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## Hand-held Meters for analytical measurement variables

### Type 202710

#### Brief description

Product Group 202710 instruments are battery-powered hand-held meters for measuring - pH, redox potential (ORP) and temperature or - electrolytic conductivity and temperature.

They are used in laboratories, industrial and wastewater plant, in aquaria or fish farms, etc. The instruments feature a memory for the MIN/MAX value, and a "Hold" function. To increase the operational life of the battery, the instrument can be switched off automatically within the range from 1 minute to 2 hours; continuous measurements can also be performed. The instruments are operated from a membrane keypad.

The 202710/20 version is an instrument for measuring pH, redox potential (ORP) and temperature. It features both manual and automatic temperature compensation of the measurement. The Pt100 temperature probe necessary for this purpose is available as an option. A standard combination electrode can be connected via a BNC socket. The combination electrode is adjusted through a 2-point calibration.

The 202710/30 version is an instrument for measuring electrolytic conductivity and temperature. The pre-assembled conductivity cell incorporates graphite electrodes and has a cell constant of  $1.0 \frac{1}{\text{cm}}$ . The temperature probe for automatic temperature compensation is integrated in the measuring cell. The hand-held meter always indicates the conductivity, which is compensated for 25°C. Thanks to the automatic range selection, the measurement is always displayed within the optimum range. This function can also be switched off.



Type 202710/20/000



Type 202710/30/000

#### Key features

- MIN and MAX memory
- "Hold" function
- Adjustable automatic switch-off
- Easy-to-read, 2-line LC display
- Supply from a 9 V block battery
- Display of battery condition
- Compact design

## Technical data

### Instrument version 202710/20

**pH range**

0 to 14 pH

**Accuracy**

+/- 0.01 pH

**Redox range**

-1999 to +2000 mV

**Accuracy**

+/- 0.1 mV

**Temperature range**

-100 to +250°C

**Accuracy**

+/- 0.2°C

**Operating temperature**

0 to +50°C

**Storage temperature**

-20 to +70°C

**Power supply**

9 V block battery, type IEC 6F22

**Current drawn**

approx. 30 mA

**Special functions**

- segment test at switch-on
- measuring circuit monitoring
- "hold" function  
(freeze latest measurement)
- MIN/MAX memory
- automatic switch-off  
(can be de-activated)
- battery change display

**Electrode/probe connection**

for pH/redox combination electrodes: BNC  
for temperature probe: mini DIN socket

**Dimensions**

142 x 71 x 26 mm (L x W x H)

**Housing material**

ABS

**Protection class**

IP65 at front

**Weight (without sensor)**

approx. 145 g

### Instrument version 202710/30

**Conductivity ranges**

0 – 200 µS/cm

0 – 2000 µS/cm

0 – 20 mS/cm

0 – 200 mS/cm

**Accuracy**

+/- 0.5% of range

**Resolution**

0.1 µS/cm

1.0 µS/cm

10 µS/cm

0.1 mS/cm

**Temperature range**

0 to +85°C

**Accuracy**

+/- 0.2°C

**Resolution**

0.1°C

**Cell constant of cell**

$K = 1.0 \frac{1}{\text{cm}}$

**Temperature coefficient of cell**

as per EN 27888  
(non-linear compensation)

**Temperature compensation**

automatic

**Operating temperature**

instrument: 0 to +50°C

cell: -5 to +80°C

**Storage temperature**

-20 to +70°C

**Power supply**

9 V block battery, type IEC 6F22

**Current drawn**

approx. 50 mA

**Special functions**

- segment test at switch-on
- measuring circuit monitoring
- "hold" function  
(freeze latest measurement)
- MIN/MAX memory
- automatic range changeover
- automatic switch-off  
(can be de-activated)
- battery change display

**Dimensions (hand-held meter)**

142 x 71 x 26 mm (L x W x H)

**Dimensions (cell)**

length: 120 mm

diameter: 12 mm

attached connecting cable,

approx. 1 m long

**Housing material**

ABS

**Protection class**

IP65 at front

**Weight (with cell)**

approx. 225 g

## Order details

### Microprocessor-based hand-held meters for analytical measurement variables

		<b>(1) Basic type</b>	Hand-held meters for analytical measurement variables
202710		<b>(2) Basic type extensions</b>	
	20	pH, redox <sup>1</sup> , temperature <sup>2</sup>	
	30	conductivity <sup>3</sup> , temperature <sup>4</sup>	
	<b>(3) Extra codes</b>		
x	x	000	no extra code
o		070	case with calibration solutions pH 4.00 and pH 7.00; with KCl electrolyte (50 ml each)
	o	071	case

x = standard  
o = available as an option

	(1)	(2)	(3)
<b>Order code</b>	<input type="text" value="202710"/>	/ <input type="text"/>	/ <input type="text"/>
<b>Order example</b>	<input type="text" value="202710"/>	/ <input type="text" value="20"/>	/ <input type="text" value="070"/>

<sup>1</sup> combination electrode not included in delivery  
<sup>2</sup> Pt100 temperature sensor not included in delivery  
<sup>3</sup> including conductivity cell  
<sup>4</sup> the temperature sensor is integrated in the cell

### Stock versions (shipment: 3 working days after receipt of order)

Type	Description	Sales No.
202710/20/000	hand-held meter for pH/redox/temperature (without combination electrode, without temperature probe)	20/00453200
202710/30/000	hand-held meter for conductivity/temperature (including cell)	20/00454356

### Production versions (shipment: 10 days after receipt of order)

Type	Description	Sales No.
202710/20/070	hand-held meter for pH/redox/temperature (without combination electrode, without temperature probe) in case, with calibration solutions pH 4.00 and pH 7.00; with KCl electrolyte (50 ml each)	20/00453205
202710/30/071	hand-held meter for conductivity/temperature (including cell) in case	20/00454357

### Accessories

Type	Sales No.
Pt100 immersion temperature probe, attached cable connection, mini DIN plug for instrument type 202710/20...	20/00453208
pH combination electrode JUMO ecoLine pH, 2 m attached cable, BNC plug for instrument type 202710/20...	20/00424828
pH combination electrode JUMO labLine pH, KCl-filled, 1 m attached cable, BNC plug for instrument type 202710/20...	20/00300196
pH insertion electrode JUMO labLine pH, stainless steel sheath, solid electrolyte gel, perforated diaphragm, 1 m attached cable, BNC plug for instrument type 202710/20...	20/00454820
pH combination electrode JUMO ecoLine pH, solid electrolyte gel, with 2 m attached cable, annular-gap diaphragm, BNC plug for instrument type 202710/20...	20/00458459
redox combination electrode JUMO ecoLine Redox, 2 m attached cable, BNC plug for instrument type 202710/20...	20/00424950