



**DR. A. KUNTZE**  
**PRODUCT CATALOGUE 2011**

**disinfectants**

valid from 01.01.2011  
subject to alterations



# disinfectants

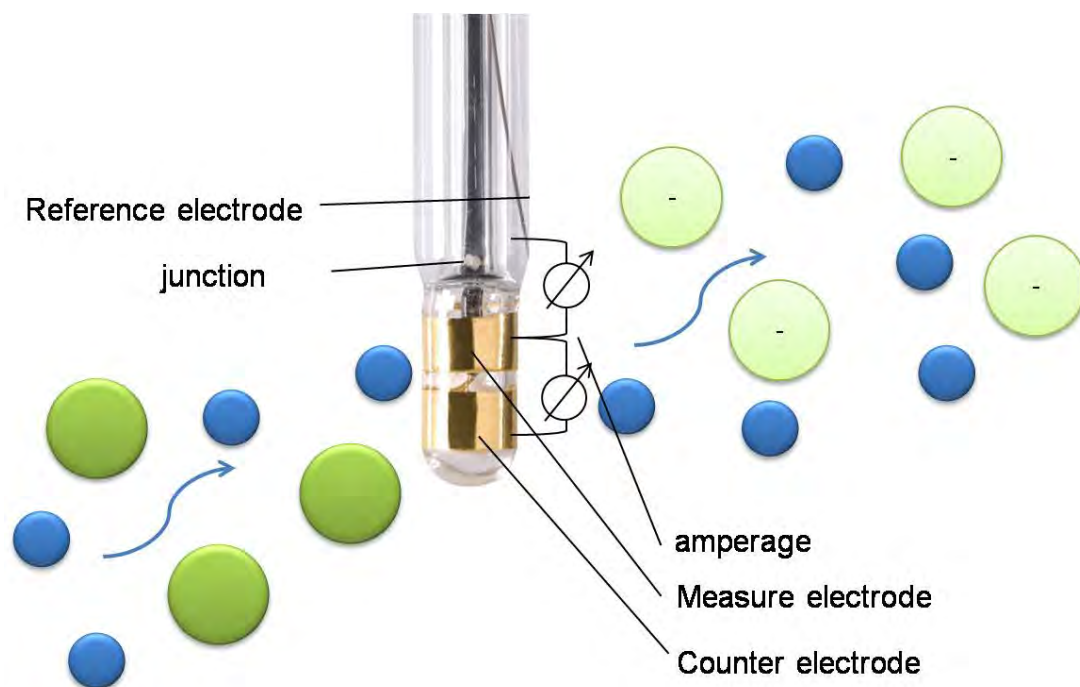
## contents

<b>Things to know</b> .....	4
Dr. A. Kuntze measurement.....	4
Measuring point diagram.....	7
<b>Measuring systems</b> .....	8
Krypton K Multi - Free Chlorine, pH, Temperature, and optionally ORP.....	8
Krypton K - Free Chlorine, Chlorine Dioxide, Ozone, or Peroxide.....	10
Krypton K SCL - Total Chlorine.....	12
<b>Measuring and control instruments</b> .....	14
K 100 (W) - Free Chlorine, Chlorine Dioxide, Ozone, or Peroxide.....	14
ASR - automatic sensor cleaning.....	16
ASR - Frequently asked question.....	17
<b>Sensors</b> .....	18
AuAu-600-OO-2-1-PG - Cl <sub>2</sub> / ClO <sub>2</sub> / O <sub>3</sub> sensor.....	18
PtPt-600-OO-2-1-PG - H <sub>2</sub> O <sub>2</sub> sensor.....	19
<b>Assemblies</b> .....	20
GD 3 V(G) (PP).....	20
<b>Cabels</b> .....	22
5SCR-M12-AE-X.....	22
<b>Accessories</b> .....	23
CHECKIT Comparator.....	23
Pooltester.....	24
S-341 data logger.....	25



### Dr. A. Kuntze measurement

The disinfectants measurement by Dr. A. Kuntze is a potentiostatic measurement with gold measuring and counter electrodes and reference, that measures specific disinfectants selectively. A defined potential is applied to the measuring electrode resulting in an electrical charge. Disinfectant molecules remove part of the charge in an ORP reaction. The measuring and control instrument measures the potential between measuring and reference electrode and readjust the potential. The resulting current is a direct measure for the concentration of the disinfectant.



For Total Chlorine we use membrane sensors.

#### Influence of the flow rate

All molecules of the measured disinfectant that hit the electrode surface contribute to the measured signal. Therefore the signal strength does not only depend on the concentration but also on the flow rate: The higher the flow rate, the more molecules can hit the electrode.

This influence is most noticeable below 15 l/h. In particular, an interruption of the water flow will immediately cause signal loss. Please make sure that the sensor is continuously supplied with water, and that a constant flow rate is maintained.

Above 20l/h the influence of flow rate is less pronounced. A change from 50l/h to 40l/h for example reduces a measured value of 0,3mg/l to 0,28mg/l. The switch point of the flow sensor in our GDM flow cell is at 30l/h. This makes sure that you always work in a flow range where flow changes of 10l/h hardly make any difference.



### Influence of the conductivity

The potentiostatic disinfectant measurement is an electrochemical measurement, it requires a minimum conductivity to ensure a closed electrical circuit. In deionized water a complete breakdown of the measured signal is possible, discernible as extreme fluctuations of the measured values. However above approx. 150microS/cm the conductivity influence has vanished.

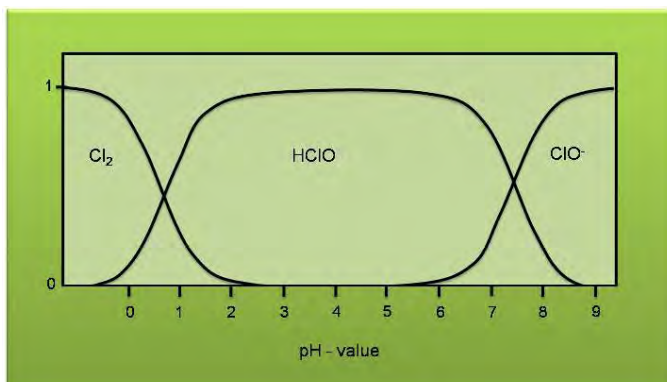
### Influence of the temperature

With increasing temperature, the signal gets stronger. However, the temperature influence is moderate. During test measurements with concentrations of 0.3mg/l, a sensor with a signal output of 25mV/0,1mg showed a temperature dependency of 0.004mg/l per degree Celsius. For most applications, such temperature influence is irrelevant. Anyway in all our measuring systems provide automatic temperature compensation.

### Influence of the pH-value on the measurement of...

#### ... free Chlorine

The expression „free Chlorine“ represents Chlorine dissolved in water, and that covers three different Chlorine compounds that form depending on pH: Chlorine as  $Cl_2$  gas can only be found in acidic solutions. With increasing pH Chlorine reacts with water to form Hypochlorous acid - HOCl. At pH 2 and higher almost all  $Cl_2$  has reacted to HOCl.



At approx. pH 6, neutralisation starts, and the Hypochlorous acid is transformed into Hypochlorite ion -  $ClO^-$ . At pH 9 and higher almost all Hypochlorous acid has turned into Hypochlorite salt. Our Chlorine measurement measures only hypochlorous acid.

The influence is strongest between pH 7 and 8. In this pH range, even small pH changes will strongly change the signal strength. To avoid such deviations, pH must either be kept constant, or measured simultaneously and the measurement used for compensation. If pH is kept constant, the influence is compensated during calibration. It shows only in a slope higher or lower than the ideal value. If not, the Chlorine instrument must offer pH measurement as well.

However, compensation is only possible as long as there is still a noticeable signal. So, even with compensation, the pH range is limited. Above pH 8, only higher concentrations can be detected.

# disinfectants

## Things to know

### Influence of the pH-value on the measurement of...

#### ...Total Chlorine

Total Chlorine is the sum of free and organically bound Chlorine. Apart from Chlorine, hypochloric acid and hypochlorite, it covers various organic Chlorine compounds that might result from the reaction of Chlorine with organic pollutants.

The total Chlorine measurement is not as pH-sensitive as the free Chlorine measurement and can be used over a broad pH range (pH 4..12). The measurement includes a chemical oxidation of Iodide in a defined environment to ensure simultaneous detection of all Chlorine-containing substances. At the electrodes, the Iodine produced in the oxidation is reduced.

#### ... of Chlorine Dioxide, Ozone, Peroxide

In the range pH 6..9 the influence of pH changes on the measurement of Chlorine dioxide, Ozone, and Hydrogen peroxide, is negligible.

### Do you want to measure Free Chlorine by unsteady pH-values

Select our Krypton K Multi with integrated automated sensor cleaning and take advantage of the automatic pH compensation, the pH controller priority function, and the log book that shows the calibration results.



- ✓ Measurement of Free Chlorine, pH value, Temperature, and optional ORP
- ✓ Automatic pH compensation
- ✓ Integrated automatic cleaning [www.automatische-sondenreinigung.de](http://www.automatische-sondenreinigung.de)
- ✓ 2 separate PI-controllers
- ✓ Priority pH controller (adjustable)
- ✓ Serial interface RS 485
- ✓ 3 digital inputs
- ✓ 4 x 0/4 ...20mA



### Measuring point diagram

for a complete measuring point you need at least

- + one measuring and control instrument
- + one sensor
- + one connection cable
- + one assembly
- + optionally an ASR

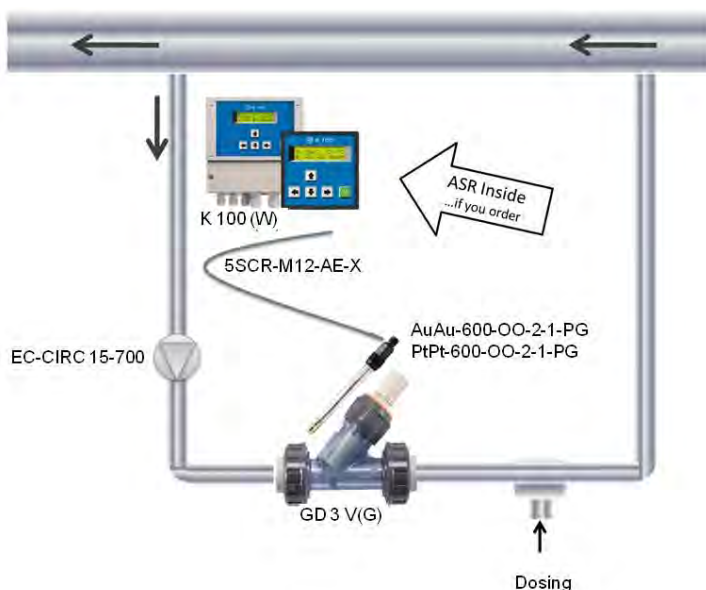
For measuring disinfectants we recommend our complete systems Krypton K or Krypton K Multi, which include all necessary components of a measuring point!



- ✓ Flow: min. 30 l/h, constant
- ✓ Temperature: 0 .. 50 °C
- ✓ Pressure: max. 6 bar bei 20°C, constant
- ✓ conductivity: > 150 µS/cm

You can also compose your measuring point individually!

For measurements of disinfectants with the double gold or double platinum sensor use the flow assembly GD3V(G) with defined incident flow or Krypton System.






- ✓ Flow: min. 30 l/h, constant
- ✓ Temperature: 0 .. 50 °C, if not constant use temperature measurement
- ✓ Pressure: PVC max. 16 bar at 20°C constant
- ✓ Conductivity: > 150 µS/cm

### Krypton K Multi - Free Chlorine, pH, Temperature, and optionally ORP

- Low maintenance by automatic sensor cleaning ASR ([www.automatische-sondenreinigung.de](http://www.automatische-sondenreinigung.de))
- Particular suitable at unsteady pH-values through pH compensation
- Higher safety by integrated flow monitoring



#### applications

-  Disinfection
-  Drinking Water / Beverages
-  Cooling And Boiler Feed Water

#### description

Ready to use and tested en bloc measuring system for automatic measuring and controlling of free Chlorine, pH-value, and temperature. An ORP measurement can be added - as an option. Chlorine concentration and pH-value can be controlled by separate PI-controllers.

#### particular characteristics

- 2 separate PI controllers for Chlorine and pH
- Priority pH controller
- 2 x 2 limit values with delay
- Dosage check for Chlorine and pH
- Semi-automatic two-point-calibration for pH
- Automatic pH compensation of the Chlorine measurement
- Automatic or manual Temperature compensation
- Background illuminated 4 line LC-Display
- Plain text menu guidance
- pass word function
- real time clock
- Log book function for the last 20 calibration data
- Broad range power supply 85 .. 265 V AC or DC
- Serial interface RS 485
- OPTION: 4 x 0/4 .. 20 mA outputs (scaleable, galvanically isolated)
- OPTION: additional ORP measurement





# disinfectants

## Measuring systems

### technical data

<b>measuring parameter</b>		
free Chlorine	0 .. 4 mg/l	
pH-value	0 .. 14 pH	
Temperature	0 .. 50 °C	
ORP	-1500 .. +1500 mV	
<b>input characteristics</b>		
conditions	max. pressure	max. 6 bar (at 20°C), constant
	flow	~30..200 l/h, constant
	ambient temperature	0 .. 50°C
	pH-range	6 .. 8 pH
	min. conductivity	>150 µS/cm
<b>output characteristics</b>		
output signal	optional - 4 x 0/4 .. 20 mA (scaleable, galvanically isolated)	
load	max. 500 Ohm	
registration range	free adjustable within the measuring ranges	
serial interface	RS 485	
	baud rate	9600
	data format	8 bit
<b>power supply</b>		
line voltage	broad range power supply 85 .. 265 V AC or DC	
power consumption	10 VA	
<b>ambient conditions</b>		
ambient temperature	operation 0 .. +50 °C, storage -20 .. + 65°C exception sensors: 0 .. 30°C	
relative humidity	max. 90% at 40°C non-condensed	
protection class	wall mounted housing	IP 65
<b>controller</b>		
control response	On/off controller (adjustable hysteresis) P/I/PID-controller (pulse-pause, pulse-frequency, 3-point controller/ servo motor control (for free Chlorine) or continuous controller output)	
relays	3 x potential-free NO-contact, max. 250 V, 6 A, 550 VA for activation dosing pumps / Servo-motor 1 x potential-free CO-contact, max. 250 V, 6A, 550 VA for alarm	
onset delay	0 .. 2000 sec	
digital input	1) Low water 2) Level switch 3) Controller stop via external contact	
<b>certificates and approvals</b>		
CE-symbol	Declaration of conformity: The product meets the requirements of the harmonized European standards. It thus complies with the legal requirements of the EC directives.	
<b>mechanical construction</b>		
material	board: PVC, assembly: PMMA, cocks: PP, PVC, instrument: ABS, sensors: glass	
dimensions	700 x 395 mm	
sampling point	Stop Cock R 1/4"	
water coupling	inlet/outlet: 1/2" (with stop cock) tube connection DN 6/8	

### dimensional drawing



### order information

name	description	article number
Krypton K Multi	Measuring system for Free Chlorine, pH-value and temperature	70005240K
GDM Redox/ORP add on	1 GDM chamber equipped with ORP sensor and cable	57001520K

### order information accessories

name	description	article number
Pt-55-W	Flow sensor with reed contact and integrated Pt100	24137030K
Set CHECKIT Comparator Cl2	Total and Free Chlorine 0 .. 4 mg/l	79500003K
Set CHECKIT Comparator ClO2	Chlorine Dioxide 0,01 .. 0,2 mg/l	79500004K
Set CHECKIT Comparator O3	Ozone 0 .. 1 mg/l	79500005K
EC-CIRC 15-700	Bypass/ circulation pump with brass housing	79500001K
Modul 4x 0-20 mA	Daughterboard 4 analog outputs (K400)	41800701D



### Krypton K - Free Chlorine, Chlorine Dioxide, Ozone, or Peroxide

- Low maintenance by automatic sensor cleaning
- Pressure-proof up to 6 bar at 20°C
- Higher safety by integrated flow monitoring



#### applications

-  Drinking Water / Beverages
-  Food Industry
-  Disinfection
-  Cooling And Boiler Feed Water

#### description

Ready to use and tested en bloc measuring board for measuring and control of Free Chlorine, Chlorine Dioxide, Ozone or Hydrogen Peroxide

#### particular characteristics

- Inclusive instrument, single rod sensor, PMMA flow assembly (with sampling point, stop cocks for inlet and outlet, flow monitoring and temperature sensor), automatic sensor cleaning ASR and all necessary cables
- Plain text menu guidance
- Password function
- 2 limit values with delay, assigned to alarm relay
- 2 separate PI-controllers
- Dosage check
- Background illuminated two-line LC-Display for measured value and temperature
- Serial interface RS 485
- Scaleable, galvanically isolated 0/4 .. 20 mA output
- Display of relay status and error messages
- Invertible alarm output, permanent or pulse contact



### technical data

<b>measuring parameter</b>		
parameter	free Chlorine, Chlorine Dioxide, Ozone, Hydrogen Peroxide	
measuring range	0.00 .. 4.00 mg/l Cl <sub>2</sub>	free Chlorine
	0.00 .. 4.00 mg/l ClO <sub>2</sub>	Chlorine Dioxide
	0.00 .. 4.00 mg/l O <sub>3</sub>	Ozone
	0.00 .. 30.00 mg/l H <sub>2</sub> O <sub>2</sub>	Hydrogen Peroxide
<b>input characteristics</b>		
temperature measuring range	-30 .. +140°C	
flow monitoring	Flow monitor with integrated Pt 100	
conditions	max. pressure	6 bar (at 20°), constant
	flow	~ 30..200 l/h, constant
	ambient temperature	0..50 °C
	pH-range	pH 6..8, constant
	min. conductivity	>150 µS/cm
<b>output characteristics</b>		
output signal	0/4 .. 20 mA (scaleable, galvanically isolated)	
load	max. 500 Ohm	
registration range	adjustable within measuring range	
serial interface	RS 485	
	baud rate	9600
	data format	8 bit
<b>power supply</b>		
line voltage	24 / 117 / 230 VAC, +6 / -10 %, 40 .. 60 Hz	
power consumption	10 VA	
<b>ambient conditions</b>		
ambient temperature	operation 0 .. +50°C, storage -20 .. +65°C exception sensors 0 .. 30°C	
relative humidity	max. 90% rH at 40°C (non-condensing)	
protection class	wall mounted housing	IP 65
<b>controller</b>		
control response	on/off controller (adjustable hysteresis) P/PI controller (pulse-pause, pulse-frequency or continuous output)	
relays	2 relays each with potential-free NO contact, max. 250 V, 6 A, 550 VA 1 alarmrelay each with potential-free NO/CO contact, max. 250 V, 6 A, 550 VA	
onset delay	0 .. 200 sec until controller active	
digital input	controller stop via external contact	
<b>certificates and approvals</b>		
CE-symbol	Declaration of conformity: The product meets the requirements of the harmonized European standards. It thus complies with the legal requirements of the EC directives.	
<b>mechanical construction</b>		
material	board: PVC, assembly: PMMA, cocks: PP/PVC instruments: ABS, sensors: glass	
dimensions	700 x 395 mm	
sampling point	1/4" female thread with stop cock	
water coupling	inlet/ outlet: 1/2" female thread (with stop cock) tube connection DN 6/8	

### order information

name	description	article number
Krypton K CL2	measuring system (230 V), Free Chlorine	70005200K
Krypton K CLO2	measuring system (230 V); Chlorine Dioxide	70005250K
Krypton K O3	measuring system (230 V), Ozone	70005400K
Krypton K H2O2	measuring system (230 V), Hydrogen Peroxide	70005450K

### order information accessories

name	description	article number
AuAu-600-OO-2-1-PG	sensor for Free Chlorine, Chlorine Dioxide and Ozone	24135140K
Pt-55-W	Flow sensor with reed contact and integrated Pt100	24137030K
Set CHECKIT Comparator Cl <sub>2</sub>	Total and Free Chlorine 0 .. 4 mg/l	79500003K
Set CHECKIT Comparator ClO <sub>2</sub>	Chlorine Dioxide 0,01 .. 0,2 mg/l	79500004K
Set CHECKIT Comparator O <sub>3</sub>	Ozone 0 .. 1 mg/l	79500005K
EC-CIRC 15-700	Bypass/ circulation pump with brass housing	79500001K
PKV-30-DPS	Converter for PROFIBUS-DP for max. 32 Kuntze instruments	66416000K
S-341 data logger	bus data logger based on RS 485 with Kuntze protocol	42001000K
PIPL-600-OO-2-1-PG	sensor for measuring hydrogen peroxide	24135260K
POOLTESTER	colorimetric rapid test	79500002K







### Krypton K SCL - Total Chlorine

- Higher safety by integrated flow monitoring
- Suitable for high pH values up to pH 12
- Reduced pH influence



#### applications

-  Disinfection
-  Drinking Water / Beverages
-  Process Water
-  Cooling And Boiler Feed Water

#### description

Ready for use system to measure and control total chlorine (= free chlorine and organically bound chlorine)

#### particular characteristics

- Inclusive instrument, membrane sensor, PMMA flow assembly (with sampling point, stop cocks for inlet and outlet, flow monitoring and temperature sensor) and all necessary cables
- Plain text menu guidance
- Password function
- 2 limit values with delay, assigned to alarm relay
- 2 separate PI controllers
- Dosage check
- Background illuminated LC-Display for measured value and temperature
- Serial interface RS 485
- Scaleable, galvanically isolated 0/4 .. 20 mA output
- Display of relay status and error messages



### technical data

<b>measuring parameter</b>		
total Chlorine	0 .. 10 mg/l TCl <sub>2</sub>	
<b>input characteristics</b>		
temperature measuring range	-30 .. +140°C	
flow monitoring	Flow monitor with integrated Pt 100	
<b>conditions</b>		
max. pressure	0.5 bar	
flow	~ 30 .. 200 l/h	
ambient temperature	1 .. 45°C	
pH-range	4 .. 12 pH	
<b>output characteristics</b>		
output signal	0/4 .. 20 mA (scaleable, galvanically isolated)	
load	max. 500 Ohm	
registration range	free scaleable within the measuring range	
voltage output	+/- 6 VDC	
<b>serial interface</b>		
RS 485		
baud rate	9600	
data format	8 bit	
<b>power supply</b>		
line voltage	24/ 117/ 230 VAC, +6/- 10 %, 40 .. 60 Hz	
power consumption	10 VA	
<b>ambient conditions</b>		
ambient temperature	operation 1 .. 45°C storage -20 .. +65°C Storage sensor: 10 .. 30°C	
relative humidity	max. 90% rH at 40°C (non-condensing)	
protection class	wall mounted housing	IP 65
<b>controller</b>		
control response	on/off controller (adjustable hysteresis) P/I controller (pulse-pause, pulse-frequency or continuous output)	
relays	3 relays each with potential-free NO contact, max. 250 V, 6 A, 550 VA	
onset delay	0 .. 200 sec till controller active	
<b>certificates and approvals</b>		
CE-symbol	Declaration of conformity: The product meets the requirements of the harmonized European standards. It thus complies with the legal requirements of the EC directives.	
<b>mechanical construction</b>		
material	board: PVC, assembly: PMMA, cocks: PP/PVC instrument: ABS, sensor: PVC, stainless steel	
dimensions	700 x 395 mm	
sampling point	1/4" female thread with stop cock	
water coupling	inlet/outlet: 1/2" female thread with stop cocks and tube connectors DN6/8	

### order information

name	description	article number
Krypton K SCL2	measuring system (230 V), Total Chlorine	70005300K

### order information accessories

name	description	article number
Set CHECKIT Comparator Cl <sub>2</sub>	Total and Free Chlorine 0 .. 4 mg/l	79500003K
Set CHECKIT Comparator ClO <sub>2</sub>	Chlorine Dioxide 0,01 .. 0,2 mg/l	79500004K
Set CHECKIT Comparator O <sub>3</sub>	Ozone 0 .. 1 mg/l	79500005K
PKV-30-DPS	Converter for PROFIBUS-DP for max. 32 Kuntze instruments	66416000K
S-341 data logger	bus data logger based on RS 485 with Kuntze protocol	42001000K



### K 100 (W) - Free Chlorine, Chlorine Dioxide, Ozone, or Peroxide

- Easy and safe operation by plain text menu guidance
- Safety by password function



#### applications

-  Drinking Water / Beverages
-  Disinfection
-  Cooling And Boiler Feed Water
-  Waste Water Treatment

#### description

The series K 100 is a high sophisticated single channel measurement and control instrument for disinfectants like Free Chlorine, Chlorine Dioxide, Ozone and Hydrogen Peroxide.

#### particular characteristics

- 2 limit values with delay, assigned to alarm relay
- 2 separate PI-controllers
- Dosage check
- Background illuminated two-line LC-Display for measured value and temperature
- Serial interface RS 485 optional
- Scaleable, galvanically isolated 0/4 .. 20 mA output
- Display of relay status and error messages
- Invertible alarm output, permanent or pulse contact



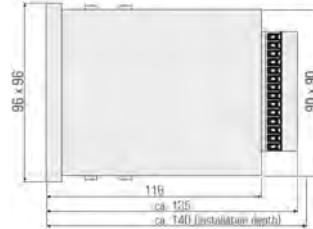
# Measuring and control instruments

## technical data

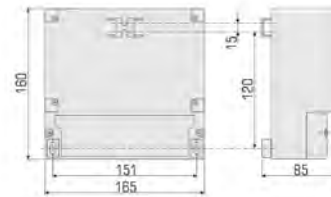
<b>measuring parameter</b>		
parameter	free Chlorine, Chlorine Dioxide, Ozone, Hydrogen Peroxide	
measuring range	0.0 .. 4.00 mg/l free Chlorine, Chlorine Dioxide, Ozone	
	0.0 .. 20.00 mg/l free Chlorine	
	0.0 .. 30 mg/l Hydrogen Peroxide	
<b>input characteristics</b>		
temperature measuring range	-30 .. +140 °C	
<b>output characteristics</b>		
output signal	0/4 .. 20 mA (scaleable, galvanically isolated)	
load	max. 500 Ohm	
registration range	free scaleable within the measuring range	
serial interface	RS 485 (optional)	
	Baud rate	9600
	data format	8 bit
<b>power supply</b>		
line voltage	24 / 117/ 230 VAC, +6/-10%, 40 .. 60 Hz	
power consumption	10 VA	
<b>ambient conditions</b>		
ambient temperature	Operation 0 .. +50 °C, storage -20 .. +65°C	
relative humidity	max. 90% rH at 40°C (non-condensing)	
protection class	panel mounted housing IP 54 (front), IP 30 (housing)	
	wall mounted housing IP 65	
<b>controller</b>		
control response	on/off controller (adjustable hysteresis) P/PI controller (pulse-pause, pulse-frequency or continuous output)	
relays	2 relays, each with a potential-free NO contact, max. 250V, 6 A, 550 VA 1 alarmrelay with potential-free CO/NO contact, max. 250V, 6A, 550 VA	
onset delay	0 .. 200 sec till controller active	
digital input	Controller stop via external contact	
<b>certificates and approvals</b>		
CE-symbol	Declaration of conformity: The product meets the requirements of the harmonized European standards. It thus complies with the legal requirements of the EC directives.	
<b>mechanical construction - panel mounted housing</b>		
material	Noryl	
dimensions	90x90x116 mm	
installation dimensions	92x92x140 mm	
weight	0.75 kg	
connection	push-screw terminals	
<b>mechanical construction - wall mounted housing</b>		
material	ABS	
dimensions	165x160x85 mm	
weight	0.95 kg	
connection	Spring-loaded terminals	

## dimensional drawing

panel mounted housing



wall mounted housing



## order information

name	description	article number
K 100 CL2	free chlorine, panel mounted housing, 230 VAC	100200K
K 100 W CL2	free chlorine, wall mounted housing, 230 VAC	105200K
K 100 CLO2	chlorine dioxide, panel mounted housing, 230 VAC	100250K
K 100 W CLO2	chlorine dioxide, wall mounted housing, 230 VAC	105250K
K 100 O3	ozone, panel mounted housing, 230 VAC	100400K
K 100 W O3	ozone, wall mounted housing, 230 VAC	105400K
K 100 H2O2	Hydrogen Peroxide, panel mounted housing, 230 VAC	100450K
K 100 W H2O2	Hydrogen Peroxide, wall mounted housing, 230 VAC	105450K

## order information accessories

name	description	article number
ASR modul K 100 W	ASR - automatic sensor cleaning - modul for measuring and control instruments K 100 W K 100 W CL2, CLO2, O3 und H2O2	50105200K
RS 485 Modul K 100 W	Serial interface module for series K 100	50105003K

Please keep in mind the conditions for our measurement like minimum flow with defined inflow, pressure, temperature and conductivity.



### ASR - automatic sensor cleaning

- Add-on for Kuntze disinfectant measurement
- No refill of chemical or physical agents
- Strongly reduced calibration demand
- Without manual cleaning
- [www.automatische-sondenreinigung.de](http://www.automatische-sondenreinigung.de)



ASR

#### description

The cleaning is carried out electrochemically by electrolysis of water:  $H_2O \rightarrow O_2 + H_2$ . The electrochemical cleaning acts threefold: the generated gases hydrogen and oxygen blast away even persistent coatings. Oxygen oxidises organic compounds, and hydrogen reduces rust and manganese oxide and likewise destroys organic coatings. The produced gas volumes are small and unused gas molecules recombine automatically to the water they stem from. The cleaning is activated in the menu of the measuring and control instrument. The starting time of cleaning can be defined by the user. The cleaning cycle lasts approx. 20 seconds. The measuring value is locked for five minutes, in the display, in the output signal, and also for the controller, to give the electrode time to polarize. The cleaning can be set to 0/1/2 times per day. ASR aims at keeping the sensor clean from the beginning. It was not meant to clean already coated sensors, since with those sensors the signals will be higher after cleaning, making a recalibration necessary.

#### order information

name	description	article number
ASR modul K 100 W	ASR - automatic sensor cleaning - modul for measuring and control instruments K 100 W K 100 W CL2, ClO2, O3 und H2O2	50105200K

The ASR can only be used in combination with our sensors AuAu-600-O-2-1-PG, PtPt-600-O-2-1-PG and Au-505-30-PG and measuring and control instruments for Free Chlorine, Chlorine Dioxide, Ozone, Peroxide and conductivity.





## ASR - Frequently asked question

### **Can I use ASR on coated sensors?**

Yes. You can use ASR for already coated sensors. You might need more than one cleaning cycle. After cleaning you will probably need to recalibrate, because by removing the coating the slope of the sensor can raise. ASR should be used from the start, keep the electrodes clean, the slope of the sensor is maintained and there is no need to recalibrate.

### **How many times is a cleaning necessary?**

A cleaning once a day is usually adequate. We recommend to raise the number of cleanings, if the measured values decrease visible within a few days.

### **Do I need to recalibrate after cleaning?**

No. The cleaning is supposed to maintain the original slope of the sensor, not to change it. If the cleaning runs from the start, the slope should change so little over the time that a recalibration is not necessary. Only calibrate if the electrode was not clean before cleaning and the value is still much higher immediately before the next cleaning. Generally never calibrate directly after cleaning, so that the calibration does not correspond with the abated polarization phase. That's the reason why we lock the calibration menu for five minutes. During this time the status message „cleaning in progress“ is shown in the display.

### **I can not use the calibration menu - why?**

The measured value is locked for five minutes in the display, in the output signal and also for the controller, in order to give the electrode time to polarize. During this time the status message „cleaning in progress“ is shown in the display, and the calibration menu is locked.

### **Can I use ASR under all circumstances?**

The automatic sensor cleaning should not be used in sea water or other saline media and also not in ultra pure water or other deionized media.

### **Is ASR also suitable for sea water?**

In sea water, brine or other saline media the ASR should not be used. At high salt concentrations chlorine is build produced oxygen during the cleaning. And this does not only interfere with the measurement but also corrodes the gold electrodes.

### **Is ASR available for pH sensors?**

No, sorry. The glass membrane cannot be cleaned electrochemically. However, ASR is now available for conductivity sensors.



### AuAu-600-OO-2-1-PG - Cl<sub>2</sub>/ ClO<sub>2</sub>/ O<sub>3</sub> sensor

- Low maintenance by gel filling
- Automatic cleaning possible with ASR
- Virtually flow-independant above 30 l/h



AuAu-600-OO-2-1-PG AuAu-600-OO-2-1-PG

#### applications

- Waste Water Treatment
- Drinking Water / Beverages
- Disinfection
- Cooling And Boiler Feed Water

#### description

AuAu-600-OO-2-1-PG is a single rod sensor with integrated counter electrode. This potentiostatic double gold sensor is in combination with our instruments suitable for measuring free Chlorine, Chlorine Dioxide and Ozone.

#### technical data

<b>ambient conditions</b>	
max. pressure	16 bar (at 20°C)
min. conductivity	>150 µS/cm with ASR > 200µS/cm
temperature	-5 .. +70 °C
<b>mechanical construction</b>	
junction	Ceramic
shaft material	Glass
electrode material	Gold
reference system	Ag/AgCl/Tepox gel
mechanical connection	S8 screw connection (PG 13,5)
electrical connection	M12 screw connection

#### order information

name	description	article number
AuAu-600-OO-2-1-PG	sensor for Free Chlorine, Chlorine Dioxide and Ozone	24135140K

#### order information accessories

name	description	article number
GD 3 V	adhesive coupling (DN 25), PVC	36604280K
GD 3 VG	pipe coupling (DN 25) with 1" internal thread, PVC	36604281K
GD 3 VG PP	pipe coupling (DN 25) with 1" internal thread, PP	36604285K
5SCR-M12-AE-5	connection cable for double gold or double platinum sensors, 5m	44136411K
5SCR-M12-AE-10	connection cable for double gold or double platinum sensors, 10 m	44136412K

Please keep in mind the conditions for our measurement like minimum flow with defined inflow, pressure, temperature and conductivity.





## PtPt-600-OO-2-1-PG - H2O2 sensor

- Low maintenance by gel filling
- Automatic cleaning possible with ASR
- Virtually flow-independant above 30 l/h



PtPt-600-OO-2-1-PG PtPt-600-OO-2-1-PG

### applications

-  Waste Water Treatment
-  Disinfection

### description

PtPt-600-OO-2-1-PG is a single rod sensor with integrated counter electrode. This potentiostatic double platinum sensor is in combination with our instruments suitable for measuring hydrogen peroxide.

### technical data

<b>ambient conditions</b>	
max. pressure	16 bar (at 20°C)
min. conductivity	>150 µS/cm with ASR > 200µS/cm
temperature	-5 .. +70 °C
<b>mechanical construction</b>	
junction	Ceramic
shaft material	Glass
electrode material	Platinum
reference system	Ag/AgCl/Tepon gel
mechanical connection	S8 screw connection (PG 13.5)
electrical connection	M12 screw connection

### order information

name	description	article number
PtPt-600-OO-2-1-PG	sensor for measuring hydrogen peroxide	24135260K

### order information accessories

name	description	article number
GD 3 V	adhesive coupling (DN 25), PVC	36604280K
GD 3 VG	pipe coupling (DN 25) with 1" internal thread, PVC	36604281K
GD 3 VG PP	pipe coupling (DN 25) with 1" internal thread, PP	36604285K
K 100 H2O2	Hydrogen Peroxide, panel mounted housing, 230 VAC	100450K
K 100 W H2O2	Hydrogen Peroxide, wall mounted housing, 230 VAC	105450K
5SCR-M12-AE-5	connection cable for double gold or double platinum sensors, 5m	44136411K
5SCR-M12-AE-10	connection cable for double gold or double platinum sensors, 10 m	44136412K

Please keep in mind the conditions for our measurement like minimum flow with defined inflow, pressure, temperature and conductivity.



### GD 3 V(G) (PP)

- Defined incident flow
- Easy to dismantle



GD 3 VG

#### description

Flow assembly for installation of one sensor AuAu-600-OO-2-1-PG or PtPt-600-OO-2-1-PG with adhesive coupling or pipe coupling DN 25 with 1" female thread. Available in PVC and PP.

#### technical data

<b>ambient conditions</b>	
max. pressure	PVC: 16 bar (at 20°C) PP: 10 bar (at 20°C)
temperature	max. 40°C (PVC) max. 90°C (PP)
<b>mechanical construction</b>	
material	PVC, PP
dimensions	see dimension drawing
installation	GD 3 V: adhesive coupling GD 3 VG (PP): pipe coupling DN 25 with 1" female thread

#### order information

name	description	article number
GD 3 V	adhesive coupling (DN 25), PVC	36604280K
GD 3 VG	pipe coupling (DN 25) with 1" internal thread, PVC	36604281K
GD 3 VG PP	pipe coupling (DN 25) with 1" internal thread, PP	36604285K

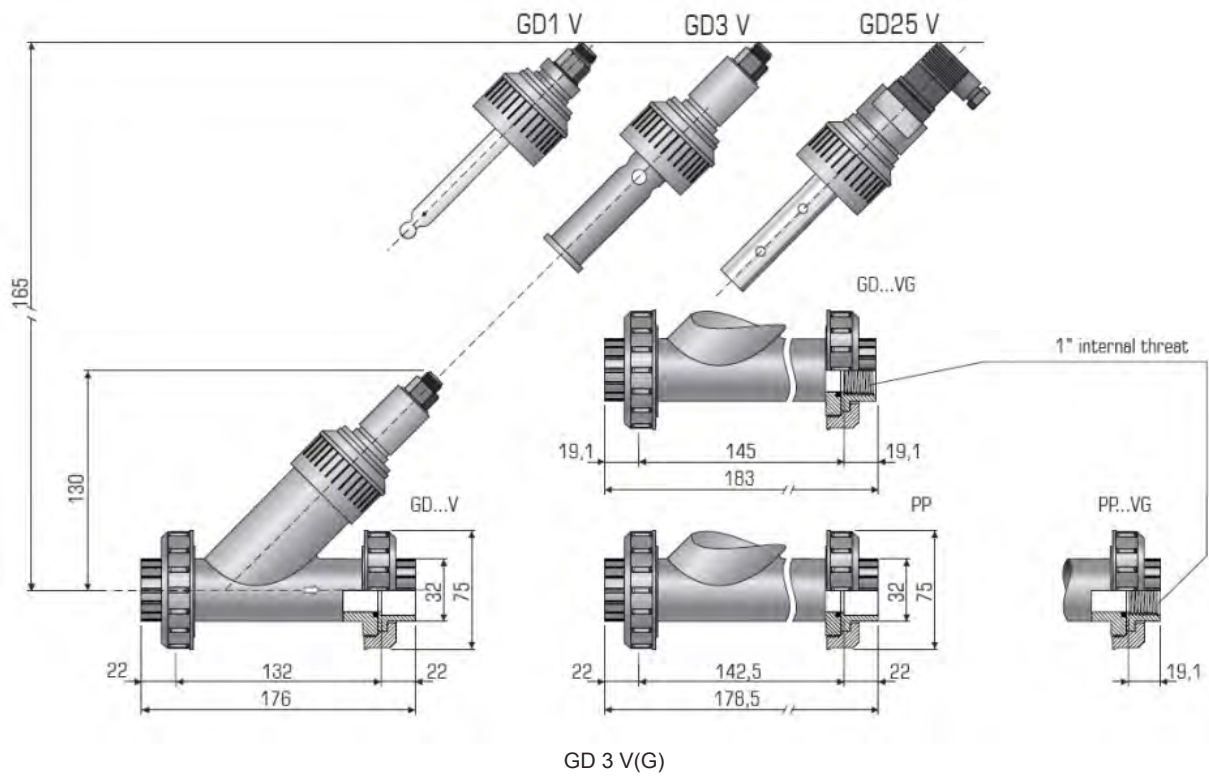
#### order information accessories

name	description	article number
AuAu-600-OO-2-1-PG	sensor for Free Chlorine, Chlorine Dioxide and Ozone	24135140K
PtPt-600-OO-2-1-PG	sensor for measuring hydrogen peroxide	24135260K



## GD 3 V(G) (PP)

dimensional drawing



### 5SCR-M12-AE-X

- Screened
- M12 plug
- Wire end ferrules



5 SCR-M12-AE-X

#### description

Screened cable for connecting the single rod sensors AuAu-600-O-2-1-PG and PtPt-600-O-2-1-PG, available in 5 or 10 m length.

#### technical data

<b>ambient conditions</b>	
ambient temperature	-20 .. +70°C
<b>mechanical construction - panel mounted housing</b>	
material	PVC

#### order information

name	description	article number
5SCR-M12-AE-5	connection cable for double gold or double platinum sensors, 5m	44136411K
5SCR-M12-AE-10	connection cable for double gold or double platinum sensors, 10 m	44136412K






### CHECKIT Comparator

- Fast
- Simple
- Low cost



Checkit

#### applications

-  Drinking Water / Beverages
-  Cooling And Boiler Feed Water
-  Disinfection

#### description

The CHECKIT Comparator is a compact handy colorimeter unit which is suitable for both mobile and static analysis work. CHECKIT Comparator is a colorimetric rapid test for easy determination of Free Chlorine, Total Chlorine, Chlorine Dioxide or Ozone concentrations that can be used as an indication measurement for our amperometric measuring systems. Naturally, regarding resolution and accuracy, the rapid test does not come close to the Krypton systems, and it cannot replace a photometric measurement. However, it provides a quick orientation and can therefore prove helpful during installation or routine comparison. The CHECKIT Comparator comes in a robust plastic casing with all necessary equipment.

#### technical data

measuring parameter	
free Chlorine	0.0 .. 4.0 mg/l
total Chlorine	0.0 .. 4.0 mg/l
Chlorine Dioxide	0.01 .. 0.2 mg/l
Ozone	0 .. 1 mg/l

#### order information

name	description	article number
Set CHECKIT Comparator Cl2	Total and Free Chlorine 0 .. 4 mg/l	79500003K
Set CHECKIT Comparator ClO2	Chlorine Dioxide 0,01 .. 0,2 mg/l	79500004K
Set CHECKIT Comparator O3	Ozone 0 .. 1 mg/l	79500005K






### Pooltester

- Fast
- Simple
- Low cost



POOLTESTER

#### applications

-  Drinking Water / Beverages
-  Cooling And Boiler Feed Water
-  Disinfection

#### description

POOLTESTER is a colorimetric rapid test for easy determination of Hydrogen peroxide concentrations that can be used as an indication measurement for our amperometric measuring systems. Naturally, regarding resolution and accuracy, the rapid test does not come close to the Krypton systems, and it cannot replace a photometric measurement. However, it provides a quick orientation and can therefore prove helpful during installation or routine comparison. The POOLTESTER comes in a robust plastic casing with 20 tablets in a blister pack and a multi-language manual.

#### technical data

measuring parameter	
Hydrogen Peroxide	0 .. 50 mg/l

#### order information

name	description	article number
POOLTESTER	colorimetric rapid test	7950002K





### S-341 data logger

- free administration of 10 instruments with up to 8 parameter each
- data storing takes place every second



S-341 data logger

#### particular characteristics

- available in German, English or French menu guidance
- data storing in 24h files in text format
- storage media is standard SD-card (max. 1 GB, FAT 12/16)
- Graphical program vario view2 is available free of charge

#### description

The bus data logger S-341 on the base of the RS-485 with Kuntze protocol reads, shows, and stores measuring data of up to 10 Kuntze instruments with up to 8 parameters each.

#### technical data

<b>power supply</b>	
voltage supply	20...253 VDC or 50...253 VAC
<b>mechanical construction - panel mounted housing</b>	
material	panel mounted housing (91x44x131)

#### order information

name	description	article number
S-341 data logger	bus data logger based on RS 485 with Kuntze protocol	42001000K



# disinfectants

## Notes



The Dr. A. Kuntze GmbH "Terms and Conditions" will be applicable.

DR. A. KUNTZE | GUTES WASSER MIT SYSTEM

Robert-Bosch-Str. 7a  
D-40668 Meerbusch  
Phone: +49 2150 7066-0, Fax: -60  
[www.kuntze.com](http://www.kuntze.com)

# disinfectants

Notes

The Dr. A. Kuntze GmbH "Terms and Conditions" will be applicable.

Robert-Bosch-Str. 7a  
D-40668 Meerbusch  
Phone: +49 2150 7066-0, Fax: -60  
[www.kuntze.com](http://www.kuntze.com)

DR. A. KUNTZE | GUTES WASSER MIT SYSTEM





## Dr. A. Kuntze GmbH

Robert-Bosch-Str. 7a | D-40668 Meerbusch | Germany  
Fon +49 (0) 2150 70 66 -0 | Fax +49 (0) 2150 70 66 -60  
[info@kuntze.com](mailto:info@kuntze.com) | [www.kuntze.com](http://www.kuntze.com)