TECHNICAL DATA SHEET

1. General

The Fuel Quantity Indication System FQIS Series 300, AS01-FQA002-00, is an active capacitive fuel quantity measuring system.

The FQIS is used to determine fuel quantity and optronic devices to detect a high and low level in aircraft tanks.

Using **state of the art micropower circuitry**, the allowable energy used to supply the active transducers within the tank is well below the specified limit.

Key features of the FQIS Series 300 System:

- **Micropower active sensor design** matching latest safety regulations
- Short and long transducer lengths possible
- Easy installation
- **High intrinsic accuracy**
- Signal conditioner with **analog and digital outputs**
- System diagnosis and modification with a personal computer
- Maintenance / simulation mode for system test
- In-field initial calibration with a personal computer
- **No recalibration needed** on exchange of transducers
- Storage of calibration profiles for various tank dimensions
- Small signal conditioner for remote or next to tank installation

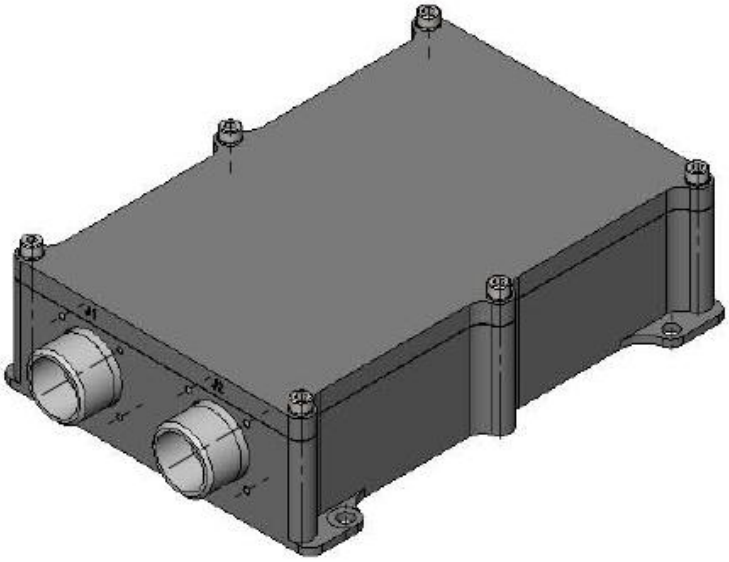
2. Operation:

Digital capacitive probe values and the level sensing signal(s) are monitored by a fuselage mounted electronic signal conditioner. Conditioned electrical signal values representing the fuel quantity and fuel level state(s) are available for cockpit indicator display(s).

The system components are:

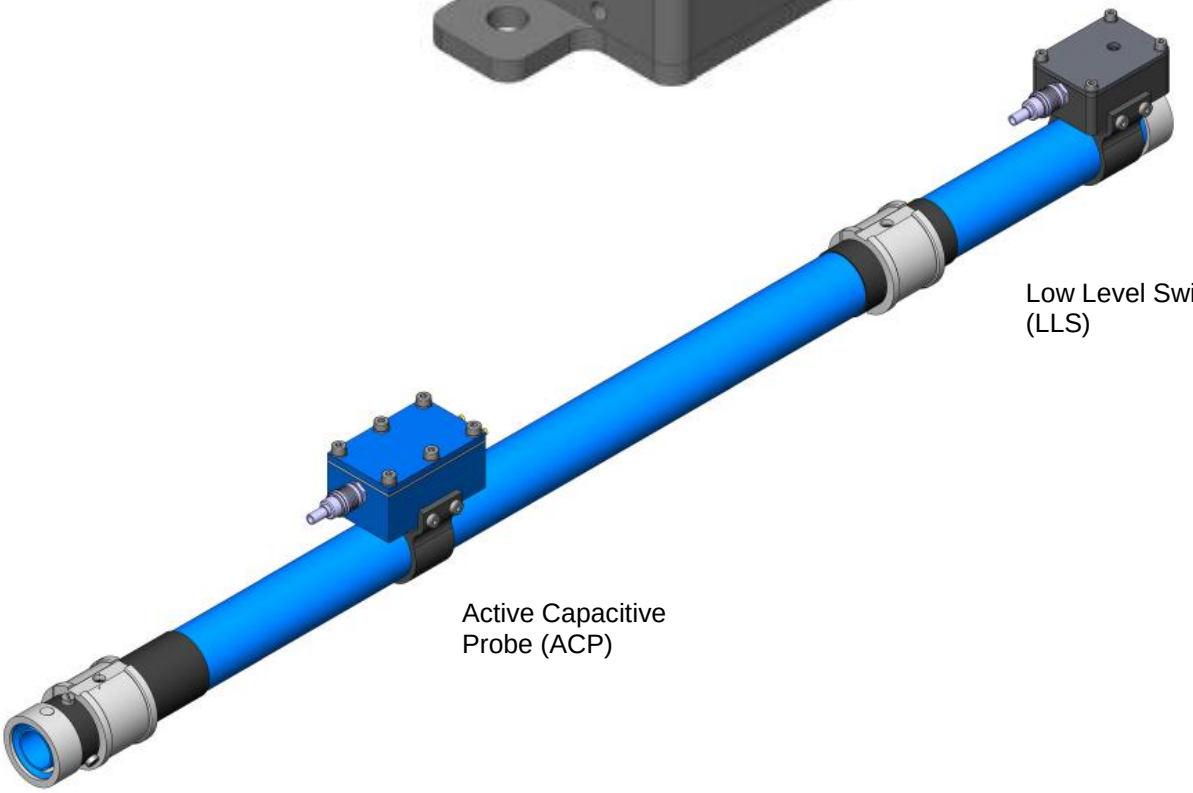
- **A**ctive **C**apacitance **P**robe (**ACP**) with mount
- **H**igh **L**evel **S**witch (**HLS**)
- **L**ow **L**evel **S**witch (**LLS**)
- **S**ensor **C**onnecting **C**ables (**SCC**)
- **S**ignal **C**onditioner **U**nit (**SCU**), inclusive Firmware

3. Dimensions



Signal Conditioner Unit (SCU)

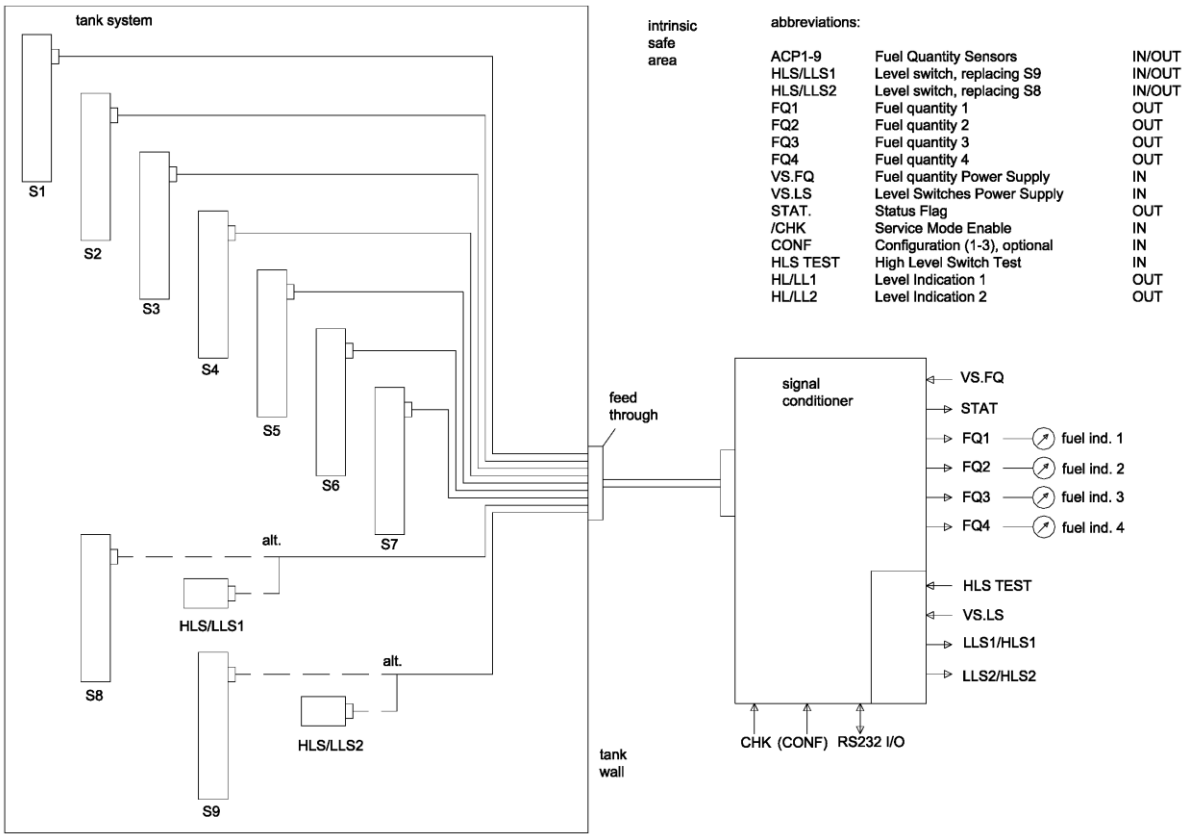
High Level Switch (HLS)



Low Level Switch (LLS)

Active Capacitive Probe (ACP)

4. Block Diagram



5. System Configuration

- One or two **Signal Conditioner Units (SCU)**
- Up to **9 transducers (ACP)**
- Up to **2 independent level switches (LS) for low and high level sensing**
- Up to **4 fuel tank output**

6. Software Configuration

The FQIS Series 300 Signal Conditioner Unit (SCU) contains built in Software.
This built in software is determined as firmware and is not field serviceable.

The built in Firmware is certified according
EUROCAE ED-12B and RTCA DO-178B Software Level C.

7. Environmental Qualification

The System has been certified to **EASA ETSO-C55**

SCU	DO-160E Env. Cat.
	(F2)BBD[(SHR)(TPE1)]EWXXXSZBABZTB[A3XXX]XXA
ACP, LS	DO-160E Env. Cat.
	(F2)BBD[(SHR)(TPE1)]AXFXXSZBAXZTB[A3XXX]XXA

8. Technical Specification

Nominal operating voltage:	28VDC
Supply voltage range:	15 to 32VDC
Current consumption:	< 0,5A
Accuracy of system, repeatable:	± 1% of full scale
Update rate:	1sec
Display delay:	pin strapable in the range of 10 to 60sec
	for 90% indicator response
FQ status output:	Open collector
	invalid fuel quantity signals => 100mA max to ground
High Level output:	Open collector, HLS in air => 100mA max to ground
	Signal may be customized delayed up to 120 seconds
Low Level output:	Open collector, LLS immersed => 100mA max to
	Signal may be customized delayed up to 120 seconds
Output value delay:	10sec to 60sec for 90% indication
Standard output:	DC voltage, 0V under range (fault condition),
	0,5 to 4,5VDC empty to full, 5VDC over range
Optional outputs:	
Current:	DC current up to four outputs:
	4 to 20mA empty/full
RS 232:	9600baud, 8Bit, even parity
Dimensions:	
SCU:	194 x 132 x 53 mm inclusive mount
ACP:	63 x 174 – 764 mm.
LLS:	53 x 32 x 23 mm exclusive mount
HLS	53 x 58 x 26 mm inclusive mount
Weight:	
SCU:	0,89 kg
ACP:	0,16 - 0,40 kg (depending upon length)
HLS:	0,050 kg incl. mount
LLS :	0,045 kg excl. mount