this type of data is typically proprietary and highly dependent on specific circumstances.

Why I can’t give a specific number with a reference:

Lack of Public Data: Aviation component failure rate data is often closely guarded by manufacturers and airlines for competitive and safety reasons. Publicly available databases (like MIL-HDBK-217) are too general. Variability: Even if I found a number in a study, it might not be applicable to all aircraft, sensor types, or operating conditions. Providing a single number would be misleading without the proper context and caveats. What I can do (which is still helpful):

Broad Range (Based on General Industry Practices):

Based on my knowledge of sensor technology and aviation maintenance practices, I can provide a very broad estimate. The Mean Time Between Failure (MTBF) for this type of sensor, assuming a well-maintained system with scheduled replacements, could potentially fall in the range of 10,000 to 100,000 hours. Important: Treat this as a very rough estimate for illustrative purposes only. Hypothetical Example (For Discussion):

Let’s hypothetically assume a specific sensor type used in a specific aircraft has a failure rate of 1 x 10-6 per flight hour. This means that for every million flight hours, you’d expect one failure. This is entirely hypothetical and does not represent actual data. The reference for this hypothetical number is “Hypothetical Example for Illustrative Purposes Only” (which isn’t a real reference, of course). Important Considerations (Reinforcing Previous Points):

Maintenance Matters: A sensor that is regularly calibrated and maintained will have a significantly lower failure rate than one that is neglected. Environment is Key: The operating environment (temperature, humidity, vibration, potential contaminants) dramatically affects sensor life. Redundancy: If the system has multiple sensors, the failure of one sensor is less critical. Regulatory Requirements: Aviation safety regulations require manufacturers to demonstrate the reliability of their systems. This often involves rigorous testing and monitoring. How to Use This Information (Responsibly):

Do not rely on the hypothetical example for any real-world decision-making. If you need actual data, you must contact the aircraft manufacturer, the sensor manufacturer, or consult with aviation safety experts. Understand that failure rates are just one factor in overall system safety. Proper design, maintenance, and operational procedures are equally important.