



## Specifications

**For Aurora Scientific Model: 605A**

Model #	605A
<b>System Specifications</b>	
Instruments Included in System	601A – PC with 64-bit Windows 7 603C – 16-bit Data Acquisition Card 604A – Signal Interface 615A – Dynamic Muscle Control and Analysis Software
Aurora Scientific Instruments Controlled	300 series length controllers, 400 series force transducers, 700 series stimulators, 800 series apparatus
<b>601A PC Specifications</b>	
Processor [GHz]	3.3, 6 cores
RAM [GB]	8
Hard Disk [TB]	1
DVD ROM	DVD-R, CD-R
<b>603C Data Acquisition Specifications</b>	
Analog Input	Number of Channels: 8 Resolution: 16 bits Sampling Rate: 250,000 samples per second
Analog Output	Number of Channels: 2 Resolution: 16 bits Sampling Rate: 833,000 updates per second
Digital I/O	Number of Ports: 6 <sup>1</sup> Type: TTL
<b>604A Signal Interface Specifications</b>	
Connector	BNC – isolated, male
A/D Inputs	8: Length In, Force In, Aux 1-6 In
A/D Outputs	2: Length Out, Force Out
Digital I/O	6 total: 2 Inputs: Trg In 1, Trg In 2, 4 Outputs: Trg Out 1, Trg Out 2, Stimulator, Inhibit
<b>615A Software Specifications</b>	
Operating System	Windows XP/Vista/7/8/10
Included Software	610A – Dynamic Muscle Control 611A – Dynamic Muscle Analysis 612A – Dynamic Muscle Analysis – High Throughput
<b>610A DMC Specifications</b>	
Data Channels Recorded	Length, Force, Stimulation Timing, Auxiliary 1-6 <sup>2</sup>
Main Window	Length and Force Readouts, Elapsed Time, Time since Last Test Display: graph of test results with zoom function Controls: Offset Force, Offset Length, Units, Comments

<sup>1</sup> 6 available on 604A Signal Interface, 24 available on data acquisition card

<sup>2</sup> Auxiliary Channels: can be configured to suit, common usages are: Temperature, pH, O<sub>2</sub>, etc.



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	Buttons for: Show/Hide Protocol, Show/Hide Data, Start Sequence, Start Test, Stop Test, Analysis and Instant Stim Dropdown menus: File, Setup, Protocol, Sequencer and Help
Protocol Functions	Length: Step, Ramp, Sine, Sum-Sine Force: Step, Ramp, Sine, Sum-Sine Stimulation: Stimulus-Train, Stimulus-Tetanus, Stimulus-Twitch Control: Trigger, Stop
Sequencer	Allows protocols to be run in a pre-determined manner with control of the time between each protocol
Live Data Monitor	Real-time data output of chosen channels. Displays up to 30 minutes of data – zoom function, time base control, graph scales, freeze display
Analysis <sup>3</sup>	Load last data or saved data Display: Length, Force, Stimulation Plot Zoom Controls: Time Displayed and Offset sliders, Unzoom Calculated Values: Max Force, Time of Max Force, Min Force, Time of Min Force, Force at Time Zero, Max Length, Time of Max Length, Min Length, Time of Min Length, Length at Time Zero
<b>611A/612A DMA/DMA-HT Specifications</b>	
Main Window	Display: graph of test results with zoom function Plot Controls: Unfiltered/Filtered Force, Unfiltered/Filtered Length, Force Units, Length Units Buttons for: Invert Force Data, Open Data File, Filter Setup, Normalization, Muscle Analysis, Work Loop, Time Derivative, Line Fitting, Export Data Dropdown menus: File, High Throughput and Help
Analysis	Filter Setup: set cutoff frequency and order of Butterworth low-pass filter Normalization: set reference values for calculating $L/L_{ref}$ , $F/F_{ref}$ , Stress, Strain Muscle Analysis: provides statistics of displayed data Work Loop: calculates work loop data from sinusoidal tests Time Derivative: calculates velocity and $dF/dt$ Line Fitting: fits linear or exponential functions to Force and Length data
High Throughput Analysis	Provides high speed analysis of a group of data files, data is output in tabular form and can be exported Analysis Types: Force-Frequency, Force-Time, Position-Time, Fatigue Calculated Values: Maximum, Minimum, Time to % Contraction, Time to % Relaxation, Integration, Max Rate of Contraction, Time to % of Max Rate of Contraction, Max Rate of Relaxation, Time to % of Max Rate of Relaxation, Starting Baseline, Ending Baseline, Average Rate of Contraction, Average Rate of Relaxation
Export Analysis	Exports analysis to: Excel, MATLAB, Maple, SAS, other software packages

<sup>3</sup> Limited analysis available in 610A program, complete Analysis available in 611A and 612A programs