Selection

Motor & Engine Tachometers

Detectors for Gasoline Engines

IP-292/296 Ignition Pulse Detector

CE modification compliant

- Rotation detector exclusive for gasoline engine
- Convenient one-touch mounting
- Max. 10 mm conductive wire can be installed
- Heat resistance structure

Applicable engines : 2/4-cycle gasoline engine
Detection section : Primary cord of an ignition coil (IP-292)
Secondary cord of an ignition coil (IP-296)
Applicable cord diameter : Max. ϕ10 mm
Output cord length : 4.9 m directly attached (with BNC (C02 type) connector)
Operating temperature range : -40 to +120 °C
Outer dimensions : Refer to P6.
Weight : Approx. 280 g
Applicable display units : Refer to P6.

IP-3000A Ignition Pulse Detector

CE modification compliant

- Detector exclusive for gasoline engine
- Convenient one-touch mounting
- Compact and lightweight detector enables installation on engines in narrow space

Applicable engines : 2/4-cycle gasoline engine
Detection section : Primary cord of an ignition coil
Current cord of an electronic distributor
Applicable cord diameter : Max. ϕ5 mm
Output cord length : 4.9 m directly attached (with BNC (C02 type) connector)
Operating temperature range : -40 to +120 °C
Outer dimensions : Refer to P6.
Weight : Approx. 80 g (including a cable)
Applicable display units : Refer to P6.

IP-3100 Ignition Pulse Detector

CE modification compliant

- Detector exclusive for gasoline engine
- Convenient one-touch mounting
- Compact and lightweight detector enables installation on engines in narrow space

Applicable engines : 2/4-cycle gasoline engine
Detection section : Primary cord of an ignition coil
Secondary cord of an ignition coil
Current cord of an electronic distributor
Applicable cord diameter : Max. ϕ10 mm
Output cord length : 4.9 m directly attached (with BNC (C02 type) connector)
Operating temperature range : -40 to +120 °C
Outer dimensions : Refer to P7.
Weight : Approx. 130 g (including a cable)
Applicable display units : Refer to P6.

Detectors for Diesel Engines

CP-044 Diesel Engine Rotation Sensor

CE modification compliant

- One touch attachment to fuel injection piped
- Attachment to the injection pipe of ϕ4 to 8 mm are available.

Applicable engines : Diesel engine
Detection method : A piezoelectric element is used to detect pulsation at the time of fuel injection
Applicable pipe diameter : ϕ4 to 8 mm
Output cord length : 4.9 m directly attached (with 6-core connector)
Piezoelectric element withstand compressive pressure : 1960 bar
Operating temperature range : 0 to +80 °C
Outer dimensions : Refer to P6.
Weight : Approx. 120 g
Applicable display units : Refer to P6.

Detectors for Motors and Engines

OM-1200 Motor/Engine RPM Detector

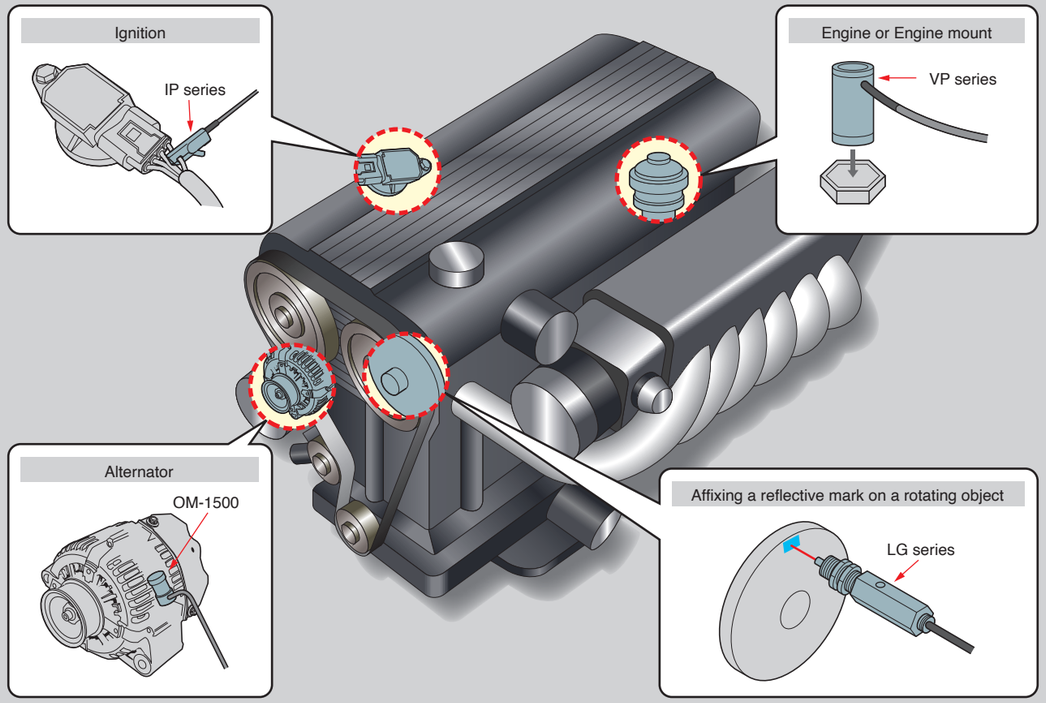
- Excellent in durability, environmental resistance and rigidity
- Gasoline engine rotation measurement and motor rotation measurement

Applicable engines : 2/4-cycle gasoline engine, EV/HEV, motor
Detection method : Electromagnetic induction
Signal cable : MX-005/010/015/020 (option)
Operating temperature range : 0 to +80 °C
Outer dimensions : ϕ20 × 54 mm (only sensor)
ϕ20 × 80 mm (when connecting cable)
Refer to P7.
Weight : Approx. 65 g
Applicable display units : Refer to P6.

OM-1500 Motor/Engine RPM Detector

- One-touch attachment in parallel with the ignition coil (Attach OM-1500 perpendicular to the rotating shaft of the motor in measuring motor rotation)
- Excellent in durability, environmental resistance, and rigidity
- Easy to use

Applicable engines : 2/4-cycle gasoline engine, EV/HEV, motor
Detection method : Electromagnetic induction
Output cord length : 4.9 m directly attached (with BNC (C02 type) connector)
Operating temperature range : -10 to +100 °C
Outer dimensions : Refer to P7.
Weight : Approx. 130 g (including a cable)
Applicable display units : Refer to P6.



* This is an example measurement. The installation location may need to be adjusted depending on the vehicle model and other factors.
* Depending on the engine type, measurement may not be performed or the measurement range may vary.
* "CE modification compliant" indicates that the product becomes CE marking compliant through modification.
Regarding modification work, we shall provide a separate quotation for both delivery time and cost.

Detectors for Gasoline and Diesel Engines

VP-201/1210 Engine Revolution Detector

- Easy mounting to a cylinder head by a magnet built-in detector
- Lightweight and heat resistant structure
- VP-1210: high sensitive type

Applicable engines : 4-cylinder diesel/ gasoline engines
Detection section : Engine, cylinder head part bolt or engine fixing bolt
Detection method : Electro-dynamic vibration detection
Output cord length : 2.9 m directly attached (with mini plug)
Operating temperature range : 0 to +100 °C
Outer dimensions : Refer to P7.
Weight : VP-201 ; Approx. 110 g
VP-1210; Approx. 130 g
Applicable display units : Refer to P6.

VP-202/1220 Engine Revolution Detector

CE modification compliant

- Easy mounting to a cylinder head by a magnet built-in detector
- Lightweight and heat resistant structure
- VP-1220: high sensitive type

Applicable engines : 4-cylinder diesel/ gasoline engines
Detection section : Engine, cylinder head part bolt or engine fixing bolt
Detection method : Electro-dynamic vibration detection
Output cord length : 2.9 m directly attached (with BNC (C02 type) connector)
Operating temperature range : 0 to +100 °C
Outer dimensions : Refer to P7.
Weight : VP-202 ; Approx. 110 g
VP-1220; Approx. 130 g
Applicable display units : Refer to P6.

LG-9200 Optical Detector

CE

- Unified structure of light source, receiver and amplifier
- Compact and lightweight
- Non-contact detection by affixing the reflective mark on the rotating shaft.
- Easy to adjust a position by visible light

Detection method : Visible light reflection using an optical fiber sensor
Detection distance : 20 to 40 mm (using 12 mm square reflective mark)
Light source : Light emitting diode (red visible light)
Max. response speed : 40 m/s (converted by the circumferential speed of rotating shaft)
Output waveform : Rectangular wave
Hi; +5 V±0.5 V, Lo; +0.5 V or less
Output impedance : 1 kΩ or less
Operating temperature range : -10 to 60 °C
Power source : 12±2 VDC, 60 mA or less (at 12 V)
Outer dimensions : Refer to P7.
Weight : Approx. 150 g (including mounting nut x 2)
Applicable display units : Refer to P6.

MP-9100/911 Electromagnetic Detector

- No power supply is required and suitable for the field measurement.
- Non-contact detector
- MP-911: directly attached cable type (5 m)
- Various types are available including oil proof, heat resistant and ultra compact.

Output voltage : 2.0 Vp-p or more (1 kHz, 10 kΩ load) M=1, gap=0.5 mm
Detectable rotation speed : 200 to 35,000 r/min (60 P/R)
Gear module : 1 to 3
Operating temperature range : -10 to +90 °C
Detected distance : 0.5 to 1 mm
Outer dimensions : Refer to P7.
Weight : MP-9100 ; Approx. 90 g
MP-911 ; Approx. 300 g (cable included)
Applicable display units : Refer to P6.
Others : MP-930 ; Oil proof
MP-935 ; Oil proof/ heat resistant
MP-9120; Low impedance

NP-3000 series Accelerometers
MI series Measurement Microphones

For details, please refer to our product brochures of NP/GK series or MI series.

Applicable display units: Refer to P6.

MP-9810/9830 Magneto-electric Rotation Detector (General, high speed type)

CE

- Detection from nearly 0 r/min is available.
- Non-contact detector
- Improved environmental resistance (IP67 compliant)
- Operation status and attaching position can be checked with signal indicator.

Output waveform : Square wave
Hi; +5±0.5 V, Lo; +0.5 V or less
Measurement range : MP-9810; 0 Hz to 20 kHz
MP-9830; 0 Hz to 100 kHz
Detection gear : Ferromagnetic, Gear width 3 mm or more Module 0.5 to 3 mm
Detection distance : 0.5 to 3.0 mm (depending on gear module)
Output impedance : Approx. 330 Ω
Operating temperature range : -10 to +70 °C
Power supply : DC12 to 24 V±10 % (10.8 to 26.4 V)
Outer dimensions : Refer to P7.
Weight : Approx. 80 g (including mounting nut x 2)
Applicable display units : Refer to P6.

Diverse lineup —
Choose the product that meets your needs.

Handheld Tachometers

SE-2500A Digital Engine Tachometer

- Built-in sensor type
- Built-in memory function
- Capable of measurement from a position 1 m apart by using the external sensor.
- Measurement can be performed in 1 r/min or 0.01 r/s unit.

Applicable engines : Gasoline engines, 2-cycle (1 to 4 cylinders), 4-cycle (1 to 6, 8, 10, 12 cylinders)
Detection method : Electromagnetic induction
Display update time : 1±0.2 s
Measurement target : Ignition coil
Measurement range : 120 to 20,000 r/min
Analog output : Output voltage; 0 to 1 V / 0 to FS (FS is arbitrary setting) Conversion method; 10 bit D/A
Monitor output : Analog output for monitoring purposes after waveform reshaping of the sensor signal
Pulse output : Output voltage Hi ; +4.5 V or more, Lo ; +0.5 V or less
Power supply : Size AAA battery × 4 or exclusive AC adapter
Battery life : Approx. 32 hours (when backlight is OFF.) Approx. 8 hours (when backlight is ON.)
Outer dimensions : 66 (W) × 198.5 (H) × 47.5 (D) mm
Weight : Approx. 250 g (not including batteries)
Applicable display units : Refer to P6.

GE-1400 Diesel Engine Tachometer

CE

- Built-in memory function
- Built-in trigger adjustment function

Applicable engines : 4-cycle diesel engines
Detection method : Detection of the pulsation of the injection pipe generated at the time of fuel injection
Display update time : 1±0.2 s
Measurement range : 400 to 8,000 r/min
Analog output : Output voltage; 0 to 1 V/ 0 to FS (FS is arbitrary setting) Conversion method; 10 bit D/A
Monitor output : Analog output for monitoring purposes after waveform reshaping of the sensor signal
Pulse output : Output voltage Hi ; +4.5 V or more, Lo ; +0.5 V or less
Power supply : Size AAA battery × 4 or exclusive AC adapter
Battery life : Approx. 32 hours (when backlight is OFF.) Approx. 8 hours (when backlight is ON.)
Outer dimensions : 66 (W) × 186.5 (H) × 47.5 (D) mm
Weight : Approx. 230 g (not including batteries)
Applicable display units : Refer to P6.

HT-6200 Handheld Digital Tachometer

CE

- The peak-hold function equipped
- The maximum and minimum values can be displayed during measurement.
- Built-in memory function
- External sensor input type

Applicable engines : Diesel engine, gasoline engine, motor, general rotating object
Display update time : 1±0.2 s
Measurement target : Ignition coil, primary/ secondary ignition cables, ECU rotation pulses (5 to 12 V)
Max. measurement value : 20,000 r/min
Measurement accuracy : Display value × (±0.02 %) ±1 count
Analog output : Output voltage; 0 to 1 V/ 0 to FS (FS is arbitrary setting) Conversion method; 10 bit D/A
Monitor output : Sensor detection signal (using analog output by switching)
Pulse output: Output voltage Hi ; +4.5 V or more, Lo ; +0.5 V or less
Power supply : Size AAA battery × 4 or exclusive AC adapter
Battery life : Approx. 16 hours (when backlight is OFF.) Approx. 8 hours (when backlight is ON.)
Outer dimensions : 66 (W) × 189.5 (H) × 47.5 (D) mm
Weight : Approx. 230 g (not including batteries)
Applicable display units : Refer to P6.

Tachometers

CT-6710 Motor & Engine Tachometer

CE

- High response measurement
- Supports various detectors with different purposes
- Automatic setting of trigger level with the Trigger Assist Function
- Measurement by ECU crank angle signal of unequal interval pulses
- High speed digital data output by CAN interface (option)
- Optional external analog display unit available

Applicable engines : Diesel engine, gasoline engine, EV, HEV, general rotating object
Measurement range : 0 to 99,999 r/min (depending on sensor and input pulse)
Display method : Fluorescent display tube (52.5 × 11.5 mm)
Analog output : 0 to 10 V/ 1 to 99,999 r/min
Pulse output : 0.5 P/R, 1 P/R, 60 P/R and waveform shaping output (switchable)
Contact output : Over run ; 1 to 99,999 r/min Engine run ; 1 to 99,999 r/min Output with engine run, over run setting
Digital interface : RS-232C/ CAN (option)
Power supply : 9 to 28 VDC, 1.35 A or lower
Outer dimensions : Refer to P8.
Weight : Approx. 700 g
Applicable display units : Refer to P6.

GE-2500 Diesel Engine Tachometer

CE

- By using rotation speed of an alternator, measurement is possible regardless of the engine type and number of cylinders
- Easy setting, sensor can be set any place of an alternator
- Enables small signal detection by FFT calculation. High noise tolerance and stable measurement.

Applicable engines : Diesel engine, gasoline engine (Engine without alternator cannot be measured.)
Calculation method : FFT calculation
Input frequency range : 1 kHz, 2 kHz, 5 kHz (Measurement mode MAIN)/ 500 Hz (Calibration mode REF)
Measurement range : 20,000 r/min
Constant drive power supply : 2.2 to 3.2 mA (REF only)
[REVO] output : Outputs for rotation speed calculation values 0 to FS/ 0 to 10 V (Value of FS can be specified.)
[SIG] output : Outputs signal of the sensor input to MAIN (can be used by switching from analog output)
Pulse output : Pulse output of the frequency of rotation speed calculation value Hi; +4.5 V or more/ Lo; +0.5 V or less (at no load) Update time: within 200 ms Load resistance:100 kΩ or more
Power supply (power consumption) : 12 to 24 VDC (8 VA or less)
Weight : 2 kg or less
Outer dimensions :Refer to P8.
Applicable display units : Refer to P6.

Tachometer using FFT calculation method

FT-7200 Advanced Handheld Tachometer

CE

- Supports rotation speed changes, acceleration and deceleration speed.
- Enables calculation of rotation speed using sound and vibration, even its rotating shaft is not come out.
- Large size LCD with backlight
- Built-in averaging function
- Using FFT calculation

Input signal voltage : ±5 V, ±0.5 V, ±0.05 V
Input signal frequency: 250 Hz, 500 Hz 2 kHz (3 frequency ranges) 3.75 Hz to 2 kHz
Input connector : BNC (C02 type)
Output function : Analog, pulse output
Power supply: Size AAA alkaline battery × 4pcs.or an exclusive AC adapter
Battery life : Approx. 6 hours (when backlight OFF) Approx. 5 hours (when backlight ON)
Operating temperature range : 0 to +40 °C
Outer dimensions : 66.0 (W) × 189.5 (H) × 47.5 (D) mm
Weight : Approx. 230 g (not including batteries)
Applicable display units : Refer to P6. (Others: FT-0501, current probe sensor)

FT-2500 Advanced Tachometer

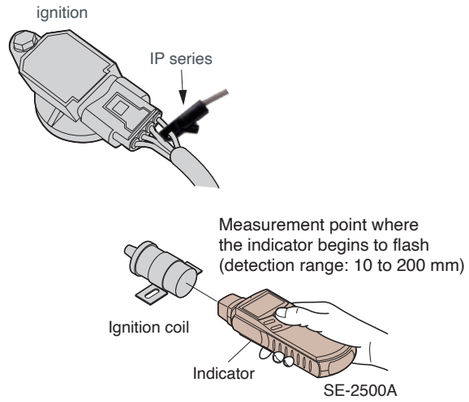
CE

- Able to use for vibration detector, displacement detector, magnetic flux detector, and current probe.
- Sensor attachment processing and reflective mark are not required.
- Using FFT calculation

Input signal voltage : ±12 V, ±0.5 V (FT-0501, and others) ±5 V, ±0.5 V, ±0.05 V (IP, NP, MI, OM, VP or others)
Input signal frequency : 500 Hz, 2 kHz, 10 kHz (3 frequency ranges) 3.75 Hz to 10 kHz
Input connector : BNC304 (BNC), R03-RB6F
Output function : Analog, pulse, comparator output
Interface : RS-232C
Power supply : AC100 to 240 V, 50/60 Hz
Operating temperature range : 0 to +40 °C
Outer dimensions : Refer to P8.
Weight : Approx. 1.2 kg
Applicable display units : Refer to P6. (Others: FT-0501, current probe sensor)

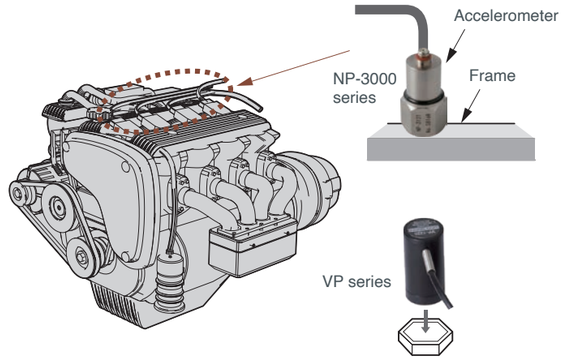
Measurement examples

Measurement of Gasoline Engine



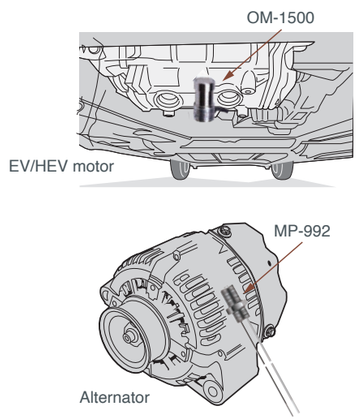
- **IP-292 for low voltage primary side IP-3000A/3100**
  Measure by clamping the low voltage primary side conductor
- **IP-296 for high voltage secondary side IP-3100**
  Measure by clamping the low voltage primary side conductor
- **OM-1200/1500**
  Measure by placing it close to the ignition coil in parallel
- **SE-2500A Handheld Tachometer**
  Measure by placing it close to the ignition coil

Measurement of Diesel Engine



- **NP-3000 series VP-202/1220**
  Attach the sensor to the engine cylinder head bolt or engine fixing bolt to detect engine vibration.
  As for the NP-3000 series, use a magnetic base to attach.
  As for VP-202/1220, it has a magnetic bottom, thus it can be attached directly.

Measurement of EV/HEV Motor or Alternator



- **OM-1200/1500 MP-992**
  Detect leakage magnetic flux using electromagnetic induction method

Motor (EV/HV)
Mount it perpendicular to the rotation axis of the motor, so it does not stick out of the motor.

Alternator
Mount the long side of the sensor in the circumferential direction of the alternator. (In this case, the alternator rotation and the engine rotation need to be synchronized.)

Note: It may not be difficult to perform stable measurement depending on the type of motors or engines.
When connecting the MP-992 to the CT 6710, it is required to modify the cable end to a BNC connector.

Combination of display and detector

Detector \ Display unit	CT-6710	FT-2500	FT-7200	GE-1400	GE-2500	HT-6200	SE-2500A
CP-044	—	—	—	○	—	—	—
IP292/296	○	○	○	—	○*	○	—
IP-3000A/3100	○	○	○	—	○*	○	—
LG-9200	○	—	—	—	—	—	—
MP-9100/911	○	—	—	—	—	—	—
MP-9810/9830	○	—	—	—	—	—	—
OM-1200/1500	○	○	○	—	○	○	—
VP-201/1210	—	—	—	—	—	—	○
VP-202/1220	○	○	○	—	○*	○	—
NP series	○	○	○	—	○*	—	—
MI series	—	○	○	—	○*	—	—

*: use as sensor for calibration

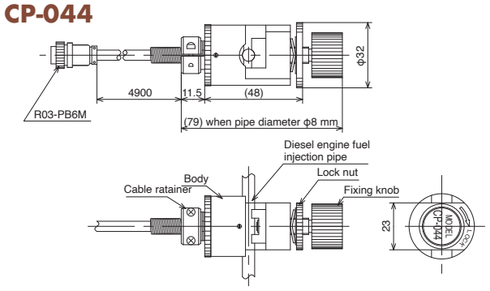
Output

Output \ Display unit	Handheld type				Stationary type		
	FT-7200	GE-1400	HT-6200	SE-2500A	CT-6710	FT-2500	GE-2500
Analog	○	○	○	○	○	○	○
Pulse	○	○	○	○	○	○	○
Comparator	—	—	—	—	○	○	—
RS-232C	—	—	—	—	○	○	—

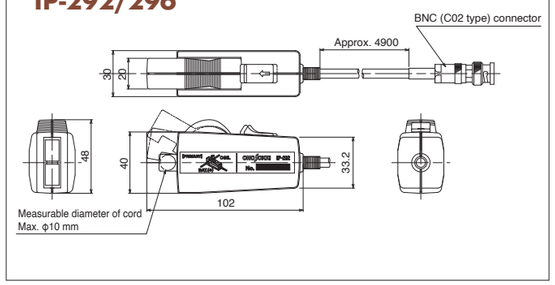
Rotation Detector Outline Dimensional Drawings

(Unit: mm)

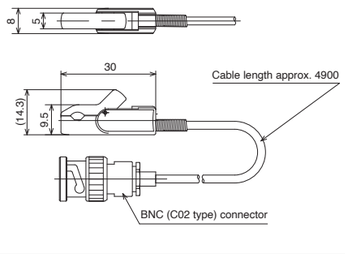
CP-044



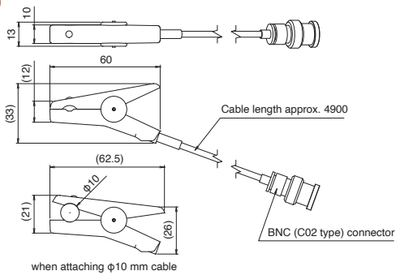
IP-292/296



IP-3000A



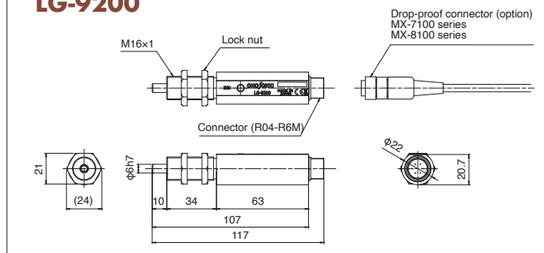
IP-3100



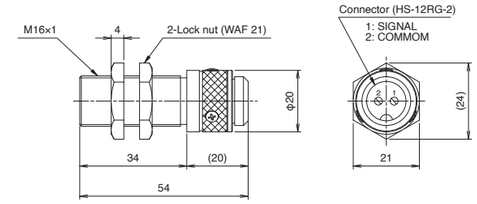
Rotation Detector Outline Dimensional Drawings

(Unit: mm)

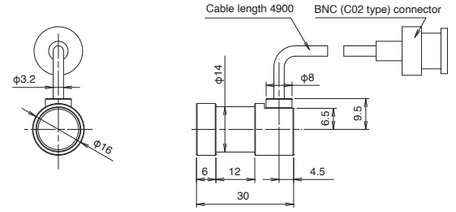
LG-9200



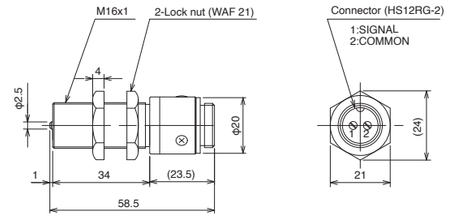
OM-1200



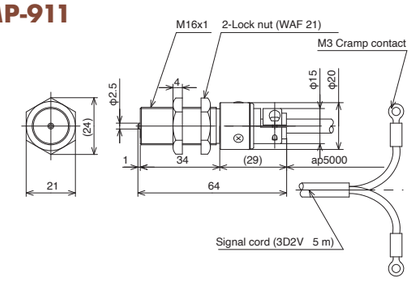
OM-1500



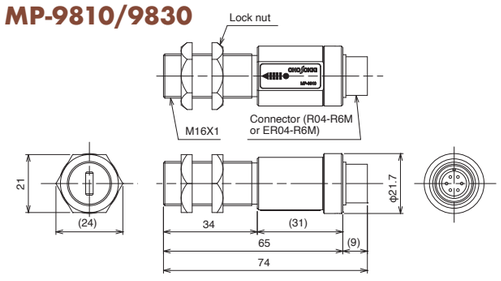
MP-9100



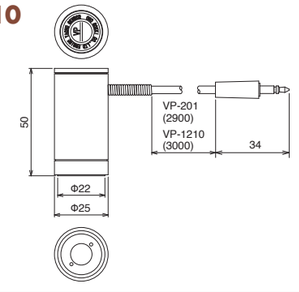
MP-911



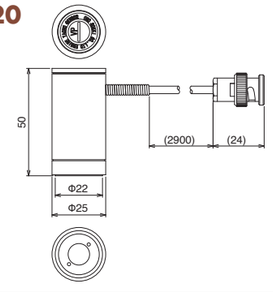
MP-9810/9830



VP-201/1210



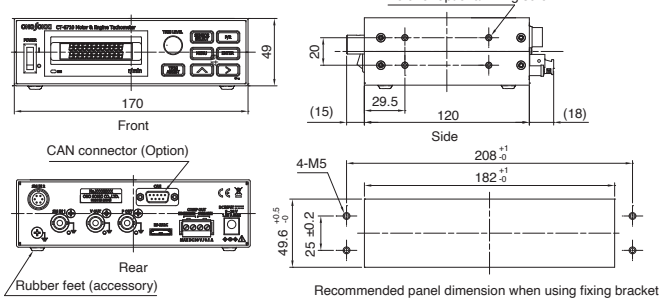
VP-202/1220



Tachometer Outline Dimensional Drawings

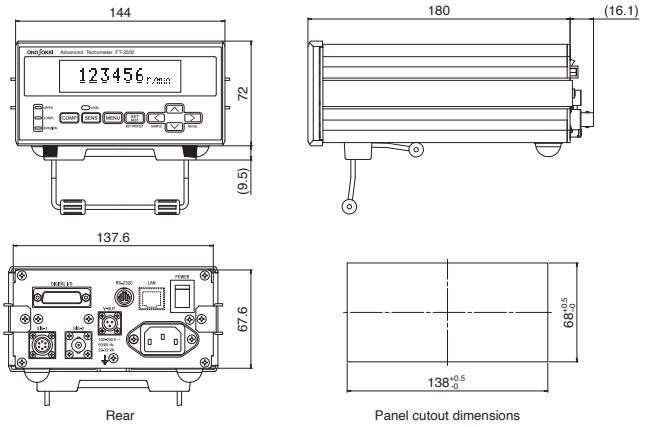
(Unit: mm)

CT-6710

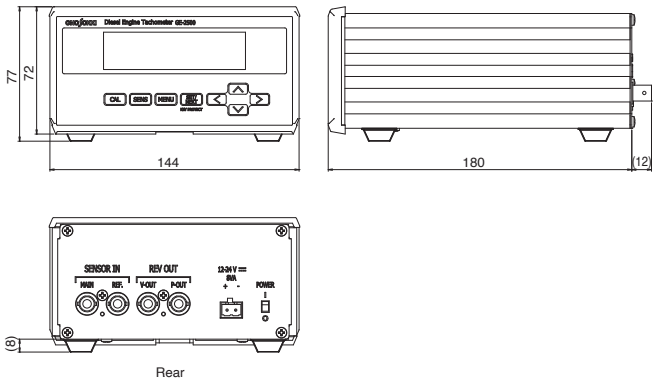


Recommended panel dimension when using fixing bracket

FT-2500



GE-2500



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

URL: https://www.onosokki.co.jp/English/english.htm

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