UNIVERSAL ENGINE TACHOMETER

CT-6520

Provides error-free digital rpm measurements and, when used in combination with Ono Sokki detectors, can be used to make rpm measurements on virtually any engine type.

NEW

ONO SOKKI

Sensor selection enables rpm me

The CT-6520 Universal Engine Tachometer uses a multiplier circuit to both reduce measurements time and improve measurement accuracy. An input pulse selection switch is used to set the number of pulses produced by the detector for each revolution, enabling measurement on virtually any engine type. In addition, the CT-6520 can be used for rpm measurements on other rotating bodies as well.

Major Features

- A selector switch can be used to specify the type of engine to be measured, optimizing measurement conditions for the Ono Sokki detector to be used.
- Used in combination with various detectors, rpm measurements are possible on 2/4-cycle engines having from one to eight cylinders.
- The number of input pulses per revolution can be set in the range 0.5 to 199.5 P/R in 0.5 P/R steps.
- Digital and analog outputs and pulse outputs are provided as standard.
- CE marking compatible.
- Both AC and DC-powered operation are possible, making the CT-6520 highly useful in both indoor and vehicle-mounted applications.
- Two speed levels can be perset for comparison.

Applicable Detectors

Detectors for Gasoline Engines

IP-292/296

Engine Rpm Detector

The IP-292/296 is clamped around the ignition coil cable to detect the spark signal of the ignition system.
IP-292: Low-voltage (primary) side detection
IP-296: High-voltage (secondary) detection

IP-3000

Engine Rpm Detector

The IP-3000 is clamped around the ignition coil cable to detect the spark signal of the ignition system and can be applicable for both low-voltage (primaty) and high-voltage (secondary) side detection.

OM-200

Engine Rpm Detector

The OM-200 is an electromagnetic detector which detects the leakage flux from the magneto rotating shaft of engines having a magneto-type ignition system.

Detectors for Both Gasoline and Diesel Engines

VP-202/201

Engine Rpm Detector

The VP-202/201 is a magneto type vibration detector which detects the vibrations caused by the reciprocating up and down movenent of the engine's piston. (Measurements on some 6-cylinder engines may not be possible.)

Detector for Gasoline/Diesel Engines and Other Rotating Bodies

MP-910/981

Magnetic/Electromagnetic Rpm Detector

The MP-910/981 detector is mounted in close proximity to a detection gear mounted on the rotating shaft, and output a signal having a frequency proportional to the rpm.

LG-916

Opto-electric Rpm Detector

An LED light source and light receiver combination is used to detect the presence of a reflective mark affixed to a rotating part of the engine. The LG-916 includes the light source, light receiver and an amplifier in one unit.

CT-6520

asurements on all engine types.

Specifications

Input Section

Applicable detectors (sold separately): IP-292, IP-296, IP-3000, VP-202(201), OM-200, MP-910, MP-981, LG-916.
Measurement range: 400 to 20,000 r/min
Input pulse switching: 0.5 to 199.5 P/R (in 0.5 P/R steps) (depending upon detector)
Trigger level: IP-292/296/3000/OM-200/VP-202/201: Set using a dial-type potentionmeter
Other detectors : Internally adjusted and fixed

* The measurement range (i.e., upper rpm limit) will depend upon the detector used and the setting of the input pulse switch.

Digital Display

Type: 5-digit green LED display (maximum indication :20,000 r/min)
Measurement time: Updated every 1 s
Time base: Quartz oscillator
Frequency : 16 MHz $\pm 3 \times 10^{-5}$
Display accuracy: $\pm$0.02% of full scale $\pm$1 digit in the range 400 to 20,000 r/min

Alarm Section

Setting: By thum-wheel switches
Range: Overrun: 1 to 199 × 100 r/min
Running detection: 1 to 99 × 100 r/min
Comparison interval: Every 100 ms
Output: Transfer confact
Capacity: Non-inductive load /AC240V 2A /DC30V 2A

Analog Output

Voltage output: 0 to 10 V/ 0 to 20,000 r/min, load resistance : 1 kΩ min.
0 to 2 V/ 0 to 20,000 r/min (Optional)
Current output: Optional
0 to 20 mA/ 0 to 20,000 r/min, load resistance : 100 kΩ max.
Note : The voltage output is eliminated when the curent output is provided.
Linearity: $\pm$0.5% of full scale
Output adjustment range: $\pm$4% of full scale (zero), $\pm$4% of full scale (span)
Response time: 80ms from 10% to 90% level

Digital Output

Format: BCD, TTL level, fanout : 2
(Receptacle connector type: 57-40500)

Pulse Output

Format: 1 P/R, 60P/R (un-synced to the input signal) and wave-shaped output of the input signal TTL level, fanout : 2

General Specifications

Power requirements: 100 to 240 VAC $\pm$10%, approx. 30W
11 to 15 VDC, approx. 25W
Operating temperature range: 0 to +40°C
Dimensions and weight: 210(W)×99(H)×300(D)mm, approx. 3kg
Accessories: AC power cable (1.9m long)
DC power cable (3.5m long)
Midget fuses (one each for AC and DC)
Instruction manual

Pulse Selector Setting for Engine Rpm Measurements

(1) IP-292/3000 Detector (Primary Side of Gasoline Engine Ignition Coil)

Pulse selector setting(P/R)	0.5	1	1.5	2	2.5	3	4
4cycles	1cyl.	2cyl.	3cyl.	4cyl.	5cyl.	6cyl.	8cyl.
2cycles		1cyl.		2cyl.		3cyl.	4cyl.

(2) IP-296/3000 Detector (Secondary Side of Gasoline Engine Ignition Coil)

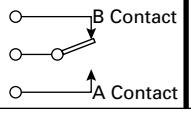
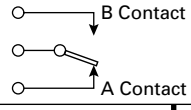
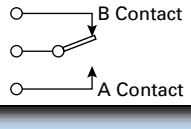
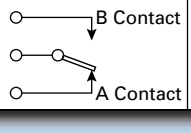
Pulse selector setting(P/R)	0.5	1
4cycles	○	
2cycles		○

(3) VP-202 (201) Detector (For 4-Cylinder Diesel/Gasoline Engine)

Pulse selector setting(P/R)	2	4
4cycles	○	
2cycles		○

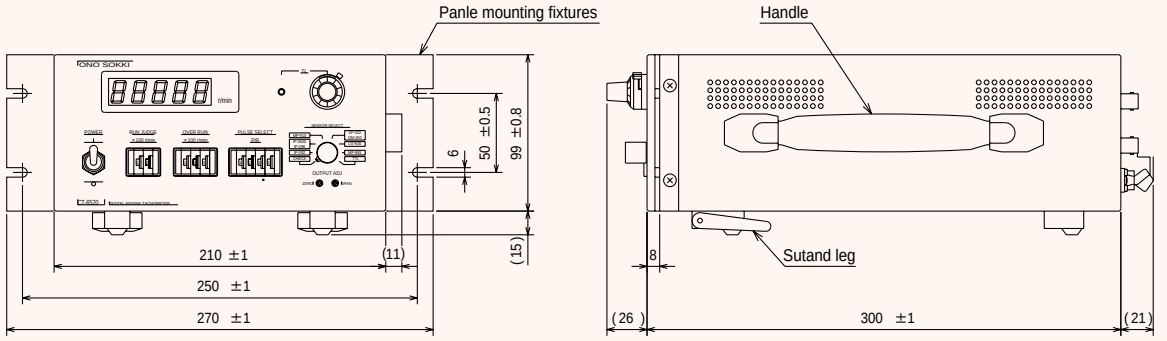
*The above number of cylinders will depend upon the engine ignition system type.
*For engines having dummy spark cycles, the pulse selector setting and number of cylinder combinations will differ.

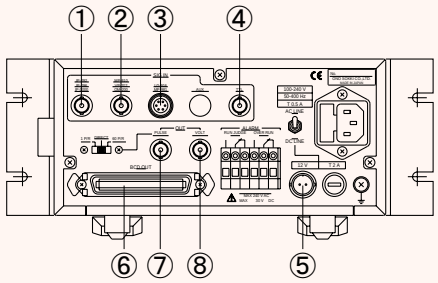
Overrun Alarm and Engine Running Detechion Function

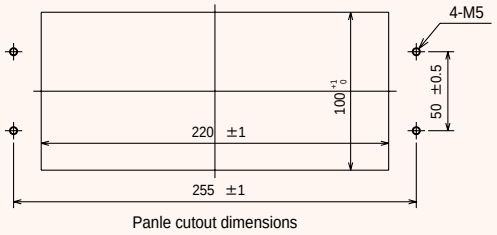
	0 Below running detection level	Upper limit	20000r/min	
RUN JUDGE				When rpm exceedes the preset level, the meter will outoput a contact signal. It can be used for the lower limit alarm, also.
OVER RUN				When rpm exceedes the preset level, a contact signal will be output as an overspeed alarm.

Outer Dimensions, Panel Cutout Dimensions and Panel Description

(Unit: mm)







Panle cutout dimensions

[Panel Side / Cable Side]

①IP-292/296/3000
- C02 Receptacle
- C02 Plug

②MP-910・930/VP-202・201/OM-200
- C02 Receptacle
- C02 Plug

③LG-916/MP-981
- R03-R6F
- R03-RB6M

④TTL
- C02 Receptacle
- C02 Plug

⑤DC12V
- RM-12BRD-2P
- RM-12BRG-2S

⑥BCD OUT
- 57-40500
- 57-30500

⑦P OUT
- C02 Receptacle
- C02 Plug

⑧V OUT
- C02 Receptacle
- C02 Plug

※Panel mounting fixtures are optional.

Signal Cable Guide

Detector type	Detector output cable	Detector output connector	Connecting cable
IP–292/296	Approx. 4.9m, direct output (3C-2V)	CO2 plug	CO2 adaptor (Required to extend the IP-292/296/3000 and VP-202) — CO2 plug — 3C-2V — CO2 plug; MX- 101 1.5m, 105 5 m, 110 10m, 115 15m (A connecting cable is not required for the IP-292/296/3000 and VP-202.)
IP–3000	Approx. 4.9m, direct output (FEP-fluorocarbon resin)	CO2 plug	
VP–202	Approx. 2.9m, direct output (Chloroprene)	CO2 plug	
MP–930	Approx. 0.5m, direct output (3C-2V)	CO2 plug	
OM–200	———	12R2A	12P2B — 3C-2V — CO2 plug; MX- 005 5 m, 010 10m, 015 15m; MX- 020 20m, 030 30m
MP–910	———	12R2A	
MP–981	———	R04-R6M	R04-PB6F — D-5 — R03-PB6M; MX- 805 5 m, 810 10m; MX- 815 15m, 820 20m
LG–916	———	R04-R6M	
VP–201	Approx. 2.9m, direct output (Chloroprene)	PS109 (Miniplug-terminated cable)	Jack — Chloroprene wires CT-002 5 m — CO2 plug

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＊Outer appearance and specifications are subject to change without prior notice.

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CAT. NO. 1203-02 Printed in Japan 99Z (EB) 2K