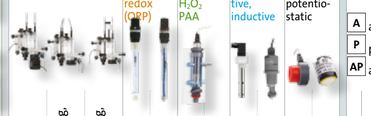
Measurement and control

Measuring units

Measuring cells and sensors



- **AQC-D1:** cleaning motor, pressure-proof
- **AQC-D2:** hydromechanical cleaning, pressure-proof, with water sensor
- **AQC-D3:** hydromechanical cleaning, pressureless
- pH value
- redox potential (ORP)
- hydrogen peroxide H_2O_2
- peracetic acid PAA
- conductive
- inductive
- amperometric
- potentiostatic

Parameters

- 1 1 1 1 — 1. parameter
- 2 2 — 2. parameter
- 3 — 3. parameter
- A — amperometric
- P — potentiostatic
- AP — amperom. or potentiostatic

- chlorine Cl
- chlorine dioxide ClO_2
- ozone O_3
- hydrogen peroxide H_2O_2
- peracetic acid PAA
- conductivity
- pH value
- redox potential (ORP)
- temperature
- ammonia
- hydrochloric acid

Conex® DIA / DIS and DIP measuring amplifier and controllers

DIA-1	(1 parameter)	●	●	●	●	●	●	●					1	1	1	1	1	1	●)
DIA-2	(2 parameters)	●	●	●	●	●	●						1	1	1	1		2	●)
DIA-2Q *)	(2 parameters)	●	●	●	●	●	●	●					1	1	1	1	1	2	2 ●)
DIS-D	(1 parameter)	●	●	●									1	1	1			2	●)
DIS-PR	(1 parameter)				●	●												1	1 ●)
DIS-C	(1 parameter)								●	●							1		●)
DIP	(3 parameters)	●	●	●	●	●							1	1	1			2	3 ●)

*) *Conex® DIA-2Q with compound-loop control* ●) only for compensation in case of temperature fluctuations

Conex® DIA-x-A / DIS-x-A and DIP-A preassembled compact systems

DIA-1-A-*D1/-D2/-D3*	●	●	●	●								1	1	1			2	●)
DIA-2-A -*D1/-D2/-D3*	●	●	●	●								1	1	1			2	●)
DIA-2Q-A -*D1/-D2/-D3* *)	●	●	●	●	●							1	1	1			2	2 ●)
DIA-1-A-PR				●	●												1	1 ●)
DIA-2-A-PR				●	●												1	●)
DIA-1-A-HP						●									1			
DIA-1-A-PA							●									1		
DIS-D-A -*D1/-D2/-D3*	●	●	●									1	1	1				
DIS-PR-A				●	●												1	1
DIP-A -*D1/-D2/-D3*	●	●	●	●	●							1	1	1			2	3 ●)

*) *Conex® DIA-2Q-A with compound-loop control* ●) only for compensation in case of temperature fluctuations

Conex® DIA-G / DIS-G gas warning units control 2 gases simultaneously

DIA-G										●	●	AP	AP	AP			P	P
DIS-G										●		A	A	A				

DIT mobile photometer measures all important parameters in water chemistry

DIT-M
DIT-L

DIT-M: aluminium, bromine, chlorine (free, combined, total), chlorine dioxide,chloride, cyanuric acid, iron, fluoride, manganese, ozone, phosphate, pH, acid demand to pH 4.3, hydrogen peroxid

DIT-L: chlorine (free, combined, total), chlorine dioxide, ozone, pH

BE THINK INNOVATE

Being responsible is our foundation
Thinking ahead makes it possible
Innovation is the essence

GRUNDFOS **WATER TREATMENT**

Perfect control for clean and healthy water

Grundfos Water Treatment

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BE THINK INNOVATE

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Measuring amplifiers

Conex® – extremely easy to operate

Conex® DIA-1/-2/-2Q
Cl_2 / ClO_2 / O_3
pH / redox (ORP)
H_2O_2 / PAA

Conex® DIS-C
conductivity

Sensors

AquaCell & more – for every occasion

AquaCell
Cl_2 / ClO_2 / O_3
pH / redox (ORP)

membrane-covered measuring cells
H_2O_2 / PAA

single-rod probes & electrodes
pH / redox (ORP) / F^-

Compact systems

Plug'n'Play – there is no easier way

Conex® DIS-PR-A
pH / redox (ORP)

DIP-A D2
Cl_2 / ClO_2 / O_3
pH / redox (ORP)

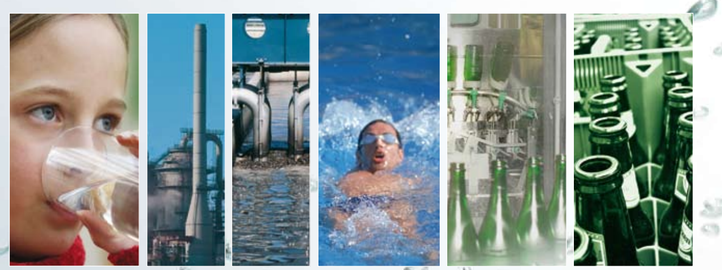
Equipment

Water analysis, safety

DIT – hand photometer

Conex® DIA-G gas warning unit

With our user-friendly measurement and control devices ...



... you'll always get your process under perfect control!

Cl_2 ClO_2 O_3 pH redox (ORP) H_2O_2 PAA

Grundfos Water Treatment measurement and control - you won't find an easier, more comprehensive system!

Straightforward, efficient operation even for complicated processes is our hallmark. That's why all our measuring and control units have convenient, multilingual, plain-text operator prompting throughout.

If you are looking for even greater convenience, Grundfos Water Treatment also provides complete systems consisting of a measuring amplifier and all necessary sensors pre-mounted on a base plate and wired ready for use. These Plug'n'Play systems offer impressive, all-round reliability, ease of use and high precision.

Our measuring amplifiers make life easy

Get optimum control over key water chemistry and process engineering parameters. Our versatile measuring amplifiers offer ultra-precise measurement and control of pH values, redox (ORP), chlorine, chlorine dioxide, ozone, hydrogen peroxide and peracetic acid.

Ultra-easy operation – fast and reliable

- **Plain-text operator prompting**
  Makes even the most complicated settings extremely easy; fewer keyboard inputs and a reliable end result.
- **Straightforward calibration**
  Integrated plausibility check and automatic buffer detection prevent operator error.

Optimal sensors for customized applications

Our sensors are fully adapted to complex water chemistry requirements.

- **Chlorine, chlorine dioxide and ozone**
  Potentiostatic pressure-proof **AquaCell** measuring cells with motorised or hydromechanical electrode cleaning.
- **pH value, redox potential (ORP) and temperature**
  Maintenance-free electrodes and single-rod probes.
- **Conductivity** – conductive or inductive sensors
- **Peracetic acid and hydrogen peroxide**
  Membrane-covered measuring electrodes

Grundfos Water Treatment measuring amplifiers & controllers – as expert and sophisticated as your applications

› The product	› The special feature	› How you benefit
Conex® DIA-1 / -1-A	1 parameter: pH, redox (ORP), Cl_2, ClO_2, O_3, PAA, H_2O_2	The all-round device for flexible use
Conex® DIA-2 / -2-A	2 parameters: (1) Cl_2, ClO_2, O_3 or H_2O_2 , (2) pH	Measures disinfection parameters and pH in parallel
Conex® DIA-2Q **DIA-2Q-A**	2 parameters and compound-loop control: (1) Cl_2, ClO_2, O_3, PAA or H_2O_2, (2) pH or redox (ORP)	Measures disinfection value and pH or redox (ORP) in parallel, compensates flow fluctuations
Conex® DIS-PR / -PR-A **DIS-D / -D-A**	1 parameter each: DIS-PR /-PR-A: pH/redox (ORP) DIS-D / D-A: Cl_2, ClO_2, O_3	High-performance, low-cost Economic-Line: freeing up resources for your process
DIP / DIP-A	3 parameters: (1) Cl_2, ClO_2, O_3, H_2O_2, (2) pH, (3) redox (ORP)	Measures disinfection value and pH and redox (ORP)

Complete systems: Plug'n'Play saves you valuable time and money

For hassle-free turnkey measurement and monitoring of all key parameters for water treatment

- with **Conex® DIA-1, DIA-2, DIA-2Q, DIS-PR/-D** or **DIP**
- and optional sensors such as:
  - pH single-rod probe in a flow-type electrode holder
  - or pressure-proof **AquaCell** with cleaning motor, chlorine electrode, temperature sensor and, depending on the measuring amplifier, also with pH or Redox (ORP) single-rod probes

Areas of Application

- *Drinking water treatment*
  pH control for dosing acids and alkalis, monitoring & control of residual chlorine
- *Industrial process water and waste water* treatment*
  pH control for dosing acids and alkalis and control of chlorine, chlorine dioxide or ozone.
- *Food and beverages industry*
  Disinfection in filling tanks and CIP applications.
- *Swimming pool water treatment*
  pH control for dosing acids and alkalis, monitoring & control of residual chlorine

* for effluent disinfection

Process reliability and water analysis in top form

Total reliability and precision are always needed to control ambient air and water quality for chemical water treatment.

- The **Conex® DIA-G gas warning unit** monitors ambient air for admissible gas concentration – chlorine, chlorine dioxide, ozone, ammonia and hydrochloric acid.
- **DIT** mobile, optoelectronic measuring device with very high measuring accuracy and reproducibility for up to 14 parameters: aluminium, bromine, chlorine (free, combined, total), chlorine dioxide, chloride, cyanuric acid, iron, fluoride, manganese, ozone, phosphate, pH, acid demand to pH 4.3, hydrogen peroxide.

Grundfos Water Treatment sensors

› The product	› The special feature	› How you benefit
AquaCell Cl_2, ClO_2 or O_3, installation points for pH / redox (ORP) / water sensor	› Pressure-proof or pressureless measuring cells › Motorised / hydromechanical cleaning › Integrated temperature sensor	› Pressure-proof cells to recycle sample water › Self-cleaning every time the water is contaminated › Automatic temperature compensation of disinfection value and/or pH value
pH/redox (ORP) single-rod probe	› Ceramic, PTFE or hole diaphragm	› The optimum sensor for every type of water
H_2O_2 / PAA measuring cells	› Membrane-covered measur. electrode	› Protected electrode boosts service life
Photometer (DIT-M, DIT-L)	› Parameters: Al, Br, Cl_2 (free, total, comb.), ClO_2, Cl^-, $C_3H_3N_3O_3$, Fe, F^-, Mn, O_3, PO_4, pH, acid capacity KS(4.3). H_2O_2	› Easy photometrical calibration

Always the optimum functional measurement and control solution for customized applications

› Task	› What Grundfos Water Treatment does	› How you benefit
Straightforward operation and setting	Ultra-easy menu-driven operator prompting, Conex® DIS: easy programming using numerical codes	You master even complex settings without any difficulty and save valuable time
Fast calibration	Separate menu-driven calibration with integrated plausibility check, automatic buffer recognition and AutoRead for calibrating the pH value	You avoid operating errors and achieve maximum process quality
Multiple languages	Multilingual operation using plain-text display in up to nine languages	If your local process operator has a different native language, simply switch
pH and temperature fluctuations	Automatic compensation with a fluctuating pH value and/or changing temperature	You save time and money for additional measuring devices and calculations
Recording (log book function)	Conex® devices (except DIS type) record sensor data and calibration values chronologically with date and time	You have a complete view of the process and cut your service costs
Access protection	Individual operating codes and key locking protect against accidental adjustment or unauthorised access	You secure optimal process availability and quality
System stability	Optimum self-monitoring – wire break monitoring of current loops, automatic regulator optimisation using adaptive regulators and error message for non-functioning sensors	You ensure maximum process reliability without costly downtimes
Optimum regulation	Numerous adjustable control functions – P/PI/PID 2-position controller, limit switch, setpoint controller, continuous controller DIA-1 also with 3-position step controller DIA-2Q with proportional controller + compound-loop control	You ensure maximum flexibility and mould your process to match your exact requirements