**Eccentricity Detectors FS-500A**

The detection moment a small eccentricity

- **Proper detection distance display function**
  The proper distance between an object and a sensor head can be set easily while confirming the change of color from green to orange.

- **Disconnection display function**
  The detection indicator turns red and the control output works at the same time when a sensor head is disconnected. Inferior goods cannot be mixed into goods.

- **Synchronous display function**
  Measuring in progress can be confirmed with the detection indicator turning green during measurement time (synchronization terminal short circuit).

- **Adoption of a one-chip microcomputer**
  High function and environmental resistance is improved with the adoption of a one-chip microcomputer.

**MAIN FUNCTION**

- **POWER INDICATOR LAMP**
  Green Light: when the power turns on.
  Orange Light: when the sensor head is in the proper position.

- **PROPER MEASUREMENT RANGE INDICATOR LAMP**
  Green Light: when the synchronization signal is input.
  Orange Light: when the control output works.
  Red Light: when the sensor head is disconnected.
  Control output: when the amplitude of the object exceeds the set value or the sensor head is disconnected.

**LED EXPLANATION**

- **POWER INDICATOR LAMP**
  Green led lights when the power is on. - LED①

- **PROPER MEASUREMENT RANGE INDICATOR LAMP**
  Orange led lights when sensor head is in proper measurement - LED②

- **SYNCHRO-SWITCH CLOSED INDICATOR LAMP**
  Green led lights while Synchro-switch closed - LED③

- **DETECTOR INDICATOR LAMP**
  Orange led lights and limit alarm output turns on when hold voltage is over the comparison voltage - LED④

- **DISCONNECTION LAMP**
  Red led lights and limit alarm outputs when sensor cable was broken or cable connection is incomplete. - LED⑤

**CONTROLLER SPECIFICATIONS**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>FS-500-1A</th>
<th>FS-500-2A</th>
<th>FS-500-3A</th>
<th>FS-500-4A</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTROL SENSORS</td>
<td>HA-3S</td>
<td>HA-9S</td>
<td>HA-8S</td>
<td>HA-141S</td>
</tr>
<tr>
<td>LINEARITY RANGE</td>
<td>0~0.4mm</td>
<td>0~0.8mm</td>
<td>0~1.4mm</td>
<td>0.8~2mm</td>
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<tr>
<td>MEASUREMENT RANGE</td>
<td>0~0.8mm</td>
<td>0~1.0mm</td>
<td>0~2.0mm</td>
<td>0~3.5mm</td>
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<tr>
<td>RESOLUTION</td>
<td>1um</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>RESPONSE</td>
<td>20~15,000rpm</td>
<td></td>
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<tr>
<td>LIMIT ALARM OUTPUT</td>
<td>1a,2A/250VAC max.</td>
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<tr>
<td>TRIGGER OUTPUT</td>
<td>Open-collector,40VDC 100mA max.</td>
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<tr>
<td>MONITOR OUTPUT</td>
<td>Analog output:1mV/um, output impedance:51Ω</td>
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<tr>
<td>AMPLITUDE DEVIATION</td>
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<tr>
<td>SETTING DIAL</td>
<td>10-truns pot.</td>
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<tr>
<td>SETTING RANGE</td>
<td>10~1,000mV 2mV/graduation</td>
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<tr>
<td>ARM</td>
<td>5mV</td>
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<tr>
<td>SYNCHRONOUS SIGNAL</td>
<td>Measurement allowed when SYNC. sw is ON</td>
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<tr>
<td>AMBIENT TEMPERATURE</td>
<td>-10~60°C</td>
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<td>AMBIENT HUMIDITY</td>
<td>85%RH or less, non-condensing</td>
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<tr>
<td>POWER SUPPLY</td>
<td>AC100/200V±15%/50/60Hz</td>
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</tbody>
</table>

**NOTE**

① In which amplitude is proportional to dial reading.

② In which amplitude may not be proportional to dial reading, but FS-500A is usable by dial calibration.

**APPLICATIONS**

- Beam detection
- Detection of chuck mistake
- Eccentricity detection of rotating body

**MOUNTING CUTOUT**

Suitable for 35mm width DIN rail
**SENSOR-HEAD DIMENSIONS**

- **Sensor head**
  - HA-30S
  - HA-50S
  - HA-80S

**WIRING CONNECTIONS**

Limit alarm
Non-contact output
40VDC 100mA max.

- **Power indicator**
- **Setting dial**
- **Detection indicator**
- **Sync SW**
- **Sensor Head**
- **AC100V**
- **AC200V**
- **Power supply**

- **Internal circuit**

**OUTPUT**

- **Control output**
  - The output works when the amplitude exceeds the setting level.
- **Relay output**
  - N0 contact max. AC250V 2A (Resistance load)
  - Non-contact output max. DC40V 100mA (Resistance load)

**DATE**

1. For the area of subject
   - The specification value is satisfied if the diameter of an object is larger than that of the sensor head.
   - The object of the example below is a circular plate.

2. In case a subject is a pillar
   - The specification value is satisfied if the diameter of the pillar is fivefold or more larger than that of the sensor head.

- **Type**
  - **COAXIAL CABLE & CONNECTORS MATERIALS**
  - Please wire the cable separately from power lines.
  - For the high frequency coaxial cable (characteristic impedance 50 ohm) and coaxial connector within 10 meter at most.

**Type**
- **Coaxial Cable**
- **Coaxial Connector**
  - HA-30S
  - HA-225S
  - HA-50S
  - HA-225S
  - HA-80S
  - HA-141S

**CAUTIONS ON USE**

- **Type of the example below is a circular plate.**
- Please fix at the torque shown below.
  - M3 set screw whose top is flat.
  - Tighten the 5mm to M3.

- **Detection aspect**
  - Readjustment is needed in case the sensor head is used buried in metal.
  - More information please contact our sales department.

- **Sensor Head**
  - U needs to be flat to M3.

- **VHF COAXIAL CABLE & CONNECTORS MATERIALS**
  - Please wire the cable separately from power lines.
  - For the high frequency coaxial cable (characteristic impedance 50 ohm) and coaxial connector within 10 meter at most.

- **Type**
  - **Coaxial Cable**
  - **Coaxial Connector**
  - HA-30S
  - HA-225S
  - HA-50S
  - HA-225S
  - HA-80S
  - HA-141S

- Please readjust the setting dial if having replaced the sensor head.
- Values might be different from the catalogue data depending on the conditions where this product is used.