

## Elektrodni releji

Elektrodni releji ( ER-104..., ER-214..., ER-142... i ER-143...) se koriste za merenje provodljivosti nivoa ispunjavanja. Oni se mogu koristiti u svim prilikama u kojim provodljive tečne supstance treba da budu izmerene, kontrolisane i regulisane. U ovoj vezi oba limitna nivoa (prepunjavanje/rad na suvo) i kontrola maksimuma minimuma mogu biti postignuti.

Merna voltaža je obezbedjena od strane elektrodnog releja koji se primenjuje na uzemljenu elektrodu i sve dalje elektrode. Kada se uzemljena elektroda uroni u tecnost koja napreduje niska AC merna struja tece i na taj nacin signalizira da je supstanca " prisutna /nije prisutna ". Ova promenljiva struja je obezbedjena i procenjena od strane elektrodnog releja. Osetljivost reakcije elektrodnog releja za razlicite supstance može biti optimalno podešena. Čak i merenje medjusklopova izmedju supstanci sa razlicitim provodljivostima je moguće. Elektrolitska dekompozicija supstance i opasnih dodira voltaža su na siguran nacin izbegnuti.

U potencijalno eksplozivnim oblastima elektrodni relej funkcioniše kao medjusklop (galvanska izolacija) izmedju Ex i ne-Ex oblasti . Ovo suštinski sigurno kolo je pouzdano galvanski izolovano od neobezbedjenog kola do najviše vrednosti voltaže od 375 V. Elektrodni releji sami po sebi ne smeju se nalaziti i funkcionisati u Ex oblastima ( bez dodatnih zaštitnih mera). Funkcionisanje u Ex oblasti je moguće kada se i instalira kućište koje odgovara Ex oblasti. Pouzdana izolacija je testirana i odobrena od strane TÜV (Nemacko udruženje za tehnicki nadzor).

Elektrodni releji takodje mogu biti korišćeni kao releji zaštite veze u prilikama u kojima predajnici signala sa nižim odobrenim napajanjem veze ( na primer: < 10 mA) su neophodni da bi uključili vece napajanje.

- Operativna struja, struja zatvorenog kola - mogu da se menjaju
- Pouzdana galvanska izolacija izmedju ulaza, mreže i veza
- Podesivi obimi osetljivosti
- Razlicito napajanje voltaže
- Razlicita odlaganja prilikom uključivanja (takodje podesiva)
- Prekidac za prijem takodje moguć
- 1 i 2 releja kanala, dvokanalni relej meri 2 limitne vrednosti ili 2 MinMax i 1 limitnu vrednost
- 19" verzija ploce
- TÜV ATEX testirano (ER-142... I ER-143...)
- ER-214 je zasnovan na tehnologiji mikroprocesora

## Detalji o sistemu

Sistem za detekciju provodljivih nivoa ispunjavanja sastoji se od tipa šipke, suspendovanih i podesivih elektroda i elektrodnog releja. Provodljive elektrode su opisane u sekciji 04.

## Electrode Relays

Electrode relays (ER-104..., ER-214..., ER-142... and ER-143...) are used for conductive measurement of filling levels. They can be used in all applications in which conductive liquid media have to be measured, controlled and regulated. In this connection both limit levels (overflow / dry running) and minimum/maximum controls can be achieved.

A measuring voltage is supplied by the electrode relay which is applied to the ground electrode and further electrodes. When the ground electrode is immersed with a further liquid a low AC measuring current flows which signals "medium present / not present". This alternating current is acquired and evaluated by the electrode relay. The response sensitivity of the electrode relay for different media can be optimally adjusted. Even measurement of interfaces between media with different conductivities is possible. Electrolytic decomposition of the medium and dangerous contact voltages are reliably avoided.

In potentially explosive areas electrode relays act as an interface (galvanic isolation) between the Ex and non-Ex area. The intrinsically safe circuit is reliably galvanically isolated from the non-intrinsically safe circuit up to a peak voltage value of 375 V. The electrode relays themselves must not be operated in Ex-areas (without additional protective measures). Operation in an Ex-area is possible when installed in an Ex-approved casing. Reliable isolation has been tested and certified by TÜV (German Technical Surveyance Association).

Electrode relays can also be used as contact protection relays in applications where signal transmitters with lower approved contact loading (e.g. < 10 mA) are required to switch high loads.

- Operating current, closed-circuit current switchable
- Reliable galvanic isolation between input, network and contacts
- Adjustable sensitivity ranges
- Various supply voltages
- Various switching delays (also adjustable)
- Acknowledge switch optional
- 1 and 2 channel relays, 2-channel relay measures 2 limit values or 2 MinMax and 1 limit value
- 19" board version
- TÜV ATEX tested (ER-142... and ER-143...)
- ER-214 is based on microprocessor technology

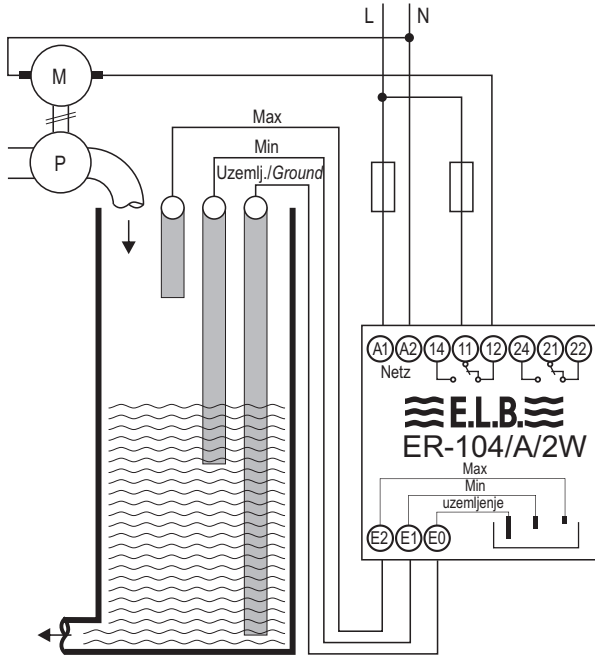
## System Details

The conductive filling level detection system consists of rod-type, suspended and adjustable electrodes and the electrode relay. Conductive electrodes are described under section 04.

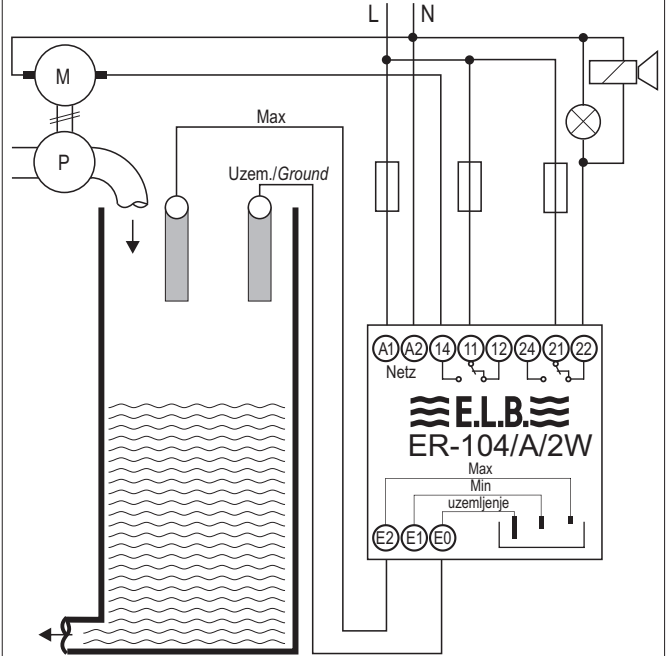


## Primer veze sa jednocanalnim relejima Connection Examples 1-Channel Relays

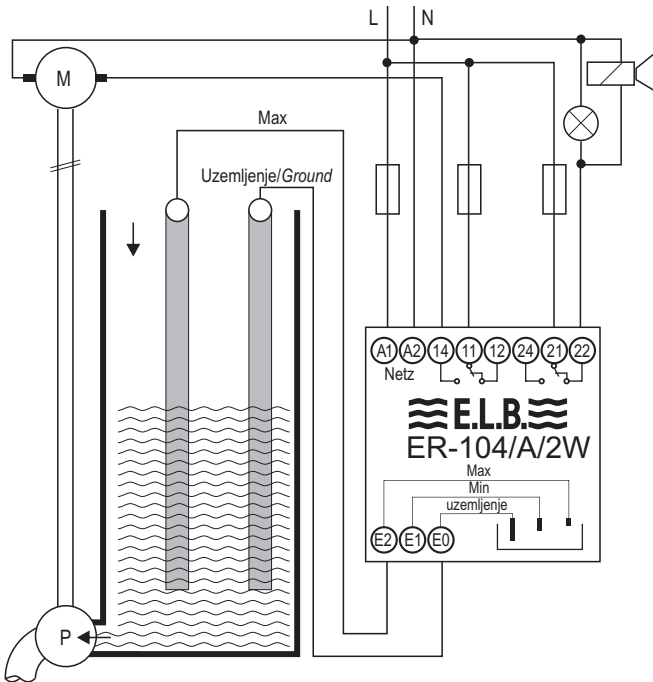
Primer veze pri punjenju  
Detekcija limitnog nivoa u operativnom otvorenom kolu  
(operise kao min/max.)  
Connection example filling  
Limit level detection in the open circuit operation (min/max-operated)



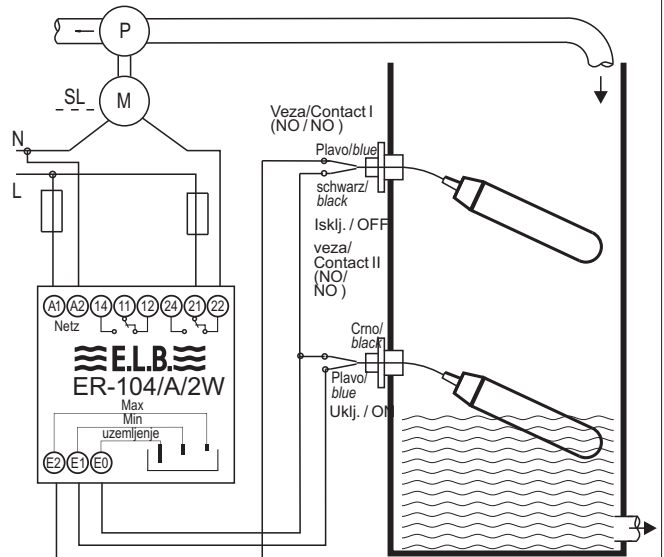
Primer veze pri prepunjavanju  
Detekcija limitnog nivoa u zatvorenom operativnom kolu  
Connection example overflow  
Limit level detection in the closed circuit operation



Primer veze pri radu na suvo  
Detekcija limitnog nivoa u otvorenom operativnom kolu  
Connection example dry running  
Limit level detection in the open circuit operation



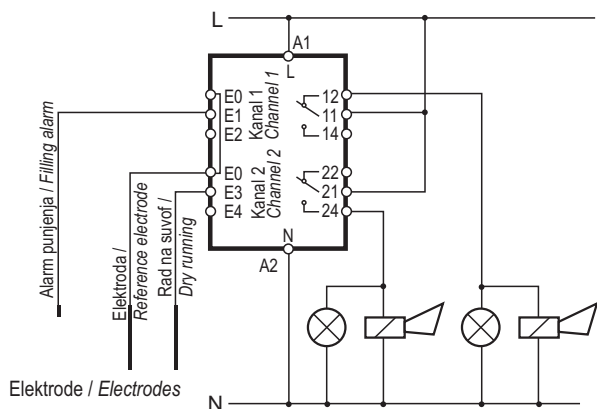
Primer veze pri ispunjavanju  
Detekcija limitnog nivoa u otvorenom operativnom kolu sa plovcima  
Connection example filling  
Limit level detection in the open circuit operation with floats



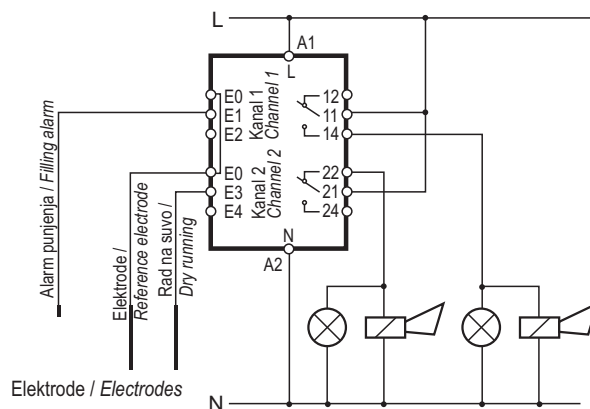


## Primer veze sa 2-kanalnim relejima Connection Examples 2-Channel Relays

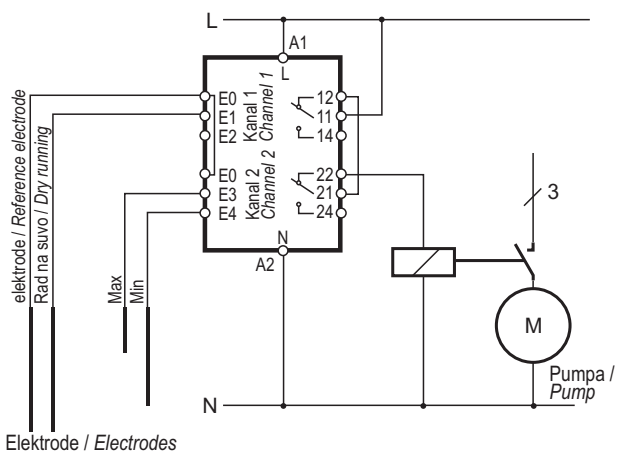
Kanal 1: alarm punjenja, Kanal 2: rad na suvo  
zatvoreno kolo, punjenje, rad na suvo  
Channel 1: filling alarm, channel 2: dry running  
Closed-circuit current, filling alarm, dry running



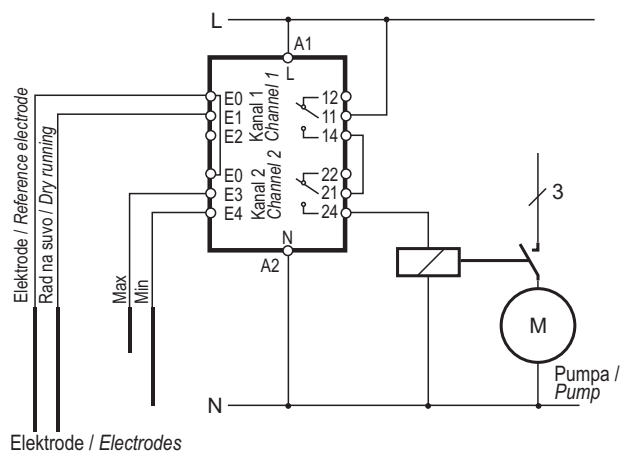
Kanal 1: alarm punjenja, Kanal 2: rad na suvo  
otvoreno kolo, alarm punjenja, rad na suvo  
Channel 1: filling alarm, channel 2: dry running  
Operating circuit, filling alarm, dry running



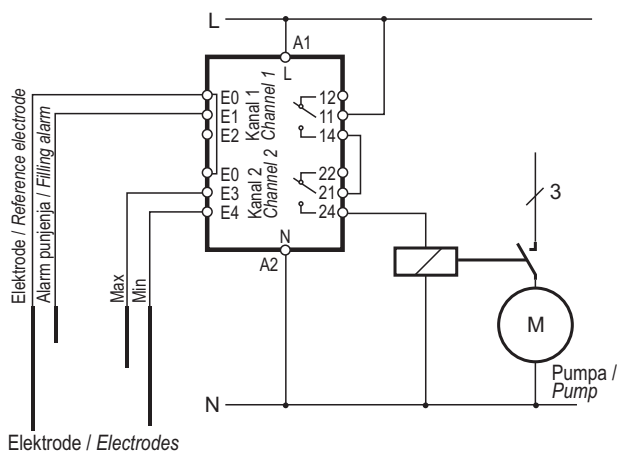
Kanal 1: rad na suvo, Kanal 2: min/max  
zatvoreno kolo, praznjenje  
Channel 1: dry running, channel 2: min/max  
Closed-circuit current, empty the container



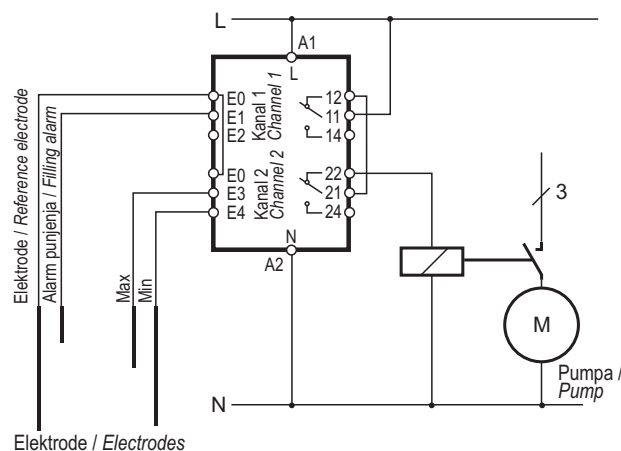
Kanal 1: rad na suvo, Kanal 2: min/max  
otvoreno kolo, praznjenje  
Channel 1: dry running, channel 2: min/max  
Operating circuit, empty the container



Kanal 1: alarm punjenja, Kanal 2: min/max  
zatvoreno kolo, punjenje  
Channel 1: filling alarm, channel 2: min/max  
Closed-circuit current, fill the container



Kanal 1: alarm punjenja, Kanal 2: min/max  
otvoreno kolo, punjenje  
Channel 1: filling alarm, channel 2: min/max  
Operating circuit, fill the container



Moguće izmene bez prethodne najave.

Subject to change without prior notice,  
errors excepted.