Advantages

The radiation-based measuring principle offers maximum operational safety and reliability even under the toughest application conditions. Measurement is independent of pressure, temperature and product properties. The measuring system can be installed on the outside of process vessels during ongoing production, without disturbing the process in any way. This saves installation costs and time.

	FIBERTRAC 31	FIBERTRAC 32	SOLITRAC 31
			
Application	Level and interface measurement of liquids and bulk solids	Level and interface measurement of liquids and bulk solids	Level and interface measurement of liquids and bulk solids
Measuring range	up to 7 m	up to 7 m	up to 3 m
Version	Sensor with flexible plastic detector \varnothing 42 mm	Sensor with flexible plastic detector \varnothing 60 mm	Sensor with PVT rod detector
Process pressure	any	any	any
Process temperature	any	any	any
Reproducibility	± 0.5 %	± 0.5 %	± 0.5 %
Mounting	From outside on the vessel	From outside on the vessel	From outside on the vessel
Signal output	4 ... 20 mA/HART, Profibus PA, Foundation Fieldbus	4 ... 20 mA/HART, Profibus PA, Foundation Fieldbus	4 ... 20 mA/HART, Profibus PA, Foundation Fieldbus
Display/Adjustment	PLICSCOM, PACTware, VEGADIS 81, VEGADIS 82	PLICSCOM, PACTware, VEGADIS 81, VEGADIS 82	PLICSCOM, PACTware, VEGADIS 81, VEGADIS 82
Approvals	ATEX, IEC, FM, CSA, EAC (GOST), UKR Sepro, Overfill protection, SIL2	ATEX, IEC, FM, CSA, EAC (GOST), UKR Sepro, SIL2	ATEX, IEC, FM, CSA, EAC (GOST), UKR Sepro, Overfill protection, SIL2
Benefit	<ul style="list-style-type: none"> • Simple installation on round and conical vessels via flexible higher sensitivity detector • Cost savings through the use of only one sensor for a measuring range of up to 7 m 	<ul style="list-style-type: none"> • Simple installation on round and conical vessels via flexible detector • Cost savings through the use of only one sensor for a measuring range of up to 7 m and reduces source size needed 	<ul style="list-style-type: none"> • Maximum accuracy through PVT detector • Simple installation with supplied accessories

Radiation-based

	POINTRAC 31	MINITRAC 31	WEIGHTRAC 31
			
Application	Level detection of liquids and bulk solids	Density measurement of liquids and bulk solids	Mass flow determination of bulk solids on belts and in screw conveyors
Measuring range	up to 305 mm	–	up to 2800 mm
Version	Sensor with PVT rod detector	Sensor with integrated NaI detector	With PVT rod detector in protective tube of 316L
Process pressure	any	any	any
Process temperature	any	any	any
Reproducibility	–	±0.1 %	±1 % of measuring range final value
Mounting	From outside on pipeline or on vessel	From outside on pipeline or on vessel	Through supplied measuring frame
Signal output	8/16 mA, Profibus PA, Foundation Fieldbus	4 ... 20 mA/HART, Profibus PA, Foundation Fieldbus	4 ... 20 mA/HART, Profibus PA, Foundation Fieldbus
Display/Adjustment	PLICSCOM, PACTware, VEGADIS 81, VEGADIS 82	PLICSCOM, PACTware, VEGADIS 81, VEGADIS 82	PLICSCOM, PACTware, VEGADIS 81, VEGADIS 82
Approvals	ATEX, IEC, FM, CSA, EAC (GOST), UKR Sepro, Overfill protection, SIL2	ATEX, IEC, FM, CSA, EAC (GOST), UKR Sepro, Overfill protection,	ATEX, IEC, FM, CSA, EAC (GOST), UKR Sepro
Benefit	<ul style="list-style-type: none"> • High process reliability through buildup detection • Simple installation with supplied accessories 	<ul style="list-style-type: none"> • Simple retrofitting during ongoing production processes • Exact measuring results independent of process conditions 	<ul style="list-style-type: none"> • Wear-free due to non-contact measurement

	VEGASOURCE 31	VEGASOURCE 35	SHLD1
			
Application	Source container for radioactive isotope	Source container for radioactive isotope	Source container for radioactive isotope
Measuring range	–	–	–
Version	Cs-137: For activities up to 18.5 GBq (500 mCi) Co-60: For activities up to 0.748 GBq (20 mCi)	Cs-137: For activities up to 111 GBq (3000 mCi) Co-60: For activities up to 3.78 GBq (100 mCi)	Cs-137: For activities up to 3.7 GBq (100 mCi)
Process pressure	any	any	any
Process temperature	any	any	any
Reproducibility	–	–	–
Mounting	Flange DN 100 PN 16, 4" 150 lbs	Flange DN 100 PN 16, 4" 150 lbs	Mounting plate or L profile 152 mm (6")
Signal output	–	–	–
Display/Adjustment	–	–	–
Approvals	ATEX (with pneumatic drive)	ATEX (with pneumatic drive)	–
Benefit	<ul style="list-style-type: none"> • Reliable shielding allows use without control areas • Operational safety through optional pneumatic ON/OFF switching 		<ul style="list-style-type: none"> • Ideal for mass flow detection with an aperture angle of 45° and 60° • Simple mounting through compact design and low weight