

4.12. THERMAL CONDUCTIVITY METER TK-4100

Thermal conductivity meter TK-4100 is designed to measure the temperature and complex electromagnetic conductivity of the solutions in order to determine the concentration of substances. It can be used in food, pharmaceutical, and light industry, in the energy, meteorology, oceanology, in the ecology and scientific researches.



Temperature measurement range	from -5 to +50 °C
Basic error of temperature measurement	$\leq \pm 0,05$ °C
Operating frequency	125 Hz
Given relative resistance sensitivity	not worse than $2 \times 10^{-3}\%$
Given relative conductivity sensitivity	not worse than $2 \times 10^{-3}\%$
Temperature sensitivity	not worse than $e 2 \times 10^{-3}$ °C
Constant of a two-electrode cell	$- 48,3 \text{ m}^{-1} \pm 5 \text{ m}^{-1}$
Constant of a four-electrode cell	$- 231 \text{ m}^{-1} \pm 5 \text{ m}^{-1}$
Consumed power from the network	no more than 2 VA
Weight	no more than 0,5kg
Dimensions	150×60×50 mm

TK-4100 can be operated both in stationary and in the field conditions.

Measuring ranges and basic measurement error of conductivity G_x :

Measuring ranges ($G_{x\min}$ - $G_{x\max}$)	Basic measurement error	Measuring ranges ($G_{x\min}$ - $G_{x\max}$)	Basic measurement error
$10^0 - 10^4 \text{ S}$	$\delta = 0,5(1+0,1G_x/G_{x\max})\%$	$10^{-4} - 10^{-3} \text{ S}$	$\delta = 0,01(1+0,1G_x/G_{x\max})\%$
$10^{-1} - 10^0 \text{ S}$	$\delta = 0,1(1+0,1G_x/G_{x\max})\%$	$10^{-5} - 10^{-4} \text{ S}$	$\delta = 0,01(1+0,2G_{x\max}/G_x)\%$
$10^{-2} - 10^{-1} \text{ S}$	$\delta = 0,05(1+0,1G_x/G_{x\max})\%$	$10^{-6} - 10^{-5} \text{ S}$	$\delta = 0,05(1+0,4G_{x\max}/G_x)\%$
$10^{-3} - 10^{-2} \text{ S}$	$\delta = 0,01(1+0,1G_{x\max}/G_x)\%$	$0 - 10^{-6} \text{ S}$	$\delta = 0,5(1+0,8G_{x\max}/G_x)\%$