- **Ex-ia approval**
- **Optical alarm and operation status indication**
- **Potential-free output as SPDT**

Electrode relay type ER-142

ER-142 / ER-143

Electrode Relays ER-142/ER-143

For control and detection of levels in Ex-areas.

The (Ex-ia) electrode relays ER-142 and ER-143 are designed for our conductive probes which are installed in areas with explosive atmospheres.

The range of applications covers all areas in which conductive liquid media have to be detected or controlled.

Hereby limit level detection (overflow, dry operation) as well as min./max. control can be implemented.

The electrode relays here are used as an interface between Ex- and "Non-Ex" area. The units however are not allowed to be operated in Ex-areas. Safe isolation is tested and certified by the PTB (Physikalisch-Technische Bundesanstalt).

The devices can also be used as contact protection relays if e.g. pickups only allow low contact loads but on the other hand higher loads have to be switched.
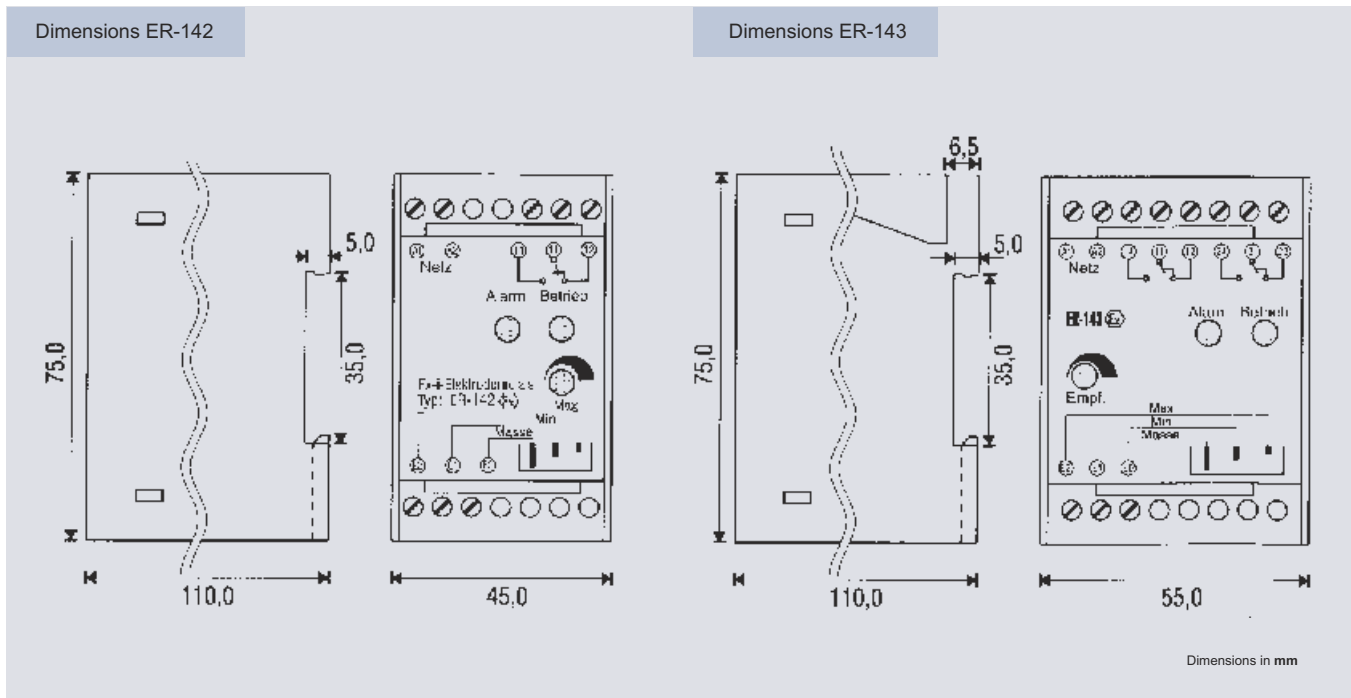
The electrode relays ER-142 and ER-143 basically consist of the four functional components power supply, intrinsical unit, potential free output and the measurement and evaluation electronics.

The ER-142's potential free output consists of one SPDT, the ER-143's output of two SPDTs (simultaneously operated).

The relays represent a complete functional unit for capture and control purposes of levels in combination with our electrodes which are available in a large variety of types for many various applications.

It is possible to use the electrode relays ER-142 and ER-143 as contact protection relays by combining them with NIVUS "signal pickups" (pressure bells, float switches, etc.).

Instrumentation For Water Industry
NIVUS GmbH • Im Taele 2 • 75031 Eppingen, Germany • Internet: www.nivus.com
Phone: +49 (0)7262 9191-0 • Fax: +49 (0)7262 9191-999 • E-mail: info@nivus.com

nivus®

Specifications

Dimensions ER-142	Dimensions ER-143

Dimensions in **mm**

ER-142, ER-143

Power supply

Nominal operating voltage	230 V AC ±10 % or 24 V DC other voltages on request
Nominal frequency	48...62 Hz
Power consumption	<2 VA

Output

ER-142 output contacts	1 potential free SPDT
ER-143 output contacts	2 potential free SPDT (simultaneously operated)
Switching voltage	max. 250 V AC / max. 150 V DC
Switching current	max. 5A AC / max. 5 A DC
Switching power	max. 50 W max. 100 VA

Input	intrinsically safe
Open circuit voltage	≤12.6 V
Short circuit current	≤10mA
Permissible outer inductivity*	≤300 mH ≤1000 mH
Permissible outer capacitance*	≤1,15 F ≤7,4 F
Sensitivity	(2..30/3..300) kOhm on request: 0.2...3 or 8...800 kOhm
Time delay	approx. 0.5 s energised/de-energised other on request

* The outer capacitance and the outer inductivity may only be used through line reactances.

Galvanic isolation

Input - output, input - mains	according to EN 60 079-11, safely isolated, peak crest value Û 375V
Output - mains, output - output	according to EN 61 010 - 1, peak crest value 300 V, overvoltage category II
Weight	approx. 250g
Storage temperature	-30...80°C
Operating temperature	-25...60°C
Ex-approval	II (1) G [Ex ia] IIC / ATEX 1836

Norm		
EN 60 529	protection (terminals)	IP 20
	protection (enclosure)	IP 40
EN 61 010-1	protection class (device)	II
	overvoltage category	II
	soiling degree	2
EN 60 079-0/ EN 60 079-11	accompanying equipment	yes
	category	ia / "ib"
	group	II C
EN 61 000-6-3/ EN 61 000-6-4		
EN 61 000-6-2		
EN 61 000-4-2	testing accuracy	III
EN V 50 140	testing accuracy	III
EN V 50 141	testing accuracy	III
EN V 50 142	testing accuracy	III / IV
EN 61 000-4-4	testing accuracy	III

You can find more information in the instruction manual or on **www.nivus.com**