SVCL

Closed amperometric cells

Data Sheet

- Chlorine probes for chlorine and chlorine bioxide measurement.
- Stables and reliables measurement even for low chlorine concentration.
- Low pH dependency for chlorine bioxide measurement

They are equipped with a special membrane system, except for SVCL17 and SVCL 18.
SVCL models work in chlorine water system.
The probe has to be installed into a probe holder and connected to a measuring and control instrument.

Dissolved chlorine into water may have many features:

FREE CHLORINE (ACTIVE):	HOCl (hypoclorus acid).
COMBINED CHLORINE:	Monochloramine, dichloramine, trichloramine (DPD4-DPD1 analysis system)
FREE ORGANIC CHLORINE:	Free cholorine with isocianuric/isocianurate (DPD1 analysis system)
FREE CHLORINE INORGANIC:	Free chlorine Use fo SVCL3N amperometric cells is recommended (DPD1 analysis system)
TOTAL CHLORINE:	Free chlorine and combined chlorine. Use of SVCL8 amperometric cells is recommended (DPD4 analysis system)

MODELS

- SVCL3S for free chlorine (organic and inorganic) for fresh water
- SVCL3N for free chlorine (inorganic) for fresh water
- SVCL8 for total chlorine
- SVCL2 for chlorine dioxide
- SVCL9 for hydrogen peroxyde
- SVCL10 for ozone
- SVCL11 for peracetic acid
- SVBR for bromine
- SVCT for Chlorite
- SVCL17 for chlorine dioxide - with automatic cleaning system
- SVCL18 for free chlorine (inorganic) - with automatic cleaning system

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SVCL3S

	SVCL3S
Parameter	FREE CHLORINE (ORGANIC) FOR FRESH WATER
Measuring range	SCL3S/20: 0,1-20 mg/l (0,1-20 ppm)
Output (Output resistance)	~ 100mV/ppm (1kΩ)
Voltage supply	±15 VDC (±10%) - 10 mA
Connection	4-pole screw connector
Measuring system	membrane covered, amperometric potentiostatic 2-electrode system
Ph working range	5,5-9,5 pH
Sample water conductivity	30-10.000 µS/cm
Run-in-time	First commissioning: 6 h approx. Recommissioning: 3 h approx.
Response time	T_{90}: 2 min. approx.
Zero point adjustment	see chapter "Probe alignment"
Slope calibration	see chapter "Probe alignment" DPD1 method
Alcalinity	100 ppm
Working temperature	5-45 °C with temperature compensation
Max pressure	1 bar - 10 mwc [mH2O] no pressure impulses and/or vibration, no depressure
Power supply	4 wires (brown +; white -; green OUT signal; yellow GND)
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESVCL3
Membrane mod.	MESVCL3
Working flow	30 l/h
Suitable for probe holder mod.	PEF1, PEF1/E, PEF5, PEF23
Material	Membrane cap: PPE Shaft: PVC
Storage	probe: frost-protected, dry and without electrolyte ((5-40°C) membrane cap: 1 year, depending on water quality electrolyte: in original bottle, protect from sunlight (5-25°C). Expiration date on the label.
Maintenance	regular control of measuring signal change of the membrane cap: every 3-6 months change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.

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SVCL3N

	SVCL3N
Parameter	FREE CHLORINE (INORGANIC) FOR FRESH WATER
Measuring range	SVCL3N/2: 0-2 mg/l (0-2 ppm) resolution: ± 0.001 SVCL3N/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.01 SVCL3N/200: 0-200 mg/l (0-200 ppm) resolution: ± 0.1
Voltage supply	±5 - ±15 VDC (10 mA)
Connection	5-pole screw connector
Measuring system	membrane covered, amperometric 2-electrode system
Ph working range	5-9.5 pH, reduced dependance on pH value. When the pH value increases, the measured signal decreases at about 10% per pH unit.
Water sample conductivity	500 µS/cm - 10000 µS/cm
Run-in-time	first start up: 1-24 h (6 hours usually) depending on water quality
Response time	T_{90}: 2 min. approx.
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment" DPD1 method
Alcalinity	80 ppm
Working temperature	1-40° C (34-104°F)
Temperature compensation	automatically, by an integrated temperature sensor
Max pressure	0.5 bar (7 PSI) - 5 mwc [mH2O] no pressure impulses and/or vibration, no depressure
Power supply	4 wires (green -485; white +485; red +5VDC; black GND)
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESVCL3N
Membrane mod.	MESVCL3
Working flow	30 l/h
Suitable for probe holder mod.	PEF1, PEF1/E, PEF5, PEF23
Material	Shaft: PP/PMMA; Membrane cap: PPE
Storage	probe: frost-protected, dry and without electrolyte (5-40° C) membrane cap: used membrane cap can not be stored electrolyte: in original bottle, protect from sunlight (5-25°C)
Maintenance	regular control of measuring signal change of the membrane cap: every 3-6 months change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.
Dimension	Diam.: 25 mm Length: 241 mm

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SVCL8

	SVCL8
Parameter	TOTAL CHLORINE
Measuring range	SVCL8/2: 0-2 mg/l (0-2 ppm) resolution: ± 0.001 SVCL8/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.01
Output (Output resistance)	SVCL8/2: ~1000 mV/ppm (1kΩ) SVCL8/20: ~100 mV/ppm (1kΩ)
Voltage supply	±5 - ±15 VDC (10 mA)
Connection	4-pole screw connector
Measuring system	membrane covered, amperometric 2-electrode system
Ph working range	6.5-9.5 pH, reduced dependance on pH value. When the pH value increases, the measured signal decreases at about 10% per pH unit.
Water sample conductivity	0.03 - 40 mS/cm
Run-in-time	first start up: 24 h approx.
Response time	T_{90}: 60 s approx.
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment" DPD4 method
Alcalinity	80 ppm
Working temperature	1-40° C (34-104°F)
Temperature compensation	automatically, by an integrated temperature sensor
Max pressure	1 bar (14.5 PSI) - 10 mwc [mH2O] no pressure impulses and/or vibration, no depressure
Power supply	4 wires (brown +; white -; green OUT signal; yellow GND)
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESVCL8
Membrane mod.	MESVCL8/2 or MESVCL8/20
Working flow	30 l/h
Suitable for probe holder mod.	PEF1, PEF1/E, PEF5, PEF23
Material	Shaft: PVC; membrane cap: PPE.
Storage	probe: frost-protected, dry and without electrolyte (5-40° C) membrane cap: used membrane cap can not be stored electrolyte: in original bottle, protect from sunlight (5-25°C) Expiration date on the label.
Maintenance	regular control of measuring signal change of the membrane cap: every 3-6 months change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.

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SVCL2

Parameter	CHLORINE DIOXIDE
Measuring range	SVCL2/2: 0-2 mg/l (0-2 ppm) resolution: ± 0.001 SVCL2/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.01
Output (Output resistance)	SVCL2/2: ~1000 mV/ppm (1kΩ) SVCL2/20: ~100 mV/ppm (1kΩ)
Voltage supply	±5 - ±15 VDC (10 mA)
Connection	4-pole screw connector
Measuring system	membrane covered, 2-electrode system
Ph working range	4-11 pH
Run-in-time	first start up: 1-24 h approx. (usually 6 h)
Response time	T_{90}: 15 sec.. approx.
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment"
Alcalinity	80 ppm
Working temperature	1-40° C (34-104°F)
Temperature compensation	automatically, by an integrated temperature sensor
Max pressure	1 bar (14.5 PSI) - 10 mwc [mH2O] no pressure impulses and/or vibration, no depressure
Power supply	4 wires (brown +; white -; green OUT signal; yellow GND)
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESVCL2
Membrane mod.	MESVCL1-2
Working flow	30 l/h
Suitable for probe holder mod.	PEF1, PEF1/E, PEF5, PEF23
Material	Shaft: PVC; membrane cap: PPE.
Storage	probe: frost-protected, dry and without electrolyte (5-40° C) membrane cap: used membrane cap can not be stored electrolyte: in original bottle, protect from sunlight (5-25°C) Expiration date on the label.
Maintenance	regular control of measuring signal change of the membrane cap: every 3-6 months change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.

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SVCL9

Parameter	HYDROGEN PEROXIDE
Measuring range	SVCL9/200: 0-200 mg/l (0-200 ppm) resolution: ± 0.1
Output (Output resistance)	0 / ~10 mV/ppm (1kΩ)
Voltage supply	±5 - ±12.5 VDC 10 - 25 VDC 25 mA
Connection	4-pole screw connector
Measuring system	membrane covered, amperometric electrode system
Ph working range	1-11 pH
Water sample conductivity	0.05 - 5.00 mS/cm
Run-in-time	first start up: 2-6 h approx.
Response time	T_{90}: 10 min. approx.
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment"
Alcalinity	80 ppm
Working temperature	1-40° C (34-104°F)
Temperature compensation	automatically, by an integrated temperature sensor
Max pressure	1 bar (14.5 PSI) - 10 mwc [mH2O] no pressure impulses and/or vibration, no depressure
Power supply	4 wires (brown +; white -; green OUT signal; yellow GND)
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESVCL9
Membrane mod.	MESVCL9
Working flow	30 l/h
Suitable for probe holder mod.	PEF1, PEF1/E, PEF5, PEF23
Material	Shaft: PVC-C; membrane cap: PVDF, PVC
Storage	probe: frost-protected, dry and without electrolyte (5-40° C) membrane cap: used membrane cap can not be stored electrolyte: in original bottle, protect from sunlight (5-25°C) Expiration date on the label.
Maintenance	regular control of measuring signal change of the membrane cap: every 3-6 months change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.

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SVCL10

Parameter	OZONE
Measuring range	SVCL10/2: 0.02-2 mg/l (0-2 ppm) resolution: ± 0.001 SVCL10/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.01
Output (Output resistance)	SVCL10/2: 0 / -1000 mV (1kΩ) SVCL10/20: 0 / -100 mV (1kΩ)
Voltage supply	±5 - ±15 VDC 10 mA
Connection	4-pole screw connector
Measuring system	membrane covered, amperometric 2-electrode system
Ph working range	2-11 pH
Run-in-time	first start up: 1 h approx.
Response time	T_{90}: 50 sec. approx.
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment"
Alcalinity	80 ppm
Working temperature	1-40° C (34-104°F)
Temperature compensation	automatically, by an integrated temperature sensor
Max pressure	1 bar (14.5 PSI) - 10 mwc [mH2O] no pressure impulses and/or vibration, no depressure
Power supply	4 wires (brown +; white -; green OUT signal; yellow GND)
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELSVCL10
Membrane mod.	MSVCL10
Working flow	30 l/h
Suitable for probe holder mod.	PEF1, PEF1/E, PEF5, PEF23
Material	PVC-U, stainless steel 1.4571
Storage	probe: frost-protected, dry and without electrolyte (5-40° C) membrane cap: used membrane cap can not be stored electrolyte: in original bottle, protect from sunlight (5-25°C) Expiration date on the label.
Maintenance	regular control of measuring signal change of the membrane cap: every 3-6 months change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.

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SVCL11

Parameter	PERACETIC ACID
Measuring range	SVCL11/200: 0-200mg/l (0-200 ppm) resolution: ± 0.1 SVCL11/2000: 0-2000 mg/l (0-2000 ppm) resolution: ± 1
Output (Output resistance)	0 / -2000 mV (1kΩ)
Voltage supply	±5 - ±15 VDC 10 mA
Connection	4-pole screw connector
Measuring system	membrane covered, amperometric 2-electrode system
Ph working range	1-9 pH
Run-in-time	first start up: 1 h approx.
Response time	T_{90}: 3 min. approx.
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment"
Alcalinity	80 ppm
Working temperature	1-40° C (34-104°F)
Temperature compensation	automatically, by an integrated temperature sensor
Max pressure	1 bar (14.5 PSI) - 10 mwc [mH2O] no pressure impulses and/or vibration, no depressure
Power supply	4 wires (brown +; white -; green OUT signal; yellow GND)
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESVCL11
Membrane mod.	MESVCL11
Working flow	30 l/h
Suitable for probe holder mod.	PEF1, PEF1/E, PEF5, PEF23
Material	PVC-U, stainless steel 1.4571
Storage	probe: frost-protected, dry and without electrolyte (5-40° C) membrane cap: used membrane cap can not be stored electrolyte: in original bottle, protect from sunlight (5-25°C) Expiration date on the label.
Maintenance	regular control of measuring signal change of the membrane cap: every 3-6 months change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.

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SBR

Parameter	BROMINE
Measuring range	SVBR/20: 0-20mg/l (0-20 ppm) resolution: ± 0.01
Output (Output resistance)	~ 100 mV/ppm (1kΩ)
Voltage supply	±5 - ±15 VDC 10 mA
Connection	4-pole screw connector
Measuring system	membrane covered, amperometric 2-electrode system
Ph working range	6.5-9.5 pH
Water sample conductivity	500 µS/cm - 10000 µS/cm
Run-in-time	first start up: 1-24 h approx. (usually 6 h)
Response time	T_{90}: 2 min. approx.
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment"
Alcalinity	80 ppm
Working temperature	1-40° C (34-104°F)
Temperature compensation	automatically, by an integrated temperature sensor
Max pressure	0.5 bar (7 PSI) - 5 mwc [mH2O] no pressure impulses and/or vibration, no depressure
Power supply	4 wires (brown +; white -; green OUT signal; yellow GND)
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESVBR
Membrane mod.	MESVBR
Working flow	30 l/h
Suitable for probe holder mod.	PEF1, PEF1/E, PEF5, PEF23
Material	Shaft: PVC; membrane cap: PPE
Storage	probe: frost-protected, dry and without electrolyte (5-40° C) membrane cap: used membrane cap can not be stored electrolyte: in original bottle, protect from sunlight (5-25°C) Expiration date on the label.
Maintenance	regular control of measuring signal change of the membrane cap: every 3-6 months change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.

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SCT

Parameter	CHLORITE
Measuring range	SCT: 0-2mg/l (0-2 ppm) resolution: ± 0.001
Voltage supply	±5 - ±15 VDC 10 mA
Connection	5-pole screw connector
Measuring system	membrane covered, amperometric 2-electrode system
pH range	5.5-9.5 pH
Conductivity range	0.05-5 mS/cm
Run-in-time	first start up: 1-24 h approx. (usually 6 h)
Response time	T_{90}: 60 s approx.
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment"
Alcalinity	100 ppm
Working temperature	1-40° C (34-104°F)
Temperature compensation	automatically, by an integrated temperature sensor
Max pressure	1 bar (14.5 PSI) - 10 mwc [mH2O] no sbalzi di pressione, no depressione
Power supply	4 wires (brown +; white -; green OUT signal; yellow GND)
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESCT
Membrane mod.	MESCT
Working flow	30 l/h
Suitable for probe holder mod.	PEF1, PEF1/E, PEF5, PEF23
Material	Shaft: PVC; membrane cap: PPE
Storage	probe: frost-protected, dry and without electrolyte (5-40° C) membrane cap: used membrane cap can not be stored electrolyte: in original bottle, protect from sunlight (5-25°C)
Maintenance	regular control of measuring signal change of the membrane cap: every 3-6 months change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.
Dimension	Diam.: 25 mm Length: 241 mm

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SVCL17

	SVCL17
Parameter	CHLORINE DIOXIDE
Measuring range	SVCL17/2: 0-2 mg/l (0-2 ppm) resolution: ± 0.001 SVCL17/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.001
Output (Output resistance)	SVCL17/2: 0 / -1000 mV (1kΩ) SVCL17/20: 0 / -100 mV (1kΩ)
Voltage supply	±5 - ±15 VDC (10 mA)
Connection	4-pole screw connector
Measuring system	amperometric 3-electrode system
Ph working range	5-9 pH (ref. HOCl dissociation curve)
Water sample conductivity	0.05 µS/cm - 10 mS/cm
Run-in-time	first start up: 1-24 h (6 hours usually) depending on water quality
Response time	T_{90}: 60 sec. approx.
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment" - DPD1
Alcalinity	80 ppm
Working temperature	5-70° C (41-158°F)
Temperature compensation	automatically, by an integrated temperature sensor
Max pressure	8 bar (116 PSI) - 80 mwc [mH2O] no pressure impulses and/or vibration, no depressure
Power supply	4 wires (brown +; white -; green OUT signal; yellow GND)
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESVCL17
Working flow	40 l/h
Suitable for probe holder mod.	PEF1, PEF1/E, PEF5, PEF23
Material	shaft: PEEK; clamp ring:PPE; electrode: gold; oring: EPDM
Storage	probe: frost-protected, dry and without electrolyte (5-40° C) electrolyte: in original bottle, protect from sunlight (5-25°C)
Maintenance	regular control of measuring signal electrode cleaning: every 4-12 weeks change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.

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SVCL18

	SVCL18
Parameter	FREE CHLORINE (INORGANIC)
Measuring range	SVCL18/2: 0-2 mg/l (0-2 ppm) resolution: ± 0.001 SVCL18/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.001
Output (Output resistance)	SVCL18/2: 0 / -1000 mV (1kΩ) SVCL18/20: 0 / -100 mV (1kΩ)
Voltage supply	±5 - ±15 VDC (10 mA)
Connection	4-pole screw connector
Measuring system	amperometric 3-electrode system
Ph working range	5-9 pH (ref. HOCl dissociation curve)
Water sample conductivity	0.05 µS/cm - 10 mS/cm
Run-in-time	first start up: 1-24 h (6 hours usually) depending on water quality
Response time	T_{90}: 60 sec. approx.
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment" - DPD1
Alcalinity	80 ppm
Working temperature	5-70° C (41-158°F)
Temperature compensation	automatically, by an integrated temperature sensor
Max pressure	8 bar (116 PSI) - 80 mwc [mH2O] no pressure impulses and/or vibration, no depressure
Power supply	4 wires (brown +; white -; green OUT signal; yellow GND)
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESVCL17
Working flow	40 l/h
Suitable for probe holder mod.	PEF1, PEF1/E, PEF5, PEF23
Material	shaft: PEEK; clamp ring:PPE; electrode: gold; oring: EPDM
Storage	probe: frost-protected, dry and without electrolyte (5-40° C) electrolyte: in original bottle, protect from sunlight (5-25°C)
Maintenance	regular control of measuring signal electrode cleaning: every 4-12 weeks change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.

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