

eLockIn205/2 - current Specification

GENERAL PARAMETER

Functions	Lockin Amplifier
	Spectrum Acquisition
	Oscilloscope
Remote Control	TCP-IP
Special Features	Dual Harmonic, Dual Input, Dual Reference Synchron Mode up to 10 MHz
Display	Color TFT - 16.51 cm (6.5")

LOCKIN AMPLIFIER SPECIFICATION

General	Number of Phases	4 simultaneously acquired phases	
	Dynamic Reserve	> 135 dB	
	Input Noise	< 4 nV _{rms} /Hz ^{0.5} @ 100 kHz & 10 kHz	
	Time Constants	1 μs (Sync) or 0.1 ms ... 1 ks	
	Full Scale Sensitivity	10 nV ... 10 V in 1-2-5 sequence	
	Phase Resolution	0.0001°	
Signal Input	Type	single-ended (A), dual input (A&B) or differential (A-B)	
	Connector	BNC	
	Coupling	DC or AC (f _{-3dB} = 2 Hz)	
	Sampling Rate	> 500 MSPS	
	Converter Resol.	16 Bit	
	Damage Threshold	+/- 12 V (in ON state) +/- 2 V (in OFF state)	
	Full Scale Input Ranges	High dynamic: ± 3.6 V _{rms} Normal: ± 360 mV _{rms} Low noise: ± 35 mV _{rms}	
	Time Constants	100 μs to 1 ks in 1-2-5 steps	
	Syncron filter	1 to 200 periods in 1-2-5 steps	
	Filter Characteristic	Butterworth	
	Gain Deviations	< 1 % between Dynamic Ranges	
	Gain accuracy	@ 20 °C : 0.5 %	
	Impedance	1 MΩ 15 pF	
	Input Noise τ = 1 ms 50 Ω @ 100 kHz	high dynamic: < 300 nV _{rms} /Hz ^{0.5} normal dynamic: < 30 nV _{rms} /Hz ^{0.5} low noise: 8 nV _{rms} /Hz ^{0.5}	
	Reference Output	Internal Oscillator	1 Hz .. > 10 MHz
		Sampling Rate	160 MSPS
Converter Resolution		14 bit distributed on Full scale and on 1/10 Full scale (switch)	
Frequency Resol.		10 mHz	
Freq. Accuracy		+/- 50 ppm from 0 °C to 70 °C	
Output Voltage		< 0.1 mV _{rms} ... 7 V _{rms}	
Reference Input	Output Noise	< 100 nV/Hz ^{0.5} (< 1 MHz) < 300 nV/Hz ^{0.5} (< 10 MHz)	
	Frequency	1 Hz .. 10 MHz	
	Amplitude	TTL or sine signal > 50 mV _{rms}	
	PLL Locking Time	< (100 ms+ 10 Cycle)	
	Phase Error	< 4 deg @ f = 1 kHz	
Impedance	TTL: 1 MΩ		
	small sine signals: 1 MΩ large sine signals: 1 kΩ		

SPECTRUM ACQUISITION SPECIFICATION

General	Display channels	4
	Frequency range	1 Hz to (20 MHz -10 Hz)
	Modes	Logarithmic, linear
Channels	Acquisition	Single spectra Integrated spectra Continuous spectra
	1 st Lockin	RA, PhiA, XA, YA
	Auxiliary IN	AD1 to AD8
	Internal data	f, Uac, In
	Auxiliary OUT	DA5 to DA8
	2 nd Lockin	RB, PhiB, XB, YB for "A&B" input Rn, Phin, Xn, Yn for "A" & "A-B" input
Special Features	Mathematical	Noise
	Measurement	Single point positions & Q-factors
	Storage	Reference channel

OSCILLOSCOPE

General	Data Channels	4
	Sampling rate	39.062 kHz
	Time scaling	20 μs to 5 s per division
Channels	1 st Lockin	RA, PhiA, XA, YA
	Auxiliary IN	AD1 to AD8
	Internal data	f, Uac, In
	Auxiliary OUT	DA5 to DA8
	2 nd Lockin	RB, PhiB, XB, YB for "A&B" input Rn, Phin, Xn, Yn for "A" & "A-B" input
	Mathematical	Noise
Special Features	Ring buffer	

OUTPUTS & AUXILIARY CHANNELS

Standard Dedicated Outputs	Channels No.	4
	Output Range	± 10 V
	Sampling Rate	1 MSPS (in test edition: 39 kHz)
Auxiliary A/D Input	Data	User-selectable out of all channels
	Channels No.	8
	Input Range	± 10 V
	Sampling Rate	39.062 kHz
Auxiliary D/A Output	Resolution	24 Bit
	Channel No.	4
	Output Range	± 10 V
	Sampling Rate	1 MSPS (in test edition: 39 kHz)
Resolution	18 Bit	

DATA STORAGE

Internal Hard drive	64 MByte
External drive	USB-Stick
Editing function	Clear data, Copy data to USB
Storage type	ASCII data, numbered

GENERAL

Power supply	110/230 V
Power cord frequency	50/60 Hz
Dimensions	19" housing - rack mount on request 0.15 (H) x 0.47 (W) x 0.25 (D) m
Weight	5.2 kg
Warranty	2 years
Includes	Manual & Certificate, USB stick, Low noise BNC cable, power cord
Optional	LoL mode
Optional	I/U-converters



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