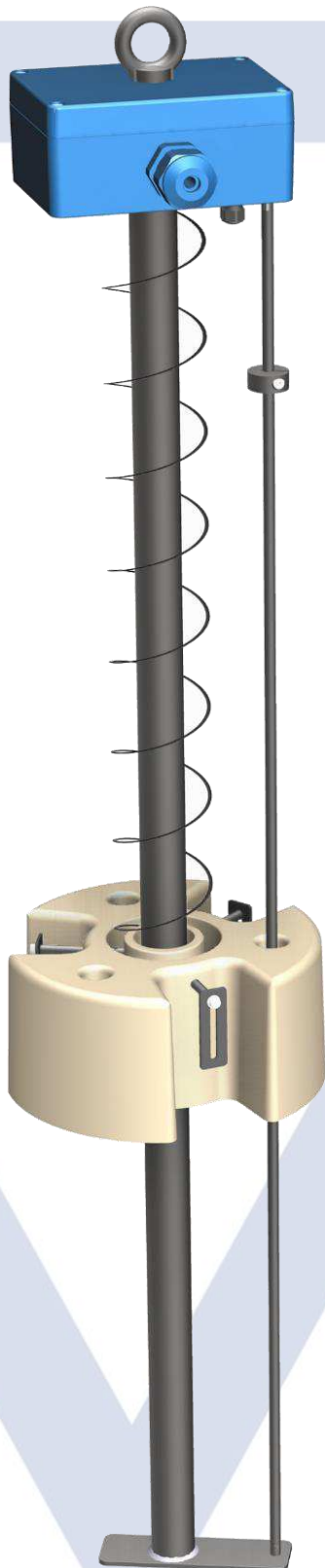


Surface oil detection conductance probe

LS21.1 A BV 1000 Ex1



- Rainwater monitoring in basins
- Measuring electronics adjusted in the factory
- Outdoor application IP65
- Oil layer thickness from 1 mm
- 2-wire technology

Use

In shafts and oil separators of outdoor petrol stations. For liquid/liquid phase detection of organic to aqueous medias.

Application

The conductivity probe, manufactured in the standard version stainless steel and PUR-Baydur float with conductive coating, is used as interface detection. The electrical properties of the liquid to be monitored (i.e. rainwater) may change. If the electrical conductivity changes $<10 \mu\text{S}/\text{cm}$, petrochemical product is detected and alarmed.

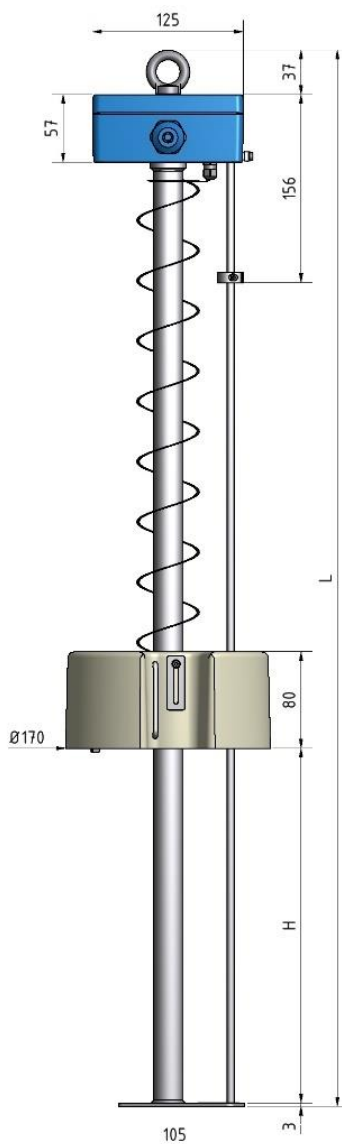


Model code: LS21.1 A BV 1000 Ex1

LS		Conductance probe liquid detection
21		Surface oil detection (monitoring) with floater PUR-Baydur with 3 measuring electrodes and 3 ground electrodes
1		One switching point with LW9 on-site measurement electronics with double electrode
A		Attached measuring electronics in connection box
BV		Connection head (Outdoor) with integrated measuring electronics LW9 connection head aluminium, blue powder-coated, seal Viton, IP 65 according EN 60529 cable gland PM M20 x 1.5, cable clamping area \varnothing 6-8 mm
L		Floater stroke length 1000 mm

Probe ATEX Ex-protection : SEV 17 ATEX 0173 CE 1254

Ex1 | Ex-version (LS21/LW9) II 2 G Ex ia IIB T4 Gb



Technical data

Temperature range

-30 .. +85 °C media | -30 .. + 60 °C connection box

Cleaning high-pressure water (except connection box)

Pressure atm

Measuring principle conductance

Measuring range DK 1.4 .. >80

Sensitivity > 1 mm

Conductivity switch point from organic phase

0..10 μ S/cm

Conductivity of the aqueous phase (rainwater)

>10 μ S/cm

Integration time 1 s

Use in Ex-zone II 2G Zone 1

Floater material PUR-Baydur 60; painting: copper coating
conductive

Connection to evaluation unit AS9*

Measuring electronics housing square, type LW9

Wiring

2-wire cable 0.75 mm² CY/EIG to all evaluation devices AS9*,
cable length up to 1000 m ($L' \leq 1$ mH/km / $C' \leq 200$ nF/km)

Article-n°. 30 66 06-1000

Technical data of integrated LW9 electronics

Design type

Electronic board lacquered with terminal

Mounting

Protection housing with mounting holes, slide-in electronics attached with 2 screws M4x8, screw hole spacing 105 mm

Installation

Linear conversion of a conductance range into a normed digital signal

Use

No setting necessary, plug & process

Dimensions

Square version height x width x length 32 x 50 x 110 mm

Weight electronic

40 g

Ex-power supply / connection wiring

Shielded two-wire connection 0.75 mm² twisted CY/EIG to all evaluation devices mipromex® cable length up to 1000 m or max. C= 120 nF / R = 30 Ohm line impedance

Transfer signal

Impulse parcel, superimposed on the supply current

Measuring voltage/current

Loaded with measuring electronics LW9E9
 U ~ 7.0 V I ~ 130,0 mA

Nominal data of the supply voltage

Rate data Ex ia IIC only for connection to aquasant® Typ AS9 *

Evaluation circuit with the following maximum output values

U_i ≤ 7,2 V I_i ≤ 135.0 mA
 C_i = 1.2 uF L_i = 0 mH



Conductance circuit with the following maximum output values

U_o ≤ 14,7 V I_o ≤ 18.5 mA
 C_o = 3.00 uF L_o = 5.0 mH / IIB
 C_o = 0.62 uF L_o = 0.5 mH / IIC

Ambient temperature

-20 ...+60 °C

Storage temperature

-30 ...+80 °C, ideal +20 °C

Adjustable shifting range

LW9 0 to 40 µS/cm

Certification

Gas II 2(1) G Ex ia [a Ga] IIC T4 Gb
 RL 2014/34/EU

Inspection report n°: 17-Ex-0017.01

Unit can be supplied without Ex-protection

Intrinsically safe Ex-connection:

Measurement electronics LW9 in protected housing
 EMV-tested, STS 024 report NR. 990102WS
 corresponds to EN 1127-1 : 20011
 EN 50014 : 1997 / EN 50020 : 1994
 EN 50284 : 1999



Measuring system

The measuring system consists of a probe in the floater, with mounted or remote LW9 on-site measuring electronics and the AS9* control unit in the non-hazardous area. The cable length for Ex ia applications is max. 1000 m.

Function

The conductance changes as a function of the dielectric and electrically conductive properties of organic products and aqueous solutions. If there is no water, the probe suppresses the conductance measurement by reed limit switches so that no oil or gasoline alarm is triggered. The measured conductivity is converted directly into a standardized digital signal as a sum signal by the LW9 measuring electronics and transmitted to the aquasant® AS9* control unit.

Installation instructions

- Installation from top to bottom suspended mounted on gallows.
- During installation, the conductivity probe must be handled with appropriate care; the siren cable to the float must not be kinked.
- The company's internal assembly guidelines must be applied.
- Observe internal and governmental safety regulations for opened manholes.
- Ambient temperature: Max. permissible temperature in connection head must not exceed +60 °C
- The function test must be carried out with the probe installed.

Dismounting instructions

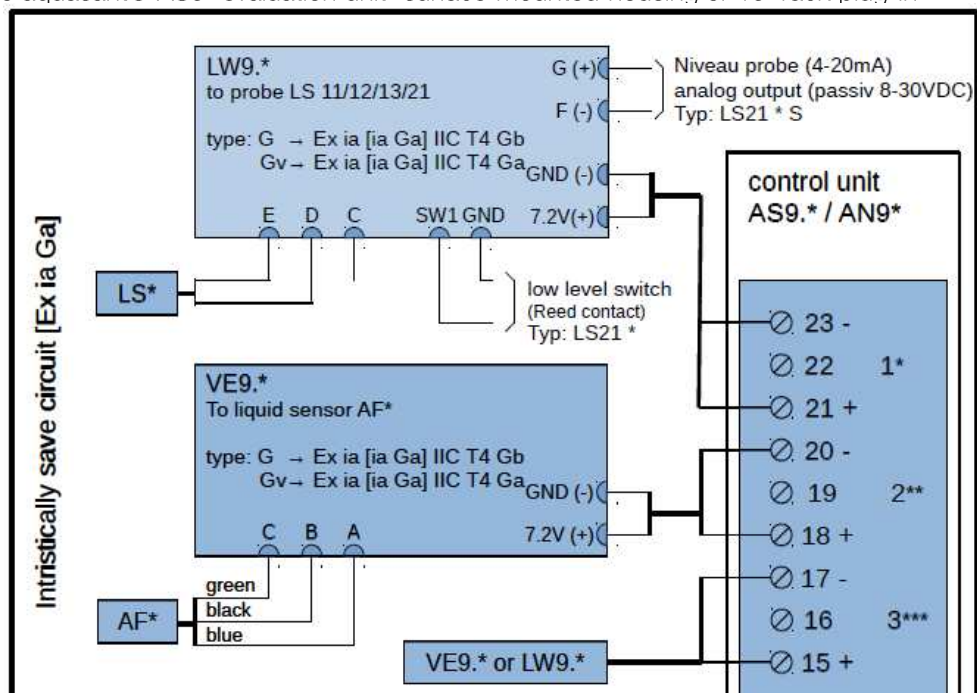
- Open shaft, rinse shaft with water according to operating instructions (observe internal safety instructions)
- Disconnect the electrical connections. Remove the probe and lift it by the chain.
- When returning repairs, the safety data sheets for personnel protection must be enclosed.

Electrical information

- Wiring according to schematic diagram and earthing diagram
- Connections to LW9 terminals 1/2, reverse polarity protected suitable for conductor cross-section 0.2 - 1.5 mm²
- The connection cable must comply with the requirements at the place of use.
- Housing cover under [Ex ia] may be opened in the Ex zone while live
- Output signal from AS9* control unit pulse modulated signal $U \leq 7.2 \text{ V}$

Schematic diagram

LW9 probe connection to aquasant® AS9* evaluation unit* surface-mounted housing or 19" rack plug-in unit



Certificates

Explosion protection (ATEX)

EC Type examination certificate SEV 17 ATEX 0173

- Ex certification according to directive 2014/34 EU

- Confidential test report No.: 17-Ex-0017.01

CE mark

The probe meets the legal requirements according to the EC directives. CE 1254