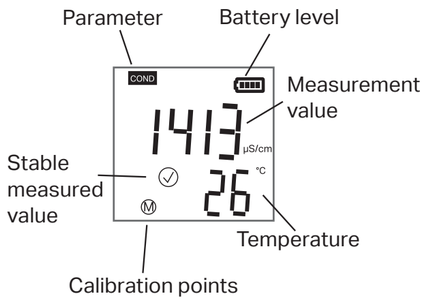
PH/ EC/ TDS/ Salinity Multi Pen Tester Manual

EN Display



	
Measuring mode	Calibration mode

Keyboard function

Short keystroke (1 sec.) - Long keystroke (3 sec.)

	Short keystroke		Switch on device
	Long keystroke		Switch off device
	Short keystroke	in the measuring mode	Backlight on/off
	Long keystroke	in the off mode	Open settings
	Short keystroke	in the calibration mode	Cancelling the calibration

	Short keystroke	in the measuring mode	Change of measuring parameters or unit
	Short keystroke	In setting	• Navigation through settings (P1-P7) • Change setting

	Long keystroke	in the measuring mode	Start calibration
	Short keystroke	in the calibration mode	Calibration
	Short keystroke	In setting	Selection or confirm-ation of a setting
	Short keystroke	at "**Auto-HOLD**"	Cancel "**HOLD**" function

Settings

In off mode, press for 3 seconds: Opening Settings.

Navigate Confirm

Blue marked = factory setting

	Parameter	Selection	Meaning
P1	pH calibration series	a) USA b) NIST	USA: pH 1,68 / 4 / 7 / 10 / 12,45 NIST: pH 1,68 / 4 / 6,86 / 9,18 / 12,45
P2	Auto-Hold	a) On b) Off	when: Measured value min. 10 s stable Auto-Hold switched off
P3	Backlight	a) On b) 1 min c) Off	Switched on continuously Switched on for 1 minute Continuously switched off
P4	Temperature compen-sation coefficient	0 - 4% 2%	Setting the linear temperature compensation
P5	TDS conversion factor	0.4 - 1 0.71	Setting of the TDS conversion factor
P6	Salinity Unit	a) ppt b) g/L	Display in ppt Display in g/L
P7	Temperature unit	a) °C b) °F	Display in °C Display in °F
P8	Factory calibration	a) Yes b) No	Calibration is reset

Measurement of the parameters

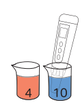
				
Carefully pull off the protective cap.	Rinsing the electrode.	Immersion in solution.	Stir tester briefly and wait.	= Measured value is stable.

Note:

- Change between pH, conductivity (COND), TDS and salinity (SAL)
- Press at "**Hold**" for new measurement recording.

pH Calibration

	
Carefully pull off the protective cap.	Always rinse the electrode before adding new buffer solution.

1-point calibration		**2-point calibration - DO NOT** switch off the device	
1.	 Immersion in pH 7 buffer solution.	5.	 Immerse in pH 4 or pH 10 buffer solution and repeat steps 2 - 4.
2.	 Press for 3 sec: Calibration mode (screen green)	**3-point calibration - DO NOT** switch off the device	
3.	 Stir tester briefly and wait. = Calibration value stable	6.	 Immerse in pH 4 or pH 10 buffer solution and repeat steps 2 - 4.
4.	 Press for 1 sec: Start calibration.		

After successful 1, 2 or 3 point calibration, the display shows:

M	1-point calibration	pH 7
L M M H	2-point calibration	pH 4 / 7 pH 7 / 10
L M H	3-point calibration	pH 4 / 7 /10

Note: Other pH calibration series possible according to settings.

Preparation of the buffer solution

			
20 mL deionised water	Addition of the required buffer tablet.	Wait 2 minutes	Buffer solution is ready for use. Water-insoluble components settle.

Note: Use the buffer solution only once. The maximum deviation from the specified pH value is ± 0.05 pH.

Calibration conductivity

Note: Recommendation: 1-point calibration depending on the measuring range.

Measuring range	Calibration solution
0 -100 µS/cm	84 µS/cm
100 - 2000 µS/cm	1413 µS/cm
2 - 20 µS/cm	12,88 µS/cm

	
Carefully pull off the protective cap.	Rinse the electrode.

1.		Select conductivity (COND)	2.		Immersion in recommended calibration solution.
3.		Press for 3 sec: Calibration mode (screen green)	4.		Stir tester briefly and wait. = Calibration value stable
5.		Press for 1 sec: Start calibration.			

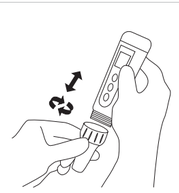
After successful 1, 2 or 3 point calibration, is shown on the display:

L	84 µS/cm
M	1413 µS/cm
H	12,88mS/cm

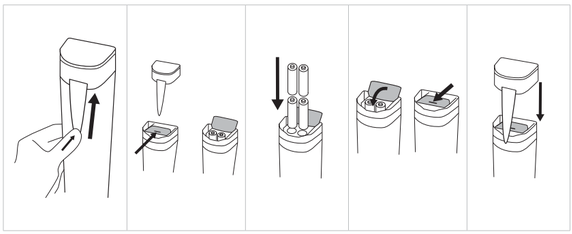
Note: 1000 µS/cm = 1 mS/cm

Multi Pen pH - Con - TDS - Salt/T Specifications

pH	Measuring range: 0-14; resolution: 0.01; accuracy: ±0.01 (± 1 digit)
Conductivity (mS/cm)	Measuring range: 0-20; resolution: 0.01; accuracy: ±1% F.S.
TDS (ppt)	Measuring range: 0-10; resolution: 0.01
Salinity (ppt)	Measuring range: 0-10; resolution: 0.01
Temperature (°C)	Measuring range: 0-50; resolution: 0.1; accuracy: ±0.5
Background light	**Blue**: Measurement; **Green**: Calibration
HOLD	Measured value is frozen
	Flashing, battery change is required
Auto. switch off	after 8 minutes without operation
Housing protection type	IP67
Batteries	4 x AAA Batteries

Replacing the electrode	**Storage of the electrode**
	

Exchange batteries



Caution: Insert all batteries with the positive terminal facing up. Incorrect insertion of the batteries could result in damage to the meter.

Note: Make sure that the battery cover is completely closed to ensure water tightness.

Error messages and procedure

		Reason	Procedure
Calibration mode	**Err 1**	Incorrect calibration sequence	Starting the calib-ration with pH 7
Calibration mode	**Err 1**	old calibration solution	Use of new calib-ration solution
Calibration mode	**Err 2**	- Key pressed too early	Wait for then press - key
Measuring mode	**Err 1**	Contaminated electrode	Rinse the electrode with deionised water
	Err 1	Aged electrode	Replace the electrode
	Err 1	Dried electrode	Immerse the electrode in 3 M KCl solution (30 min.)
	Err 1	Defective electrode	Replace the electrode
	Err 1	Immersion depth too shallow	Immerse at least 2-3 cm into the solution
	Err 1	Air bubbles around electrode	Swivel the tester > Remove air bubbles

Note: In case of heavy contamination, carefully remove the sensor protection and rinse the electrode.

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