

Press Release Sensor Instruments

May 2020

No Problems Counting Fan Blades

14.05.2020. Sensor Instruments GmbH: In the production of radial and axial fans the checking of the correct frequency response depending on the applied DC voltage is one of the final steps. The easiest method for measuring the frequency is to use a transmitted-light sensor (for example a D-LAS2-d1.0-T + D-LAS2-Q-d1.0-R-HS, featuring a switching frequency of typ. 300kHz). In many cases, however, the fan blades of the respective fan version only can be accessed from one side for testing, so that a reflected-light sensor must be used as an alternative.

The edge detectors of the **RED series (RED-50-L or RED-110-L)** are excellently suited for such applications. The sensor's laser spot is directed onto the fan blades of the respective fan type in such a way that viewed from the receiver on the far side of the laser collimator the laser spot is alternately visible and blocked. The signal change (visible/blocked) leads to a change of the sensor's switching output (0V/+24V). With automatic laser power control, dynamic dead time, pulse lengthening, and edge hysteresis, all the prerequisites for the correct detection and counting of fan blades are fulfilled.

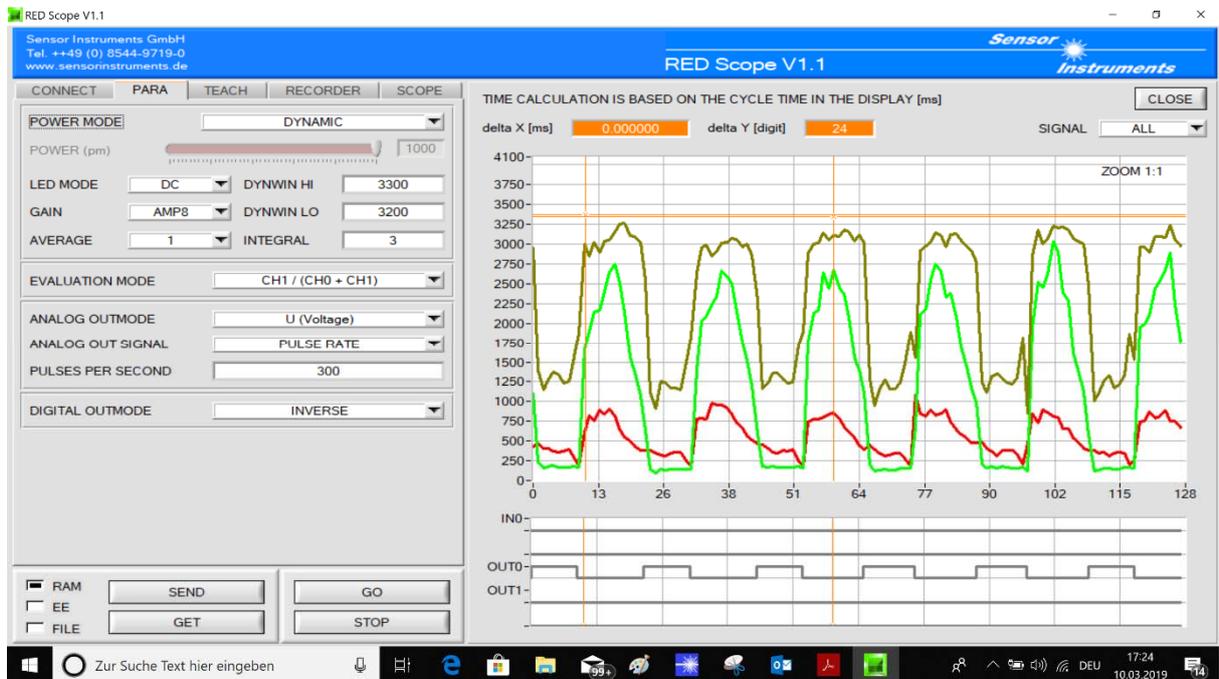
In the laser sensor's PULSE RATE mode (with its comprehensive parameterisation and monitoring software the sensor can be set and "monitored" from a PC) an analog signal (0V ... +10V or 4mA ... 20mA) that is proportional to the frequency of the fan also can be provided at the sensor's analog output. The RED sensor features a maximum scan frequency of typ. 85kHz, so even the sprinter versions among the fans should not cause any problems!



Detecting and counting the rotor blades with the RED-50-L laser reflex light edge detector



The laser spot of the RED-50-L is directed at the rotor blades of the fan type



Signal evaluation of edge detector RED-50-L with the RED-Scope Windows® software.

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