

# European Aviation Safety Agency

## European Technical Standard Order

**Subject:** Fuel and Oil Quantity Instruments

### **1 - Applicability**

This ETSO gives the requirements which Fuel and Oil Quantity Instruments that are manufactured on or after the date of this ETSO must meet in order to be identified with the applicable ETSO marking.

### **2 - Procedures**

#### 2.1 - General

Applicable procedures are detailed in CS-ETSO Subpart A.

#### 2.2 - Specific

None.

### **3 - Technical Conditions**

#### 3.1 - Basic

##### 3.1.1 - Minimum Performance Standard

Standards set forth in the SAE AS 405BC, Fuel and oil quantity Instruments, dated July 2001, as amended and supplemented by this ETSO:

- (i) Conformance with the following paragraphs of AS 405BC is not required: 3.1; 3.1.1, 3.1.2, 3.2 and 4.2.1.
- (ii) Substitute the following for paragraph 7: „Performance tests: The following tests, in addition to any others deemed necessary by the manufacturer, shall be the basis for determining compliance with the performance requirements of this standard“.

##### 3.1.2 - Environmental Standard

See CS-ETSO Subpart A paragraph 2.1.

As specified in the SAE Aerospace Standard AS 405-C.

##### 3.1.3 - Computer Software

See CS-ETSO Subpart A paragraph 2.2.

##### 3.1.4 - Electronic Hardware Qualification

See CS-ETSO Subpart A paragraph 2.3.

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### 3.2 - Specific

#### 3.2.1 Failure Condition Classification

See CS-ETSO Subpart A paragraph 2.4.

The failure condition classification will depend on the system on which the fuel and oil quantity instrument is installed. The classification must be determined by the safety assessment conducted as part of the installation approval. Develop each fuel and oil quantity instrument to at least the design assurance level assigned to the system on which the fuel and oil quantity instrument is installed.

## 4 - Marking

### 4.1 - General

Marking as detailed in CS-ETSO Subpart A paragraph 1.2.

### 4.2 - Specific

- a. Mark at least one major component permanently and legibly with all the information in SAE AS405C, Section 3.2 (except paragraph 3.2.b). Also, mark the component with the following information:
  - (1) The basic type and accuracy classification, and
  - (2) The fluids for which the instrument is substantiated
- b. If the fuel and oil quantity instrument includes a digital computer, then the part number must include hardware and software identification. Or, you can use a separate part number for hardware and software. Either way, you must include a means to show the modification status.

NOTE: Similar software versions, approved for different software levels, must be differentiated by part number.

## 5 - Availability of Referenced Document

See CS-ETSO Subpart A paragraph 3.