In the present work we apply recently developed pattern recognition algorithms SP and SPm to the problem of automated detection of artificial disturbances in one-minute and one-second magnetic observatory data. The algorithms rely on fuzzy mathematics principles. We show that, after a learning phase, these algorithms are able to recognize artificial disturbances efficiently and distinguish them from natural ones, such as short-period geomagnetic pulsations in the 1s-1min period range. This capability is critical and opens the possibility to use the algorithms in an operational environment. The algorithms were tested on real magnetic data. Small probability values for target miss and false alarm were obtained.