

**OPPAMA**



**PULSE**

# Product General Catalog



## **PET/DET series**

*Dedicated to gasoline engine*

Our digital products comply with RoHS order (Restriction of Hazardous Substances) excluding a part of model.

**RoHS**

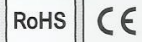
# Mounted type

The rotation frequency can be measured easily by moving it closer to the ignition plug cord.  
\*The direct ignition type engine is excluded

For specifications and details, please refer to the specifications list on other page.

## Engine tachometer

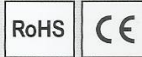
### PET-302R



This is the simply designed tachometer without button, which automatically displays the cumulative accumulated time after the measurement of rotation frequency is terminated.  
Dedicated to gasoline engine of 2-stroke 1-cylinder, 4-stroke 2-cylinder and 1-rotation 1-ignition  
\*Antenna lead wire (1.2m) included (MAX r/min : 30000r/min)



### PET-2000DXR



This is the tachometer on which the dual displays function for displaying the rotation frequency and max. rotation frequency is mounted, which can measure rotation frequency, cumulative accumulated time and max. Rotation frequency of engine.  
Dedicated to gasoline engine of 2-stroke 1, 2-cylinder, 4-stroke 2, 4-cylinder and 1-rotation 1-ignition  
\*Antenna lead wire (1.2m) included



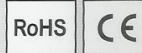
### PET-2100DXR



This is the high capacity type tachometer that supports multicylinder engine in addition to the functions of PET-2000DXR.  
Dedicated to gasoline engine of 2-stroke 1 to 4-cylinder, 4-stroke 1 to 6, 8-cylinder  
\*Antenna lead wire (1.2m) included



### PET-304



This is the simply designed tachometer without button, which automatically displays the cumulative accumulated time after the measurement of rotation frequency is terminated.  
Dedicated to gasoline engine of 2-stroke 1-cylinder, 4-stroke 2-cylinder and 1-rotation 1-ignition  
\*Antenna lead wire (1.2m) included (MAX r/min : 20000r/min)



● The pulse engine tachometer is useful for maintenance, inspection and tune-up of engine equipment.

#### Explanation of pictograph mark

RoHS

This product uses the parts that do not contain the harmful substances restricted by Restriction of Hazardous Substances (RoHS order) announced by European Union (EU).

CE

This is the product designed for complying with the product safety of European Union (EU).

# Handy type

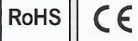
This is the low-profile handy type tachometer including PET-1200 that supports the direct ignition. The rotation frequency can be measured easily by moving it closer to the ignition plug cord.

\*The measurement of direct ignition engine cannot be performed by model other than PET-1200.

## Engine tachometer

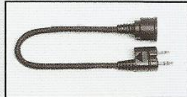
For specifications and details, please refer to the specifications list on other page.

### PET-1200

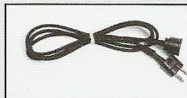


\*PET-1200 has been adopted for the measurement of rotation frequency at the time of automobile inspection (sound volume measurement) for MFJ Motocross hosted by MFJ (Motorcycle Foundation of Japan) since FY2007.  
\*Recommended by JMCA (Japan Motorcycle Accessories Association)

### Direct ignition engine supported



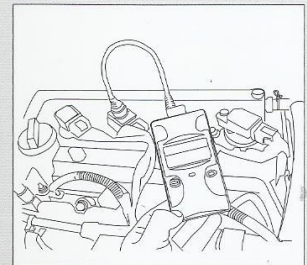
Sensor A  
(L= 0.26m) : Standard part  
Dedicated to the measurement of direct ignition engine



Sensor B  
(L= 1.5m) : Standard part  
Dedicated to the measurement of direct ignition engine



Sensor C  
(L= 1.5m) : Standard part  
Dedicated to the measurement of normal ignition engine



Example of measurement (when the sensor A is used)

This is the model that supports the direct ignition engine that cannot be measured by existing rotating meter.

The normal ignition is also supported.

Dedicated to gasoline engine of 2-stroke 1 to 4-cylinder, 4-stroke 1 to 6, 8-cylinder

The measurement range of rotation frequency has been expanded to MAX. 30000 r/min (single-cylinder engine) and the high rotation engine is supported.

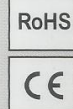
Max. rotation frequency storage, hour meter functions are included.

### PET-1000R



Pocket size 13mm thick  
Standard type that seeks usability  
Dedicated to gasoline engine of 2-stroke 1, 2-cylinder, 4-stroke 2, 4-cylinder and 1-rotation 1-ignition  
\*Antenna lead wire (1m) included

### PET-1100R



Functions of PET-1000R and multicylinder engine are supported.  
High capacity type that enables the selection from 7 positions Dedicated to gasoline engine of 2-stroke 1 to 4-cylinder, 4-stroke 1 to 6, 8-cylinder.  
\*Antenna lead wire (1m) included

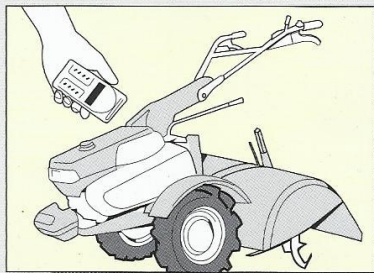
### DET-610R



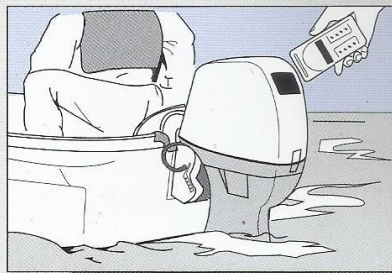
Multicylinder engine is supported.  
Watch function and solar battery are included.  
Dedicated to gasoline engine of 2-stroke 1 to 4-cylinder, 4-stroke 1 to 6, 8-cylinder  
\*Antenna lead wire (1m) included

#### Example of use

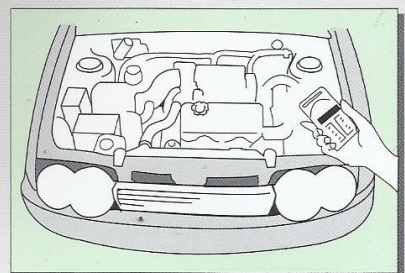
This product can be used for gasoline engine equipment of vehicle, motorcycle, grass mower, chainsaw, personal watercraft and electric dynamo etc.



●Cultivator



●Outboard engine



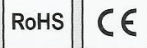
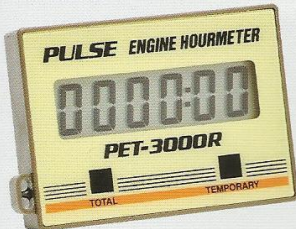
●Vehicle

# Other equipment gauges

For specifications and details, please refer to the specifications list on other page.

## Engine hour meter

### PET-3000R



Standard type that can measure temporary storage time and cumulative accumulated time

It measures the cumulative accumulated time of engine operation. Please utilize it for the management of maintenance / inspection period and rental time etc.

\*Antenna lead wire (1.2m) included

## Engine hour meter

### PET-3200R



Ultra small / light model that does not pick the attachment place

This is the mounted type ultra small hour meter that measures the cumulative accumulated time of engine operation. Please utilize it for an indication of replacement time of engine oil and parts.

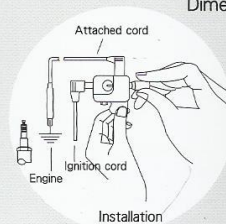
\*Antenna lead wire (1m) included

## Ignition checker

### PET-4000



This is the three-wire spark inspection machine of gasoline engine ignition system. The failure can be diagnosed easily without removing the magnet equipment from engine. The spark gap (standard 6mm) can be adjusted by knob with scale (0 to 12mm).  
Dimensions (L×W×H) : 83 × 124 × 20mm



## Ignition indicator

### PET-4100 PULSER



The spark can be checked easily by moving it closer to the ignition plug cord. If the ignition pulse is received, the blue LED lights up.  
Dimensions (L×W×H) : 25 × 68 × 6 mm  
(Excluding the key holder part)

# OPPAMA

## PULSE ENGINE TACHOMETER **PET-1010**

SIMPLE AND ECONOMIC TACHOMETER  
GOOD FOR 2-CYCLE 1-CYLINDER ENGINES, AND 4-CYCLE 1,2CYLINDER ENGINES

After showing rpm, accumulative operating time of the engine is displayed.  
RoHS & CE compliance.



Measurable engines

2-cycle 1-cylinder, 4-cycle 1-cylinder  
4-cycle 2-cylinder

EXTRA  
Function

Measurement method

Count pulses at spark plug cable.

RPM display interval

0.5 sec.

Accuracy

± 10 rpm

Battery life

19,000hrs.

Unit body size

120 x 62 x 13mm

Weight (unit + antenna)

60 gr.

Accessories

Antenna lead

 **OPPAMA INDUSTRY CO., LTD.**

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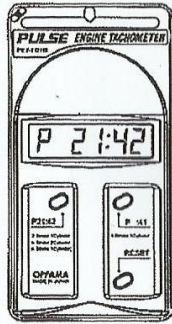
URL : <http://www.oppama.co.jp>

E-mail : [info@oppama.co.jp](mailto:info@oppama.co.jp)

**OPPAMA**

**Instruction Manual**

**PULSE<sup>®</sup>  
ENGINE TACHOMETER  
PET-1010**



**WARRANTY STATEMENT**

Under normal use and care Oppama Industries agrees to repair or replace free of charge any Tachometer found to be defective. This warranty is for one year from the original date of Purchase, and is extended to the original purchaser only and is not transferable.

For repair or replacement, return the defective tachometer with proof of purchaser to your dealer.

Date of Purchase: \_\_\_\_\_

Name: \_\_\_\_\_ Phone \_\_\_\_\_

Address: \_\_\_\_\_

Retailer \_\_\_\_\_

**IMPORTANT**  
Complete this warranty card at the time of purchase and keep a copy for your records.

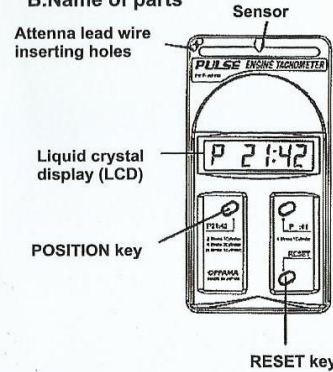
This warranty is provided by Oppama Industry Co.LTD.  
14-2, Natsushimacho, Yokosuka, Kanagawa  
237-0061, Japan  
Phone+81-46-866-2139 Fax+81-46-866-3090  
Email info@oppama.co.jp http://www oppama.co.jp

**A. Function**

The PET-1010 is a pulse- activated tachometer: it detects and counts electric pulses produced at the time of ignition of gasoline engines, and processes the detected signals into rpm readings according to the type of engines being monitored.

This unit is capable of monitoring rpm of 2 types of gasoline engines that are shown in the position table. This unit cannot be used for diesel engines and direct ignition engine.

**B. Name of parts**



**C. Measuring Position Chart**

Position	Objective engine		Measurable range r/min
	Stroke	Cylinder	
P 21:42	2 ----- 4	1 ----- 2	100 ~ 19000
P :41	4	1	100 ~ 19980

**D. Specifications**

Objective engine	Stroke	Cylinder
	2 ----- 4	1 ----- 1 - 2
Display interval	0.5sec	
Accuracy	± 10r/min(± 20r/min for 4-str 1-cyl)	
Battery life	Approx. 20,000 hr	
Working Temperature	-10°C~ +60°C	
Storage Temperature	-10°C~ +60°C	
Dimensions(L x W x H)	120 x 62 x 13mm	
Weight	60g	
Accessories	Antenna lead with clip Instruction Manual	

**E. How to use**

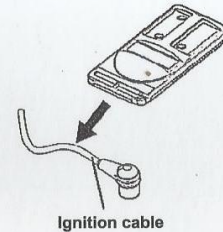
(1) Non-Contact Method (Fig.1)

1. Turn ON the unit by depressing POSITION key.
2. Select the POSITION number applicable to the engine to be monitored, referring to the Measuring Position Chart.
3. Depress the POSITION key as many times as needed until the selected POSITION number appears on the LCD
4. With the engine running, hold the Unit so that the sensor end is at an appropriate distance (1cm-50cm) from the active ignition cable (or one a multiple cylinder engine, from the spot where all the ignition cables are clustered.) "Appropriate monitoring distance" varies with the signal strength and the type of engines being monitored; it is established when the rpm readings appearing on the LCD have become stabilized within a ± 10~±15% rpm range. The engine's rpm readings will continue to appear at 0.5 Sec intervals as long as the Unit is held at the Proper monitoring distance (CAUTION: Do not allow the Unit to touch any active ignition cable, or the unit's failure may result.)
5. Move the unit away from the running engine, or stop the engine, and the POSITION number will appear on the LCD. The unit will automatically turn OFF in one minute thereafter.

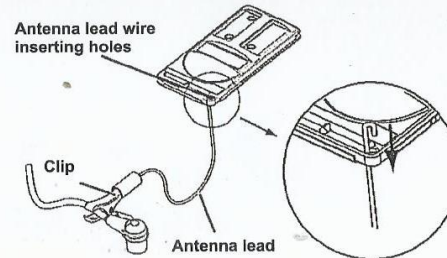
(2) Antenna Lead Method (Fig.2)

1. Attach the antenna lead to the unit as illustrated.
2. Get the unit ready for use, following Steps(1)1-3.
3. Connect the antenna lead to the ignition cable, using the clip, as shown. On a multi-cylinder engine, attach the antenna lead clip to one of the ignition cables where all of them are clustered
4. Start the engine, and its rpm reading will appear on the unit's LCD at 0.5 sec intervals.
5. Remove the antenna lead clip from the ignition cable, or stop the engine, and the POSITION number will appear on the LCD. The Unit will automatically turn OFF in one minute thereafter.

**Fig.1**



**Fig. 2**



**F. NOTES AND CAUTIONS**

1. Use P 21:42 when 4-stroke 1-cylinder engine that sparks at sparks plug every revolution is monitored.
2. Some engines employ "double sparks" ignition method where the number of sparks per revolution is double that of the ordinary engines. Since rpm reading are given based on the count of sparks-generated electric pulses, this means that the rpm readings displayed represent two times the actual, correct readings. To obtain direct rpm readings on a double- spark - ignition engine, select the POSITION number by doubling the number of cylinder of the engine: For example, the POSITION number to select for a double-spark ignition, 4- stroke 1- cylinder engine should be P21:42 instead of P :41
3. Very rarely, strange figure or symbols happen to appear on the LCD. This condition does not represent the unit's failure. If this has occurred, depress RESET key: the figured 8888:88 will temporarily appear and then POSITION number P 21:42 will follow, indicating that the Unit is in normal working condition.
4. When the antenna lead is used, be sure to keep it free from contact with metallic surfaces to avoid possible errors in rpm readings.
5. Keep this unit away from strong physical shocks.
6. Never touch the inside circuit to prevent any unnecessary trouble or malfunction.