Consort

Artistic in science

20-06

Product catalogue

Electrochemical Measurement

- **Gold Plated BNC**
- **Multichannel**
- **Pre-programmed standards**
  pH: 1.68, 2.00, 4.00, 4.01, 6.87, 6.99, 9.18, 9.21, 10.01, 12.00, 12.45 (at 25°C) + 5 user editable
  Conductivity: 1413 µS/cm, 12.88 mS/cm, 111.8 mS/cm (at 25°C) + 3 user editable
- **No interference between electrodes**
- **Stability algorithm with intuitive indicator**
- **Hold function**
- **Selectable resolution**
- **Range lock**
- **Capacitive compensation**
- **Galvanic isolated USB interface**
- **Ethernet connection available**
- **High Accuracy**
- **Free software and firmware updates**

AP414

SH300

The C3000 series are all full-parameter multi-channel instruments. 2 channels up to 8 channels with each channel having it's own dedicated measurement hardware without interference between the channels. All values can be displayed simultaneously on the screen.

Specifications depending on model

Measurement Channels	**2 to 8 (max 2 EC channels)**
Temperature Channels	**2 to 6**
pH	-10.000...+20.000 pH
mV	±2000.0 mV
Ion	0.01 ng/l...100 g/l
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0.0...70.0
TDS	0...100.0 g/l
Dissolved oxygen	0...60.00 mg/l 0...600%
Air pressure	600...1300 hPa
Temperature	-30.0...+130.0°C
Warranty	36 months
Made in Belgium	

Code	Description
C3040	6 channel pH/Ion/conductivity/DO/ISE meter
C3060	8 channel pH/Ion/conductivity/ISE meter

Code	Description	Content
C30xxP	pH meter kit, glass electrode	meter + pH electrode SP20T + 2x50ml pH buffers + 50ml electrolyte
C30xxPE	pH meter kit, epoxy electrode	meter + pH electrode SP10T + 2x50ml pH buffers + 50ml electrolyte
C30xxK	EC meter kit, glass electrode	meter + EC electrode SK20T + 50ml EC standard
C30xxKE	EC meter kit, epoxy electrode	meter + EC electrode SK10T + 50ml EC standard
C30xxPK	pH/EC meter kit, glass electrodes	meter + pH electrode SP20T + EC electrode SK20T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard
C30xxPKE	pH/EC meter kit, epoxy electrodes	meter + pH electrode SP10T + EC electrode SK10T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard
C30xxZ	Oxygen meter kit	meter + DO electrode SZ10T
C30xxT	Complete meter kit, glass electrodes (DO epoxy)	meter + pH electrode SP20T + EC electrode SK20T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard + DO electrode SZ10T
C30xxTE	Complete meter kit, epoxy electrode	meter + pH electrode SP10T + EC electrode SK10T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard + DO electrode SZ10T
C30xxX	Meter kit without electrodes	meter + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard
AP414	Serial printer	
SH300	Flexible electrode holder (optional)	
Kits are available for each meter. Replace xx with correct meter number. F.i. C3010P, C3030T, etc...		

Measurement Channels	**6 (conductivity: 2)**
Temperature Channels	**6**
pH	-10.000...+20.000 pH
mV	±2000.0 mV
Ion	0.01 ng/l...100 g/l
Conductivity	0...2000 mS/cm
Resistivity	...200 MΩ.cm
Salinity	0.0...70.0
TDS	0...100.0 g/l
Dissolved oxygen	0...60.00 mg/l 0...600%
Air pressure	600...1300 hPa
Temperature	-30.0...+130.0°C
Warranty	36 months
Made in Belgium	

Six independent channels for all measurements!

Description

With 6 multi-parameter measurement channels and 6 temperature channels the C3040 can perform 6 different measurements at the same time with individual temperature compensation. All measurements, including temperature, can be shown simultaneously or individually on the wide display. C3041 version has an Ethernet connection instead of USB.

All 6 gold plated BNC connectors accept different electrodes of witch 2 connectors also accept conductivity electrodes. There is no interference between the channels when measuring pH/ORP/Ion and conductivity in the same solution.

Besides the pre-programmed pH buffers and EC standards, you can also add your own buffer and standard tables. Not just a certain value at a certain temperature but the complete temperature related table of your specific buffer. Add up to 5 pH buffers and 3 EC standards of your own choice and use them as if they are built-in.

Six temperature inputs are independent from measurement channels. ATC for each channel can be selected from any of the temperature inputs. The device can be connected to a PC and completely controlled via USB/RS232.
Both software and communication protocol can be downloaded from our website.

Highlights

Multichannel up to 6 measurements can be performed at the same time and simultaneously or individually shown on the display. Each channel can measure 2 times per second.

No interference between pH/ORP/Ion and conductivity electrodes in the same solution

Custom calibration tables allow the user to add complete buffer/standard-temperature relation tables. With this feature the built-in tables can be extended with your own tables. Tables can be entered via a device menu or uploaded from a PC.

Wide Display shows up to 6 channels (selectable) at the same time including temperature and date/time.

Stability indicator ensures visualisation when the measurement has stabilised.

Stability algorithm ensures stable readings with ability to detect fast changes.

Hold function allows to freeze the display

Selectable resolution for more stable readings of mV, pH and DO.

Range lock for conductivity measurements.

Capacitive compensation eliminates the capacitive component of the electrode and cable when measuring low conductivities.

Galvanic isolated USB interface eliminates ground loop effects when connected to a PC.

GPL report can be shown on the display or sent to the digital port.

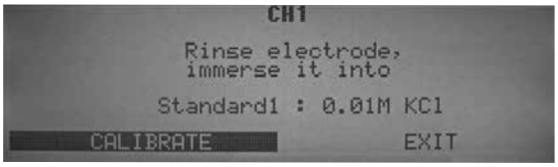
Pre-programmed standards
pH: 1.68, 2.00, 4.00, 4.01, 6.87, 6.99, 9.18, 9.21, 10.01, 12.00, 12.45 (at 25°C)
Conductivity: 1413 µS/cm, 12.88 mS/cm, 111.8 mS/cm (at 25°C)

Free software and firmware updates downloadable from www.consort.be

Specifications

pH	Range	-10.000...+20.000 pH
	Resolution	0.001 pH
	Accuracy	0.1% ± 1 digit
	Calibration	1...5 points
	Buffers	11 pre-programmed 5 user specified
	Temperature compensation	-5.0...+105.0°C
	ISO-pH	6.000...8.000 pH
	Slope	80.0...120.0%
	Zero point (Eo)	±999.0 mV
	Selectable Resolution	✓
mV	Range	±2000.0 mV
	Resolution	0.1 mV
	Accuracy	0.1% ± 1 digit
	Calibration	1 point
	Selectable Resolution	✓
CONDUCTIVITY	Range (cc dependent)	0...2000 mS/cm
	Resolution (cc dependent)	0.001 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1...3 points
	Standards	3 pre-programmed 3 user specified
	Cell constant (cc)	0.07...13 cm-1
	Temperature compensation	-5...+105°C or off
	Reference temperature	20°, 25°C
	Temperature coefficient	natural waters (EN27888)
	Range lock	✓
	Capacitive compensation	✓
RESISTIVITY	Range	0...200 MΩ.cm
	Resolution	1 Ω.cm
SALINITY	Range	0.0...70.0
	Reference temperature	15°C
TDS	Range	0...100.0 g/l
	Resolution	0.01 mg/l
DISSOLVED OXYGEN	Range	0...60.00mg/l
	Resolution	0.01 mg/l
	Accuracy	1% ± 1 digit
	Calibration	1 point
	Temperature compensation	0...50°C
	Salinity compensation	0...40
	Air pressure compensation	600...1300 hPa
	Selectable Resolution	✓

TEMPERATURE	Range	-30.0...+130.0°C
	Resolution	0.1°C
	Accuracy	0.1°C
	Calibration	1 point
ION	Range	0.01 ng/l...100 g/l
	Resolution	3 digits
	Accuracy	0.5% ± 1 digit
	Calibration	2...5 points + blank
AIR PRESSURE	Range	600...1300 hPa
	Calibration	1 point
CHANNELS	Measurement	6
	Temperature	6
INPUTS	Measurement	6 BNC, $10^{12}\Omega$
	Temperature	6x2 banana, for Pt1000
CALIBRATION	Reminder	0...999 h
	GLP	✓
DISPLAY	LCD	240x64 pixels
	White back-light	✓
	Hold function	✓
	Selectable resolution	✓
	Real time clock	✓
	Built-in help	✓
	Languages	English
		Dutch
		French
		German
COMMUNICA-TION	Interface with computer	USB/RS232
	Baud rate	1200...115200 b/s
	Printer	✓
DATA-LOGGING	Data sets	12000 + °C/date/time
	Modes	all
	Manual or timed	✓
	Interval	1...9999 s
SECURITY	Password protection	✓
AMBIENT CONDITIONS	Temperature	0...40°C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	100...240 VAC, 50/60 Hz
	Low voltage	9...15 VDC
DIMENSIONS	WxDxH	26x18x9 cm
WEIGHT	Meter	1 kg



Ordering codes

Code	Description
C3040	pH/Ion/conductivity/DO meter
AP414	Serial printer
SH300	Flexible electrode holder (optional)
ADAPT-CAR	Car adaptor, 12 V (optional)

➔ **Supplied with a mains adaptor (100...240 VAC, EU/US) and USB or UTP cable.** Add -UK for UK plug versions, -CH for Swiss plug versions.

- **Measurement Channels** **3 (conductivity: 2)**
- **Temperature Channels** **3**
- **pH** -10.000...+20.000 pH
  mV ±2000.0 mV
  Conductivity 0...2000 mS/cm
  Resistivity 0...200 MΩ.cm
  Salinity 0.0...70.0
- **TDS** 0...100.0 g/l
- **Temperature** -30.0...+130.0°C
- **µW** 0...400000 µW
- **rH_2** 0.00...42.00 rH2
- **Warranty** 36 months
- **Made in Belgium**

C3050/C3051 is an instrument capable of measuring all parameters according to Vincent's method. All parameters can be measured at once and shown on the wide display. C3051 version has an Ethernet connection instead of USB.

This instrument is built with the same quality as the instruments in the whole C3000 series. As such, it has the same features as the other versions. All 3 gold plated BNC connectors each accept different electrodes of which 2 connectors also accept conductivity electrodes. There is no interference between the channels when measuring pH/ORP/Ion and conductivity electrodes in the same solution.

Besides the pre-programmed pH buffers and EC standards, you can also add your own buffer and standard tables. Not just a certain value at a certain temperature but the complete temperature related table of your specific buffer. Add up to 5 pH buffers and 3 EC standards of your own choice and use them as if they are built-in.

Two temperature inputs are independent from measurement channels. ATC for each channel can be selected from any of the temperature inputs. The device can be connected to a PC and completely controlled via either USB/RS232 or Ethernet/RS232. Both software and communication protocol can be downloaded from our website.

Multichannel up to 3 measurements can be performed at the same time and simultaneously or individually shown on the display. All parameters according to Vincent's method can be shown on the display. Each channel can measure 2 times per second.

No interference between pH/ORP and conductivity electrodes in the same solution

Custom calibration tables allow the user to add complete buffer/standard-temperature relation tables. With this feature the built-in tables can be extended with your own tables. Tables can be entered via a device menu or uploaded from a PC.

Direct rH_2 and µW measurement when using a pH, ORP and EC electrode. All 5 parameters can be displayed simultaneously.

Wide Display shows all channels at the same time including temperature and date/time.

Stability indicator ensures visualisation when the measurement has stabilised.

Stability algorithm ensures stable readings with ability to detect fast changes.

Hold function allows to freeze the display

Selectable resolution for more stable readings on mV and pH.

Range lock for conductivity measurements.

Capacitive compensation eliminates the capacitive component of the electrode and cable when measuring low conductivities.

Galvanic isolated USB interface eliminates ground loop effects when connected to a PC (C3050 only).

Ethernet connection allows remote access to the device via LAN or Internet (C3051 only)

Pre-programmed standards
pH: 1.68, 2.00, 4.00, 4.01, 6.87, 6.99, 9.18, 9.21, 10.01, 12.00, 12.45 (at 25°C)
Conductivity: 1413 µS/cm, 12.88 mS/cm, 111.8 mS/cm (at 25°C)

Free software and firmware updates downloadable from www.consort.be

Measurement Channels	**3 (conductivity: 2)**
Temperature Channels	**3**
pH	-10.000...+20.000 pH
mV	±2000.0 mV
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0.0...70.0
TDS	0...100.0 g/l
Temperature	-30.0...+130.0°C
µW	0...400000 µW
rH_2	0.00...42.00 rH_2
Warranty	36 months
Made in Belgium	

Description

C3050/C3051 is an instrument capable of measuring all parameters according to Vincent's method. All parameters can be measured at once and shown on the wide display. C3051 version has an Ethernet connection instead of USB.

This instrument is built with the same quality as the instruments in the whole C3000 series. As such, it has the same features as the other versions. All 3 gold plated BNC connectors each accept different electrodes of which 2 connectors also accept conductivity electrodes. There is no interference between the channels when measuring pH/ORP/Ion and conductivity electrodes in the same solution.

Besides the pre-programmed pH buffers and EC standards, you can also add your own buffer and standard tables. Not just a certain value at a certain temperature but the complete temperature related table of your specific buffer. Add up to 5 pH buffers and 3 EC standards of your own choice and use them as if they are built-in.

Two temperature inputs are independent from measurement channels. ATC for each channel can be selected from any of the temperature inputs. The device can be connected to a PC and completely controlled via either USB/RS232 or Ethernet/RS232. Both software and communication protocol can be downloaded from our website.

Highlights

Multichannel up to 3 measurements can be performed at the same time and simultaneously or individually shown on the display. All parameters according to Vincent's method can be shown on the display. Each channel can measure 2 times per second.

No interference between pH/ORP and conductivity electrodes in the same solution

Custom calibration tables allow the user to add complete buffer/standard-temperature relation tables. With this feature the built-in tables can be extended with your own tables. Tables can be entered via a device menu or uploaded from a PC.

Direct rH_2 and µW measurement when using a pH, ORP and EC electrode. All 5 parameters can be displayed simultaneously.

Wide Display shows all channels at the same time including temperature and date/time.

Stability indicator ensures visualisation when the measurement has stabilised.

Stability algorithm ensures stable readings with ability to detect fast changes.

Hold function allows to freeze the display

Selectable resolution for more stable readings on mV and pH.

Range lock for conductivity measurements.

Capacitive compensation eliminates the capacitive component of the electrode and cable when measuring low conductivities.

Galvanic isolated USB interface eliminates ground loop effects when connected to a PC (C3050 only).

Ethernet connection allows remote access to the device via LAN or Internet (C3051 only)

Pre-programmed standards

pH: 1.68, 2.00, 4.00, 4.01, 6.87, 6.99, 9.18, 9.21, 10.01, 12.00, 12.45 (at 25°C)
Conductivity: 1413 µS/cm, 12.88 mS/cm, 111.8 mS/cm (at 25°C)

Free software and firmware updates downloadable from www.consort.be

Specifications

pH	Range	-10...+20 pH
	Resolution	0.001 pH
	Accuracy	0.1% ± 1 digit
	Calibration	1...5 points
	Buffers	11 pre-programmed 5 user specified
	Temperature compensation	-5...+105°C
	ISO-pH	6...8 pH
	Slope	80...120%
	Zero point (Eo)	±999 mV
mV	Range	±2000 mV
	Resolution	0.1 mV
	Accuracy	0.1% ± 1 digit
	Calibration	1 point
rH_2	Range	0...42 rH_2
	Resolution	0.01 rH_2
	Accuracy	0.1% ± 1 digit
CONDUCTIVITY	Range (cc dependent)	0...2000 mS/cm
	Resolution (cc dependent)	0.001 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1...3 points
	Standards	3 pre-programmed 3 user specified
	Cell constant (cc)	0.07...13 cm-1
	Temperature compensation	-5...+105°C
	Reference temperature	20°...40°C
	Temperature coefficient	natural waters (EN27888)
	Range lock	✓
	Capacitive compensation	✓
RESISTIVITY	Range	0...200 MΩ.cm
	Resolution	1 Ω.cm
SALINITY	Range	0...70
	Reference temperature	15°C
TDS	Range	0...100 g/l
	Resolution	0.01 mg/l
µW	Range	0...400000 µW

TEMPERATURE	Range	-30...+130°C
	Resolution	0.1°C
	Accuracy	0.1°C
	Calibration	1 point
CHANNELS	Measurement	3 (conductivity: 2)
	Temperature	3
INPUTS	Measurement	3 BNC, 10^{12} Ω
	Temperature	3x2 banana, for Pt1000
CALIBRATION	Reminder	0...999 h
	GLP	✓
DISPLAY	LCD	240x64 pixels
	White back-light	✓
	Hold function	✓
	Selectable resolution	✓
	Real time clock	✓
COMMUNICA-TION	Interface with computer	USB/RS232 or Ethernet/RS232
	Baud rate	1200...115200 b/s
	Printer	✓
DATA-LOGGING	Data sets	12000 + °C/date/time
	Modes	all
	Manual or timed	✓
	Interval	1...9999 s
SECURITY	Password protection	✓
AMBIENT CONDITIONS	Temperature	0...40°C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	100...240 VAC, 50/60 Hz
	Low voltage	9...15 VDC
DIMENSIONS	WxDxH	26x18x9 cm
WEIGHT	Meter	1 kg

Ordering codes

Code	Description
C3050	Bio-electronic meter (USB version) + USB cable
C3051	Bio-electronic meter (Ethernet version) + UTP cable
C3050T	Meter kit complete: meter + pH/ORP electrode SP35B + conductivity electrode SK20T+ 2x50 ml buffers (pH 4 and 7) + 50 ml conductivity standard (0.01 M KCl) + 50 ml electrolyte (3M KCl) + 50 ml redox standard (358 mV) + flexible electrode holder SH300
AP414	Serial printer
SH300	Flexible electrode holder (optional)
ADAPT-CAR	Car adaptor, 12 V (optional)
➔ **Supplied with a mains adaptor (100...240 VAC, EU/US) and USB or UTP cable.** Add -UK for UK plug versions, -CH for Swiss plug versions.	

Measurement Channels	**8 (conductivity: 2)**
Temperature Channels	**2**
pH	-10.000...+20.000 pH
mV	±2000.0 mV
Ion	0.01 ng/l...100 g/l
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0.0...70.0
TDS	0...100 g/l
Temperature	-30.0...+130.0°C
Warranty	36 months
Made in Belgium	

Eight independent channels for all measurements!

Description

With 8 multi-parameter measurement channels and 2 temperature channels the C3060 can perform 8 different measurements at the same time. Each channel has it's own measurement hardware. All values can be shown simultaneously on the display.

All 8 gold plated BNC connectors each accepts different electrodes of which 2 connectors also accept conductivity electrodes. There is no interference between the channels when measuring pH/ORP/Ion and conductivity in the same solution.

Besides the pre-programmed pH buffers and EC standards, you can also add your own buffer and standard tables. Not just a certain value at a certain temperature but the complete temperature related table of your specific buffer. Add up to 5 pH buffers and 3 EC standards of your own choice and use them as if they are built-in.

Two temperature inputs are independent from measurement channels. ATC for each channel can be selected from any of the temperature inputs.

The device can be connected to a PC and completely controlled via USB/RS232. Both software and communication protocol can be downloaded from our website.

Highlights

Multichannel up to 8 measurements can be performed at the same time and simultaneously or individually shown on the display. Each channel can measure 2 times per second.

No interference between pH/ORP/Ion and conductivity electrodes in the same solution

Custom calibration tables allows the user to add complete buffer/standard-temperature relation tables. With this feature the built-in tables can be extended with your own tables. Tables can be entered via a device menu or uploaded from a PC.

Wide Display shows up to 8 channels (selectable) at the same time including temperature and date/time.

Stability indicator ensures visualisation when measurement has stabilised.

Stability algorithm ensures stable readings with ability to detect fast changes.

Hold function allows to freeze the display

Selectable resolution for more stable readings for mV and pH.

Range lock for conductivity measurements.

Capacitive compensation eliminates the capacitive component of the electrode and cable at conductivity measurements

Galvanic isolated USB interface eliminates ground loop effects when connected to a PC.

GPL report can be shown on the display or sent to the digital port.

Pre-programmed standards

pH: 1.68, 2.00, 4.00, 4.01, 6.87, 6.99, 9.18, 9.21, 10.01, 12.00, 12.45 (at 25°C)
Conductivity: 1413 µS/cm, 12.88 mS/cm, 111.8 mS/cm (at 25°C)

Free software and firmware updates downloadable from www.consort.be

Specifications

pH	Range	-10.000...+20.000 pH
	Resolution	0.001 pH
	Accuracy	0.1% ± 1 digit
	Calibration	1...5 points
	Buffers	11 pre-programmed 5 user specified
	Temperature compensation	-5.0...+105.0°C
	ISO-pH	6.000...8.000 pH
	Slope	80.0...120.0%
	Zero point (Eo)	±999.0 mV
	Selectable Resolution	✓
mV	Range	±2000.0 mV
	Resolution	0.1 mV
	Accuracy	0.1% ± 1 digit
	Calibration	1 point
	Selectable Resolution	✓
CONDUCTIVITY	Range (cc dependent)	0...2000 mS/cm
	Resolution (cc dependent)	0.001 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1...3 points
	Standards	3 pre-programmed 3 user specified
	Cell constant (cc)	0.07...13 cm-1
	Temperature compensation	-5...+105°C or off
	Reference temperature	20°, 25°C
	Temperature coefficient	natural waters (EN27888)
	Range lock	✓
	Capacitive compensation	✓
RESISTIVITY	Range	0...200 MΩ.cm
	Resolution	1 Ω.cm
SALINITY	Range	0.0...70.0
	Reference temperature	15°C
TDS	Range	0...100.0 g/l
	Resolution	0.01 mg/l
TEMPERATURE	Range	-30.0...+130.0°C
	Resolution	0.1°C
	Accuracy	0.1°C
	Calibration	1 point

ION	Range	0.01 ng/l...100 g/l
	Resolution	3 digits
	Accuracy	0.5% ± 1 digit
	Calibration	2...5 points + blank
CHANNELS	Measurement	8
	Temperature	2
INPUTS	Measurement	8 BNC, $10^{12}\Omega$
	Temperature	2x2 banana, for Pt1000
CALIBRATION	Reminder	0...999 h
	GLP	✓
DISPLAY	LCD	240x64 pixels
	White back-light	✓
	Hold function	✓
	Selectable resolution	✓
	Real time clock	✓
	Built-in help	✓
	Languages	English
		Dutch
		French
		German
COMMUNICA-TION	Interface with computer	USB/RS232
	Baud rate	1200...115200 b/s
	Printer	✓
DATA-LOGGING	Data sets	12000 + °C/date/time
	Modes	all
	Manual or timed	✓
	Interval	1...9999 s
SECURITY	Password protection	✓
AMBIENT CONDITIONS	Temperature	0...40°C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	100...240 VAC, 50/60 Hz
	Low voltage	9...15 VDC
DIMENSIONS	WxDxH	26x18x9 cm
WEIGHT	Meter	1 kg

Ordering codes

Code	Description
C3060	pH/Ion/conductivity/ISE meter
AP414	Serial printer
SH300	Flexible electrode holder (optional)
ADAPT-CAR	Car adaptor, 12 V (optional)
➔ **Supplied with a mains adaptor (100...240 VAC, EU/US) and USB or UTP cable.** Add -UK for UK plug versions, -CH for Swiss plug versions.	

Measurement Channels	**2**
Temperature Channels	**2**
pH	-10.000...+20.000 pH
mV	±2000.0 mV
Ion (C3230 only)	0.01 ng/l...100 g/l
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0.0...70.0
TDS	0...100.0 g/l
Dissolved oxygen	0...60.00 mg/l 0...600%
Air pressure	600...1300 hPa
Temperature	-30.0...+130.0°C
Warranty	36 months
Made in Belgium	

Two independent channels for all measurements!

Description

The C3210 and C3230 instruments are full parameter dual channel instruments. Each channel has it's own measurement hardware. All values can be displayed simultaneously on the screen. There is no interference between the channels when measuring pH/ORP/ Ion and conductivity in the same solution!
2 sets of gold plated BNC connectors of which each accepts different electrodes, including conductivity electrodes. Gold plating prevents corrosion of BNC connectors. Via an easy to use menu system, the device can be configured for your measurements.
A built-in help system will help you through all steps to use the instrument successfully.

Besides the pre-programmed pH buffers and EC standards, you can also add your own buffer and standard tables. Not just a certain value at a certain temperature but the complete temperature related table of your specific buffer. Add up to 5 pH buffers and 3 EC standards of your own choice and use them as if they are built-in.

Two temperature inputs are independent from measurement channels. ATC for each channel can be selected from any of the temperature inputs. The device can be connected to a PC and completely controlled via USB/RS232.
Both software and communication protocol can be downloaded from our website.

Highlights

Multichannel up to 2 measurements can be performed at the same time and simultaneously or individually shown on the display. Each channel can measure 2 times per second.

No interference between pH/ORP/Ion and conductivity electrodes in the same solution

Custom calibration tables allows the user to add complete buffer/standard-temperature relation tables. With this feature the built-in tables can be extended with your own tables. Tables can be entered via a device menu or uploaded from a PC.

Wide Display shows 2 channels at the same time including temperature and date/time.

Stability indicator ensures visualisation when the measurement has stabilised.

Stability algorithm ensures stable readings with ability to detect fast changes.

Hold function allows to freeze the display

Selectable resolution for more stable readings of mV, pH and DO.

Range lock for conductivity measurements.

Capacitive compensation eliminates the capacitive component of the electrode and cable when measuring low conductivities.

Galvanic isolated USB interface eliminates ground loop effects when connected to a PC.

GPL report can be shown on the display or sent to the digital port.

Pre-programmed standards
pH: 1.68, 2.00, 4.00, 4.01, 6.87, 6.99, 9.18, 9.21, 10.01, 12.00, 12.45 (at 25°C)
Conductivity: 1413 µS/cm, 12.88 mS/cm, 111.8 mS/cm (at 25°C)

Free software and firmware updates downloadable from www.consort.be

Specifications

pH	Range	-10.000...+20.000 pH
	Resolution	0.001 pH
	Accuracy	0.1% ± 1 digit
	Calibration	1...5 points
	Buffers	11 pre-programmed 5 user specified
	Temperature compensation	-5.0...+105.0°C
	ISO-pH	6.000...8.000 pH
	Slope	80.0...120.0%
	Zero point (Eo)	±999.0 mV
	Selectable Resolution	✓
mV	Range	±2000.0 mV
	Resolution	0.1 mV
	Accuracy	0.1% ± 1 digit
	Calibration	1 point
	Selectable Resolution	✓
CONDUCTIVITY	Range (cc dependent)	0...2000 mS/cm
	Resolution (cc dependent)	0.001 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1...3 points
	Standards	3 pre-programmed 3 user specified
	Cell constant (cc)	0.07...13 cm-1
	Temperature compensation	-5...+105°C or off
	Reference temperature	20°, 25°C
	Temperature coefficient	natural waters (EN27888)
	Range lock	✓
	Capacitive compensation	✓
RESISTIVITY	Range	0...200 MΩ.cm
	Resolution	1 Ω.cm
SALINITY	Range	0.0...70.0
	Reference temperature	15°C
TDS	Range	0...100.0 g/l
	Resolution	0.01 mg/l
DISSOLVED OXYGEN	Range	0...60.00mg/l
	Resolution	0.01 mg/l
	Accuracy	1% ± 1 digit
	Calibration	1 point
	Temperature compensation	0...50°C
	Salinity compensation	0...40
	Air pressure compensation	600...1300 hPa
	Selectable Resolution	✓

TEMPERATURE	Range	-30.0...+130.0°C
	Resolution	0.1°C
	Accuracy	0.1°C
	Calibration	1 point
ION (C303x only)	Range	0.01 ng/l...100 g/l
	Resolution	3 digits
	Accuracy	0.5% ± 1 digit
	Calibration	2...5 points + blank
AIR PRESSURE	Range	600...1300 hPa
	Calibration	1 point
CHANNELS	Measurement	2
	Temperature	2
INPUTS	Measurement	2 BNC, $10^{12}\Omega$
	Temperature	2x2 banana, for Pt1000
CALIBRATION	Reminder	0...999 h
	GLP	✓
DISPLAY	LCD	240x64 pixels
	White back-light	✓
	Hold function	✓
	Selectable resolution	✓
	Real time clock	✓
	Built-in help	✓
	Languages	English
		Dutch
		French
		German
COMMUNICATION	Interface with computer	USB/RS232
	Baud rate	1200...115200 b/s
	Printer	✓
DATA-LOGGING	Data sets	12000 + °C/date/time
	Modes	all
	Manual or timed	✓
	Interval	1...9999 s
SECURITY	Password protection	✓
AMBIENT CONDITIONS	Temperature	0...40°C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	100...240 VAC, 50/60 Hz
	Low voltage	9...15 VDC
DIMENSIONS	WxDxH	26x18x9 cm
WEIGHT	Meter	1 kg

Ordering codes

Code	Description
C3210	pH/conductivity/DO meter
C3230	pH/Ion/conductivity/DO meter
C32xxP	pH meter kit, glass electrode: C30xx + pH/ATC electrode SP20T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl)
C32xxPE	pH meter kit, epoxy electrode: C30xx + pH/ATC electrode SP10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl)
C32xxK	EC meter kit, glass electrode: C30xx + conductivity/ATC electrode SK20T + 50 ml conductivity standard (0.01 M KCl)
C32xxKE	EC meter kit, epoxy electrode: C30xx + conductivity/ATC electrode SK10T + 50 ml conductivity standard (0.01 M KCl)
C32xxPK	pH/EC meter kit, glass electrodes: C30xx + pH/ATC electrode SP20T + conductivity/ATC electrode SK20T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl)
C32xxPKE	pH/EC meter kit, epoxy electrodes: C30xx + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl)
C32xxZ	Oxygen meter: C30xx + dissolved oxygen electrode SZ10T
C32xxT	Complete meter kit, pH and EC glass electrodes: C30xx + pH/ATC electrode SP20T + conductivity/ATC electrode SK20T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + dissolved oxygen electrode SZ10T
C32xxTE	Complete meter kit, pH and EC epoxy electrode: C30xx + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + dissolved oxygen electrode SZ10T
C32xxX	Meter kit without electrodes: meter + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl)
AP414	Serial printer
SH300	Flexible electrode holder (optional)
➔ **Supplied with a mains adaptor (100...240 VAC, EU/US) and USB or UTP cable.** Add -UK for UK plug versions, -CH for Swiss plug versions.	

- **Gold Plated BNC**
- **Portable**
- **One input handles all electrodes**
- **Pre-programmed standards**
  pH: 1.68, 2.00, 4.00, 4.01, 6.87, 6.99, 9.18, 9.21, 10.01, 12.00, 12.45 (at 25°C) + 5 user editable
  Conductivity: 1413 µS/cm, 12.88 mS/cm, 111.8 mS/cm (at 25°C) + 3 user editable
- **Stability algorithm with intuitive indicator**
- **Hold function**
- **Selectable resolution**
- **Range lock**
- **Capacitive compensation**
- **Galvanic isolated USB interface**
- **High Accuracy**
- **Free software and firmware updates**

CONV USBD RS232

The C6000 series are all full-parameter portable instruments. With the optional CONV_USBD_RS232 it's possible to convert the USB interface to RS232. Suitable for connecting an AP414 printer to the meter.

Specifications depending on model

Measurement Channels	**1**
Temperature Channels	**1**
pH	-2.000...+16.000 pH
mV	±2000.0 mV
Ion	0.01 ng/l...100 g/l
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0.0...70.0
TDS	0...100.0 g/l
Dissolved oxygen	0...60.00 mg/l 0...600%
Air pressure	600...1300 hPa
Temperature	-5.0...+105.0°C
Warranty	36 months
Made in Belgium	

Code	Description
C6010	pH/conductivity/DO meter
C6030	pH/Ion/conductivity/DO meter

Code	Description	Content
C60xxP	pH meter kit, glass electrode	meter + pH electrode SP20T + 2x50ml pH buffers + 50ml electrolyte + carrying case
C60xxPE	pH meter kit, epoxy electrode	meter + pH electrode SP10T + 2x50ml pH buffers + 50ml electrolyte + carrying case
C60xxK	EC meter kit, glass electrode	meter + EC electrode SK20T + 50ml EC standard + carrying case
C60xxKE	EC meter kit, epoxy electrode	meter + EC electrode SK10T + 50ml EC standard + carrying case
C60xxPK	pH/EC meter kit, glass electrodes	meter + pH electrode SP20T + EC electrode SK20T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard + carrying case
C60xxPKE	pH/EC meter kit, epoxy electrodes	meter + pH electrode SP10T + EC electrode SK10T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard + carrying case
C60xxZ	Oxygen meter kit	meter + DO electrode SZ10T + carrying case
C60xxT	Complete meter kit, glass electrodes (DO epoxy)	meter + pH electrode SP20T + EC electrode SK20T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard + DO electrode SZ10T + carrying case
C60xxTE	Complete meter kit, epoxy electrode	meter + pH electrode SP10T + EC electrode SK10T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard + DO electrode SZ10T + carrying case
C60xxX	Meter kit without electrodes	meter + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard + carrying case
CONV_USBD_RS232	USB device to RS232 converter	
AP414	Serial printer	
SH300	Flexible electrode holder	
Kits are available for each meter. Replace xx with correct meter number. F.i. C6010P, C6030T, etc...		

Measurement Channels	**1**
Temperature Channels	**1**
pH	-2.000...+16.000 pH
mV	±2000.0 mV
Ion (C6030 only)	0.01 ng/l...100 g/l
Conductivity	0...2000 mS/cm
Resistivity	0...200 MΩ.cm
Salinity	0.0...70.0
TDS	0...100.0 g/l
Dissolved oxygen	0...60.00 mg/l 0...600.0%
Air pressure	600...1300 hPa
Temperature	-5.0...+105.0°C
Warranty	36 months
Made in Belgium	

Description

The C6010 and C6030 instruments are single channel multi parameter analysers suitable as bench-top and as portable device.
A corrosion resistant gold plated BNC connector ensures a long life in even harsh environments. The single BNC connection accepts different electrodes, including conductivity electrodes.

Via an easy to use menu system, the device can be configured to do your measurements. A built-in help system will help you through all steps for successfully use the instrument.

Besides the pre-programmed pH buffers and EC standards, you can also add your own buffer and standard tables. Not just a certain value at a certain temperature but the complete temperature related table of your specific buffer. Add up to 5 pH buffers and 3 EC standards of your own choice and use them as if they are built-in.

The device can be connected to a PC and completely controlled. Both software and communication protocol can be downloaded from our website.

Highlights

Portable and bench-top combined in 1 instrument.

Custom calibration tables allows the user to add complete buffer/standard-temperature relation tables. With this feature the built-in tables can be extended with your own tables. Tables can be entered via a device menu or uploaded from a PC.

Stability indicator ensures visualisation when measurement has stabilised.

Stability algorithm ensures stable readings with ability to detect fast changes.

Hold function allows to freeze the display

Selectable resolution for more stable readings for mV, pH and DO.

Range lock for conductivity measurements.

Capacitive compensation eliminates the capacitive component of the electrode and cable at conductivity measurements

Galvanic isolated USB interface eliminates ground loop effects when connected to a PC.

GPL report can be shown on the display or sent to the digital port.

Pre-programmed standards
pH: 1.68, 2.00, 4.00, 4.01, 6.87, 6.99, 9.18, 9.21, 10.01, 12.00, 12.45 (at 25°C)
Conductivity: 1413 µS/cm, 12.88 mS/cm, 111.8 mS/cm (at 25°C)

Free software and firmware updates downloadable from www.consort.be

Specifications

pH	Range	-2.000...+16.000 pH
	Resolution	0.001 pH
	Accuracy	0.1% ± 1 digit
	Calibration	1...5 points
	Buffers	11 pre-programmed 5 user specified
	Temperature compensation	-5.0...+105.0°C
	ISO-pH	6.000...8.000 pH
	Slope	80.0...120.0%
	Zero point (Eo)	±999.0 mV
	Selectable Resolution	✓
mV	Range	±2000.0 mV
	Resolution	0.1 mV
	Accuracy	0.1% ± 1 digit
	Calibration	1 point
	Selectable Resolution	✓
CONDUCTIVITY	Range (cc dependent)	0...2000 mS/cm
	Resolution (cc dependent)	0.001 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1...3 points
	Standards	3 pre-programmed 3 user specified
	Cell constant (cc)	0.07...13 cm-1
	Temperature compensation	-5...+105°C
	Reference temperature	20°, 25°C or off
	Temperature coefficient	natural waters (EN27888)
	Range lock	✓
	Capacitive compensation	✓
RESISTIVITY	Range	0...200 MΩ.cm
	Resolution	1 Ω.cm
SALINITY	Range	0.0...70.0
	Reference temperature	15°C
TDS	Range	0...100.0 g/l
	Resolution	0.01 mg/l
DISSOLVED OXYGEN	Range	0...60.00mg/l
	Resolution	0.01 mg/l
	Accuracy	1% ± 1 digit
	Calibration	1 point
	Temperature compensation	0...50°C
	Salinity compensation	0...40
	Air pressure compensation	600...1300 hPa
	Selectable Resolution	✓

TEMPERATURE	Range	-5.0...+105.0°C
	Resolution	0.1°C
	Accuracy	0.1°C
	Calibration	1 point
ION (C6030 only)	Range	0.01 ng/l...100 g/l
	Resolution	3 digits
	Accuracy	0.5% ± 1 digit
	Calibration	2...5 points + blank
AIR PRESSURE	Range	600...1300 hPa
	Calibration	1 point
CHANNELS	Measurement	1
	Temperature	1
INPUTS	Measurement	1 BNC, 10^{12}Ω
	Temperature	1x2 banana, for Pt1000
CALIBRATION	Reminder	0...999 h
	GLP	✓
DISPLAY	LCD	128x64 pixels
	White back-light	✓
	Hold function	✓
	Selectable resolution	✓
	Real time clock	✓
	Built-in help	✓
	Languages	English
		Dutch
		French
		German
COMMUNICA-TION	Interface with computer	USB
	Baud rate	1200...115200 b/s
DATA-LOGGING	Data sets	12000 + °C/date/time
	Modes	all
	Manual or timed	✓
	Interval	1...9999 s
SECURITY	Password protection	✓
AMBIENT CONDITIONS	Temperature	0...40°C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	100...240 VAC, 50/60 Hz
	Low voltage	9...15 VDC
	Batteries (included)	4x1.2 V, AA, NiMH
DIMENSIONS	WxDxH	12x25x5 cm
WEIGHT	Meter	600g

Ordering codes

Code	Description
C6010	pH/conductivity/DO meter (USB version)
C6030	pH/Ion/conductivity/DO meter (USB version)
C60xxP	pH meter kit, glass electrode: C60xx + pH/ATC electrode SP20T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + carrying case
C60xxPE	pH meter kit, epoxy electrode: C60xx + pH/ATC electrode SP10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + carrying case
C60xxPCH	pH meter kit, spear electrode: C60xx + pH/ATC spear electrode SP24T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + carrying case
C60xxK	EC meter kit, glass electrode: C60xx + conductivity/ATC electrode SK20T + 50 ml conductivity standard (0.01 M KCl) + carrying case
C60xxKE	EC meter kit, epoxy electrode: C60xx + conductivity/ATC electrode SK10T + 50 ml conductivity standard (0.01 M KCl) + carrying case
C60xxPK	pH/EC meter kit, pH and EC glass electrodes: C60xx + pH/ATC electrode SP20T + conductivity/ATC electrode SK20T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
C60xxPKE	pH/EC meter kit, pH and EC epoxy electrodes: C60xx + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
C60xxZ	DO meter kit: C60xx + dissolved oxygen electrode SZ10T + carrying case
C60xxT	pH/EC/DO meter kit, pH and EC glass electrodes: C60xx + pH/ATC electrode SP20T + conductivity/ATC electrode SK20T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + dissolved oxygen electrode SZ10T + carrying case
C60xxTE	pH/EC/DO meter kit, pH and EC epoxy electrodes: C60xx + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + dissolved oxygen electrode SZ10T + carrying case
C60xxX	Meter kit without electrodes: meter + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
SH300	Flexible electrode holder (optional)
ADAPT-CAR	Car adaptor, 12 V (optional)

➔ **Supplied with a mains adaptor (100...240 VAC, EU/US) and USB cable.** Add -UK for UK plug versions, -CH for Swiss plug versions.

Description

This free software package is specially designed to collect, store and manage data from the C3000 series, C6000 series and T8700 series controllers when equipped with a digital interface.

DIS-1 runs under Windows™ 2000 or higher and can be downloaded from www.consort.be

Highlights

Data acquisition. All measurements of all instruments are processed at the same time, each in its own window. Data is collected on-line at a programmable interval determined by the program (1 s ... 24 h).

Starting By using a program-key, the data-logging will start automatically after opening the program. Data-logging can be stopped or continued at any moment. Data, which is stored in the internal memory of the connected instrument, can also be read and processed.

Table Data is always stored in a table. Comments can be added to each line in a special information column.

Files All data is saved in a user defined file. Just open the file to view, process or print the stored data. The incoming data can be stored immediately in a file. All measurements are saved in CVS format which is easily transferred into spreadsheets.

Graphs are generated using automatic or user defined settings. The number of visible values can be changed at any time. Programmable alarm limits for each graph allow to print a report indicating when limits have been exceeded and it shows statistics about minima, maxima and averages.

Communication port: RS232 or USB

Terminal shows exactly how data is receive. It enables the user to check for possible errors in the data transmission.

Settings The style of each window can be set up separately. Choose fonts, colours etc... All settings are stored in a configuration file and automatically recalled when opening the program. Documented printouts will show:

- file name.
- date and time.
- name of the operator.
- name of the company.
- name of the division.
- optional notes by the operator.

Functions are accessible through the menu. Only valid options appear in the menu to eliminate set-up errors. Special buttons, icons and short-keys allow the user to easily access the most useful functions. The contents of each window can be transferred to other programs by using a copy function.

- **Gold Plated BNC**
- **Pre-programmed standards**
  pH: 1.68, 2.00, 4.00, 4.01, 6.87, 6.99, 9.18, 9.21, 10.01, 12.00, 12.45 (at 25°C)
  Conductivity: 1413 µS/cm, 12.88 mS/cm, 111.8 mS/cm (at 25°C)
- **Stability algorithm with intuitive indicator**
- **Easy to use**
- **Ideal for schools and small laboratories**
- **Large graphical display**
- **Accuracy at a budget**

SH300

SK10T

SP10T

SZ10T

The C1000 series are basic, yet complete and accurate bench-top meters. It can measure all common electrochemical parameters such as pH, ORP, Conductivity and Dissolved Oxygen. C1020 adds a larger conductivity range, Salinity, TDS and measurement storage capability.

Specifications depending on model

pH/MV Channels	**1**
EC/TDS/SAL/DO Channels	**1**
Temperature Channels	**1**
pH	0.00...14.00 pH
mV	±1000 mV
Conductivity	0...100 mS/cm
	0...1000 mS/cm
Salinity	0.0...70.0
TDS	0...100 g/l
Dissolved oxygen	0.00...20.00 mg
	0...200%
Temperature	0.0...+100.0°C
Warranty	36 months
Made in Belgium	

Code	Description
C1010	mV/pH/EC/DO meter
C1020	mV/pH/EC/SAL/TDS/DO meter

Code	Description	Content
C10xxP	pH meter kit, epoxy electrode	meter + pH electrode SP10T + 2x50ml pH buffers + 50ml electrolyte
C10xxK	EC meter kit, epoxy electrode	meter + EC electrode SK10T + 50ml EC standard
C10xxPK	pH/EC meter kit, epoxy electrodes	meter + pH electrode SP10T + EC electrode SK10T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard
C10xxZ	Oxygen meter kit	meter + DO electrode SZ10T
C10xxT	Complete meter kit, epoxy electrode	meter + pH electrode SP10T + EC electrode SK10T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard + DO electrode SZ10T
C10xxX	Meter kit without electrodes	meter + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard
SH300	Flexible electrode holder	
Kits are available for each meter. Replace xx with correct meter number. F.i. C1010P, C1020T, etc...		

pH/MV Channels	**1**
EC/TDS/SAL/DO Channels	**1**
Temperature Channels	**1**
pH	0.00...14.00 pH
mV	±1000 mV
Conductivity	0...100 mS/cm (C1010) 0...1000 mS/cm (C1020)
Salinity (C1020 only)	0.0...70.0
TDS (C1020 only)	0...100 g/l
Dissolved oxygen	0.00...20.00 mg 0...200%
Temperature	0.0...+100.0°C
Warranty	36 months
Made in Belgium	

Description

C1010 is the most basic, yet complete and accurate bench-top meter in our portfolio. It can measure all common electrochemical parameters such as pH, ORP, Conductivity and Dissolved Oxygen. This makes the C1010 an all-round instrument. C1020 adds a larger conductivity range, Salinity, TDS and measurement storage capability.

The large numbers on the graphical display make it easy to read the measurement. The instrument contains a stability indicator and stability algorithm for steady accurate readings.

Specifications

pH (C1020 only)	Range	0.00...14.00 pH
	Resolution	0.01 pH
	Accuracy	0.2% ± 1 digit
	Calibration	1...3 points
	Buffers	11 pre-programmed
	Temperature compensation	0...100°C
	ISO-pH	6...8 pH
	Slope	80...120%
mV	Range	±1000 mV
	Resolution	1 mV
	Accuracy	0.2% ± 1 digit
	Calibration	1 point
CONDUCTIVITY	Range (cc dependent)	0...100 mS/cm (C1010) 0...1000 mS/cm (C1020)
	Resolution (cc dependent)	0.1 µS/cm (C1010) 0.01 µS/cm (C1020)
	Accuracy	1% f.s. of range
	Calibration	1 point
	Standards	3 pre-programmed
	Cell constant (cc)	1 cm^{-1} ±30% (C1010) 0.1/1/10 cm-1 ±30% (C1020)
	Temperature compensation	0...100°C
	Reference temperature	20° or 25°C
	Temperature coefficient	natural waters (EN27888)
SALINITY (C1020 only)	Range	0...70
	Reference temperature	15°C
TDS (C1020 only)	Range	0...100.0 g/l
	Resolution	0.1 mg/l

DISSOLVED OXYGEN	Range	0.00...20.00 mg/l (0...200%)
	Resolution	0.01 mg/l (0.1%)
	Accuracy	1% ± 1 digit
	Calibration	1 point
	Temperature compensation	0...50°C
	Salinity compensation	0...40
	Air pressure compensation	800...1200 hPa
TEMPERATURE	Range	0...100°C
	Resolution	0.1°C
	Accuracy	0.5°C
	Calibration	1 point
INPUTS	pH/mV	BNC, 10^{12} Ω
	Conductivity/Dissolved oxygen	BNC
	Temperature	2 banana, for Pt1000
STORAGE MEMORY (C1020 only)	Data sets	300
CALIBRATION	GLP	✓
DISPLAY	LCD	128x64 pixels
	White back-light	✓
AMBIENT CONDITIONS	Temperature	0...40°C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	100...240 VAC, 50/60 Hz
	Low voltage	9...15 VDC
DIMENSIONS	WxDxH	13x18x10 cm
WEIGHT	Meter	600 gr

Ordering codes

Code	Description
C1010	pH/conductivity/DO meter
C1020	pH/conductivity/DO meter
C10xxP	PH meter kit: C10xx + pH/ATC electrode SP10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl)
C10xxK	EC meter kit: C10xx + conductivity/ATC electrode SK10T + 50 ml conductivity standard (0.01 M KCl)
C10xxPK	PH/EC meter kit: C10xx + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl)
C10xxZ	DO meter kit: C10xx + dissolved oxygen electrode SZ10T
C10xxT	pH/EC/DO meter kit: C10xx + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + dissolved oxygen electrode SZ10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl)
C10xxX	Meter kit without electrodes: meter + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl)

➔ **Supplied with a mains adaptor (100...240 VAC, EU/US).** Add -UK for UK plug versions, -CH for Swiss plug versions

- **Gold Plated BNC**
- **Pre-programmed standards**
  pH: 1.68, 2.00, 4.00, 4.01, 6.87, 6.99, 9.18, 9.21, 10.01, 12.00, 12.45 (at 25°C)
  Conductivity: 1413 µS/cm, 12.88 mS/cm, 111.8 mS/cm (at 25°C)
- **Stability algorithm with intuitive indicator**
- **Easy to use**
- **Ideal for schools and small laboratories**
- **Portable**
- **Accuracy at a budget**

SK10T

SP10T

SZ10T

The C5000 series are basic, yet complete and accurate portable meters. It can measure all common electrochemical parameters such as pH, ORP, Conductivity and Dissolved Oxygen. C5020 adds a larger conductivity range, Salinity, TDS and measurement storage capability.

With an optional car adaptor you can recharge batteries in the car.

Specifications depending on model

pH/MV Channels	**1**
EC/TDS/SAL/DO Channels	**1**
Temperature Channels	**1**
pH	0.00...14.00 pH
mV	±1000 mV
Conductivity	0...100 mS/cm
	0...1000 mS/cm
Salinity	0.0...70.0
TDS	0...100 g/l
Dissolved oxygen	0.00...20.00 mg
	0...200%
Temperature	0.0...+100.0°C
Warranty	36 months
Made in Belgium	

Code	Description
C5010	mV/pH/EC/DO meter
C5020	mV/pH/EC/SAL/TDS/DO meter

Code	Description	Content
C50xxP	pH meter kit, epoxy electrode	meter + pH electrode SP10T + 2x50ml pH buffers + 50ml electrolyte + carrying case
C50xxK	EC meter kit, epoxy electrode	meter + EC electrode SK10T + 50ml EC standard + carrying case
C50xxPK	pH/EC meter kit, epoxy electrodes	meter + pH electrode SP10T + EC electrode SK10T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard + carrying case
C50xxZ	Oxygen meter kit	meter + DO electrode SZ10T + carrying case
C50xxT	Complete meter kit, epoxy electrode	meter + pH electrode SP10T + EC electrode SK10T + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard + DO electrode SZ10T + carrying case
C10xxX	Meter kit without electrodes	meter + 2x50ml pH buffers + 50ml electrolyte + 50ml EC standard + carrying case
ADAPT-CAR	Car adaptor, 12 V	
Kits are available for each meter. Replace xx with correct meter number. F.i. C5010P, C5020T, etc...		

pH/MV Channels	**1**
EC/TDS/SAL/DO Channels	**1**
Temperature Channels	**1**
pH	0.00...14.00 pH
mV	±1000 mV
Conductivity	0...100 mS/cm (C5010) 0...1000 mS/cm (C5020)
Salinity (C5020 only)	0.0...70.0
TDS (C5020 only)	0...100 g/l
Dissolved oxygen	0.00...20.00 mg 0...200%
Temperature	0.0...+100.0°C
Warranty	36 months
Made in Belgium	

Description

C5010 is the most basic, yet complete and accurate portable meter in our portfolio. It can measure all common electrochemical parameters such as pH, ORP, Conductivity and Dissolved Oxygen. This makes the C5010 an all-round instrument. C5020 adds a larger conductivity range, Salinity, TDS and measurement storing capabilities.

The large numbers on the graphical display makes it easy to read the measurement. The instrument a stability indicator and stability algorithm for steady accurate readings.

Specifications

pH	Range	0.00...14.00 pH
	Resolution	0.01 pH
	Accuracy	0.2% ± 1 digit
	Calibration	1...3 points
	Buffers	11 pre-programmed
	Temperature compensation	0...100°C
	ISO-pH	6...8 pH
	Slope	80...120%
mV	Range	±1000 mV
	Resolution	1 mV
	Accuracy	0.2% ± 1 digit
	Calibration	1 point
CONDUCTIVITY	Range (cc dependent)	0...100 mS/cm (C5010) 0...1000 mS/cm (C5020)
	Resolution (cc dependent)	0.1 µS/cm (C5010) 0.01 µS/cm (C5020)
	Accuracy	1% f.s. of range
	Calibration	1 point
	Standards	3 pre-programmed
	Cell constant (cc)	1 cm^{-1} ±30% (C5010) 0.1/1/10 cm-1 ±30% (C5020)
	Temperature compensation	0...100°C
	Reference temperature	20° or 25°C
	Temperature coefficient	natural waters (EN27888)
SALINITY (C5020 only)	Range	0...70
	Reference temperature	15°C
TDS (C5020 only)	Range	0...100.0 g/l
	Resolution	0.1 mg/l

DISSOLVED OXYGEN	Range	0.00...20.00 mg/l (0...200%)
	Resolution	0.01 mg/l (0.1%)
	Accuracy	1% ± 1 digit
	Calibration	1 point
	Temperature compensation	0...50°C
	Salinity compensation	0...40
	Air pressure compensation	800...1200 hPa
TEMPERATURE	Range	0...100°C
	Resolution	0.1°C
	Accuracy	0.5°C
	Calibration	1 point
INPUTS	pH/mV	BNC, 10^{12} Ω
	Conductivity/Dissolved oxygen	BNC
	Temperature	2 banana, for Pt1000
STORAGE MEMORY (C5020 only)	Data sets	300
CALIBRATION	GLP	✓
DISPLAY	LCD	122x32 pixels
	White back-light	✓
AMBIENT CONDITIONS	Temperature	0...40°C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	100...240 VAC, 50/60 Hz
	Low voltage	9...15 VDC
	Batteries (included)	4x1.2 V, NiMH
DIMENSIONS	WxDxH	13x18x10 cm
WEIGHT	Meter	600 gr

Ordering codes

Code	Description
C5010	pH/conductivity/DO meter
C5020	pH/conductivity/DO meter
C50xxP	PH meter kit: C50xx + pH/ATC electrode SP10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + carrying case
C50xxK	EC meter kit: C50xx + conductivity/ATC electrode SK10T + 50 ml conductivity standard (0.01 M KCl) + carrying case
C50xxPK	PH/EC meter kit: C50xx + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
C50xxPCH	pH meter kit, spear type: C50xx + pH/ATC spear electrode SP24T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + carrying case
C50xxZ	DO meter kit: C50xx + dissolved oxygen electrode SZ10T + carrying case
C50xxT	pH/EC/DO meter kit: C50xx + pH/ATC electrode SP10T + conductivity/ATC electrode SK10T + dissolved oxygen electrode SZ10T + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte (3M KCl) + 50 ml conductivity standard (0.01 M KCl) + carrying case
C50xxX	Meter kit without electrodes: meter + 2x50 ml buffers (pH 4 and 7) + 50 ml electrolyte + 50 ml conductivity standard (0.01 M KCl) + carrying case
ADAPT-CAR	Car adaptor, 12 V (optional)

➔ **Supplied with a mains adaptor (100...240 VAC, EU/US).** Add -UK for UK plug versions, -CH for Swiss plug versions

Measurement Channels	**4...448**
pH	0...14 pH
mV	±2000 mV
Ion	0...100 g/l
Conductivity	0...2000 mS/cm
TDS	0...100 g/l
Dissolved oxygen	0...60 mg/l
Temperature	-5...+105°C
Warranty	36 months
Made in Belgium	

Large measurement channel array.

4...28 pH/mV/Ion channels
4...28 conductivity channels
4...28 oxygen channels
4...28 temperature channels

Description

Our successful D230 system is a configurable large measurement array. With up to 16 fully loaded D230 racks connected to each other the complete D230 system can measure up to 448 channels.

The system is based upon a D230 rack and 2 different measurement modules: D291 and D292. D291 is 4-channel pH/mV/Ion/Dissolved Oxygen measurement modules. D292 is a 4-channel Conductivity/TDS module. Both modules can be used in the D230 system so you can configure a D230 as you wish.

The data acquisition software of the D230 system is freely downloadable from our website. It is specially designed to control, collect and store data of a D230 system. I runs under Windows 2000 or higher. All channels are processed at the same time, each in its own window. The software automatically detects the maximum number and type of available channels. Data is collected on-line at a programmable interval determined by the program (4s...24h)

Highlights

Multichannel up to 448 measurements can be performed at the same time and simultaneous displayed on the screen.

No interference between pH/ORP/Ion and conductivity electrodes in the same solution

Free data acquisition software to control, collect and store data of a D230 system.

Table Data is always stored in a table. Each module has its own programmable table containing an unlimited number of lines. Comments can easily be added to each line in a special information column.

Starting Data-logging can start/stop automatically or at a programmable date/time. Data-logging can be stopped or continued at any moment.

Files All data is saved in a user defined file. Just open the file to view, process or print the stored data. All measurements are saved in CSV format which is easily transferred into spreadsheets.

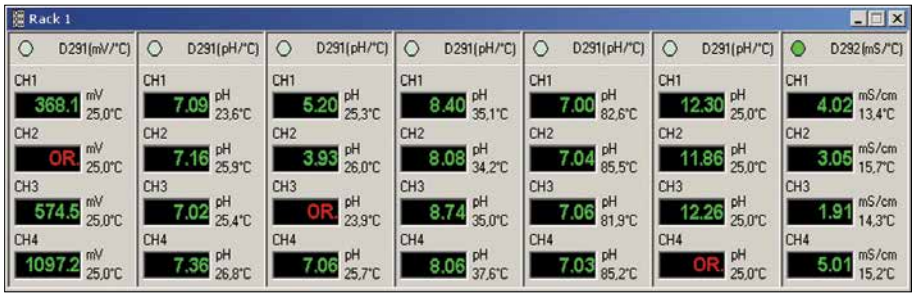
Graphs Graphs are generated using automatic or user defined settings. The number of visible values can be changed at any time. Programmable alarm limits for each graph allow to print a report indicating when limits have been exceeded. Shows statistics about minima, maxima, averages etc...

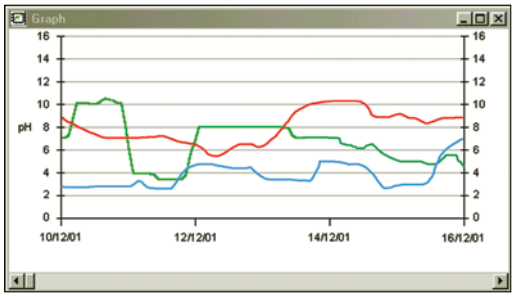
Settings Languages: English, Dutch or French. The style of each window can be set up separately. Choose fonts, colours etc... Documented printouts will show:

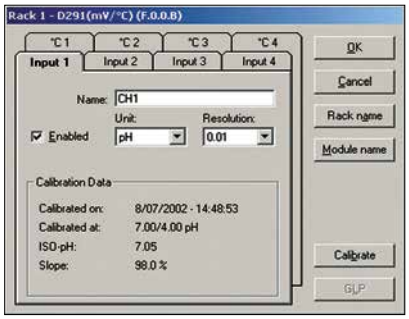
- file name.
- date and time.
- name of the operator.
- name of the company.
- name of the division.
- optional notes by the operator.

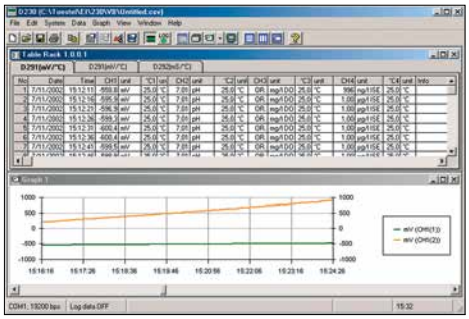
All settings are stored in a configuration file and automatically recalled when opening the program.

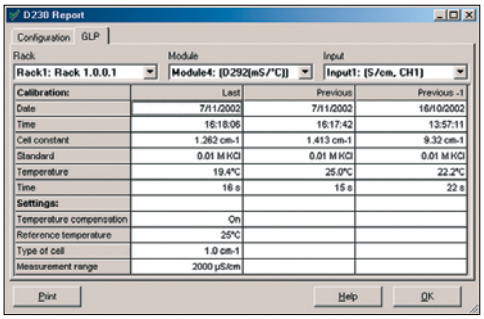
Functions All functions are accessible through the menu. Only valid options appear in the menu to eliminate set-up errors. Special buttons, icons and short-keys allow the user to easily access the most useful functions. The contents of each window can be transferred to other programs by using a copy function. Tile or cascade the windows and arrange the icons fully automatically or rearrange them manually.











Specifications

pH	Range	0...14 pH
	Resolution	0.001 pH
	Accuracy	0.1% ± 1 digit
	Calibration	1...2 points
	Buffers	9 pre-programmed 2 user specified
	Temperature compensation	-5...+105°C
	ISO-pH	6...8 pH
	Slope	80...120%
mV	Range	±2000 mV
	Resolution	0.1 mV
	Accuracy	0.1% ± 1 digit
	Calibration	1 point
Ion	Range	0.01 ng/l...100 g/l
	Resolution	3 digits
	Accuracy	0.5% ± 1 digit
	Calibration	2 points + blank
CONDUCTIVITY	Range (cc dependent)	0...2000 mS/cm
	Resolution (cc dependent)	0.001 µS/cm
	Accuracy	0.5% f.s. of range
	Calibration	1 point
	Standards	3 pre-programmed 2 user specified
	Cell constant (cc)	0.01/0.1/1/10 cm^{-1} ±30%
	Temperature compensation	-5...+105°C
	Reference temperature	20° or 25°C
	Temperature coefficient	natural waters (EN27888)
	Capacitive compensation	✓
TDS	Range	0...100 g/l
	Resolution	0.01 mg/l

DISSOLVED OXYGEN	Range	0...60 mg/l (0...600%)
	Resolution	0.01 mg/l (0.1%)
	Accuracy	1% ± 1 digit
	Calibration	1 point
	Temperature compensation	0...50°C
	Salinity compensation	0...40
	Air pressure compensation	800...1200 hPa
TEMPERATURE	Range	-5...+105°C
	Resolution	0.1°C
	Accuracy	0.3°C
	Calibration	1 point
CHANNELS	pH/mV/Ion/Dissolved oxygen	4...28
	Conductivity	4...28
	Temperature	4...28
INPUTS	pH/mV/Ion/Dissolved oxygen	BNC, 10^{12} Ω
	Conductivity	BNC
	Temperature	2 banana, for Pt1000
CALIBRATION	GLP	✓
DATA-LOGGING	Data sets	unlimited
	Interval	4 s ... 24 h
SOFTWARE	Languages	EN, NL, FR
AMBIENT CONDITIONS	Temperature	0...40°C
	Humidity	0...95%, non condensing
POWER SUPPLY	Mains	210...250 VAC, 50/60 Hz 110...130 VAC, 50/60 Hz
DIMENSIONS	WxDxH	48x24x13 cm
WEIGHT	Meter	10 kg

Ordering codes

Code	Description
D230	Data-logger: central unit for 7 modules + software + RS232 cable
D291	Module for pH/mV/Ion/O_2/°C with 4+4 channels
D292	Module for conductivity/TDS/°C with 4+4 channels
D298	Data cable to connect 2 data-loggers with each other (optional)
D299	Blanc front panel to cover unused module space (optional)
➔ **Supplied with a European mains cord.** Add -US for US plug 120 VAC version, -UK for UK plug version, -CH for Swiss plug version,	

pH measurement in different substances

Gas

The only way to measure the pH of a gas is to dissolve it into distilled water and measure the mixture. Technically, the pH of the distilled water/gas mixture will be that of the gas.

Soil

Prepare the sample by combining a 10 g soil sample with distilled water (total volume should be 50 ml), mixing thoroughly, and allowing the mixture to settle for 10 minutes. Carefully insert the pH electrode and allow readings the stabilise.

Ethanol

You need a pH electrode with a low resistance pH bulb, and the reference portion of the electrode should have a double junction design with an outer chamber that is refillable.

Take a 10 ml aliquot of the regular 4 M KCl fill solution and dilute it to volume with the ethanol in a 100 ml volumetric flask. Use this solution to fill the reference chamber of the electrode.

Ethanol solutions require the correct type of liquid junction, that is, one that is easily renewed and cleaned. An open liquid junction or sleeve junction electrode is recommended. The proper functioning of the glass electrode depends on the hydration of the glass layer which takes place on the surface of the pH sensitive glass membrane during soaking and measurement in aqueous solutions.

As long as the electrode is frequently rehydrated, accurate measurements in non-aqueous or partly aqueous solutions such as ethanol are also possible. You are going to have dehydration of the pH bulb and reference junctions with the ethanol. You will have to switch out the electrodes for rehydration every few days. This can be accomplished by soaking in a slightly acidic buffer such as pH 4 buffer.

ORP Paradoxical measurement

The most common problem reported with regard to ORP determination in environmental water is that readings from various instruments (sometimes with exactly the same sensor type and electronics) differ by a significant margin (50-100 mV) even though the sensors are in the same container of water. To make the problem more perplexing, all of the sensors show identical readings in an ORP standard such as Zobell solution.

The exact explanation for this paradox is sometimes elusive, but there are at least three possible reasons for its occurrence.

1. ORP sensors can show a slow response in environmental water if the platinum button of the probe has been contaminated with extraneous material. Common contaminants include hard water deposits, oil/grease, or other organic matter. If the platinum electrodes in the above example are variably contaminated, then some of them (the more contaminated) will be likely to approach potentiometric equilibrium slower. Under this scenario, if left long enough all the sensors would read the same. However, it might take days for the contaminated sensors to reach their final value, and, therefore, they appear in the time frame of a sampling experiment (< 1 hour), to be different. Naturally, if the electrode contaminant is redox-active, either in itself or because it contains redox-active impurities, the reading from that sensor will exhibit erroneous readings that may never change unless the contaminant is removed.
2. In clean environmental water, there may be very few redox-active species present, and those that are present may be in very low concentration. In many cases, the concentration can be so low that the redox influence of the species is effectively below the detection limit of the method. Under these conditions, the readings will have questionable meaning and could show this type of variation described above. Note that the ORP reading variance associated by this scenario is likely to be exacerbated if any of the electrodes is also contaminated as described above.
3. The composition of the surface of the electrode may not be ideal for the measurement in the medium under investigation. While “platinum” ORP electrodes are primarily composed of the metal itself (in a neutral state), it is well known that the surface of the electrode (where the redox action takes place) is coated to varying extents with a molecular layer of platinum oxide (PtO). The Pt/PtO ratio can change over time, depending on the medium in which the probe is stored, and thus the surface of the electrode actually possesses its own potential that can be variable. If this surface potential is similar to the ORP potential of the medium, then electrode response can be sluggish. The cleaning procedure recommended later in this document will result in a surface characterized by a low Pt/PtO ratio and one that possesses a very positive potential. This should be suitable for most environmental measurements.

The fact that similar or identical ORP sensors read differently in environmental water yet the same in Zobell solution is due to the fact that the concentration of redox-active species (ferricyanide/ferrocyanide for Zobell) is much greater in the standards. This higher concentration usually “swamps out” the inconsistencies related to detection limit problems (caused by low amounts of redox-active species) and response time issues (caused by electrode contamination), thus all sensors respond rapidly and read within the specification of ± 20 mV when in standards.

ABSOLUTE READINGS
The instrument shows the actual value without compensating to a reference temperature.

AC-ADAPTOR
An internationally approved mains-plug with built-in low voltage transformer for a safe supply of energy to instruments.

ACCURACY
Maximum electronic error of the measured unit. The accuracy of an electrochemical determination such as pH, conductivity, dissolved oxygen & ion-selective measurements is mainly limited by the electrodes and calibration solutions.

ALARM
An alert sounds or a relay is closed when readings stray outside pre-set limits.

ALTERNATING DISPLAY
The meter can automatically scan all selected inputs for display or transmission to a computer or printer.

AUTOMATIC CROSS-OVER
When the resistance of an electrophoresis apparatus changes during a run, the power supply is able to switch automatically between constant voltage, constant current and constant power.

BATTERY CAPACITY
Percentage of remaining battery capacity.

BAUD RATE
Communication speed, in bits/second (b/s), of the digital interface (RS232).

BUFFER
A solution of buffered species where the pH tends to remain constant if diluted or concentrated.

Pre-programmed pH buffers: 1.68/ 2.00/ 4.00/ 4.01/ 6.87/ 7.00/ 9.18/ 9.21/ 10.01/ 12.00/ 12.45.

User specified pH buffers: special tables can be stored for future calibrations.

CALIBRATION REMINDER
A timed calibration procedure facilitates considerably GLP management by prompting the user when his instrument needs to be recalibrated.

CAPACITIVE COMPENSATION
The capacity of the electrode and its cable falsifies the measurement at very low conductivities. A capacity compensation allows to compensate for these errors.

CELL
The 2-pole design is the most commonly used conductivity cell. The electrodes are made of platinised platinum. The cell must be replaced or re-platinised if the plates become fouled.

The 4-pole design reduces considerably the problems of polarisation and fouling. By utilising four electrodes, no current flows through the measuring circuit. The AC-current is only applied to the outer pair of rings allowing the inner pair of electrodes to measure the voltage without any polarisation effects.

CELL CONSTANT
The cell constant (cm-1) of a conductivity electrode is determined by the length (cm) of the column of liquid between the plates divided by the area (cm2) of the plates.

CONCENTRATION
Concentration measurement with an ion selective electrode requires a minimum of chemical know-how to make successful ion selective determinations.

CONDUCTIVITY
The conductivity is a measure of the solution's ability to conduct electric current. The basic unit is Siemens/cm (S/cm). It is measured by an electrode consisting of two platinum plates to which an alternating potential is applied. The corresponding current is proportional to the conductivity of the ionic solution in which the electrode is dipped.

DATA-ACQUISITION
Connect the instrument to a computer via an USB, RS232, RS485 interface for bi-directional communication capabilities. Most instruments require no special software and feature an advanced easy to use data acquisition fully compatible with spread-sheet.

DATA-LOGGING
Stores automatically or manually the measured values (+ °C & time/date) in a built-in non-volatile memory.

GLP
Good Laboratory Practices procedures help to increase accuracy through calibration reports.

GROUND LEAKAGE
Leaking or dirty electrophoresis apparatus are dangerous, since the applied high voltage may result in an electric current flowing through the operator to the ground.

IDENTIFICATION NUMBER
Several instruments connected to the same computer can easily be identified when specific numbers are allocated to them.

INPUT
Several types of connectors are used according to the application. Check the specifications of meter-input and electrode-plug on their compatibility.

ISO-pH
Zero-point of a pH electrode. A new pH electrode has an ISO-pH between 6.5 and 7.5 pH.

MINIMUM/MAXIMUM MEMORY
Recalls the lowest/highest values ever measured since the last calibration.

mV
Electrode potential is read in mV.

ON/OFF CONTROL
Simple control system in which the relays are continuously closed when a pre-set level is exceeded.

ORP
Oxido-Reduction-Potential (the reducing or oxidising capability of a solution).

PASSWORD PROTECTION
For tamper-proof storage of parameters and data, a secret personal code protects the instrument against any undesired access.

pH
The pH is a measurement for the acidity or alkalinity of a solution. In pure water the hydrogen ion (H+) and hydroxyl ion (OH-) concentrations are equal at 10-7 M (25°C). To provide a convenient and effective means of defining acidity and alkalinity, the negative logarithm of hydrogen ion activity is used. The pH is calculated from the potential between a glass and a reference electrode (Nernst equation).

PROPORTIONAL CONTROL
The control relay will pulse at a rate proportional to the regulation difference. When the difference is superior to a pre-set maximum value, the relay is continuously activated. However, when reaching a pre-set level the wait-time between the pulses will increase gradually in order to perform very accurate regulations.

Pt100
Platinum resistance thermometer (100 Ω at 0°C). It requires a low resistance cable for highest accuracy.

Pt1000
Platinum resistance thermometer (1000 Ω at 0°C). Less errors when using longer cables.

QUALITY MANAGEMENT
Measuring equipment should be calibrated on a regular basis (GLP). The accuracy of measurements is only limited by the electrodes and calibration solutions. At any moment, a complete documentation about the electrodes and calibration solutions can be printed or sent to a computer. This includes meter settings, data about the last calibration and a comparison with the previous calibration. The use of certified calibration solutions is strongly recommended. For very accurate quality measurements fresh standard solutions should be used for each calibration.

QUANTIFICATION OF VINCENT

The quantification of Vincent is a measurement for the energy stored in an organism. It expresses the maximum dissipation of energy by a chemical or biochemical reaction. The basic unit is Watt (W) but it is more convenient to use µW (micro-watt). It is calculated from the ORP, referenced against a hydrogen electrode, and the resistance.

RANGE LOCK

Allows to lock the initial conductivity measuring range when titrating in order to avoid cross-over errors due to varying measuring frequencies and linearity errors of the conductivity cell.

REAL TIME CLOCK

Shows time and date on the display.

REDOX POTENTIAL

The potential developed by a metallic electrode when placed in a solution containing a species in two different oxidation states. It is usually measured by a combination platinum electrode.

REFERENCE TEMPERATURE

Conductivity measurements are temperature dependent. Therefore, the readings should be referenced to a standard temperature.

RESISTIVITY

Electrical resistivity is the reciprocal of Conductivity. The basic unit is Ohm. cm (Ω.cm). While the ion concentration of a solution decreases, the resistivity rises up to a maximum of 18.3 MΩ.cm (absolute pure water at 25°C).

RESOLUTION

Smallest possible reading of the measured unit. More sophisticated meters allow to select the desired resolution. Unlike other meters, the CONSORT models round off the last digit rather than simply truncating digits outside the display range.

rH2

The rH2 is a measurement for the level of electronic exchanges between water and dissolved ions. It enables to study incomplete, indeterminate and very diluted aqueous redox solutions. It is defined as the negative logarithm of molecular hydrogen ion activity, calculated from the pH and the ORP referenced against a hydrogen electrode.

RS232

Digital interface, transmits the displayed values and calibration data to a printer or computer.

RS485

Allows to connect several process controllers for bi-directional communication with a computer. It allows multiple devices (up to 32) to communicate at half-duplex on a single pair of wires, plus a ground wire, at distances up to 1200 meters.

SALINITY

Salinity gives an indication of the salt content of sea water. It is calculated from the conductivity referred to 15°C. The salinity is the ratio between the total salt content (g) and the total weight of the sea water (kg). Hence salinity can be expressed in ppt (parts per thousand).

SLOPE

Percentage which relates the actual behaviour of a pH electrode to the Nernst's law. A new electrode has a slope between 95 and 100 %.

S/S RELAY

A solid-state relay contains no mechanical contacts. Long life, compact design and spark-free switching are its main advantages. It should not be used for controlling very low power loads, as the small leakage current can cause unwanted switching-on.

STABILITY INDICATION

A decimal point flashes until the electrode output remains constant, then readings can be recorded.

TDS

Total Dissolved Salts of a solution gives an indication of the total ion concentration. Due to ionic interactions within a solution, the salt concentration cannot easily be related to conductivity. As the dissolved solids are generally unknown, a TDS measurement is always referred to a solution of pure Sodium Chloride.

TEMPERATURE COEFFICIENT

Each solution has its own temperature coefficient (%/K). As this coefficient also varies with temperature, a standard conductometer cannot achieve a precise temperature compensation over a wide span of temperatures. However, a research grade meter is able to plot special temperature curves for each individual type of solutions in its non-volatile memory. Specific temperature coefficients can also be entered for special applications. For standard applications, the non-linear function for natural waters (EN27888) is used.

TEMPERATURE COMPENSATION

Corrects readings for variations in electrode response due to temperature effects.

THERMOCOUPLE

Thermocouples basically consist of two dissimilar wires (each made of a different alloy). One end is twisted or soldered to form a measuring junction. The other end is connected to a thermometer and forms the reference junction. The signal is a small voltage (µV) proportional to the temperature gradient between the measuring and reference junctions. Thermocouple probes are ideal to cover greater lengths. They also have a great temperature range and can easily pass through e.g. oven doors. Response time is faster than with Pt100 probes. Accuracy, stability and repeatability are less than with Pt100 probes.

USB

Universal Serial Bus is a standard designed to eliminate the guesswork in connecting peripherals to a computer.

VOLT-HOUR INTEGRATOR

The distance at which molecules migrate in an electrophoresis apparatus depends on the applied voltage and run-time ($\int V.dt$). In order to achieve reproducible experiments, it is recommended to use a volt-hour integrator rather than a simple timer.

ZERO POINT (Eo)

Standard pH meters assume a pH electrode to supply a zero potential at 7 pH. Electrodes for special applications (e.g. stomach pH measurements) may have a different zero point. An adjustable zero point correction feature will allow users to measure with these electrodes.

General terms

Art. 1
Unless otherwise agreed in writing, the legal relationship between the parties is governed by the present general terms, of which the customer declares to have taken cognisance, and which prevail over the customer's possible terms of purchase.

Art. 2
All quotations are without engagement. Prices do not include taxes. Any price stated is based at all times on the salaries, social charges and prices of materials obtaining on the date of the quotation. Official price modifications as arranged by legal dispositions automatically entail equivalent modifications of the prices stated in the contract. This proportional increase can also apply to part of the order or work.

Art. 3
Transport or dispatch of our goods by any means of transport is at the consignee's risk, even with carriage paid.

Art. 4
If our firm acts as an intermediary, the guarantee on the goods supplied by us is restricted to the guarantee given to us by the supplier or manufacturer. If the goods are subject to formal guarantee, defective, material will be repaired or replaced, but no claims for any other damage will be accepted.

Art. 5
All invoices are payable cash on the address of the invoice unless otherwise stipulated in the documents committing the parties or unless an expiry date is stated on the Invoice.

Art. 6
Contrary to art. 1583 of the Civil Code, any goods that are not paid in full remain our full property; in such case possible advance payments will serve as a compensation for costs and loss of profit.

Art. 7
Bills in arrears entitle us to suspend any further deliveries or services without prior notice, such to prevent debts from further increasing.

Art. 8
The supply of goods or services on a later date than the date stipulated for supply or service, if such is not caused by bad faith or a serious shortcoming of the supplier, shall never form a motive for suspending the order or the agreement, nor entitle the customer to claim any damages.

Art. 9
If default is made in cash payment or if payment is not carried out on the expiry date stated, the amount of the invoice shall bear a conventional interest of 1.5% per month as from the day on which the invoice as remitted or as from the expiry date stated, such by right and without any formal notice. Each month started shall be charged as a full month.

Art. 10
Moreover, by way of a fixed and irrevocable condition, the amount of the invoice shall be increased by 15% with a minimum of 200 EUR, by right and without formal notice, as a compensation for recovery costs of the claim (both staff and administration costs, management and follow-up of the file, influences on financial management, etc.), in application of art. 1147 C.C. and 1152 C.C.
This compensation is due apart from the moratory interests, the recoverable procedure costs and the possible compensation for material damages and loss of profit.
The parties thus agree that this compensation is fixed and that, contrary to art. 1231 C.C. It cannot be modified, even when the shortcoming is only partial.

Art. 11
Cheques and bills of exchange are only accepted as payment after their repayment. Possible costs are at the expense of the purchaser or commissioner.

Art. 12
The drawing and/or accepting bills of exchange or other transferable documents does not imply a novation or deviation from the general terms. The acceptance costs of bills of exchange are at the expense of the purchaser or commissioner.

Art. 13
If one invoice remains unpaid on its expiry date, the balance due of any other invoices, even when not expired, are immediately recoverable by right.

Art. 14
In the event of a dispute, only the courts of Turnhout, Belgium, shall have competence.

Art. 15
Any complaints regarding the supply of the goods and services shall be made on termination and be confirmed by a motivated registered letter within 8 days of the date of supply. These complaints do not suspend the obligation of payment.

Art. 16
Remarks and restrictions concerning the invoice and/or the general terms therein stated shall be transmitted to us by motivated registered letter within 8 days of date of invoice; for the settlement of disputes this period amounts to 30 days. If an order form is signed by a purchaser or commissioner, the regulations of the general terms stated on the order form shall apply.