SCL

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

SCL 3/S
SCL 3/N
SCL 8
SBR
SCT

SCL2

SCL 9
SCL 10

SCL 11

SCL 17
SCL 18

They are equipped with a special membrane system, except for SCL17 and SCL 18.
SCL models work in chlorine water system.
The probe has to be installed into a probe holder and connected to a measuring and control instrument.

R4-07-22

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 SCL3N amperometric cells is recommended (DPD1 analysis system)
TOTAL CHLORINE:	Free chlorine and combined chlorine. Use of SCL8 amperometric cells is recommended (DPD4 analysis system)

MODELS

- SCL3S for free chlorine (organic and inorganic)
- SCL3N for free chlorine (inorganic)
- SCL8 for total chlorine
- SCL2 for chlorine dioxide
- SCL9 for hydrogen peroxyde
- SCL10 for ozone
- SCL11 for peracetic acid
- SBR for bromine
- SCT for Chlorite
- SCL17 for chlorine dioxide - with automatic cleaning system
- SCL18 for free chlorine (inorganic) - with automatic cleaning system

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Closed amperometric cells

SCL3S

	SCL3S/20
Parameter	FREE CHLORINE (ORGANIC)
Measuring range	0,1-20 mg/l (0,1-20 ppm)
Voltage supply	0/5 VDC (±10%) - 10 mA
Connection	5-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	min 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
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESCL3
Membrane mod.	MESCL3
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.
Dimension	Diam.: 25 mm Length: 241 mm

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Closed amperometric cells

SCL3N

	SCL3N
Parameter	FREE CHLORINE (INORGANIC) FOR FRESH WATER
Measuring range	SCL3N/0.5: 0-0.5 mg/l (0-0.5 ppm) resolution: ± 0.001 SCL3N/2: 0-2 mg/l (0-2 ppm) resolution: ± 0.001 SCL3N/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.01
Voltage supply	0/5 VDC (±10%) (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	30 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	min 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
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESCL3N
Membrane mod.	MESCL3
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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Closed amperometric cells

SCL8

	SCL8
Parameter	TOTAL CHLORINE
Measuring range	SCL8/2: 0-2 mg/l (0-2 ppm) resolution: ± 0.001 SCL8/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.01
Voltage supply	0/5 VDC (±10%) (10 mA)
Connection	5-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	min 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
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESCL8
Membrane mod.	MESCL8/2 or MESCL8/20
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)
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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Closed amperometric cells

SCL2

Parameter	CHLORINE DIOXIDE
Measuring range	SCL2/0.5: 0-0.5 mg/l (0-0.5 ppm) resolution: ± 0.001 SCL2/2: 0-2 mg/l (0-2 ppm) resolution: ± 0.001 SCL2/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.01
Voltage supply	0/5 VDC (±10%) (10 mA)
Connection	5-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	min 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
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESCL2
Membrane mod.	MESCL2
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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SCL9

Parameter	HYDROGEN PEROXIDE
Measuring range	SCL9/200: 0-200 mg/l (0-200 ppm) ; SCL9/50: 0-50 mg/l (0-50 ppm) res. ± 0.1
Voltage supply	0/5 VDC (±10%) - 25 mA
Connection	5-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	min 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
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESCL9
Membrane mod.	MESCL9
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)
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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SCL10

Parameter	OZONE
Measuring range	SCL10/2: 0-2 mg/l (0-2 ppm) resolution: ± 0.001 SCL10/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.01
Voltage supply	0/5 VDC (±10%) 10 mA
Connection	5-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	min 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
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELSCL10
Membrane mod.	MSCL10
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)
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

Closed amperometric cells

SCL11

Parameter	PERACETIC ACID
Measuring range	SCL11/200: 10-200mg/l (10-200 ppm) resolution: ± 0.1 SCL11/2000: 10-2000 mg/l (10-2000 ppm) resolution: ± 1
Voltage supply	0/5 VDC (±10%) 10 mA
Connection	5-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	min 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
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESCL11
Membrane mod.	MESCL11
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)
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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SBR

Parameter	BROMINE
Measuring range	SBR/20: 0-20mg/l (0-20 ppm) resolution: ± 0.01
Voltage supply	0/5 VDC (±10%) 10 mA
Connection	5-pole screw connector
Measuring system	membrane covered, amperometric 2-electrode system
Ph working range	6.5-9.5 pH
Water sample conductivity	50 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	min 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
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESBR
Membrane mod.	MESBR
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

SCL

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Closed amperometric cells

SCT

Parameter	CHLORITE
Measuring range	SCT: 0-2mg/l (0-2 ppm) resolution: ± 0.001
Voltage supply	0/5 VDC (±10%) 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	min 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
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

SCL

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SCL17

	SCL17
Parameter	CHLORINE DIOXIDE
Measuring range	SCL17/0.5: 0-0.5 mg/l (0-0.5 ppm) resolution: ± 0.001 SCL17/2: 0-2 mg/l (0-2 ppm) resolution: ± 0.001 SCL17/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.001
Voltage supply	0/5 VDC (±10%) (10 mA)
Connection	5-pole screw connector
Measuring system	amperometric 3-electrode system
Ph working range	5-9 pH (ref. HOCl dissociation curve)
Conductivity water sample	50 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}: 60 sec. approx.
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment" - DPD1
Alcalinity	min 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
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESCL17
Working flow	40 l/h
Cleaning system	selfcleaning with 3-balls systems
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 change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.

SCL

Data Sheet

Closed amperometric cells

SCL18

	SCL18
Parameter	FREE CHLORINE (INORGANIC)
Measuring range	SCL18/0.5: 0-0.5 mg/l (0-0.5 ppm) resolution: ± 0.001 SCL18/2: 0-2 mg/l (0-2 ppm) resolution: ± 0.001 SCL18/20: 0-20 mg/l (0-20 ppm) resolution: ± 0.001
Voltage supply	0/5 VDC (±10%) (10 mA)
Connection	5-pole screw connector
Measuring system	amperometric 3-electrode system
Ph working range	5-9 pH (ref. HOCl dissociation curve)
Conductivity water sample	50 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}: 60 sec. approx
Zero point adjustment	See Operating manual: "Probe alignment"
Slope calibration	See Operating manual: "Probe alignment" - DPD1
Alcalinity	min 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
Cable (standard)	1 m (3.28 ft)
Electrolyte mod.	ELESCL18
Working flow	40 l/h
Cleaning system	selfcleaning with 3-balls systems
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 change electrolyte: every 3-6 months SHORTEN THE MAINTENANCE INTERVALS APPROPRIATELY DEPENDING ON WATER QUALITY.