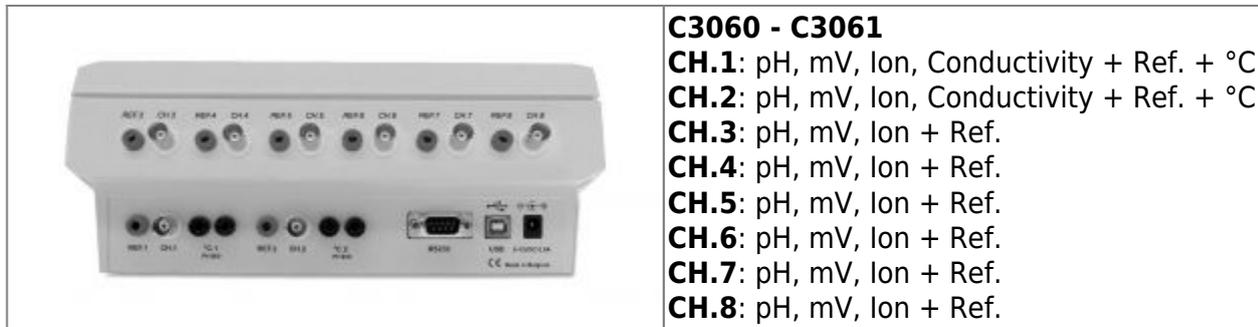


C30xx Series



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	<p>C3010 - C3011 CH.1: pH, mV, O₂, Conductivity + Ref. + °C CH.2: pH, mV, O₂, Conductivity + Ref. + °C</p> <p>C3030 - C3031 CH.1: pH, mV, Ion, O₂, Conductivity + Ref. + °C CH.2: pH, mV, Ion, O₂, Conductivity + Ref. + °C</p>
	<p>C3410 - C3411 CH.1: pH, mV, Conductivity + Ref. + °C CH.2: pH, mV, Conductivity + Ref. + °C</p> <p>C3420 - C3421 CH.1: pH, mV, O₂, Conductivity + Ref. + °C CH.2: pH, mV, O₂, Conductivity + Ref. + °C</p> <p>C3430 - C3431 CH.1: pH, mV, Ion, O₂, Conductivity + Ref. + °C CH.2: pH, mV, Ion, O₂, Conductivity + Ref. + °C</p>
	<p>C3040 - C3041 CH.1: pH, mV, Ion, O₂, Conductivity + Ref. + °C CH.2: pH, mV, Ion, O₂, Conductivity + Ref. + °C CH.3: pH, mV, Ion, O₂ + Ref. + °C CH.4: pH, mV, Ion, O₂ + Ref. + °C CH.5: pH, mV, Ion, O₂ + Ref. + °C CH.6: pH, mV, Ion, O₂ + Ref. + °C</p>
	<p>C3050 - C3051 CH.1: pH, mV, Conductivity + Ref. + °C CH.2: pH, mV, Conductivity + Ref. + °C CH.3: pH, mV + Ref. + °C</p>



C3060 - C3061
CH.1: pH, mV, Ion, Conductivity + Ref. + °C
CH.2: pH, mV, Ion, Conductivity + Ref. + °C
CH.3: pH, mV, Ion + Ref.
CH.4: pH, mV, Ion + Ref.
CH.5: pH, mV, Ion + Ref.
CH.6: pH, mV, Ion + Ref.
CH.7: pH, mV, Ion + Ref.
CH.8: pH, mV, Ion + Ref.

Installation of the instrument

Keyboard

MODE=Selects the settings or escapes from error traps, calibration procedures, etc..by returning to the original mode.

↑ ↓ =Buttons for browsing between the selected modes, for entering a value or for selecting a function.

OK=Proceeds a function.

CAL=Starts a calibration.

STORE=Stores the displayed value or send it to a computer or printer.

HOLD=Holds display when measuring.

Inputs

The measuring electrodes should be connected to the coaxial connectors CH1 or CH2. Automatic temperature compensation and measurement are possible by connecting a Pt1000 temperature compensator to the banana connectors °C1 or °C2. Without compensator, the manual temperature compensation is automatically switched on. Model C34xx has two extra DIN connectors in parallel with CH.1 and CH2. **NEVER use DIN- and BNC- channels together!**

Outputs

A standard USB or Ethernet port is provided for interfacing the instrument with a computer or network.

A standard RS232 port is provided for interfacing the instrument with a printer. Data is sent in the ASCII code at a BAUD rate of 1200...115200 bps (8 bit, no parity, 1 stopbit).

Device Menu

Press **MODE** to go to the menu. Press **OK** to enter the selected item. Press **MODE** to go back or cancel.

- [SYSTEM]
 - [LANGUAGE] -> select the desired language and press **OK**
 - [CONTRAST] -> adjust the contrast and press **OK**
 - [DATE/TIME] -> [MODIFY] -> Adjust date and time and press **OK**
 - [PASSWORD] -> [YES] -> enter your secret sequence of 5 keys
- [STAND BY] and press **OK**.
 - [YES] -> continue automatically after a power failure
 - [NO] -> instrument can be switched off
- [CHANNELS]
 - Select the desired channel and press **OK**.
 - Select the desired range and press **OK**.
 - Select the desired input for temperature compensation and press **OK**.
- [USER TABLES]
 - [pH buffers] or [S/cm standards] and press **OK**.
 - Follow the instructions on the screen to enter the different values. The value for 25°C is obligatory!

pH measurement

BUFFER 1 : 7.00pH
BUFFER 2 : 4.00pH
BUFFER 3 : --pH

1. Select the desired mode (pH) by pressing $\uparrow \downarrow$. The display will immediately show the measured value according to the previous calibration. Should you want to recalibrate, press **CAL**.
 2. The instrument permits to choose between the buffers in memory (1.68, 2.00, 4.00, 4.01, 6.87, 7.00, 9.18, 9.21, 10.01, 12.00, 12.45 + up to 5 user tables). Select the proper values and press **OK**. The unused buffers should be switched off.
 3. Rinse the electrodes with distilled water and immerse them in the first buffer solution. Select [CALIBRATE], press **OK** and follow the instructions on the screen until the calibration is finished.
 4. After rinsing the electrodes with distilled water, immerse them in the samples and read the display.
 5. Rinse the electrodes always with distilled water after use and store them in a 3...4 M KCl solution.
- A blinking decimal point warns you for unstable measurements. Wait to read the display!
 - Stirring the solution during the measurements promotes the homogeneity and is obligatory!
 - The instrument will refuse automatic calibration when the electrode is unstable. Insufficient stirring or a worn electrode may be the cause.

Using pH electrodes with an abnormal zero point

1. Press **CAL**.
 2. Select [Eo = x mV] and press **OK**.
 3. Enter the zero point of the electrode and press **OK**.
- Hold **MODE** pressed and press \downarrow to change the resolution from 0.1 to 0.001 pH.

mV measurement

1. Select the desired mode (mV) by pressing $\hat{=}$. The display will immediately show the measured value according to the previous calibration. Should you want to recalibrate, press **CAL**.
 2. Immerse the electrodes in a standard solution of known potential.
 - Select [CALIBRATE] and press **OK**. Adjust to the proper value and press **OK**.
 - Select [RESET] and press **OK** to reset the calibration.
 - Hold **MODE** pressed and press \downarrow to change the resolution from 1 to 0.1 mV.
-

Temperature measurement

1. Select the desired mode ($^{\circ}\text{C}$) by pressing $\hat{=}$. Should you want to recalibrate, press **CAL**.
 2. Immerse the Pt1000 in a solution of known temperature.
 - Select [CALIBRATE] and press **OK**. Adjust to the proper value and press **OK**.
 - Select [RESET] and press **OK** to reset the calibration.
 - Without Pt1000, press **CAL** adjust the manual temperature compensation and proceed by pressing **OK**.
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rH2 measurement (C305x only)

1. After calibrating and rinsing the pH and redox electrodes with distilled water, immerse them in the solution to be measured.
 2. Select the multi-channel display by pressing $\hat{=}$ and read the display.
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μW measurement (C305x only)

1. After calibrating and rinsing the ORP and conductivity electrodes with distilled water, immerse them in the solution to be measured.
 2. Select the multi-channel display by pressing $\uparrow\downarrow$ and read the display.
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Conductivity measurement

1. Select the desired mode (S/cm) by pressing $\hat{=}$. The display will immediately show the measured value according to the previous calibration. Should you want to recalibrate, press **CAL**.
2. The instrument permits to choose between the standards in memory (1413 $\mu\text{S}/\text{cm}$, 12.88

mS/cm, 111.8 mS/cm + up to 3 user tables). Select the proper values and press **OK**. The unused standards should be switched off.

3. After rinsing the electrode several times with the first standard solution, immerse it in that standard. The solution temperature is not so critical but should lie between 0°C and 40°C. When no Pt1000 is used, do not forget to compensate manually first! Select [CALIBRATE], press **OK** and follow the instructions on the screen until the calibration is finished.
 4. Rinse the electrode several times with the sample, immerse it in that solution and read the display.
 5. Rinse the electrode always after use and store it in distilled water (add some detergent to keep the spongy platinum surface in perfect condition).
- A blinking decimal point warns you for unstable measurements. Wait to read the display!
 - Stirring the solution during the measurements promotes the homogeneity and is obligatory!
 - The instrument will refuse automatic calibration when the electrode is unstable. Insufficient stirring or a worn electrode may be the cause.
 - *When starting a titration, hold **MODE** pressed and press ↓ to lock the actual range and avoid cross-over errors due to differences in the measuring frequency. Hold **MODE** pressed and press ↓ to return again to the normal measuring mode.*

Temperature compensation

1. Press **CAL**.
2. Select [REF.] and press **OK**.
3. Select the temperature to which all future measurements will be referred to (25°C or 20°C) (C305x: 20°C...40°C in 1°C steps) and press **OK**.

Capacitive compensation

1. Capacitive compensation increases accuracy in the very low conductivity ranges (<10 µS/cm). Select whether or not this compensation should be applied. Verify if the attached electrode is completely dry and press **CAL**.
2. Select [CAP.COMP] and press **OK**.
3. Select [YES] or [NO] and press **OK**. Follow the instructions on the screen.

TDS measurement

1. Select the desired mode (mg/l)(TDS) by pressing ↑↓. The display will immediately show the measured value.

Salinity measurement

1. Select the desired mode (SAL) by pressing ↑↓. The display will immediately show the measured value.

Resistivity measurement

1. Select the desired mode (W.cm) by pressing $\uparrow\downarrow$. The display will immediately show the measured value.
 - *To browse between conductivity, resistivity, salinity or TDS, hold **MODE** pressed and press \downarrow sequentially.*
-

Dissolved oxygen measurement (C3x1x/C3x3x/C304x only)

General information about O2

1. Select the desired mode (ppm) or (%O2) by pressing $\uparrow\downarrow$. The display will immediately show the measured value according to the previous calibration. Should you want to recalibrate, press **CAL**.
 2. The display shows the salinity correction. Select the proper value and press **OK**. Leave salinity correction to zero unless you are going to measure in heavily salted solutions such as e.g. sea-water (35 g/l). Select [CALIBRATE], press **OK** and follow the instructions on the screen until the calibration is finished.
 3. The electrode exposed to the air reaches an equilibrium corresponding to the partial pressure of oxygen and thus to saturation in water at the given temperature. The instrument shows the measured saturation, current, temperature, and will calibrate automatically when readings are stable.
 4. After rinsing the electrodes with distilled water, immerse them in the samples and read the display. Stirring the solution during the measurements promotes the homogeneity and is **obligatory!** The advection rate must be at least 10 cm/s.
 5. Rinse the electrode always after use and store it in distilled water.
 - A blinking decimal point warns you for unstable measurements. Wait to read the display!
 - Stirring the solution during the measurements promotes the homogeneity and is therefore always recommended.
 - *Hold **MODE** pressed and press \downarrow to change the resolution from 0.1 to 0.01 ppm or from 1 to 0.1 %.*
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Air pressure measurement (C3x2x/C3x3x/C304x only)

1. Select the desired mode (hPa) by pressing $\uparrow\downarrow$. Should you want to recalibrate, press **CAL**.
 - Select [CALIBRATE], press **CAL**, adjust to the real air pressure and press **OK**.
 - Select [RESET] and press **OK** to reset the calibration.
-

Ion selective measurement (C3x3x/C304x/C306x only)

1. Select the desired mode by pressing $\uparrow\downarrow$. The display will immediately show the measured value according to the previous calibration. Should you want to recalibrate, press **CAL**.
 2. The instrument permits to choose between the possible standards (1, 10, 100 ng/l, 1, 10, 100 $\mu\text{g/l}$, 1, 10, 100 mg/l, 1, 10, 100 g/l). Select the proper values and press **OK**. The unused standards should be switched off.
 3. Select [CALIBRATE] and press **OK**.
 4. After rinsing the electrodes with distilled water, immerse them in the first standard solution. Select the first calibration value and press **OK** when readings are stable. Go on in the same way with the next standard solutions.
 5. Decide whether a blank correction should be carried out or not. Follow the instructions on the screen. After rinsing the electrodes with distilled water, immerse them in a blank solution. When readings are stable press **OK**.
 6. Rinse the electrodes with distilled water, immerse them in the samples, and read the concentration on the display.
 - Maintenance: we refer to the manual supplied with the ion specific electrodes.
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Good Laboratory Practice

GLP Report

1. Select the desired range by pressing $\uparrow\downarrow$ and then press **CAL**.
2. Select [GLP] and press **OK**.
3. Select [SHOW REPORT] and press **OK**. Browse with $\uparrow\downarrow$ to show a complete calibration report.
4. Select [SEND REPORT] and press **OK** to send the report to a computer.

Calibration reminder

1. Select the desired range by pressing $\uparrow\downarrow$ and then press **CAL**.
 2. Select [GLP] and press **OK**.
 3. Select [INTERVAL] and press **OK**.
 4. Select the desired time interval between each automatic warning for a new calibration of the electrodes and press **OK**.
-

Data Logging

Data Storage in the internal memory

1. Press **MODE**.
2. Select [DATA] and press **OK**.

Start the data-logging

1. Select [ACTIVATE] and press **OK**.
2. Decide whether data-logging should be carried out or not and press **OK**.
3. Select [CONTINUOUS] and press **OK**.
4. Decide whether the oldest data should be overwritten when the memory limit is reached or not and press **OK**.
5. Select [INTERVAL] and press **OK**.
6. Select the desired time interval between the data-logging and press **OK**.
7. Return to the measurements by pressing **MODE**.
8. The data-logging starts according to the previous settings while the display shows the logging-number e.g. [LOG.00027].

Process the stored values

1. Select [PROCESS] and press **OK**.
2. Select [TABLE] or [SEND] to display or send the stored data and press **OK** to continue. Follow the instructions on the screen.

Erase the stored values

1. Select [PROCESS] and press **OK**.
2. Select [ERASE] and press **OK**. Follow the instructions on the screen.

External storage in a computer using USB, RS232 or Ethernet

1. Press **MODE**.
2. Select [SERIAL PORT] (only on Ethernet versions) and press **OK**.
3. Select [INTERVAL] and press **OK**.
4. Select the desired interval between the transmitted data and press **OK**. Pre-set to zero if no automatic transmitting is required.
5. Select [BAUD] and press **OK**.
6. Select the desired transmission rate and press **OK**.

- You can download free software and a suitable USB driver or an Ethernet configuration document from www.consort.be.

From:
<http://www.consort.be/wiki/> - Support website

Permanent link:
http://www.consort.be/wiki/c30xx_manual?rev=1416427816

Last update: **19/11/2014 20:10**

