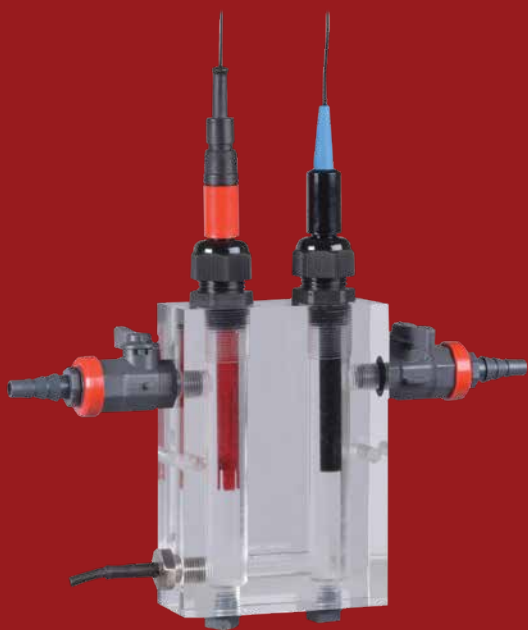


# Controllers



- **Gold Plated BNC**
- **2 Multiparamter Channels**
- **2 (3) Independable Control Systems**
- **Control types**  
proportional  
on/off
- **Safety Features**  
Stop control without stopping measurements  
Automatic Resume  
Washing Program  
Programmable alarm
- **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  $\mu$ S/cm, 12.88 mS/cm, 111.8 mS/cm (at 25°C)
- **No interference between electrodes**
- **Stability algorithm with intuitive indicator**
- **Selectable resolution**
- **Capacitive compensation**
- **Galvanic isolated RS485 interface**
- **Galvanic isolated 4-20mA outputs**
- **High Accuracy**
- **Free software**
- **Open Communication Protocol**



FC3020T flowcell with intergrated T sensor

The R3600 adds 2 (3 for R3630) independent programmable control systems to measurement system of C3000 series. It's possible to connect up to 31 controllers with a computer. A programmable alarm function prevents overdosing of chemicals in the process liquid.

R3614 and R3624 are versions with 1 extra DIN connector for 4-pole conductivity electrodes.

### Specifications depending on model

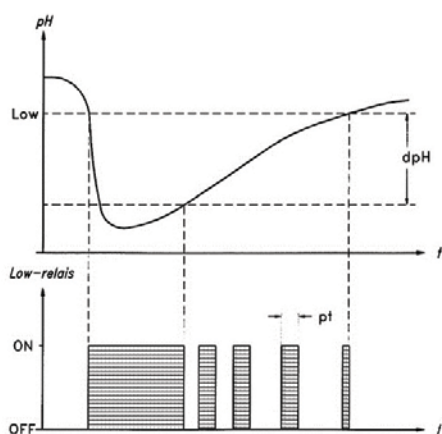
|                      |                            |
|----------------------|----------------------------|
| Measurement Channels | 2 (R3630 3)                |
| Temperature Channels | 2 (R3630 1)                |
| Controls             | 2 (3)                      |
| Solid State Relays   | 4                          |
| pH                   | -2.000...+16.000 pH        |
| mV                   | ±2000.0 mV                 |
| Ion                  | 0.01 ng/l...100 g/l        |
| Conductivity         | 0...2000 mS/cm             |
| Dissolved oxygen     | 0...60.00 mg/l<br>0...600% |
| Free chlorine        | 0...10 mg/l                |
| Air pressure         | 600...1300 hPa             |
| Temperature          | -5.0...+105.0°C            |
| Digital output       | RS485                      |
| Analogue output      | 4..20mA                    |
| Warranty             | 36 months                  |
| Made in Belgium      |                            |

| Code                            | Description   |
|---------------------------------|---|
| R3610                           | Controller for pH/mV/conductivity/dissolved oxygen  |
| R3620                           | Controller for pH/mV/conductivity/dissolved oxygen/ion  |
| R3630                           | Controller for pH/mV/conductivity/dissolved oxygen/free chlorine  |
| FC3020T                         | 2 channel flow cell with integrated Pt1000 temperature sensor and mounting accessories excl. electrodes |
| → Add -US for 120 VAC versions. |   |

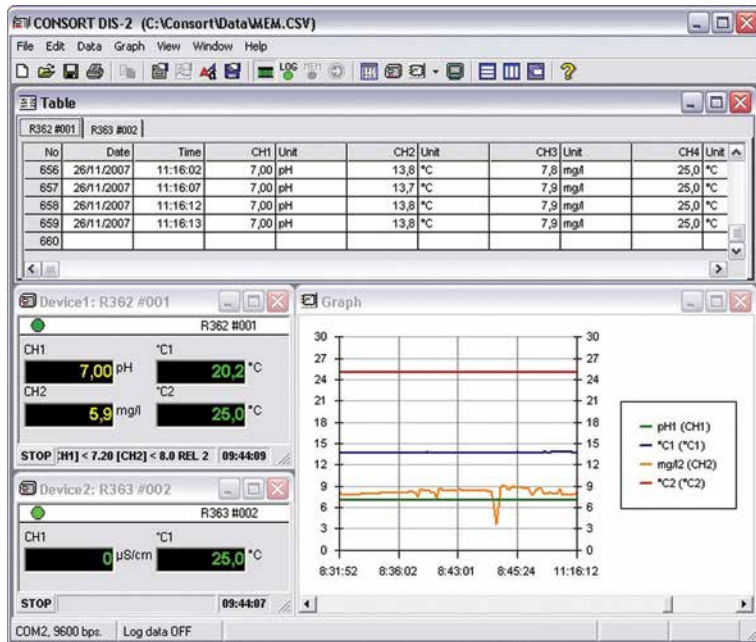
## Specifications

|                                   |                           |                                       |
|-----------------------------------|---------------------------|---------------------------------------|
| <b>pH</b>                         | Range                     | -2...+16 pH                           |
|                                   | Resolution                | 0.001 pH                              |
|                                   | Accuracy                  | 0.1% ± 1 digit                        |
|                                   | Calibration               | 1...5 points                          |
|                                   | Buffers                   | 11 pre-programmed<br>5 user specified |
|                                   | Temperature compensation  | -5...+105°C                           |
|                                   | ISO-pH                    | 6...8 pH                              |
| <b>mV</b>                         | Slope                     | 80...120%                             |
|                                   | Range                     | ±2000 mV                              |
|                                   | Resolution                | 0.1 mV                                |
|                                   | Accuracy                  | 0.1% ± 1 digit                        |
| <b>CONDUCTIVITY</b>               | Calibration               | 1 point                               |
|                                   | 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<br>3 user specified  |
|                                   | Cell constant (cc)        | 0.1/1/10 cm <sup>-1</sup> ±30%        |
|                                   | Temperature compensation  | -5...+105°C                           |
|                                   | Reference temperature     | 20° or 25°C                           |
|                                   | Temperature coefficient   | natural waters (EN27888)              |
|                                   | Capacitive compensation   | ✓                                     |
| <b>DISSOLVED OXYGEN</b>           | 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                                |
| <b>ION (R3620 only)</b>           | Air pressure compensation | 600...1300 hPa                        |
|                                   | Range                     | 0.01 ng/l...100 g/l                   |
|                                   | Resolution                | 3 digits                              |
|                                   | Accuracy                  | 0.5% ± 1 digit                        |
| <b>FREE CHLORINE (R3630 only)</b> | Calibration               | 2...5 points + blank                  |
|                                   | Range                     | 0...10 mg/l                           |
|                                   | Resolution                | 0.01 mg/l                             |
|                                   | Accuracy                  | 5% ± 1 digit                          |
|                                   | Calibration               | 1 point                               |
|                                   | pH compensation           | 5...9 pH                              |
|                                   | Temperature compensation  | 10...40°C                             |
|                                   | min. flow rate            | 20 cm/s                               |

|                           |                       |                                      |
|---------------------------|-----------------------|--------------------------------------|
| <b>TEMPERATURE</b>        | Range                 | -5...+105°C                          |
|                           | Resolution            | 0.1°C                                |
|                           | Accuracy              | 0.1°C                                |
|                           | Calibration           | 1 point                              |
| <b>AIR PRESSURE</b>       | Range                 | 600...1300 hPa                       |
|                           | Calibration           | 1 point                              |
| <b>CHANNELS</b>           | Measurement           | 2                                    |
|                           | Temperature           | 2                                    |
| <b>INPUTS</b>             | Measurement           | 2 BNC, 10 <sup>12</sup> Ω            |
|                           | Temperature           | 1 DIN (R36x4 only)                   |
|                           | Temperature           | 2 BNC, for Pt1000                    |
| <b>CALIBRATION</b>        | Reminder              | 0...999 h                            |
|                           | GLP                   | ✓                                    |
| <b>CONTROL</b>            | independent controls  | 2                                    |
|                           | On/Off                | ✓                                    |
|                           | Proportional          | ✓                                    |
|                           | Wash program          | ✓                                    |
|                           | Alarm timer           | ✓                                    |
| <b>DISPLAY</b>            | LCD                   | 128x64 pixels                        |
|                           | White back-light      | ✓                                    |
|                           | Selectable resolution | ✓                                    |
|                           | Real time clock       | ✓                                    |
|                           | Built-in help         | ✓                                    |
|                           | Languages             | English<br>Dutch<br>French<br>German |
|                           | ANALOG OUTPUTS        | Two outputs                          |
|                           |                       | 4...20 mA, max. 300 Ω load           |
| <b>COMMUNICATION</b>      | RS485, baud rate      | 300...19200 b/s                      |
| <b>DATA-LOGGING</b>       | Data sets             | 12000 + °C/date/time                 |
|                           | Modes                 | all                                  |
|                           | Interval              | 1 s...4 h                            |
|                           | RELAY OUTPUT          | Four relays                          |
| <b>SECURITY</b>           |                       | 4 solid state                        |
|                           | Voltage               | 12...250 VAC/ min. 1 mA/ max. 1 A    |
| <b>SECURITY</b>           | Identification number | ✓                                    |
|                           | Password protection   | ✓                                    |
| <b>AMBIENT CONDITIONS</b> | Temperature           | 0...40°C                             |
|                           | Humidity              | 0...95%, non condensing              |
| <b>POWER SUPPLY</b>       | Mains                 | 210...250 VAC, 50/60 Hz              |
| <b>DIMENSIONS</b>         | WxDxH                 | 28x17x6 cm                           |
| <b>WEIGHT</b>             | Meter                 | 1.3 kg                               |



FC3020T flowcell with integrated T sensor



The screenshot shows the configuration window 'C:\Toestel\Dis2.cfg'. It has tabs for Log, Connection, Language, and Devices. The 'Devices' tab is active, showing a table of configured devices.

| No | Device | ID.no. | Channels |
|----|--------|--------|----------|
| 1  | R362   | 001    | 4        |
| 2  | R362   | 002    | 4        |
| 3  | R362   | 003    | 4        |
| 4  | R363   | 004    | 4        |
| 5  | R363   | 005    | 4        |
| 6  | R363   | 006    | 4        |
| 7  | R362   | 007    | 4        |
| 8  | R362   | 008    | 4        |
| 9  | R362   | 009    | 4        |

Buttons for OK, Cancel, and Help are on the right.



## Description

This free software package is specially designed to collect, store and manage data from the R36xx controllers when equipped with a RS485 interface. It can also be used with the following previous models or versions when equipped with an RS485 interface: R305, R315, R335.

DIS-2 runs under Windows™ 2000 or higher and can be downloaded from [www.consort.be](http://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 CSV 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** COM1 to COM9 can be used to connect up to nine series of max. 31 instruments. Baud rate: 300..9600 b/s.

**Terminal** shows exactly how data is received. 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.

# Electrodes



## ● Overview

Consort offers a wide variety high quality electrochemical analytical sensors. Our pH, ORP (Oxidation-Reduction Potential), Conductivity, Oxygen and Ion Selective Electrodes (ISEs) are designed for Laboratory, Industrial, Biotechnology and Medical applications.

The most common electrodes are in our catalogue. We can supply variations depending on your needs: body style, submersible, cable length, body length, connector type, ATC type,...

Most of our electrodes can be delivered from stock. ISE's are never delivered from stock because of it's limited shelf life. An ISE is manufactured on demand and as such will guarantee an ideal shelf life combined with a low price.

## ● Tips and tricks

While calibrating or measuring, all solutions should be stirred gently to ensure the electrode gives a true representation of the beaker contents.

Calibration solutions with values near the expected sample value should be chosen. Only fresh calibration solutions should be used. Changing all solutions daily is a good practice. All solutions should be maintained at equal temperature.

Rinse the electrode twice between measurements: first thoroughly in distilled water and then with a small amount of the next sample to be measured. Allow the electrodes sufficient time to stabilise while calibrating or measuring. A stability indicator on all of our meters prompts the user when readings should be taken.

## ● About B, N, T, X, Y

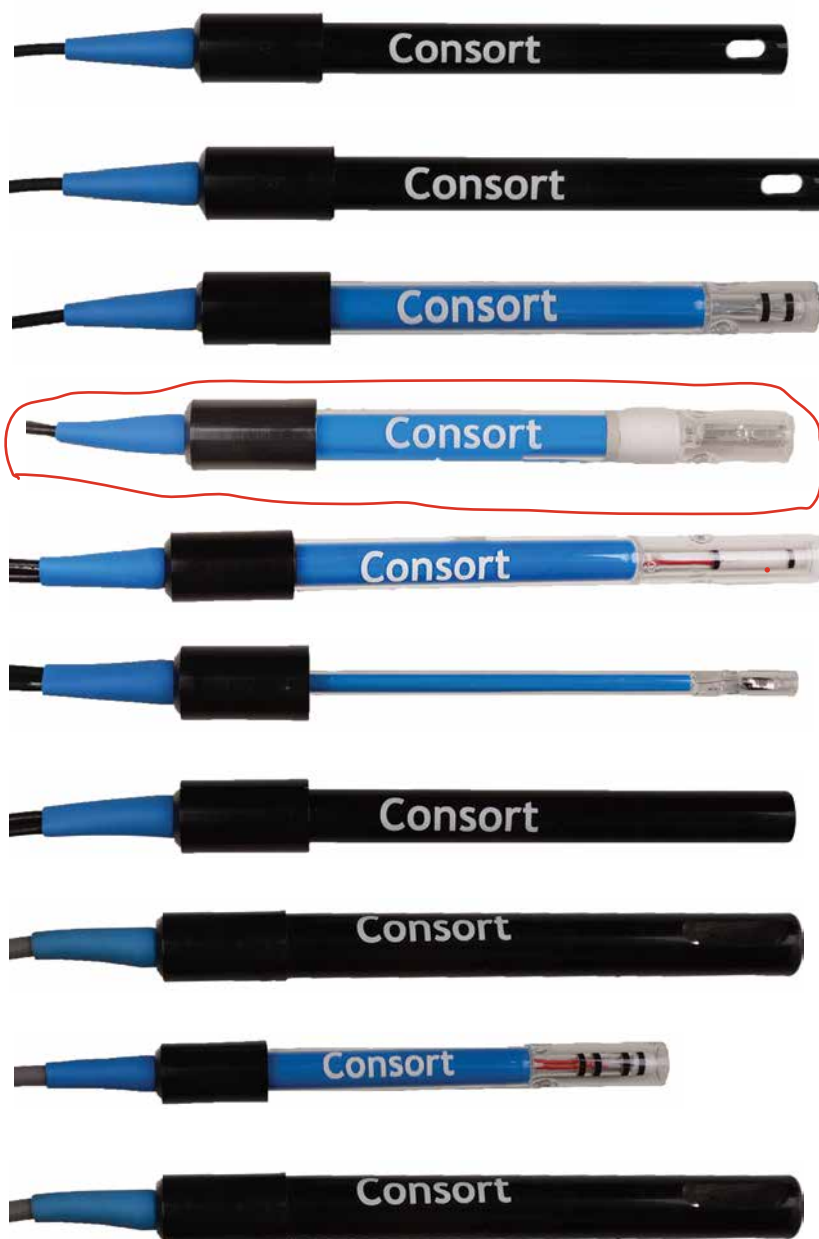
Our electrodes have different options indicated with a suffix. Here is an explanation of the different suffixes:

- B** 1m cable  
1 BNC connection
- N** 1m cable  
2 banana connections
- T** built-in ATC (Pt1000)  
1m cable  
1 BNC connection  
2 banana connections for ATC
- X** S7 screw connection (separate cable (SCxxB) needed)
- Y** S8 screw head for in-line use, screw connection (separate cable (SCxxB) needed)

# Conductivity electrodes

## Conductivity electrodes

| Code                    |                            | Body  | Poles | CC                   | °C      | size    |
|-------------------------|----------------------------|-------|-------|----------------------|---------|---------|
| SK10B<br>SK10T<br>SK10Y | General Graphite           | Epoxy | 2     | 1 cm <sup>-1</sup>   | 0...80  | 110xØ12 |
| SK12T                   | Low cond. Graphite         | Epoxy | 2     | 0.1 cm <sup>-1</sup> | 0...80  | 110xØ12 |
| SK20B<br>SK20T<br>SK20Y | General Platinum           | Glass | 2     | 1 cm <sup>-1</sup>   | 0...110 | 110xØ12 |
| SK21T<br>SK21Y          | Low cond. Platinum         | Glass | 2     | 0.1 cm <sup>-1</sup> | 0...110 | 110xØ12 |
| SK23T                   | High cond. Platinum        | Glass | 2     | 10 cm <sup>-1</sup>  | 0...110 | 130xØ12 |
| SK24T                   | Micro elec. Platinum       | Glass | 2     | 1 cm <sup>-1</sup>   | 0...100 | 110xØ6  |
| SK27B<br>SK27T          | Flat Surface Graphite      | Epoxy | 2     | 1 cm <sup>-1</sup>   | 0...80  | 110xØ12 |
| SK40T                   | 4-pole Graphite            | Epoxy | 4     | 0.5 cm <sup>-1</sup> | 0...80  | 110xØ15 |
| SK41T                   | 4-pole Platinum            | Glass | 4     | 1 cm <sup>-1</sup>   | 0...100 | 110xØ12 |
| SK43T                   | 4-pole High cond. Platinum | Glass | 4     | 10 cm <sup>-1</sup>  | 0...100 | 110xØ12 |



## Temperature Compensator

| Code  | Body                          | type   | °C         | size   |
|-------|-------------------------------|--------|------------|--------|
| ST10N | Teflon coated stainless steel | Pt1000 | -30...+130 | 110xØ4 |
| ST20N | Glass                         | Pt1000 | -30...+130 | 110xØ8 |
| ST21Y | Glass                         | Pt1000 | -30...+130 | 110x12 |

