

Upgrade Options

ASC500 Basic Version Upgrade Options		upgrades		
		z controller	AFM controller	closed loop scanning
Art. Nr.		1013331	1013332	1008999
Interface				
z voltage output	-10 .. +10 V, 18 (+16) bit, 200 kS/s uni-/bipolar, output limiter, slewrate control	•		
high frequency section	2 x 16 bit, 50 MS/s ADC with continuous signal amplification		•	
	2 x monitor output of preamplified signal		•	
	2 x 16 bit, 50 MS/s DDS-DAC, oscillation excitation		•	
	2 x SYNC output with fixed 10 V amplitude		•	
Closed Loop Scanning (optional)				
sensors	interferometric (FPS 19" SLIMLINE) or position triggered scanning			•
coordinate system	global			•
Z Controller				
type	digital PI, anti wind-up	•		
resolution	18 bit, up to 34 bit for small control range	•		
bandwidth	50 kHz	•		
control signal	any internal signal channel	•		
features	external modulation input, setpoint modulation, invertable	•		
	feedback gain and output polarity, P/I gains in physical units	•		
Phase Locked Loop (PLL)				
features	2 P/I controllers with graphical interface		•	
frequency resolution	0.14 μ Hz		•	
frequency range	1 kHz .. 500 kHz		•	
Q Control				
type	electronic, phase controlled		•	
efficiency	decrease or increase of Q by factor 10 typical		•	
Second Pass Mode				
working principal	2nd pass with height offset or different scan parameter set		•	
parameters	height offset, wait time, slew rate, alternative DAC, alternative setpoint		•	
application	MFM, SGM		•	
Lock-In				
low frequency Lock-In	1 mHz .. 20 kHz		•	
modulation	all DAC channels		•	
demodulation	any internal signal		•	
integration time	up to 128 periods		•	
usage	spectroscopy, vibrational analysis, Hall probe etc.		•	
high frequency Lock-In	1 kHz .. 500 kHz		•	
integration time	up to 512 periods		•	
usage	AFM cantilever signal, tuning fork signal etc.		•	
Crosslink				
functionality	two generic PI loops, input/output for all ADC/DAC channels map any internal signal to any arbitrary output channel		•	•