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1 Notice

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1.1 Safety instructions

Your safety is our primary concern! Please be safe!

Safety symbols in the manual




WARNING	Calls attention to a procedure, practice, or condition that could cause body injury or death.
	
CAUTION	Calls attention to a procedure, practice, or condition that could possibly cause damage to equipment or permanent loss of data.
	

2 About this document

This is the Users Manual for DS-Tacho4 Version 1.0.1.

2.1 Legend

The following symbols and formats will be used throughout the document.

<p>IMPORTANT</p> 	<p>Gives you an important information about a subject. Please read carefully!</p>
<p>HINT</p> 	<p>Gives you a hint or provides additional information about a subject.</p>
<p>EXAMPLE</p> 	<p>Gives you an example to a specific subject.</p>

2.2 Online versions

The most recent version of this manual can be downloaded from our homepage:

<http://www.dewesoft.com/download#Manuals>

3 Introduction

Always keep in mind that the Tach4 sensors are threshold's sensors. This is important especially for the proximity detection mode, the most commonly used for rotating: working distance could change with the albedo and/or the form and distance of the target, also, **contrast** appears as an important parameter: teeth-no teeth, black and white marks.

The recommended distance for encoding application is a few millimetres: put the probe closed to the target to avoid an incorrect reading resulting from rocking and wagging of the turning part (Descartes optical law); on the other hand, the reflective tape allows for much more than 100 mm. It is highly recommended that you use the adhesives encoders for optimal results.

A few phenomena may affect the detection function, such as a drop of liquid on top of the probe, excessive dusts covering the top, more generally, a non transparent environment for our light source such as: diesel engine sump film (i.e. carbon is not transparent for the near I.R.).

Patented concept implemented in the sensors strongly simplifies mounting and set-ups. 152 sensors lights sources are not dangerous: No Laser inside. Prior to measurement, it is recommended that a detection test be performed, even at low speed, to ensure detection feasibility and determine detection distance required for the sensor.

If impossible to perform a test due to technical reason or mounting specifics, a theoretical method would be to fix the probe at a distance equivalent to the width of the black and width strips to detect- in any event, without exceeding 4mm.

IMPORTANT



Fixing and support of the probe will influence acquisition of the reading. Please be careful regarding vibration. We recommend that you design your supports including appropriate vibration orders studies. The further the probe will be away from the target, the more the TTL amplitude signal will decrease.

3.1 Scope of Delivery

The DS-Tacho4 shipment contains the following items:

- ❶ Probe
- ❷ Sensor
- ❸ Tripod
- ❹ Tape
- ❺ Adapter sleeve (6mm)



Illustration 1: Scope of delivery

3.1.1 Sensor



3.1.2 Probe

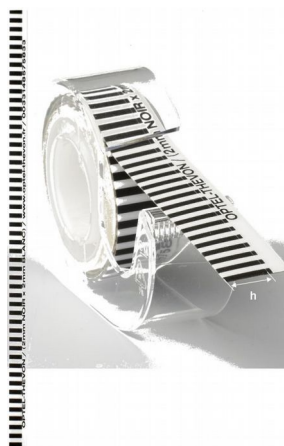


3.1.3 Tripod



Tripod: Box-dimensions: 63x50x55 mm

3.1.4 Tape



5 Technical

5.1 Sensor set-up

Power supply must be perfectly rectified, filtered, and constantly deliver more than 120mA /12V. This is not an “open collector” out put sensor, but PNP output. 152 G7 can support reverse tension, this tension modify signal’s Amplitude. 152 G7 TTL Voltage output is 5Vcc , 152 G7 Voltage output is nominal voltage input -1.5Vcc. If the sensor is connected to the acquisition system the use of dedicated measurement connectors and matching cables is recommended. Please refrain from extending the cable. Otherwise, the sensor’s operation may be affected. To confirm that the sensor is live, check if a faint red LED glows on the small light channel in front of the sensor optical head; You can also use a digital camera to see the I.R. Light. The brightness of this small red light is independent of the position of the potentiometer.

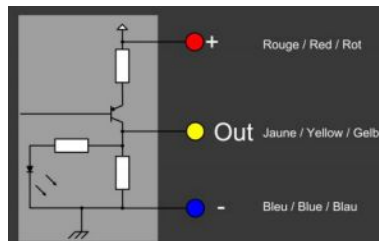
5.2 Sensor plug-in

V Rating: 12/24Vcc

V Minima: 10Vcc

V Maxima: 30Vcc

I: 120mA/12Vcc



5.3 Specifications

Specifications	DS-Tacho4
Supply voltage	9 - 30 VDC
Supply current @ 12 V	100 mA
Max. input frequency	260 kHz
Output	TTL
Rise time	100 ns
Fall time	<1 μ s
Temperature range	-10 to 50 °C non condensing
Temperature fiber sensor	-40 to 100 °C
Temperature B&W tape	-10 to 60 °C
Weight	150 g (0.33 lb.)
Working area of probe	2 - 5 mm
Trigger level adjustable	Potentiometer 3/4 turn
Probe diameter	M6 x 20 mm
Black/white tape	2 mm black, 2 mm white; width 10 mm; 1 m tape included
Connector	Lemo FGG.1B.307, directly fits to a Dewesoft counter input

Table 1: DS-Tacho4: Specifications

5.4 Lemo connector

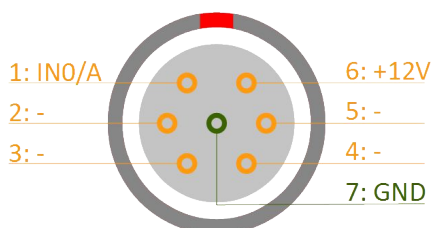


Illustration 4: counter pin-out (Lemo 7 pin)

Connector Type: L1B7f

Connector on the measurement module: *EGG.1B.307.CLL*

Mating connector: *FGG.1B.307.CLAD52*

6 Appendix

6.1 Documentation version history

Revision number: 23

Last modified: Mon 02 Dec 2019, 09:56

Version	Date [dd.mm.yyyy]	Notes
1.0.0	09.03.2015	<input checked="" type="checkbox"/> initial revision
1.0.1	02.12.2019	<input checked="" type="checkbox"/> Update sensor specification