Sensor Data Sheet

KD-2300

Multi-purpose
non-contact
position/displacement
sensing

Kaman Precision Products

800-552-6267 | kamansensors.com | measuring@kaman.com
FEATURES
>
> Dual coil sensors for excellent thermal stability
> Economical single-channel units
> Long-term stability and repeatability
> Measuring range from 0.020 to 2.0 inches
> Resolution better than 0.01% of measuring range
> Linearity better than ±0.5 to ±1% measuring range
> Frequency response to 50 kHz

MULTI-VIT: MULTI-PURPOSE VARIABLE IMPEDANCE TRANSDUCER

Kaman Precision Products’ Multi-VIT displacement measuring system, the KD-2300, is a non-contact linear displacement measuring system. This easy-to-use system makes high-precision, static and dynamic measurements for product design, fabrication, process control, and inspection of metal objects. It replaces LVDTs, air gauges, dial indicators, and micrometers.

The system includes a sensor, power and output cable, and signal conditioning electronics package. Zero, gain, and linearity adjustments are provided on the electronics package. The output voltage of the system is proportional to the distance between the face of the sensor and any metallic (conductive) target.

Depending upon the system, the standard sensor cable length may be increased to a maximum of 30 feet (9.15 m). If special sensor designs or improved system performance are required, contact a Kaman applications engineer for assistance.

Certain internal components in the KD-2300 family precisely match the signal conditioning electronics to a specific sensor and cable. To change the sensor size and/or cable length, a corresponding bridge card must also change. This is an easy task, requiring only a screw driver, that can be accomplished in a matter of minutes. Contact Kaman for the type of sensor/cable conversion you wish to make.

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**Sensor Data Sheet KD-2300**

### Sensor Types

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>.5SU</th>
<th>.5SUM</th>
<th>1S</th>
<th>1SU</th>
<th>1SM</th>
<th>1SUM</th>
<th>2S</th>
<th>6C</th>
<th>8C</th>
<th>10C</th>
<th>10CU</th>
<th>12CU</th>
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<tbody>
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<td><strong>Target Material</strong></td>
<td>non-magnetic</td>
<td>magnetic</td>
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<td><strong>Measuring Range</strong></td>
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<tr>
<td>(+10% nominal offset)</td>
<td>mil*</td>
<td>mm</td>
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<tr>
<td><strong>Offset</strong></td>
<td>mil*</td>
<td>mm</td>
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<td><strong>Nonlinearity</strong></td>
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<td>±mm</td>
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<td>(±1% of measuring range)</td>
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<td><strong>Static Resolution - Mid Range</strong></td>
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<td>Analog</td>
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<tr>
<td>Customer Adjustable</td>
<td>mV/mil*/mV/mm</td>
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<td>1000</td>
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<td><strong>Output, Full Range</strong></td>
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<td>Voltage Analog</td>
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<td>Vdc (Eng.)</td>
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<td>1.910</td>
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<td>Shift = mid range</td>
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<td>(Sensor/target interface)</td>
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<td>0.1% FSO/°F without temp. comp.; 0.02% FSO/°F with temp. comp.</td>
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**Notes:**
- * mil = 0.001 inch
- ** Maximum frequency response is sensitivity dependent. At maximum sensitivity, the -3 dB level is 10 kHz. At 10% of maximum sensitivity, frequency response is 50 kHz (optimum).
KAMAN

SENSOR DATA SHEET
KD-2300

SPECIFICATIONS

OPERATING TEMPERATURE RANGE
Sensor: -67°F to +220°F (-55°C to +105°C)
Cable and connector: -67°F to +220°F (-55°C to +105°C)
Electronics: +32°F to +132°F (0°C to +55°C)

STORAGE TEMPERATURE RANGE
Sensor, cable and connector: -67°F to +220°F (-55°C to +105°C)
Electronics: -67°F to +220°F (-55°C to +105°C)

POWER SUPPLY REQUIREMENTS**
Voltage: ±12 Vdc to ±15 Vdc
Voltage regulation: ±1/2 Vdc
Current: 70 mA

* Standard on .5SU and .5SUM; available only on -1SM and -1SUM
** Recommend Kaman P-3410 and P-3450

OPTIONS

Sensor cable lengths shorter or longer than the standard ten feet, up to 30 feet
Temperature compensation over a +100°F (+50°C) band
System synchronization, required to prevent beat note interference or cross talk between sensors when sensors of two or more systems are mounted less than three sensor-diameters apart
Oscillator frequency change
Bridge conversion module
Moderate temperature (to +400°F or +204°C) versions of some sensors are available
Single coil sensors. A wide variety of single coil sensors are also available. Contact Kaman.

ACCESSORIES

POWER SUPPLIES
Regulated ±15 Vdc with 115 VAC input; optional 230 VAC input available
Model P-3410 - single channel
  115 VAC input: P/N 852531-001
  230 VAC input: P/N 852531-001A
Model P-3450 - up to six channels
  115 VAC input: P/N 852531-004
  230 VAC input: P/N 852531-004A

MICROMETER CALIBRATION FIXTURE
(THROUGH -6C SYSTEM)
Digital: P/N 855578-001

CERAMIC CALIBRATION SPACERS
Set of seven, 0.050-inch through 1.0-inch (part number 850859-001)

ORDERING INFORMATION
Before ordering, you will need to determine which sensor model fits your application. You may also want to consider sensor cable length, optional calibration ranges, temperature compensated calibrations and synchronization. We will be glad to assist you with these decisions.