



**STEP Systems GmbH**  
Soil Testing Equipment - Professional Systems

pH

Soil moisture

EC

Temperature

Salinity



# COMBI 5000

Universal measuring instrument  
for fast and precise control of plant nutrition

Rapid control of plant nutrition

## COMBI 5000

Smarter. Faster. Better.

The new generation of plant nutrition measurement technology



The COMBI 5000 is a universal instrument for the immediate measurement of the most important parameters in plant production.

### Universally applicable:

Wide range of probes for monitoring nutritional status of your plants.

### No application errors:

The latest microprocessor technology enables automatic sensor detection: each time the probe is changed, the instrument automatically switches to the corresponding measuring mode.

### Easy-to-use:

The automatic buffer recognition during calibration also ensures a high level of operating convenience and additional safety.

### Fast on:

Simply exchange probes during the measurement without a re-start.

### Save time:

Simultaneous measurement of different parameters.

### Always ready to go:

The unit is delivered in a sturdy aluminium case, with all accessories stored safely and within reach.

### Multilingual:

Easy to understand menu is available in three languages: German, English and Russian.

### Smart:

Evaluation via the COMBI 5000 app provides quick and easy storage and interpretation of all measured values for different plants.

## Features:

### pH measurement

pH is one of the most important parameters in the plant nutrition. The absorption of nutrients by the plants is highly dependent on pH. For this reason, fast, easy and accurate pH measurements are essential in professional horticulture.

### EC measurement

Electrical conductivity of an aqueous solution is directly related to the concentration of the dissolved salts. For plant nutrition control, it is essential to measure EC of process water and nutrient solution, especially in closed and hydroponic cultivation.

### Activity measurement (salinity)

Salinity is determined by the concentration of total dissolved salts directly in the soil or substrate, taking into consideration the relevant soil properties, like soil moisture, temperature and soil compaction. These factors determine the quantity of salts being "active" and available to the plants.

### Moisture measurement

The measuring principle is based on the FDR measuring technology and is not affected by pH and salt content of the soil and substrates. Water content data (expressed in Vol %) allow immediate statement about the irrigation water requirements.

### Temperature measurement

Temperature measurement is carried out in the range of -10°C to +50°C by a fast-reacting NTC sensor spattered in the probe tip.

To the application video:



pH measurement

pH 5000



**Applications:**  
pH measurement directly in soils, substrates and solutions, e.g. irrigation water.

**Delivery scope pH 5000:**  
COMBI pH 5000 basic unit, pH insertion probe, buffer solutions pH 4 and pH 7 (100 ml each), storage solution for the probe (3 mol KCL, 100 ml), piercing pin, manual with optimal values, aluminium transport and storage case.

Item-no.	
10390	pH 5000, complete case

EC measurement

EC 5000



**Applications:**  
Conductivity measurement for salinity determination of liquids and solutions. The measuring range up to 200 mS even allows precise measurements of fertilizer stock solutions.

**Delivery scope EC 5000:**  
COMBI EC 5000 basic unit, EC probe with platinum sensors, standard solutions 111.8 mS and 1.4 mS (50 ml each), volume measuring cup, 100 ml, manual with optimal values, aluminium transport and storage case.

Item-no.	
10290	EC 5000, complete case

Activity measurement

AM 5000



**Applications:**  
Direct measurement of soil salinity with consideration of the relevant soil properties, like soil moisture, temperature and soil compaction.

**Delivery scope AM 5000:**  
COMBI AM 5000 basic unit, stainless steel AM probe, 25 cm, manual with optimal values, aluminium transport and storage case.

Item-no.	
10190	AM 5000, complete case

Moisture measurement

MST 5000



**Applications:**  
Soil moisture and temperature measurement directly in the soil and substrate.

**Delivery scope MST 5000:**  
COMBI MST 5000 basic unit, soil moisture probe, manual, aluminium transport and storage case.

Item-no.	
10850	MST 5000, complete case



## pH &amp; activity measurement

## pH + AM 5000

**Applications:**

Measurement of pH and salinity directly in the soil and in substrates.

Ideal combination for production, consultants and service in all fields of horticulture and nurseries without application of liquid fertilization.

**Suitable probes and solutions:**

- pH insertion probe (item-no. 10302)
- buffer solution pH 4 (item-no. 31001)
- buffer solution pH 7 (item-no. 31002)
- stainless steel AM probe, 25 cm, 50 cm or 75 cm

**Delivery scope pH + AM 5000:**

COMBI pH + AM 5000 basic unit, pH insertion probe, buffer solutions pH 4 and pH 7 (100 ml each), storage solution for the probe (3 mol KCL, 100 ml), stainless steel AM probe, 25 cm, piercing pin, manual with optimal values, aluminium transport and storage case.

Item-no.	
10590	pH + AM 5000, complete case

## pH &amp; EC measurement

## pH + EC 5000

**Applications:**

Simultaneous pH and EC measurement with just one device. Perfect configuration for all users of hydroponic growing systems, for consultants and sellers of liquid fertilizers, fertilizer mixers, etc.

**Suitable probes and solutions:**

- pH insertion probe (item-no. 10302)
- buffer solution pH 4 (item-no. 31001)
- buffer solution pH 7 (item-no. 31002)
- EC probe with platinum sensors (item-no. 10212)
- standard solution 1.4 mS (item-no. 31003)
- standard solution 111.8 mS (item-no. 31005)

**Delivery scope pH + EC 5000:**

COMBI pH + EC 5000 basic unit, pH insertion probe, buffer solutions pH 4 and pH 7 (100 ml each), EC probe with platinum sensors, standard solutions 111.8 mS and 1.4 mS (50 ml each), volume measuring cup, 100 ml, piercing pin, manual with optimal values, aluminium transport and storage case.

Item-no.	
10690	pH + EC 5000, complete case

## EC &amp; activity measurement

**EC + AM 5000****Applications:**

Measurement of salinity directly in the crop (activity) and conductivity of nutrient and stock solutions with only one device.

Optimal configuration for substrate production, ornamental plants and composting facilities.

**Suitable probes and solutions:**

- EC probe with platinum sensors (item-no. 10212)
- standard solution 1.4 mS (item-no. 31003)
- standard solution 111.8 mS (item-no. 31005)
- stainless steel AM probe, 25 cm, 50 cm or 75 cm

**Delivery scope EC + AM 5000:**

COMBI EC + AM 5000 basic unit, EC probe with platinum sensors, standard solutions 111.8 mS and 1.4 mS (50 ml each), stainless steel AM probe, 25 cm, volume measuring cup, 100 ml, manual with optimal values, aluminium transport and storage case.

**Item-no.**

10490

EC + AM 5000, complete case

## pH, EC &amp; activity measurement

**pH + EC + AM 5000****Applications:**

This configuration provides a combination of the most important measuring parameters: pH, conductivity and activity.

Perfect solution for greenhouses, consulting services and educational facilities for practical training.

**Suitable probes and solutions:**

- pH insertion probe (item-no. 10302)
- buffer solutions pH 4 & 7 (items 31001/31002)
- EC probe with platinum sensors (item-no. 10212)
- standard solutions 1.4 & 111.8 mS (items 31003/31005)
- stainless steel AM probe, 25 cm, 50 cm or 75 cm

**Delivery scope pH + EC + AM 5000:**

COMBI pH + EC + AM 5000 basic unit, pH insertion probe, buffer solutions pH 4 and pH 7 (100 ml each), EC probe with platinum sensors, standard solutions 111.8 mS and 1.4 mS (50 ml each), stainless steel AM probe, 25 cm, piercing pin, volume measuring cup, 100 ml, manual with optimal values, aluminium transport and storage case.

**Item-no.**

10790

pH + EC + AM 5000, complete case



pH + EC + activity + moisture + temperature

## COMBI 5000



### 5 measurements for rapid control of plant nutrition with only one device

With the COMBI 5000 in the hand, you have the most important parameters to determine the nutritional status of your plant stock professionally and quickly:

- pH measurement
- EC measurement
- activity measurement
- soil moisture
- temperature

#### Probes and features:

- pH probe
  - direct measurement in soils, substrates and liquids
- EC probe
  - conductivity measurement in liquids, e.g. nutrient and stock solutions
- multi-probe for simultaneous measurement of:
  - activity measurement (salinity)
  - soil moisture (volumetric)
  - temperature

#### Applications:

Universal combination for agriculture, horticulture, laboratory, technical colleges and universities.

#### Suitable probes and solutions:

- pH insertion probe (item-no. 10302)
- buffer solutions pH 4 (item-no. 31001)
- buffer solutions pH 7 (item-no. 31002)
- EC probe with platinum sensors (item-no. 10212)
- standard solution 1.4 mS (item-no. 31003)
- standard solution 111.8 mS (item-no. 31005)
- multi-probe, 250 mm (item-no. 10190)

#### Delivery scope COMBI 5000:

COMBI 5000 basic unit, pH insertion probe, buffer solutions pH 4 and pH 7 (100 ml each), EC probe with platinum sensors, standard solutions 1.4 mS and 111.8 mS (50 ml each), multi-probe, 250 mm, piercing pin, spray bottle with snorkel, 250 ml, volume measuring cup, 100 ml, manual with optimal values, aluminium case.

Item-no.	
10900	COMBI 5000, complete case

## COMBI 5000 App



### Artificial intelligence in horticulture

With this app you can easily digitise your STEP Systems COMBI 5000 measured values.

Simply make a photo of the display with measured value and the app automatically recognises the values and the parameters measured: pH and / or salinity, EC or soil moisture. After the crop and the measurement location are selected, the app immediately provides an interpretation of the respective measuring results.

Afterwards, all measured values of a plant can be displayed chronologically in comparison to the STEP Systems reference values.

All measured values including the interpretation can be exported as a clear PDF document. In this way, all measurements with crop, measuring location and time tag can be documented properly.



*Simultaneous measuring of activity, soil moisture and temperature with multi-probe*

## Technical data and configurations

## Technical data

COMBI 5000 basic unit	
Housing	splash-proof, rugged
Power	9 Volt battery, > 4000 measurements
Display	alphanumeric, reflective
Connector	BNC plug and 8-pin plug
Dimensions	180 x 83 x 55 mm
Weight	300 g
pH probe	
Measuring range	0 - 14 pH
Resolution	0.01 pH
Accuracy	± 0.02 pH
Calibration	automatic
Probe	gel-filled insertion probe, 125 mm
Application	pH measurement directly in soils, substrates and liquids
EC probe	
Measuring range	0 - 200 mS
Resolution	0.001 - 0.01 mS
Accuracy	± 2 % from measured value
Calibration	automatic
Probe	plastic with platinum sensors, 125 mm
Application	conductivity measurement in liquids, e.g. nutrient and stock solutions
Multi-probe	
Probe	PVC, Ø 10 mm
Probe length	250 mm
Sensors	FDR capacitive (moisture), NTC (temperature), bi-pol (salinity)
t° compensation	automatic
Applications	measurement of salinity, temperature, soil and substrate moisture
Activity measurement (salinity)	
Measuring range	0 - 2.99 g/l of active salts
Resolution	0.01 g/l of active salts
Calibration	factory calibration, stable
Temperature measurement	
Measuring range	-10 to +50°C
Resolution	0.1°C
Moisture measurement	
Measuring range	0.5 - 70%
Resolution	0.1 %
Calibration	%: in air and 99.9%: in water
AM probe	
Measuring range	0 - 2.99 activity in g/l
Resolution	0.01 activity in g/l
Calibration	factory calibration, stable
Probe	stainless steel with special 2-pol-sensor
Probe length	250, 500 or 750 mm
Application	direct measurement of soil salinity
Soil moisture probe	
Measuring range	0 - 60% VWC / -40 to +60°C
Accuracy	± 3% / ± 0.5°C
Resolution	0.1% / 0.1°C
Dimensions	H = 150 mm, Ø 60 mm
Application	moisture and temperature measurement directly in the soil or substate

## Configurations

Item-no.	
COMBI 5000: single-function	
10190	AM 5000, complete case
10290	EC 5000, complete case
10390	pH 5000, complete case
10850	MST 5000, complete case
COMBI 5000: multi-function	
10490	EC + AM 5000, complete case
10590	pH + AM 5000, complete case
10690	pH + EC, complete case
10790	pH + EC + AM, complete case
10890	AM + moisture + temp., complete case
10892	EC + AM + moisture + temp., complete case
10895	pH + AM + moisture + temp., complete case
10900	pH + EC + AM + moisture + temp., complete case

## Attention:

The units are designed in such a way that retrofitting to further parameters is basically not possible.

To have the possibility of future retrofitting, we recommend to purchase the basic unit COMBI 5000 (item no. 10910) with all functions. In this case, an upgrade is possible by simply purchasing the respective measuring probe.

Item-no.	
Component parts:	
10910	COMBI 5000, basic unit
10302	pH insertion probe
31001	Buffer solution pH 4, 100 ml
31002	Buffer solution pH 7, 100 ml
10212	EC probe with platinum sensors
31003	Standard solution 1.4 mS, 50 ml
31005	Standard solution 111.8 mS, 50 ml
10191	Multi-probe: for simultaneous measurement of activity, soil moisture and temperature
10124	Insertion temperature probe
40821	Soil moisture probe
10121	Stainless steel AM probe, 250 mm
10122	Stainless steel AM probe, 500 mm
10123	Stainless steel AM probe, 750 mm
23041	Spray bottle with snorkel, 250 ml
90036	Volume measuring cup, 100 ml
90020	Piercing pin

Technical data are subject to change.

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