

LCR-300 AHRS Attitude and Heading Reference System

Expanding a highly successful system with no compromises.



This new product is an evolution from the very successful Fiber Optic Gyro based systems. The **LCR-300 AHRS** offers state of the art MEMS gyro and accelerometer technology from one of the leading MEMS manufacturing companies in aerospace. The LCR-300 continues the successful history of AHRS made by Northrop Grumman LITEF in Germany. Our exhaustive research and development has culminated in a product that delivers value to the operator due to light weight, reduced volume, precision output and unmatched performance even in high dynamic flight profiles and under rough vibration and acoustic noise conditions.

Key Features

- Meets rotary and fixed wing demands
- Directional Gyro Mode
- IRS/GNSS blended Hybrid Navigation Data
- Optional RVSM Air Data Computer

Our system for your future ...

This performance is based on unlimited attitude range and better accuracy over the entire operating spectrum, combined with precise outputs of basic attitude and heading data, body rates and body accelerations as well as air data, all delivered over ARINC 429 busses. The LCR-300 provides an attractive solution for a wide variation from small to large sized airplanes and helicopters. The extensive BITE and self-test diagnostics with optical Selftest "PASSED" indication, reduces maintenance

costs and avoids unverified removals. Operated from a single 28 Volt DC source, the LCR-300 eliminates heavy and troublesome inverters. It is qualified with no forced air cooling.

Air Data Computer

As an option Northrop Grumman LITEF GmbH further expands the utility of the AHRS product line by incorporating an RVSM capable Air Data Computer Module (ADCM). This action brings installation and weight dividends by combining two critical functions into one LRU. The vibrating cylinder sensor technology used in the ADCM provides superior stability over years. It is this stability which reduces the cost of maintenance activities and hence cost of ownership of the Air Data Computer.

Versatility for today and tomorrow

In its basic version, the LCR-300 is an Attitude and Heading Reference System. Upgraded with an embedded Air Data Module, the LCR-300A version will provide Air Speed and Baro Altitude output data in addition to the AHRS function. Long term heading reference is provided by an external Magnetometer. If available, the unit can also accept GNSS data to provide hybrid navigation data (GNSS/Inertial) with high bandwidth and low noise. The signals are output to the cockpit system on an ARINC-429 high speed data bus. Free inertial heading or DG Mode is available to the pilots via cockpit selection to overcome local geographical anomalies seen in slaved mode.

LCR-300 AHRS

Attitude and Heading Reference System

TECHNICAL DATA LCR-300/LCR-300A

SPECIFICATIONS		LCR-300	LCR-300A (future option)
• Dimensions	AHRU/ADAHRU	225 x 89 x 125 mm	225 x 89 x 125 mm
• Weight	AHRU/ADAHRU	1.9 kg	2.3 kg
• Volume	AHRU/ADAHRU	2.5 l	2.5 l
• Power	Primary	28 V DC (nominal)	28 V DC (nominal)
	Auxiliary	28 V DC (nominal)	28 V DC (nominal)
	Load	18 W	22 W
• MTBF	AHRU	25,000 hours	15,000 hours
PERFORMANCE ATTITUDE HEADING REFERENCE SYSTEM LCR-300 and LCR-300A			
• Attitude	Static (straight & level):	0.5 deg	
	Dynamic:		
	Basic Mode	2.0 deg	
	Normal Mode	1.0 deg	
	Hybrid (GNSS/Inertial)	0.1 deg	
• Mag. Heading	Slaved mode	2.0 deg	
• Mag. Heading	DG mode Drift	10 deg/h	
• True Heading	Hybrid (GNSS/Inertial)	1.0 deg	
• Angular Rates		0.1 deg/s or 1%	
• Acceleration		10 mg or 1%	
• Acceleration Range		± 10 g	
• Output		ARINC 705-5	
PERFORMANCE AIR DATA COMPUTER LCR-300A			
• Altitude/Tolerance	-3,000 ft/±14 ft; 0 ft/±14 ft; 10,000 ft/±19 ft; 20,000 ft/±26 ft; 30,000 ft/±37 ft; 40,000 ft/±56 ft; 50,000 ft/±73 ft		
• Indicated Airspeed/ Tolerance	20 kts/±5.5 kts; 35 kts/±3.0 kts; 50 kts/±2.0 kts; 75 kts/±2.0 kts; 100 kts/±1.5 kts; 250 kts/±0.7 kts; 300 kts/±0.6 kts; 400 kts/±0.4 kts		
INTERFACES			
• ARINC-429			
• RS-422 (Magnetometer and Maintenance)			
• Discretes			
• With embedded Air Data Computer LCR-300A: Pressure Ports MS 33649-06 and with MS 33649-04; Analogue 500 Ohm Outside Air Temperature (2, 3 or 4 wire); Analogue Baro Correction Input; Optional Angle of Attack Input			
CERTIFICATIONS			
• ETSO/TSO		C3d, C4c, C5e, C5f, C6d, C201	C3d, C4c, C5e, C5f, C6d, C201, C106 AC 91-85 for RVSM Operations
• DO-160-G	Temperature: -55°C to +70°C; Vibration: CAT SC 4.12 grms, CAT UG Sine on Random		
• DO-178 C Level A			
• DO-254 Level A			

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