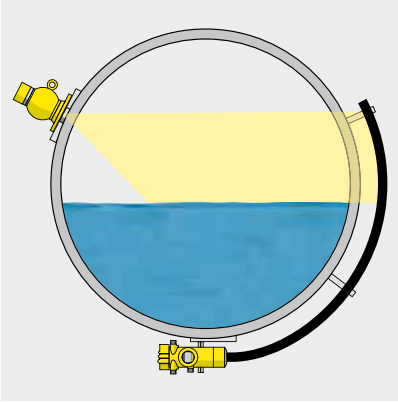
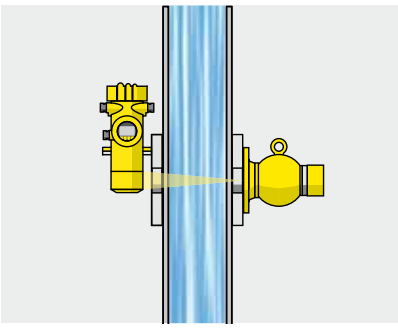
Radiation-based

Overview PROTRAC





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 vessel, 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	SOLITRAC 31	POINTRAC 31
			
Application	Level and interface measurement of liquids and bulk solids	Level and interface measurement of liquids and bulk solids	Level detection of liquids and bulk solids
Measuring range	up to 7 m	up to 3 m	up to 305 mm
Version	Sensor with flexible plastic detector ø 42 mm	Sensor with PVT rod detector	Sensor with PVT rod detector
Process pressure	any	any	any
Process temperature	any	any	any
Reproducibility	±0.5 %	±0.5 %	–
Mounting	From outside on the vessel	From outside on the vessel	From outside on the pipelines or the vessel
Signal output	4 … 20 mA/HART, Profibus PA, Foundation Fieldbus	4 … 20 mA/HART, Profibus PA, Foundation Fieldbus	8/16 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, GOST, SIL2	ATEX, IEC, FM, CSA, GOST, SIL2	ATEX, IEC, FM, CSA, GOST, SIL2

	MINITRAC 31	WEIGHTRAC 31
		
Application	Density measurement of liquids and bulk solids	Mass flow determination of bulk solids on belts and in screw conveyor
Measuring range	–	up to 2800 mm
Version	Sensor with integrated NaI detector	With PVT rod detector in protective tube of 316L
Process pressure	any	any
Process temperature	any	any
Reproducibility	±0.1 %	±1 % of measuring range final value
Mounting	From outside on pipelines or on vessel	Through supplied measuring frame
Signal output	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
Approvals	ATEX, IEC, FM, CSA, GOST	ATEX, IEC, FM, CSA, GOST

	VEGASOURCE 31	VEGASOURCE 35
		
Application	Source container for radioactive isotope	Source container for radioactive isotope
Measuring range	–	–
Source activity	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)
Process pressure	any	any
Process temperature	any	any
Reproducibility	–	–
Mounting	Flange DN 100 PN 16, 4" 150 lbs	Flange DN 100 PN 16, 4" 150 lbs
Signal output	–	–
Display/Adjustment	–	–
Approvals	ATEX (with pneumatic drive)	ATEX (with pneumatic drive)

FIBERTRAC 31

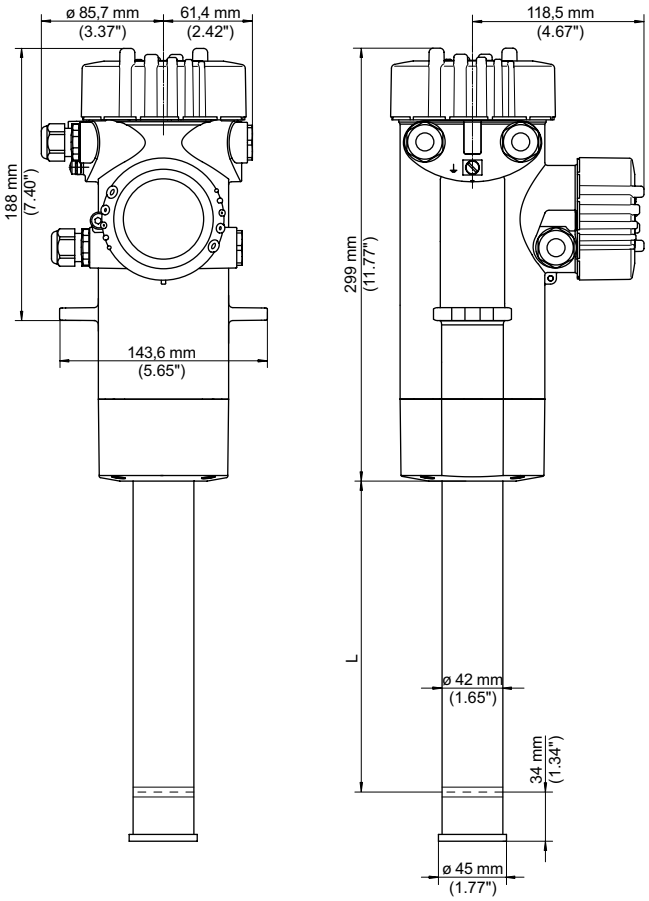
Radiation-based sensor for continuous level measurement

Application area
The FIBERTRAC 31 is a radiation-based sensor with flexible plastic detector for continuous measurement of liquids and bulk solids. It is suitable for level measurement under extreme process conditions, in aggressive products or critical product features. The FIBERTRAC 31 delivers precise measuring results even under hardest application conditions.

Your benefit
- High plant availability through non-contact measurement
- Simple mounting on round and conical vessels through flexible detector
- Cost saving through use of only one sensor up to 7 m measuring range

Technical data

Version:	sensor with flexible plastic detector ø 42 mm
Measuring range:	up to 7 m
Mounting:	from outside on the vessel
Reproducibility:	±0.5 %
SIL qualification:	optionally up to SIL2



L Measuring length

Note:
Mounting accessory in the scope of delivery.

The options shown represent only a limited selection.
Additional instrument options and possible restrictions.
www.vega.com/configurator

Instrument documentation and drawings:
www.vega.com/downloads

Mounting accessories, welded sockets and housing overview:
Chapter Accessory

Approval

- **TX** ATEX IM 2 (M1) Ex d [ia Ma] I Mb
- **TX** IEC Ex d [ia Ma] I Mb
- **XX** Without
- **DK** ATEX II 2(1)G Ex d [ia] IIC T6 + II 1D Ex ta [ia] IIIC T*
- **DK** IEC Ex d [ia] IIC T6 + Ex ta, tb [ia] IIC T*

Version / Ambient temperature

- **1** Standard / -20°...+50°C

Electronics

- **V** Four-wire 4...20mA/HART®
- **S** Four-wire 4...20mA/HART® with SIL qualification
- **A** Four-wire 4...20mA/HART® (Ex d output)
- **I** Four-wire 4...20 mA/HART® (Ex d output) with SIL qualification
- **B** Four-wire 4...20mA/HART® (Ex ia output)
- **L** Four-wire 4...20 mA/HART® (Ex ia output) with SIL qualification
- **F** Four-wire Foundation Fieldbus
- **C** Four-wire Foundation Fieldbus (Ex d output)
- **D** Four-wire Foundation Fieldbus (Ex ia output)
- **P** Four-wire Profibus PA
- **E** Four-wire Profibus PA (Ex d output)
- **G** Four-wire Profibus PA (Ex ia output)

Housing / Protection

- **D** Aluminium double chamber / IP66/IP67
- **W** Stainless steel double chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

- **M** M20x1.5 / with / without
- **N** ½ NPT / without / without

Display/adjustment module PLICSCOM

- **X** Without
- **B** Mounted

Additional equipment

- **X** Without

Active length

- **A10** 1000 mm
- **A15** 1500 mm
- **A20** 2000 mm
- **A25** 2500 mm
- **A30** 3000 mm
- **A35** 3500 mm
- **A40** 4000 mm
- **A45** 4500 mm
- **A50** 5000 mm
- **A55** 5500 mm
- **A60** 6000 mm
- **A65** 6500 mm
- **A70** 7000 mm

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SOLITRAC 31

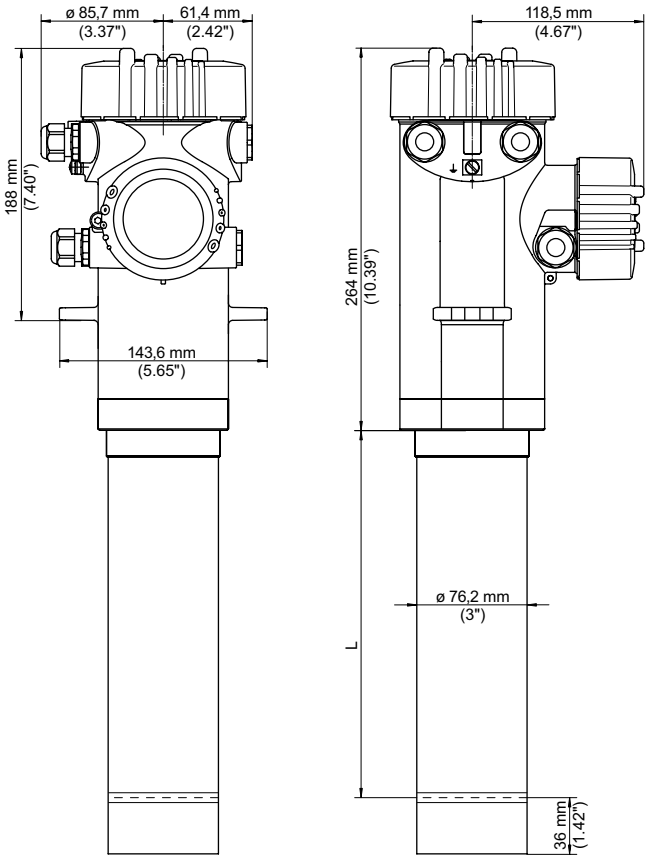
Radiation-based sensor for continuous level measurement

Application area
The SOLITRAC 31 is a radiation-based sensor with PVT rod detector for continuous measurement of liquids and bulk solids. It is suitable for level measurement under extreme process conditions, with critical product features or in aggressive products. The SOLITRAC 31 is ideal for use in cylindrical vessels, reactors, autoclaves, separators and mixing vessels.

Your benefit
- High plant availability through non-contact measurement
- Best measurement performance through PVT detector with maximum sensitivity
- Simple mounting through supplied accessory

Technical data

Version:	sensor with PVT rod detector
Measuring range:	up to 3 m
Mounting:	from outside on the vessel
Reproducibility:	±0.5 %
SIL qualification:	optionally up to SIL2



L Measuring length

Note:
Mounting accessory in the scope of delivery.

The options shown represent only a limited selection.
Additional instrument options and possible restrictions.
www.vega.com/configurator

Instrument documentation and drawings:
www.vega.com/downloads

Mounting accessories, welded sockets and housing overview:
Chapter Accessory

Approval

TX ATEX IM 2 (M1) Ex d [ia Ma] I Mb

TX IEC Ex d [ia Ma] I Mb

XX Without

DK ATEX II 2(1)G Ex d [ia] IIC T6 + II 1D Ex ta [ia] IIIC T*

DK IEC Ex d [ia] IIC T6 + Ex ta, tb [ia] IIC T*

Version / Ambient temperature

1 Standard / -40...+60ºC

Electronics

V Four-wire 4...20mA/HART®

S Four-wire 4...20mA/HART® with SIL qualification

A Four-wire 4...20mA/HART® (Ex d output)

I Four-wire 4...20 mA/HART® (Ex d output) with SIL qualification

B Four-wire 4...20mA/HART® (Ex ia output)

L Four-wire 4...20 mA/HART® (Ex ia output) with SIL qualification

F Four-wire Foundation Fieldbus

C Four-wire Foundation Fieldbus (Ex d output)

D Four-wire Foundation Fieldbus (Ex ia output)

P Four-wire Profibus PA

E Four-wire Profibus PA (Ex d output)

G Four-wire Profibus PA (Ex ia output)

Housing / Protection

D Aluminium double chamber / IP66/IP67

W Stainless steel double chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

M M20x1.5 / with / without

N ½ NPT / without / without

Display/adjustment module PLICSCOM

X Without

B Mounted

Additional equipment

X Without

Length

A05 500 mm

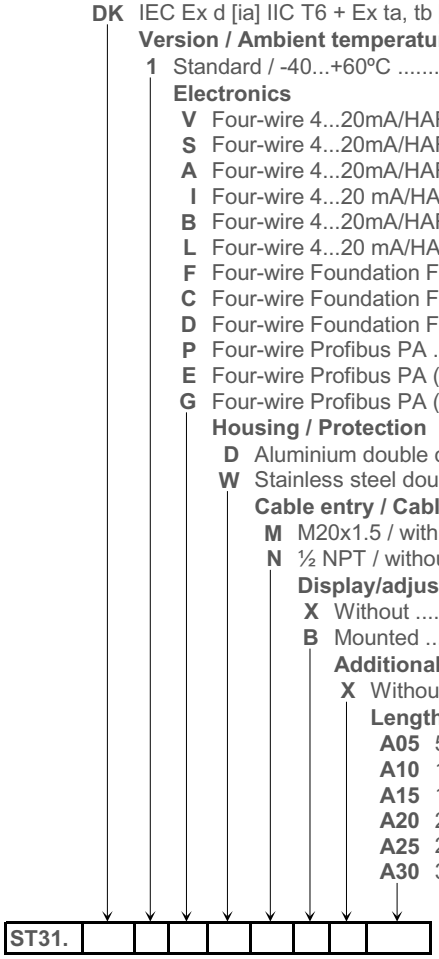
A10 1000 mm

A15 1500 mm

A20 2000 mm

A25 2500 mm

A30 3000 mm



POINTRAC 31

Radiation-based sensor for level detection

Application area

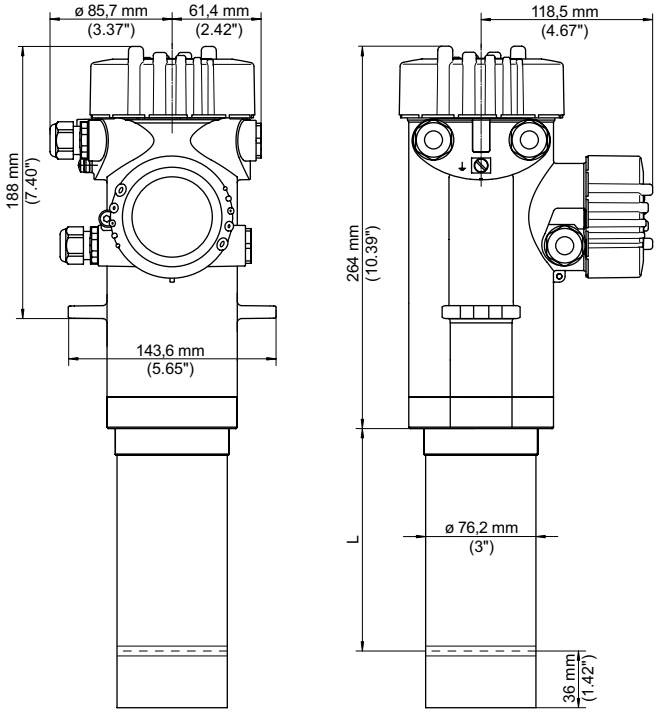
The POINTRAC 31 is a radiation-based sensor for universal level detection of liquids and bulk solids. Independent of the mounting location, it monitors reliably the limit level in vessels. The sensor can be used for applications in all industries. Due to the high sensitivity POINTRAC 31 is an economical solution with minimum radiation activity.

Your benefit

- Exact measuring results independent of process conditions
- High process reliability through determination of buildup
- Economical level detection under arduous application conditions

Technical data

Version:	sensor with PVT rod detector
Measuring range:	up to 305 mm
Mounting:	from outside on the pipeline or vessel
SIL qualification:	optionally up to SIL2



L Measuring length

Note:
Mounting accessory in the scope of delivery.

The options shown represent only a limited selection.
Additional instrument options and possible restrictions.
www.vega.com/configurator

Instrument documentation and drawings:
www.vega.com/downloads

Mounting accessories, welded sockets and housing overview:
Chapter Accessory

Approval

TX ATEX IM 2 (M1) Ex d [ia Ma] I Mb

TX IEC Ex d [ia Ma] I Mb

XX Without

DK ATEX II 2(1)G Ex d [ia] IIC T6 + II 1D Ex ta [ia] IIIC T*

DK IEC Ex d [ia] IIC T6 + Ex ta, tb [ia] IIC T*

Version / Ambient temperature

1 Standard / -40...+60ºC

Electronics

V Four-wire 8/16mA/HART®

S Four-wire 8/16mA/HART® with SIL qualification

A Four-wire 8/16mA/HART® (Ex d output)

I Four-wire 8/16mA/HART® (Ex d output) with SIL qualification

B Four-wire 8/16mA/HART® (Ex ia output)

L Four-wire 8/16mA/HART® (Ex ia output) with SIL qualification

F Four-wire Foundation Fieldbus

C Four-wire Foundation Fieldbus (Ex d output)

D Four-wire Foundation Fieldbus (Ex ia output)

P Four-wire Profibus PA

E Four-wire Profibus PA (Ex d output)

G Four-wire Profibus PA (Ex ia output)

Housing / Protection

D Aluminium double chamber / IP66/IP67

W Stainless steel double chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

M M20x1.5 / with / without

N ½ NPT / without / without

Display/adjustment module PLICSCOM

X Without

B Mounted

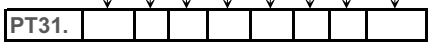
Additional equipment

X Without

Length

006 152mm

012 305mm



MINITRAC 31

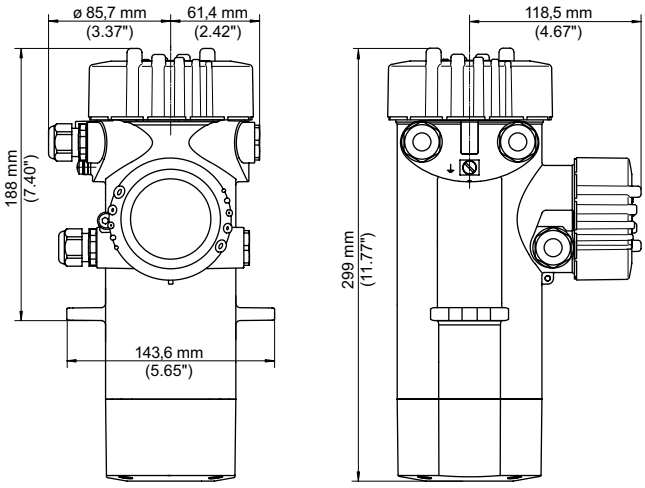
Radiation-based sensor for density measurement

Application area
The MINITRAC 31 is a radiation-based sensor for non-contact density measurement of liquids and bulk solids. The MINITRAC 31 determines the density contactlessly from outside through pipelines or the vessel wall. Through its compact design it is ideal for mounting in positions hardly to access and in narrow space applications.

Your benefit
- Simple retrofitting during production processes
- High plant availability through non-contact measurement
- Exact measuring results independent of the process conditions

Technical data

Version:	sensor with integrated NaI detector
Mounting:	from outside on pipelines or the vessel
Reproducibility:	±0.1 %



Note:
Mounting accessory not in the scope of delivery.

The options shown represent only a limited selection.
Additional instrument options and possible restrictions.
www.vega.com/configurator

Instrument documentation and drawings:
www.vega.com/downloads

Mounting accessories, welded sockets and housing overview:
Chapter Accessory

Approval

TX ATEX IM 2 (M1) Ex d [ia Ma] I Mb

TX IEC Ex d [ia Ma] I Mb

XX Without

DK ATEX II 2(1)G Ex d [ia] IIC T6 + II 1D Ex ta [ia] IIIC T*

DK IEC Ex d [ia] IIC T6 + Ex ta, tb [ia] IIC T*

Version / Ambient temperature

1 Standard / -40...+60ºC

Electronics

V Four-wire 4...20mA/HART®

S Four-wire 4...20mA/HART® with SIL qualification

A Four-wire 4...20mA/HART® (Ex d output)

I Four-wire 4...20 mA/HART® (Ex d output) with SIL qualification

B Four-wire 4...20mA/HART® (Ex ia output)

L Four-wire 4...20 mA/HART® (Ex ia output) with SIL qualification

F Four-wire Foundation Fieldbus

C Four-wire Foundation Fieldbus (Ex d output)

D Four-wire Foundation Fieldbus (Ex ia output)

P Four-wire Profibus PA

E Four-wire Profibus PA (Ex d output)

G Four-wire Profibus PA (Ex ia output)

Housing / Protection

D Aluminium double chamber / IP66/IP67

W Stainless steel double chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

M M20x1.5 / with / without

N ½ NPT / without / without

Display/adjustment module PLICSCOM

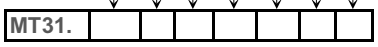
X Without

B Mounted

Additional equipment

X Without

S Int. lead coating to protect against ambient radiation



WEIGHTRAC 31

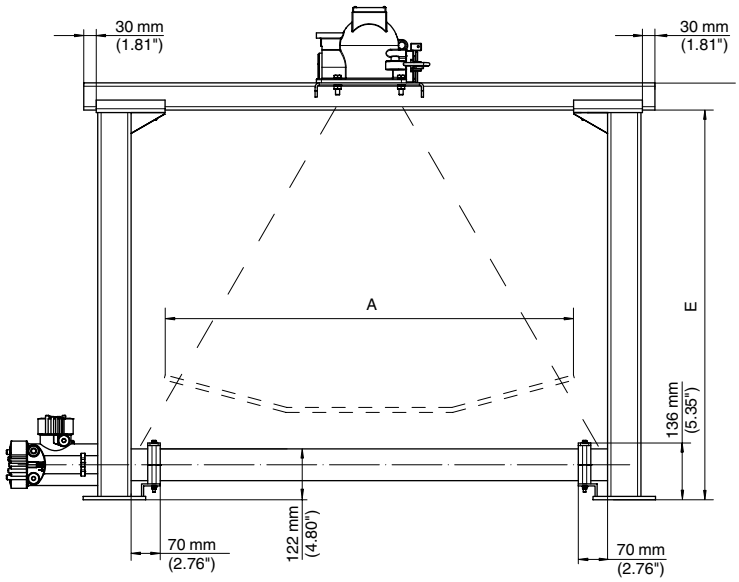
Radiation-based sensor for mass flow determination

Application area
The WEIGHTRAC 31 is a radiation-based sensor for precise flow measurement of bulk solids. It is ideal for mass flow determination on conveyor belts and in screw conveyor in all industries. Due to its frame construction, the WEIGHTRAC 31 can be simply retrofitted to the conveyor belt.

Your benefit
– Wear-free, because non-contact measurement
– Exact determination of the delivery volume through simple setup

Technical data

Version:	sensor with PVT rod detector
Measurement width:	up to 2800 mm
Mounting:	through the supplied measurement frame
Accuracy:	±1 % of the measuring range final value



Note:
Source container not in the scope delivery.

The options shown represent only a limited selection.
Additional instrument options and possible restrictions.
www.vega.com/configurator

Instrument documentation and drawings:
www.vega.com/downloads

Mounting accessories, welded sockets and housing overview:
Chapter Accessory

Approval

- **TX** ATEX IM 2 (M1) Ex d [ia Ma] I Mb
- **TX** IEC Ex d [ia Ma] I Mb
- **XX** Without
- **DK** ATEX II 2(1)G Ex d [ia] IIC T6 + II 1D Ex ta [ia] IIIC T*
- **DK** IEC Ex d [ia] IIC T6 + Ex ta, tb [ia] IIC T*

Version / Ambient temperature

- **1** Standard / -40...+60ºC

Electronics

- **V** Four-wire 4...20mA/HART®
- **A** Four-wire 4...20mA/HART® (Ex d output)
- **B** Four-wire 4...20mA/HART® (Ex ia output)
- **F** Four-wire Foundation Fieldbus
- **C** Four-wire Foundation Fieldbus (Ex d output)
- **D** Four-wire Foundation Fieldbus (Ex ia output)
- **P** Four-wire Profibus PA
- **E** Four-wire Profibus PA (Ex d output)
- **G** Four-wire Profibus PA (Ex ia output)

Housing / Protection

- **D** Aluminium double chamber / IP66/IP67
- **W** Stainless steel double chamber / IP66/IP67

Cable entry / Cable gland / Plug connection

- **M** M20x1.5 / with / without
- **N** ½ NPT / without / without

Display/adjustment module PLICSCOM

- **X** Without
- **B** Mounted

Additional equipment

- **X** Without

Frame construction

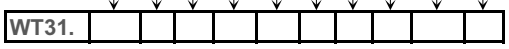
- **X** without
- **A** of galvanized steel
- **C** 316SS

Measurement width (A) / clear frame height (E)

- **N1** 500 mm / 435 mm
- **NX** 500 mm
- **P1** 800 mm / 705 mm
- **PX** 800 mm
- **Q1** 1000 mm / 935 mm
- **QX** 1000 mm
- **R1** 1200 mm / 1115 mm
- **RX** 1200 mm
- **S1** 1600 mm / 1485 mm
- **SX** 1600 mm
- **T1** 2000 mm / 1903 mm
- **TX** 2000 mm
- **U1** 2400 mm / 2292 mm
- **UX** 2400 mm
- **V1** 2800 mm / 2710 mm
- **VX** 2800 mm

Source holder configuration

- **X** without
- **B** one mounting plate
- **D** two mounting plates
- **V** Adapter flange for VEGASOURCE



VEGASOURCE 31

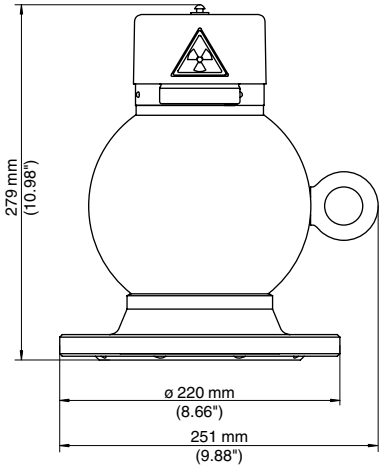
Source container for the reception of the source capsule

Application area
The VEGASOURCE 31 is used for the reception of a gamma radiator which is used as radiation source for the radation-based limit level, level and density measurements. The design of VEGASOURCE 31 offers an optimum shielding and protects the integrated gamma radiator reliably.

Your benefit
- Reliable shielding allows use without control sections
- Small space requirement and simple mounting
- Reliability through pneumatic switch-ON / switch-OFF

Technical data

Version:	source container with locking facility
Mounting:	flange DN 100 PN 16, 4" 150 lbs
Exit angle:	5°, 20° or 40°
Materials:	steel C22.8, 304, 316L
Weight:	42 kg



Version:
with cylinder lock for ON/OFF

License

AA Not necessary

Version

A Cylinder lock for position ON/OFF incl. protective cover

B Swivel, pin for position ON and lock for position OFF

C Swivel, lock for position ON/OFF

K Pneumatic drive, lock for postion OFF

L Pneumatic drive, lock for postion OFF, ATEX II 2G

Prepared for source activity

VXX No radioactive source

1AC 18.5 MBq / 0.5 mCi (Cs-137)

1AD 37 MBq / 1 mCi (Cs-137)

1AE 74 MBq / 2 mCi (Cs-137)

1AF 110 MBq / 3 mCi (Cs-137)

1AG 185 MBq / 5 mCi (Cs-137)

1AH 370 MBq / 10 mCi (Cs-137)

1AI 550 MBq / 15 mCi (Cs-137)

1AK 740 MBq / 20 mCi (Cs-137)

1AL 1.1 GBq / 30 mCi (Cs-137)

1AM 1.85 GBq / 50 mCi (Cs-137)

1BM 2.8 GBq / 75 mCi (Cs-137)

1AN 3.7 GBq / 100 mCi (Cs-137)

1AO 5.5 GBq / 150 mCi (Cs-137)

1AP 7.4 GBq / 200 mCi (Cs-137)

1AQ 9.25 GBq / 250 mCi (Cs-137)

1AR 11 GBq / 300 mCi (Cs-137)

1AS 15 GBq / 400 mCi (Cs-137)

1AT 18.5 GBq / 500 mCi (Cs-137)

1AU 22.5 GBq / 600 mCi (Cs-137)

2AD 37 MBq / 1 mCi (Co-60)

2AE 74 MBq / 2 mCi (Co-60)

2AF 110 MBq / 3 mCi (Co-60)

2AG 185 MBq / 5 mCi (Co-60)

2AH 370 MBq / 10 mCi (Co-60)

2AK 740 MBq / 20 mCi (Co-60)

Prepared for source capsule / Type

A1 Capsule VZ-79-001 (Cs-137) / Nipple (ø6.4x16mm)

A2 Capsule VZ-64-001 (Co-60) / Nipple (ø6.4x16mm)

B1 Capsule VZ-1508-001 (Cs-137) / Thread M4 (ø6.4x17.6mm)

B2 Capsule VZ-1486-001 (Co-60) / Thread M4 (ø6.4x17.6mm)

C1 Capsule VZ-357-001 (Cs-137) / Nipple (ø8x19mm)

D1 Capsule VZ-3579-001 (Cs-137) / Thread M4 (ø8x19mm)

Material source container

A Steel C22.8 (1.0460)

B 316L

Surface protection

2 PUR 2K texture paint yellow (RAL 1003)

Emmision angle

1 5°

3 20°

5 40°

Additional equipment

X without

D Fixation ON (density measurement)

F Fire-resistant 821°C/30 minutes

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VEGASOURCE 35

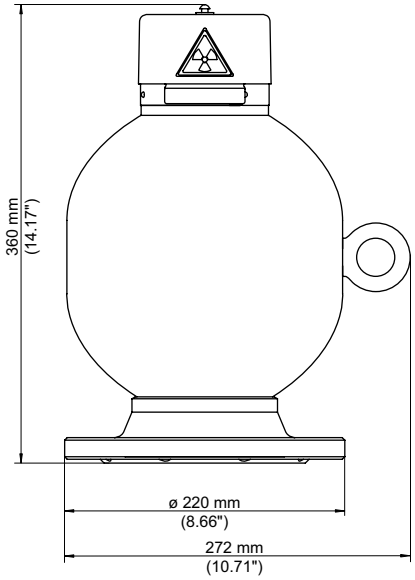
Source container for the reception of the source

Application area
The VEGASOURCE 35 is used for the reception of a gamma radiator which is used as radiation source for the radation-based limit level, level and density measurements. The VEGASOURCE 35 is designed for larger source activities, offers an optimum shielding and reliable protection of the integrated gamma radiator.

Your benefit
- Reliable shielding allows use without control sections
- Small space requirement and simple mounting
- Reliability through pneumatic switch-ON / switch-OFF

Technical data

Version:	source container with locking facility
Mounting:	flange DN 100 PN 16, 4" 150 lbs
Exit angle:	5°, 20° or 40°
Materials:	steel C22.8, 304, 316L
Weight:	86 kg



Version:
with cylinder lock for ON/OFF

License

AA Not necessary

Version

A Cylinder lock for position ON/OFF incl. protective cover

B Swivel, pin for position ON and lock for position OFF

C Swivel, lock for position ON/OFF

K Pneumatic drive, lock for postion OFF

L Pneumatic drive, lock for postion OFF, ATEX II 2G

Prepared for source activity

VXX No radioactive source

1AC 18.5 MBq / 0.5 mCi (Cs-137)

1AD 37 MBq / 1 mCi (Cs-137)

1AE 74 MBq / 2 mCi (Cs-137)

1AF 110 MBq / 3 mCi (Cs-137)

1AG 185 MBq / 5 mCi (Cs-137)

1AH 370 MBq / 10 mCi (Cs-137)

1AI 550 MBq / 15 mCi (Cs-137)

1AK 740 MBq / 20 mCi (Cs-137)

1AL 1.1 GBq / 30 mCi (Cs-137)

1AM 1.85 GBq / 50 mCi (Cs-137)

1BM 2.8 GBq / 75 mCi (Cs-137)

1AN 3.7 GBq / 100 mCi (Cs-137)

1AO 5.5 GBq / 150 mCi (Cs-137)

1AP 7.4 GBq / 200 mCi (Cs-137)

1AQ 9.25 GBq / 250 mCi (Cs-137)

1AR 11 GBq / 300 mCi (Cs-137)

1AS 15 GBq / 400 mCi (Cs-137)

1AT 18.5 GBq / 500 mCi (Cs-137)

1AU 22.5 GBq / 600 mCi (Cs-137)

1AV 25.9 GBq / 700 mCi (Cs-137)

1AW 29.6 GBq / 800 mCi (Cs-137)

1BB 37 GBq / 1000 mCi (Cs-137)

1BC 55.5 GBq / 1500 mCi (Cs-137)

1BD 74 GBq / 2000 mCi (Cs-137)

2AD 37 MBq / 1 mCi (Co-60)

2AE 74 MBq / 2 mCi (Co-60)

2AF 110 MBq / 3 mCi (Co-60)

2AG 185 MBq / 5 mCi (Co-60)

2AH 370 MBq / 10 mCi (Co-60)

2AK 740 MBq / 20 mCi (Co-60)

2AL 1.1 GBq / 30 mCi (Co-60)

2AM 1.85 GBq / 50 mCi (Co-60)

2AN 3.7 GBq / 100 mCi (Co-60)

2AP 7.4 GBq / 200 mCi (Co-60)

Prepared for source capsule / Type

A1 Capsule VZ-79-001 (Cs-137) / Nipple (ø6.4x16mm)

A2 Capsule VZ-64-001 (Co-60) / Nipple (ø6.4x16mm)

B1 Capsule VZ-1508-001 (Cs-137) / Thread M4 (ø6.4x17.6mm)

B2 Capsule VZ-1486-001 (Co-60) / Thread M4 (ø6.4x17.6mm)

C1 Capsule VZ-357-001 (Cs-137) / Nipple (ø8x19mm)

D1 Capsule VZ-3579-001 (Cs-137) / Thread M4 (ø8x19mm)

Material source container

A Steel C22.8 (1.0460)

B 316L

Surface protection

2 PUR 2K texture paint yellow (RAL 1003)

Emmision angle

1 5°

3 20°

5 40°

Additional equipment

X without

D Fixation ON (density measurement)

F Fire-resistant 821°C/30 minutes

SE35.								

Radiation capsule

Metallic cobalt / Caesium ceramic pellet

Application area
Radioactive, gamma rays emitting isotopes are used as source for level, switching, density and mass flow measurements. Since in the ratiation-based measurement technique only the radiation in direction of the sensor is required, a respective focussing in the source container VEGASOURCE is required.

Your benefit
- Double encapsulated Cobalt-60 / Caesium-137 isotopes
- Maximum protection with temperature, pressure, shock and vibration according to radiation classification ANSI/ISO C.66646
- Simple handling and installation in the source container

Technical data

Version:	double encapsulated gamma source
Isotopes:	Co-60/Cs-137
Classification:	C.66646 according to ISO 2919 or DIN 25426
Series:	with nipple and M4 thread for fastening

Radiation source activity

1AC	18.5 MBq / 0.5 mCi (Cs-137)
1AD	37 MBq / 1 mCi (Cs-137)
1AE	74 MBq / 2 mCi (Cs-137)
1AF	110 MBq / 3 mCi (Cs-137)
1AG	185 MBq / 5 mCi (Cs-137)
1AH	370 MBq / 10 mCi (Cs-137)
1AI	550 MBq / 15 mCi (Cs-137)
1AK	740 MBq / 20 mCi (Cs-137)
1AL	1.1 GBq / 30 mCi (Cs-137)
1AM	1.85 GBq / 50 mCi (Cs-137)
1BM	2.8 GBq / 75 mCi (Cs-137)
1AN	3.7 GBq / 100 mCi (Cs-137)
1AO	5.5 GBq / 150 mCi (Cs-137)
1AP	7.4 GBq / 200 mCi (Cs-137)
1AQ	9.25 GBq / 250 mCi (Cs-137)
1AR	11 GBq / 300 mCi (Cs-137)
1AS	15 GBq / 400 mCi (Cs-137)
1AT	18.5 GBq / 500 mCi (Cs-137)
1AU	22.5 GBq / 600 mCi (Cs-137)
1AV	25.9 GBq / 700 mCi (Cs-137)
1AW	29.6 GBq / 800 mCi (Cs-137)
1BB	37 GBq / 1000 mCi (Cs-137)
1BC	55.5 GBq / 1500 mCi (Cs-137)
1BD	74 GBq / 2000 mCi (Cs-137)
2AD	37 MBq / 1 mCi (Co-60)
2AE	74 MBq / 2 mCi (Co-60)
2AF	110 MBq / 3 mCi (Co-60)
2AG	185 MBq / 5 mCi (Co-60)
2AH	370 MBq / 10 mCi (Co-60)
2AK	740 MBq / 20 mCi (Co-60)
2AL	1.1 GBq / 30 mCi (Co-60)
2AM	1.85 GBq / 50 mCi (Co-60)
2AN	3.7 GBq / 100 mCi (Co-60)
2AP	7.4 GBq / 200 mCi (Co-60)

Source capsule / Type

A1	Capsule VZ-79-001 (Cs-137) / Nipple (ø6.4x16mm)
A2	Capsule VZ-64-001 (Co-60) / Nipple (ø6.4x16mm)
B1	Capsule VZ-1508-001 (Cs-137) / Thread M4 (ø6.4x17.6mm)
B2	Capsule VZ-1486-001 (Co-60) / Thread M4 (ø6.4x17.6mm)
C1	Capsule VZ-357-001 (Cs-137) / Nipple (ø8x19mm)
D1	Capsule VZ-3579-001 (Cs-137) / Thread M4 (ø8x19mm)
F1	Capsule X.9 (Cs-137) / Cylinder (ø8.05x12.3mm)

SK.		

Mounting bracket KV 31

Mounting bracket for pipes with 50 - 600 mm diameter

The robust mounting bracket of 316L is used for simple pipe mounting of MINITRAC and source container. For applications with small tube diameters, it is possible to extend the measurement displacement through a 30° mounting of the sensor and source container. The required fixing material is included to the shipment.

Pipe diameter / Material

- **A** 50...220 mm / 316L
- **B** 50...100 mm / 316L (30° degrees diagonal radiation)
- **C** 200...420 mm / 316L
- **D** 400...600 mm / 316L

Mounting arrangement

- **1** Horizontal sensor mounting (axial radiation)
- **2** Vertical sensor mounting (radial radiation)
- **3** 30° diagonal radiation (vertical)

Equipment

- **X** Standard; with bracket for VEGASOURCE
- **C** Collimator for sensor
- **D** Collimator for VEGASOURCE
- **E** Collimator for sensor and VEGASOURCE

Cooling option

- **X** without

KV31.				

Water/Air cooling FIBERTRAC 31

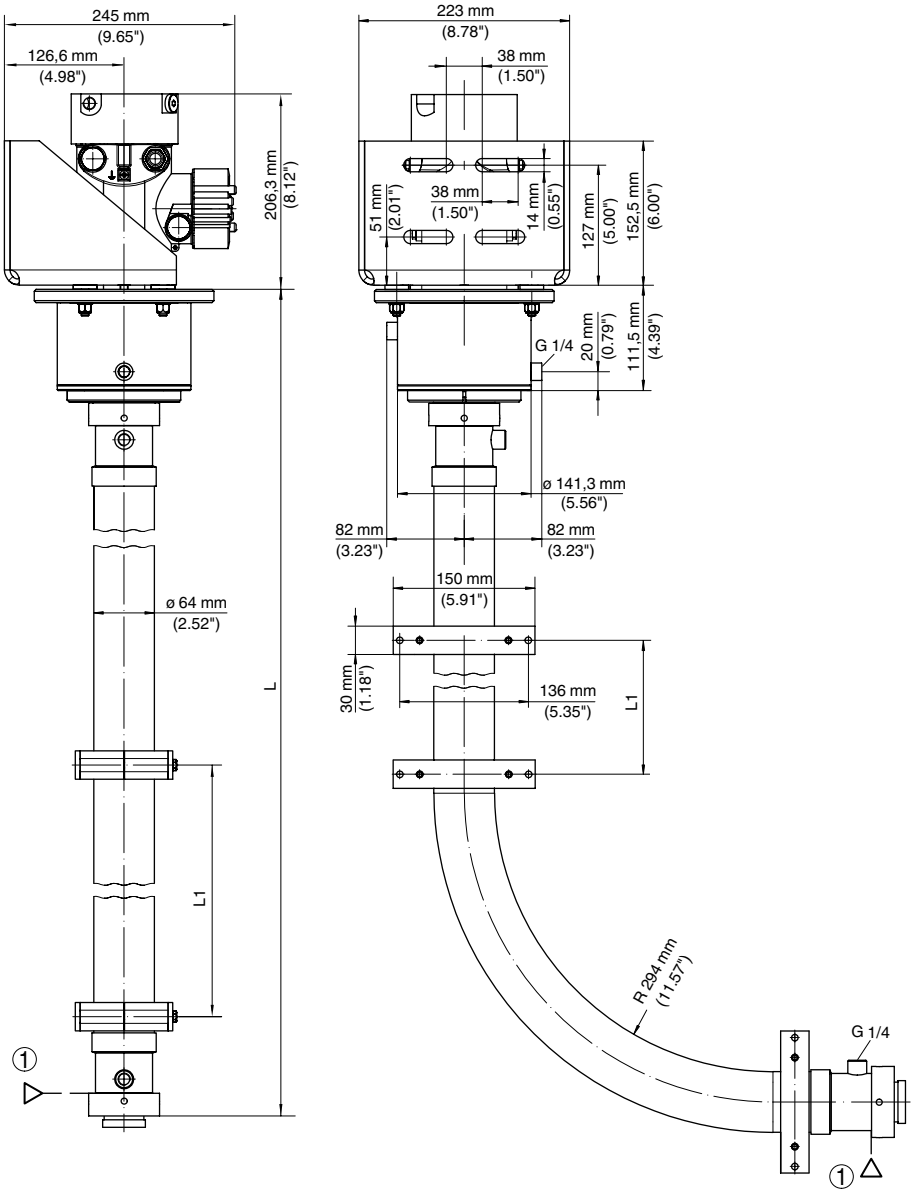
Water/air cooling of FIBERTRAC 31 for use with increased ambient temperature

Application area

If the max. permissible ambient temperature of the sensor of +50 °C is exceeded due to heat radiation, then the cooling system of the sensor will protect against overheating. The cooling for the FIBERTRAC 31 consists of a housing and scintillator cooling. Either an air or water-cooled option is available.

Your benefit

- Enables the use of the sensor with increased ambient temperature
- Reliable measurement with extreme temperatures
- Simple retrofitting



① Position of the lower measuring range end (on the upper edge of the lower compression nut

L Total length of the water cooling system

L1 Distance between the mounting clips = approx. 450 mm

Scope

I Worldwide

Application

X for Ex-free area

Y for Ex-approved detectors

Version / Ambient temperature

A Air-cooled box and scintillator cooling / max. 80°C

W Water-cooled lid (316L) and scintillator cooling / max. 100 °C

Water/Air connection

G Thread G¼

N Thread ¼NPT

Length

A10 1000 mm

A15 1500 mm

A20 2000 mm

A25 2500 mm

A30 3000 mm

A35 3500 mm

A40 4000 mm

A45 4500 mm

A50 5000 mm

A55 5500 mm

A60 6000 mm

A65 6500 mm

A70 7000 mm

Vortex cooling

X without

Z with two Vortex coolers

Mounting accessory

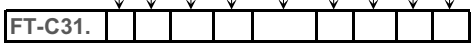
M Metric thread

Additional equipment

X Without

Certificates

X no



Water/Air cooling SOLITRAC 31

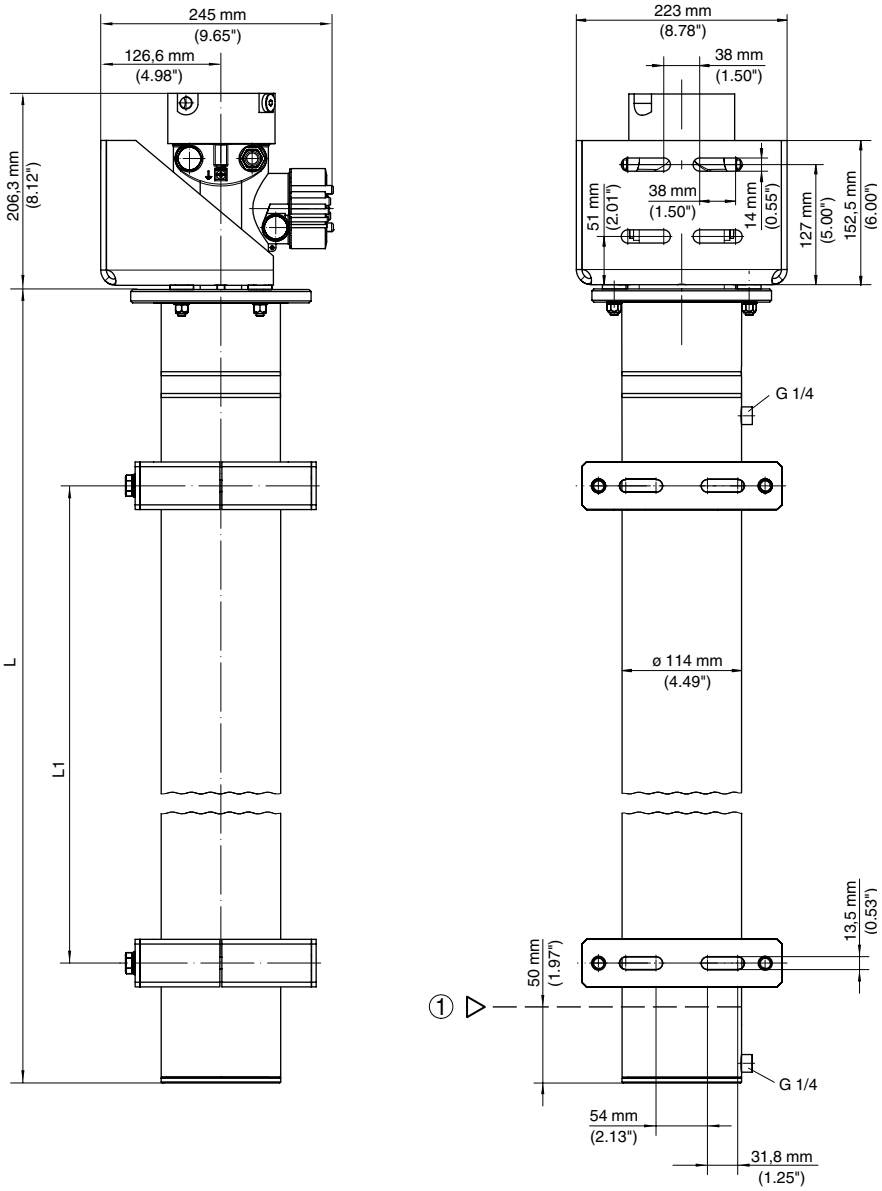
Water/air cooling of SOLITRAC 31 for use with increased ambient temperature

Application area

If the max. permissible ambient temperature of the sensor of +60 °C is exceeded due to heat radiation, then the cooling system of the sensor will protect against overheating. The cooling for the SOLITRAC 31 consists of a housing and scintillator cooling. Either an air or water-cooled option is available.

Your benefit

- Enables the use of the sensor with increased ambient temperature
- Reliable measurement with extreme temperatures
- Simple retrofitting



① Position of the lower measuring range end (on the upper edge of the lower screwed connection)

L Total length of the water cooling system

L1 Distance between the mounting clips = approx. 450 mm

Scope

I Worldwide

Application

X for Ex-free area

Y for Ex-approved detectors

Version / Ambient temperature

A Air-cooled box and scintillator cooling / max. 120 °C

W Water-cooled lid (316L) and scintillator cooling / max. 100 °C

Water/Air connection

G Thread G¼

N Thread ¼NPT

Length

A05 500 mm

A10 1000 mm

A15 1500 mm

A20 2000 mm

A25 2500 mm

A30 3000 mm

Vortex cooling

X without

Z with two Vortex coolers

Mounting accessory

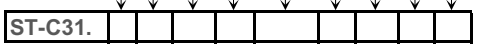
M Metric thread

Additional equipment

X Without

Certificates

X no

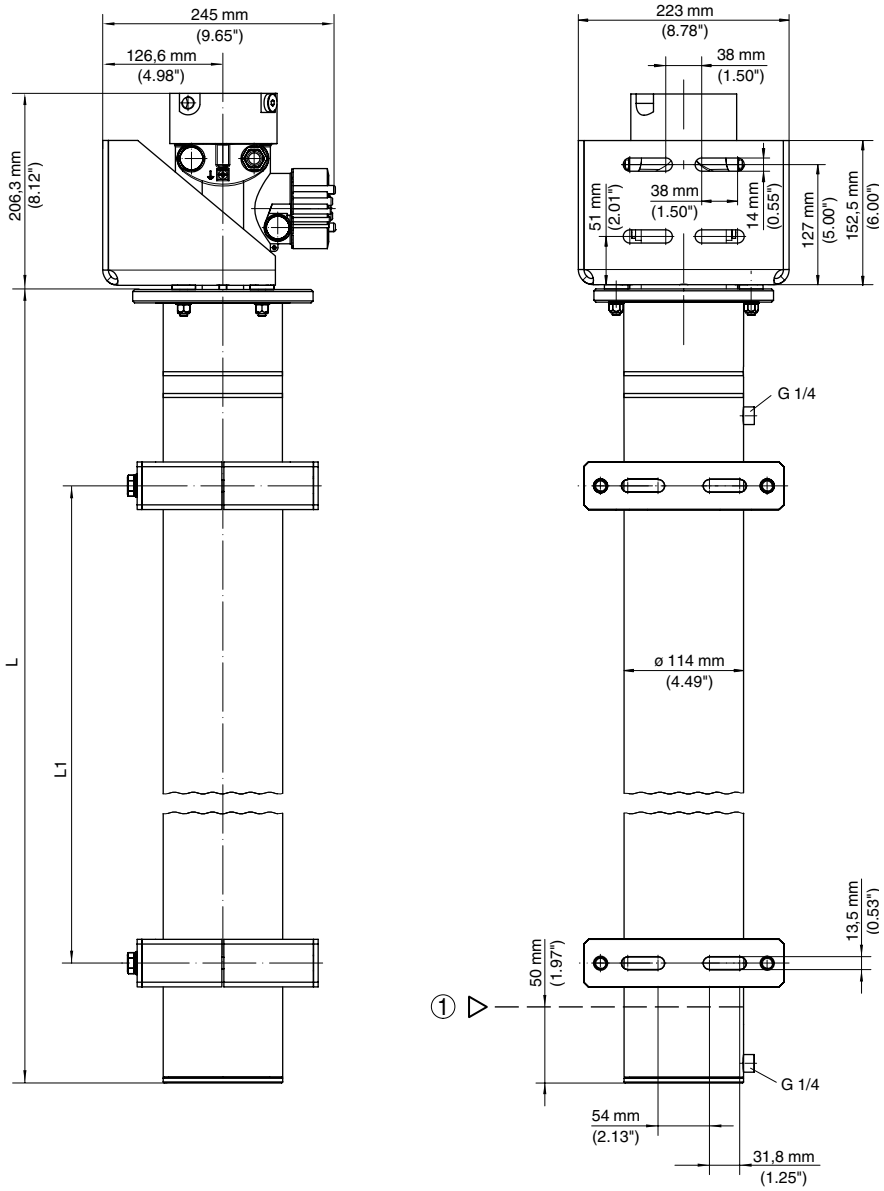


Water/Air cooling POINTRAC 31

Water/air cooling of POINTRAC 31 for use with increased ambient temperature

Application area
If the max. permissible ambient temperature of the sensor of +60 °C is exceeded due to heat radiation, then the cooling system of the sensor will protect against overheating. The cooling for the POINTRAC 31 consists of a housing and scintillator cooling. Either an air or water-cooled option is available.

Your benefit
- Enables the use of the sensor with increased ambient temperature
- Reliable measurement with extreme temperatures
- Simple retrofitting



① Position of the lower measuring range end (on the upper edge of the lower screwed connection)
L Total length of the water cooling system
L1 Distance between the mounting clips = approx. 450 mm

Scope

I Worldwide

Application

X for Ex-free area

Y for Ex-approved detectors

Version / Ambient temperature

A Air-cooled box and scintillator cooling / max. 120 °C

W Water-cooled lid (316L) and scintillator cooling / max. 100 °C

Water/Air connection

G Thread G¼

N Thread ¼NPT

Length

006 152mm

012 305mm

Vortex cooling

X without

Z with two Vortex coolers

Mounting accessory

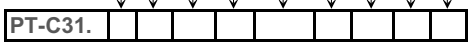
M Metric thread

Additional equipment

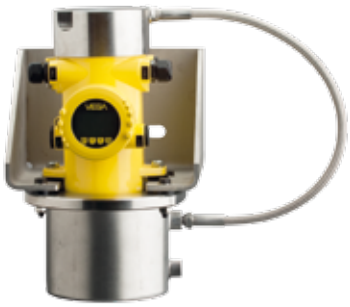
X Without

Certificates

X no



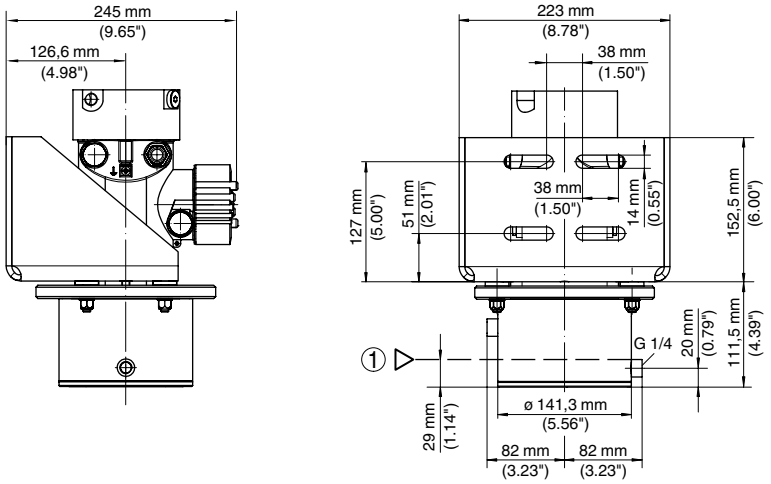
Water/Air cooling MINITRAC 31



Water/air cooling of MINITRAC 31 for use with increased ambient temperature

Application area
If the max. permissible ambient temperature of the sensor of +60 °C is exceeded due to heat radiation, then the cooling system of the sensor will protect against overheating. The cooling for the MINITRAC 31 consists of a housing and scintillator cooling. Either an air or water-cooled option is available.

Your benefit
- Enables the use of the sensor with increased ambient temperature
- Reliable measurement with extreme temperatures
- Simple retrofitting



① Position of the measuring range end

Scope

I Worldwide

Application

X for Ex-free area

Y for Ex-approved detectors

Mounting arrangement

2 Vertical sensor mounting (radial radiation)

Version / Ambient temperature

A Air-cooled box and scintillator cooling / max. 120 °C

W Water-cooled lid (316L) and scintillator cooling / max. 100 °C

Water/Air connection

G Thread G¼

N Thread ¼NPT

Vortex cooling

X without

V with one Vortex cooler

Mounting accessory

M Metric thread

Additional equipment

X Without

Certificates

X no

MT-C31.									