

Parameters	Range	Accuracy (sensor input)	Seconds per sampling interval	Resolution	Remarks
12a. Pitch Control(s) position (non-fly-by-wire systems).	Full Range	±2% Unless Higher Accuracy Uniquely Required.	0.5 or 0.25 for airplanes operated under § 121.344(f).	0.5% of full range.	For airplanes that have a flight control break away capability that allows either pilot to operate the controls independently, record both control inputs. The control inputs may be sampled alternately once per second to produce the sampling interval of 0.5 or 0.25, as applicable.
14a. Yaw Control position(s) (non-fly-by-wire) ⁵ .	Full Range	±2° Unless Higher Accuracy Uniquely Required.	0.5	0.3% of full range.	For airplanes that have a flight control break away capability that allows either pilot to operate the controls independently, record both control inputs. The control inputs may be sampled alternately once per second to produce the sampling interval of 0.5.
16. Lateral Control Surface(s) Position ⁷ .	Full Range	±2° Unless Higher Accuracy Uniquely Required.	0.5 or 0.25 for airplanes operated under § 121.344(f).	0.3% of full range.	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 or 0.25.
19. Pitch Trim Surface Position.	Full Range	±3° Unless Higher Accuracy Uniquely Required.	1	0.6% of full range	
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 § 121.344(f).	0.5% of full range	
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.
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 flight 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.

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

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°).

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

¹¹ For A330/A340 series airplanes, resolution = 1.05% (0.250°>0.120°). For A330 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°).

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