

## Floating electrodes

for detection of a thin layer of non-conductive liquids with a lower specific gravity on top of conductive liquids with a higher specific gravity, e.g. oil on water

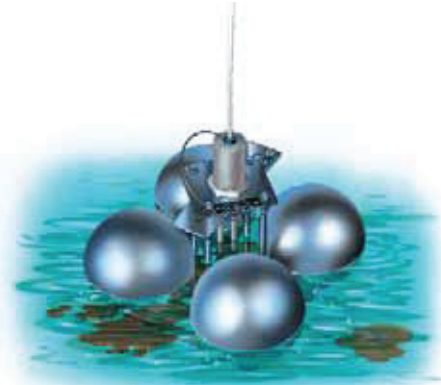
Ex versions also available.  
Detailed information on request.

### Design

The SCHE ... floating electrodes are made up of an upper section and a lower section. The upper section consists of an electrode holder and a rod electrode (whose position can be adjusted in the electrode holder) with one control electrode and one earth electrode for alarm signalling. The lower section of the floating electrode is made up of four floats and a stabilising plate.

### Mode of operation and adjustment

The SCHE ... floating electrode normally floats on a conductive liquid, such as water. It is connected to an electrode relay which supplies it with a low safety voltage. The height of the rod electrode is set in such a way that the two electrode rod tips are permanently underwater. Depending on the movement of the surface of the liquid, the rod electrode should be set further up or down. Although the two electrode rod tips should be permanently underwater, they should only just be underwater, so that when a conductive liquid (water in our example) is overlaid by a non-conductive liquid (such as oil), a thin layer of the non-conductive liquid (oil) is sufficient to lift the electrode rod tips of the rod electrode from the conductive water layer into the non-conductive oil layer, to thus interrupt the current flowing from the electrode relay via the rod electrode, and therefore to activate an alarm.



If, for example, oil flows onto a still water surface following a leak, exact setting of the rod electrode will ensure that an oil layer of only approx. 5 to 10 mm thickness is sufficient to interrupt the control current flowing via the rod electrode and activate an alarm.

**To ensure functioning of the SCHE ... floating electrode, there must be a minimum liquid level of 80 mm to 130 mm (depending on model) above the floor. If this condition is not fulfilled, the two electrode rod tips will no longer be underwater – in other words, they will not be electrically bridged by a conductive liquid. This will lead to normally undesired alarm activation via the connected electrode relay. The only model with an alarm bridging contact for this eventuality is the SCHE 2/E (Variante ILS).**

The SCHE ... floating electrodes are designed for connection to the electrode relay ESA 2.

## SCHE ... floating electrodes

Technical data	SCHE 2/T/GR	SCHE 2/E	SCHE 2/E (Variante ILS)
Design		1 control electrode and 1 earth electrode	
Electrode rods	stainless steel 316 Ti, Ø 4 mm, coated with shrinkdown tubing made of polyolefine	stainless steel 316 Ti	
Electrode head	PP	stainless steel 316 Ti	
Connection	oil-resistant PVC cable,	PTFE cable,	
Length of connecting cable		potted in electrode head; other cable on request	
Material of electrode holder, stabiliser plate and brackets	PVC	stainless steel 316 Ti or other stainless steel	
No. of floats, float material and float dimensions	PP approx. 85 mm Ø	4 units made of stainless steel 316 Ti approx. 95 mm Ø	stainless steel 316 Ti approx. 130 mm Ø
Alarm bridging contact	—	—	magnetically activated reed contact
Temperature application range	from + 8°C to + 60°C		from – 20°C to + 90°C
Max. length of connecting cable between relay and SCHE ...		1,000 m	

## ESA 2 relay

Technical data	ESA 2
Alternative supply voltages	see relay Leckstar on page 13
Electrode circuit (terminals 7 and 8)	2 terminals with SELV (safety extra low voltage), acting on 2 relays without self-hold, where one can be reset if an alarm is activated
– no-load voltage	9 V <sub>eff</sub> 10 Hz SELV (safety extra low voltage)
Controlled circuits (terminals 12, 13 - relay 1, terminals 9, 10 - relay 2)	2 potential-free normally closed contacts based on the quiescent current principle, both activated in standby status. One of the two normally closed contacts (terminals 12, 13 - relay 1) can be reset in the event of alarm. The other normally closed contact (terminals 9, 10 - relay 2) retains its switching status as long as the alarm is given.
Acknowledgement	relay 1 (terminals 12, 13) can be reset via a built-in button or an external acknowledgement button (connection option at terminals 4 and 5)
Switching status indicator	via two-colour LED : – green LED permanently lit: OK status, output relays energized, – red LED flashing: leakage alarm, output relays not energized, – red LED permanently lit: output relay 1 energized, output relay 2 not energized
All other technical data	see relay Leckstar on page 13

