

# pH Sensor Digital Differential TpH-D

80S200000 · 80S200010



Robust digital differential pH sensor for operation on TriBox controllers and HS100 DIN G2 module. The closed design ensures separation of the pH electrode reference system from the medium to be measured, thus excluding electrode poisoning. A dirt-resistant salt bridge minimizes cleaning efforts and prevents dilution of electrolytes. The sensor therefore achieves an extremely long service life even in heavily contaminated media.

## Benefits

- Measurement transmission via digital Modbus RTU protocol
- Longer electrode life thanks to differential measurements
- All calibrations can be performed via the digital interface
- No moving mechanical parts
- Plug and Play

## Applications

- Difficult measurement of inlets for waste water treatment plants
- Process monitoring and control

## Accessories

- Cable: Extension cables of 0.3 m, 2 m, 10 m, 25 m
- Controller: TriBox3, TriBox Mini, HS100
- Fittings: FlowCell

## Technical Specifications

<b>Measurement technology</b>	pH electrode with additional reference pH electrode in pH7 buffer solution	
<b>Measurement principle</b>	Potentiometry	
<b>Parameters</b>	pH value, temperature	
<b>Measuring range</b>	pH	0...14 pH
	Temperature	0...+65 °C
<b>Resolution</b>	pH	0.01 pH
	Temperature	0.1 °C
<b>Precision</b>	pH	± 0,06 pH
	Temperature	± 0.5 °C
<b>Intrinsic error</b>	pH1	± 0.05 pH
	pH7	± 0.05 pH
	pH13	± 0.35 pH
<b>Linearity measurement error</b>	± 0.1 pH	

<b>Repeatability</b>	pH1	± 0.1 pH	
	pH7	± 0.05 pH	
	pH13	± 0.1 pH	
<b>Output signal fluctuation</b>	pH7	± 0.025 pH	
	pH4	± 0.05 pH	
<b>Warm-up time</b>		< 5 min	
<b>Drift</b>	Short-term drift 24 h	< 0.03 pH	
	Long-term drift 1 week	< 0.05 pH	
<b>10% time and 90% time</b>	T10 ascending	< 2 s	
	T10 falling	< 2 s	
	T90 ascending	≤ 5 s	
	T90 falling	≤ 5 s	
<b>Temperature compensation</b>		Pt1000	
<b>Measurement interval</b>		2 s	
<b>Housing material</b>		PPS / PET / NBR	
<b>Dimensions (L x Ø)</b>		~ 225 x 32 mm	~ 8.9" x 1.3"
<b>Weight</b>		180 g	~ 0.4 lbs
<b>Interface</b>		RS-485, Modbus RTU	
<b>Power consumption</b>		0.2 W	
<b>Power supply</b>		12...24 VDC (± 10 %)	
<b>Connection</b>		8-pin M12 plug	
<b>Sensor cable</b>		2 m and 10 m	
<b>Required supervision</b>		Typically ≤ 0.5 h/month	
<b>Calibration / maintenance interval</b>		Typically 4 weeks	
<b>System compatibility</b>		Modbus RTU	
<b>Warranty</b>		1 year (EU&US: 2 years) on electronics; wearing parts are excluded from the warranty	
<b>Max. pressure</b>	with fixed cable	3 bar	~ 43.5 psig
	in flow cell	1 bar, 2...4 L/min	~ 14.5 psig, 0.5 to 1 gpm
<b>Protection type</b>		IP68	NEMA 6P
<b>Sample temperature</b>		+2...+40 °C	~ +36 °F to +104 °F
<b>Ambient temperature</b>		-5...+55 °C	~ +23 °F to +131 °F
<b>Storage temperature</b>		0... +80 °C	~ +32 °F to +176 °F
<b>Inflow velocity</b>		0...3 m/second	~ 0...10 fps