ESCHWEILER combi line
automatic analysing systems

K^+

Ca^{++}

Cl^-

Na^+

Li^+

the new generation

tHb

pCO_2

pH

pO_2

the new generation

The flexible and economic »point of care« analysing system for:

- **blood gases**
  BGA
- **electrolytes**
  ISE
- **blood gases**
  plus electrolytes
  BGA + ISE

All configurations also available with the unique ESCHWEILER sensor for the hemoglobin determination.

From only 1 specimen up to 9 parameters are measured and further 12 are calculated.

- easy operation
- liquid calibration
- economical

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K^+ Ca^{++} Cl^- Na^+ Li^+

the new generation

tHb pCO_2 pH pO_2

We present **combi line** the next generation of analysing systems: compact, easy and economical.

Forget all the other systems with a number of confusing keys and technical nonsense. With the clear functionality the **combi line** is dedicated to serve you. In critical cases even seconds count. We follow this obligation. With its clear and easy handling the **combi line** provides fast and accurate results to give you the required informations for your further actions.

Quality measurements are basically depending on the quality of the sensors used and the calibration technology. Since more than 50 years we develop and produce relevant quality sensors. You can rely on our experience.

With our progressive liquid calibration technology the reliability is improved significantly. No external gas supply is required. You only need a power-supply to operate the analyser wherever you like.

The unlimited flexibility of our new concept is a big advantage for you.
Choose only those parameters which are of interest for you – any combination out of 9 parameters is allowed.
We save your money for unnecessary investments and costs for operation and maintenance of sensors which are not required.

Reducing running cost is a must everywhere. Our concepts for supporting you are:
Seperate containers for the reagents. You can empty each container completely. With cartridges and reagentpacks you waste money as you have to replace the whole pack even if only one compartment is empty.

Choice of reusable sensors. You can easily replace the membrane at low cost. Maintenance-free sensors used with other brands are disposable parts and require to be replaced completely even if only the membrane is defective.

Operation

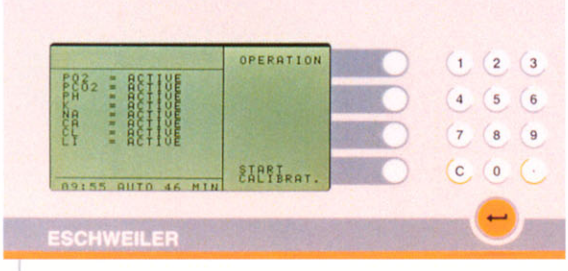
The handling of samples is simple, safe and hygienic.
Using capillaries, the specimen is aspirated automatically. For syringes the specimen is injected into the system until an acoustic signal confirms the filling.

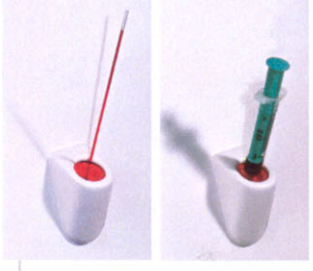
While the test is running, the values can already be tracked on the display as a trend. After completion of the test operation, the reported parameters are printed out by the built-in thermal printer.

Sample Input

Insert the needle or the capillary into the sample port, confirm, and the sample is automatically drawn into the sample chamber.
A signal tone verifies that the chamber has been filled – remove the needle or capillary and the assay begins.

In addition to the standard assay (with all sensors in operation), the **combi** *line* offers specialised test programs depending on sensor configuration. These programs enable selective measurement of blood gases and electrolytes.
For daily quality control tests, the **combi** *line* includes a QC-test program.





Consumables

combi *line* calibration solutions are delivered in foil packets – easy to handle and individually replaceable. Only completely used packets are replaced. Another way to reduce operating costs. Only four calibration solutions and a rinse solution are needed to operate the **combi** *line's* complete sensor configuration for analysis of blood gases and electrolytes. Units with the sensor combinations »Blood Gas« or »Electrolyte« may be operated with only two calibration solutions.

Sensors

For more than five decades, the name **ESCHWEILER** has stood for high quality and reliability in blood gas and electrolyte sensors. **ESCHWEILER** sensors are distinguished by the precision of their measurement and their durability. Reduced patient care costs, replaceable premembraned cartridges – delivering even more compelling advantages in light of reductions in operating costs.

Technical Data

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measured parameter	range	resolution
pO_2	0 - 800 mmHg (SI-units selctable)	0,1 mmHg
pCO_2	5 - 200 mmHg (SI-units selctable)	0,1 mmHg
pH	6,000 - 8,000	0,001 pH
total-hemoglobin (tHb)	5 - 30 g/dl	0,1 g/dl
barometric pressure	500 - 900 mmHg (SI-units selctable)	1,0 mmHg
Na^+	100 - 200 mmol/l	0,1 mmol/l
K^+	2 - 10 mmol/l	0,1 mmol/l
Ca^+	0,25 - 2,5 mmol/l	0,01 mmol/l
Li^+	0,25 - 2,5 mmol/l	0,01 mmol/l
Cl^-	80 - 200 mmol/l	1,0 mmol/l
input parameter		
patient temperature	13 - 43 °C	0,1 °C
hemoglobin (tHb)	0 - 30 g/dl (if not measured)	0,1 g/dl
fraction of inspired oxygen (FIO_2)	15 - 100 %	only relevant for $AaDO_2$
respiratory quotient (RQ)	0,7 - 1,0	only relevant for $AaDO_2$
calculated parameter		
actual bicarbonate (HCO_3-A)	10 - 50	0,1 mmol/l
standard bicarbonate (HCO_3-S)	10 - 50	0,1 mmol/l
base exess (BE)	-25 - 25	0,1 mmol/l
standard base exess (SBE)	-25 - 25	1,0 mmol/l
total CO_2 (TCO_2)	10 - 50	0,1 mmol/l
buffer base (BB)	0 - 100	0,1 mmol/l
O_2 saturation of hemoglobin (O_2sat)	20 - 100	0,1 %
O_2 content or concentration (O_2CT)	0 - 40	0,1 %
partial O_2-press. at 50% O_2-sat (P50)	10 - 50	0,01 mmHg
alveolar to arterial oxygen-tension grade (AaDO2)	0 - 800	0,1 mmHg
acid base status	relevant diagnosis recorded on printer	
hematocrite (Hct)	0 - 100 % (only in combination with tHb)	0,1 %
data output		
display	illuminated, 15-lines LCD display	
printer	fast, low-noise thermoprinter	
interface	RS 232	
calibration		
automatic calibration		
economy mode		
specimen		
specimen container	capillary, syringe and others	
specimen material	whole blood, serum, plasma/respiratory gas	
electrical data		
voltage	115 V resp. 230 V	
frequency	50/60 Hz	
ambient temperature	12 - 32 °C	
dimensions/weight		
height	402 mm	
width	285 mm	
depth	432 mm	
weight	appr. 15 kg	

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