

Parameters	Range	Accuracy (sensor input)	Seconds per sampling interval	Resolution	Remarks
17. Yaw Control Surface(s) Position ⁸ .	Full Range	±2° Unless Higher Accuracy Uniquely Required.	0.5	0.2% of full range.	For airplanes 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.
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 alternately 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, of flap position and cockpit control may each be sampled at 4 second intervals, so as to give a data point to every 2 seconds.
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 § 135.152(j).	0.5% of full range	
24. Outside Air Temperature or Total Air Temperature ¹³ .	−50° C to +90° C	±2° C	2	0.3° C	
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.
37. Drift Angle ¹⁵	As installed	As installed	4	0.1°	
42. Throttle/power lever position ¹⁶ .	Full Range	±2%	1 for each lever	2% of full range	For airplanes with non-mechanically linked cockpit engine controls.
57. Thrust command ¹⁷	Full Range	±2%	2	2% of full range	
87. Ground spoiler position and speed brake selection.	Full Range or Discrete ..	±5%	0.5	0.3% of full range	
88. All cockpit flight control input forces (control wheel, control column, rudder pedal).	Full Range Control Wheel ±70 lbs Control Column ±85 lb Rudder pedal ±165 lbs.	±5%	1	0.3% of full range.	For fly-by-wire flight control systems, where control surface position is a function of the displacement of the control input device only, it is not necessary to record this parameter. For airplanes that have a flight control break away capability that allows either pilot to operate the control independently, record both control force inputs. The control force inputs may be sampled alternately once per 2 seconds to produce the sampling interval of 1.

¹ For A300 B2/B4 airplanes, resolution = 6 seconds.

² For A330/A340 series airplanes, resolution = 0.703°.

³ For A318/A319/A320/A321 series airplanes, resolution = 0.275% (0.088°>0.064°). For A330/A340 series airplanes, resolution = 2.20% (0.703°>0.064°).

⁴ For A318/A319/A320/A321 series airplanes, resolution = 0.22% (0.088°>0.080°). For A330/A340 series airplanes, resolution = 1.76% (0.703°>0.080°).

⁵ For A330/A340 series airplanes, resolution = 1.18% (0.703°>0.120°).

⁶ For A330/A340 series airplanes, resolution = 0.783% (0.352°>0.090°).

⁷ For A330/A340 series airplanes, aileron resolution = 0.704% (0.352°>0.100°). For A330/A340 series airplanes, spoiler resolution = 1.406% (0.703°>0.100°).

⁸ For A330/A340 series airplanes, resolution = 0.30% (0.176°>0.12°). For A330/A340 series airplanes, seconds per sampling interval = 1.

⁹ For B-717 series airplanes, resolution = .005g. For Dassault F900C/F900EX airplanes, resolution = .007g.

¹⁰ For A330/A340 series airplanes, resolution = 1.05% (0.250°>0.120°).

¹¹ For A330/A340 series airplanes, resolution = 1.05% (0.250°>0.120°). For A300 B2/B4 series airplanes, resolution = 0.92% (0.230°>0.125°).

¹² For A330/A340 series airplanes, spoiler resolution = 1.406% (0.703°>0.100°).

¹³ For A330/A340 series airplanes, resolution = 0.5° C.

¹⁴ For Dassault F900C/F900EX airplanes, Radio Altitude resolution = 1.25 ft.

¹⁵ For A330/A340 series airplanes, resolution = 0.352 degrees.

¹⁶ For A318/A319/A320/A321 series airplanes, resolution = 4.32%. For A330/A340 series airplanes, resolution is 3.27% of full range for throttle lever angle (TLA); for reverse thrust, reverse throttle lever angle (RLA) resolution is nonlinear over the active reverse thrust range, which is 51.54 degrees to 96.14 degrees. The resolved element is 2.8 degrees uniformly over the entire active reverse thrust range, or 2.9% of the full range value of 96.14 degrees.

¹⁷ For A318/A319/A320/A321 series airplanes, with IAE engines, resolution = 2.58%.