

## RPM8000-OBD2 v4

RPM and SPEED measurement in cars  
via CAN “On-Board Diagnostics” interface  
with analog and pulse outputs

**NEW:** Now with galvanic isolated powering from board net!



- No sensor installation required
- Direct reading of RPM and SPEED
- 16-8-4-2 or 1 pulse / engine revolutions
- 16 Hz / km/h
- Analogue and pulse output
- Display of RPM and SPEED
- Max. 10000 RPM and 250 km/h
- Galvanic ISO from vehicle ground!

RPM8000-OBD2 offers a discerning solution for automotive RPM measurement without an additional sensor. The information will read direct from the CAN-OBDD2- interface (**ISO 15765 CAN, 11/29Bit ID, 250/500 kBaud**). The instrument is simply connected to the standard OBD2 connector and the RPM or SPEED is shown directly on the LCD display. You even have the choice to output the data as an analog voltage (0-5V) or as a digital pulse sequence (TTL).

**Technical details:**

**Input source** CAN-OBDD2 Interface (ISO 15765 CAN BUS)  
 CAN 11 ident 250 KB, CAN 11 ident 500 KB  
 CAN 29 ident 250 KB, CAN 29 ident 500 KB  
 Update rate 10-20Hz (typical) or better  
 RPM8000OBDD2 unit scan up to 400Hz update rate, if supported from the car Engine control unit (ECU)

**Supply voltage** via CAN-OBDD2 connector or 8-30 VDC

**Current consumption** 200 mA at 12V

**RPM resolution:** 0.25 RPM

**RPM Analog output:** 0-5V, 0.5 V per 1000 RPM, max. 10000 RPM  
 max. delay 50 ms (car timeout), min. delay 4ms, typ. delay 10 ms  
 accuracy 0.5 % (tested with calibrator)  
 load > 1k ohm

**RPM Digital output:** 16 (1:1) per engine revolutions max. 10000 RPM  
 RPM frequency divider 1:1, 1:2, 1:4, 1:8 or 1:16  
 DIV 1:1 = 2666,66 Hz at 10000 RPM = 16pulse/rev.  
 DIV 1:2 = 1333,33 Hz at 10000 RPM = 8 pulse/rev.  
 DIV 1:4 = 666,66 Hz at 10000 RPM = 4 pulse/rev.  
 DIV 1:8 = 333,33 Hz at 10000 RPM = 2 pulse/rev.  
 DIV 1:16 = 166,66 Hz at 10000 RPM = 1 pulse/rev.  
 TTL level  
 output impedance 130 ohm  
 accuracy 0.5 % (tested with calibrator)  
 max. delay 50 ms (car timeout), min. delay 4ms, typ. delay 10 ms  
 jitter 0.1 – 1 %

**SPEED resolution:** 1 km/h

**SPEED Analog output:** 0-5V, 0.02 V per km/h, max. 250Hz  
 max. delay 50 ms (car timeout), min. delay 4ms, typ. delay 10 ms  
 accuracy 0.5 % (tested with calibrator)  
 load > 1k ohm

**SPEED Digital output:** 16Hz/km/h max. 250km/h = 4000Hz  
 TTL level  
 output impedance 130 ohm  
 accuracy 0.5 % (tested with calibrator)  
 max. delay 50 ms (car timeout), min. delay 3ms, typ. delay 10 ms  
 jitter 0.1 – 1 %

**Synchronization time** ~ 2 seconds

**Displays:**  
 graphic display: Divider, numeric and graphic RPM and SPEED  
 LED green Power ON  
 LED green/red RPM supported over CAN YES / NO (green/red)  
 LED green/red SPEED supported over CAN YES / NO (green/red)

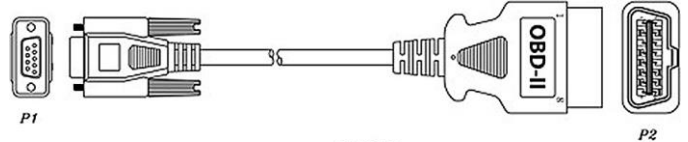
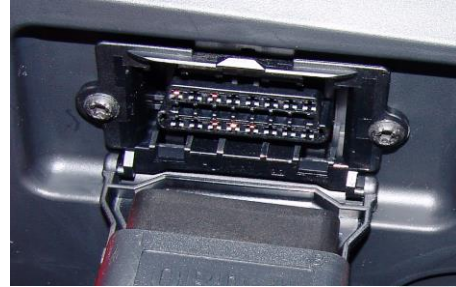
**Rotary switch:** frequency divider for RPM 1:1, 1:2, 1:4, 1:8 or 1:16  
 Rotary switch can switch-OFF the SPEED function (only RPM measurement possible)

The RPM measuring range of the analog output is 0.5 Volt per 1000 RPM. The standard TTL frequency output of 16 pulse per engine revolution can scaled with a frequency divider of 1:1, 1:2, 1:4, 1:8 or 1:16.

The SPEED measuring range of the analog output is 0.020V per km/h (0-5V = 0-250km/h) The TTL frequency output is 16Hz/km/h max. 250km/h.

**Connectors:**

- BNC OUT for analog RPM and SPEED
- BNC OUT for TTL frequency RPM and SPEED
- OBDD2 Plug** for INPUT with 1.8m cable
- Pin connection: 5 Signal Ground
- OBDD2 PLUG 6 CAN-High (J-2284)
- 14 CAN-Low (J-2284)
- 16 Battery power (+)



PIN OUT	
P1 3	P2 6 CAN High (J-2284)
P1 5	P2 14 CAN Low (J-2284)
P1 6	P2 10 Not connected
P1 7	P2 2 Not connected
P1 1	P2 5 Signal Ground
P1 2	P2 4 Not connected
P1 4	P2 7 Not connected
P1 8	P2 15 Not connected
P1 9	P2 16 Battery Power

**Pin connection from 1.8m cable OBD2/9p-SUB-D**

- Dimensions: 150 x 100 x 30mm
- Weight: 0.5kg without connection cable
- Material: anodized aluminum
- Operating temperature: -20°C to +70°C
- Storage temperature: -30 to +80°C
- Humidity: 20 – 80%
- Vibrations: 5g
- Shock: in all directions 100 g



RPM8000OBDD2 – in transport case