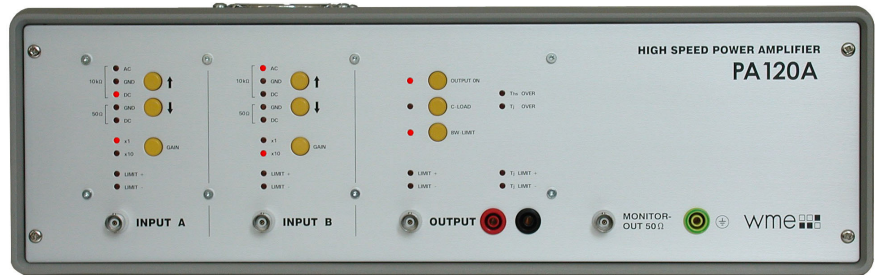


## High Speed Power Amplifier PA120A

- Bandwidth: DC-1,5 MHz
- Slew-Rate: 250 V/ $\mu$ s
- Load current: > 10 A<sub>p</sub>
- Offset: < 3 mV
- Sophisticated limiting and protection concept



### Application Range:

- Research
- Development (in particular power electronics)
- Pulse physics
- Component testing
- Quality assurance
- Measurement and test engineering

PA120A is a high speed DC-coupled power amplifier featuring power bandwidth of 1,5MHz.

The output stage of PA120A provides output voltages ranging from -30V to +30V, whereas load currents of  $\pm$  4A and peak load currents up to  $\pm$  10A are available.

The amplifier comes with two input channels; their signals are added together. This allows e.g. for providing an AC-signal with a DC-offset. Another example would be superimposing of the wanted signal by a disturbing signal. Input resistance (50 $\Omega$  / 10k $\Omega$ ) as well as coupling mode (AC / GND / DC) and gain (x1 / x10) can be set for each input channel separately.

LED indicators at the inputs (LIMIT + / LIMIT -) signalise overmodulation of the input stage.

The power output stage is protected against overload and overtemperature.

The supply voltage of the output stage is varied depending on junction temperature of its transistors (T<sub>j</sub> LIMIT + / T<sub>j</sub> LIMIT -). This method allows for achieving high output currents even at small output voltages.

Monitoring of the junction temperature also makes a fast current limitation unnecessary, thus allowing for very high peak output currents (> 10A). If either the junction temperature exceeds 125°C (T<sub>j</sub> OVER) or the maximum heatsink temperature is exceeded (T<sub>hs</sub> OVER), the output of the amplifier will be disconnected.

If the output voltage level exceeds its positive or negative limit, the appropriate output limit indicator LED lights up (LIMIT + / LIMIT -). The output voltage will be then reduced, preventing overmodulation of the power output stage.

## • Technical Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Comment
Absolut maximum ratings:						
Input voltage ( $R_I$ 10k $\Omega$ )	$V_{I10}$	-90		+90	$V_P$	
Input voltage ( $R_I$ 50 $\Omega$ )	$V_{I50}$		15		$V_{RMS}$	
Electrical characteristics:						
Input voltage ( $R_I$ 10k $\Omega$ , GAIN x1)	$V_{I10-1}$	-30		+30	$V_P$	
Input voltage ( $R_I$ 10k $\Omega$ , GAIN x10)	$V_{T10-10}$	-3		+3	$V_P$	
Input voltage ( $R_I$ 50 $\Omega$ , GAIN x1)	$V_{T50-1}$	-30		+30	$V_P$	max. 15 $V_{RMS}$ !!
Input voltage ( $R_I$ 50 $\Omega$ , GAIN x10)	$V_{T50-10}$	-3		+3	$V_P$	
Lower limiting frequency AC	f (-3dB)		15		Hz	
Output voltage	$V_O$	-30		+30	$V_P$	$R_L \geq 7,5\Omega$ , $f \geq 10kHz$
Load current	$I_{ODC}$	2	2,2		A	f=0Hz
Load current	$I_{OAC}$	4	4,5		$A_P$	f $\geq$ 10kHz, square
Load current	$I_{OAC}$	6,3	7		$A_P$	f $\geq$ 10kHz, sinus
Pulsed load current	$I_{OP}$	10	12		$A_P$	$t_p \leq 20\mu s$ , $D \leq 0,2$
Output resistance	$R_O$		0,1		$\Omega$	
Output resistance Monitor Out	$R_{OM}$		51		$\Omega$	
Frequency response	f (-3dB)		0..1,5		MHz	$R_L = 50\Omega$
Frequency response BW-LIMIT	f (-3dB)		0..300		kHz	$R_L = 50\Omega$
Slew-Rate	SR	200	250		V/ $\mu s$	$R_L = 50\Omega$
Output offset voltage	$\Delta V_{OO}$	-3	1,5	+3	mV	
Mains voltage	$V_{LINE}$	207	230	253	$V_{AC}$	
Mains frequency	$f_{LINE}$	45	50	65	Hz	
Power consumption	$P_{LINE}$	25		300	W	
Input current	$I_{LINE}$			1,6	A	
Mains fuse			T2,5A			
Ambient temperature (operation)	$T_{AMB}$	0	20	35	$^{\circ}C$	
Storage temperature	$T_S$	-25		+85	$^{\circ}C$	
Width	W		470		mm	
Height	H		153		mm	
Depth	D		300		mm	
Weight	m		10,5		kg	

Specifications are subject to change without notice.