



Description

The LNAK Series Ku-Band LNA offers premium performance and reliability in the most versatile package available for a Ku-Band LNA. The latest technology in GaAs HEMT devices produces the lowest possible noise temperatures in an uncooled LNA. In addition, the LNAK Series LNA is backed by a 36-month warranty and by more than 30 years experience in the design of high performance communications amplifiers.

The performance of the LNAK Series LNA is matched by a full range of features chosen with the communication system designer in mind. From the compact weatherproof housing to the standard combination of RF cable and circular connector DC input, the LNAK Series LNA is ready for integration into your system.

FEATURES

- High Output Power and Intercept Point Standard
- Noise Temperatures as low as 55K
- All Standard Ku-Band Frequencies available
- 36-Month Warranty
- Input and Output Isolators
- +11 to +33 VDC Operation
- Waterproof (gasket-sealed), Painted Aluminum Housing
- Reverse Voltage Protection
- Small size and light weight
- Fault Alarm (Current Sensing)
- +20 dBm P1dB
- 65 dB Gain minimum

OPTIONS

- Universal AC Power Supply

CONFIGURATIONS

- 1:1 Redundant LNA System
- 1:2 Redundant LNA System

Electrical

PARAMETER	NOTES	LIMITS	UNITS
Frequency Range	All standard bands	10.700 to 12.750	GHz
Noise Temperature	(see ordering information)	55 to 100	K @ +23 °C ambient
Gain	Full band /40MHz	65 (min.)	dB
Gain Flatness		±0.50 (max.)	dB
Gain Slope		±0.20 (max.)	dB
Gain Stability vs. Time		0.01 (max.)	dB/MHz
		±0.10 (max.)	dB/hour
		±0.20 (max.)	dB/24 hours
		±0.20 (max.)	dB/month
Output Power @ 1dB Gain Compression (P_{1dB})		+20	dBm
Output Third Order Intercept Point	Measured with two tone input; each tone @ -65 dBm input	+20 (min.)	dBm
Input/Output VSWR		1.30:1(max.)	
Input Overdrive		0	dBm CW
Out-of-Band Signal Presence	Specification-compliant	-30	dBm CW input; 14.00 - 14.50 GHz
Group Delay	/40 MHz	0.01	ns/MHz
Linear		0.001	ns/MHz ²
Parabolic Ripple		0.1	ns peak-to-peak
AM/PM Conversion	@ -10 dBm output power	0.03 (max.)	%/dB
Primary Power	(see ordering information for available options)		
Voltage		+11 to +33	VDC
Current		160 typical	mA

Mechanical

Size	width X length X height	1.90 X 6.80 X 1.50 48.3 X 172.7 X 38.1	in. mm.
Weight		1.2	lbs.
Finish		Paint	White; epoxy enamel
Feed Pressure		2	PSI
Connectors	RF Input RF Output (standard) RF Output (option) DC Voltage (AC/Fault option)	WR75 Waveguide ¹ SMA Type N ² 6-pin MS ² 6-pin MS mate	Cover flange Female Female MS3112E10-6P MS3116F10-6S

¹ Use supplied full (for mating with a grooved flange) or half (for mating with a flat flange) gasket to ensure a weatherproof seal.

² Cover connectors with electrical putty or tape to ensure a weatherproof seal.

Environmental

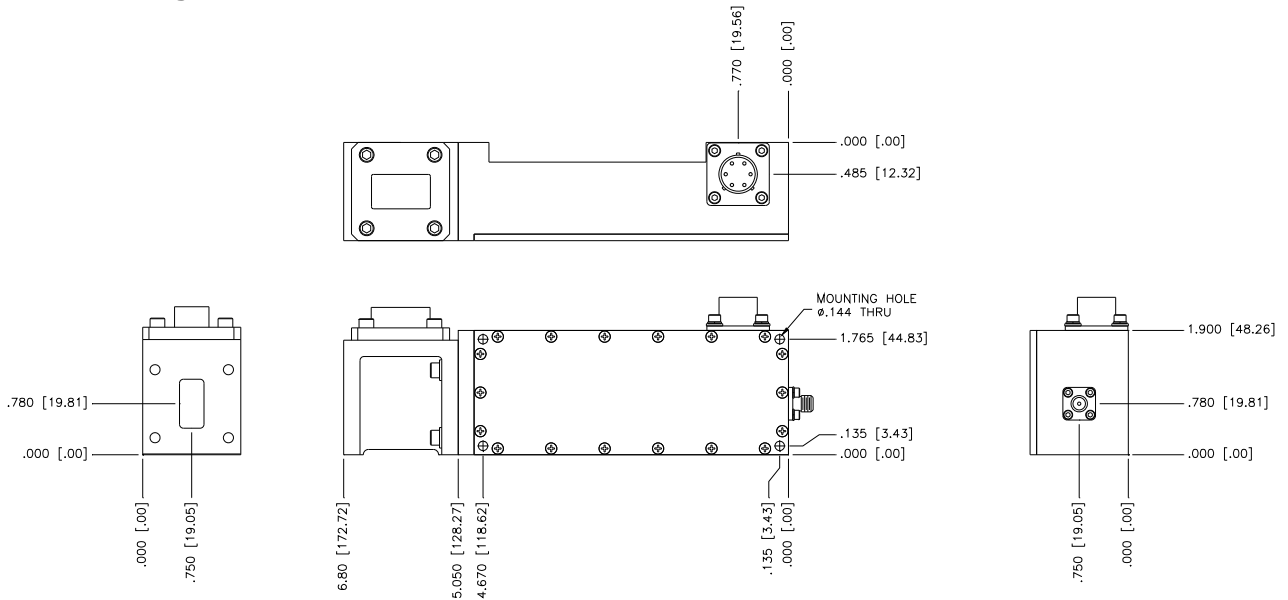
Operating Temperature	Ambient	-40 to +70	°C
Relative Humidity	Condensing	100	%



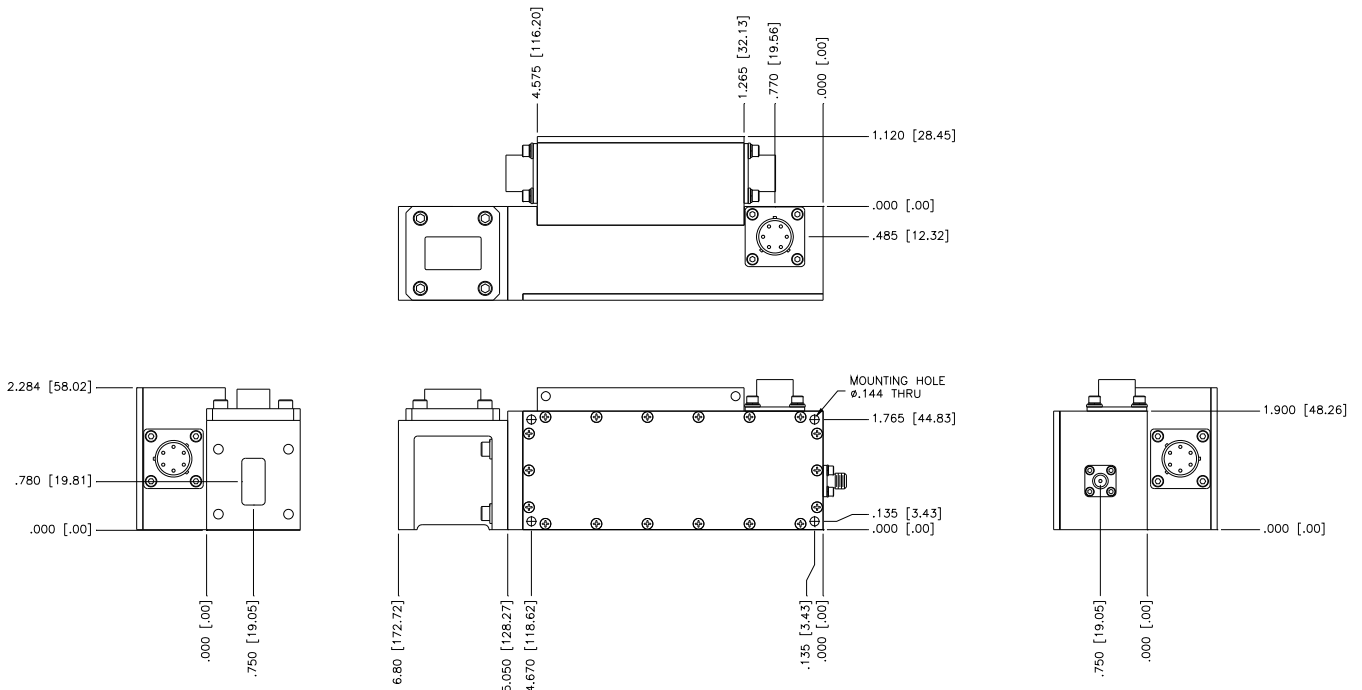
Technical Notes

Gain vs. Ambient Temperature Coefficient	-0.04 dB/°C
Noise Temperature vs. Ambient Temperature	De-rate noise temperature by 0.31K/°C for ambient temperatures over +23 °C

Outline Drawing, Standard DC Power



Outline Drawing, Optional AC Power Supply attached



PRIME POWER / ALARM INTERFACE

PIN	STANDARD	AC POWER*	DC POWER
A	+11 to +33 VDC	85 to 265 VAC LINE	-18 to -64 VDC
B	GROUND	AC GROUND	-18 to -64 VDC RTN
C	GROUND	85 to 265 VAC RTN.	GROUND
D	OPEN ON FAULT	OPEN ON FAULT	OPEN ON FAULT
E	COMMON	COMMON	COMMON
F	CLOSED ON FAULT	CLOSED ON FAULT	CLOSED ON FAULT

*AC Power option requires an add-on enclosure that houses the universal power supply.

Ku-Band LNA Configurator

L	N	A	K				6	5				
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Noise Temperature (K)

055	070	085
060	075	090
065	080	095

Gain (dB)

65

Frequency Band (GHz)

A = 10.95 - 12.75	J = 12.50 - 12.75
B = 10.95 - 11.75	K = 10.70 - 11.70
C = 11.70 - 12.20	L = 10.95 - 11.95
D = 12.25 - 12.75	M = 10.70 - 12.20
E = 11.25 - 11.75	N = 10.90 - 11.70
F = 10.70 - 12.75	P = 12.20 - 12.75
G = 10.95 - 11.70	R = 10.90 - 12.75
H = 10.95 - 12.20	S = 11.70 - 12.75

Special Notes

XX = None (SMA(f) RF Output)
 XN = Type N(f) RF Output
 CP¹ = Cable Power with Type N(f) RF Output and Cir-Mil Removed

¹ Not available with Input Voltage options A1 or A3

Input Voltage

XX = +11 to +33 VDC
 A1 = 100-240 VAC, 47-440 Hz
 A3 = -18 to -64 VDC