

SPECIFICATIONS

1.0 MECHANICAL SPECIFICATIONS

- 1.1 DIMENSIONS IN PARENTHESIS [] DENOTE MILLIMETERS.
- 1.2 CASE MATERIAL: STAINLESS STEEL.
- 1.3 SEAL TYPE: ELASTOMER COATING.
- 1.4 MASS: 9 OUNCES (25 GRAMS) MAX.
- 1.5 MOUNTING: BUSHING TYPE
- 1.6 MOUNTING HARDWARE: BEZEL NUT, LOCKING RING, LOCKWASHER AND HEX NUT INCLUDED.
- 1.7 OPERATING FORCE: 0 TO 2 LBS. (0 TO 8.9 NEWTONS) APPLIED AT POINT SHOWN. LIMITS BY MECHANICAL STOP MAXIMUM FORCE BEFORE DAMAGE: 25 LBS. (111 NEWTONS).
- 1.8 MAXIMUM WIRE SIZE TO BE INSERTED & SOLDERED IN PIN IS 25 AWG.
- 1.9 SET SCREW TORQUE: A: 2-56 - 1.2 IN-LB B: 4-40 - 4.0 IN-LB
- 1.10 KNOB ASSY SHIPPED LOOSE. KIT INCLUDES KNOB, SET SCREW, LOCKWASHER AND WRENCH.

2.0 ELECTRICAL SPECIFICATIONS

- 2.1 ABSOLUTE MAXIMUM EXCITATION: 5.0 VDC OR AC RMS ACROSS EACH ELEMENT (0.065 WATT/ELEMENT).
- 2.2 RESISTANCE OF EACH ELEMENT: 406 $\pm$ 15% OHMS.
- 2.3 NULL OFFSET: $\pm$ 0.17V MAX FOR $\pm$ 5V APPLIED MAX.
- 2.4 NULL TEMP. COEFFICIENT: $\pm$ 0.04% OF FULL SCALE OUTPUT PER DEGREE C MAX.
- 2.5 NULL HYSTERESIS: 0.7% OF FULL SCALE MAX AFTER 5 SECONDS FOLLOWING RELEASE OF FORCE.
- 2.6 SENSITIVITY: PROPORTIONAL TO SUPPLY VOLTAGE $\pm$.55 VOLTS/LB $\pm$ 20% AT $\pm$ 5.0 VDC VOLTAGE.
- 2.7 SENSITIVITY TEMP COEFFICIENT: 0.3% PER DEGREE CELSIUS MAXIMUM.
- 2.8 RESOLUTION: INFINITE.
- 2.9 LINEARITY: $\pm$ 5% OF FULL SCALE OUTPUT. (INDEPENDENT LINEARITY)
- 2.10 OUTPUT IMPEDANCE: 200 OHMS NOMINAL.

3.0 ENVIRONMENTAL SPECIFICATIONS

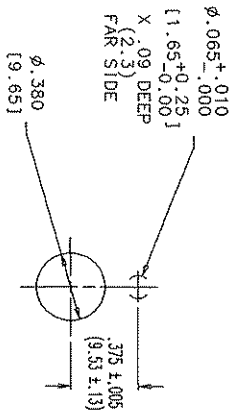
- 3.1 OPERATING TEMPERATURE RANGE
FUNCTIONAL: -40°C TO +55°C
IDEAL: 0°C TO +50°C (TEMPERATURE COMPENSATION NOT REQUIRED)
- 3.2 STORAGE TEMPERATURE RANGE: -55°C TO +125°C
- 3.3 SHOCK: $\pm$ 15 g, 11ms, HALF SINE
- 3.4 VIBRATION: 10 g PEAK, 10 TO 500 Hz
- 3.5 INSULATION RESISTANCE: 1 MEG OHM AT 50 VDC.
- 3.6 JOYSTICK MTBF 200,000 HOURS
- 3.7 THIS PRODUCT IS ROHS COMPLIANT.

IDENTIFICATION LABEL DETAIL

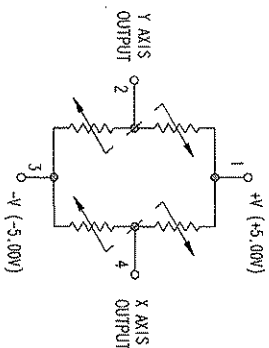
ULTRA-MSI

462C-X

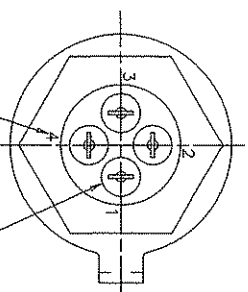
✓RoHS



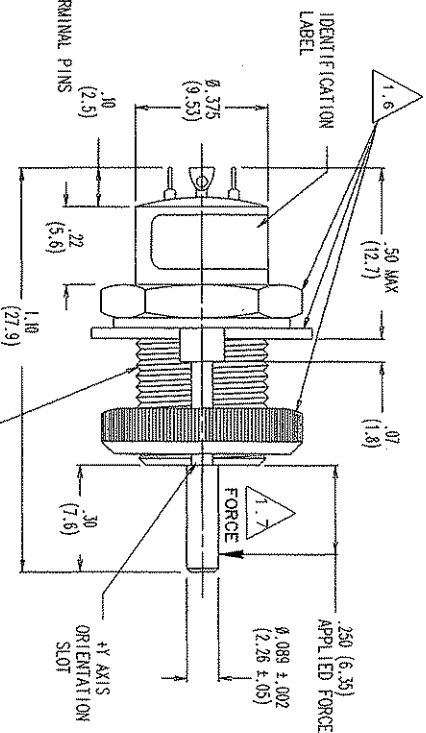
RECOMMENDED MOUNTING HOLE
SCALE 2:1



CIRCUIT DIAGRAM



NUMBERS ARE ONLY FOR REFERENCE ONLY, DO NOT APPEAR ON PART



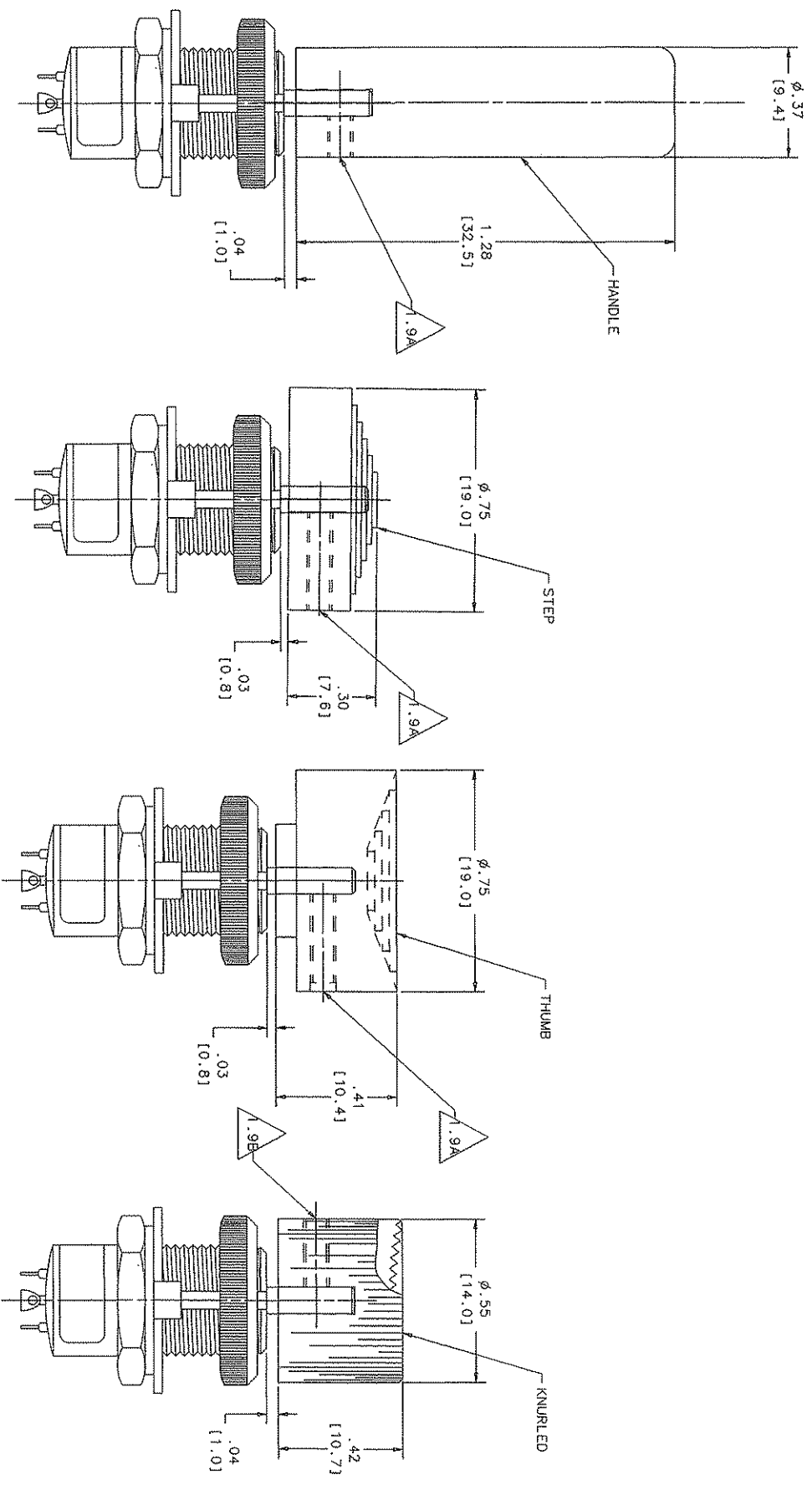
VENDOR ITEM CONTROL DRAWING

PROPRIETARY TO ULTRA ELECTRONICS - MEASUREMENT SYSTEMS INC UNAUTHORIZED COPYING IS NOT ALLOWED.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES REMOVE ALL BURRS AND BREAK SHARP EDGES .0005 TO .010 DECIMALS: .XXX ± .010 SURFACE: .63 ANGLE: .2-2	DATE	Ultr MEASUREMENT SYSTEMS INC
DRAWN WLB 3-7-08		

CHECKED WLB 7-2-08	ENGINEER JAS 7/2/2008	APPROVED CPT 7/2/08
SUBMINIATURE JOYSTICK FORCE OPERATED, MODEL 462C ROHS COMPLIANT		

SIZE C	CASE CODE NO. 22978	DWG NUMBER 34277715	REV -
SCALE 4:1 I-DEAS SHEET 1 OF 2			



462C-1

462C-2

462C-3

462C-4

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Ultra ELECTRONICS		MEASUREMENT SYSTEMS INC	
SIZE	CAGE CODE NO.	DWG NUMBER	REV
C	22978	3427715	-
SCALE 4:1		I-DEAS	SHEET 2 of 2

3427715