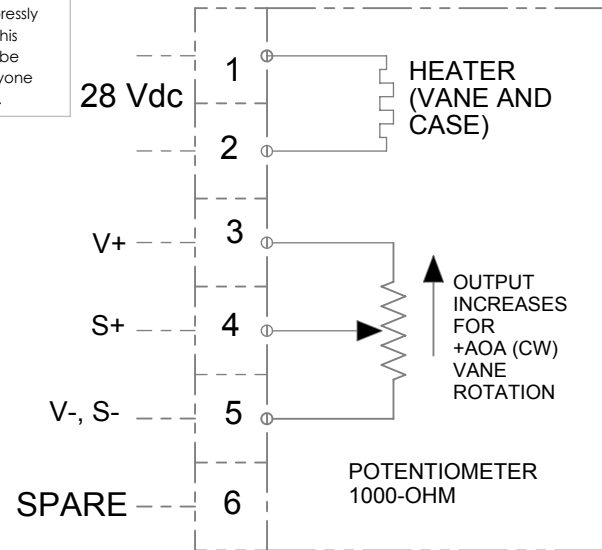


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SCHEMATIC

NOTES (UNLESS OTHERWISE SPECIFIED):

1. DESCRIPTION: ANGLE OF ATTACK (AOA) VANE WITH HEATED VANE AND CASE. SENSING ELEMENT IS A RESISTIVE POTENTIOMETER (POT). OUTPUT VOLTAGE (S+ TO S-) IS A RATIO OF THE INPUT VOLTAGE (V+ TO V-).

2. HEATER IS 28-VOLT HEATER SELF-REGULATING (I.E. RESISTANCE INCREASES AS TEMPERATURE INCREASES). MAXIMUM POWER IS ACHIEVED IN HIGH AIRFLOW AND ICING CONDITIONS.

- MAX IN-FLIGHT CONTINUOUS POWER: 100 WATTS (3.57 AMPS)
- POWER IN STILL AIR CONDITIONS: LESS THAN 60 WATTS (2.14 AMPS)
- INITIAL POWER SURGE: 15 AMPS MAX (DROPS RAPIDLY)

3. ANTI-ICING PERFORMANCE: WITHSTANDS IN-FLIGHT ICING CONDITIONS AT -30 °C, 300 KNOTS. TEST VALIDATION IN ACCORDANCE WITH FAA TSO-C16A AND BSI 2G-135 (SECTION 8.7.2).

4. WEIGHT: 1 LB MAX

5. STRUCTURAL INTEGRITY: VANE WILL NOT BREAK OFF DUE TO BIRD STRIKE OR ICE BALL IMPACT.

6. MECHANICAL TRAVEL: THE VANE HAS INTEGRAL MECHANICAL STOPS THAT ARE OUTSIDE OF THE -30° TO +45° AOA PRIMARY SENSING RANGE. MAXIMUM MECHANICAL RANGE NOT TO EXCEED -33° TO +48°.

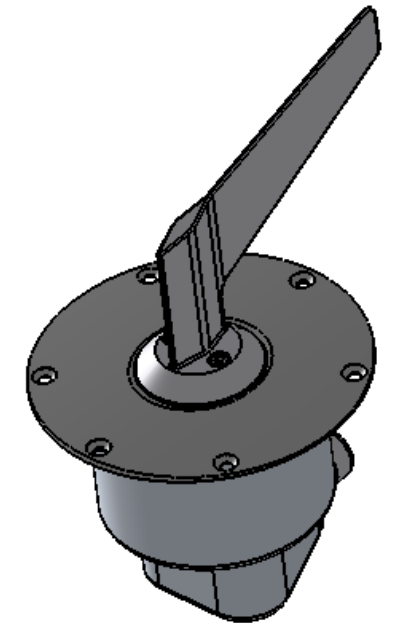
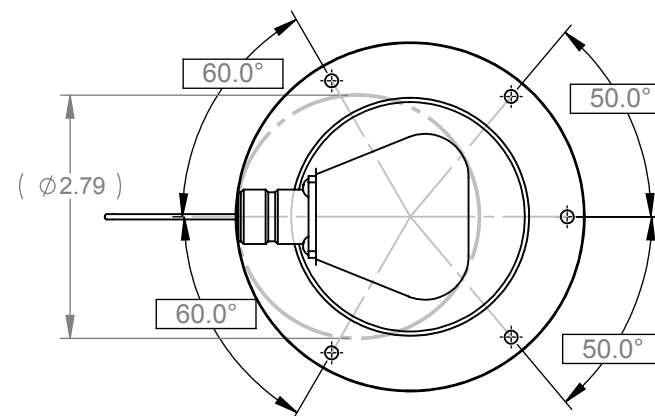
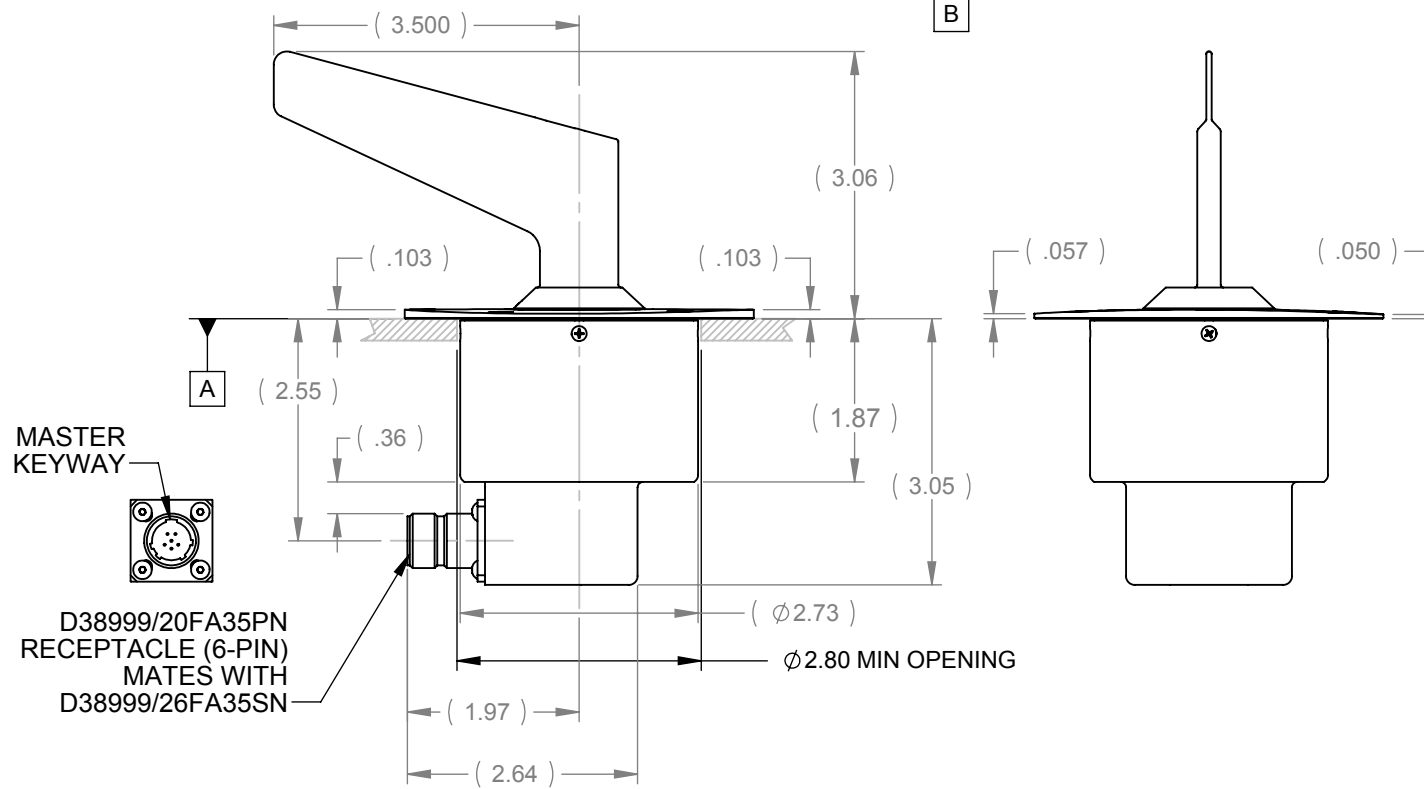
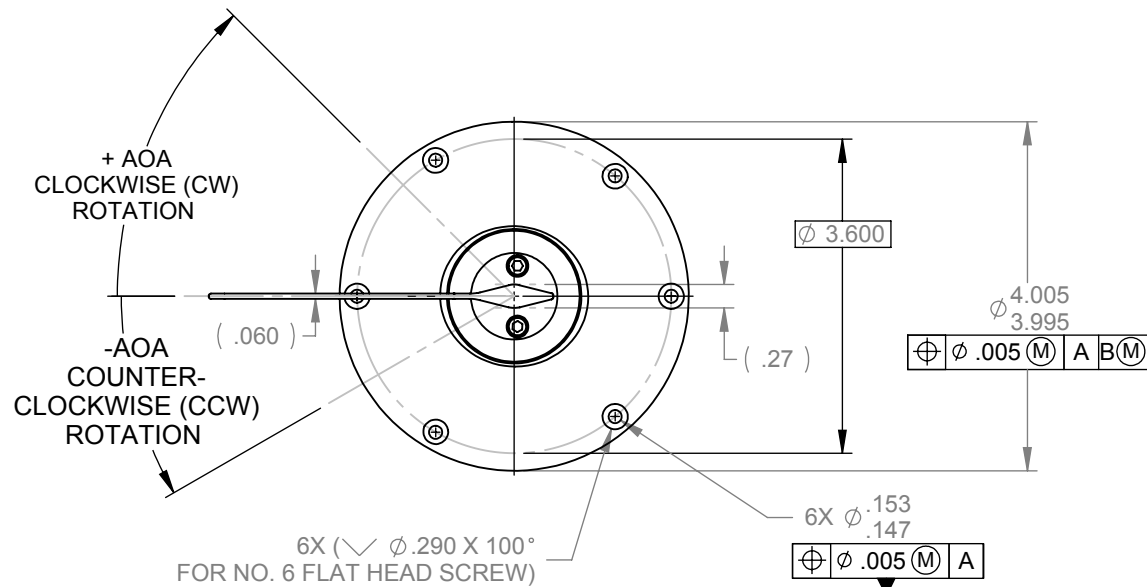
7. ELECTRICAL CHARACTERISTICS:

- POT RESISTANCE (PINS 3 AND 5): 800 - 1200 OHMS
- POT ELEMENT POWER DISSIPATION (PINS 3 AND 5): 1.0 WATT MAX AT 70 °C.
- MAX INPUT VOLTAGE (PINS 3 AND 5): 28.3 Vdc
- OUTPUT CURRENT (PIN 4, WIPER): 10 mA MAX PEAK, 1.0 mA MAX CONTINUOUS.
- OUTPUT VOLTAGE (PINS 4 AND 5) INCREASES LINEARLY WITH +AOA (CW) ROTATION OF VANE (SEE DRAWING) FROM -30° TO +45° AOA.
- OUTPUT VOLTAGE AT -AOA MECHANICAL STOP IS NOT LESS THAN 5% OF THE INPUT VOLTAGE. OUTPUT VOLTAGE AT +AOA MECHANICAL STOP IS NOT GREATER THAN 95% OF THE INPUT VOLTAGE.

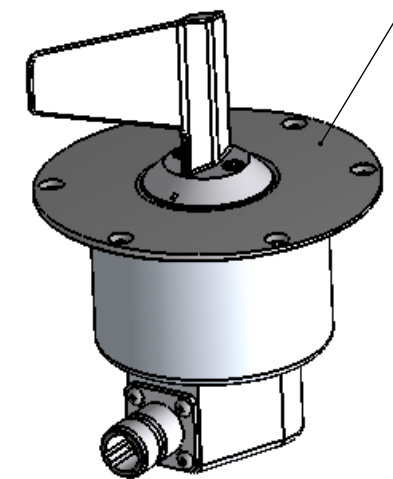
8. OUTPUT VOLTAGE EQUATION: $\alpha = 91.463 \times (VR) - 38.232$
 WHERE α = ANGLE IN DEGREES
 $VR = (\text{OUTPUT VOLTS}) / (\text{INPUT VOLTS})$

9. ACCURACY / INTERCHANGEABILITY TOLERANCES:

- A) $\pm 0.10^\circ$ OVER RANGE $+5^\circ$ TO $+10^\circ$ AOA
- B) $\pm 0.15^\circ$ OVER RANGE $+3^\circ$ TO $+5^\circ$ AOA
- C) $\pm 0.15^\circ$ OVER RANGE $+10^\circ$ TO $+18^\circ$ AOA
- D) $\pm 0.35^\circ$ OVER RANGE $+19^\circ$ TO $+45^\circ$ AOA
- E) $\pm 0.35^\circ$ OVER RANGE -30° TO $+3^\circ$ AOA



TOP SURFACE OF FLANGE IS A 3D CONTOURED SHAPE MATCHING THE FUSELAGE 3D CONTOUR



SPA PN 4239-01

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		PROJECT 197			
DRAWN		DATE		REV.	
B.P.		03-28-07		C	
APPROVALS		DIGITAL - ON FILE		HEATED ANGLE OF ATTACK VANE	
CHECKED		DIGITAL - ON FILE		SIZE B	
ENG		DIGITAL - ON FILE		CAGE CODE 34851	
MATERIAL SEE NOTES		DWG. NO. 4239		SHEET 1 OF 1	
FINISH SEE NOTES		SCALE		CAD FILE:	
CAD GENERATED DRAWING. DO NOT MANUALLY UPDATE					