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The invention relates to the measurement technology and can be used for casting insulated conductors or semiconductors.

The process for measuring the section of an insulated wire in the casting process, for example of a glass-insulated microwire, consists in its drawing from a metal preform introduced into a tube of insulating material in suspension state with a high-frequency electromagnetic field and reeling of the cast microwire on a metal carcass, forming a bobbin with cast microwire. Measuring of the microwire section is carried out by compensating the equivalent electrical resistance Z_x of the bobbin with cast microwire for the equivalent electrical resistance Z_0 of the bobbin with standard microwire, which is connected in parallel to the differential input of an operational amplifier and in series with a branch consisting of the connected in series measured microwire portion and bobbin with cast microwire. Said branch is connected to the noninverting input of the operational amplifier. The series circuit, consisting of the bobbin with standard microwire and the series branch, consisting of the measured microwire portion and the bobbin with cast microwire, is connected to a sinusoidal current source of predetermined value, where the current i(t) from the source, passing through the series circuit, forms voltage drops $U_x=Z_xi(t)$ across the bobbin with cast microwire, $U_0=Z_0i(t)$ across the bobbin with standard microwire and $U_r=i(t)rl$ across the measured microwire portion. The voltage U_0 is divided by π through the operational amplifier and is repeated by value at its output, where it is summed up with the sum of voltages U_x+U_r, forming the measured total voltage $U_\Sigma=-U_0+U_r+U_x=i(t)[-Z_0+rl+Z_x]$, which when $Z_x=Z_0$, i(t)=const and l=const is equal to i(t)rl, which, in its turn, is proportional to the resistance r and inversely proportional to the section of the standard microwire $U_r \sim S_0^{-1}$.

Claims: 1
Fig.: 3