

Federal Aviation Administration, DOT

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The recorded values must meet the designated range, resolution and accuracy requirements during static and dynamic conditions. Dynamic condition means the parameter is experiencing change at the maximum rate attainable, including the maximum rate of reversal. All data recorded must be correlated in time to within one second.

Parameters	Range	Accuracy (sensor input)	Seconds per sampling interval	Resolution	Remarks
17. Yaw control surface(s) position ^{9, 18} .	Full range	±2° unless higher accuracy uniquely required.	0.5	0.2% of full range.	For airplanes fitted with multiple or split surfaces, a suitable combination of surface position sensors is acceptable in lieu of recording each surface separately. The control surfaces may be sampled alternately to produce the sampling interval of 0.5.
18. Lateral Acceleration.	±1g	±1.5% max. range excluding datum error of ±5%.	0.25	0.004g.	
19. Pitch Trim Surface Position.	Full Range	±3° Unless Higher Accuracy Uniquely Required.	1	0.6% of full range	
20. Trailing Edge Flap or Cockpit Control Selection. ¹⁰ .	Full Range or Each Position (discrete).	±3° or as Pilot's indicator.	2	0.5% of full range.	Flap position and cockpit control may each be sampled at 4 second intervals, to give a data point every 2 seconds.
21. Leading Edge Flap or Cockpit Control Selection. ¹¹ .	Full Range or Each Discrete Position.	±3° or as Pilot's indicator and sufficient to determine each discrete position.	2	0.5% of full range.	Left and right sides, or flap position and cockpit control may each be sampled at 4 second intervals, so as to give a data point every 2 seconds.
22. Each Thrust Reverser Position (or equivalent for propeller airplane).	Stowed, In Transit, and Reverse (Discrete).	1 (per engine).	Turbo-jet—2 discretes enable the 3 states to be determined. Turbo-prop—1 discrete.
23. Ground Spoiler Position or Speed Brake Selection ¹² .	Full Range or Each Position (discrete).	±2° Unless higher accuracy uniquely required.	1 or 0.5 for airplanes operated under § 125.226(f).	0.2% of full range.	
24. Outside Air Temperature or Total Air Temperature. ¹³ .	− 50 °C to + 90 °C.	±2 °C	2	0.3 °C..	
25. Autopilot/ Autothrottle/ AFCS Mode and Engagement Status.	A suitable combination of discretes.	1	Discretes should show which systems are engaged and which primary modes are controlling the flight path and speed of the aircraft.
26. Radio Altitude ¹⁴ .	− 20 ft to 2,500 ft.	±2 ft or ±3% Whichever is Greater Below 500 ft and ±5% above 500 ft.	1	1 ft + 5% Above 500 ft.	For autoland/category 3 operations. Each radio altimeter should be recorded, but arranged so that at least one is recorded each second.
27. Localizer Deviation, MLS Azimuth, or GPS Lateral Deviation.	±400 Microamps or available sensor range as installed ±62°.	As installed. ±3% recommended ...	1	0.3% of full range.	For autoland/category 3 operations. each system should be recorded but arranged so that at least one is recorded each second. It is not necessary to record ILS and MLS at the same time, only the approach aid in use need be recorded.