Alarm unit for oil-water separators
NivOil® / 230 V AC





- **Synoptic board of alarms on the front**
- **Automatic sensor recognition**
- **3 Output relays, change-over contacts**
- **Audible alarm (buzzer)**
- **Type-tested according to ATEX**

APPLICATIONS

- Oil-water separator monitoring: Meets the requirements of EN 858-1 and 2, for light liquid separators, sewage treatment.

DESCRIPTION

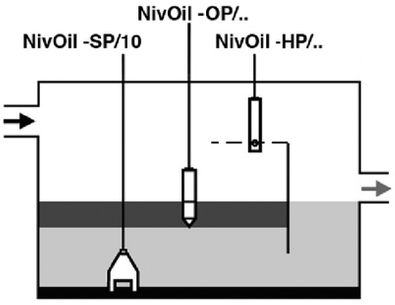
The alarm unit NivOil-CU (BVS 07 ATEX E 090) monitors levels in oil/water separators, up to three detection probes.

The oil layer thickness probe NivOil-OP/.. (BVS 07 ATEX E 091 X) detects the thickness of hydrocarbons fluids layer floating over the water.

The overfill probe NivOil-HP/.. (BVS 07 ATEX E 092 X) detects the overfill level in the separator.
This alarm can inform that drainage is blocked.

The sludge level probe NivOil-SP/.. (BVS 09 ATEX E 021 X) detects the highest permissible level of sludge layer.
As soon as the sludge level has reached the too high level an alarm signal is triggered.

All detection loops are automatically set up (self recognition).
Therefore it is possible to connect any of the three intrinsically safe NivOil probes to any of the three intrinsically safe channels of the NivOil alarm unit.
The alarm unit NivOil-CU detects for each channel which probe is connected and indicates the corresponding LED on the front panel.
If a channel is not assigned, its LEDs remain dark during operation.
The unit has a built-in audible alarm (piezo); If necessary, it can be disabled through a DIP switch.



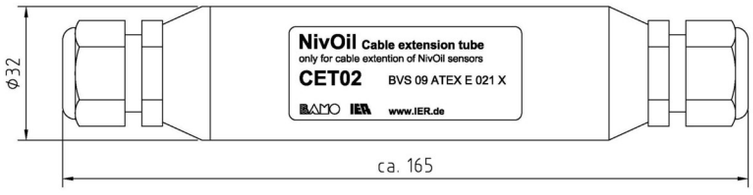
CABLE EXTENSION

Coupler CET02 for cable extension

The cable between the probe and the alarm unit can be extended up to 300m (Total length depends of cable capacitance and inductance).
For this purpose, the use of our Ex-approved cable coupler CET02 is recommended.



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TECHNICAL FEATURES

NivOiL-CU/220 – Alarm unit

Main power supply	230 V AC – 50 Hz
Consumption:	About 9 VA (with 3 probes connected)
Probe inputs	3 inputs with automatic probe recognition, indifferently: Probe NivOil-OP for hydrocarbons layer thickness detection Probe NivOil-HP for overfill detection Probe NivOil-SP for settled sludge level detection
Monitoring	Alarm unit NivOil-CU is equipped with a broken or short circuit control on each detection loop
Outputs	3 Relay outputs, 230 V AC, 3A; Potential free changeover contact
Display and signals	1 Operating channel LED (green) on each channel 1 alarm LED (red) on each channel Built-in audible alarm, disabled by DIP switch
Temperature limits	-20 ... +60 °C
Intrinsicaly safe unit	Ⓔx II (1) G [Ex ia] IIB (associated equipment)
Ex loop impedance	The maximum permissible values (U_0, I_0, P_0 and C_0, L_0) of the intrinsically safe input circuits are detailed in Annex 1 to the BTA (BVS 07 ATEX E 090 / Point 15.3.2) per channel and in conjunction with the NivOil probes.
EC-Type Examination Certificate	BVS 07 ATEX E 090 (The alarm unit must be installed in a non-hazardous area)
Protection	IP 65 according EN 60529
Front panel, interface	2 push buttons for diagnostic test and alarm clearance

Probe NivOiL-OP/10 or OP/15 for hydrocarbons layer thickness detection

(Only for use with our alarm units NivOiL and RAC531)

Probe body	Antistatic PE
Sensor end	Stainless steel 316 L
Cable	Resistant to hydrocarbon fluids, 2x 1 mm²; blue colour; standard length: 10 m, Other lengths on request; Extension: up to 300 m, [C] line ≤ 200 nF/km and [L] line ≤ 1 mH/km
Dimensions	About O.D. 32 mm; Height: 230 mm; With marks each 5 cm for height adjustment
Protection	IP 68 according EN 60529
Detection principle	Capacitive detection, high frequency
Temperature limits	-20 ... +60 °C
EC-Type Examination Certificate	BVS 07 ATEX E 091 X (For zone 0)
Ex loop impedance	The maximum permissible values (U_0, I_0, P_0 and C_0, L_0) of the intrinsically safe detection loop are detailed in Annex 2 to the BTA (BVS 07 ATEX E 091 / Point 15.3.1).
Intrinsic safety	Ⓔx II 1 G Ex ia IIB T4 (intrinsically safe electrical equipment)

Probe NivOiL-HP/10 or 15 for overfill detection

(Only for use with our alarm units NivOiL)

Probe body	Antistatic PE
Sensor	Stainless steel 316 L
Cable	Resistant to hydrocarbon fluids, 2x 1 mm²; blue colour; standard length: 10 m, Other lengths on request; Extension: up to 300 m, [C] line ≤ 200 nF/km and [L] line ≤ 1 mH/km
Dimensions	About O.D. 32 mm; Height: 195 mm
Protection	IP 68 according EN 60529
Detection principle	PTC sensor, heated
Temperature limits	-20 ... +60 °C
EC-Type Examination Certificate	BVS 07 ATEX E 092 X (For zone 0)
Ex loop impedance	The maximum permissible values (U_0, I_0, P_0 and C_0, L_0) of the intrinsically safe detection loop are detailed in Annex 3 to the BTA (BVS 07 ATEX E 092 Point 15.3.1).
Intrinsic safety	Ⓔx II 1 G Ex ia IIB T3 (intrinsically safe electrical equipment)

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Probe NivOiL-SP/10 for settled sludge level detection
(For use only with our alarm unit NivOiL CU/220)

Probe body	PVC
Cable	Resistant to hydrocarbon fluids, 2x 1 mm²; blue colour; standard length: 10 m, Other lengths on request; Extension: up to 300 m, [C] line ≤ 200 nF/km and [L] line ≤ 1 mH/km
Dimensions	About 145 x 90 x 25 mm
Protection	IP 68 according EN 60529
Detection principle	Ultrasonic sensor
Temperature limits	-20 ... +60 °C
EC-Type Examination Certificate	BVS 09 ATEX E 021 X (For zone 0)
Ex loop impedance	The maximum permissible values (U_0, I_0, P_0 and C_0, L_0) of the intrinsically safe detection loop are detailed in Annex to the BTA (BVS 07 ATEX E 021 X Point 15.3.1).
Intrinsic safety	Ⓔx II 1 G Ex ia IIB T4 (intrinsically safe electrical equipment)

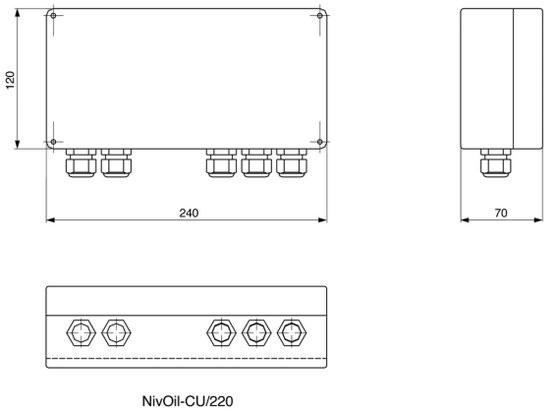
EC Conformity: The instruments meet the legal requirements of the current European Directives

CODE NUMBERS AND REFERENCES

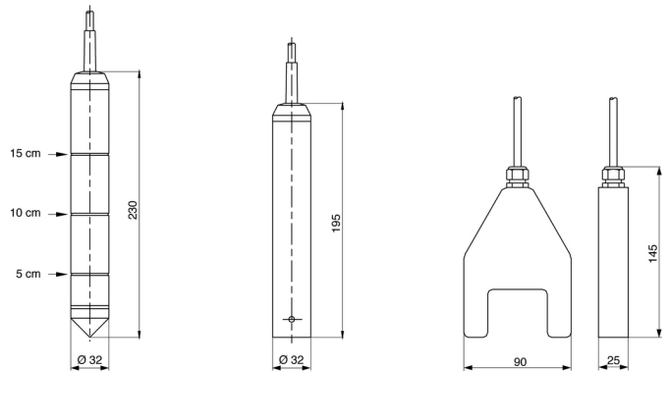
Code	Reference	Description
531 050	NivOil-CU/220	Alarm unit, 220 V AC; IP65
531 102	NivOil-OP/10	Layer thickness probe, 10 m long cable
531 200	NivOil-HP/10	Overfill probe, 10 m long cable
531 301	NivOil-SP/10	Settled sludge probe, 10 m long cable
531 550	NivOil-CET-02	IP65 Coupler for cable extension (cable ≤4 mm²)
531 502	SK-PVC-2x1	Extension cable, 2-wire, for 1 detection ATEX probe

Other versions: on request

DIMENSIONS



NivOil-CU/220



NivOil-OP/.. NivOil-HP/.. NivOil-SP/10

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NivOil® / 230 V AC
14-01-2022 D-531.01-EN-AG

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531-01 /3

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