

PROPRIETARY AND CONFIDENTIAL

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6 4-WIRE CABLE

|                 |  |
|-----------------|--|
| WIRE            | 36 AWG, 7/44 SILVER PLATED COPPER      |
| WIRE INSULATION | PFA, .006 NOMINAL WALL                 |
| SHIELD          | 44 AWG SILVER PLATED SOFT COPPER BRAID |
| JACKET          | PFA, WHITE, .006 INCH NOMINAL WALL     |
| DIAMETER        | Ø .045 NOMINAL                         |
| TEMP            | -196 TO +200 DEG C                     |
| VOLTAGE         | 150 VOLTS AC                           |

REVISIONS

| REV. | ECN   | DESCRIPTION  | BY/DATE      | CHK | APPR               |
|------|-------|--|--------------|-----|--------------------|
| E    | 13437 | ADDED "LOW OUTGASSING" NOTE                          | JB 5/9/2017  | MH  | LN                 |
| F    | 13902 | INITIAL RELEASE OF D1-17, D2-17, D3-17, D4-01, D5-17 | RA, 12/08/17 | MH  | LN                 |
| G    | 14107 | SEE ECN  | RA, 03/22/18 | MH  | <i>[Signature]</i> |

7 CABLE LENGTH TOLERANCE

| ENGLISH        |            | [METRIC]    |             |
|----------------|------------|-------------|-------------|
| ≤1 FT          | +1/ -0 IN  | ≤0.3m       | +25mm -0mm  |
| >1 FT - 5 FT   | +2/ -0 IN  | .0.3 m-1.5m | +50mm -0mm  |
| > 5 FT - 10 FT | +4/ -0 IN  | >1.5m-3m    | +100mm -0mm |
| >10 FT - 25FT  | +6 / -0 IN | >3m-7.5m    | +150mm -0mm |
| >25 FT         | +5% / -0%  | >7.5m       | +5%/-0%     |

D

D

C

C

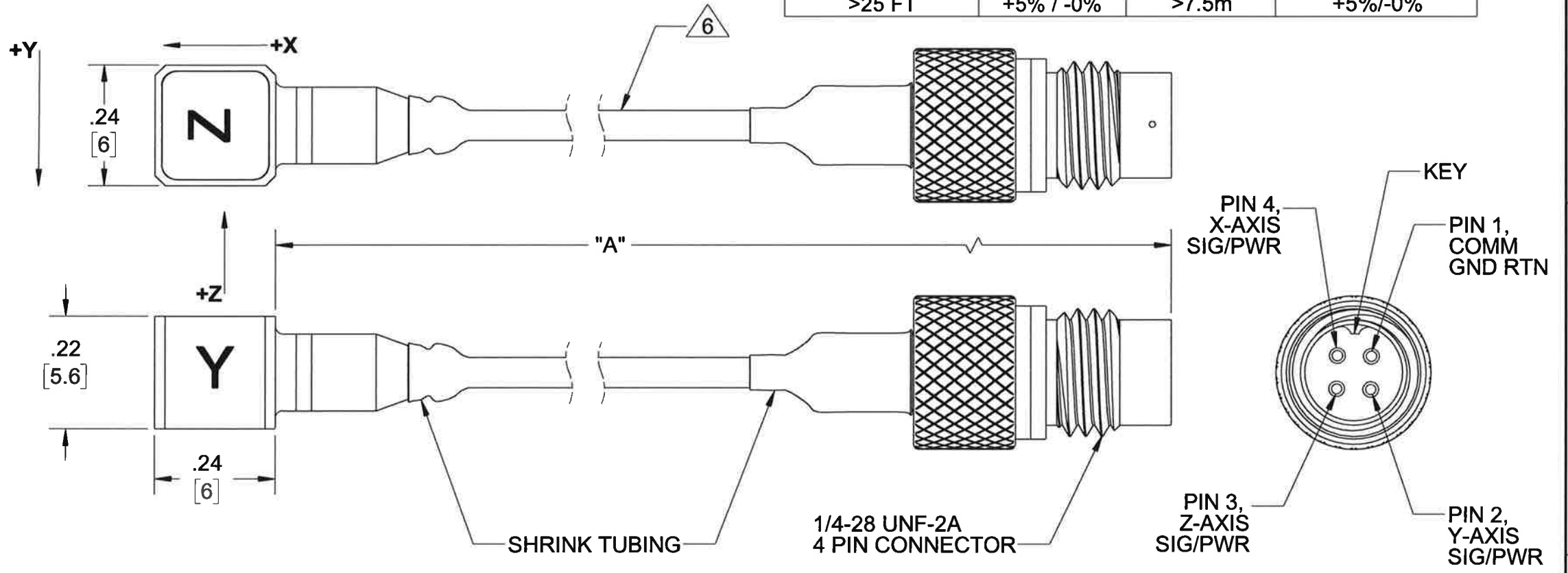
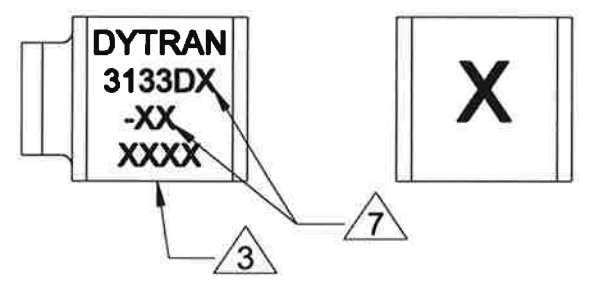
B

B

A

A

| MODEL      | SENSITIVITY | DIM "A"  |
|------------|-------------|----------|
| 3133D1     | 10 mV/g     | 36.00 IN |
| 3133D2     | 2 mV/g      | 36.00 IN |
| 3133D3     | 5 mV/g      | 36.00 IN |
| 3133D4     | 0.7 mV/g    | 36.00 IN |
| 3133D5     | 0.25 mV/g   | 36.00 IN |
| 3133D1-17  | 10 mV/g     | 17.00 FT |
| 3133D2-17  | 2 mV/g      | 17.00 FT |
| 3133D3-17  | 5 mV/g      | 17.00 FT |
| 3133D4-17  | 0.7 mV/g    | 17.00 FT |
| 3133D5-17  | 0.25 mV/g   | 17.00 FT |
| 3133D1-1.7 | 10 mV/g     | 1.70 FT  |
| 3133D2-1.7 | 2 mV/g      | 1.70 FT  |
| 3133D3-1.7 | 5 mV/g      | 1.70 FT  |
| 3133D4-1.7 | 0.7 mV/g    | 1.70 FT  |
| 3133D5-1.7 | 0.25 mV/g   | 1.70 FT  |



- 8. LOW OUTGASSING
  - 7 PART NO: 3133DX-XX (WHERE APPLICABLE, -XX DENOTES LENGTH IN FEET). SEE TABLE FOR LENGTH TOLERANCE.
  - 6 SEE TABLE FOR 4 WIRE CABLE SPECIFICATIONS.
  - 5. DYTRAN MODEL 6298 PETRO MOUNTING WAX AND MODEL 6741 REMOVAL TOOL, SUPPLIED.
  - 4. ARROWS INDICATE DIRECTION OF ACCELERATION FOR POSITIVE OUTPUT.
  - 3 FOR BEST FREQUENCY RESPONSE, PREPARE A FLAT MOUNTING SURFACE OF AT LEAST Ø .39, FLAT TO .0001 TIR. APPLY ONE DROP OF CYANOACRYLATE ADHESIVE TO MOUNT THE ACCELEROMETER.
  - 2. HOUSING MATERIAL: TITANIUM ALLOY.
  - 1. WEIGHT: 0.8 GRAMS MAX, LESS CABLE.
- NOTES: UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED: INTERPRET DIM & TOL PER ASME Y14.5M - 1994. REMOVE BURRS. COUNTERSINK INTERNAL THDS 90° TO MAJOR DIA. CHAM EXT THDS 45° TO MINOR DIA. THD LENGTHS AND DEPTHS ARE FOR MIN FULL THDS. DIMENSIONS APPLY AFTER FINISHING.

ALL MACHINED SURFACES: TOTAL RUNOUT WITHIN .005. BREAK SHARP EDGES .005 TO .010. MACHINED FILLET RADII .005 TO .015. WELDING SYMBOLS PER AWS A2.4. ABBREVIATIONS PER MIL-STD-12.

| DECIMALS   | METRIC    | ANGLES |
|------------|-----------|--------|
| .XX ±.03   | .X ±.08   | ±1°    |
| .XXX ±.010 | .XX ±0.25 |        |

| APPROVALS |    | DATE     |
|-----------|----|----------|
| ORIG      | LN | 05/26/15 |
| CHK       | LN | 12/22/15 |
| APP       | AS | 12/23/15 |

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS IN BRACKETS [ ] ARE IN MILLIMETERS. TOLERANCES ARE:

**DYTRAN INSTRUMENTS, INC.** Chatsworth, CA

**MASTER COPY IN RED**

TITLE: **OUTLINE/INSTALLATION DWG, MINIATURE TRIAXIAL ACCEL, 3133D SERIES**

| SIZE | CAGE CODE | DWG NO    | REV |
|------|-----------|-----------|-----|
| B    | 2W033     | 127-3133D | G   |

SCALE: 1:1 SHEET 1 OF 1

|                               |                                      |                            |
|-------------------------------|--------------------------------------|----------------------------|
| <b>Model Number</b><br>3133D3 | <b>PERFORMANCE SPECIFICATION</b>     | <b>DOC NO</b><br>PS3133D3  |
|                               | <b>Accelerometer, Triaxial, IEPE</b> | REV H, ECN 14744, 12/10/18 |



- **ULTRA MINIATURE SIZE**
- **IDEAL LOW FREQUENCY RESPONSE**
- **LOW BASE STRAIN SENSITIVITY**
- **HERMETICALLY SEALED**
- **LOW OUTGASSING**

**PHYSICAL**

|                 |                       |    |             |       |
|-----------------|-----------------------|----|-------------|-------|
| Weight          | 0.03                  | oz | 0.8         | grams |
| Mounting        | Adhesive              |    | Adhesive    |       |
| Integral Cable  | Length 3              | ft | 914         | mm    |
| Connector       | Type 4-pin            |    | 4-pin       |       |
| Housing         | Material Titanium     |    | Titanium    |       |
|                 | Isolation Case Ground |    | Case Ground |       |
| Sensing Element | Material Ceramic      |    | Ceramic     |       |
|                 | Mode Shear            |    | Shear       |       |

| ENGLISH         |                       | SI          |       |
|-----------------|-----------------------|-------------|-------|
| Weight          | 0.03 oz               | 0.8         | grams |
| Mounting        | Adhesive              | Adhesive    |       |
| Integral Cable  | Length 3 ft           | 914         | mm    |
| Connector       | Type 4-pin            | 4-pin       |       |
| Housing         | Material Titanium     | Titanium    |       |
|                 | Isolation Case Ground | Case Ground |       |
| Sensing Element | Material Ceramic      | Ceramic     |       |
|                 | Mode Shear            | Shear       |       |

**PERFORMANCE**

|                             |               |        |               |                       |
|-----------------------------|---------------|--------|---------------|-----------------------|
| Sensitivity [1], [2], ± 25% | 5             | mV/g   | 0.5           | mV/m/s <sup>2</sup>   |
| Acceleration Range          | 1,000         | Gpeak  | 9810          | m/s <sup>2</sup> peak |
| Frequency Range, ±5%        | 0.3 to 6000   | Hz     | 0.3 to 6000   | Hz                    |
| Frequency Range, ±10%       | 0.25 to 10000 | Hz     | 0.25 to 10000 | Hz                    |
| Linearity [4]               | ± 1           | % F.S. | ± 1           | % F.S.                |
| Resonance Frequency         | >27           | kHz    | >27           | kHz                   |
| Transverse Sensitivity      | 6             | %      | 6             | %                     |
| Output Impedance            | 100           | Ω      | 100           | Ω                     |
| Noise floor, Max.           | 0.06          | Grms   | 0.59          | m/s <sup>2</sup> rms  |

|                             |                  |               |                       |
|-----------------------------|------------------|---------------|-----------------------|
| Sensitivity [1], [2], ± 25% | 5 mV/g           | 0.5           | mV/m/s <sup>2</sup>   |
| Acceleration Range          | 1,000 Gpeak      | 9810          | m/s <sup>2</sup> peak |
| Frequency Range, ±5%        | 0.3 to 6000 Hz   | 0.3 to 6000   | Hz                    |
| Frequency Range, ±10%       | 0.25 to 10000 Hz | 0.25 to 10000 | Hz                    |
| Linearity [4]               | ± 1 % F.S.       | ± 1           | % F.S.                |
| Resonance Frequency         | >27 kHz          | >27           | kHz                   |
| Transverse Sensitivity      | 6 %              | 6             | %                     |
| Output Impedance            | 100 Ω            | 100           | Ω                     |
| Noise floor, Max.           | 0.06 Grms        | 0.59          | m/s <sup>2</sup> rms  |

**ENVIRONMENTAL**

|                                   |             |         |            |                         |
|-----------------------------------|-------------|---------|------------|-------------------------|
| Maximum Shock                     | 3,000       | Gpeak   | 29430      | m/s <sup>2</sup>        |
| Maximum Vibration                 | 1,500       | Gpeak   | 14715      | m/s <sup>2</sup>        |
| Operating Temperature             | -67 to +320 | °F      | -55 to 160 | °C                      |
| Seal                              | Hermetic    |         | Hermetic   |                         |
| Magnetic Sensitivity at 100 Gauss | 0.0002      | g/Gauss | 0.002      | m/s <sup>2</sup> /Gauss |
| Base Strain Sensitivity           | 0.001       | g/με    | 0.01       | m/s <sup>2</sup> /με    |

|                                   |                |            |                         |
|-----------------------------------|----------------|------------|-------------------------|
| Maximum Shock                     | 3,000 Gpeak    | 29430      | m/s <sup>2</sup>        |
| Maximum Vibration                 | 1,500 Gpeak    | 14715      | m/s <sup>2</sup>        |
| Operating Temperature             | -67 to +320 °F | -55 to 160 | °C                      |
| Seal                              | Hermetic       | Hermetic   |                         |
| Magnetic Sensitivity at 100 Gauss | 0.0002 g/Gauss | 0.002      | m/s <sup>2</sup> /Gauss |
| Base Strain Sensitivity           | 0.001 g/με     | 0.01       | m/s <sup>2</sup> /με    |

**ELECTRICAL**

|                         |            |         |            |         |
|-------------------------|------------|---------|------------|---------|
| Compliance Voltage      | +18 to +30 | VDC     | +18 to +30 | VDC     |
| Current Range [4]       | 2 to 20    | mA      | 2 to 20    | mA      |
| Bias Voltage            | +8 to +10  | VDC     | +8 to +10  | VDC     |
| Discharge Time Constant | 1.1 to 2.5 | seconds | 1.1 to 2.5 | seconds |
| Output Impedance        | 100        | Ω       | 100        | Ω       |

|                         |                    |            |         |
|-------------------------|--------------------|------------|---------|
| Compliance Voltage      | +18 to +30 VDC     | +18 to +30 | VDC     |
| Current Range [4]       | 2 to 20 mA         | 2 to 20    | mA      |
| Bias Voltage            | +8 to +10 VDC      | +8 to +10  | VDC     |
| Discharge Time Constant | 1.1 to 2.5 seconds | 1.1 to 2.5 | seconds |
| Output Impedance        | 100 Ω              | 100        | Ω       |

**This family also includes:**

| Model  | Sensitivity (mV/g) | Range (Gpeak) | Resolution (Grms) | Oper. Temp(°F) | TC         |
|--------|--------------------|---------------|-------------------|----------------|------------|
| 3133D1 | 10                 | 500           | 0.02              | -67 to 320     | 1.1 to 2.5 |
| 3133D2 | 2                  | 2,500         | 0.15              | -67 to 320     | 0.3 to 2.5 |
| 3133D4 | 0.7                | 5,000         | 0.3               | -67 to 320     | 0.5 to 2.5 |
| 3133D5 | 0.25               | 20,000        | 0.5               | -67 to 320     | 0.5 to 4.0 |

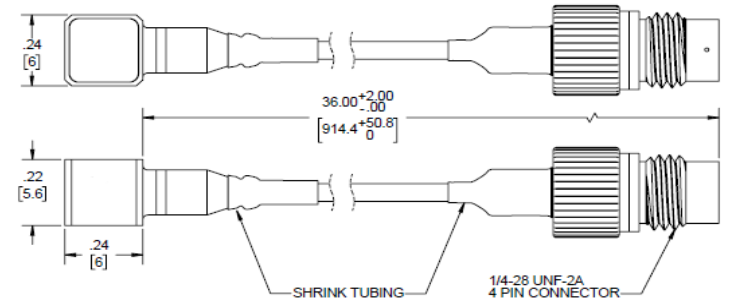
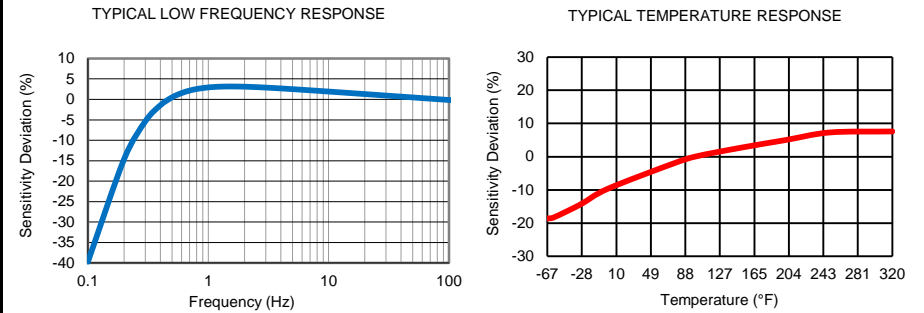
Refer to the performance specifications of the products in this family for detailed description

**Supplied Accessories:**

- 1) Model 6298 small petro wax
- 2) Model 6741 removal tool
- 3) Accredited calibration certificate (ISO 17025)

**Notes:**

- [1] Measured at 100 Hz, 10 Grms
- [2] Actual sensitivity is given on a calibration certificate
- [3] Do not apply power to this device without current limiting, 20mA max, to do so will destroy the integral IC amplifier
- [4] Measured using zero-based straight line method, % of F.S. or any lesser range.



Units on the line drawing are in inches, units in brackets are in millimeters. Refer to 127-3133D for more information.



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