**Abstract.** This paper considers the prospects for the development of a magnetically sensitive layer based on liquid crystals with magnetic nanoparticles and presents the results of experimental studies of the influence of the magnetic field on nematic liquid crystals with magnetic nanoparticles. The obtained results show that the magnetic sensitivity of liquid crystals with magnetic nanoparticles depends not only on the concentration of such nanoparticles, but also strongly depends on the orientation of the liquid crystal. A change in the transmission polarization characteristics of oriented liquid crystals with magnetic nanoparticles is observed in a magnetic field whose intensity is more than an order less the field intensity, which leads to similar changes in nonoriented liquid crystals with magnetic nanoparticles. The paper also shows the possibility of increasing the magnetic sensitivity of liquid crystals with magnetic nanoparticles, as well as increasing the rate of reorientation of their director when applying an additional magnetic field to the liquid crystal.