	<h1>TARAline CS4</h1>	
Max. allowed working pressure	Operation without retaining ring: <ul style="list-style-type: none"> - 0.5 bar - no pressure impulses and/or vibrations 	
	Operation with retaining ring in TARAflow FLC: <ul style="list-style-type: none"> - 3 bar, - no pressure impulses and/or vibrations (see option 2)	
Flow rate (Incoming flow velocity)	approx. 15-30 l/h (15 – 30 cm/s) in TARAflow FLC, small flow rate dependence is given (see diagram "Slope of TARAline CS4 versus flow rate")	
pH-range	pH 4 – pH 9, reduced dependence on pH-value (see diagram "Slope of TARAline CS4 versus pH")	
Conductivity	10 µS/cm – 50 mS/cm (sea water)	
Run-in time	First start-up approx. 2 h	
Response time	T ₉₀ : approx. 2 min.	
Zero point adjustment	Not necessary	
Slope calibration	At the device, by analytical determination, DPD-1-Method	
interferences	ClO ₂ : factor 0.75 O ₃ : factor 0.8 Bound chlorine can increase the measuring value.	
	Corrosion inhibitors can lead to measuring errors. Stabilisers for water hardness can lead to measuring errors.	
Absence of the disinfectant	Max. 24 h	
Connection	mV version: 5-pole M12, plug-on flange Modbus version: 5-pole M12, plug-on flange 4-20 mA version: 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:	IP68
	2-pole terminal with mA-hood:	IP65


<p>Option 2: Retaining ring</p>	<ul style="list-style-type: none"> - 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) 	
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Spare parts

Type	Membrane cap	Electrolyte	Emery	O-ring
All CS4	M48.4E Art. No. 11051-E	ECS2.1/GEL, 100 ml Art. No. 11007	S1 Art. No. 11908	14 x 1.8 NBR Art. No. 11806
	For sea water applications: M48.4S Art. No. 11051-S			

(Subject to technical changes!)

Technical Data
1. CS4 (analog output, analog internal signal processing)


	Measuring range in ppm	Resolution in ppm	Output Output resistance	Nominal slope (at pH 7.2) in mV/ppm	Power supply	Galvanic isolation required in the measuring device/controller *	Connection
CS4H-M12	0.005...2.000	0.001	0...-2000 mV 1 kΩ	-1000	±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.
CS4N-M12	0.05...20.00	0.01		-100			
CS4L-M12	0.5...200.0	0.1		-10			
CS4HUp-M12	0.005...2.000	0.001	0...+2000 mV 1 kΩ	+1000	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.
CS4Up-M12	0.05...20.00	0.01		+100			

* 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. CS4 (analog output, digital internal signal processing)


analog-out / digital

	Measuring range in ppm	Resolution in ppm	Output Output resistance	Nominal slope (at pH 7.2) in mV/ppm	Power supply	Galvanic isolation required in the measuring device/controller *	Connection
CS4H-An-M12	0.005... 2.000	0.001	analog 0...-2 V (max. -2.5 V) 1 kΩ	-1000	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.
CS4N-An-M12	0.05... 20.00	0.01		-100			
CS4L-An-M12	0.5... 200.0	0.1		-10			
CS4H-Ap-M12	0.005... 2.000	0.001	analog 0...+2 V (max. +2.5 V) 1 kΩ	+1000			
CS4N-Ap-M12	0.05... 20.00	0.01		+100			
CS4L-Ap-M12	0.5... 200.0	0.1		+10			

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(Subject to technical changes!)

3. CS4 (digital output, digital internal signal processing)


	Measuring range in ppm	Resolution in ppm	Output Output resistance	Power supply	Galvanic isolation required in the measuring device/controller *	Connection
CS4H-M0c	0.005... 2.000	0.001	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
CS4N-M0c	0.05... 20.00	0.01				
CS4L-M0c	0.5... 200.0	0.1				

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(Subject to technical changes!)

4. CS4 4-20mA (analog output, analog internal signal processing)


4.1 Electrical connection: 2 pole terminal clamp

	Measuring range in ppm	Resolution in ppm	Output Output resistance	Nominal slope (at pH 7.2) in mA/ppm	Power supply	Galvanic isolation required in the measuring device/controller *	Connection
CS4MA2	0.005...2.000	0.001	4...20 mA uncalibrated	8.0	12...30 VDC R _L 50Ω...R _L 900Ω	yes	2-pole terminal (2 x 1 mm ²) Recommended: Round cable ∅ 4 mm 2 x 0.34 mm ²
CS4MA5	0.05...5.00	0.01		3.2			
CS4MA10	0.05...10.00	0.01		1.6			
CS4MA20	0.05...20.00	0.01		0.8			
CS4MA-200	0.5...200.0	0.1		0.08			

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

(Subject to technical changes!)

4.2 Electrical connection: 5 pole M12 plug-on flange

	Measuring range in ppm	Resolution in ppm	Output Output resistance	Nominal slope (at pH 7.2) in mA/ppm	Power supply	Galvanic isolation required in the measuring device/controller *	Connection
CS4MA2-M12	0.005...2.000	0.001	4...20 mA uncalibrated	8.0	12...30 VDC R _L 50Ω...R _L 900Ω	yes	5-pole M12 plug-on flange Function of wires: PIN1: n. c. PIN2: +U PIN3: -U PIN4: n c. PIN5: n. c.
CS4MA5-M12	0.05...5.00	0.01		3.2			
CS4MA10-M12	0.05...10.00	0.01		1.6			
CS4MA20-M12	0.05...20.00	0.01		0.8			
CS4MA-200-M12	0.5...200.0	0.1		0.08			

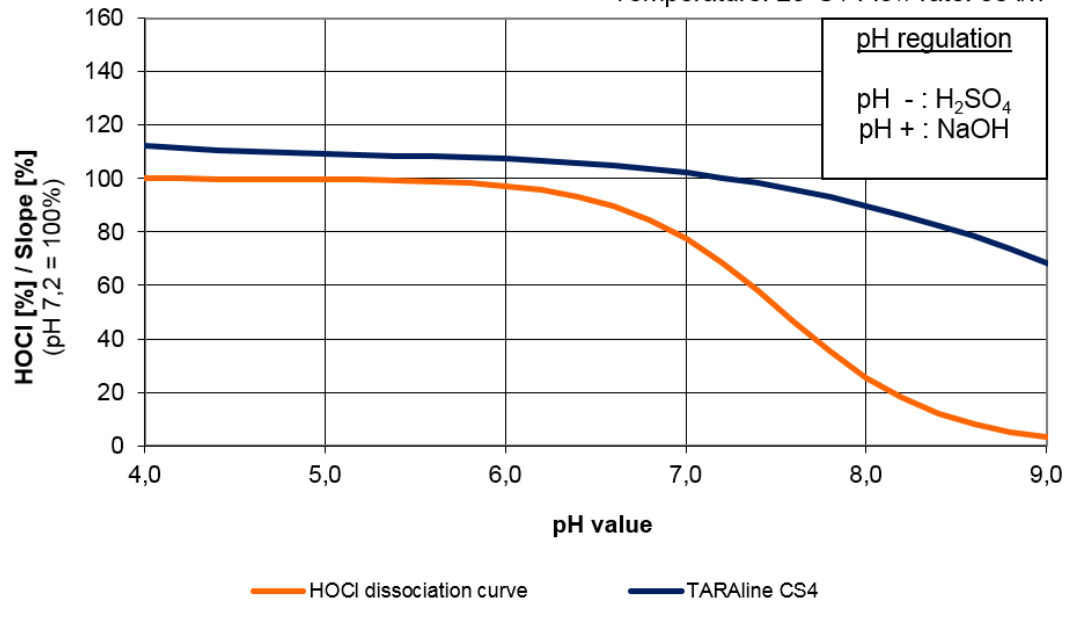
* for further information see brochure 'Technical information // galvanic isolation' (in the download area of our website www.reiss-gmbh.com)

(Subject to technical changes!)

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Slope of TARAline CS4 versus pH

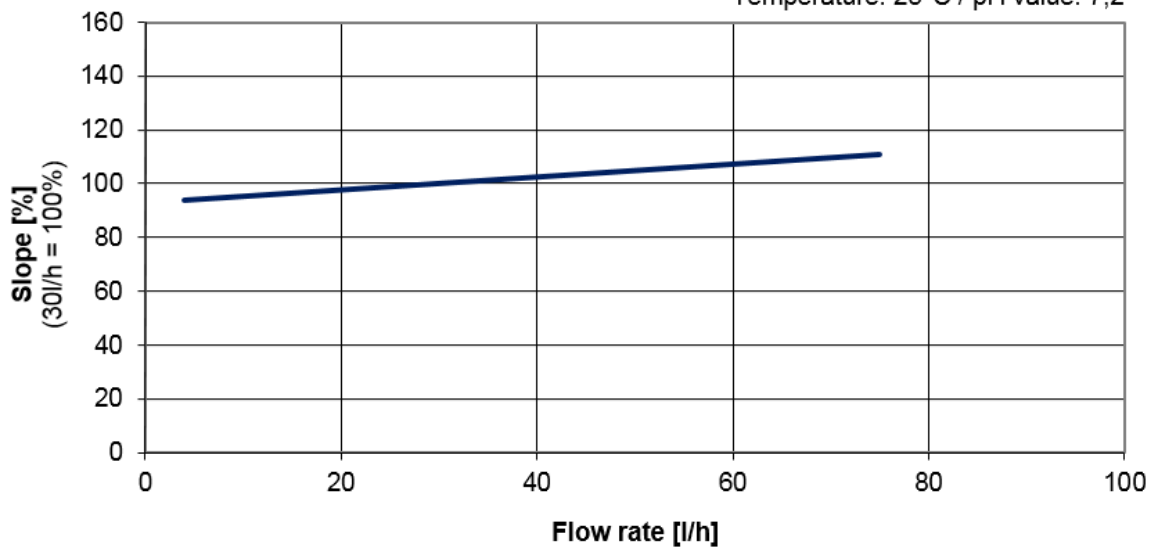
Temperature: 25°C / Flow rate: 30 l/h



CS4_008

Slope of TARAline CS4 versus Flow rate

Temperature: 25°C / pH value: 7,2



CS4_008

This values are only valid for the probe housing FLC1 / FLC3