![DEWESoft® measurement innovation]

DS TACHO 2

User manual, Version: 1.0, 12.01.2018

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1. Revision history

| Revision	Author	Date	Comment
1.0	DEWESoft d.o.o.	12/01/2018	Initial version

2. Introduction

DS TACHO 2 is a remote optical LED sensor. It has a visible red LED light source and green LED on-target indicator. The red LED light source acts as the aiming device during setup and can accurately measure speeds from 1 up to 250000 RPM from a distance of up to 1 meter with a maximum offset angle of 45 degrees from the rotating object. The sensor is housed in a threaded stainless-steel tube and supplied with a 90-degree mounting bracket and a 2.5 meter shielded cable.

Common usage of the sensor is in wide range of general purpose applications in relatively clean environments.

3. Specifications

Speed range	1 – 250 000 RPM
Distance to object	Up to 1 meter and 45 degrees offset from target
Power supply	3-15VDC, 45mA
Operating temperature	-10°C to +70°C
Connector	L1B7m connector for SIRIUS and DEWE-43 counter input
Output signal	Negative pulse input voltage (+V) to 0
Dimensions	74 mm length, 16mm diameter
Cable length	2.5 meters
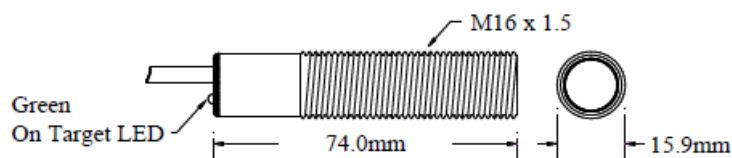
4. Operating instructions

The remote optical sensor is capable of detecting a reflected pulse from a target consisting of reflective tape at distances of up to 1 meter from the rotating object and angles up to 45 degrees.

For most applications, a 12-mm square piece of reflective tape should be applied to a clean area on the rotating object. The sensor should be optically aligned to illuminate the on-target indicator once per revolution. The sensor must be mounted steady to obtain accurate measurement. The optical sensor must be placed at a slight angle (15 degrees recommended) from perpendicular, so that the sensor will receive only pulses from the reflective marker.

The optical sensor must be at least **25 mm** from the reflective target to avoid false triggering. The green LED on-target indicator will blink at the input frequency rate when the sensor is properly aimed.
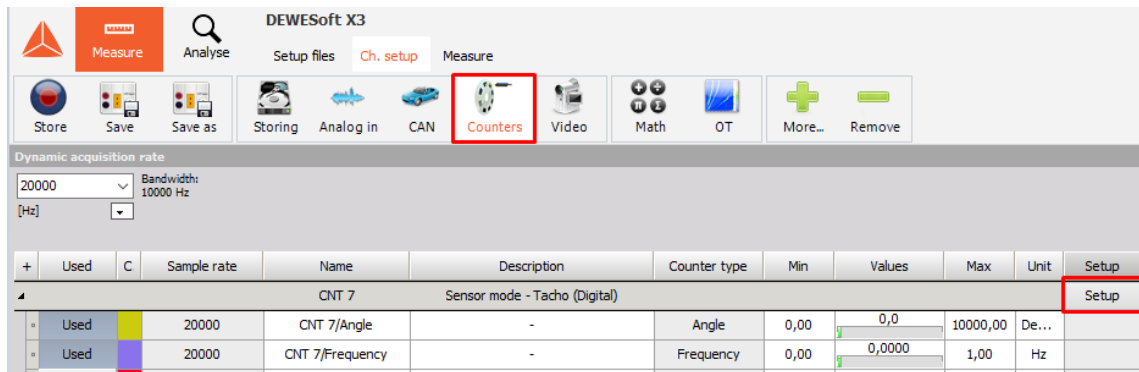

NOTE: The green LED On-Target Indicator will blink on and off at slow speeds and remain on steady at high speeds.

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5. Set up in DEWESoft

Connect the sensor to the counter input (ACC+, STG+, Multi, …) and enter the counter setup.

Under the Basic application select **Sensor (encoder, CDM, tacho…)** mode. From the dropdown menu select the **Tacho (Digital)** as a sensor type. It depends from the connection of the sensor which signal is selected as **Signal input** (CNT_IN1 or CNT IN0). After selecting all the mentioned parameters, you can immediately see the angle and the frequency of rotation.
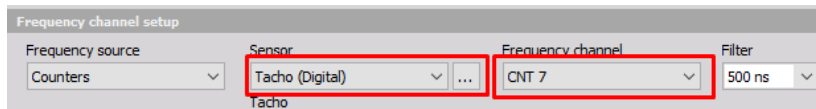
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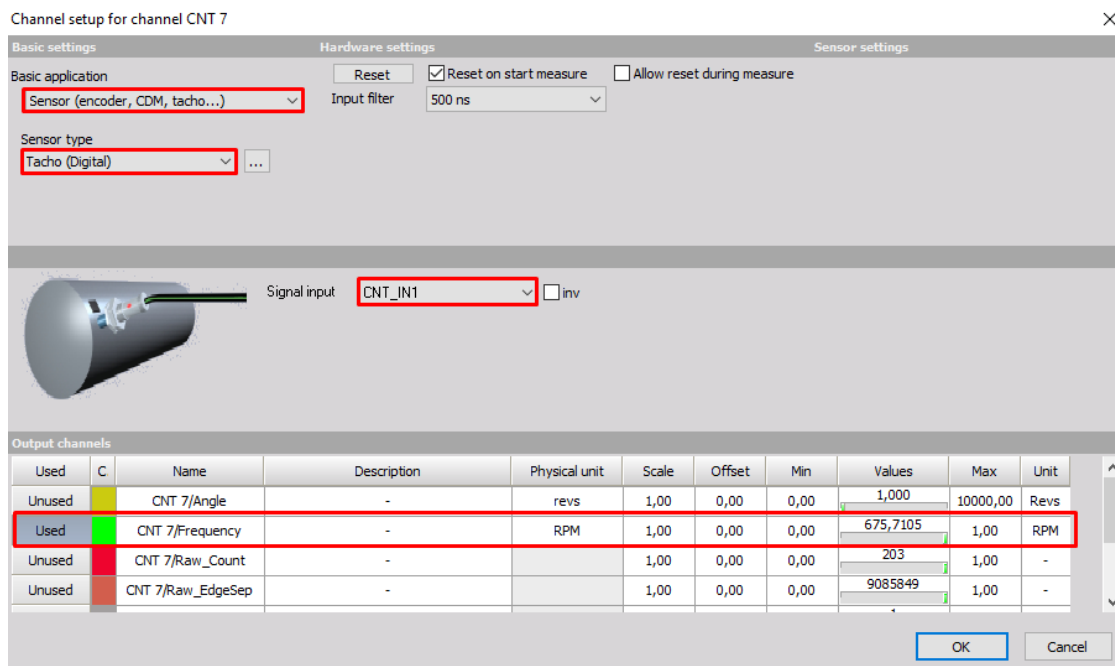
6. Measurement

Once the sensor is properly connected and defined in DEWESoft, it can be used for frequency measurements (for example: order tracking, balancing, basic RPM measurements, …).

Example: in the order tracking setup you can directly select the tacho as a frequency channel.

The lowest detectable frequency for the counter input on the DEWE-43 / SIRIUS is 5 Hz, therefore if you have 1 pulse/revolution, the lowest RPM is 300.