

# ALB129/229 Series

Compact 16W/20W/25W Ku Band  
Block-Up Converter

Designed to mount directly to the feedhorn, ideal for SOTM, fixed and maritime applications.

Innovative and excellent efficiency thermal design makes this BUC one of the most power efficient, robust and reliable to operate under harsh outdoor environment.

Easy installation with redundancy ready features to work in 1+1 redundancy mode.

## Features

- Feed mountable
- Forward power detection
- Monitoring and Control through Serial and Ethernet ports
- Fault identification and alarm generation
- LED status and alarm indicator
- Auto gain control throughout operating temperature
- Wide DC input ranging 38 to 60Vdc  
AC input voltage option available
- Wide operating temperature -40°C to +60°C
- IP65 Weatherproof
- RoHS Compliant

## Quality Assurance

100% thorough stringent quality checks in addition to well-defined Environmental Stress Screening to ensure operation in harsh outdoor environment conditions. All subjected to seal test for water ingress verification.

## Reliability

Field proven under harsh environment conditions. Agilis ODUs can withstand temperature ranging from -40°C to +60°C under 100% humidity.

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## Technical Specifications

### RF Specifications

Freq Band	Transmit	IF	LO
Standard	14.00 – 14.50GHz	950 – 1450MHz	13.05GHz
Extended	13.75 – 14.50GHz	950 – 1700MHz	12.80GHz

Output Power	P <sub>1dB</sub>	P <sub>linear</sub>
16W (ALB129)	42.0dBm (16W)	39.0dBm (8W)
20W (ALB129)	43.0dBm (20W)	40.0dBm (10W)
25W (ALB129)	44.0dBm (25W)	41.0dBm (12.5W)

<b>Small Signal Gain</b>	68dB min
<b>Gain Flatness</b>	±2dB within band ±1dB over 40MHz
<b>Gain Variation</b>	±2dB within band over operating temperature
<b>Intermodulation</b>	-25dBc max @ P <sub>linear</sub>
<b>Spurious</b>	According to EN 301 428
<b>Phase Noise</b>	-93dBc/Hz max @100KHz offset -83dBc/Hz max @10KHz offset -73dBc/Hz max @1KHz offset
<b>VSWR</b>	1.5:1 max @input 1.25:1 max @output with optional external isolator
<b>Noise Power Density</b>	Tx Band: -70dBW/4KHz max Rx Band: -142dBW/4KHz max

### AC/DC Power

<b>Prime Power</b>	38 to 60Vdc (DC Model) 90 to 264Vac, 47 to 63Hz (AC Model)
<b>Power Consumption</b>	200VA max. @16W 220VA max. @20W 240VA max. @25W

### Interface

<b>IF Input</b>	N-Type Female 50Ω F-Type Female 75Ω (option)
<b>RF Output</b>	WR75 Square Grooved

### Reference Requirement

<b>Frequency</b>	10MHz
<b>Source</b>	External Internal (Option)
<b>Ext Ref Power Level</b>	-5dBm to +5dBm
<b>Ext Ref Phase Noise</b>	-160dBc/Hz max @100KHz offset -155dBc/Hz max @10KHz offset -150dBc/Hz max @1KHz offset

### Monitor & Control

<b>Monitor</b>	BUC Temperature LO Unlock and Status Alarm with LED Indicator RF Forward Power Detection
<b>Control</b>	Gain adjustable 20dB with 0.5dB step RF Output On/Mute
<b>Communication Port</b>	Serial RS232/RS485, Ethernet (SNMP & HTTP)
<b>Transmit Redundancy</b>	Redundancy-Ready (with ext. controller unit)

### Environmental

<b>Operating Temperature</b>	-40°C to +60°C
<b>Relative Humidity</b>	Up to 100%
<b>Weatherproof</b>	IP65

### Mechanical

<b>Dimension</b> (excluding interface connectors)	L200 x W130 x H113mm (16W/20W, DC Model) L7.87" x W5.12" x H4.43" L200 x W130 x H130mm (25W, DC Model) L7.87" x W5.12" x H5.12" L200 x W130 x H203mm (AC Model) L7.87" x W5.12" x H7.99"
<b>Weight</b>	2.8Kg / 6.2lbs (16W/20W, DC Model) 3.3Kg / 7.3lbs (25W, DC Model) 4.7Kg / 10.3lbs (AC Model)

### Compliance Standard

<b>IEC 609501-2nd Edition</b>	International Safety Standard for Information Technology Equipment
<b>ETSI EN 301 489-12</b>	Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Electro Magnetic Compatibility (EMC) Standard for radio equipment and services; Part 12: Specific conditions for Very Small Aperture Terminal, Satellite Interactive Earth Stations operated in the frequency ranges between 4GHz and 30GHz in the Fixed Satellite Service (FSS)
<b>ETSI EN 301 489-1</b>	Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Electro Magnetic Compatibility Standard for Radio Equipment and Services
<b>ETSI EN 301 428</b>	Satellite Earth Stations and Systems (SES); Harmonized EN for Very Small Aperture Terminal (VSAT); Transmit-only, transmit/receive or receive-only satellite earth stations operating in the 11/12/14 GHz frequency bands covering essential requirements under article 3.2 of the R&TTE directive
<b>FCC Part 15 Class B</b>	Two levels of radiation and conducted emissions limits for unintentional radiators (FCC Mark)

NOTE: All specifications subject to change without notice  
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## Compact 16W/20W/25W Ku Band Block-Up Converter

### Standard Part List for Standalone Configuration

ITEM	PRODUCT NAME	OPTION	PART NUMBER	QTY	DESCRIPTION
1	BUC		ALB129xxx-xxx	01	BUC
2	Prime Power Input Cable	AC 220V	1001520980	01	Transient Protection Box 12-3S to Underterminated 220Vac 5A 3M
3	Cable M&C	AC Model	2502041633	01	C/A M&C Serial-ETH 14-12S to DB9 (F) 2M
		DC Model	2502041296	01	C/A M&C Serial-ETH 14-12S to DB9 (F)/DC Underterminated 2M
4	Cable M&C	ETH	2502041166	01	C/A ETH-DB9 (M) to RJ45 2M
5	Converter	RS485	6103480008	01	Converter USB to RS485
6	Isolator RF		2503160298	01	ACCS WR75 Ku-Band ISOLATOR 60W W/ O-RING
7	Mounting Accessory Set			01	Mounting screws including brackets, studs, and gasket for flange WR75

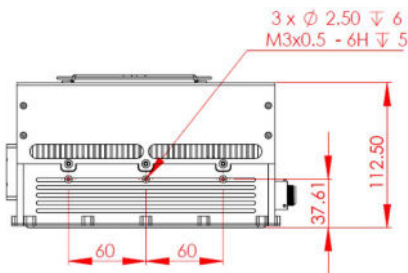
### Option Items

ITEM	PRODUCT NAME	OPTION	PART NUMBER	DESCRIPTION
1	WG Flexible	0.6m	4203490010	Flexible WG Ku band WR75 Sq Grooved to WR75 Sq Cover 0.6M
		1.0m	4203490049	Flexible WG Ku band WR75 Sq Grooved to WR75 Sq Cover 1M
		1.5m	4203490014	Flexible WG Ku band WR75 Sq Grooved to WR75 Sq Cover 1.5M
2	Cable RF	3M	2502040137	C/A RF N (M) to N (M) 3M
		7M	2502040109	C/A RF N(M) TO N(M) 7M
		10M	2502041952	C/A RF N(M) TO N(M) 10M
3	Prime Power Input Cable	AC 110V	1001520979	Transient Protection Box 12-3S to Underterminated 110Vac 5A 3M
		AC 220V / 30M	1001522100	Transient Protection Box 12-3S to Underterminated 220Vac 5A 30M
4	Cable M&C	DC / 485 / 10M	2502042303	C/A M&C Serial/ETH 14-12S to DB9 (F)/DC Underterminated 10M

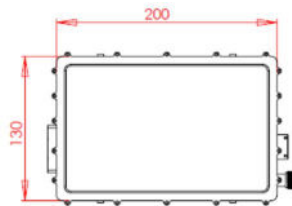
NOTE: Part list and drawing subject to change without notice  
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### Mounting Diagram

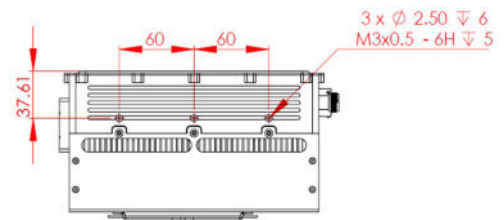
Side View – 16W/20W, DC Model



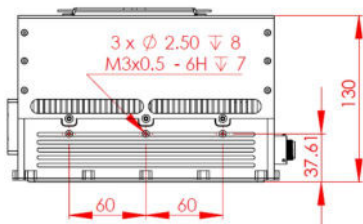
Top View



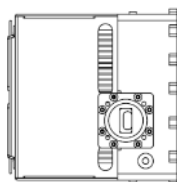
Side View



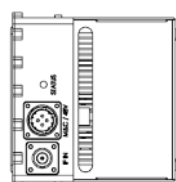
Side View – 25W, DC Model



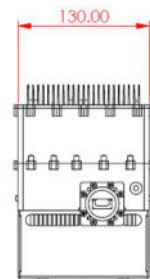
Side View – DC Model



Side View – DC Model



Side View – AC Model



# ALB129/229 Series

## Compact 16W/20W/25W Ku Band Block-Up Converter

### Standard Part List for Redundancy 1+1 Configuration

ITEM	PRODUCT NAME	OPTION	PART NUMBER	QTY	DESCRIPTION
1	Power Supply Cable	AC	1001520980	04	Transient Protection Box 12-3S to Unterminated 220Vac 5A 3M
2	Converter	RS485	6103480008	01	Converter USB to RS485
3	Cable RCU	2M	2502041503	02	C/A RCU 14-12S to 12-8S 2M
4	Cable RF	3M	2502040137	02	C/A RF N (M) to N (M) 3M
5	Cable Switch Control	3M	2502040155	01	C/A Sw Control 10-6S to 10-6P 3M
6	WG Termination		4203490015	01	WG Termination Ku Band WR75 75W
7	WG Flexible	1.0M	4203490049	02	WG Flexible Ku Band WR75 Sq Grooved to WR75 Sq Cover 1.0M
8	Cable RCU M&C	485/ETH	2502041169	01	C/A M&C 485/ETH 12-8P to DB9 (F) 2M
9	WG Switch		5903290009	01	WG Switch Ku Band WR75 Single 230Vac
10	Redundancy Control Unit		AAV6103804-T	01	RCU w 10MHz Tx ETH
11	BUC		ALB129xxx-xxx	02	Ku BUC
12	Isolator RF		2503160298	01	ACCS WR75 Ku-Band ISOLATOR 60W W/ O-RING
13	WG Rx Rejection Filter		4203490081	01	WG Filter Ku band WR75 Rx Reject
14	Cable BUC M&C	DC BUC	2502041296	01	C/A M&C Serial/ETH + PS 14-12S to DB9 (F)/DC Unterminated 2M
		AC BUC	2502041633	01	C/A M&C Serial/ETH 14-12S to DB9 (F) 2M
15	Cable M&C	ETH	2502041166	01	C/A M&C ETH-DB9 (M) to RJ45 2M
16	BUC Mounting Accessory Set			02	Mounting screws including brackets, studs, and gasket for flange WR75
17	RCU Mounting Accessory Set			01	RCU Mounting brackets including screws and studs

### Option Items

ITEM	PRODUCT NAME	OPTION	PART NUMBER	DESCRIPTION
1	WG Flexible	0.6M	4203490010	Flexible WG Ku band WR75 Sq Grooved to WR75 Sq Cover 0.6m
		1.0M	4203490049	Flexible WG Ku band WR75 Sq Grooved to WR75 Sq Cover 1m
		1.5M	4203490014	Flexible WG Ku band WR75 Sq Grooved to WR75 Sq Cover 1.5m
2	Prime Power Input Cable	110Vac / 3M	1001520979	Transient Protection Box 12-3S to Unterminated 110Vac 5A 3M
		220Vac / 30M	1001522100	Transient Protection Box 12-3S to Unterminated 220Vac 5A 30M
3	Cable M&C – 485/ETH	6M	2502041980	C/A M&C 485/ETH 12-8P to DB9 (F) 6M
		50M	2502041722	C/A M&C 485/ETH 12-8P to DB9 (F) 50M
4	Cable Switch Control	10M	2502042323	C/A Sw Control 10-6S to 10-6P 10M
		50M	2502042308	C/A Sw Control 10-6S to 10-6P 50M
5	Cable RF	7M	2502040109	C/A RF N(M) TO N(M) 7M
		10M	2502041952	C/A RF N(M) TO N(M) 10M
6	AIM		AIM28105	System Status Indoor Monitoring Unit

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1+1 Configuration Block Diagram

