ES21

Level monitoring

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Keep this manual for future use!

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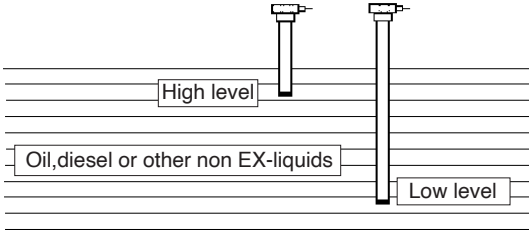


Level monitoring systems
Type ES21

Afriso Ema AB
Kilvägen 2 • SE-232 37 Arlöv
Sweden
+46-(0)40-92 20 50

www.afriso.se

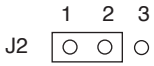
Description

System components:
Electronic unit ES21 is a universal control unit to be connected to type approved thermistor probes.

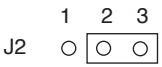
Description:
The electronic unit ES21 is designed for wall mounting. When the unit is connected to a thermistor it may be configured to either a high level alarm (e.g as an overfill prevention) or a low level alarm (e.g as a tank leak indication).

Function:
The sensor output is intrinsically safe. The unit is fitted with a link on the PCB (inaccessible from the outside) for changing between high level and low level signals.

High level signal: link fitted between 1 and 2 on J2. Red LED on : The sensor is cold either through being immersed in oil, petrol or other liquids or due to an open or short circuit in the sensor leads. The output relay is de-energized. Green LED on : The sensor is uncovered. The output relay is energized.



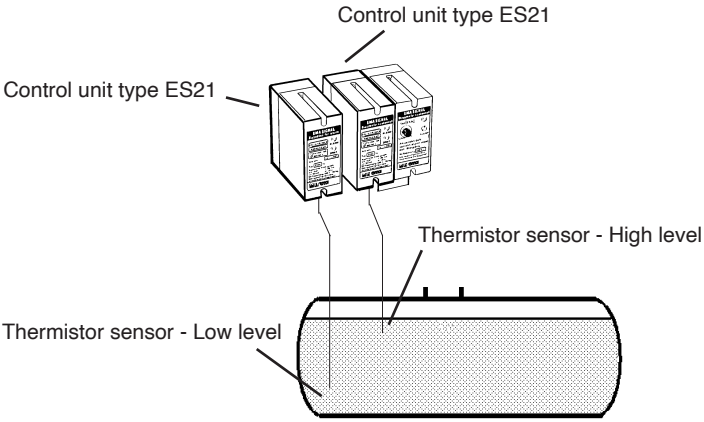
Low level signal: link fitted between 2 and 3 on J2. Red LED on : The sensor is either uncovered, or there is an open or short circuit in the sensor leads. The output relay is de-energized. Green LED on : The sensor is cold through being immersed in oil. The output relay is de-energized.



Specifications
ES21

Supply	230 V, 50 Hz
Relay output	U_{max} 230 V I_{max} 4 A max 100 VA
Ambient temperature	±0 - +50°C
Housing	IP 40

Mounting example



Installation ES21

Generally:
The ES3 units's housing has a protection rating of IP40 and must only be mounted in dry rooms. If moisture is present, the unit must be mounted in an weatherproof enclosure with a protection rating of at least IP 55.

The unit has 2 fixing holes for mounting directly onto the wall with screws.

Wiring:
If the sensor has an integral cable this must be connected in accordance with the wiring diagram. If the cable between the sensor and the ES21 unit has to be extended then a 1,5 mm 2 two-core screened cable should be used.

Make the connections according to the wiring diagram. The power supply connection on terminal 11 and 12, where 11 is phase and 12 is neutral. The probe is connected on terminal 1 and 2, where blue cable or cable marked '2' is connected to terminal 1. The brown cable or cable marked '1' is connected to terminal 2.

Commissioning checks:
Check that all wiring to the ES21 unit is in accordance with the wiring diagram.
An open circuit or short circuit in the sensor cable will give an alarm signal when the unit is switched on. Check that cable of the correct type and rating has been used.

Check that the correct alarm level has been selected. For high level alarms pins 1 and 2 on connector J2 on the PCB must be linked, and for low level alarms pins 2 and 3 must be linked.

Carefully plug the ES21 unit into the base ensuring that the PCB edge connector makes correct contact with and does not damage any of the terminals.

Operation:
High level alarm:
Switch on the supply voltage to the ES21 unit. If the sensor is immersed in liquid the red LED will come on immediately, and will remain on so long as the sensor is immersed in liquid.

If the sensor is in air, then after a sensor warm-up of around 15 seconds, the red LED will go out and the green LED will light up.

For a low level alarm setting the operation will be the reverse of the above.

Warning!

The supply voltage must be switched off prior to unplugging the ES21 unit from it's base.

Failure to do so may result in damage to the electronic circuitry, and will also expose the user to dangerous voltages present in the base of the unit.

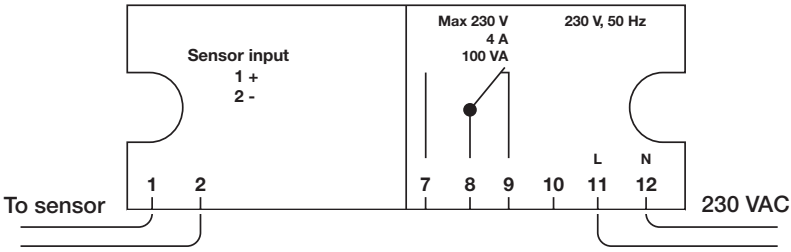
The electronic unit and sensor is not allowed to be mounted in an EX-zone.

Service and maintenance

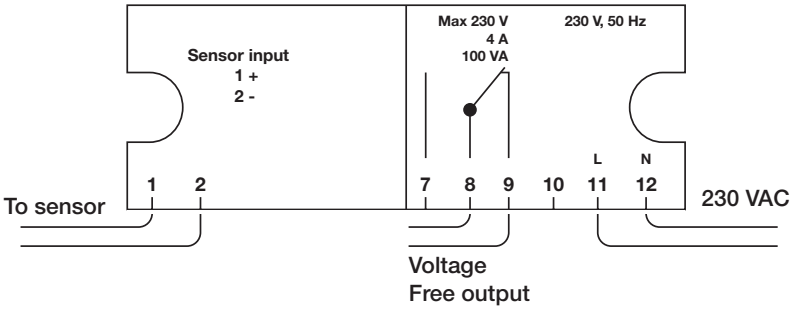
There are no user-serviceable parts,
if either repairs or maintenance are required
the units must be returned to the supplier.

System wiring diagrams:

ES 21 without extra alarm output



ES 21 with voltage free output for alarm panel etc.



AFRISO

CE Declaration of Conformity

This declaration certifies that the below mentioned apparatus conforms to the essential requirement of the EMC directive 2014/30/EU and Low-Voltage directive (LVD) 2014/35/EU.

Description of the apparatus : Level Surveillance Equipment type ES321.

Manufacturer : Afriso Ema AB
Kilvägen 2
SE-232 37 Arlöv
Sweden

The construction of applience in accordance with the following standards :

EMC:

EN 61000-6-2 (2019)	Electromagnetic compability, Generic standards - Immunity for industrial environments.
EN 61000-6-3 (2007)/A11(2011)	Electromagnetic compability, Generic standards - Emission standard for residential, commercial and light-industrial environments.

LVD:

EN 61010-1 (2010)/A1(2019)	Safety requirements for electrical equipment for measurement, control and laboratory use. Part 1 : General requirements

Afriso Ema AB declares under our sole responsibility, that the equipment specified above conforms to the above mentioned Directives and Standards.

Date: 2022-02-21

Signed:

Jonas Ericson Nihlstorp
CEO

Afriso Ema AB, Kilvägen 2 , SE-232 37 Arlöv, Sweden
Tel : + 46 40 922050 • www.afriso.se • info@afriso.se

Notes

Afriso Ema AB
Kilvägen 2 • SE-232 37 Arlöv • Sweden
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Afriso EMA AB 2023-05-16