



The CT-6700 is a digital engine tachometer to measure revolution speed of gasoline or diesel engines, motors (EV/HEV) equipped on electric vehicles or hybrid electric vehicles or general rotating bodies.

This compact tachometer supports 10 kinds of various sensors with different usages and purposes including ignition pulse detector, gasoline and diesel engine rotation detector, and magneto-electric rotation detector. Engine rotation speed has now come to be able to measure by ECU crank signal even when it is difficult to mount a detector on an actual vehicle.

Features

- **High response measurement- Analog output response ; 1 cycle+8 μs or less of input signal –**

The CT-6700 catches transient phenomena of engine rotation speed with high response. The analog output follows up the behaviors of acceleration/deceleration within 1 cycle + 8 μs of input signal. As for pulse output, waveform-shaped output can be selected for signal output of engine rotation speed without delay.

- **Supports various sensors with different purposes**

In addition to 10 kinds of detectors such as an ignition pulse detector, gasoline/diesel engine rotation detector, magneto-electric rotation detector, ECU crank signal output becomes available. The CT-6700 measures rotation speed of various engines which is undetectable so far.

- **Automatic setting of trigger level with the Trigger Assist Function**

Before engine rotation measurement and motor rotation measurement, a trigger level is adjusted. Especially for the measurement using ignition signal, it is important to remove noise influence for stable measurement. This function performs trigger level adjustment automatically and helps to reduce setting time.

- **Measurement by ECU crank signal of unequal interval pulses (option: CT-0672)**

The CT-6700 enables rotation measurement by input of ECU crank angle signal. Since gear teeth are arranged at unequal intervals for top dead center detection, ECU crank signal is detected as unequal interval signal. The CT-6700 learns pulse pattern at unequal intervals and makes stable measurement even by input of ECU crank signal.

- **High speed digital data output by CAN* interface (option: CT-0671)**

* CAN: Controller Area Network

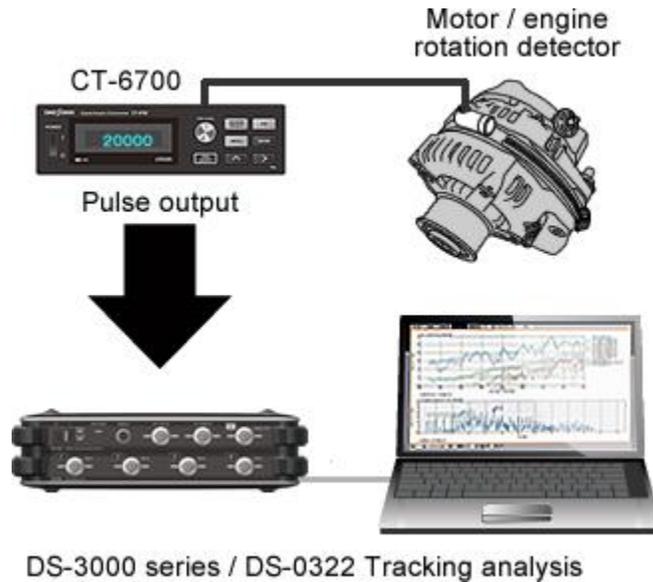
Various functions to help measurement

Compact and space-saving design: 170(W) X 49(H) X 120(D) mm



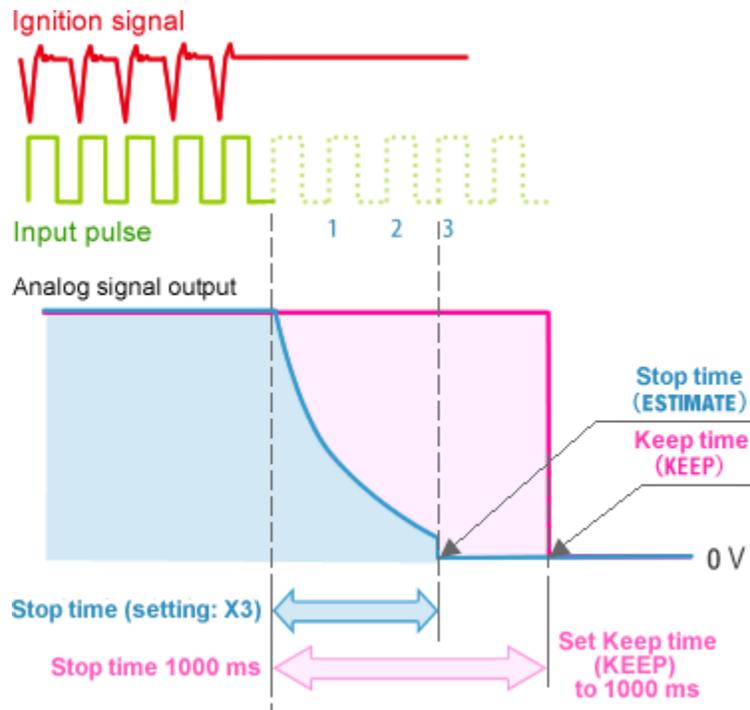
CT-6700 has achieved size-saving design and operability in both on-vehicle measurement and engine bench measurement.

Pulse output function for tracking analysis



Rotation-tracking analysis is effective when you want to find the details of vibration source such as the component or the number of order. Tracking analysis can be performed by reading DIRECT pulse output of CT-6700 (signal for rotation synchronization) in DS series of Ono Sokki.

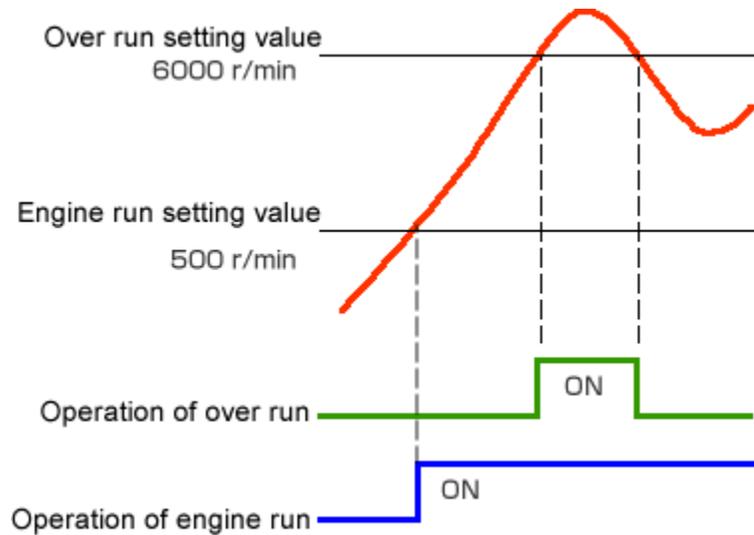
Deceleration calculation function supports the measurement in engine stop.



This is the function to decrease/stop the analog signal output when the input signal from the sensor decreases dramatically and there is no signal input over the period longer than the previous pulse interval. It estimates the signal output of rotation speed based on the last detected signal cycle, and output the analog signal.

Either of the analog signals is output, the signal estimated based on the last signal cycle detected, or 0 r/min after the specified time.

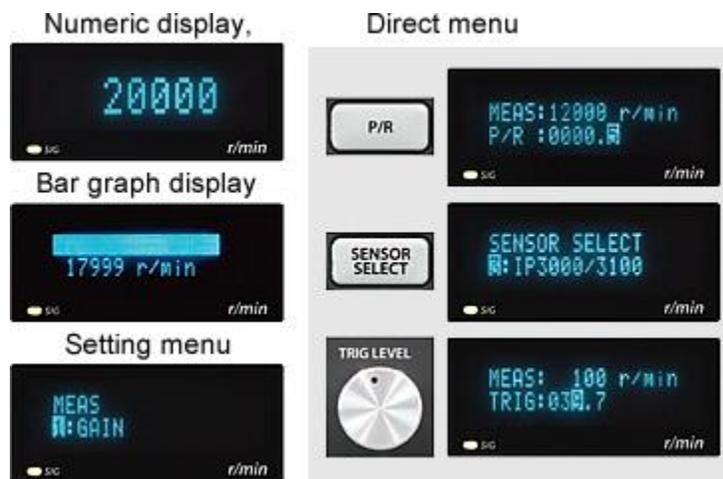
Comparator function for monitoring engine measurement condition



The above is the output operation example of the comparator when the engine run and overrun (VALUE) condition is set. If the engine run is set to 500 r/min, the engine is regarded as started when the engine rotation speed exceeds 500 r/min.

If the overrun is set to 6000 r/min, the engine is regarded as abnormal when the engine rotation speed exceeds 6000 r/min.

Easy to see, easy to use



Various functions are easily set by menu format and highly visible display

Frequently-used setting items such as sensor type selection, the number of pulses, and trigger level can be set by direct keys (button and a rotary dial) in a short time.

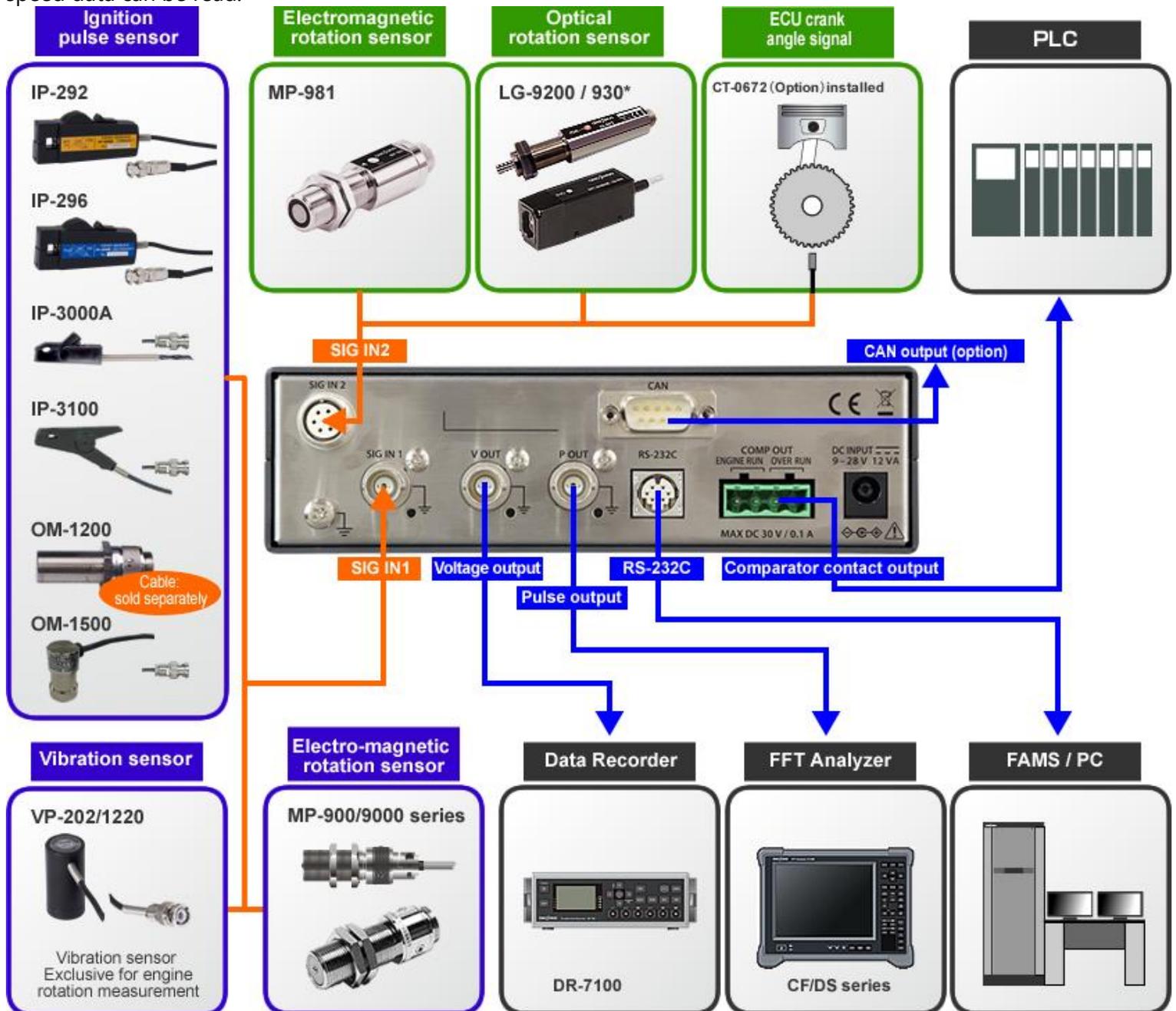
High speed digital data CAN output function (option : CT-0671)



Baud rate (kbps)	125, 250, 500, 1000
Update frequency (Hz)	OFF, 1, 2, 5, 10, 20, 100, 1000

Rotation speed data can be output via CAN interface

Output update frequency is selectable up to 1 kHz. By an instrument with CAN interface such as CAN logger, rotation speed data can be read.



Specification

Input section

**Applicable sensor
(sold separately)** IP-292/296, IP-3000A/3100, OM-1200/1500, VP-202/1220, LG-9200, MP-900/9000 series, MP-981, EXT(PULSE), ECU crank angle signal (option)

IP-292/296/3000A/3100 : 120 to 20000 r/min

OM-1200/1500 : 120 to 20000 r/min

VP-202/1220 : 120 to 20000 r/min

MP-900/9000 series : 30 to 99999 r/min

MP-981 : 0 to 99999 r/min

LG-9200 : 0 to 99999 r/min

EXT(PULSE) : 0 to 99999 r/min

CRANK PULSE : 120 to 20000 r/min

Measurement range

Display

**Display method
(display size)**

Fluorescent display tube (52.5 x 11.5 mm)

Display range

0 to 99999 r/min※1

Accuracy

±0.01 %/F.S (±1 count) or less

Analog output

Output range

0 to 10 V

Range setting

1 to 99999 r/min (set in steps of 1 r/min)

Load resistance

100 kΩ or more

Response

Updates in less than 8μs after cycle becomes stable.

Pulse output

DIRECT : Wave-shaped output

**Output item
(selectable)**

0.5[P/R] : Output r/min value to obtain 0.5 P/R

1[P/R] : Output r/min value to obtain

1 P/R 60[P/R] : Manually switch r/min value output to obtain 60 P/R

Signal level

0-5 V logic signal (Lo:0.4 V or less, Hi:4.5 V or less)

Load resistance

100 kΩ or more

Contact output

Item

Engine run, over run

Setting range

1 to 99999 r/min

Contact capacity

DC 30 V/0.1 A

**Applicable connector
(cable side)**

Phoenix Contact MVSTBR2, 5/4-ST-5, 08

Digital interface

RS-232C / CAN (option)

Other function

Moving average

2 to 720 times

Deceleration calculation	Selection of time or cycle Time : 1 to 1200 ms Cycle : 1.5/3/5/8/16
Trigger assist	Automatic setting of trigger level employed until pulse detection
Resume function	Preserving condition values even while power is off.
Condition memory	Up to 5 types of condition memory can be saved.
General specification	
Power requirement	DC 9 to 28 V, 12 VA or less <ul style="list-style-type: none"> ▪ AC adapter (AC100-240 V, 36 VA or less) ▪ Input cable with fuse clips on both ends (option)
Outer dimensions	170 (W) × 49 (H) × 120 (D) mm
Weight	Approx. 700 g
Operating temperature range	0 to 50 °C※ ²
Operating humidity range	5 to 85 % (with no condensation)
CE marking	Low Voltage Directive : 2014/35/EUEN61010-1 class (when AC adapter is used.) EMC Directive : 2014/30/EUEN61326-1 class1 Industrial Environment RoHS Directive : 2011/65/EUEN50581
FCC	47 CFR 15 Subpart B Class A <ul style="list-style-type: none"> ▪ Rubber foot x 4
Accessory	<ul style="list-style-type: none"> ▪ AC adapter (100-240 V) for DC16 V ▪ Instruction Manual × 1

※¹ Depends on a sensor type or setting value.

※² Operating temperature range of the AC adapter: 0 to 40 °C

Option

Model name	Description
CT-0671	CAN output function
CT-0672	ECU Crank Angle Signal Input Function ^{*3}
CT-0673	Panel Mounting Fixture
CT-0674	Panel Mounting Fixture (CT-6520 replacement) ^{*4}
CT-0675	Protection Plate
CT-0676	Light Shielding Hood
LC-0082	Battery Power Cable
LC-0865	Power cable for Cigarette Lighter Socket Sensor

※³ This function enables measurement of engine rotation speed by using ECU crank angular signal.

※⁴ CT-0673 is required when CT-0674 is used.



CT-0673
 Panel mounting fixture
 *CT-6700 is sold separately



CT-0674
 Panel mounting fixture
 for replacement of CT-6520B
 *CT-6700 and CT-0673 are sold separately.



CT-0676
 Light shielding hood
 *CT-6700 is sold separately

Applicable sensors

IP-292/296
 Ignition pulse
 detector



IP-3000A
 Ignition pulse
 detector



IP-3100
 Ignition pulse
 detector



OM-1200/1500
 Ignition
 pulse/motor
 rotation detector



VP-202/1220
 Engine vibration
 detector



LG-9200
 Optical detector

