OEM-2306

Non-contact position sensing using Eddy Current Technology Specifically for OEM applications

KAMAN

Precision Products / Measuring
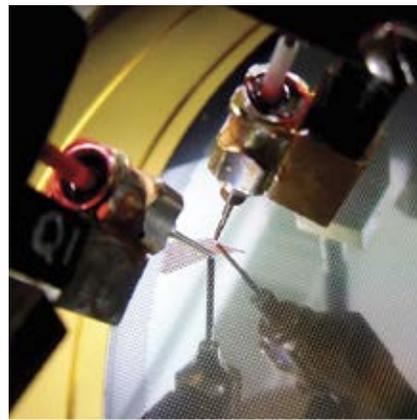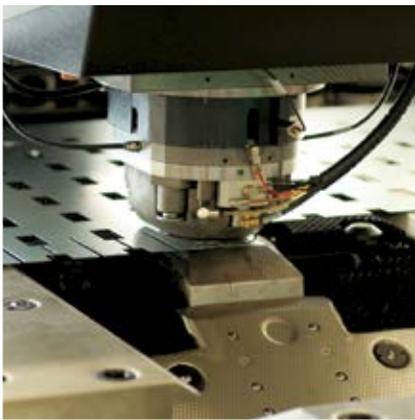
Features

❖ Supports both dual and single coil sensors
❖ Terminal I/O connections
❖ Analog DC single ended and bipolar voltage outputs
❖ Front PCB accessable coarse and fine calibration controls
❖ RoHS compliant

Non-contact position and displacement sensing

The OEM-2306 is a non-contact linear displacement measuring instrument with the performance of the KD-2306 signal conditioning electronics in a smaller bare PC board format. It is factory configured for each specific set up for lower cost in higher volume applications. The board level configuration makes it ideal for integration into OEM equipment. It is a cost-effective replacement for LVDTs, air gauges, dial indicators and micrometers.

A system includes a sensor and electronics. Systems can be specified with factory calibration complete with a NIST traceable calibration record. For customers who desire to do their own calibration, zero, gain and linearity potentiometers are incorporated. The output voltage of the system is proportional to the distance between the face of the sensor and any metallic (conductive) target.

Many aspects of the physical configuration and calibration can be specified including extending the sensor cable, extended range calibration, temperature compensation calibration, and sensor customization to fit the needs of the application.

Contact Kaman for assistance.
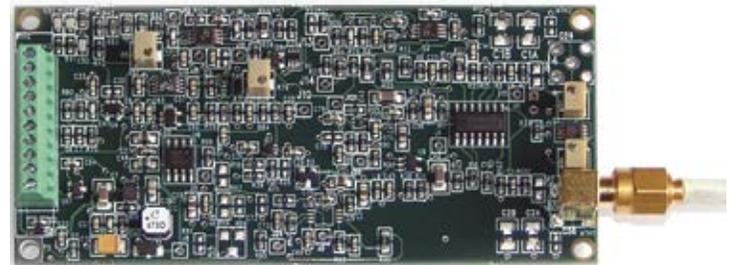
General Performance Specifications

The following specifications can be applied to the full range of systems using standard sensor options in the chart on page 3. Each sensor has specific performance specifications that can be better than those listed below.

Resolution	0.01%FS
Frequency response	50KHz (-3dB point) Modified frequency response available on request.
Nonlinearity	<1%FS Typ
Thermal sensitivity	Standard 0.1%FS/°F Compensated 0.02%FS/°F
Output options	0-10 VDC (standard) 0-5 VDC ±5 VDC

OEM-2306 Sensors

SENSOR	STANDARD MEASURING RANGE		TARGET MATERIAL		STATIC RESOLUTION		SINGLE (S) OR DUAL (D) COIL	SHIELDED (S) OR UNSHIELDED (U)	OPERATING FREQUENCY	STANDARD CABLE LENGTH (FT)	INTEGRAL (I) OR REMOVABLE (R) CABLE	NOTES
	inch	mm	non-fer	ferrous	µ in	µ m						
STANDARD TEMPERATURE SENSORS: –67° TO +220° F (–55° TO +105° C)												
2U / 2UM	0.020	0.5	2U	2UM	4	0.1	S	U	1 MHz	6.6	I	
1S /1SM	0.040	1.0	1S	1SM	4	0.1	D	S	1 MHz	10	I	
1U1	0.040	1.0	■		4	0.1	S	U	0.5 MHz	10	I	
1SU / 1SUM	0.050	1.3	1SU	1SUM	5	0.1	D	U	1 MHz	10	I	
2S1	0.080	2.0	■		8	0.2	S	S	0.5 MHz	10	R	
2UB1	0.080	2.0	■		8	0.2	S	U	0.5 MHz	10	I	
2S	0.100	2.5	■	■	10	0.3	D	S	1 MHz	10	I	
3U1	0.120	3.0	■		12	0.3	S	U	0.5 MHz	10	R	
4S1	0.160	4.0	■	■	16	0.4	S	S	0.5 MHz	10	R	
4SB	0.160	4.0	■		16	0.4	S	S	0.5 MHz	10	I	
6U1	0.240	6.0	■	■	24	0.6	S	U	0.5 MHz	10	R	
6C	0.250	6.4	■	■	25	0.6	D	S	1 MHz	15	R	
8C	0.500	13	■	■	50	1.3	D	S	1 MHz	15	R	
15U1	0.600	15	■		60	1.5	S	U	0.5 MHz	15	R	
10CU	1.000	25	■	■	100	2.5	D	U	1 MHz	15	R	
30U1	1.200	30	■	■	120	3.0	S	U	0.5 MHz	15	R	
12CU	2.000	50	■	■	200	5.0	D	U	1 MHz	15	R	
60U1	2.400	60	■	■	240	6.0	S	U	0.5 MHz	15	R	
MODERATE TEMPERATURE SENSORS: CRYOGENIC TO +400° F (+200° C), SENSOR DEPENDENT												
1UEP	0.040	1.0	■	■	4	0.1	D	U	1 MHz	10	I	
2SMT	0.100	2.5	■	■	10	0.3	D	S	1 MHz	10	I	
6CMT	0.250	6.4	■	■	25	0.6	D	S	1 MHz	15	I	
8CMT	0.500	13	■	■	50	1.3	D	S	1 MHz	15	I	
9U	0.160	4.0	■		16	0.4	S	U	1 MHz	6.6	I	
12U	0.200	5.0	■	■	20	0.5	S	U	1 MHz	6.6	I	
16U	0.320	8.0	■	■	32	0.8	S	U	1 MHz	6.6	I	
26U	0.500	12	■	■	50	1.2	S	U	1 MHz	6.6	I	
38U	0.750	20	■	■	75	2.0	S	U	1 MHz	6.6	I	
51U	1.000	25	■	■	100	2.5	S	U	1 MHz	6.6	I	

Notes:
1) Reference Sensors Data Sheet for dimensional information

Specifications

Operating Temperature Range
Electronics   +32°F to +132°F
                               (0°C to +55°C)

Storage Temperature Range
Electronics   -67°F to +220°F
                               (-55°C to +105°C)

Power Supply Requirements
Voltage   +15 to +30 Vdc
Voltage regulation   ±1/2 Vdc
Current   150 mA

Terminal Screw Torque
Maximum   7 lb-in

Accessories
Power Supply
Micrometer Calibration Fixture
Ceramic Calibration Spacers
(for sensor sizes above 6C)

Options
- Special calibrations
  - ❖ non standard range/target material
  - ❖ temperature compensation
  - ❖ at specific temperature and cryogenic
- Sensor cables
  - ❖ non standard lengths
  - ❖ in line splice
  - ❖ hermetic and non-hermetic bulkhead splice
- Microseal treatment of sensor for moisture resistance
- Custom sensor design
- Electronics enclosure for drop-in replacement of KD-2300 series

Ordering Information

This product is only for volume OEM applications. For low volume applications refer to the KD-2306 data sheet.

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

Contact Kaman to speak with an applications engineer for assistance.
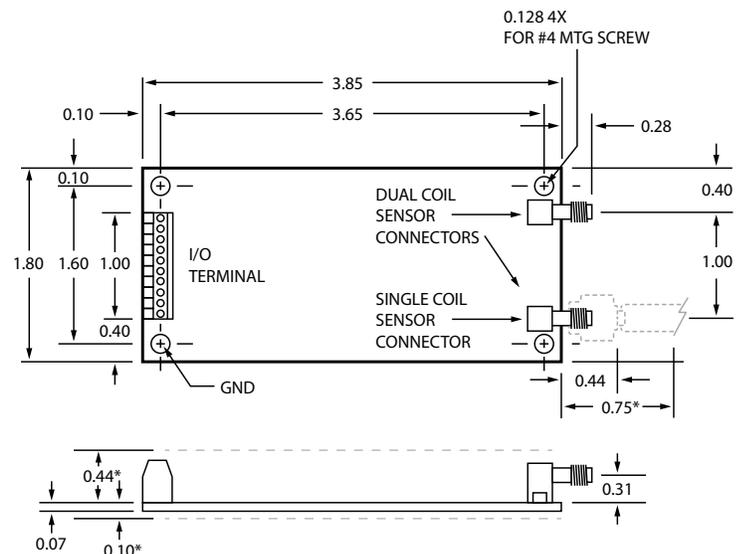
*Notes: 1. Component clearance dimensions
Dimensions are in inches