



SYSTEMIC BLOOD PRESSURE <  
 PRESSURE-VOLUME LOOPS <  
 ELECTROPHYSIOLOGY (CEG) <

Scisense offers full data acquisition and analysis solutions for in vivo/in vitro Pressure, Pressure-Volume, and Cardiac Electrogram (CEG) studies. Packages include Scisense hardware, catheters, and PONEMAH Life Sciences Suite from Data Sciences International (DSI™). The PONEMAH Life Sciences Suite includes an 8 or 16 channel USB-based A/D system, the PONEMAH real-time acquisition interface P3P Plus, and a selection of real-time analysis modules. An Open Database Connectivity (ODBC) feature is included which generates MicroSoft®Excel® spreadsheets with summary data during acquisition. PONEMAH software also has both a replay and a review mode for viewing, validating, and analyzing saved data.

## SCISENSE COMPONENTS



Pressure



Rodent Pressure-Volume



Large Animal Pressure-Volume



Electrophysiology

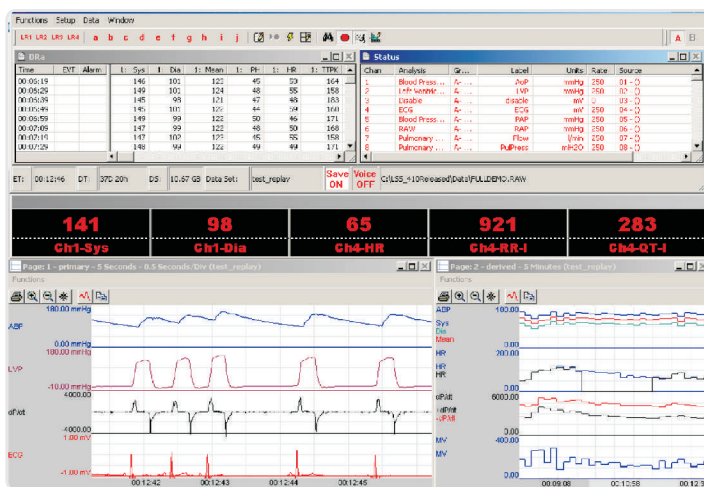
## PONEMAH COMPONENTS



ACQ-16 Acquisition Interface Unit - USB

The ACQ-16 is part of the Life Science Suite, and is designed specifically to interface to the PONEMAH Physiology Platform software. The ACQ-16 digitizes up to 16 pre-conditioned, high-level signals and connects to a computer via a USB port. This makes data acquisition possible with either a desktop PC or a laptop computer.

The slim line chassis can be free-standing on a table or mounted in a standard 19" laboratory rack. The inputs can be configured to accommodate signals in the range of +/-2.5, +/- 5 and +/-10 volts.



PONEMAH P3P Plus Physiology Platform Core Software

The PONEMAH Physiology Platform Core Software is capable of displaying, saving and analyzing up to 128 primary signals in real-time. The software architecture is modular in nature and allows for custom design and configuration without the need for any programming. This versatility means that the same system can be used for a variety of applications beyond hemodynamics and cardiac function (i.e. isolated organ studies, respiratory studies, G.I. motility studies).

A number of unique acquisition features exist including data security options, creation of study protocols and templates, definition and integration of event markers, the ability to parse data from large files into a smaller file, and data reduction capability. An Open database connectivity (ODBC) feature is compatible with Microsoft EXCEL and Microsoft Access. ODBC will generate an Excel workbook containing the text-based files generated for a specific experiment.

## ELECTROPHYSIOLOGY MODULE PARAMETERS

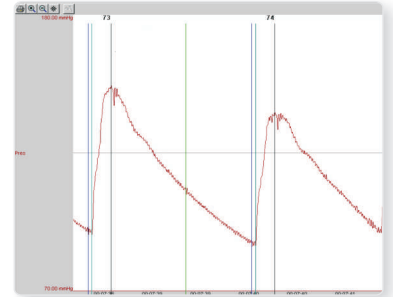
VARIABLE	DESCRIPTION	VARIABLE	DESCRIPTION
QR-I	QR Interval	ERP	Effective Refractory Period
QT-I	QT Interval	QRS	QRS, P Widths
RR-I	RR Interval	QTD	QT Dispersion
PR-I	PR Interval	HR	Instantaneous Heart Rate
ST-I	ST Interval	R-H,P-H,T-H	R, P, T, Wave Height



Cardiac Electrogram (CEG) trace and derivative with respect to time

## BLOOD PRESSURE MODULE FUNCTIONAL PARAMETERS

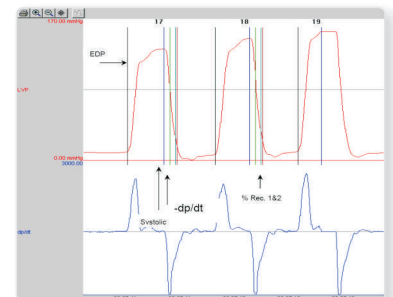
VARIABLE	DESCRIPTION	VARIABLE	DESCRIPTION
SYS	Systolic Pressure	+/-dP/dt	Max and Min Derivative of Pressure
DIA	Diastolic Pressure	%REC	Percent Recovery Time
Mean	Mean Blood Pressure	NPMN	Non-Pulsatile Mean
Mean2	Mean 2 [(Systolic +2(Diastolic))/3]	Q-A	Q-A Interval
PH	Pulse Height	Rnum	Rate Number
HR	Instantaneous Heart Rate	Rint	Rate Interval
TTPK	Time to Peak Pressure	Rbpm	Heart Rate
ET	Ejection Time		



Mouse Carotid Arterial Pressure trace

## LEFT VENTRICULAR PRESSURE MODULE FUNCTIONAL PARAMETERS

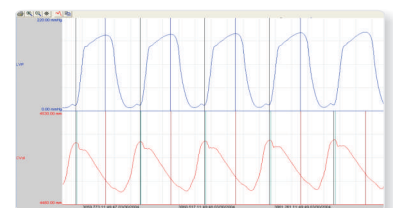
VARIABLE	DESCRIPTION	VARIABLE	DESCRIPTION
SYS	Max Ventricular Systolic Pressure	+/-dP/dt	Max and Min Derivative of Pressure
LVEDP	LV End Diastolic Pressure	dP-A/B/C/D	dP/dt at defined LVP
Min	Minimum Ventricular Pressure	NPMN	Non-Pulsatile Mean
TTI	Tension-Time Index	Q-A	Q-A Interval
DP	Developed Pressure	IVT	Iso Volumetric Time
HR	Instantaneous Heart Rate	TTI-T	Tension-Time Index Period
CI	Contractility Index	Tau	Time Constant of Isovolumic Relaxation
RT1/2	Variable Relaxation Times 1 and 2		



Mouse Left Ventricular Pressure trace and derivative with respect to time

## LEFT VENTRICULAR CARDIAC VOLUME MODULE FUNCTIONAL PARAMETERS

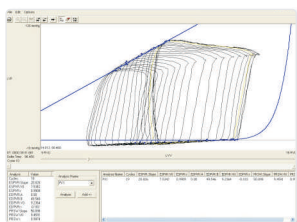
VARIABLE	DESCRIPTION	VARIABLE	DESCRIPTION
Vmin/max	Minimum & Maximum Volume	Ped, Ved	Pressure & Volume at LVEDP
TPFR	Time to Peak Filling Rate	%EF	Ejection Fraction
SV	Stroke Volume	PFR	Peak Filling and Emptying Rate
-dV	Volume at LVP Minimum	SW	Stroke Work
Pes, Ves	Pressure & Volume at Max Elastance	Ea	Arterial Elastance



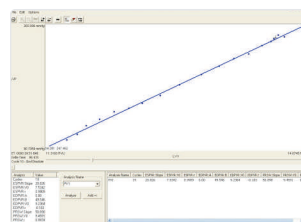
Mouse Left Ventricular Pressure and Volume trace

## PRESSURE-VOLUME ANALYSIS PARAMETERS

VARIABLE	DESCRIPTION
ESPVR	End-Systolic Pressure-Volume Relationship
EDPVR	End-Diastolic Pressure-Volume Relationship
PRSW	Pre-load Recrutable Stroke Work



ESPVR and EDPVR calculation



Slope calculation for PRSW

**scisense**  
advancing micro-sensor technology™

tel: 519.680.7677  
fax: 519.680.7718

3397 White Oak Rd.,  
Unit 3, London, Ontario  
Canada N6E 3A1

[www.scisense.com](http://www.scisense.com)



Check out my new genes!

MOUSE'N GENES

The mouse'n genes was conceived, as many great ideas, on a restaurant napkin. As a serious discussion around transgenic mice evolved, so did Sammy Scisense, as he is affectionately known today.