



LIQUID MEASUREMENT SYSTEMS

SIGNAL CONDITIONER UNIT (SCU)

Product Improvement Scheduled for 2022

ORANGE FONT = IMPROVEMENTS

OVERVIEW

LMS is currently implementing significant Product Improvements to our Signal Conditioner Unit (SCU) to increase Affordability, Safety, Reliability, and Accuracy. The basic function of an SCU is to excite the fuel probes, compensator, and temperature sensors and scale the return signals.

ENCLOSURE

- Dimensions: 6.4" x 6.3" x 2.7" (16.3cm x 16.0cm x 6.9cm)
- Weight: Approx 2 lbs (0.9kg)
- Connectors: D38999/26SC35SN, D38999/26SD35PN, D38999/26SE35PN, D38999/26SD35SN
- Material: Nickel plated aluminum

FEATURES

- Affordability: Reduced Development Cost & Schedule
- Safety: Detect Fuel Imbalance
- Reliability:
 - Startup, Continuous, and Initiated Built-In-Test (SBIT, CBIT, IBIT)
 - Increased Operational Availability via Operational Fault Management (Reduced Common Mode Failures)
- Fuel temperature measurement
- No field calibration required when paired with LMS probes and sensors
- Slosh filtering
- High and Low-Level detection

SYSTEM ACCURACY

- MIL-G-26988C Class III ($\pm 1\%$ indication, $\pm 0.5\%$ full scale)
 - Densitometer Required
 - No Compensator Required for One Fuel Type
 - Compensator Required for Multiple Fuel Types
- MIL-G-26988C Class II ($\pm 2\%$ indication, $\pm 0.75\%$ full scale)
 - No Compensator Required for One Fuel Type
 - Compensator Required for Multiple Fuel Types
- MIL-G-26988C Class I ($\pm 4\%$ indication, $\pm 2\%$ full scale)
 - No Compensator Required for Multiple Fuel Types

OPERATIONAL TEMP RANGE

- -55°C to $+75^{\circ}\text{C}$

INPUTS

- One SCU can excite and monitor up to twelve (12) fuel probes or compensators and up to four (4) temperature sensors (Reduces number of SCU's per Aircraft)
- Select up to Nine (9) different tank configurations
- Up to Two (2) ARINC 429 receive only data busses
- Input: 28VDC

OUTPUTS

- Up to Two (2) ARINC 429 transmit/receive data busses
- One RS485 data bus
- One Ethernet data bus
- Customer Specific Requirement

POWER REQUIREMENTS

- Input: 28VDC per MIL-STD-704
- Current Draw: $< 100\text{mA}$
- Maximum Power Consumption: 7W



IMPROVED SIGNAL CONDITIONER UNIT (SCU)



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



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