

## MULTIFUNCTION METER CX-701

The multifunction meter CX-701 belongs to the newest generation of measuring equipment and enables very accurate measurements of:

1. pH,
2. redox potential - mV
3. ion concentration
4. conductivity
5. salinity calculated to NaCl, KCl or TDS
6. dissolved oxygen in % of saturation or mg/l
7. atmospheric pressure in hPa
8. temperature of air or liquids in °C, °F and K
9. enables semi-automatic titration

- All operations are done with use of buttons generated on the 10" colour graphic backlit touch screen.
- **CX-701** may be used in laboratory as well as in the field after placing it in a special case with rechargeable batteries (optional).
- The rechargeable batteries allow for continuous work in the field for 8 – 15 hours, depending on the kind of chosen measuring functions and settings of the screen etc.



- Possibility of simultaneous measurements and observing results of up to 5 functions displayed in numerical form, function chosen as the main one may also be displayed in graphical form.
- The pH, ion and temperature inputs are isolated from the oxygen and conductivity inputs.
- Additional information is given as pop up windows and voice messages.
- Storing the date of next calibration.

### In the pH measuring mode:

- pH electrode calibration in 1 to 5 points;
- Automatic detection of pH buffers and standards, their value may be set by the user;
- In case of using standard solutions (NIST norm) automatic introduction of temperature correction on the value of those standards what makes calibration much easier;
- Storing of 3 pH electrodes' characteristics enables to replace them quickly – very useful feature during field work.
- Automatic control of the electrode's condition.
- Depending on the chosen pH electrode kind possible measurements in pure water, sewage, pastes, etc.
- Enables readout of the pH electrode parameters – buffer and slope

#### In the conductivity measuring mode:

- Full measuring range enables making measurements in ultra pure water as well as in very salty solutions.
- 6 ranges switched automatically.
- High accuracy conductivity cell ECF-1 available as additional equipment. Measuring range 0÷500 mS/cm sufficient for measurements in ultra pure water and high salt concentration samples. Metal electrodes are easy to clean and PVC body protects it against mechanical damage.
- Calibration by entering the constant K in range 0.01÷19.999 cm<sup>-1</sup> or in buffer solution.
- Possibility of storing constants K of 3 cells which cover the whole measuring range.
- Possibility of changing the reference temperature.
- Automatic calculation conductivity into salinity in NaCl or KCl on the basis of the actual characteristics, what greatly increases the accuracy of conversion.
- Possibility of defining the TDS with use of conductivity measurement by entering the TDS coefficient in range 0.2-1.0.
- Possibility to measure electric admittance of tree seedlings – checking the vitality of seedlings with a special sensor.

#### In the Ion measuring mode:

- The measuring range of the meter enables co-operation with all ion selective electrodes (ISE) chosen depending on the measured ion, equipped with BNC connector.
- Molar weight of measured ion is automatically introduced.
- Automatic conversion of the units – e.g. M/l to mg/l or pX without the necessity of manual conversion.
- Possibility of entering freely chosen standard solution value.
- Possibility of simultaneous measurement of Ions and pH.

#### In the oxygen measuring mode:

- Air pressure measurement with automatic calculation of its influence on the oxygen measurement.
- Automatic transfer of the salinity value measured in conductivity mode to the oxygen measurement mode and automatic calculation of its influence on the result in mg/l oxygen content.
- Easy in use and maintenance galvanic oxygen sensor.
- Calibration of the oxygen sensor in 1 or 2 points.

#### In the redox potential (mV) measurement mode:

- Precise redox potential measurement (accuracy 0.1 mV).
- Possibility of the mV measurement relatively to the entered or measured reference (Vref) value.

#### In the titration mode:

- Potentiometric, calorimetric and conductometric titration with automatic determining of the final points.
- The only required operating procedure is entering the volume of the added titrator.
- The results of titration are collected as series of measurements with the significant values marked.

#### Other features:

- The results are stored on the 2GB SD memory card, the number of collected data is practically unlimited.
- Two ways of co-operation with a PC:
  - by connecting the SD card with a PC and transferring the data included on the card,
  - by connecting the meter with a PC with use of USB cable, what enables transfer of the current readouts or the series collected in the meter's memory to the PC.
- The results of all actually measured functions are stored simultaneously.
- Storing of measurement's results with time and date, taken as single or in series with set time interval.
- Automatic or manual temperature compensation.
- The charts are scaled both during the continuous observation and during the analysis of the collected results, zoom function.
- The results and calibration data are stored in non-volatile memory.
- Internal clock with date.
- Powered with 15V power adapter.
- The meter meets the GLP requirements.
- 24 months of warranty.
- CX-701 was awarded with 2 golden medals on EUROLAB international fairs.

Measurement	pH / mV	Ion	Redox	O <sub>2</sub>	Conductivity	Atm. pressure.	Temperature
Ranges	-3.000 ÷ 20.000 pH ±2000 mV	-3 ÷ 20 pX 0 ÷ 100 M/l 0 ÷ 1000 g/l 0 ÷ 1 000 000 ppm	±1999 mV	600.0% 60.00 mg/l	0 ÷ 1.99 S/cm 0 ÷ 200 g/l KCl 0 ÷ 250 g/l NaCl	800 ÷ 1100 HPa	-200÷200 °C -328÷392 °F 73÷473 K
Accuracy	±0.001 pH ±0.1mV	±0.001 pX ± 0.25%	±0.1 mV	±1%	±0.1 % > 20 m/cm ±0.25 %	± 2 HPa	±0.2 °C*
Temp. Compens.	-5 ÷ 110 °C	-5 ÷ 110 °C	—	0 ÷ 40 °C	-5 ÷ 70 °C	-	—
Input impedance	10 <sup>12</sup> Ω	10 <sup>12</sup> Ω	10 <sup>12</sup> Ω	—	—	-	—
Constant K	—	—	—	—	0.1÷ 19. 999	-	—
α coefficient	—	—	—	—	0 ÷ 10 % / °C	-	—
Size / Weight	280 x 262 x 94/38 / 1,7 kg.						

\* Accuracy of the meter, total accuracy is a sum of the meter's error and the sensor (probe) error.



Case for CX-701 for field work

**ELMETRON<sup>®</sup>** Sp. j.  
41-814 Zabrze ul. Witosa 10 POLAND  
tel. +48 32 2738106 fax +48 32 2738114  
[www.elmetron.pl](http://www.elmetron.pl) e-mail: [info@elmetron.com.pl](mailto:info@elmetron.com.pl)