

Mounting & Installation Instructions

ER-214

Read and follow important instructions

Correct transport, storage, assembly, professional installation and commissioning, correct operation and careful maintenance are essential for the safe and trouble-free operation of the electrode relays.

These activities may only be carried out by persons who have the necessary expertise and qualifications. The relevant safety regulations for the installation and operation of electrical systems must be observed.

If the information contained in this manual is not sufficient in any way, please contact the manufacturer.

Electrical connection

The voltage specified on the ER-214 must match the operating voltage of the system. **All electrical connections must be made in a de-energised state.**

Mounting

The electrode relay ER-214 is designed for quick mounting on a 35 mm standard rail in accordance with DIN EN 50 022. The maximum ambient temperature (see technical data) of the electrode relay must not be exceeded at the installation location.

Connecting the electrodes

The electrodes must be connected to the terminals labelled **E0 (reference electrode), E1 (max) and E2 (min) (for channel 1) and to E0, E3 (max) and E4 (min) (for channel 2)**. Terminals E0 are bridged internally and can be used alternatively.

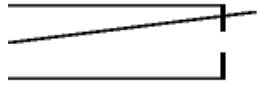
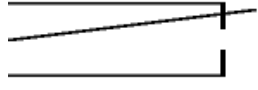
Note:

When installing the sensor cable, ensure that it is laid at a sufficient distance from power cables. If this is not possible, the use of a shielded cable can reduce interference due to coupling.

Connection of the supply voltage

Make the electrical connection in accordance with the imprint on the housing cover at the terminals **labelled A1 and A2**, for voltage see rating plate. In accordance with EN 61010-1, an all-pole disconnection must be provided in the building installation, which must be accessible near the electrode relays, labelled as a disconnecting device for these. Overcurrent protection of the devices is provided by the use of a short-circuit-proof transformer.

Connection of the potential-free output contacts

Device	Clamp	Assignment	Relay not actuated
ER-214 channel 1	12	NC contact NC	
	11	Joint contact COM	
	14	Normally open contact NO	
ER-214 channel 2	22	NC contact NC	
	21	Joint contact COM	
	24	Normally open contact NO	

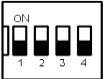
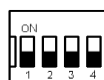
One potential-free changeover contact per channel is available as an output on the ER-214.

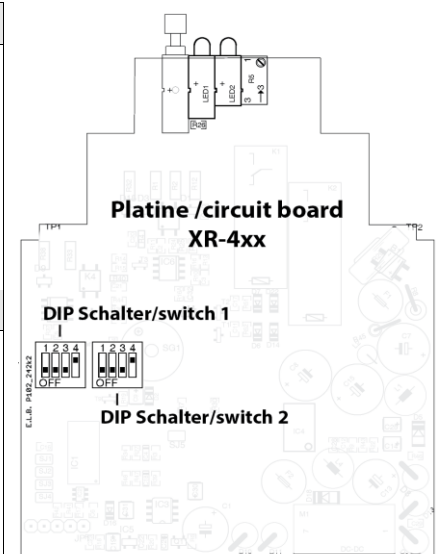
Display elements / Control elements:

LED GREEN "PWR"	ON	Operating state
	OFF	failure of the mains voltage
LED RED "ERR"	ON	Line fault (only active if DIP switch 3 in ON position)
	OFF	No line fault, or DIP switch 3 in OFF position
LED YELLOW "OUT"	ON	Max electrode immersed
	ON	Min electrode still immersed (with Min-Max control)
	OFF	No electrode immersed

Options

The desired device function can be set on the 10-pole DIP switch after opening the de-energised device. To avoid damage to circuit parts due to electrostatic discharge, the setting may only be carried out using antistatic tools.

DIP-Switch for Channel 1		Switch 1
Switch 1: OFF and Switch 2: OFF	Switching delay ca. 0,2 sec.	
Switch 1: ON and Switch 2: OFF	Switching delay ca. 2 sec.	
Switch 1: OFF and Switch 2: ON	Switching delay ca. 4 sec.	
Switch 1: ON and Switch 2: ON	Switching delay ca. 10 sec.	
Switch 3: ON = circuit monitoring ON	OFF = circuit monitoring OFF	
Switch 4: ON = closed-circuit current	OFF = Operating current	
DIP-Switch for Channel 2		Switch 2
Switch 1: OFF and Switch 2: OFF	Switching delay ca. 0,2 sec.	
Switch 1: ON and Switch 2: OFF	Switching delay ca. 2 sec.	
Switch 1: OFF and Switch 2: ON	Switching delay ca. 4 sec.	
Switch 1: ON and Switch 2: ON	Switching delay ca. 10 sec.	
Switch 3: ON = circuit monitoring ON	OFF = circuit monitoring OFF	
Switch 4: ON = closed-circuit current	OFF = Operating current	



Installation / Settings

On delivery, all DIP switches are set to OFF and the potentiometer is set to minimum sensitivity. If a different device setting is required, the device must be opened and the desired device function must be set on the DIP switches. Then close the housing. Ensure that no cables are damaged in the process.

After setting the device and connecting the electrodes to the supply voltage, the electrode relay must be set to the medium to be detected. To do this, the response sensitivity must first be set to the minimum value (turn the potentiometer anti-clockwise with a screwdriver - max. 20 revolutions). With the electrodes immersed in the medium ("Max" and "Ground"), the potentiometer is now turned to the right until the yellow LED lights up. Once this setting has been found, the potentiometer is turned approx. 1 turn further to the right in order to be in the safe switching range in the event of fluctuating conductivity.

Function check

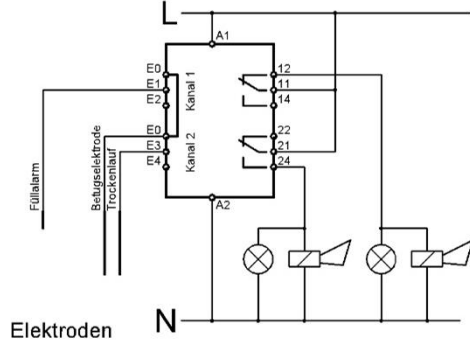
To check the function, the electrodes connected to the relay must be immersed in the medium. The switching function must be checked on the status LEDs (yellow) on the relay and on the downstream devices or warning devices.

Maintenance

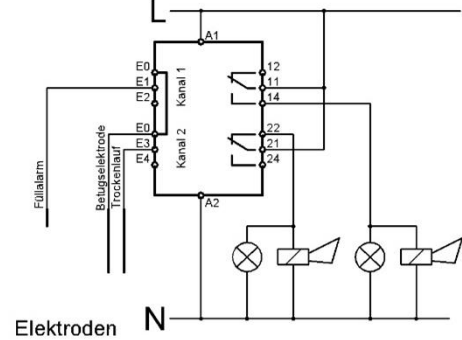
The relay does not require any special maintenance beyond the general inspection / functional check of the electrical system.

Connection examples ER-214

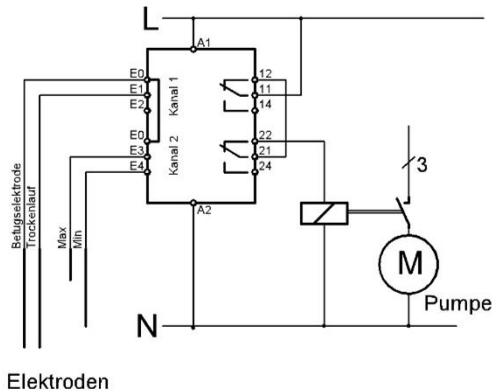
Channel 1: Filling alarm
Channel 2: Dry run, closed-circuit current, Filling alarm, Dry run



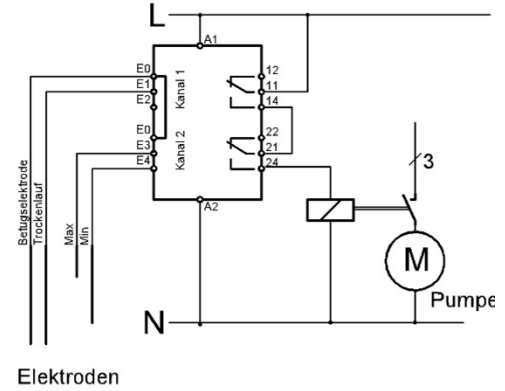
Channel 1: Filling alarm
Channel 2: Dry run, Operating current, Filling alarm, Dry run



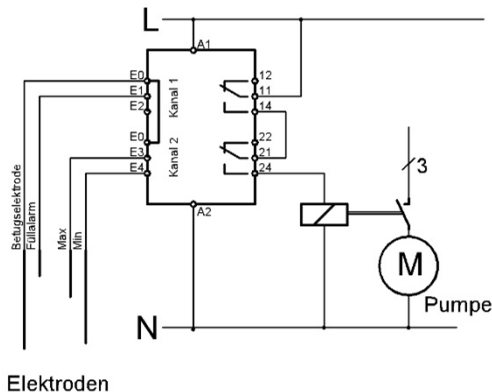
Channel 1: Dry running
Channel 2: min/max, closed-circuit current, empty reservoir



Channel 1: Dry running
Channel 2: min/max, working current, empty reservoir



Channel 1: Filling alarm
Channel 2: min/max, closed-circuit current, fill reservoir



Channel 1: Filling alarm
Channel 2: min/max, operating current, fill reservoir

