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(54) **PROXIMITY SENSOR WITH NONLINEAR FILTER AND METHOD**

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(57) **ABSTRACT**

A sensor for a portable connected device comprising a filter **30** is arranged to reduce a noise component on a sampled input signal, wherein the filter is arranged to consider only input measurements that change systematically in a same direction, updating an output value when all the input samples in a predetermined time window are above or below a current output value and, repeating the current output value when the input samples in the time window are below and above the current output value.