SIGNAL CONDITIONER UNIT (SCU)

OVERVIEW

The Signal Conditioner Unit's (SCU) basic function is to excite the fuel probes, compensator, and temperature sensors and scale the return signals. Each SCU can interface with up to twelve (12) fuel probes and four (4) temperature sensors. It will process capacitive and resistive readings to determine the fuel heights for each probe and transmit the calculated fuel mass to the cockpit.

ENCLOSURE

- Dimensions: 7.5"x 6.3"x 2.2" (19.1cm x 16.0cm x 5.6cm)
- Weight: Approx. 2.25 lbs. (1.02kg)
- Connectors: D38999/24ZC35PN, D38999/24ZD35PN, D38999/24ZD35PA, D38999/24ZD35PB
- Material: Nickel plated aluminum

FEATURES

- Detects fuel imbalance
- Startup, continuous, and initiated Built-In-Test (SBIT, CBIT, IBIT)
- Fuel temperature measurement
- No field calibration when paired with LMS probes and sensors
- Slosh Filtering
- High and low-level detection

SYSTEM ACCURACY

- MIL-G-26988C Class III (±1% indication, ±0.5% full scale)
  - Densitometer required
  - No compensator required for one fuel type
  - Compensator required for multiple fuel types
- MIL-G-26988C Class II (±2% indication, ±0.75% full scale)
  - No compensator required for one fuel type
  - Compensator required for multiple fuel types
- MIL-G-26988C Class I (±4% indication, ±2% full scale)
  - No compensator required for multiple fuel types

OPERATIONAL TEMP RANGE

- -55°C to +75°C

INPUTS

- One SCU can excite and monitor up to twelve (12) fuel probes or compensators and up to four (4) temperature sensors. More functionality means fewer SCUs per system.
- Can communicate with up to five (5) additional SCUs for system expansion
- Dedicated ARINC 429 receive only data bus
- Up to four (4) discrete inputs

OUTPUTS

- Dedicated ARINC 429 transmit data bus
- Two 0-10V analog outputs
- Optional interface for optical low level sensor
- Up to four (4) discrete outputs

POWER REQUIREMENTS

- Input: 28VDC per MIL-STD-704
- Current draw: < 200mA
- Maximum power consump□on: 5.5W

IMPROVED SIGNAL CONDITIONER UNIT (SCU)

Precise Measurement. Optimized Performance.

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DO-160G Section	Description	Category
4	Temperature & Altitude	B2
5	Temperature Variation	A
6	Humidity	B
7	Operational Shocks and Crash Safety	B
8	Vibration	S (Curve T) R (Curve G)
9	Explosive Atmosphere	E
10	Waterproofness	W
11	Fluids Susceptibility	F
12	Sand and Dust	S
13	Fungus Resistance	F
14	Salt Fog	S
15	Magnetic Effect	Z
16	Power Input	ZXX
17	Voltage Spike	A
18	Audio Frequency Conducted Susceptibility	Z
19	Induced Signal Susceptibility	ZCX
20	Radio Frequency Susceptibility (Radiated and Conducted)	R
21	Emission of Radio Frequency Energy	M
22	Lightning Induced Transient Susceptibility	A3J3L3
23	Lightning Direct Effects	X
24	Icing	A
25	Electrostatic Discharge (ESD)	A
26	Fire, Flammability	C

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