

Suited for all  
printing machines and  
dampening solution systems

**UNI**sensor

Sensorsysteme GmbH

Modular system for precise  
measurement and control  
of alcohol concentration  
in offset printing



**ALCOPRINT 4000**

## # Specifications

Type	ALCOPRINT 4000
Measuring principle	opto-electronic
Measurement	continuous selective infrared measurement in the measuring fluid, output of measured values every second
Measuring components	IPA (optional: ISO 800)
Measuring range	0.5% vol. to 15% vol. IPA
Measurement tolerance	less than $\pm 0.2\%$ vol. IPA (5°C to 25°C)
Resolution of measured values	0.1% vol.
Temperature of the measuring medium	5°C to 25°C
Pressure of the measuring medium	1 bar $\pm$ 0.2bar
Pressure of the reference medium	1 bar $\pm$ 0.2bar
Ambient temperature	10°C – 50°C
Voltage	24V DC $\pm$ 10%
Power	32W
Cleansing	fully automatic, closed loop
Noise emission	less than 70dB(A)
Housing protection	IP54
Dimensions (H x W x D)	310 x 150 x 195mm
Weight	5.6kg without fluids

## Measuring principle

1. An infrared measuring beam crosses the measuring chamber flooded with dampening solution. The beam intensity is then reduced at various degrees depending on the current alcohol concentration of the solution.
2. A microprocessor continuously calculates the current alcohol concentration level from the degree of reduction of the beam intensity and transmits the actual value to the alcohol control unit.

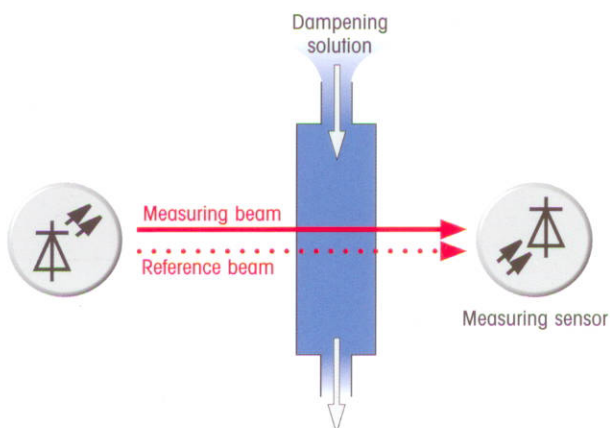


Fig. 4: ALCOPRINT 4000 measuring principle

UNISENSOR Sensorsysteme GmbH specializes in sensor systems technology. Our products are being used by companies from the printing, bottling, gas or recycling industry and power suppliers across the globe.

Do you have any questions? Are you interested in an inhouse presentation? If so, do not hesitate to contact us.

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## ALCOPRINT 4000 – the third generation of product innovation

**1997** – UNISENSOR introduces **ALCOPRINT 2000**, the first Isopropanol (IPA) control system for offset printing on the market that is based on infrared absorption and sets new standards: For the first time, IPA concentration in the dampening solution can be reduced in a controlled manner – thanks to the precise and selective IPA measurement and control, even at very low concentrations between 0 and 5% vol. Print shops benefit from cost savings resulting from reduced IPA consumption and lower IPA concentrations in the ambient air.

**2002** – The compact design of **ALCOPRINT 3000** allows for quick and easy installation and retrofit of the system.

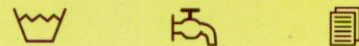
**2007** – The modular **ALCOPRINT 4000** generation fulfils UNISENSOR's claim to provide a solution for the global market: If required, each of the five main modules can be exchanged by the user in just a few steps, thus virtually eliminating the need to call a service technician.

### Simple user interface with intuitive symbols

The new user interface of the **ALCOPRINT 4000** system offers:

- an easy-to-use menu and intuitive icons
- parameter options to adjust the settings to individual requirements, such as personalized intervals for cleansing and reference measurements
- a system information screen providing an overview of all relevant settings

Setpoint: 2.7%



Menu

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System information  
Valve test  
Cleansing interval  
Reference interval  
Language  
Interfaces  
-----

Valve test



Fig. 1: ALCOPRINT 4000 user interface examples

The service-oriented and modular design enables the user to exchange each of the five main modules, if required. This "plug & play" approach does not require special training. The improved serviceability extends the service life of the system while at the same time reducing maintenance costs.

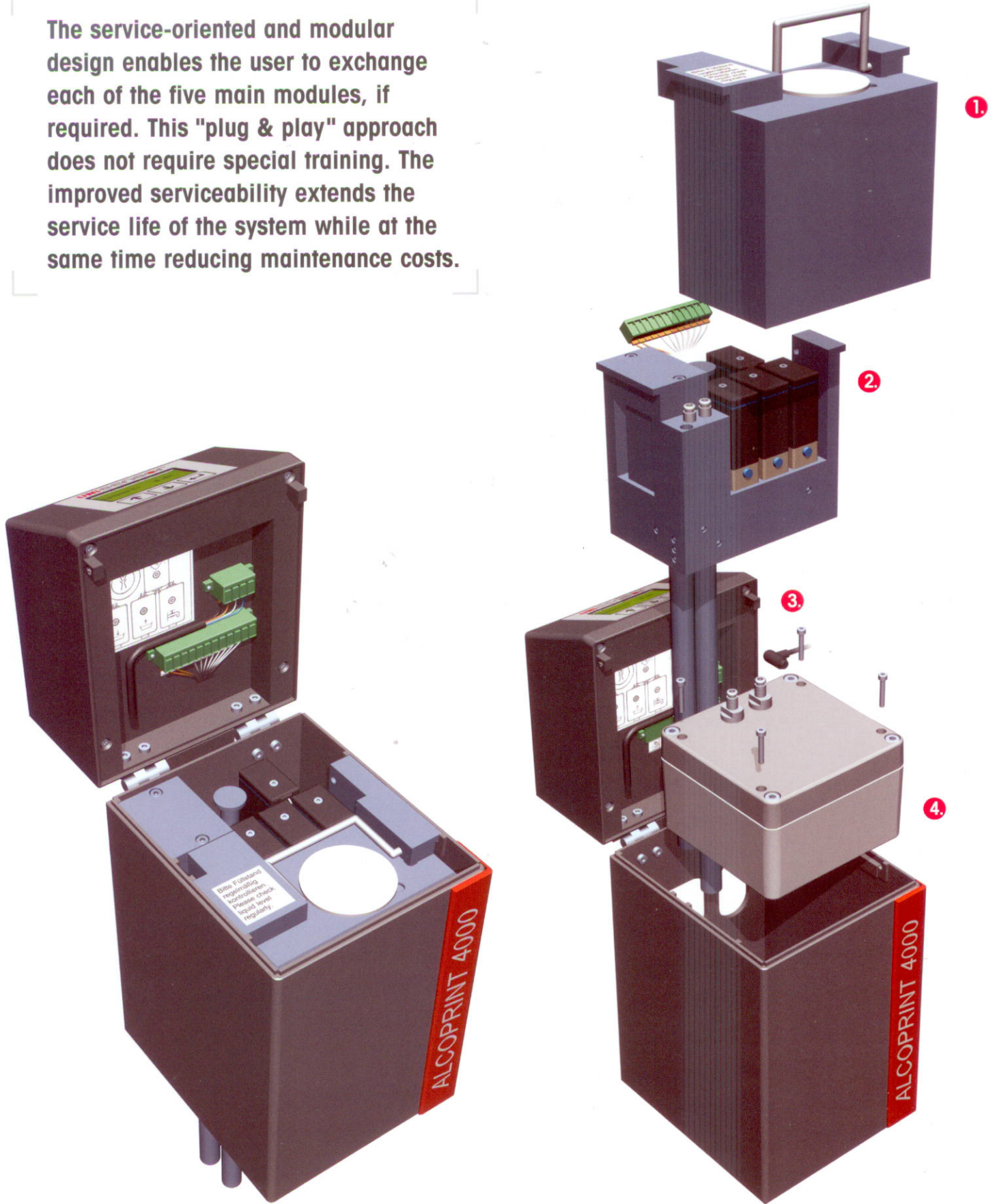


Fig. 2: ALCOPRINT 4000 – a modular system

### 1. Cleansing module

For automatic cleansing of the measuring chamber, the removable cleansing module is filled with a special detergent.

### 2. Medium module

Thanks to its compact design, servicing the medium module is very simple. The module is equipped with medium-separated valves, thus avoiding any direct contact between control mechanism and dampening solution, isopropyl alcohol, or detergent. These premium-quality valves meet the high standards of modern offset printing.

### 3. Micro-electronics module

The sensor system and the micro-electronic components of the ALCOPRINT 4000 system are located in separate modules and communicate through a bus system.

### 4. Sensor system module

Digital signal processing and state-of-the-art sensor technology increase the system's long-term reliability.

### 5. Interface module

ALCOPRINT 4000 is suited for all printing machines and dampening solution systems. The dampening solution system is easily connected by linking up with the respective interface without special configuration of the ALCOPRINT 4000 system. The user can install or retrofit the system without further assistance by a service technician. All it takes is to connect a single electric plug to the customer interface used to transmit the measured values to the printing machine, and three quick couplings to the dampening solution, alcohol, and industrial water circuits, respectively.

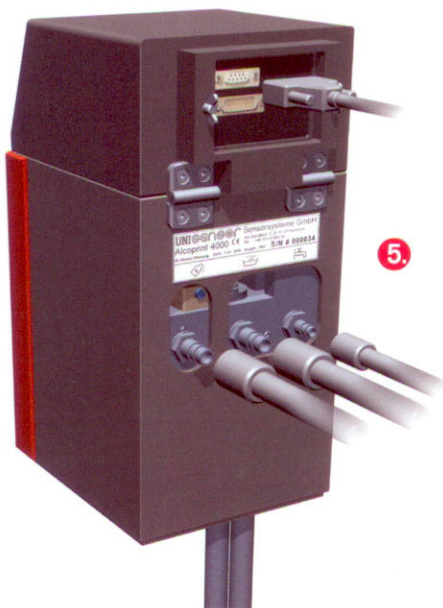
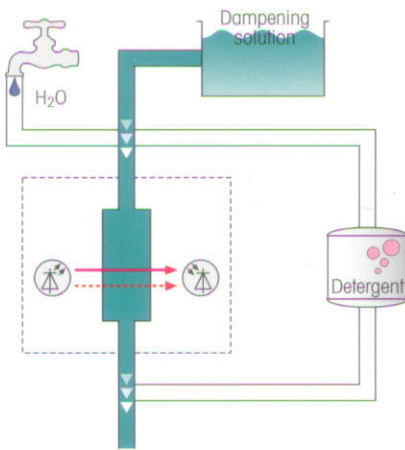


Fig. 3: Rear view of ALCOPRINT 4000 with electronic interface for connection with the dampening solution system and fluid connections for dampening solution, alcohol, and industrial water

## = Customer benefit

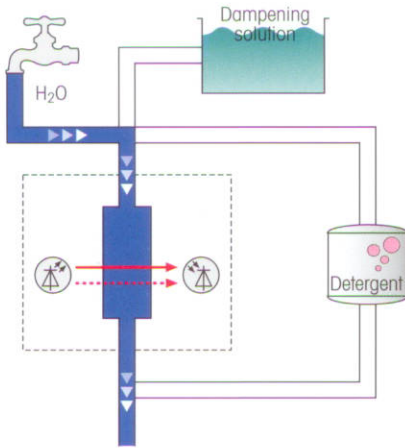


### ALCOPRINT = selective measurement through IR absorption

ALCOPRINT selectively measures the level of isopropyl alcohol. Measured values are therefore not influenced by other components of the dampening solution.

### ALCOPRINT = measurement directly in the medium

➔ ALCOPRINT allows precise IPA measurement even at very low concentration levels.

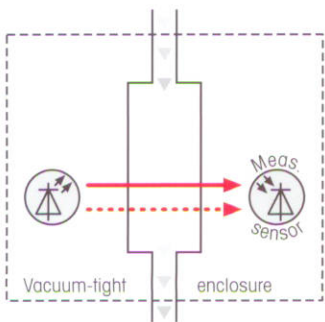


### ALCOPRINT = automatic zero-point synchronization

by periodic rinsing of the measuring chamber with IPA-free industrial water.

➔ Reliable zero-point throughout the entire service life of the device.

➔ Precise IPA measurement and control even at very low concentration levels.

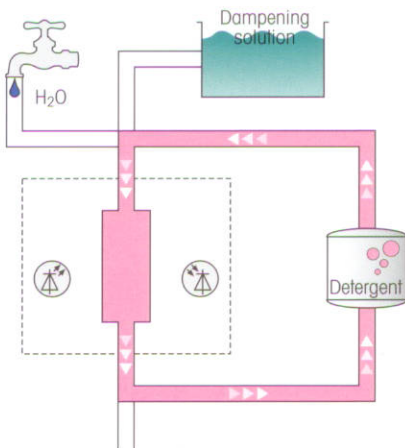


### ALCOPRINT = vacuum-tight enclosure of the sensor system

This eliminates the risk of optical and sensor component contaminations and any measuring errors they may cause.

➔ No system drifts, no need for cleaning actions.

➔ Precise IPA measurement throughout the entire service life.



### ALCOPRINT = automatic cleansing of the measuring chamber

If required, a cleansing cycle is initiated automatically using a detergent in a closed circuit.

# ALCOPRINT 4000

The ALCOPRINT 4000 system is available in two variants, „Sheet“ and „Web“. The Web variant was designed to handle the special requirements of modern rotary web offset printing caused by the continuous enlargement of the printing lines. The Web variant delivers precise results even under these extreme conditions by using a dedicated spectral region.