

# Consort

---

MANUAL

HANDLEIDING

MODE D'EMPLOI



Distributor:  
Topac Inc  
231 CJC Highway  
Cohasset  
MA 02025  
Tel 781 740 8778  
Fax 781 740 8779  
[www.topac.com](http://www.topac.com)  
[email sales@topac.com](mailto:sales@topac.com)

**D230**

---

June 2011

This instrument is manufactured with the latest technology and needs no particular maintenance. **Consort** certifies that this instrument was thoroughly inspected and tested at the factory prior to shipment and found to meet all requirements defined by contract under which it is furnished. However, dimensions and other physical characteristics may differ.

The normal operating temperature should be between 0° and 40°C. Never use the instrument in a room with high humidity (>95 %) or at very low temperatures (condensation water!).

Connect the instrument only to an earthed power line. The required power source is indicated on the label at the back of the instrument. Do not cut and splice the power cord. When removing the power cord from the wall outlet, be sure to unplug by holding the plug attachment and not by pulling the cord. Do not hold the plug by wet hand.

---

*Manufacturer*

**Consort bvba**

Parklaan 36  
B2300 Turnhout  
Belgium

Tel (+32)(14)41 12 79  
Fax (+32)(14)42 91 79  
E-mail: info@Consort.be

---

*Warranty*

This instrument (excluding all accessories) is warranted against defective material and workmanship for a period of thirty-six (36) months from the date of shipment ex factory. **Consort** will repair all defective equipment returned to it during the warranty period without charge, provided the equipment has been used under normal laboratory conditions and in accordance with the operating limitations and maintenance procedures in this instruction manual and when not having been subject to accident, alteration, misuse or abuse. A return authorisation must be obtained from **Consort** before returning any product for warranty repair on a freight prepaid basis!

**Consort** is not liable for consequential damages arising out of the use or handling of its products.

---

*Servicing*

In the event of this instrument being returned for servicing, the owner is requested to remove the power supply lead and **NOT** to send the following items unless they are suspect:

- Manual
- Cables
- Accessories

If serious malfunctioning occurs, stop using the unit immediately and consult your local **Consort** dealer.

---

*Connections*

1. The electrodes should be connected to the coaxial BNC connectors.
2. Automatic temperature compensation and temperature measurements are possible by plugging a Pt1000 thermocompensator into the corresponding banana terminals. Without compensator, the manual temperature compensation is automatically switched on.
3. Connect the first rack to the serial port of the computer using the RS232 cable (DP9) supplied with the system.
4. Connect additional racks with each other and to the first rack using the special cables D298.
5. Install the software on the computer and read the help file for further instructions.

Temp.	1.68	4.01	6.87	9.18	12.45	<i>NIST buffers</i>
0 °C	1.666 pH	4.003 pH	6.984 pH	9.464 pH	13.423 pH	
5 °C	1.668 pH	3.999 pH	6.951 pH	9.395 pH	13.207 pH	
10 °C	1.670 pH	3.998 pH	6.923 pH	9.332 pH	13.003 pH	
15 °C	1.672 pH	3.999 pH	6.900 pH	9.276 pH	12.810 pH	
20 °C	1.675 pH	4.002 pH	6.881 pH	9.225 pH	12.627 pH	
<b>25 °C</b>	<b>1.679 pH</b>	<b>4.008 pH</b>	<b>6.865 pH</b>	<b>9.180 pH</b>	<b>12.454 pH</b>	
30 °C	1.683 pH	4.015 pH	6.853 pH	9.139 pH	12.289 pH	
40 °C	1.694 pH	4.035 pH	6.838 pH	9.068 pH	11.984 pH	
50 °C	1.707 pH	4.060 pH	6.833 pH	9.011 pH	11.705 pH	
60 °C	1.723 pH	4.091 pH	6.836 pH	8.962 pH	11.449 pH	
70 °C	1.743 pH	4.126 pH	6.845 pH	8.921 pH		
80 °C	1.766 pH	4.164 pH	6.859 pH	8.885 pH		

Temp.	4.00	7.00	9.21	10.01	<i>Standard buffers</i>
5 °C	3.99 pH	7.08 pH	9.45 pH	10.24 pH	
10 °C	3.99 pH	7.06 pH	9.38 pH	10.18 pH	
20 °C	3.99 pH	7.02 pH	9.26 pH	10.06 pH	
<b>25 °C</b>	<b>4.00 pH</b>	<b>7.00 pH</b>	<b>9.21 pH</b>	<b>10.01 pH</b>	
30 °C	4.01 pH	6.99 pH	9.16 pH	9.97 pH	
40 °C	4.03 pH	6.98 pH	9.06 pH	9.89 pH	
50 °C	4.06 pH	6.97 pH	8.99 pH	9.83 pH	
60 °C	4.09 pH	6.98 pH	8.93 pH	9.79 pH	

Temp.	0.01 M	0.1 M	1 M	<i>Conductivity standards</i>
0 °C	776 $\mu$ S	7.15 mS	65.4 mS	
5 °C	896 $\mu$ S	8.22 mS	74.1 mS	
10 °C	1020 $\mu$ S	9.33 mS	83.2 mS	
15 °C	1147 $\mu$ S	10.48 mS	92.5 mS	
20 °C	1278 $\mu$ S	11.67 mS	102.1 mS	
<b>25 °C</b>	<b>1413 <math>\mu</math>S</b>	<b>12.88 mS</b>	<b>111.8 mS</b>	
30 °C	1552 $\mu$ S	14.12 mS	121.7 mS	

Temp.	3 M KCl	<i>Redox standard</i>
0 °C	224 mV	
5 °C	219 mV	
10 °C	214 mV	
15 °C	212 mV	
20 °C	204 mV	
25 °C	199 mV	
30 °C	194 mV	
35 °C	189 mV	
40 °C	184 mV	
45 °C	179 mV	
50 °C	174 mV	

Specifications		D230
pH	<i>Range</i>	0...14 pH
	<i>Resolution</i>	0.001 pH
	<i>Accuracy</i>	0.1% ± 1 digit
	<i>Calibration</i>	1...2 points
	<i>Buffers</i>	9 pre-programmed 2 user specified
	<i>Temperature Compensation</i>	-30...+130 °C
	<i>ISO-pH</i>	6...8 pH
	<i>Slope</i>	80...120%
mV	<i>Range</i>	±2000 mV
	<i>Resolution</i>	0.1 mV
	<i>Accuracy</i>	0.1% ± 1 digit
	<i>Calibration</i>	1 point
ION	<i>Range</i>	0.01 ng/l...100 g/l
	<i>Resolution</i>	3 digits
	<i>Accuracy</i>	0.5% ± 1 digit
	<i>Calibration</i>	2 points + blank
DISS. OXYGEN	<i>Range</i>	0...60 mg/l (0...600%)
	<i>Resolution</i>	0.01 mg/l (0.1%)
	<i>Accuracy</i>	1% ± 1 digit
	<i>Calibration</i>	1 point
	<i>Temperature Compensation</i>	0...50 °C
CONDUCTIVITY	<i>Range</i>	0...2000 mS/cm
	<i>Resolution</i>	0.001 µS/cm
	<i>Accuracy</i>	0.5% f.s. of range
	<i>Calibration</i>	1 point
	<i>Standards</i>	0.01/0.1/1 M KCl 3 user specified
	<i>Cell Constant</i>	0.01/0.1/1/10 cm <sup>-1</sup> ± 50%
	<i>Temperature Compensation</i>	-30...+130 °C
	<i>Reference Temperature</i>	20° or 25 °C
	<i>Temperature Coefficient</i>	natural waters (EN27888)
	<i>Capacitive Compensation</i>	✓
	TDS	<i>Range</i>
<i>Resolution</i>		0.01 mg/l
TEMPERATURE	<i>Range</i>	-30...+130 °C
	<i>Resolution</i>	0.1 °C
	<i>Accuracy</i>	0.3 °C
	<i>Calibration</i>	±10 °C
CHANNELS	<i>pH/mV/Ion/Oxygen</i>	4...28
	<i>Conductivity</i>	4...28
	<i>Temperature</i>	4...28
INPUTS	<i>pH/mV/Ion/Oxygen</i>	BNC, 10 <sup>12</sup> Ω
	<i>Conductivity</i>	BNC
	<i>Temperature</i>	2 banana, for Pt1000
CALIBRATION	<i>GLP</i>	✓
DATA-LOGGING	<i>Values/channel</i>	unlimited + °C/date/time
	<i>Interval</i>	4 s ... 24 h
SOFTWARE	<i>Languages</i>	EN, NL, FR
SECURITY	<i>Password Protection</i>	✓
POWER SUPPLY	<i>Mains</i>	210...250 VAC
DIMENSIONS	<i>WxDxH</i>	48x24x13 cm
WEIGHT	<i>Meter</i>	12 kg

## WARRANTY CERTIFICATE

This instrument (excluding all accessories) is warranted against defective material and workmanship for a period of thirty-six (36) months from the date of shipment ex factory.

**CONSORT** will repair all defective equipment returned to it during the warranty period without charge, provided the equipment has been used under normal laboratory conditions and in accordance with the operating limitations and maintenance procedures in this instruction manual and when not having been subject to accident, alteration, misuse or abuse.

A return authorisation must be obtained from **CONSORT** before returning any product for warranty repair on a freight prepaid basis!



## DECLARATION OF CONFORMITY

We declare under our sole responsibility that the product

**Multi-parameter analyser**  
**content of the type numbers**  
**D230, D291, D292**

to which this declaration relates is in conformity  
with the following standards

**EN61010**  
**LOW VOLTAGE DIRECTIVE 73/23/EEG**  
**EN50081-1**  
**EN50082-1**  
**EN60555-2**  
**EMC DIRECTIVE 89/336/EEG**

Turnhout, June 20, 2002

A handwritten signature in black ink, appearing to be 'J. G. G.', is located below the date.

on behalf of Consort bvba