

CS 29.1337 Powerplant instruments

ED Decision 2003/16/RM

- (a) *Instruments and instrument lines*
- (1) Each powerplant and auxiliary power unit instrument line must meet the requirements of [CS 29.993](#) and [29.1183](#).
 - (2) Each line carrying flammable fluids under pressure must:
 - (i) Have restricting orifices or other safety devices at the source of pressure to prevent the escape of excessive fluid if the line fails; and
 - (ii) Be installed and located so that the escape of fluids would not create a hazard.
 - (3) Each power plant and auxiliary power unit instrument that utilises flammable fluids must be installed and located so that the escape of fluid would not create a hazard.
- (b) *Fuel quantity indicator.* There must be means to indicate to the flight-crew members the quantity, in US-gallons or equivalent units, of usable fuel in each tank during flight. In addition:
- (1) Each fuel quantity indicator must be calibrated to read ‘zero’ during level flight when the quantity of fuel remaining in the tank is equal to the unusable fuel supply determined under [CS 29.959](#);
 - (2) When two or more tanks are closely interconnected by a gravity feed system and vented, and when it is impossible to feed from each tank separately, at least one fuel quantity indicator must be installed;
 - (3) Tanks with interconnected outlets and airspaces may be treated as one tank and need not have separate indicators; and
 - (4) Each exposed sight gauge used as a fuel quantity indicator must be protected against damage.
- (c) *Fuel flowmeter system.* If a fuel flowmeter system is installed, each metering component must have a means for bypassing the fuel supply if malfunction of that component severely restricts fuel flow.
- (d) *Oil quantity indicator.* There must be a stick gauge or equivalent means to indicate the quantity of oil:
- (1) In each tank; and
 - (2) In each transmission gearbox.
- (e) Rotor drive system transmissions and gearboxes utilising ferromagnetic materials must be equipped with chip detectors designed to indicate the presence of ferromagnetic particles resulting from damage or excessive wear within the transmission or gearbox. Each chip detector must:
- (1) Be designed to provide a signal to the indicator required by [CS 29.1305\(a\)\(23\)](#); and
 - (2) Be provided with a means to allow crew members to check, in flight, the function of each detector electrical circuit and signal.