

SENSOR DATA SHEET

SENSOR FAMILY

Advanced
family of
high-precision
position sensors



KAMAN
PRECISION PRODUCTS

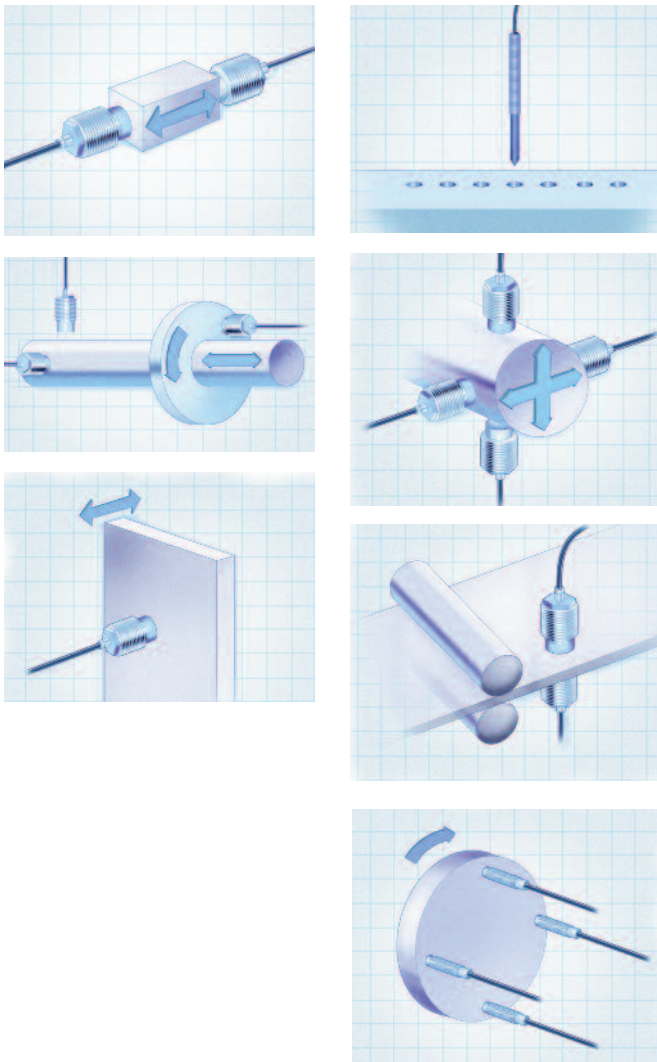
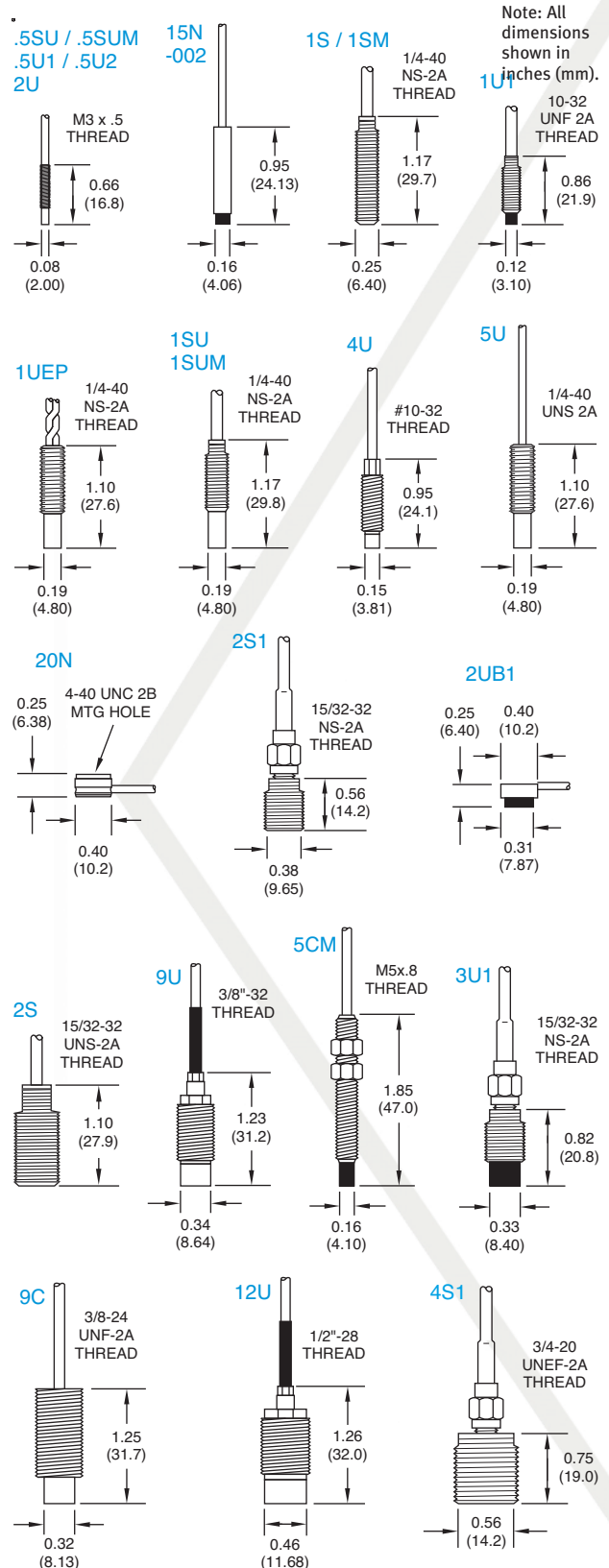
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FEATURES

- > Ranges from 0.002 to 2.50 inches
- > High speed analog and digital signal conditioning
- > Rugged stainless steel and PEEK housings
- > Dual coil and matched differential pairs minimize temperature, radiation and other environmental effects
- > Sensors and cables rated to +400°F (+204°C)

SENSORS (shown at 50%)

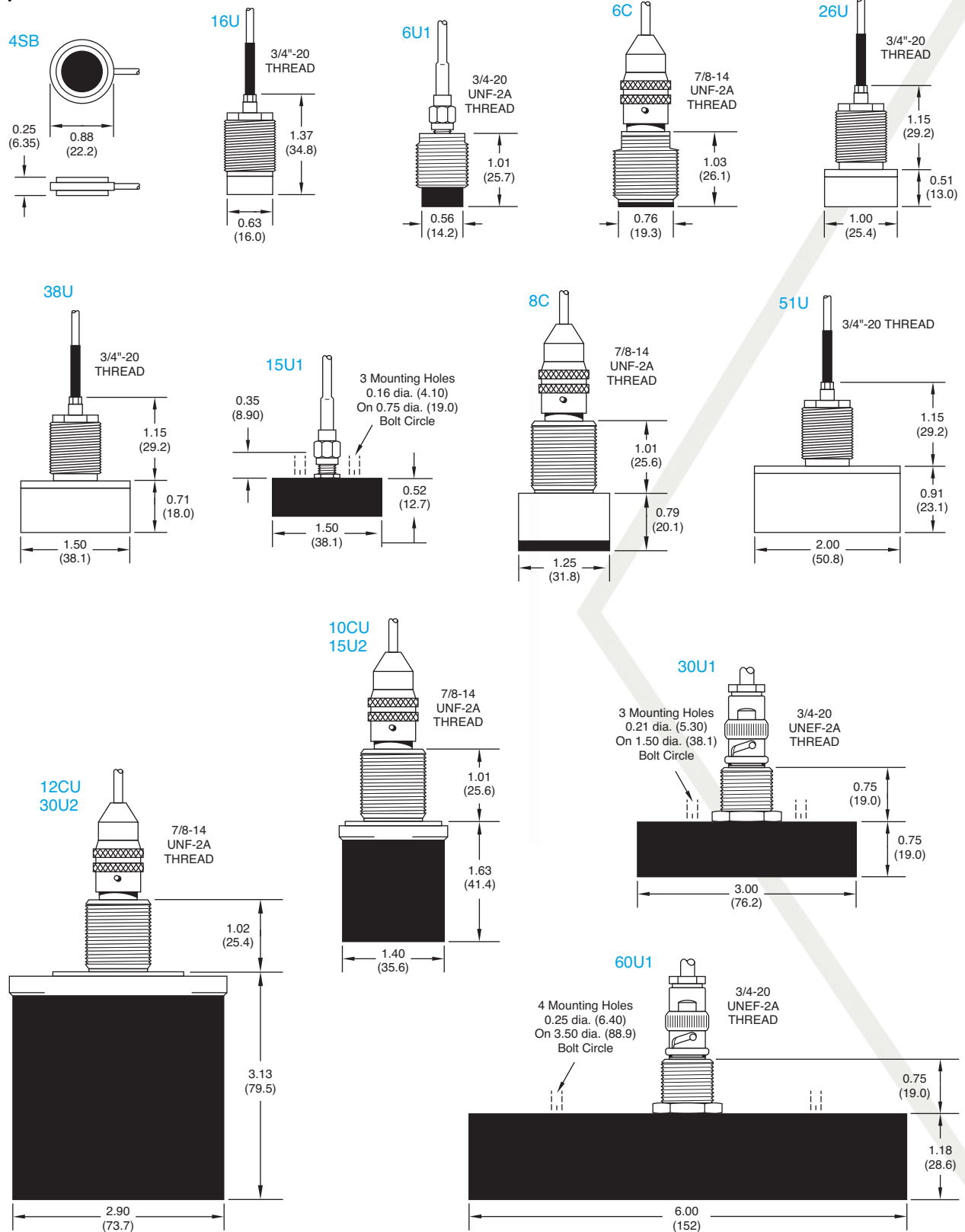


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SENSORS (shown at 50%)

Note: All dimensions shown in inches (mm).



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SENSOR	TYPICAL SPECIFICATIONS						ELECTRONICS						
	STANDARD RANGE		TARGET MATERIAL		STATIC RESOLUTION		TEMPERATURE RATING	KD-2306	KD-2446	KD-5100	DIT-5200	KDM-8206	SMT-9700
	mil	mm	non-mag	magnetic	μ in	μ m	see notes						
.5SU, .5U1	20	0.5	√		4	0.1	1	√				√	
.5SUM, .5U2	20	0.5		√	4	0.1	1	√				√	
2U	20	0.5	√				1		√				√
15N	35	0.9	√				1			√	√		√
1S	40	1.0	√		4	0.1	1	√					
15M	40	1.0		√	4	0.1	1	√					
1U1	40	1.0	√		4	0.1	1	√				√	√
1UEP	40	1.0		√	4	0.1	2	√				√	
1SU	50	1.3	√		5	0.12	1	√					
1SUM	50	1.3		√	5	0.12	1	√					
4U	50	1.3	√				2						√
5U	50	1.3	√				1						√
20N	75	1.9	√				1			√	√		√
2S1	80	2.0	√	√	8	0.2	1	√				√	
2UB1	80	2.0	√	√	8	0.2	1	√				√	
2S	100	2.5	√	√	10	0.25	1	√					
9U	100	2.5	√				2						√
5CM	115	2.9	√	√	10	0.25	2		√				
3U1	120	3.0	√		12	0.3	1	√				√	√
9C	150	3.8	√	√			2		√				
12U	160	4.0	√	√			2		√				√
4S1	160	4.0	√	√	16	0.4	1	√				√	
4SB	160	4.0	√	√	16	0.4	1	√				√	
16U	200	5.0	√	√			2		√				√
6U1	240	6.0	√	√	24	0.6	1	√				√	√
6C	250	6.4	√	√	25	0.62	1	√					
26U	320	8.1	√	√			2		√				√
38U	500	12.7	√	√			2		√				√
8C	500	12.7	√	√	50	1.25	1	√					
15U1	600	15.0	√	√	60	1.5	1	√				√	√
15U2	600	15.0	√	√	60	1.5	1					√	
51U	600	15.0	√	√			2		√				√
10CU	1000	25.4	√	√	100	2.5	1	√					
30U1	1200	30.0	√	√	120	3.0	1					√	√
30U2	1200	30.0	√	√	120	3.0	1					√	
12CU	2000	50.8	√	√	200	5.0	1	√				√	
60U1	2400	60.0	√	√	240	6.0	1	√				√	√

Notes: Operating Temperature:
 Range 1: -67 to +220° F (-55 to +105° C)
 Range 2: -452 to +400° F (-269 to +204° C)
 Resolution is dependant upon electronics selected. Contact Kaman where value is not shown.
 Most sensor ranges may be extended up to 50% , but performance will vary. Contact Kaman.
 Dynamic resolution = static resolution x square root of bandwidth.

SENSOR FAMILY

KD-2306

- › Economical single-channel units.
- › Long-term stability and repeatability.
- › Linearity better than $\pm 0.50\%$ most sensors.
- › Frequency response to 50 kHz.



KD-2446

- › Static resolution to 12 μ inches.
- › Easy to calibrate; low cost.
- › Excellent performance with highly resistive targets.
- › Compact rugged electronics and sensors.
- › Analog and switched output.
- › Frequency response to 10 kHz.



KD-5100

- › Two precisely matched sensors per channel give resolution to a nanometer.
- › Superior thermal and long-term stability of 5×10^{-6} inches/month or better.
- › Small package size: just 2 x 2.12 x 0.75 inches thick.
- › Cryogenic sensors available.
- › High sensitivity up to 10 V/mil (394 mV/ μ m).
- › Low power consumption less than 2W @ ± 15 Vdc typical.
- › Frequency response to 22 kHz.



KDM-8206

- › A modularized rack format for customized, building-block solutions.
- › Standard 3U by 7T Eurocard modules.
- › Multiple channels, rack mounted or bench-top enclosures.
- › Frequency response to 50 kHz.
- › Dual channel NEMA enclosure available.
- › Linearity $\pm 0.50\%$.



SMT-9700

- › Flexible, high-resolution position/displacement sensing for OEM apps
- › 1, 2 or 3 channels
- › Nanometer to sub-nanometer resolution
- › Easy, cost-effective performance customization
- › CE and RoHS compliant
- › Small package size
- › Thirteen standard sensor options



DIT-5200

- › Commercial version of KD-5100 with similar performance.



SENSOR FAMILY

WHY KAMAN?

Experience. Kaman Precision Products | Measuring has over 40 years of experience with non-contact position measurement techniques. We bring you the best in advanced sensor technology and signal conditioning electronics.

Custom systems. We specialize in custom solutions to difficult problems, and we'll work with you to develop a system for your particular application.

Advanced technology. Kaman's sensors are based on eddy current technology, providing measurements that are

- › very stable and repeatable;
- › ideal for metal targets;
- › unaffected by humidity, dust, and other contaminants;
- › resistant to harsh environments.

SPECIALIZED SENSOR SYSTEMS FROM KAMAN

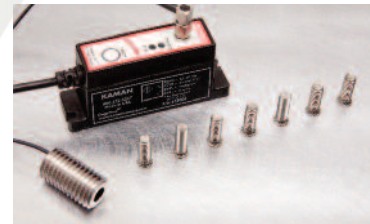
DAQ-JACK KDAQ200+

- › USB-enabled data acquisition
- › Built-in programmable bipolar DC power supply for powering analog instruments
- › Two high-resolution input channels
- › Configurable digital filtering
- › Simple user interface for application-specific programming
- › Includes PC data logging and custom setup software
- › Small 3.15 x 2.125 x 0.91" package



THREADCHECKER

- › Checks for thread presence or absence
- › Universal electronics for any probe/ material combination
- › DIN rail mounting option
- › Push button teach with go/no-go LED
- › IP-67 rated probes and electronics
- › PUR jacketed probes and I/O cables
- › Four internal probes from 4mm to 10mm
- › Two external probes: 6mm and 8mm
- › Both switched and analog outputs



EXTREME ENVIRONMENT SYSTEMS

- › For high pressure, low temperature, and high temperature applications
- › Offers high accuracy, high reliability, and structural integrity
- › Operating temperatures from -320°F to 1000°F (+1200°F short term)
- › Displacements systems *withstand* pressures up to 3500 or 5000 psi
- › Dual-coil sensor design effectively minimizes radiation effects
- › Hermetically sealed and laser welded
- › Unaffected by environmental contaminants