

HA5100 Series
1550nm Erbium Doped Fiber Amplifier

Technical Specification

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1.0 PRODUCT DESCRIPTION

HA5100 series is a CATV booster optical amplifier with gain spectrum band within 1540~1565nm. This kind of optical amplifier is designed for the application of single channel or 1~8 continuous ribbon channels (ITU wavelength). Generally, fiber CATV system operates in single wavelength that has no strict requirement on gain flatness. HA5100 booster amplifier is featured with low NF, high-saturated output power. It is applicable for central bureau, sub-bureau and line relay, as well as other optical communication network. HA5100 is applied most commonly and widely compared with other optical amplifier in CATV system.

Huatai is the famous manufacturer of optical amplifier. HA5100 optical amplifier adopts the world's top class pump laser and America OFS erbium-doped optical fiber. Perfect APC, ACC and ATC control, excellent design in the ventilation and heat-dissipation ensure the long life and high reliable work of pump laser. RS232 and RJ45 offer serial commutation and SNMP network management port. The LCD at the front panel offers the work index of all equipment and warning alarm. The laser will switch off automatically if optical power is missing, which offers security protection for the laser. All the optical port of optical amplifier can be installed in the front panel (also can be in the back panel if customers specify).

2.0 PRODUCT FEATURE

- 1540~1563nm operating bandwidth
- Low noise, high output, high reliability
- APC、ACC、ATC controlled selection (HA5100/P)
- Powerful RS232 supervisory instruction
- Three exterior option: 1U (19" stander), 3D (12.4", 3U, Desk-type) and modulator
- 1U and 3D exterior, offering status appearance and diagnosing fault with LCD, standard RS232 communication interface, SNMP network management function
- Application of 3D models to adapt to laboratory
- Excellent P/P ratio in area

3.0 MAIN APPLICATION

- AM CATV
- Digital CATV
- DBS & MMDS
- FTTP
- FTTx PON
- Laboratory application

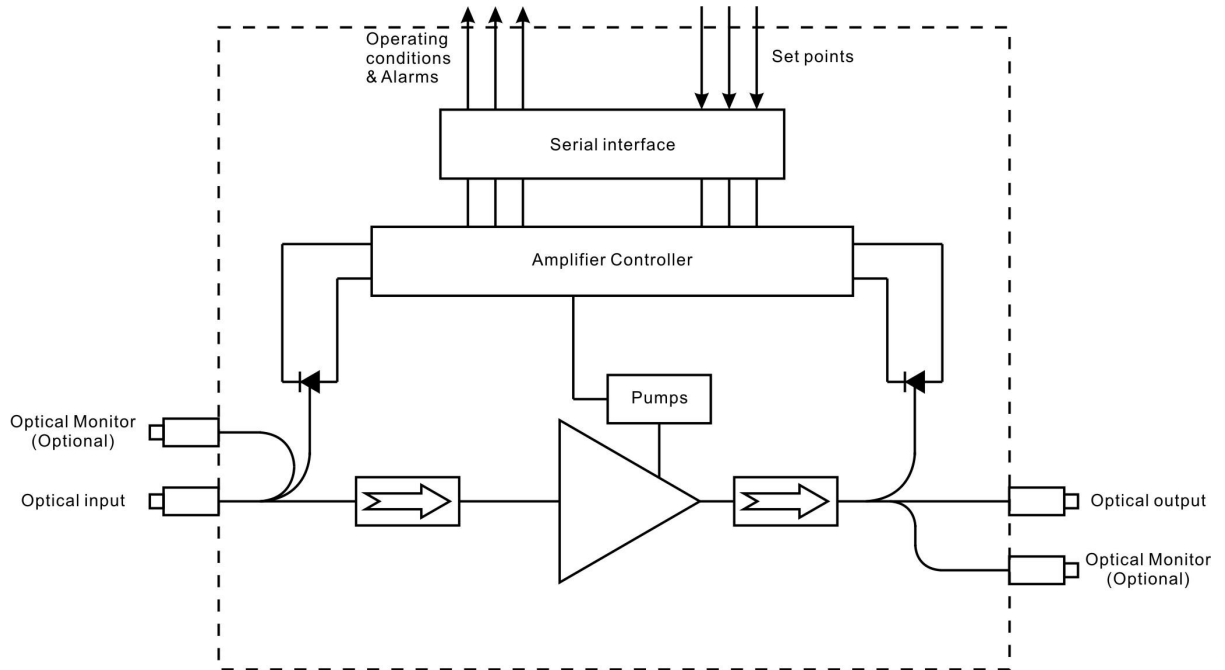
4.0 Technique index

Performance		Index			Supplement	
		Min	Typ	Max		
Optic feature	Operation wavelength range (λ)	(nm)	1540		1563	CATV
	Input power	(dBm)	-10		+10	
	Maximim output power ¹⁾	(dBm)	+10		+26	Pin=0dBm
	Output power adjustable range	(dBm)	-6		0	HA5100/P
	Number of output ports		1		8	SC/APC
			1		16	LC/APC
	Difference of each output power	(dB)	-0.5		+0.5	
	Noise figure (Pin=0dBm)	(dB)			6.3	HA5126
	Polarization dependence loss	(dB)			0.3	
	Polarization dependence gain	(dB)			0.3	
	Polarization mode dispersion	(ps)			0.3	
	Input/ output isolation	(dB)	30			
	Pump power leakage	(dBm)			-30	
Echo loss	(dB)	55			APC	
General feature	SNMP network management interface		RJ45			
	Communication interface		RS232			
	Power supply	(V)	90		265	220VAC
			30		72	-48VDC
			23		25	+24VDC
	Power consume	(W)			50	
	Work temp.	($^{\circ}$ C)	-5		65	
	Storage temp.	($^{\circ}$ C)	-40		80	
	Relative humidity	(%)	5		95	
	Size (W) \times (D) \times (H)	(mm)	483 \times 368 \times 44			1RU (19")
315 \times 391 \times 133			3D (12.4", desk-type)			
399 \times 244 \times 165			Out-door			

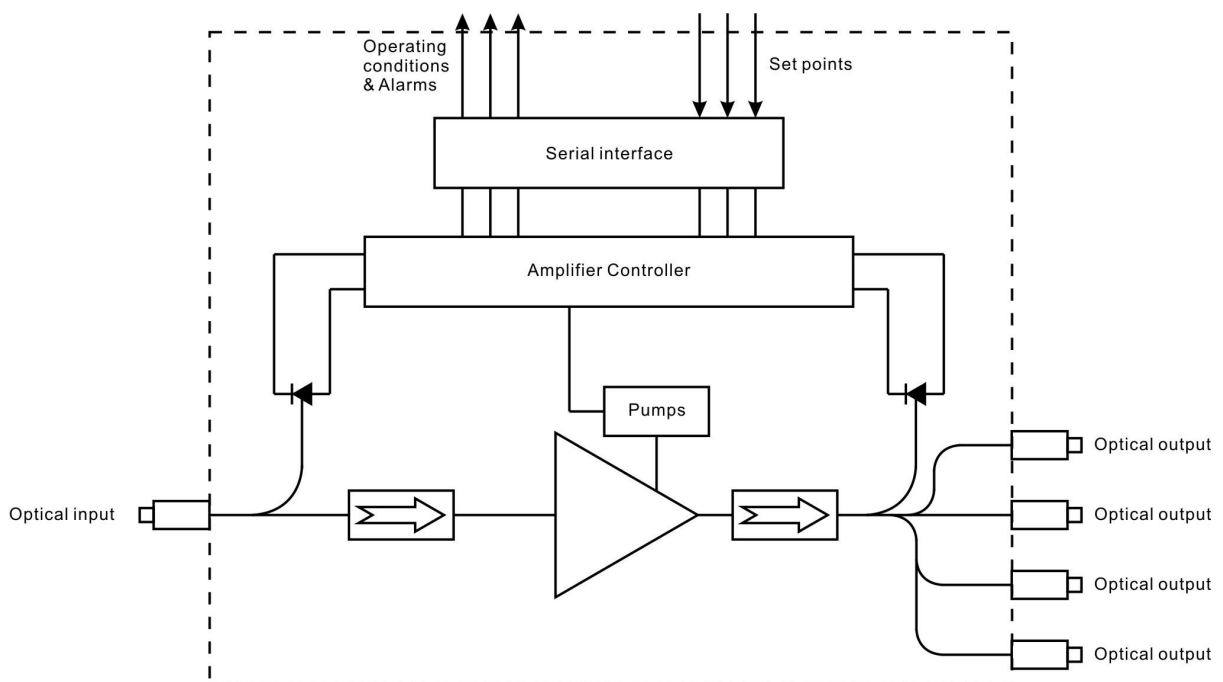
Remark: Output power can be customized by user

5.0 Optical/electrical schema

5.1 Optical port mode M4 (With input & output monitor port)



5.2 Optical mode O4 (Four ways optical output)



6.0 PRODUCT SERIES

Model	Output power Max (dBm) Pin=0dBm	Noise figure (dB) Pin=0dBm	Input power range (dBm)			Function
			Min.	Typ.	Max.	
HA5113/ON	≥13	4.0	-10	0	+10	With SNMP network management, output power is not adjustable
HA5114/ON	≥14	4.1				
HA5115/ON	≥15	4.2				
HA5116/ON	≥16	4.3				
HA5117/ON	≥17	4.5				
HA5118/ON	≥18	4.8				
HA5119/ON	≥19	5.0				
HA5120/ON	≥20	5.3				
HA5121/ON	≥21	5.5				
HA5122/ON	≥22	5.8				
HA5123/ON	≥23	6.0				
HA5124/ON	≥24	6.3				
HA5125/ON	≥25	6.5				
HA5126/ON	≥26	6.8				
HA5120/PN	≥20	5.3	-10	0	+10	With SNMP network management, the output optical power adjustable 0~ -6dB
HA5121/PN	≥21	5.5				
HA5122/PN	≥22	5.8				
HA5123/PN	≥23	6.0				
HA5124/PN	≥24	6.3				
HA5125/PN	≥25	6.5				
HA5126/PN	≥26	6.8				

7.0 Model explanation

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Product series	Operating bandwidth		Product type		Saturation output power		Function		Network management		Number of optical port		Exterior		Optical port position		Connector		Power supply	
Amplifier of communication class	5	1540~1563nm CATV	1	BA	13	13dBm	0	Without	0	Without	01	1 port	1U	19" 1RU	F	Front panel	FA	FC/APC	22	220VAC
			2	LA	14	14dBm	P	Optical power adj.	N	With	02	2 ports	3D	Desk-type	B	Back panel	FP	FC/UPC	11	110VAC
	4	C-Band 1528~1565nm	3	PA	15	15dBm					04	4 ports	OD	Out-door			SA	SC/APC	48	-48VDC
			4	High Power	16	16dBm	G	Gain adj.			08	8 ports	OEM	Appearance user customized			SP	SC/UPC		
	6	L-Band 1570~1610nm	5	VGA	17	17dBm					16	16 ports							LA	LC/APC
			7	MSA	18	18dBm					M2	2 ports, without input & output monitor	2U	19" 2RU			LP	LC/UPC		
	7	C+L-Band	8	FTTP with CWDM, for FTTx PON	19	19dBm					M4	4 ports, with input & output monitor	ML	Modulator						
					8	Bi-direction EDFA	20	20dBm												
					21	21dBm														
					22	22dBm														
					23	23dBm														
					24	24dBm														
					25	25dBm														
					26	26dBm														