

Gasoline & diesel engines, EV & HEV motors  
**Handheld Digital Tachometer**

# HT-6200

**External Sensor Input Type**



HANDHELD  
DIGITAL  
TACHOMETER

**ONOSOKKI**

# Handheld Digital Tachometer

# HT-6200

## Advanced model of the HT-6100

Not just measuring gasoline/diesel engine rotation but motor rotation of EV/HEV !

All in one model for measuring gasoline/diesel engines and EV/HEV motors!

Three types of output (analog, pulse and monitor) for recording and for tracking analysis of rotation.

### Features

#### 1 Can be used with various sensors

Various types of rotation sensors can be connected. Rotation measurement of gasoline engines, diesel engines and motors can be performed with one tachometer.

#### 2 Three outputs provided as standard

Analog output : For recording rotation speed  
Pulse output : For synchronous signal with rotation  
Monitor output : For checking detected signals.

#### 3 Built-in peak-hold function

Max. and min. values can be displayed during measurement.

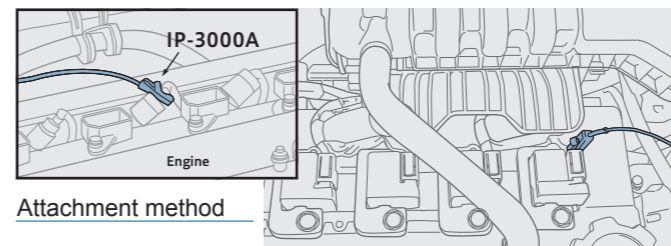
#### 4 Built-in memory function

Up to 20 data can be stored.

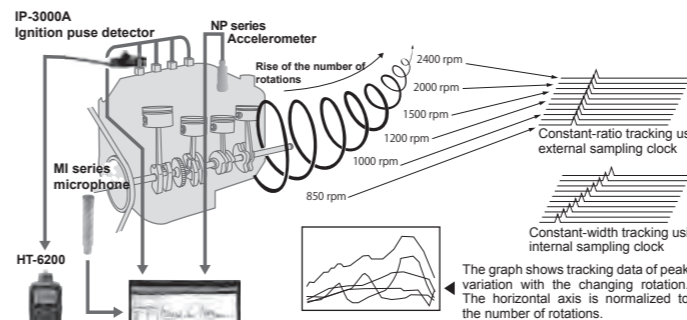


### Applications

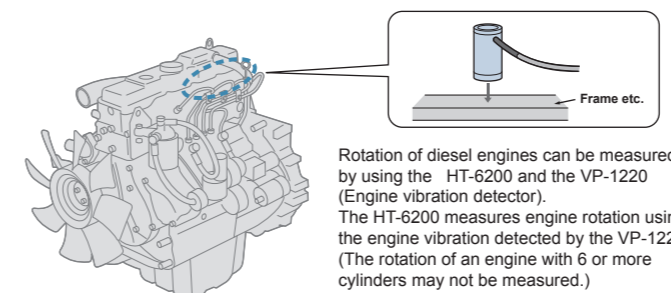
#### Measuring rotation of gasoline engines



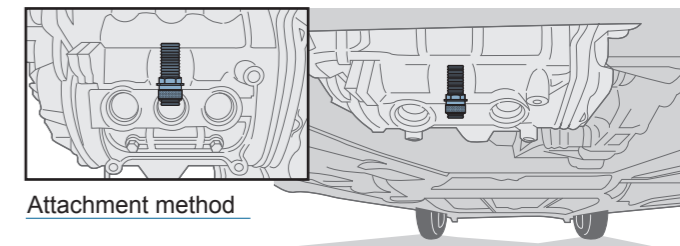
The rotation of gasoline engines can be measured using the IP-3000A (Ignition pulse detector) and the HT-6200 (Handheld digital tachometer). The IP-3000A is attached on an ignition cable.



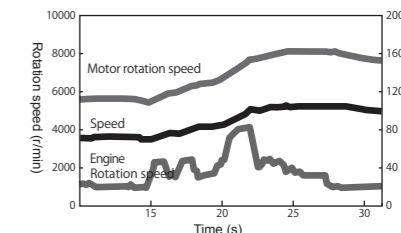
#### Measuring rotation of diesel engines



#### Measuring motor rotation of EV/HEV



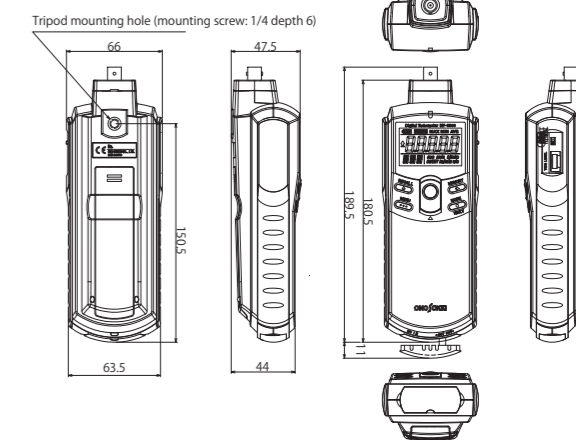
The OM-1200 is installed perpendicularly to the rotating shaft of the motor. It needs to set the number of poles (number of pulses P/R) for the HT-6200.



#### Actual running test of HEV

The above graph shows the rotation speed of a motor and an engine in HEV (measured by two HT-6200's), and the speed of HEV (measured by the LC-8100 GPS speedometer).

#### Outer Dimensions (unit: mm)



### Specifications

<b>Object to be measured</b>	Engines, motors and rotating objects in general
<b>Display</b>	5-digit LCD with backlight (character height: 10.2 mm)
<b>Calculation method</b>	Periodic operation method
<b>Measurement time</b>	1 s+1 period
<b>Measurement accuracy</b>	Displayed value x (±0.02 %) (Not including a quantization error) The measurement accuracy of the circumferential speed depends on the accuracy of rotation speed (r/min).
<b>Setup range of number of pulses (P/R)</b>	0.50 to 200.00(engine rotation measurement) 0.50 to 999.99(other than engine rotation measurement) (Can be set at intervals of 0.01)
<b>Peak-hold function</b>	Maximum value (MAX), Minimum value (MIN)
<b>Memory function</b>	Up to 20 data
<b>Over-range function</b>	The over-range warning (ERROR mark) is displayed when the measured value exceeds the display range.
<b>Rotation upper limit warning function</b>	The upper limit warning (↑ mark) is displayed when the rotation speed exceeds the preset upper limit value.
<b>Circumferential speed calculation function</b>	Calculates the circumferential speed from the preset diameter value (mm) and the measured rotation speed.
<b>Accumulation function</b>	Counts accumulated pulses of input signal
<b>Period measurement function</b>	Measures the input pulse period (When 1 second or less: average value of input pulse)
<b>Trigger level adjustment function</b>	Trigger level can be adjusted using a rotary dial at the right-hand side of the main unit.
<b>Connector</b>	φ2.5 sub-mini jack
<b>Analog output</b>	Output content: Output to the display value of rotation speed Output voltage: 0 to 1 V/0 to F.S. (F.S. can be specified.)

<b>Conversion method</b>	10-bit D/A conversion method
<b>Linearity</b>	±1 % / F.S.
<b>Output update time</b>	50ms + the time required for 1 period or less
<b>Temperature stability</b>	± 0.05 % / F.S. / °C (ZERO & SPAN)
<b>Setting error</b>	±0.5 % / F.S.
<b>Load resistance</b>	100 kΩ or more
<b>Output content</b>	Detected signal of a sensor (available by switching from analog output.)
<b>Load resistance</b>	100 kΩ or more
<b>Output voltage</b>	High level: +4.5 V or more Low level: +0.5 V or less
<b>Output logic</b>	Positive logic pulse
<b>Load resistance</b>	100 kΩ or more
<b>Power supply</b>	Type AAA battery (x 4) or exclusive AC adapter (PB-7090 sold separately)
<b>Continuous operating time</b>	16 hours or more (backlight OFF) 8 hours or more (backlight ON) *When alkaline batteries are used at 20 °C.
<b>Battery LOW display</b>	Lights up at about 4.5 V("LOW" will be displayed.)
<b>Operating temperature range</b>	0 to +40 °C
<b>Storage temperature range</b>	-10 to +50 °C
<b>Outer dimensions</b>	47.5(W)×189.5(L)× 66(D) mm
<b>Weight</b>	Approx. 280 g (including batteries)
<b>Accessories</b>	Type AAA battery x 4, carrying case x 1, Instruction manual x 1

	Gasoline engine	Diesel engine	Motor (EV, HEV)	Rotating object in general
<b>Applicable detector</b>	<ul style="list-style-type: none"> <li>Ignition pulse detector: IP-296/292/3100/3000A</li> <li>Motor/gasoline engine RPM detector: OM-1200</li> <li>Engine vibration detector: VP-1220</li> </ul>	<ul style="list-style-type: none"> <li>Ignition pulse detector: IP-296/292/3100/3000A</li> <li>Motor/gasoline engine RPM detector: OM-1200</li> <li>Engine vibration detector: VP-1220</li> </ul>	<ul style="list-style-type: none"> <li>Motor/gasoline engine RPM detector: OM-1200</li> </ul>	<ul style="list-style-type: none"> <li>Electromagnetic rotation detector MP-900/9000 series</li> </ul>
<b>Object to be measured</b>	<ul style="list-style-type: none"> <li>Ignition coil, primary/secondary ignition cables</li> <li>ECU rotation pulse (5V)</li> <li>Cylinder-head of an engine (When using the VP-1220)</li> </ul>	<ul style="list-style-type: none"> <li>ECU rotation pulse (5V)</li> <li>Cylinder-head of an engine (When using the VP-1220)</li> </ul>	<ul style="list-style-type: none"> <li>Motor</li> </ul>	<ul style="list-style-type: none"> <li>Rotation detection gear</li> </ul>
<b>Measurement unit</b>	Rotation measurement of gasoline/diesel engines r/min (rotation speed)		Rotation measurement other than engines r/min, r/s (rotation speed), m/min (circumferential speed), ms (period), COUNT (accumulated count)	
<b>Input frequency range</b>	1 to 1666.67 Hz		3.33 to 1666.67 Hz	
<b>Maximum measurement value</b>	20,000 r/min The maximum rotation speed is 20,000 r/min regardless of the number of pulses per one rotation (P/R).		99999 r/min (P/R=1), 999.99 r/s (P/R=1) 9999.9 m/min (diameter =100 mm), 300 (ms), 99999 (COUNT) The maximum value varies depending on the number of pulses per one rotation.	

※ The measurement range may be changed depending on measurement objects.  
 ※ The measurement range may be changed depending on the sensor installation position or type of motor when the motor rotation is measured using the OM-1200.  
 ※ The measurement may not be performed normally depending on type of a motor, type of an engine or other reason. Please contact your nearest distributor for more details.

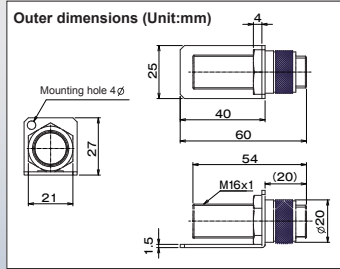
## Options

For measuring EV/HEV motor rotation

OM-1200 (detector)  
OM-0102 (mounting fixture)



Detector with a mounting fixture



Motor/gasoline engine RPM detector  
OM-1200



Electromagnetic rotation detector  
MP series



Ignition pulse detector (Primary side)  
IP-292



Ignition pulse detector (Secondary side)  
IP-296



Ignition pulse detector  
IP-3000A



Ignition pulse detector  
IP-3100



Engine vibration detector  
VP-1220



AC adapter  
PB-7090



## Main unit

HT-6200 Handheld Digital Tachometer

## Sensors (sold separately)

VP-1220	Engine vibration detector
IP-292	Ignition pulse detector
IP-296	Ignition pulse detector
IP-3000A	Ignition pulse detector
IP-3100	Ignition pulse detector
OM-1200	Motor/gasoline engine RPM detector
MP series	Electromagnetic rotation detector

## Accessories (sold separately)

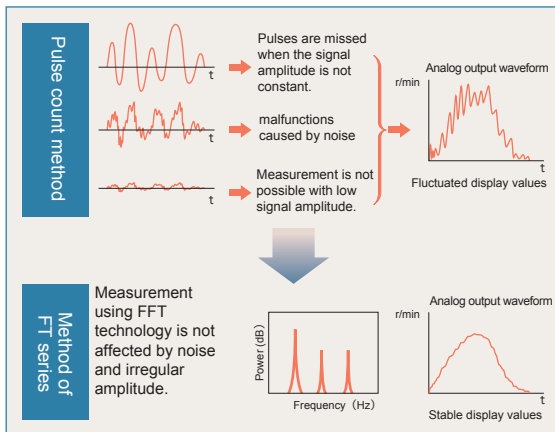
AX-501	Signal output cable (for analog and pulse output) 2.5φ sub-mini plug to CO2 (BNC), 2m
MX series	Cable for electromagnetic rotation detector (for OM-1200, MP series) MX-005 5m MX-010 10m
OM-0102	Mounting fixture for OM-1200 (with 3 of adhesive sheet)
PB-7090	AC adapter Input: 100 to 240V AC Output: 5.9V DC/3.5A (with AC power cable)

## For stable measurement High precision type the FT-7200 Advanced Handheld Tachometer

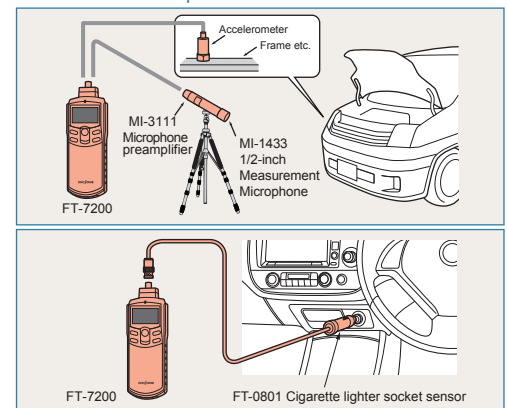


FT-7200

The FT-7200 is a handheld type tachometer which measures the rotation speed by performing frequency analysis using FFT calculation. This tachometer is useful for measurement of sensor signal with noise or small amplitude.



## Measurement examples



Cigarette lighter socket sensor  
FT-0801

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