

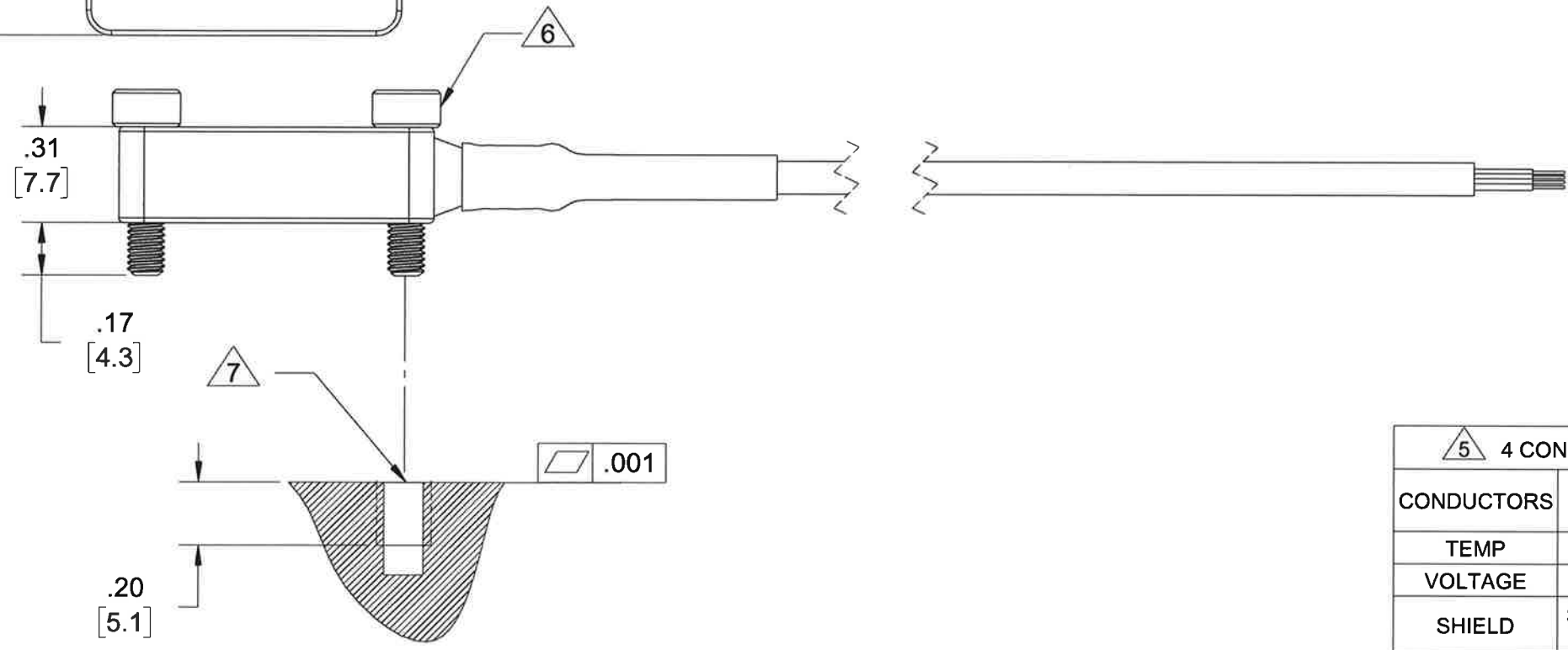
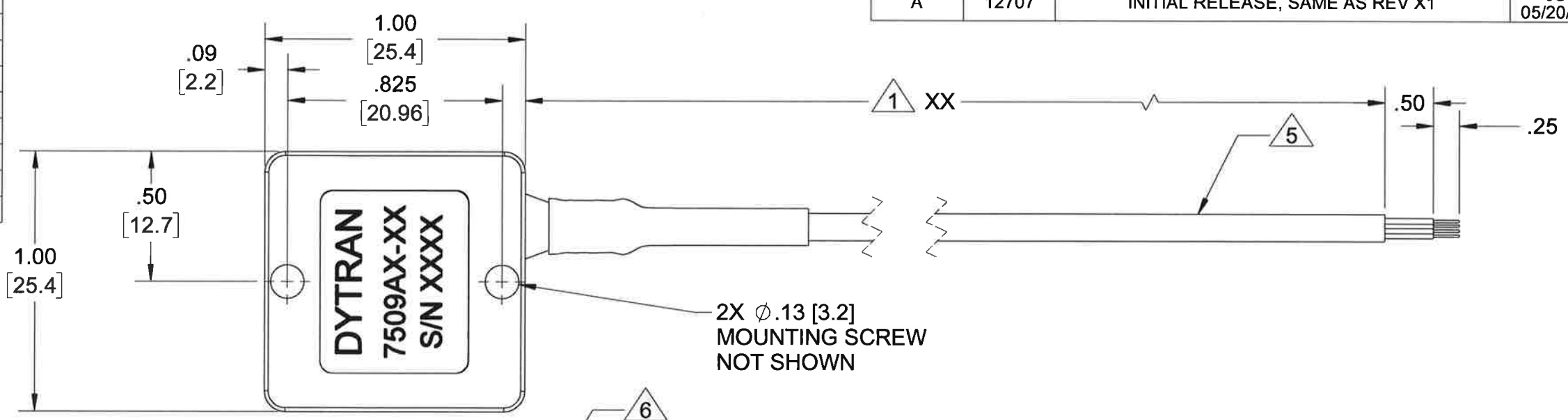
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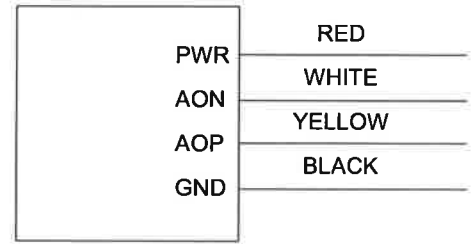
REVISIONS

| REV. | ECN | DESCRIPTION | BY/DATE | CHK | APPR |
|------|-------|---------------------------------|----------------|-----|------|
| A | 12707 | INITIAL RELEASE, SAME AS REV X1 | JS 05/20/16 | LA | LW |

| MODEL NO | RANGE |
|-----------|-------|
| 7509A1-XX | ±2g |
| 7509A2-XX | ±5g |
| 7509A3-XX | ±10g |
| 7509A4-XX | ±25g |
| 7509A5-XX | ±50g |
| 7509A6-XX | ±100g |
| 7509A7-XX | ±200g |
| 7509A8-XX | ±400g |



ACCELEROMETER



SCHEMATIC DIAGRAM

| | |
|------------|--|
| 5 | 4 CONDUCTOR, SHIELDED CABLE |
| CONDUCTORS | 30 AWG 7/38 SILVER PLATED COPPER |
| TEMP | -65°C (-85°F) TO +200°C (+392°F) |
| VOLTAGE | 600 VOLTS |
| SHIELD | SILVER PLATED COPPER BRAID, 90% MIN COVERAGE |
| JACKET | FEP, BLACK, .006/.015 WALL |
| DIAMETER | .105 MAX |

- 7 MOUNTING RECOMMENDATIONS: PREPARE FLAT MOUNTING SURFACE EQUAL OR BETTER THAN .001 TIR. (TAP 4-40 UNC-2B ∇ .200 MIN.) RECOMMENDED TORQUE 6-8 LB-IN.
 - 6 MOUNTING SCREW DYTRAN MODEL 6868 (2X) & 6688 (2X) SUPPLIED.
 - 5 CABLE, 4 CONDUCTORS, SHIELDED. SEE TABLE FOR SPECIFICATIONS.
 - 4. HOUSING MATERIAL: ALUMINUM ALLOY, ANODIZED, COLOR: BLUE.
 - 3. OPERATING TEMPERATURE: -67°F TO +257°F (-55°C TO +125°C).
 - 2. WEIGHT, LESS CABLE: 13 GRAMS MAX.
 - 1 PART NUMBER: 7509AX-XX, (XX DENOTES FEET IN LENGTH).
- 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 ±0.8 | ±1° |
| .XXX ±.010 | .XX ±0.25 | |

APPROVALS: ORIG JS, CHK LA, APP LW, DATE 01/11/16, 5/24/16, 5/25/16

DO NOT SCALE DRAWING

DYTRAN INSTRUMENTS, INC. MASTER ONLY IF IN RED Chatsworth, CA

TITLE: **OUTLINE/INSTALLATION DRAWING, 7509AX-XX SERIES**

SIZE B, CAGE CODE 2W033, DWG NO 127-7509AX-XX, REV A

SCALE: 1:4, SHEET 1 OF 1



- VARIABLE CAPACITANCE ACCELEROMETER
- DIFFERENTIAL MODE
- DC RESPONSE
- TEFLON CABLE JACKET

| | |
|---------|----|
| ENGLISH | SI |
|---------|----|

| | | | | |
|-----------------|------------|--------------------|----|--------------------|
| PHYSICAL | | | | |
| Weight, Max. | | 0.5 | oz | 13 |
| Cable | Type | Integral | | Integral |
| Mounting | Thru Holes | 2 X Ø.13 | in | 2 X Ø3.3 |
| Material | | Aluminum, Anodized | | Aluminum, Anodized |

| | | | | |
|--------------------------------------|--|-------|------------|-------|
| PERFORMANCE | | | | |
| Input Range | | ±2 | g | ±19.6 |
| Frequency Response, ±3dB | | 0-300 | Hz | 0-300 |
| Sensitivity Differential, ±10% [1] | | 2,000 | mV/g | 203.9 |
| Output Noise, Differential, Typ. | | 7 | µg rms/√Hz | 69 |
| Non-Linearity, Max. [3] | | 0.5 | % F.S | 0.5 |
| Transverse Sensitivity, Max. | | 3 | % | 3 |
| Scale Factor Calibration Error, Max. | | 1 | % | 1 |
| Zero Measured Output | | ±50 | mV | ±50 |

| | | | | |
|------------------------------------|--|-------------|------------------|-------------|
| ENVIRONMENTAL | | | | |
| Maximum Mechanical Shock | | 2000 | gpk | 19620 |
| Bias Temperature Shift, Max. [2] | | 111 | (ppm of span)/°F | 200 |
| Bias Calibration Error, Max | | .5 | % of span | .5 |
| Operating Temperature Range | | -67 to +257 | °F | -55 to +125 |
| Scale Factor Temperature Shift [2] | | -111 to 111 | ppm/°F | -200 to 200 |
| Seal | | Epoxy | | Epoxy |

| | | | | |
|------------------------------------|--|-----------|-------|-----------|
| ELECTRICAL | | | | |
| Output Common Mode Voltage, TYP | | 2.45 | VDC | 2.45 |
| Output Impedance, Nom. | | <90 | Ω | <90 |
| Operating Voltage | | +5 to +28 | VDC | +5 to +28 |
| Operating Current (AOP & AON open) | | 7 to 10 | mA DC | 7 to 10 |
| Power Supply Rejection Ratio | | >65 | dB | >65 |
| Case Isolated | | 30 | MΩ | 30 |

This family also includes:

| Model | Input Range (g) | Frequency response (Hz) | Sensitivity Differential, ±10% (mV/g) | Max.Shock (gpk) | Noise Differential (µg rms/√Hz) |
|-----------|-----------------|-------------------------|---------------------------------------|-----------------|---------------------------------|
| 7509A2-XX | ± 5 | 0-400 | 800 | 2000 | 12 |
| 7509A3-XX | ± 10 | 0-600 | 400 | 5000 | 18 |
| 7509A4-XX | ± 25 | 0-900 | 160 | 5000 | 25 |
| 7509A5-XX | ± 50 | 0-1200 | 80 | 5000 | 50 |
| 7509A6-XX | ± 100 | 0-1400 | 40 | 5000 | 100 |
| 7509A7-XX | ± 200 | 0-1750 | 20 | 5000 | 200 |
| 7509A8-XX | ± 400 | 0-2000 | 10 | 5000 | 400 |

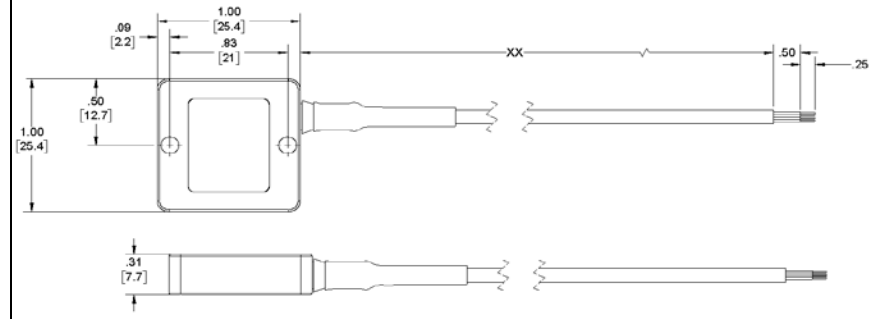
Refer to the performance specifications of the products in this family for detailed description.

Supplied Accessories:

- 1) Accredited calibration certificate (ISO 17025)
- 2) Two mounting screws model # 6868, 4-40 X .50"
- 3) Two mounting screws model # 6688, M3x0.5 X 12mm

Notes:

- [1] Single ended sensitivity is half of values shown.
- [2] Over the rated temperature range.
- [3] -90% to +90% of Full Scale.
- [4] In the interest of constant product improvement, we reserve the right to change specifications without notice.



Units on the line drawing are in inches, dimensions in brackets [] are in millimeters. Refer to 127-7509AX-XX for more information.

