PONA 2100 Series

DATASHEET | JANUARY 2012 FIBER OPTICS

Applications

- High Performance Supertrunking Links
- High Power Distribution Networks
- Redundanct Ring Architectures
- FTTx Networks.

Features

- Full Functionality 1 RU EDFA
- Low Noise Figure (Typ < 5.5 dB)
- Total Input Power Range: -10 dBm to +12 dBM
- +14 dBm to +30 dBm Output Power
- Optional Internal Optical Power Splitters
- Standard RS-232 Communications
- Standard SNMP Communication (coming soon)
- Key Lock Switch
- Standard and Optional Gain Flatness (1530 nm – 1562 nm)
- VFD Panel Status Indicator
- Low Electrical Power Consumption
- Input/Output Isolation >40/40 dB
- Polarization Dependant Gain < 0.1 dB
- Polarization Mode Dispersion < 0.5 ps

PONA 2100 Series Erbium Doped Fiber Amplifier

The EMCORE PONA 2100 Series Erbium Doped Fiber Amplifier (EDFA) is an ideal building block for OEM system integrators. The family of PONA 2100 series EDFA's is designed to meet the most demanding noise performance requirements of CATV applications, and performs all the functions required of an optical amplifier for system integration. PONA 2100 series EDFA's provide optical isolation on the input and output of the gain block for stable, low noise operation. The input and output optical signal power levels are detected for monitoring and control. The input optical signal is amplified with active gain control for a constant output power level, or with active output power control for constant gain mode. The PONA 2100 series EDFA's also provide monitors and associated alarms for all vital characteristics. The optical output of the PONA 2100 series EDFA's can be split into multiple ports by an optional external splitter.

General and Mechanical Specifications

Property	Requirement	Comments
Operating Wavelength	1532 ~ 1565 nm 1545 ~ 1565 nm	PONA 2114 – PONA2127 PONA 2130
Operating Case Temperature	-10°C to 55°C	Standard
Storage Temperature	-40°C to 85°C	Standard
Operating Humidity	20% to 85%	Non-condensing
Voltage Supply Range	100 VAC to 240 VAC 50/60 Hz -36 to –60 V DC	Standard Optional
Optical Connectors	SC/APC; SC/UPC; FC/APC; FC/UPC; E2000/APC	User Specified
Dimensions in Inches	19.0"W x 14.76"D x 1.72"H	19" Rack Mounted, 1U

Optical/Electrical Characteristics[1]

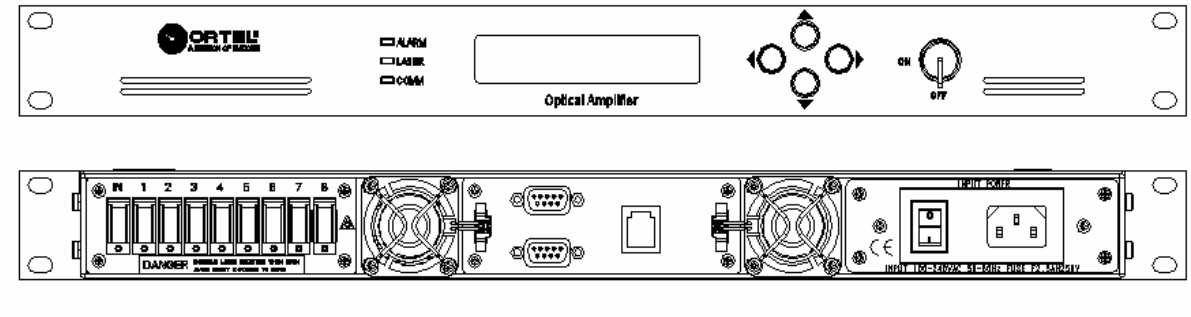
Property	Symbol (Units)	Limit	PONA Models							Comments
			2114	2117	2120	2122	2124	2127	2130	
Operating Input Power	Pin (dBm)	Max	+12	+12	+12	+12	+12	+12	+12	
Operating Input Power	Pin (dBm)	Min	-10	-10	-10	-10	-10	-10	-10	Typical (May vary for some models)
Output Power	Po (dBm)		14.0	17.0	20.0	22.0	24.0	27.0	30.0	(Note 2)
			+/-.25	+/- .25	+/- .25	+/- .25	+/- .25	+/- .25	+/- .25	
Noise Figure	NF (dB)	Typ/Max	4.5/5.0	4.5/5.0	4.5/5.0	4.5/5.0	5.0/5.5	5.0/5.5	5.5/6.0	(Notes 3, 8)
Static Gain Flatness	GF (dB)	Max	+/-0.5	+/-0.5	+/-0.5	+/-0.5	+/-0.5	+/-0.5	(Note 7)	(Note 4)
Dynamic Gain Flatness	(dB)	Max	+/-1	+/-1.25	+/-1.5	+/-2.0	+/-2.0	+/-2.0	(Note 7)	(Notes 5, 8)
Output Power Stability	(dB)	Max	+/- 0.2	+/- 0.2	+/- 0.2	+/- 0.2	+/- 0.2	+/- 0.2	+/- 0.2	(Note 6)
Power Consumption (steady state regime)	Psys (W)	Max	5	7	9	12	20	35	40	50°C Case

Notes:

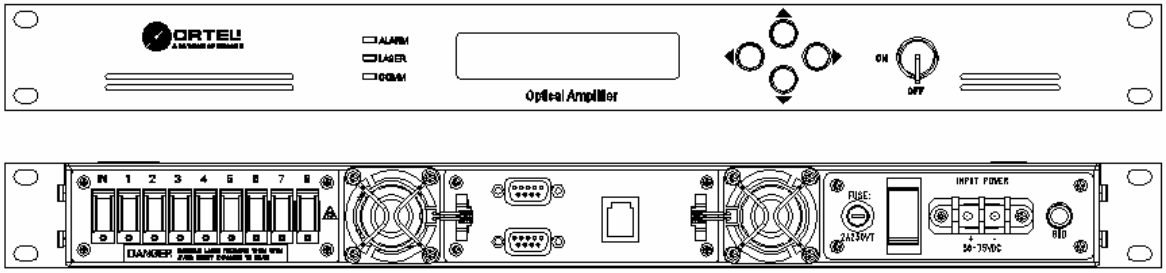
1. Unless stated otherwise, all specifications apply over the full operating temperature and humidity ranges
2. Measurement variations
3. Measured with 8 evenly spread input optical signals @ 25°C, ∑Pin ≈ 0 dBm (Measuring with 1 input optical signal with Pin ≈ 0 dBm and λ ≈ 1550 nm is also possible. (Low Noise Figure options with NF ≤ 4.0/4.5 dB are available for some models)
4. Measured with a swept Probe Signal (Pp), where Pp ≈ 0 dBm @ 25°C
5. Measured with a swept Probe Signal (Pp), and a fixed Tone Signal (Pt) @ ~ 1550 nm; (Pt ≈ Pp+20 dB; Pt + Pp ≈ 0 dBm) @ 25°C; Gain Flattened Options with ΔG ≤ +/-1.0dB are available (for some models)
6. Over polarization and temperature
7. Static and Dynamic Gain Flatness for PONA 2130 can be defined for 1545 nm ≤ λ ≤1562 nm and by special request only.
8. Specific NF and ΔG can be guaranteed at a single specified Input Optical Power Level (Pin = Pt + Pp) equal or different from 0 dBm. (Please contact your Sales Representative for more information)

Outline Drawing

AC versions shown below with 8-port option



DC versions shown below with 8-port option



Compliance Information

89/336/EEC	Electromagnetic Compatibility Directive, amended by 92/31/EEC & 93/68/EEC
73/23/EEC	Low Voltage Directive, amended by 93/68/EEC
EN 50083-2, (2001)	Cable networks for TV signals, sounds and interactive services, Part 2 Electromagnetic Compatibility for equipment.
EN 55013	Mains Conducted Emissions
EN 61000-3-2	Mains Frequency and its Harmonics, Conducted Emissions
EN 55020	Radiation from Active Equipment, Radiated Immunity
EN 61000-4-6	Immunity of Active Equipment, Radiated Immunity
EN 61000-4-3	Immunity of Active Equipment, Radiated Immunity
EN 61000-4-2	Electrostatic Discharge Immunity
EN 61000-4-4	Electrical Fast Transient / Burst Immunity
EN 60950	Low Voltage Directives
EN 60825-1	Laser Safety Requirement
EN 60825-2	Laser Safety Requirement
CDRH	Laser Safety Requirement
Fit Rate:	90% level of confidence < 1700 @ 30°C (PONA 2130)

Ordering Information

PONA 21 ☐☐ - ☐ - ☐☐☐ - ☐☐ - ☐☐ *

Optical Output Power	Output Ports	Input Voltage	Connector	GFF/ NF Options
14 - 14 dBm	**1**	**AC** – 90-260V 50/60 Hz	**SC –** SC/APC (Default Option)	**00 -** Standard
17 - 17 dBm	**2**	**DC** – 48 V	**FC** - FC/APC (Default Option)	**01 –** Gain Flattened Option
20 - 20 dBm	**4**	**2DC –** Redundant 48 V	**EC** - E2000/APC	**02** - Low NF Option
22 - 22 dBm	**8**		**TC** - SC/UPC	**03** – Gain Flattened AND Low NF Option
			GC - FC/UPC	
24 - 24 dBm	**16**			
27 - 27 dBm				
30 - 30 dBm				

Notes:

1. For ordering PONA ***preamplifiers*** please contact your Sales Representative
2. Only some models can be order with Gain Flattened and/or Low NF options. (-01, -02, and –03 suffixes). ***Please contact your Emcore Sales Representative for details***

Laser Safety Information

This product meets the applicable requirements of 21 CFR 1010 & 1040 and is classified as a Class IV laser product based on the maximum optical output power shown below. During use as intended, the laser energy is fully contained within the fiber network such that there is no accessible laser radiation and would meet the requirements for a Class I laser product. The laser product report has been submitted to the CDRH and the accession number is expected by October 2006.

Wavelength = 1530 ~ 1561 nm (dependant on input source)

Maximum Output Power = 1.0 W (single output, 30 dBm model)