TARAtec WP10.1

indicator	Hydrogen peroxide
Application	All kinds of water treatment, also sea water, especially for high H_2O_2-concentrations. The membrane system is mechanical resistant. The membrane system is highly resistant to surfactants (tensides).
Measuring system	Membrane covered, amperometric 2-electrode system.
Electronic	Analog version: - voltage output - not galvanically isolated electronics - analog internal data processing - output signal: analog (analog-out/analog) Digital version: - electronic is completely galvanically isolated - digital internal data processing - output signal: analog (analog-out/digital) or digital (digital-out/digital) mA-version: - current output analog - not galvanically isolated electronics - output signal: analog (analog-out/analog)
Information about the measuring range	The actual slope of a sensor can vary production-related between 65% and 150% of the nominal slope Note: With a slope > 100% the measuring range is reduced accordingly. (Ex.: 150% slope → 67% of the specified measuring range)
Working temperature	Measuring water temperature: 0 … +45 °C (no ice crystals in the measuring water)
	Ambient temperature: 0 … +55 °C
Temperature compensation	Automatically, by an integrated temperature sensor Response time t_{90} = approx. 8 min. Max. change in temperature: 5 °C per hour, sudden temperature changes must be avoided
Max. allowed working pressure	Operation without retaining ring: – 0.5 bar – no pressure impulses and/or vibrations
	Operation with retaining ring in TARAflow FLC: – 1.0 bar, – no pressure impulses and/or vibrations (see option 1)
Flow rate (Incoming flow velocity)	approx. 15-30 l/h (15 – 30 cm/s) in TARAflow FLC, small flow rate dependence is given
pH-range	pH 2 – pH 11

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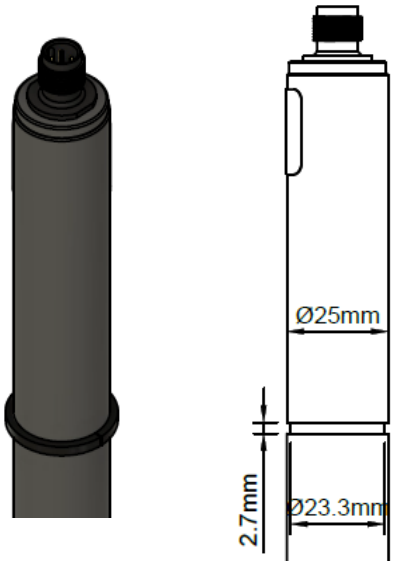
Run-in time	First start-up approx. 60 min.		
Response time	T_{90}: approx. 12 min.		
Accuracy after calibration at repeatability conditions (25°C, pH 7.2 in drinking water) of the upper full scale	– Measuring range 200 ppm:	at 40 ppm at 160 ppm	<2% <2%
	– Measuring range 2000 ppm:	at 400 ppm at 1600 ppm	<0,5% <2%
Zero point adjustment	Not necessary		
calibration	At the device, by analytical determination		
interferences	Cl_2: must not be present PAA: must not be present O_3: must not be present Sulfides: contaminate the measuring system Phenol: aqueous solution >3 % phenol, destroys the membrane system		
Absence of the disinfectant	Max. 24 h		
Connection	mV version: Modbus version: 4-20 mA version:	5-pole M12, plug-on flange 5-pole M12, plug-on flange 2-pole terminal or 5-pole M12, plug-on flange	
max. length of sensor cable (depending on internal signal processing)	analog	< 30 m	
	digital	> 30 m are permissible Maximum cable length depends on application	
Protection type	5-pole M12 plug-on flange: 2-pole terminal with mA-hood:	IP68 IP65	
material	Elastomer membrane, PVC-U, stainless steel 1.4571		
Size	diameter: Length: mV version Modbus version 4-20 mA version	approx. 25 mm approx. 190 mm (analog signal processing) approx.. 205 mm (digital signal processing) approx. 205 mm approx. 220 mm (2-pole-terminal) approx. 190 mm (5-pole-M12)	
Transport	+5 … +50 °C (Sensor, electrolyte, membrane cap)		
storage	Sensor: dry and without electrolyte no limit at +5 … +40 °C		
	Electrolyte: in original bottle protected from sunlight at +5 … +35 °C min. 1 year or until specified EXP-Date		
	Membrane cap: in original packing no limit at +5 … +40 °C (used membrane caps can not be stored)		

	# TARAtec WP10.1
maintenance	Regularly control of the measuring signal, min. once a week The following specifications highly depend on the water quality: Change of the membrane cap: once a year Change of the electrolyte: every 3 - 6 months
CE	EMC tested RoHS compliant

Option 1: **Retaining ring**	– When operating with pressures >0.5 bar in TARAflow FLC – Dimensions retaining ring 29 x 23.4 x 2.5 mm, slitted, PETP – Different positions for groove selectable (on request)	

Technical Data

1. WP10.1 (Analog output, analog internal signal processing)

	**Measuring range**	**Resolution**	**Output** **Output resistance**	**Nominal slope**	**Voltage supply**	**Galvanic isolation required in the measuring device/controller ***	**Connection**
WP10.1H-M12	0.5…200 ppm	0.1 ppm	0…-2000 mV 1 kΩ	-10 mV/ppm	±5 - ±15 VDC 10 mA	yes	5-pole M12 plug-on flange Function of wires: PIN1: measuring signal PIN2: +U PIN3: -U PIN4: signal GND PIN5: n. c.
WP10.1N-M12	5…2000 ppm	1 ppm		-1 mV/ppm			
WP10.1L-M12	0.005…2 % (20000 ppm)	0.001 % (10 ppm)		-1000mV/% (-0.1 mV/ppm)			
WP10.1-20%-M12	0.05… 20% (200000 ppm)	0.01 % (100 ppm)		-100 mV/% (-0.01 mV/ppm)			
WP10.1HUp-M12	0,5…200 ppm	0,1 ppm	0…+2000 mV 1 kΩ	+10 mV/ppm	10 – 30 VDC 10 mA		5-pole M12 plug-on flange Function of wires: PIN1: measuring signal PIN2: +U PIN3: power GND PIN4: signal GND PIN5: n. c
WP10.1Up-M12	5…2000 ppm	1 ppm		+1 mV/ppm			
WP10.1LUp-M12	0,005…2 % (20000 ppm)	0,001 % (10 ppm)		+1000 mV/% (+0,1 mV/ppm)			

* for further information see brochure ‘Technical information // galvanic isolation’ (in the download area of our website www.reiss-gmbh.com)

(Subject to technical changes!)

2. WP10.1 (analog output, digital signal processing)

analog-out / digital

	**Measuring range**	**Resolution**	**Output** **Output resistance**	**Nominal slope**	**Power supply**	**Galvanic isolation required in the measuring device/controller ***	**Connection**
WP10.1H-An-M12	0.5… 200 ppm	0.1 ppm	analog 0…-2 V (max. -2.5 V) 1 kΩ	-10 mV/ppm	9-30 VDC approx. 7-30 mA	no	5-pole M12 plug-on flange Function of wires: PIN1: measuring signal PIN2: +U PIN3: power GND PIN4: signal GND PIN5: n. c.
WP10.1N-An-M12	.50… 2000 ppm	1 ppm		-1 mV/ppm			
WP10.1L-An-M12	0.005… 2 % (20000 ppm)	0.001 % (10 ppm)		-1000 mV/% (-0.1 mV/ppm)			
WP10.1-20%-An-M12	0.05… 20 % (200000 ppm)	0.01 % (100 ppm)		-100 mV/% (-0.01 mV/ppm)			
WP10.1H-Ap-M12	0.5… 200.0 ppm	0.1 ppm	analog 0…+2 V (max. +2.5 V) 1 kΩ	+10 mV/ppm			
WP10.1N-Ap-M12	5… 2000 ppm	1 ppm		+1 mV/ppm			
WP10.1L-Ap-M12	0.005… 2 % (20000 ppm)	0.001 % (10 ppm)		+1000 mV/% (+0.1 mV/ppm)			
WP10.1-20%-Ap-M12	0.05… 20 % (200000 ppm)	0.01 % (100 ppm)		+100 mV/% (+0.01 mV/ppm)			

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(Subject to technical changes!)

3. WP10.1 (digital output, digital signal processing)

	**Measuring range**	**Resolution**	**Output** **Output resistance**	**Power supply**	**Galvanic isolation required in the measuring device/controller ***	**Connection**
WP10.1H-M0c	0.5… 200 ppm	0.1 ppm	Modbus RTU There are no terminating resistors in the sensor.	9-30 VDC approx. 7-30 mA	no	5-pole M12 plug-on flange Function of wires: PIN1: reserved PIN2: +U PIN3: power GND PIN4: RS485B PIN5: RS485A
WP10.1N-M0c	5… 2000 ppm	1 ppm				
WP10.1L-M0c	0.005… 2 % (20000 ppm)	0.001 % (10 ppm)				
WP10.1-20%-M0c	0.05… 20 % (200000 ppm)	0.01 % (100 ppm)				

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(Subject to technical changes!)

4. WP10.1 4-20 mA (analog output, analog internal signal processing)

4.1 Electrical connection: 2 pole terminal clamp

	**Measuring range**	**Resolution**	**Output** **Output resistance**	**Nominal slope**	**Voltage supply**	**Galvanic isolation required in the measuring device/controller ***	**Connection**
WP10.1MA-200	0.5… 200 ppm	0.1 ppm	4…20 mA uncalibrated	0.08 mA/ppm	12…30 VDC R_L 50Ω…R_L 900Ω	yes	2-pole terminal (2 x 1 mm²) Recommended: Round cable ∅ 4 mm 2 x 0.34 mm²
WP10.1MA-500	5…500 ppm	1 ppm		0,032 mA/ppm			
WP10.1MA-2000	5… 2000 ppm	1 ppm		0.008 mA/ppm			
WP10.1MA-2%	0.005… 2 % (20000 ppm)	0.001 % (10 ppm)		8 mA/% (0.0008 mA/ppm)			
WP10.1MA-5%	0.05… 5 % (50000 ppm)	0.01 % (100 ppm)		3.2 mA/% (0.00032 mA/ppm)			
WP10.1MA-20%	0.05… 20 % (200000 ppm)	0.01 % (100 ppm)		0.8 mA/% (0.00008 mA/ppm)			

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(Subject to technical changes!)

4.2 Electrical connection: 5 pole M12 plug-on flange

	**Measuring range**	**Resolution**	**Output** **Output resistance**	**Nominal slope**	**Voltage supply**	**Galvanic isolation required in the measuring device/controller ***	**Connection**
WP10.1MA-200-M12	0.5… 200 ppm	0.1 ppm		0.08 mA/ppm			
WP10.1MA-500-M12	5…500 ppm	1 ppm		0,032 mA/ppm			5-pole M12 plug-on flange
WP10.1MA-2000-M12	5… 2000 ppm	1 ppm	4…20 mA	0.008 mA/ppm	12…30 VDC		Function of wires: PIN1: n. c. PIN2: +U PIN3: -U PIN4: n c. PIN5: n. c.
WP10.1MA-2%-M12	0.005… 2 % (20000 ppm)	0.001 % (10 ppm)	uncalibrated	8 mA/% (0.0008 mA/ppm)	R_L 50Ω…R_L 900Ω	yes	
WP10.1MA-5%-M12	0.05… 5 % (50000 ppm)	0.01 % (100 ppm)		3.2 mA/% (0.00032 mA/ppm)			
WP10.1MA-20%-M12	0.05… 20 % (200000 ppm)	0.01 % (100 ppm)		0.8 mA/% (0.00008 mA/ppm)			

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(Subject to technical changes!)

Spare Parts

Type	Membrane cap	Electrolyte	Emery	O-ring
All WP10.1	M10.3N Art. no. 11057	EWP7/W, 100 ml Art. no. 11201	S2 Art. no. 11906	20 x 1.5 silicone Art. no. 11803

(Subject to technical changes!)

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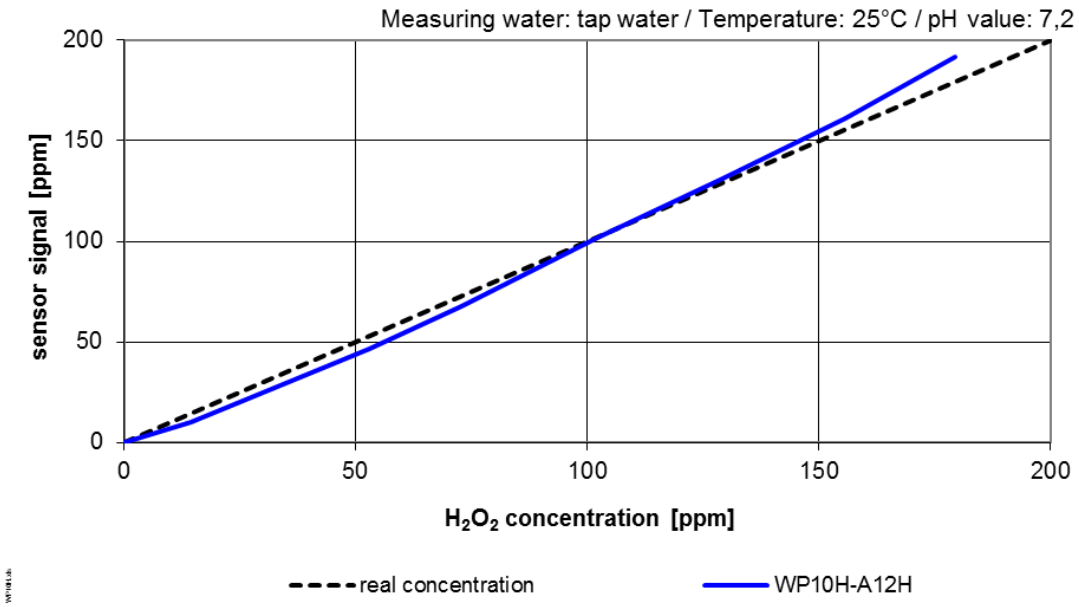
Linearity of WP10H-A12n
Measurement range 200 ppm



Linearity of WP10N-A12n
Measurement range 2000 ppm