

# SANWA

# SE-100

DIGITAL REVOLUTION COUNTER  
NON-CONTACT TYPE

INSTRUCTION MANUAL

**SANWA**  
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# SE-100

DIGITAL REVOLUTION COUNTER  
NON-CONTACT TYPE

The unit is designed with a concept to pursue the best availability of human engineering. It is a high-precision, wide measuring, non-contact type digital revolution counter.

## Main Features

- The unit is designed to pursue operational efficiency and easiness of hand touching as a handy type measuring instrument. It is, yet, solid and robust.
- A wide range of 60-50000 rpm can be measured. And the accuracy is exceedingly high.
- rps (revolutions per second) can also be measured.
- Incorporating DATA HOLD function.
- Incorporating AUTO POWER OFF function.

The Name of Each Part

Ratings

Measuring mode : rpm (revolutions per minute)/rps (revolutions per second) switching system

Measuring range

Range	rpm	rps (one range)
X 1	60 ~ 9999	1 ~ 833
X10	60 ~ 50000	1 ~ 833

Measuring time : For one sec. Measurement is repeated automatically.

Display : Max. reading 9999 in LED

Overranging indication

: Overranging indication LED lights at over 9999.

Accuracy :  $\pm 1$  digit in X1 range  
 $\pm 2$  digit in X10 range

Detectable distance : 10 ~ 150 mm

With revolution confirming indication

With DATA HOLD function

With low battery alarming function

With AUTO POWER OFF function

Used power source : Four SUM-3 (R6) batteries

Using hours: about 9 hours

(Continuous use)

about 36 hours (Normal use)

Using temperature range : 0°C ~ +40°C

Size · weight : 170 x 42 x 31mm, approx. 170 g

Accessories : • Reflecting sheet 20 sheets

• Instruction manual 1 copy

• Carrying case (option) 1 pce

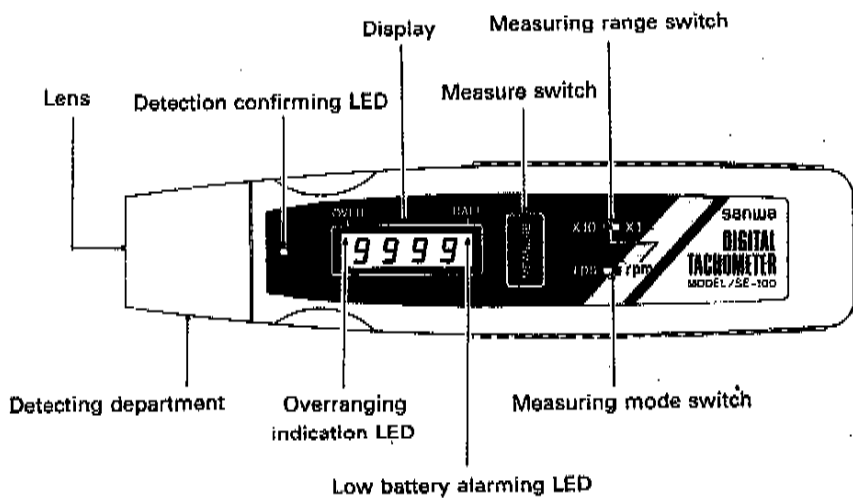


Fig. 1

## General Precautions

1. Before using the unit, be sure to confirm whether the inner batteries are good enough to drive the unit perfectly. Refer to page 7 for the batteries.
2. Do not measure revolving targets at a close distance in order to avoid danger, although it is possible for the unit to do so.
3. As the unit adopts light-reflecting method and is non-contact type, it is necessary to label attached reflecting sheet to measured revolving target. Before the reflecting sheet is labeled, wipe off water, oil, dust, or the like perfectly from the place where it is labeled. If the labeled place reflects some light because it is plated, paint the place in black or wind it with black tape before the reflecting sheet is labeled.
4. Be sure not to let intermittent light such as fluorescent light apply to the reflecting sheet that has been labeled on measured revolving target. If any influence by external light is caught, drive the revolving object and do measurement after changing the position of the unit in such a condition as the indication may become 0 rpm with the revolving object at a standstill or shutting out external light perfectly.
5. Overranging indication is made if measured value is over 9999. For example, if a revolving target of 10000 rpm is measured in rpm mode and in X1 range, the display shows 0000 rpm and the overranging indication LED flickers, showing that measured value is overranging.
6. Do not give any strong shock to the lens. If the lens is stained, wipe off its surface softly with such a soft thing as tissue paper, etc.
7. Do not leave the counter for a long time in a place where much shock or vibration is given, under the direct rays of the sun, or in a high or low temperature, or in a high humidity.

## How to Use the Counter

Read carefully each item of "General precautions" before using the counter.

### 1. Measuring rpm (revolutions per minute)

Label the reflecting sheet to revolving target to be measured as shown in Fig. 2.

1-1 Set the measuring mode switch to rpm side.

1-2 Set the measuring range switch to a desirable range.

1-3 Depress the measure switch, and spotlight red LED in the detecting department will light. Apply the spotlight to the reflecting sheet so that the detection confirming LED may flicker in a stable condition. At this time, a desirable distance between the tip of the detecting department and the reflecting face is 10 to 150 mm. To obtain measured value, multiply indicated value with the multiplication factor of the measuring range switch.

Example:

If indicated value is 5000, read it out directly in X1 range or read it out after multiplying it by 10 in X10 range. Measured value should be 50000 rpm in the latter case.

1-4 When the measure switch is released from the depressing finger, measured value then is kept held by DATA HOLD function. And then, the counter is powered off automatically in about 10 sec.

1-5 When the measure switch is depressed again, measurement can be done again. Take care, however, the previously-measured value is cleared out then.

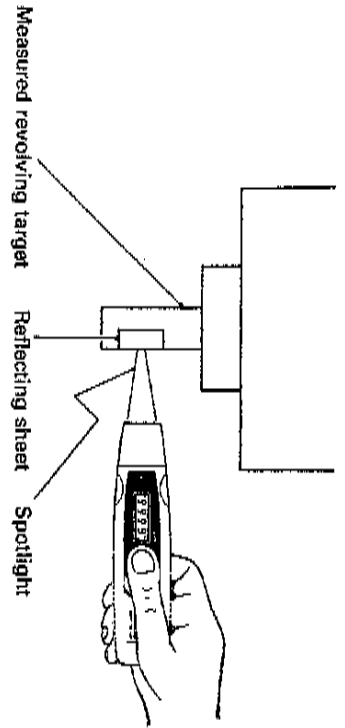


Fig. 2

### 2. Measuring rps (revolutions per second)

Set the measuring mode switch to rps side and do the same operations and measurements as shown in the foregoing "Measuring rpm". In this case, however, there is nothing to do with the measuring range switch, so indicated value can be read directly as measured value.

For example, if indicated value is 0833, measured value is 833 rps.

## Battery

### 1. Battery Attachment

1-1 Detach the battery cover on the rear side of the unit by strongly depressing its stopper and pulling it towards you as shown in Fig. 3.

1-2 Place four SUM-3 (R6) batteries into the battery compartment with the direction of their polarities correctly arranged as shown in Fig. 4. In this case, battery attachment can be done easily if the innermost two batteries are attached first.

1-3 Place the battery cover on the ditch as shown in Fig. 4. Undo the battery cover by pushing it up in a sliding mode.

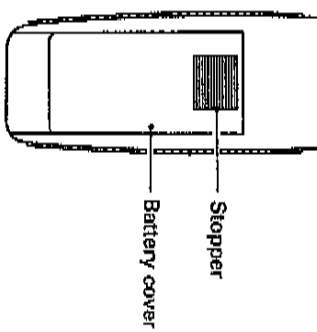


Fig. 3

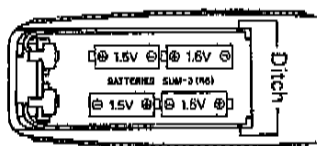


Fig. 4

## 2. Battery Replacement

The inner batteries have worn out in such a condition as they do not satisfy the ratings of the unit if the low battery alarming LED in the display lights as in Fig. 5 with the measure switch kept depressed. Replace them with new ones at once. Also, do battery replacement if nothing is shown in the display. Battery replacement should be done in a similar way as in "1. Battery Attachment".

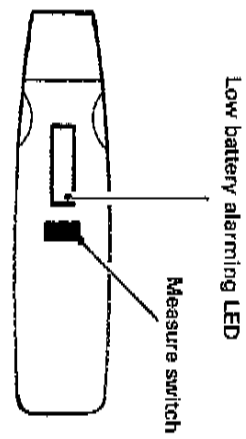


Fig. 5

*Specifications herein may be changed for improvement without notice.*