

Differential device for fire detection comprises two sensing elements and an algebraic adder, to a «+» input of which one sensing element is connected, and to a «-» input of said algebraic adder, a second sensing element is connected. The differential device additionally comprises two switches, a differentiation unit, a NOT element, a trigger, an analog-to-digital converter, and a microprocessor, a first input of which is connected to a first output of a first switch, an input of which is connected to an output of the algebraic adder and to an input of a second switch, a second output of the first switch is connected via the differentiation unit, the NOT element and the trigger to a control input of the second switch, a second output of which is connected via the analog-to-digital converter to a second input of the microprocessor, and an output thereof is connected to control inputs of the first switch and the analog-to-digital converter.