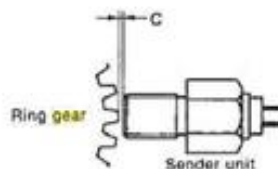
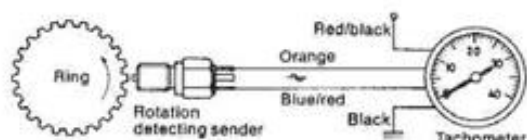


6. Tachometer

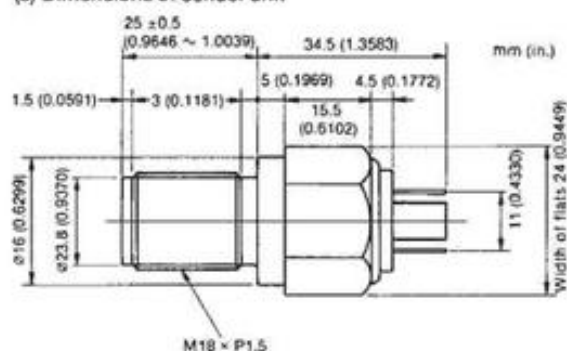
6-1 Construction of tachometer

The tachometer indicates the number of revolutions per minute by means of an electrical input signal which is generated as a pulse signal from the magnetic pickup sender (MPU sender).

The function of the sender is to convert the rotary motion into an electrical signal by means of counting by the number of **teeth** of the **ring gear** fitted to the flywheel housing.



(3) Dimensions of sender unit

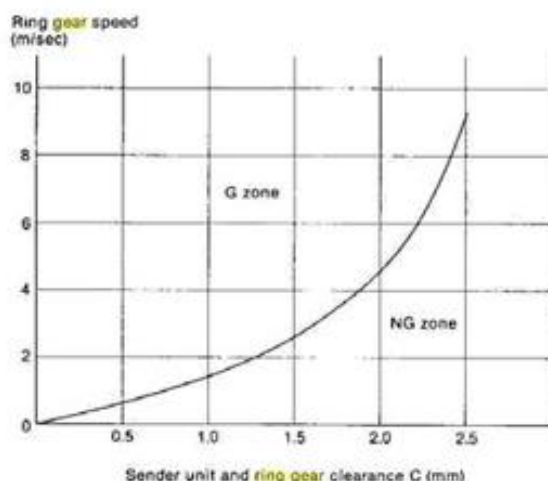


6-2 Specifications and dimensions of tachometer

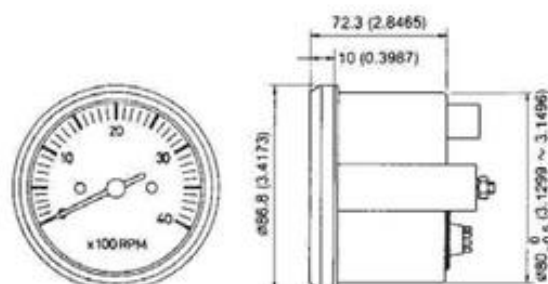
(1) Specifications

		1GM10(C) 2GM20(F)(C) 3GM30(F)(C)	3HM35(F)(C)
Rated voltage		DC 12V	
Range of operating voltage		10 ~ 15V	
Illumination		3.4W/12V	
Ring gear	No. of teeth	97	114
	Module	2.54	2.54
Part No. of tachometer		128170-91100	128670-91100
Part No. of sender unit		128170-91160	128170-91160

(2) Sensitivity limit of sender unit



(4) Dimensions and shape of tachometer



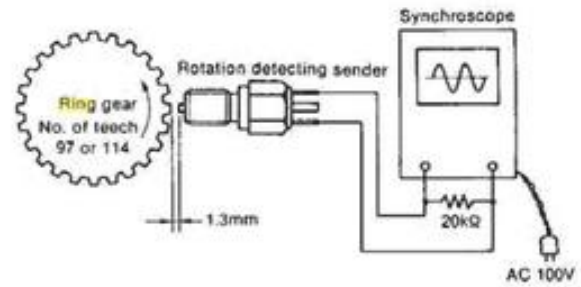
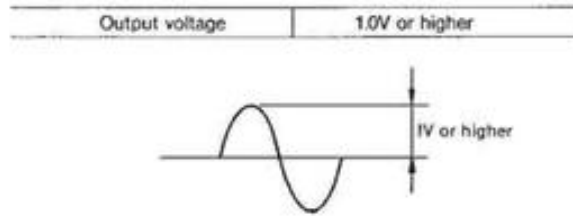
For models 1GM10(C), 2GM20(F)(C), 3GM30(F)(C)

For model 3HM35(F)(C)



6-3 Measurement of sensor unit characteristics

(1) Measurement of output voltage



* Check the output wave pattern and number of pulses when carrying out the output voltage measurement.

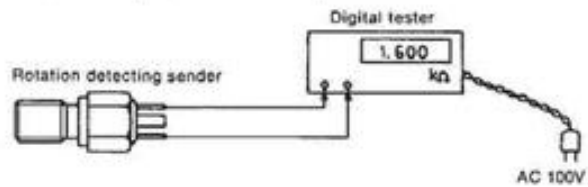
Measuring conditions

Number of teeth of ring gear:	97,114
Gap between the ring gear and sender:	1.3mm (0.0511in.)
Resistance:	20kΩ
Speed of ring gear:	500 rpm (approx. 800Hz)
Measuring temperature:	20°C
Measuring instrument:	Synchroscope

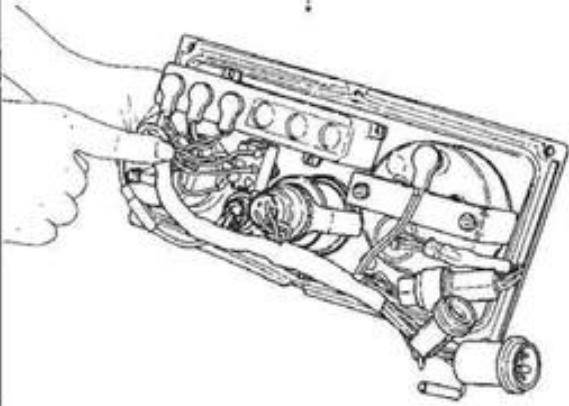
(2) Measurement of internal resistance

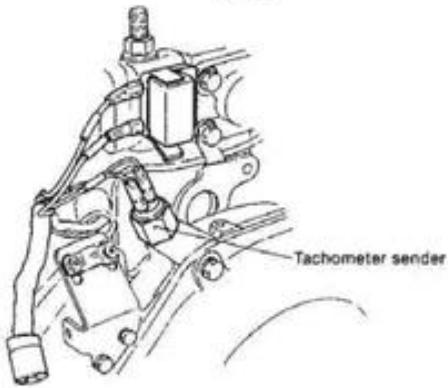
Measuring conditions

Measuring temperature:	20°C
Measuring instrument:	Digital tester



6-4

Fault	Diagnosis	Remedy
Does not function well. 1) Pointer does not move. 2) Functions intermittently.	Check if there is an open-circuit cable connection at the rear of the meter, a loose or disconnected terminal, or bad continuity due to corrosion. 	Yes Make good the connection.
	Disconnect at the instrument terminals, and measure the voltage between the cable terminals. (To be 10 ~ 16V) Satisfactory	No If the input voltage is abnormal, check the cause. (e.g. short-circuit, disconnection, or blown fuse, etc.)

	<p>Check if the sender is loosely fitted.</p> <p style="text-align: center;">↓ No</p> 	<p>Yes Fix the sender securely.</p>
	<p>Measure the internal resistance of the sender. (To be $1.6 \pm 0.1k\Omega$ at $20^{\circ}C$)</p> <p style="text-align: center;">↓</p>	<p>No Replace the sender.</p>
	<p>Measure the output voltage of the sender. (To be 1V or higher at $20^{\circ}C$)</p>	<p>No Replace the sender.</p>