



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



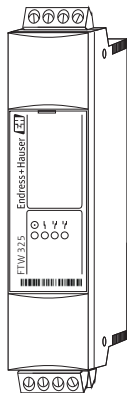
Services



Solutions

Upute za uporabu

Nivotester FTW325



hr - Razina točke prebacivanja
s intrinzično sigurnim signalnim krugom

KA00199F/41/HR/15.15
71437718

Endress+Hauser 
People for Process Automation

hr - Sadržaj	2
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hr - Napomene o sigurnosti

Uređaj Nivotester FTW325 se može koristiti samo kao provodni mjerni odašiljač. Ako se pogrešno koristi, može doći do opasnosti vezanih za primjenu.

Prekidač granične razine može montirati, spojiti, pustiti u rad, rukovati i održavati **samo kvalifikovano i ovlašteno osoblje**, pod strogim pridržavanjem ovih uputa za uporabu, svim relevantnim standardima, zakonskim zahtjevima i, po potrebi, certifikatom.

Koristite samo izolirane alate!

Koristite samo originalne dijelove!

hr - Identifikacija

Sljedeće su opcije dostupne za identifikaciju mjernog uređaja:

- Specifikacije natpisne pločice
- Kôd narudžbe s podjelom značajki uređaja na dostavnici



Savjet



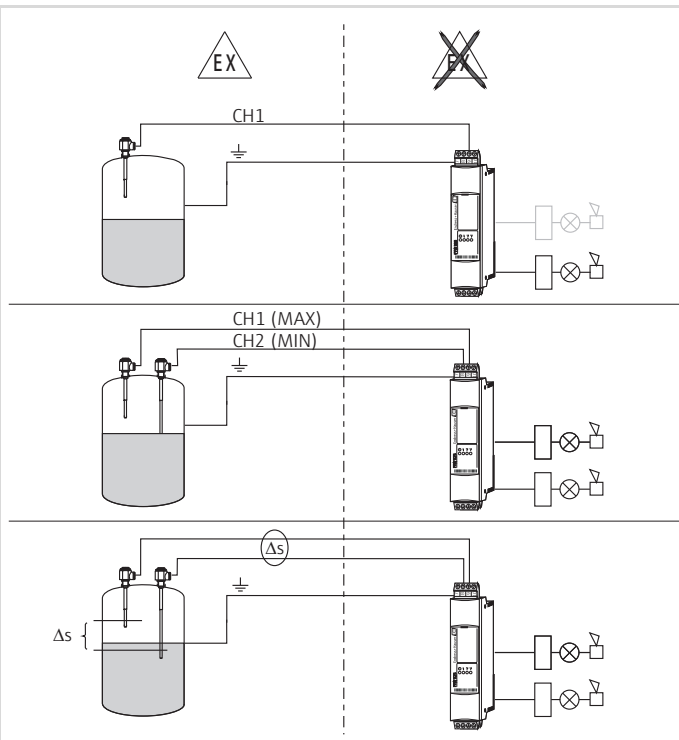
Dozvoljeno

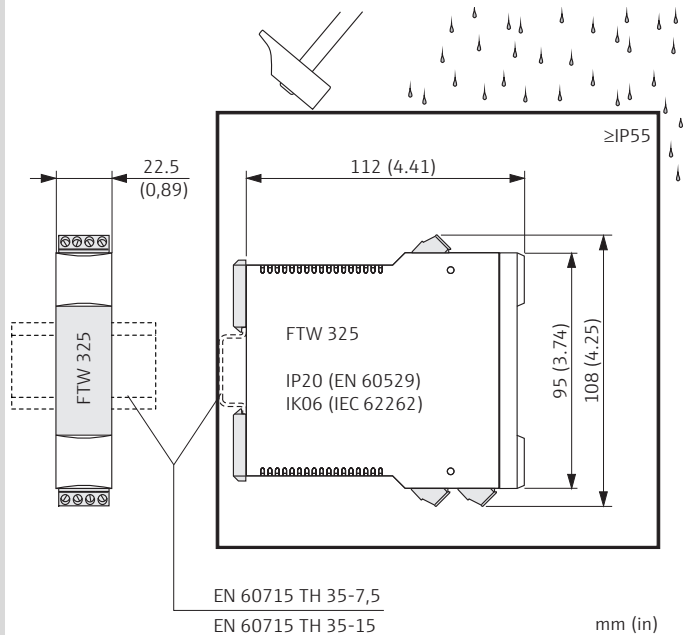


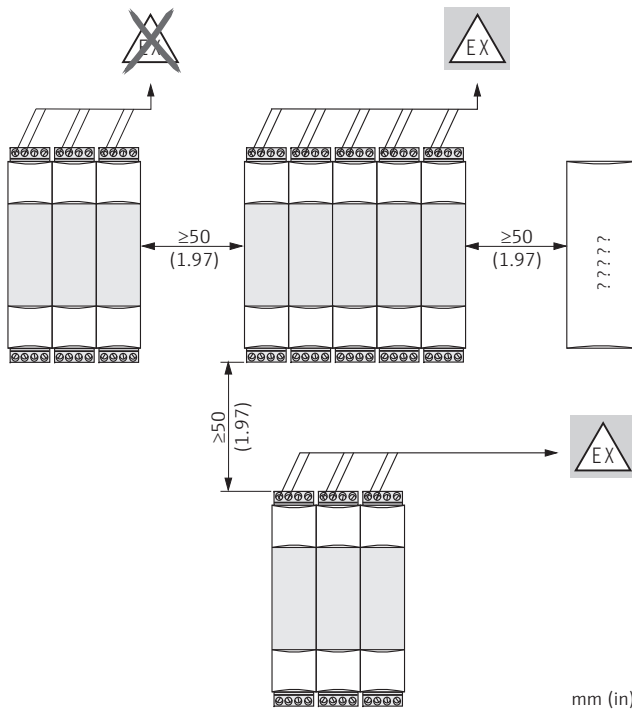
Zabranjeno



Vizualna provjera







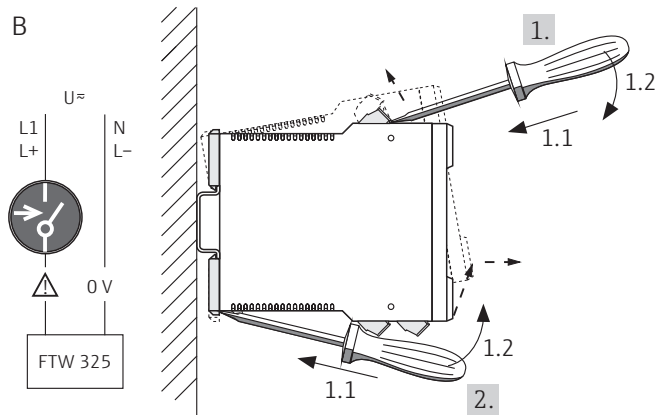
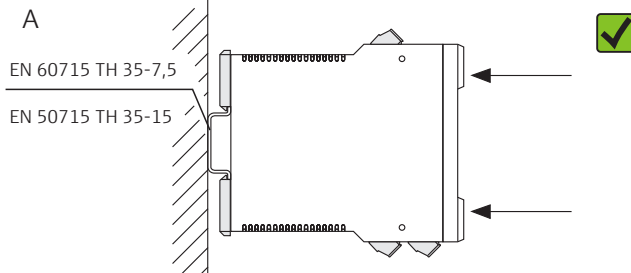
mm (in)

hr - A: Montaža rukohvata

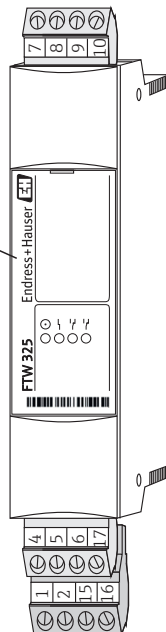
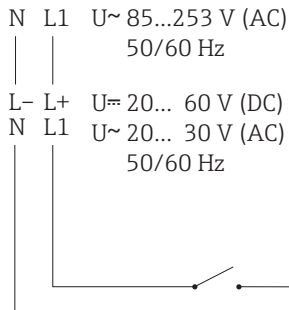
B: Demontaža

1. Uklonite priključne blokove

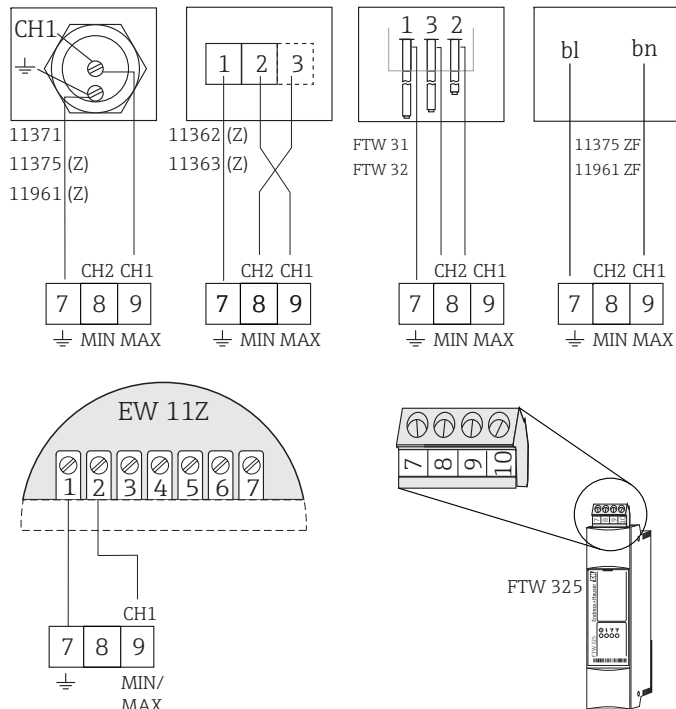
2. Uklonite jedinicu

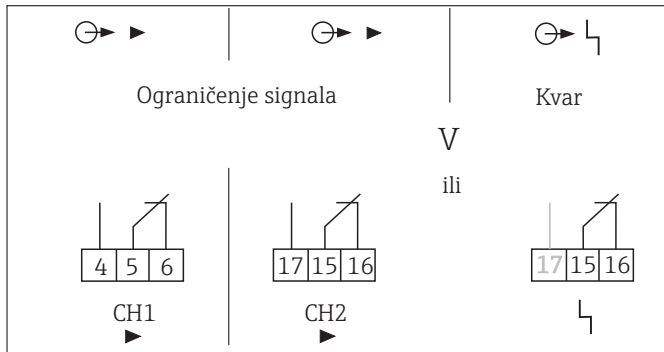


Obratite pozornost na natpisnu pločicu!

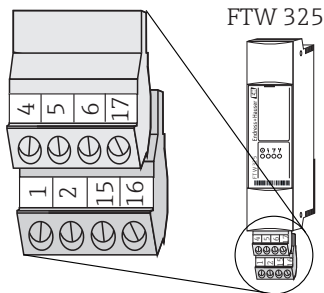


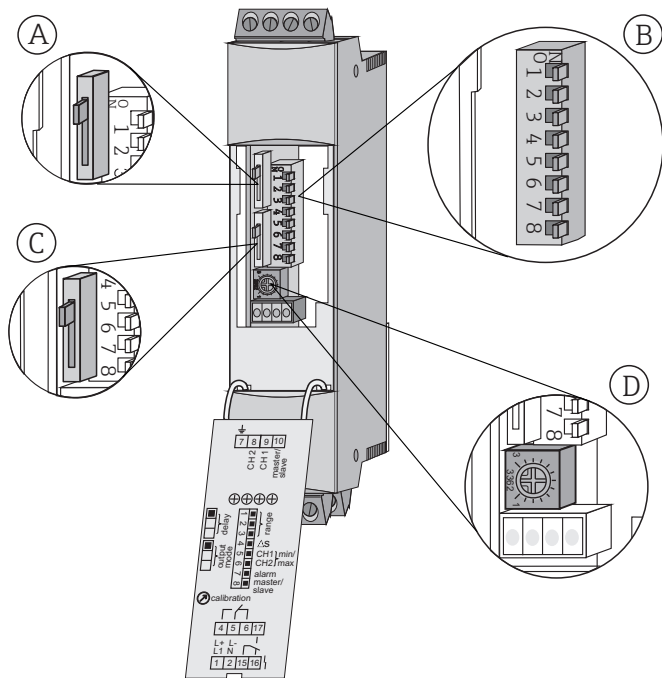
hr - Povezivanje
Raspored terminala
Opskrba naponom





$U_{\sim}$ max. 250 V (AC)
 $I_{\sim}$ max. 2 A (AC)
 $P_{\sim}$ max. 500 VA / $\cos \varphi \geq 0,7$
 $U_{\rightleftharpoons}$ max. 40 V (DC)
 $I_{\rightleftharpoons}$ max. 2 A (DC)
 $P_{\rightleftharpoons}$ max. 80 W





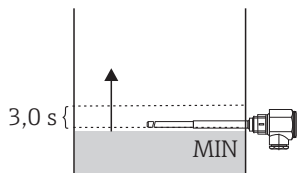
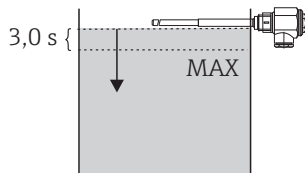
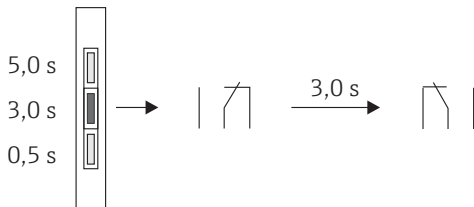
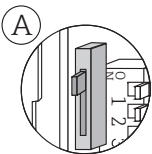
Svjetlosni signali:



uključeni

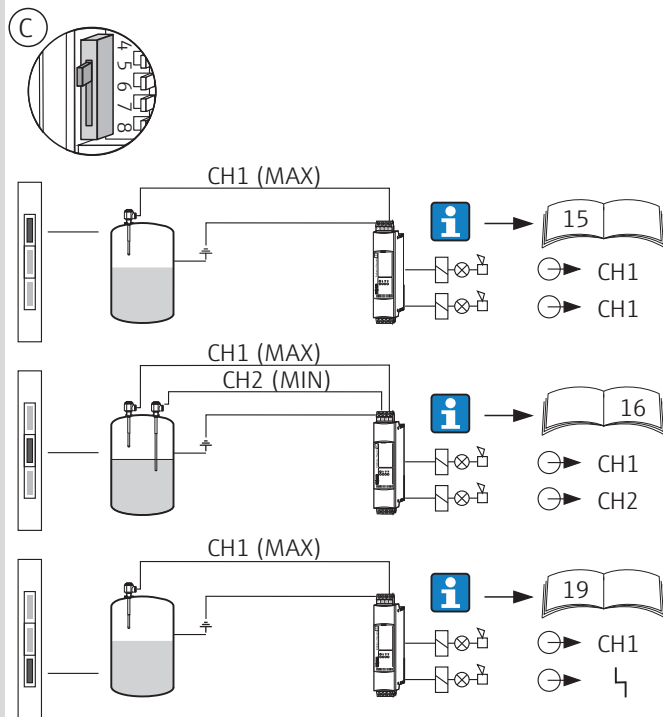


isključeni

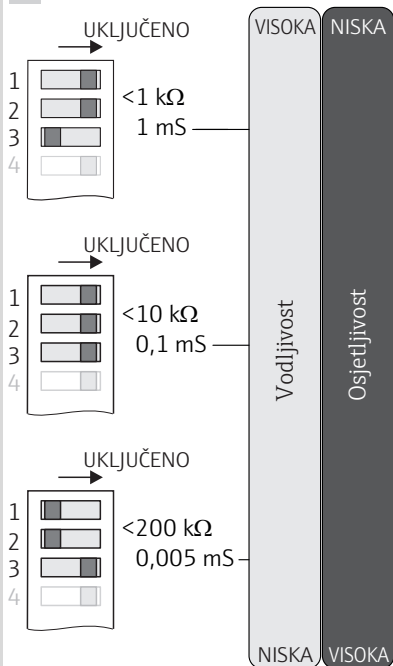


hr - Postavka kašnjenja prebacivanja
 5,0 s (vrh)
 3,0 s (centar)
 0,5 s (dno)

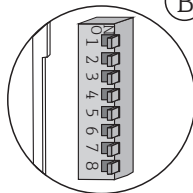
hr - Način rada drugog izlaznog releja
 Razina ili alarm, " ili , "



1.



B

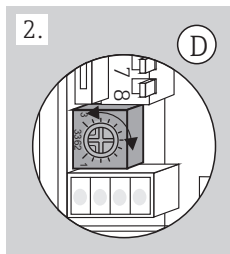


hr - DIL prekidač:

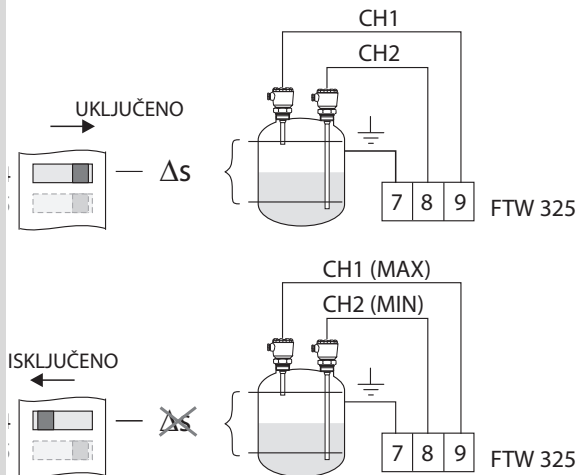
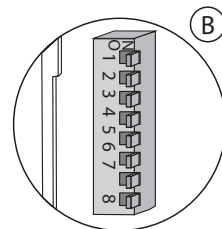
1. Postavka raspona otpora
2. Izvršite ispravno kalibriranje

2.

D

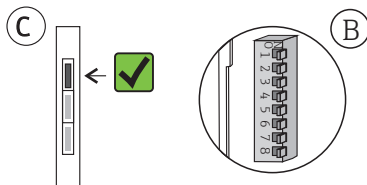


hr - DIL prekidač:
Δ s funkcija
Kontrola u dvije točke



Strujno kolo
bez smetnji

Razina



hr - DIL prekidač:
MIN/MAX sigurnost
2 x CH1
račenje linije (ISKLJUČENO)

⊖ CH1

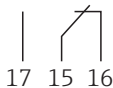
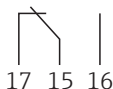
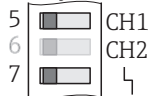
⊖ CH1

gn rd ye ye
(zelena) (crvena) (žuta) (žuta)



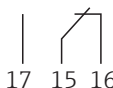
MAX

ISKLJUČENO



MIN

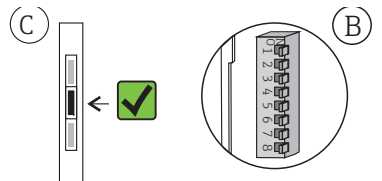
UKLJUČENO



hr - DIL prekidač:
MIN/MAX sigurnost
CH1 i CH2
praćenje linije (ISKLJUČENO)

Strujno kolo
bez smetnji

Razina



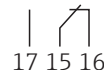
⊖ → CH1

⊖ → CH2

gn rd ye ye
(zeleni) (crveni) (žuti) (žuti)

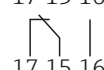
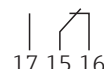
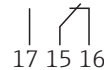
CH1 = MAX
CH2 = MIN

ISKLJUČENO



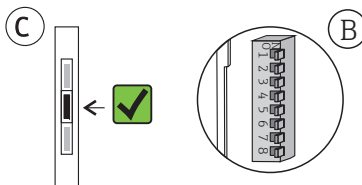
CH1 = MIN
CH2 = MAX

UKLJUČENO



Strujno kolo
bez smetnji

Razina



hr - DIL prekidač:
MAX sigurnost
 Δs (CH1 + CH2)
Praćenje linije (OFF)

		Δs		gn rd ye ye (zelená) (crvena) (žuta) (žuta)			
$\Delta s = \{$		$\ominus \rightarrow$ CH1	$\ominus \rightarrow$ CH2				
MAX + Δs							
{							
UKLJUČENO							
{							
{							
{							



hr - DIL prekidač:
MIN sigurnost
 Δs (CH1 + CH2)
Praćenje linije (OFF)

Strujno kolo bez smetnji	Razina	C ← ✓ B 1 2 3 4 5 6 7 8		Δs ⊖→CH1 ⊖→CH2		gn rd ye ye (zelená) (crvená) (žutá) (žutá)			
		Δs = {							
MIN + Δs UKLJUČENO 4 5 6 7 Δs CH1 CH2		4 5 6	17 15 16	☀ ● ● ●					
		4 5 6	17 15 16	☀ ● ● ●					
		4 5 6	17 15 16	☀ ● ☀ ☀					
		4 5 6	17 15 16	☀ ● ☀ ☀					
		4 5 6	17 15 16	☀ ● ● ●					

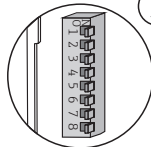
Strujno kolo
bez smetnji

Razina

C



B

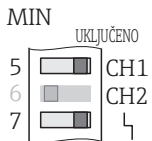
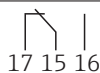


hr - DIL prekidač:
MIN/MAX sigurnost
CH1 + poruka o grešci
praćenje linije (ON)

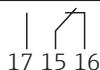
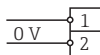
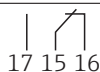
CH1



gn rd ye ye
(zelená) (crvena) (žuta) (žuta)

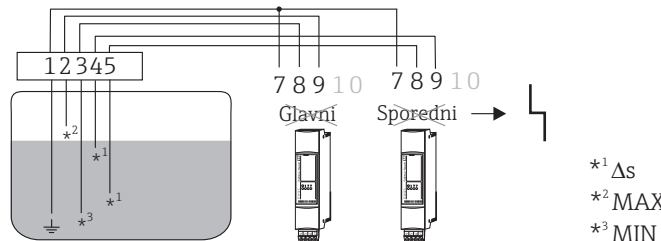
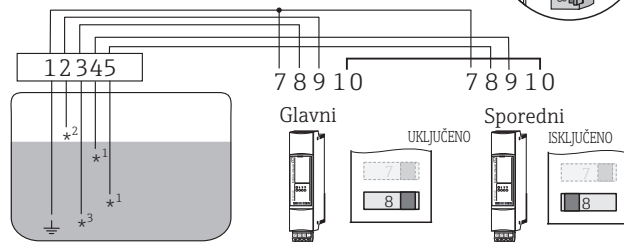
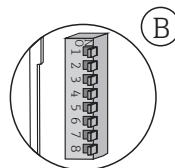


Kvar

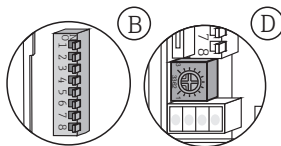


hr - Glavna-sporedna funkcija
Postavljanje sinkronizacije faza

GLAVNI _____
SLAVE
0



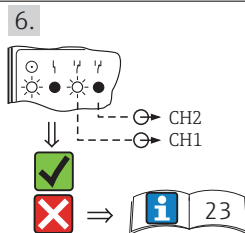
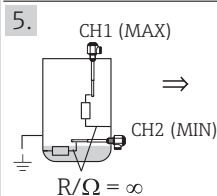
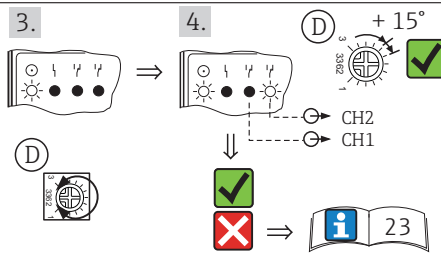
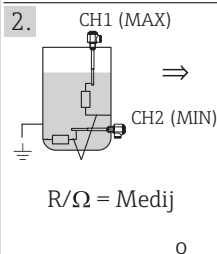
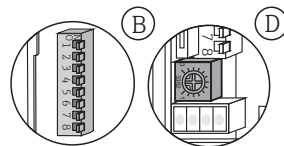
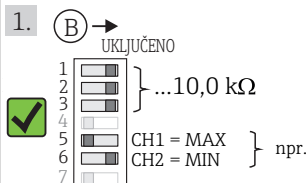
1. (B) →
- UKLJUČENO
- 1 2 3 4 5 6 7
- ...200,0 kΩ
- CH1 = MAX
- CH2 = MAX



hr - Kalibracija
Standardna postavka!
Za provodne tekućine

2. CH2 CH1
- R/Ω = Medij
- 3.
- 4.
- (D) + 15°
- CH2
- CH1
- 22

5. CH2 CH1
- R/Ω = ∞
- 6.
- CH2
- CH1
- 22



hr - Raspon otpora do 1,0 kΩ

1. (B) → UKLJUČENO

1 } ...1,0 kΩ
2 }
3 }
4 } Δs = UKLJUČENO
5 } CH1 = MAX
6 } CH2 = MAX } npr.
7 }

✓

2. CH2 CH1

Δs

$R/\Omega = \text{Medij}$

3. (D) $+15^\circ$

4. (D) $+15^\circ$

CH2

CH1

✓

✗

37

5. CH2 CH1

ΔS

$R/\Omega = \infty$

6.

CH2

CH1

CH2

CH1

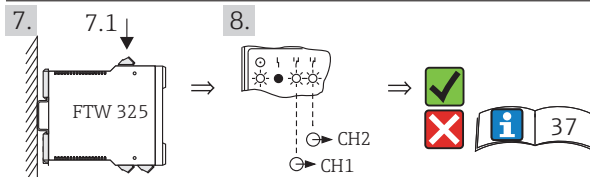
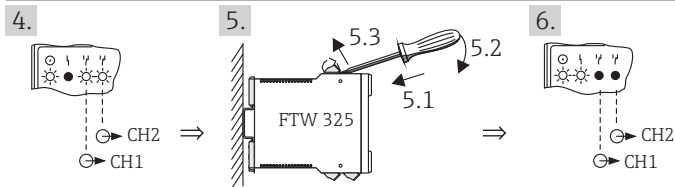
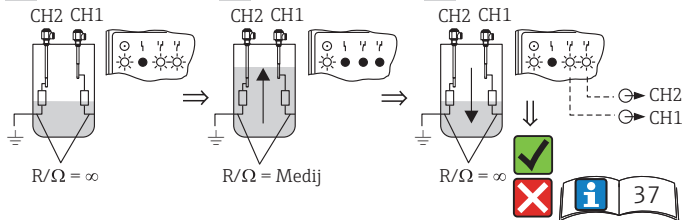
✓

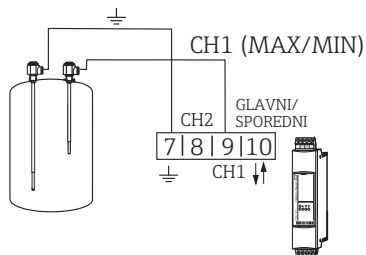
✗

37

24

1.

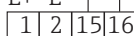




Izlaz CH1



L1 N
L+ L- Signal alarma



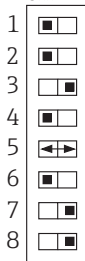
Opskrba naponom

Postavka prekidača

5 s
3 s
0,5 s

vrijeme kašnjenja

off on



.. 1 k Ω
.. 10 k Ω
.. 200 k Ω } osjetljivost

Δ S (ISKLJUČENO)

CH1 (MAX/MIN)

CH2 (MAX)

Alarm (UKLJUČENO)

Glavni/sporedni (Glavni)

CH1 izlaza paralelan

CH2 izlaz odvojen

1CH s alarmom

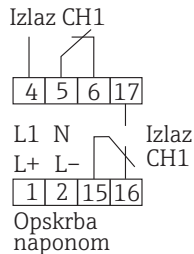
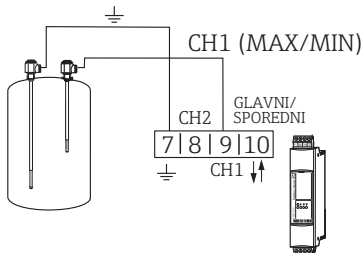
režim izlaza



Kalibracija

hr - Primjeri montaže
i konfiguracije
Jednokanalni način rada
s alarmnim signalom

hr - Jednokanalni način rada bez signala alarma (izlazi paralelni)



Postavka prekidača

5 s
3 s
0,5 s



vrijeme kašnjenja

CH1 izlaza paralelan

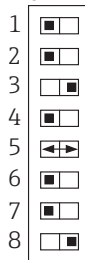
CH2 izlaz odvojen

1CH s alarmom



režim izlaza

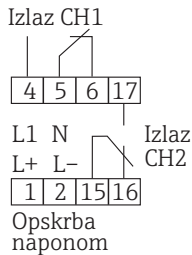
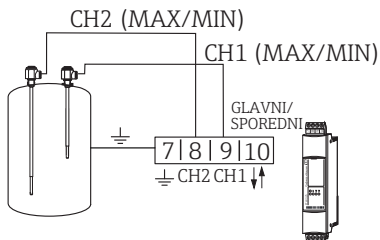
off on



.. 1 k Ω
.. 10 k Ω
.. 200 k Ω } osjetljivost
 Δ S (ISKLUČENO)
CH1 (MAX/MIN)
CH2 (MAX)
Alarm (ISKLUČENO)
Glavni/sporedni (Glavni)



Kalibracija



hr - Dvokanalni način rada
(izlazi odvojeni)

Postavka prekidača

5 s
3 s
0,5 s

vrijeme kašnjenja

CH1 izlaza paralelan
CH2 izlaz odvojen
1CH s alarmom

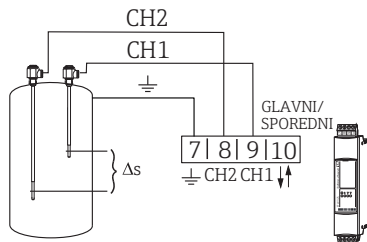
režim izlaza

	off	on	
1	☐	☐	.. 1 kΩ
2	☒	☐	.. 10 kΩ
3	☐	☒	.. 200 kΩ
4	☒	☐	} osjetljivost
5	☒	☐	
6	☒	☐	
7	☒	☐	ΔS (ISKLJUČENO)
8	☐	☒	CH1 (MAX/MIN)
			CH2 (MAX/MIN)
			Alarm (ISKLJUČENO)
			Glavni/sporedni (Glavni)

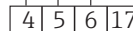


Kalibracija

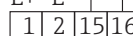
hr - kontrola Kontrola u dvije točke
(Δs) sa alarmnim signalom



Izlaz Δs - Signal



L1 N
L+ L- Signal
alarmna



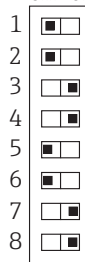
Opskrba
naponom

Postavka prekidača

5 s
3 s
0,5 s
vrijeme kašnjenja

CH1 izlaza paralelan
CH2 izlaz odvojen
1CH s alarmom
režim izlaza

off on



.. 1 k Ω
.. 10 k Ω
.. 200 k Ω } osjetljivost

Δs (UKLJUČENO)

CH1 (MAX)

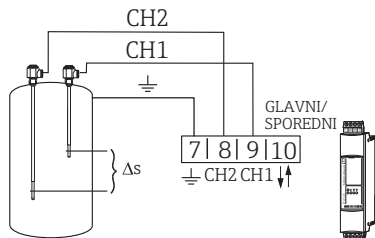
CH2 (MAX)

Alarm (UKLJUČENO)

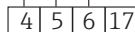
Glavni/sporedni (Glavni)



Kalibracija

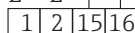


Izlaz Δs - Signal



L1 N

L+ L-



Opskrba
napihom

Izlaz
 Δs - Signal

Postavka prekidača

5 s
3 s
0,5 s

vrijeme kašnjenja

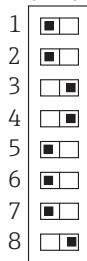
CH1 izlaza paralelan

CH2 izlaz odvojen

1CH s alarmom

režim izlaza

off on



.. 1 k Ω }
.. 10 k Ω } osjetljivost
.. 200 k Ω }

Δs (UKLJUČENO)

CH1 (MAX)

CH2 (MAX)

Alarm (ISKLJUČENO)

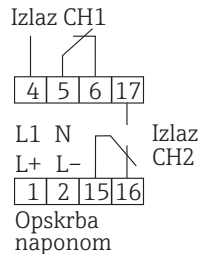
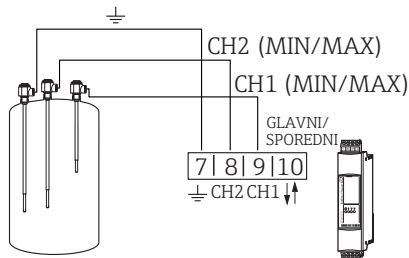
Glavni/sporedni (Glavni)



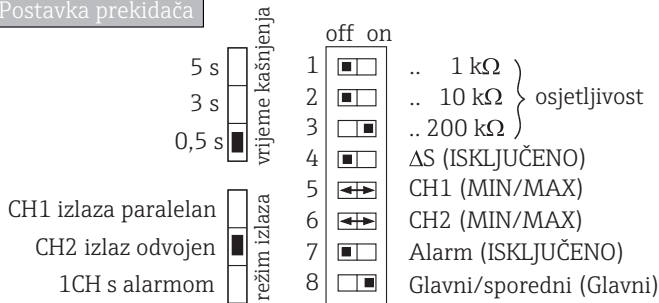
Kalibracija

hr - Kontrola u dvije točke (Δs)
bez alarmnog signala

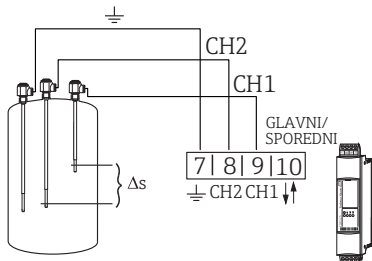
hr - Dvokanalni način rada
(izlazi odvojeni)



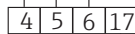
Postavka prekidača



Kalibracija

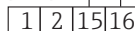


Izlaz Δs - Signal



L1 N

L+ L-



Opskrba
napihom

Signal
alarma

hr - kontrola Kontrola u dvije točke
(Δs) sa alarmnim signalom

Postavka prekidača

5 s
3 s
0,5 s



vrijeme kašnjenja

CH1 izlaza paralelan

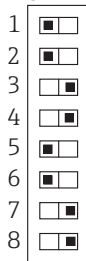
CH2 izlaz odvojen

1CH s alarmom



režim izlaza

off on



.. 1 k Ω
.. 10 k Ω
.. 200 k Ω } osjetljivost

ΔS (UKLJUČENO)

CH1 (MAX)

CH2 (MAX)

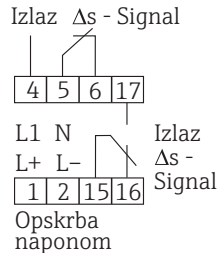
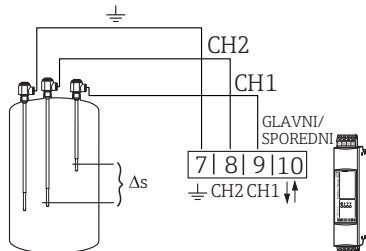
Alarm (UKLJUČENO)

Glavni/sporedni (Glavni)



Kalibracija

hr - Kontrola u dvije točke (Δs) bez alarmnog signala



Postavka prekidača

			off	on	
5 s	☐	1	☒	1	.. 1 k Ω
3 s	☐	2	☒	2	.. 10 k Ω
0,5 s	☒	3	☐	3	.. 200 k Ω
		4	☐	4	ΔS (UKLJUČENO)
		5	☒	5	CH1 (MAX)
		6	☒	6	CH2 (MAX)
		7	☒	7	Alarm (ISKLJUČENO)
		8	☐	8	Glavni/sporedni (Glavni)

vrijeme kašnjenja
 CH1 izlaza paralelan
 CH2 izlaz odvojen
 1CH s alarmom

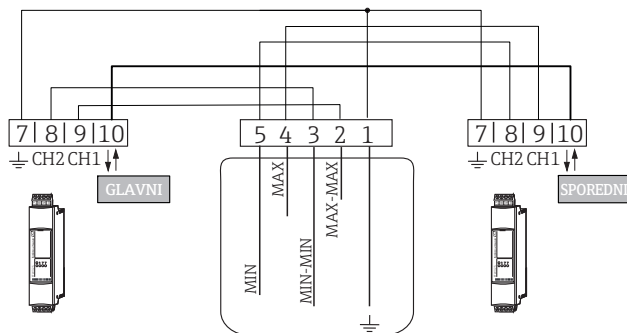
režim izlaza

osjetljivost



Kalibracija

hr - Način rada s četiri kanala
(MIN resp. MAX proizvoljno kombinirani)

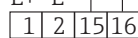


Glavni

Izlaz CH1



L1 N
L+ L- Izlaz CH2



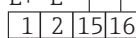
Opskrba
naponom

Sporedni

Izlaz CH1



L1 N
L+ L- Izlaz CH2



Opskrba
naponom

hr - Način rada s četiri kanala
(MIN resp. MAX proizvoljno kombinirani)

Glavna postavka prekidača

CH1 izlaza paralelan
CH2 izlaz odvojen
1CH s alarmom



Kalibracija

off on

- | | | | |
|---|---|--------------------------|----------------|
| 1 | ☒ ☐ | .. 1 k Ω | } osjetljivost |
| 2 | ☒ ☐ | .. 10 k Ω | |
| 3 | ☐ ☒ | .. 200 k Ω | |
| 4 | ☒ ☐ | Δ S (ISKLJUČENO) | |
| 5 | ☒ ☒ | CH1 (MAX/MIN) | |
| 6 | ☒ ☒ | CH2 (MAX/MIN) | |
| 7 | ☒ ☐ | Alarm (ISKLJUČENO) | |
| 8 | ☐ ☒ | Glavni/sporedni (Glavni) | |

Sporedna postavka prekidača

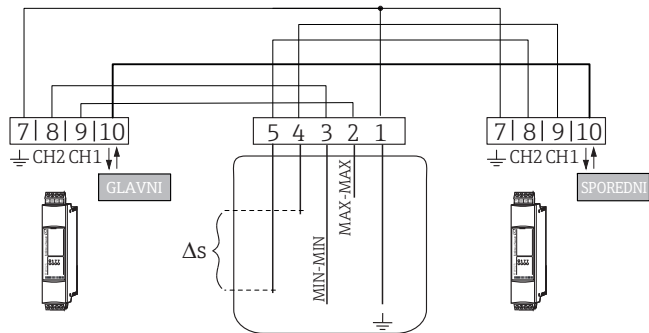
CH1 izlaza paralelan
CH2 izlaz odvojen
1CH s alarmom



Kalibracija

off on

- | | | | |
|---|---|--------------------------|----------------|
| 1 | ☒ ☐ | .. 1 k Ω | } osjetljivost |
| 2 | ☒ ☐ | .. 10 k Ω | |
| 3 | ☐ ☒ | .. 200 k Ω | |
| 4 | ☒ ☐ | Δ S (ISKLJUČENO) | |
| 5 | ☒ ☒ | CH1 (MAX/MIN) | |
| 6 | ☒ ☒ | CH2 (MAX/MIN) | |
| 7 | ☒ ☐ | Alarm (ISKLJUČENO) | |
| 8 | ☒ ☐ | Glavni/sporedni (Spored) | |



hr - Kontrola u dvije točke (Δs) bez alarmnog signala i dvokanalni način rada (izlazi odvojeni)

Glavni

Izlaz CH1

4 5 6 17

L1 N
L+ L- Izlaz CH2

Opskrba naponom

Sporedni

Izlaz Δs - Signal

4 5 6 17

L1 N
L+ L- Izlaz Δs - Signal

Opskrba naponom

hr - Kontrola u dvije točke (Δs) bez alarmnog signala i dvokanalni način rada (izlazi odvojeni)

Glavna postavka prekidača

CH1 izlaza paralelan

CH2 izlaz odvojen

1CH s alarmom



Kalibracija

off on

1	☒	.. 1 k Ω	} osjetljivost
2	☒	.. 10 k Ω	
3	☐	.. 200 k Ω	
4	☒	ΔS (ISKLJUČENO)	
5	☒	CH1 (MAX/MIN)	
6	☒	CH2 (MAX/MIN)	
7	☒	Alarm (ISKLJUČENO)	
8	☐	Glavni/sporedni (Glavni)	

Sporedna postavka prekidača

CH1 izlaza paralelan

CH2 izlaz odvojen

1CH s alarmom



Kalibracija

off on

1	☒	.. 1 k Ω	} osjetljivost
2	☒	.. 10 k Ω	
3	☐	.. 200 k Ω	
4	☐	ΔS (UKLJUČENO)	
5	☒	CH1 (MAX)	
6	☒	CH2 (MAX)	
7	☒	Alarm (ISKLJUČENO)	
8	☒	Glavni/sporedni (Sporedni)	

Kvar	Razlog	Način popravke
Ne prebacuje	Nema opskrbe naponom (LED dioda zelene boje se ne pali)	Provjerite napajanje
	Elektronički nedostatak	Zamijenite FTW325
	Kontakti zavareni zajedno (nakon kratkog spoja)	Zamijenite FTW325; spojite osigurač u sklop kontaktora
	Neispravan mjerni odašiljač	Zamijenite mjerni odašiljač
Pogrešno prebacivanje	Neispravna postavka prekidača za prebacivanje za signal ograničenja u FTW325	Ispravno namjestite prekidač za prebacivanje iza prednje ploče
Trajni signal alarma	Prekid ili kratki spoj na mjernom odašiljaču	Provjerite vod
	Neispravna elektronika mjernog odašiljača	Zamijenite elektroniku mjernog odašiljača
	Nivotester neispravan	Zamijenite FTW325

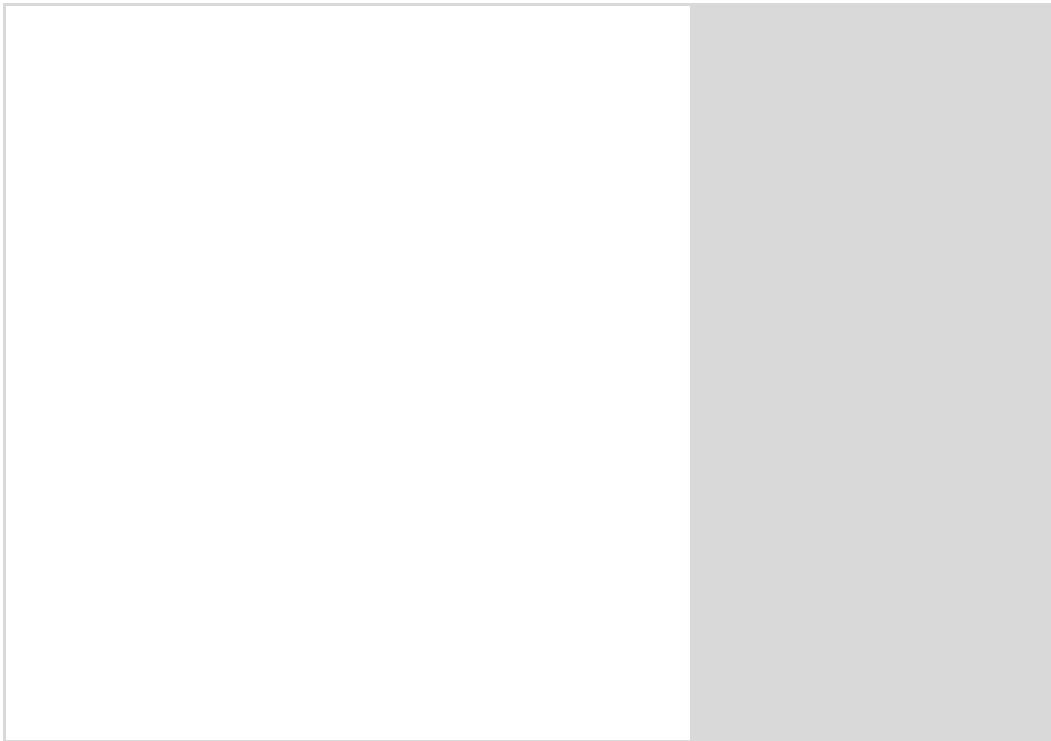
hr -Rješavanje problema

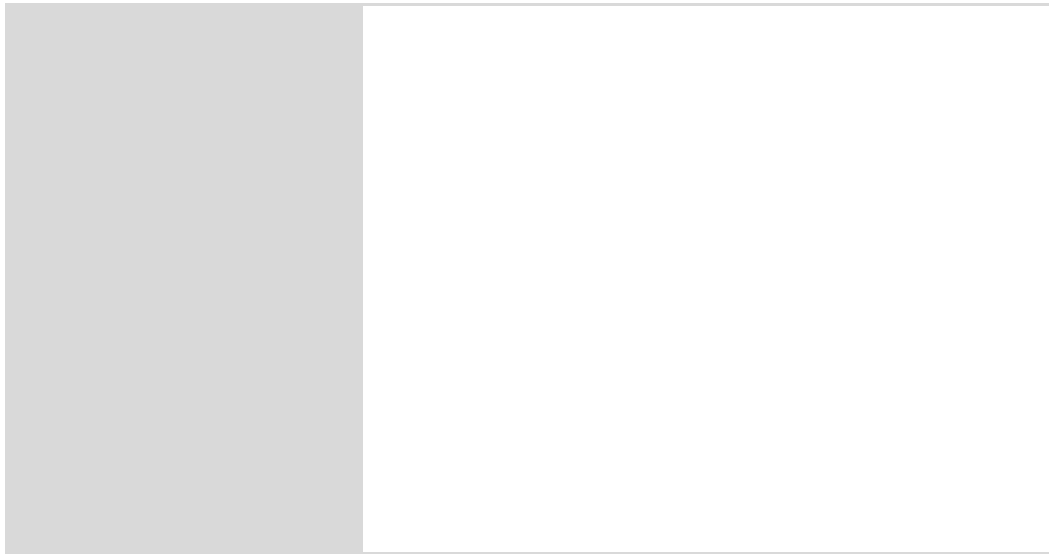
TI00373F

Napomene o sigurnosti

XA00196F   II (1) G [Ex ia Ga] IIC/IIB

  II (1) D [Ex ia Da] IIIC





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