

# Elevator Speed Limiter Speedometer



Model: ES-2100E

## Applications

This Elevator Speedometer is a compact and lightweight handheld speedometer, designed for adjustment, maintenance, and inspection of an elevator. This Elevator is provided with two display units enabling speed display at two different measurement timings.

## Features

- \* Memory function, for storing and reading 20 sets of measurement results. Including CH1 Value, CH2 Value, Maximum Value. Larger amount of memory can be customized.
- \* Maximum hold function.
- \* Averaging function, for averaging with desired number of times up to 200 times. The measurement interval is 10 ms.
- \* Low battery indicator function.
- \* Distance measurement function.
- \* Bluetooth printer function, measurement data can be printed directly.
- \* Can be connected with computer by USB Cable or Bluetooth Adapter, realizing data transport function.

## Specifications

| Measurement Section             |                                                                                                               |
|---------------------------------|---------------------------------------------------------------------------------------------------------------|
| Measurement method              | Contact method                                                                                                |
| Measurement range               | Speed measurement: 0.1~2,000.0m/min                                                                           |
|                                 | Rotational speed measurement: 1~20,000r/min                                                                   |
|                                 | Distance measurement: 0~999mm                                                                                 |
|                                 | Note: Measurement is possible for up to 5,000mm. Measurement values of 999mm or larger can not be guaranteed. |
| Measurement accuracy            | ±1 count                                                                                                      |
| Measurement time                | 10ms                                                                                                          |
| Measurement unit                | m/min, r/min, mm                                                                                              |
| Auto power-off function         | Turns OFF the power in 180 seconds after last operation.                                                      |
| Measurement value hold function | CH1 Value, CH2 Value, MAX Value                                                                               |
| Averaging function              | Performs averaging desired number of times (1 to 200 times)                                                   |
| Memory function                 | Stores up to 20 sets of measurement results, larger amount of memory can be customized.                       |

## Specifications

| Detection Section       |                                                              |
|-------------------------|--------------------------------------------------------------|
| Number of pulses        | 400pulses/rotation, slit reflection method                   |
| Light source            | Infrared LED                                                 |
| Light-receiving element | Photo diode                                                  |
| Allowable               | 5kg in radial direction, 5kg in thrust direction             |
| Bearing life            | 2x10 <sup>7</sup> r/min-h(maximum load within specification) |

| Display Section |                                                 |
|-----------------|-------------------------------------------------|
| Display unit    | 5-digit backlight LCD (upper and lower display) |
| Update time     | 100ms                                           |
| Resolution      | 0.1 (m/min: Number of averagings 10 or more)    |
|                 | 1 (r/min: Number of averagings 10 or more)      |
|                 | 1 (mm)                                          |

| Analog Output Section |                                               |
|-----------------------|-----------------------------------------------|
| Contents              | Instantaneous value (averaging result output) |
| Voltage range         | 0 to F.S. / 0 to 1V                           |
| Conversion method     | 10 bits D/A conversion                        |
| Linearity             | ±1% F.S.                                      |
| Output update time    | 10ms                                          |
| Output connector      | Φ2.5 pin jack                                 |

| Pulse Output Section |                                    |
|----------------------|------------------------------------|
| Output method        | Transistor output (open collector) |
| Withstand voltage    | 14V                                |
| Number of pulses     | 800/rotation                       |
| Logic                | Negative logic                     |
| Pulse width          | Approx 0.5 to 1.2μs                |
| Output connector     | Φ2.5 pin jack                      |

| General Specifications       |                                                                                                                                                                    |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply                 | 2 x 3.7v 14500 lithium ion battery                                                                                                                                 |
| Operating temperature        | 0~45 °C                                                                                                                                                            |
| Storage temperature          | -10~60 °C                                                                                                                                                          |
| Operating humidity           | 35~85%RH                                                                                                                                                           |
| Storage humidity             | 35~85%RH                                                                                                                                                           |
| Dimensions                   | 211x80x36mm                                                                                                                                                        |
| Weight (Including batteries) | 270g                                                                                                                                                               |
| Standard Accessories         | Main Unit, Circumferential Ring, Screwdriver, 3.7v 14500 Lithium Ion Battery x 2, Power Adapter, External Hold Signal Cable x 2, Instruction Manual, Carrying Case |
| Optional Accessories         | Lengthening Rod for Rotating Contact Tip, Trigger Unit, Bluetooth Printer, USB Cable & Software, Bluetooth Adapter & Software                                      |