sigrist photometer

ColorPlus 2 System

Monitoring the elimination of micropollutants in the 4th treatment stage

Fully automatic complete system for comparative measurement of SAK-254 values – including automatic cleaning for reliable and low-maintenance long-term measurements.

The ColorPlus 2 system offers reliable and precise online monitoring of the fourth treatment stage in wastewater treatment plants. The SAK-254 values are continuously recorded both before and after treatment in order to reliably assess the purification performance. Thanks to its modular design, the system can be flexibly expanded to up to four measuring points. The automatic, time-controlled cleaning with phosphoric acid and subsequent blowing out with compressed air guarantee permanently accurate and stable measurement results.

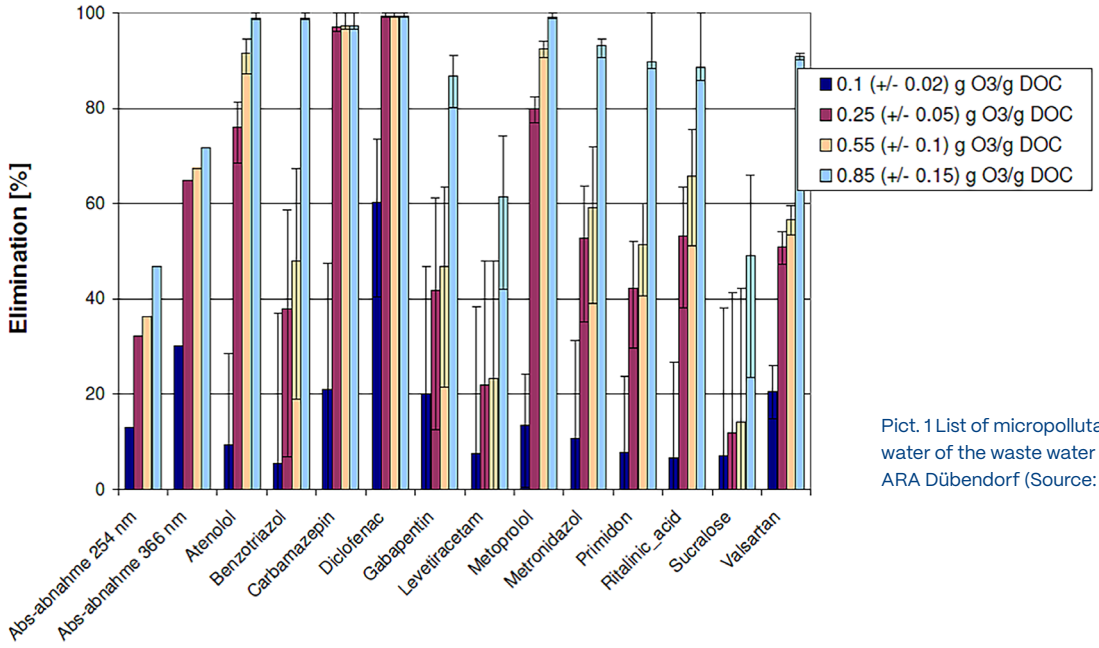
The basic version of the ColorPlus 2 system consists of

- 2 absorption measuring devices ColorPlus 2 Bypass
- System for automatic cleaning of the measuring cell with compressed air and cleaning agent (phosphoric acid 5–10%)

Advantages of the SIGRIST complete system

Customer benefits

- The elimination of micropollutants before and after the 4th clarification stage (ozonation, PAH, GAC) is precisely measured.
- The effectiveness of the 4th treatment stage is monitored.
- Dosing of ozone or PAH to keep resource consumption low.
- The automatic cleaning unit ensures stable, low-maintenance long-term measurements.
- The entire system can therefore be operated for longer without downtime.



Pict. 1 List of micropollutants in waste water of the waste water treatment plant ARA Dübendorf (Source: eawag)

The introduction of the fourth purification stage in wastewater treatment plants aims to remove micropollutants such as drug residues, cleaning agents, pesticides and cosmetics – substances that can hardly be detected with the existing purification stages. As individual trace substances can only be detected directly in the laboratory at great expense, the SAK-254 value serves as a practical online substitute parameter. It records the total amount of dissolved organic substances and thus allows continuous monitoring. A comparison of the SAK-254 values before and after treatment provides meaningful information about the effectiveness of the fourth treatment stage. The value can also be used to dose ozone or powdered activated carbon (PAC) as required.

The elimination of these trace substances in wastewater is tackled in three ways:

- Ozonation: the ozone oxidises the trace substances
- Powdered activated carbon PAH: PAH added to the wastewater in doses binds these trace substances
- Granular activated carbon (GAC): fixed-bed filters made of GAC filter trace substances out of the wastewater

Several European countries, including Germany and Switzerland, have already introduced legal requirements or funding programmes for retrofitting wastewater treatment plants. As part of the revision of the Urban Wastewater Directive, the EU is planning to establish EU-wide requirements for the reduction of these substances in water bodies in future.

Particles can lead to blockages in the valves. Prefiltration is essential to ensure smooth and trouble-free operation.

Main technical details

Measuring principle:	Absorption
Wave length UV lamp:	254nm
Measuring span:	0 ... 3 E
Resolution:	0.001 E
Protection degree:	IP 65
Sample Temperature:	0 ... 40 °C

Details and technical data:

sigrist.com

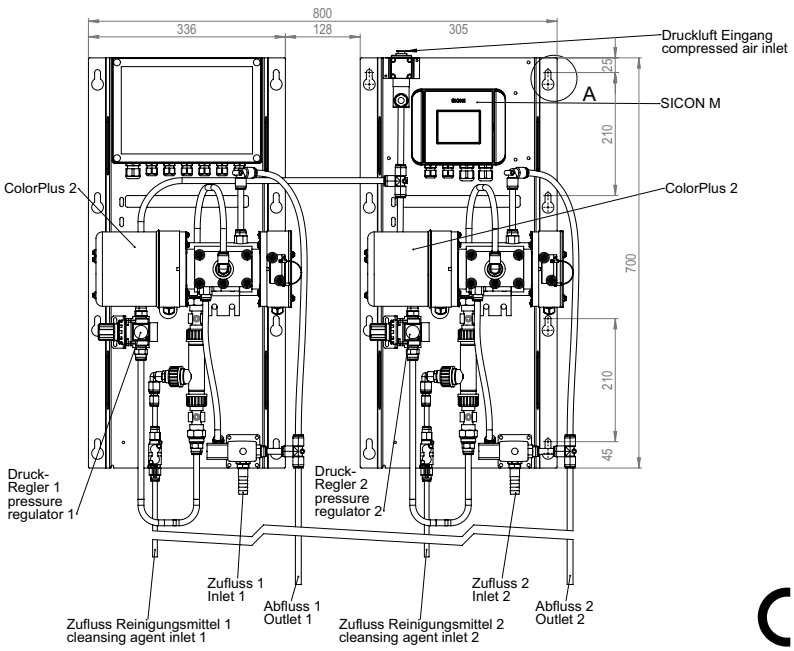
Sigrist-Photometer AG
Hofurlistrasse 1 – CH-6373 Ennetbürgen

+41 41 624 54 54
info@sigrist.com

ColorPlus 2 System

Technical data

Device	
Measuring principle:	Absorption
Wave length UV lamp:	254nm
Measuring span:	0 ... 3 E
Resolution:	0.001 E
Measuring ranges:	8, freely configurable
Ambient temperature:	–10.. + 50 °C
Enclosure material:	Stainless steel 1.4301
Protection degree:	IP 65
Power supply:	100..240 VAC, 47..63 Hz, 35 W (70 W peak power)
Accuracy	±2 %, or ± 0.01 E (intersection point 0.5 E)
Repeatability:	±0.5 %, or ± 0.001 E (intersection point 0.25 E)
Flow cell	
Material:	PVC 100mm
Window material:	Quarz (UV)
Seals:	EPDM
Sample Temperature:	0 ... 40 °C
Sample pressure:	400 kPA (4 bar)
Sample flow:	min 1 l/min
Compressed air supply:	200 ... 350 kPA (2..3.5 bar)
Control unit SICON M	
Display:	1/4 VGA, 3.5"
Operation:	Touchscreen
Outputs:	4 x 0/4..20mA, galv.separated, 7 x digital
Inputs:	5 x digital, freely configurable
Digital interfaces:	Ethernet, microSD card, Modbus TCP
Optional interfaces:	Profibus DP, Modbus RTU



Authorised Distributor:

AMPMECH
46, Jalan SS 22/21, Damansara Jaya,
47400 Petaling Jaya,
Selangor Darul Ehsan, Malaysia.
Email: ampmech@ampmech.com
Website: www.ampmech.com

Sigrist-Photometer AG
Hofurlistrasse 1 – CH-6373 Ennetbürgen
+41 41 624 54 54
info@sigrist.com