

Battery Tachometer



Operating Instructions



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Important

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Every reasonable effort has been made to ensure that information within this Operating Instruction manual is correct at the time of release, but Omitec cannot accept responsibility for any errors that may occur.

The information in this Operating Instruction manual is subject to change without notice, and does not represent a commitment on the part of Omitec.

Warranty

For details of Warranty please refer to the details in our Terms and Conditions of Sale.

WARNING: Do not attempt to operate this equipment unless you have read and understood these instructions.

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Safety

- Always follow the vehicle manufacturer's instructions when holding the cut off speed of Diesel engines.
- When connecting the tachometer, be careful to avoid rotating, or hot components (e.g. fan, exhaust manifold).
- When connecting to the battery take care to avoid shorting the positive terminal to any parts which may be at ground potential (i.e. metalwork).
- Unless authorised, do not remove or make any alternation to any part of the supplied equipment. Contact the supplier.
- Do not use the battery tachometer for any other purpose than for which it is intended.
- Keep this users manual in an easily accessible place.

Introduction

Introduction

The OM4500/13 derives engine speed by monitoring the alternator ripple voltage across the battery. When the alternator is charging, the ripple frequency varies slightly or modulates in proportion to the engine speed.

The unit uses this frequency modulation to derive an engine speed signal that is used to drive the inductive clamp currently fitted on Omitec gas analysers, pc stand alone gas analyser and ps gas and smoke combined units.

Important Notes:

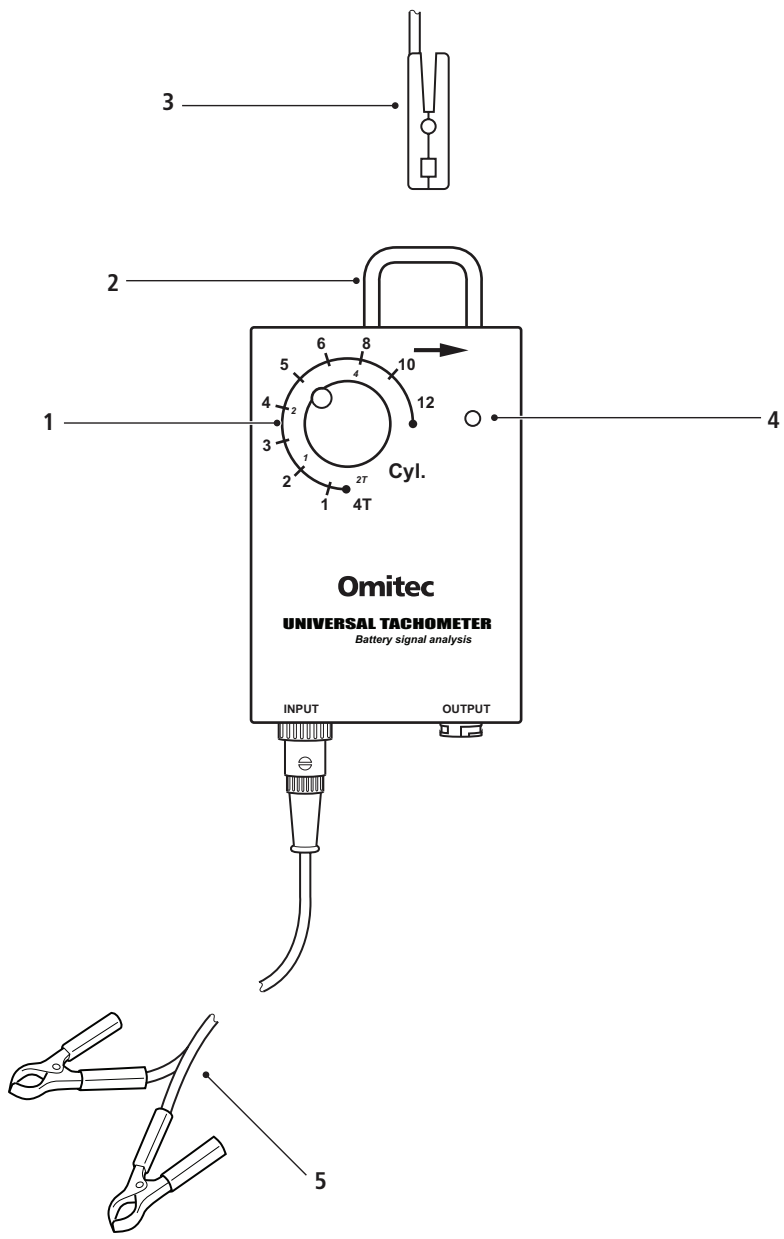
The OM4500/13 is designed for use with petrol and diesel emission procedures only. The engine speed signal is not derived from Cylinder number 1 and therefore **MUST NOT** be used for timing purposes, the speed will read correctly but the timing will be wrong.

The OM4500/13 produces a signal equivalent to a conventional ignition system (i.e. one pulse per engine cycle). When defining the ignition system on the host analyser, it is therefore imperative that a conventional distributor system is selected, irrespective of that fitted to the vehicle. Selecting DIS for example will result in the readings being divided by 2.

List of Contents

1. 1 x OM4500/13
2. 1 x Power/Sensing cable
3. 1 x Operating Instructions
4. 1 x Storage case

Connections



Operation

1. Engine type/Cylinder select
 2. Inductive pickup loop
 3. Gas analyser inductive pickup
 4. Status LED¹
 5. Battery clips - red to battery +ve, black to battery -ve
- ¹ On - Power/Initialising, Flashing measurement in progress

Fitting

The OM4500/13 is supplied with a magnetic tile affixed to the back, so fitting is simply a case of attaching the unit to a suitable flat metallic surface, such as the top of the host analyser. When used with gas analyser, connect the inductive clip of analyser to the trigger loop on OM4500/13.

Operation

Attach the crocodile clips on OM4500/13 power/sensing cable to battery terminals, ensuring that the polarity is correct.

Use the selector knob to set engine type and number of cylinders.

Example: For a four cylinder four stroke engine, the selector should be set to 4 on the 4T scale. For a vehicle fitted with a Distributorless Ignition System (DIS) the setting will be the same.

Start engine, switch on vehicle lights and allow to idle.

The unit will search for a steady speed, each time it is powered up, if the engine speed falls or if the engine type is changed. This is the initialisation period and may last up to 17 seconds. During this time, the status LED will flash slowly and the rpm will read zero.

Once the speed has been detected, readings will appear on the host analyser. The OM4500/13 updates 10 readings per second.

On some vehicles readings may be unstable or inaccurate. To minimise the risk of this:

- *Ensure that the vehicle headlights are switched on.*
- *Keep the engine speed stable during the initialisation time <17Sec.*
- *If, after initialisation the speed is stable but reading double, change the cylinder setting until the correct value appears.*

NOTE: *If it fails to pick up alternator ripple please try to create a load on the alternator by turning on the HRW.*

Technical Data

Technical Data

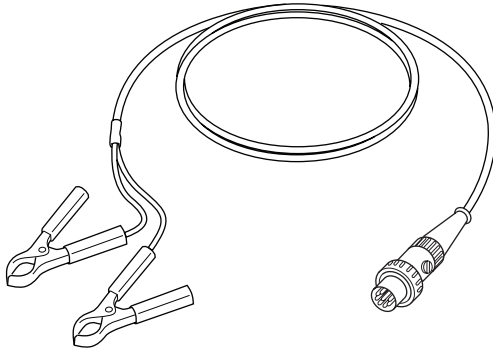
Engine type	4-stroke Diesel and Petrol
Measurement range	400 - 9999 rpm
Accuracy	± 20 rpm below 2000 rpm ± 2 % above 2000
Response	< 1 Second
Initialisation	≤ 17 Seconds
Power supply	9 - 15 V dc <0.5A Reverse Polarity Protection
Operating temperature	0 to +45°C
Humidity	<90% non - condensing
Dimensions	144 x 98 x 40 mm
Weight	386 g

Spares and After Sales Service

For spare parts and service please contact the Omitec Sales Helpline on 0870 2400 050. All spare parts purchases are subject to minimum order values.

Spare Parts

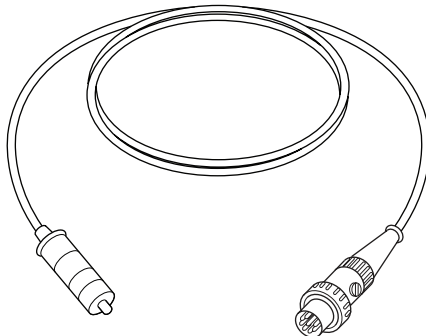
Power/Sensing cable
CABL3016



OM1389

Optional Parts

Power/Sensing
cable **CABL3023**
(for connection to
vehicle accessory
socket)



OM1391

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