

SP430 Scisense Pressure Module

Precision Blood Pressure Measurements for In Vivo Animal Studies

Scisense solid-state Pressure Catheters now Compatible with Transonic Flowmeters

Now measure blood flow and pressure simultaneously in one console. The SP430 Scisense Pressure Amplifier Module for Transonic 400-Series Flowmeter Consoles (T402 & T403) is a specialized amplifier for compatible Pressure catheters and Transducers to measure arterial or venous blood pressure in the research setting. The Module accepts two Pressure Transducers for simultaneous measurement of two channels of pressure with separate controls for zero offset balance of each Transducer. This Module incorporates an internal barometric pressure reference for use with fully sealed chronic pressure implants. Analog output signals (via front panel BNC connectors or the Console's rear terminal block) are recorded simultaneously with your chosen data acquisition system. This enables all blood flow and pressure data to be recorded in one file for later detailed analysis.

NUMEROUS APPLICATIONS

- Small Animal Cardiovascular – even mice!
- Pulmonary Vascular Resistance (PVR): simultaneous analysis of pressure and flow waves enable detailed characterization of the vascular system identifying lung impedance, asthma/obstructive vasculopathies, Pulmonary Embolism (PE) models.
- Renal Hypertension Studies
- Peripheral cardiovascular - adjusting drug therapy for hemodynamic support in dose response studies
- Ventricular assist device animal study using multiple combination of pressures and flows placed at different locations to detect efficacy and safety of tested mechanical circulatory support.
- Langendorff Isolated Heart Studies: sync and record perfusion and chamber pressure(s) with perfusate flows.



The 400-Series with SP430 Pressure Module and TS420 Perivascular Flow Module is able to simultaneously record LIMA blood pressure and blood flow.

Channels from top to bottom: ECG Lead 1, ECG Lead 2, LIMA pressure, LIMA blood flow, Mean LIMA blood flow on CPB modeling LAD occlusion by thrombus.

Presented data, courtesy of Drs. Filip Konecny and Dimitri Starostin.

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THE MEASURE OF BETTER RESULTS.

SP430 Pressure Amplifier Module Specifications

GENERAL FEATURES

Size 5.125" h x 2" w x 9.062" d

Weight: 1.9 lbs.

Module fits 1 Console slot (10HP) in T402 or T403 Consoles (place in slot 3,4,5 or 6)

Power: Derives input power from 400-Series Consoles. Installation in a Console is required.

TRANSDUCER COMPATIBILITY

- FTH-SERIES: SMALL ANIMAL PRESSURE CATHETERS
 - 1.2F, 1.6F Single and Dual Sensor Catheters
 - 1.9F (available as PV catheter only - pressure detection only with SP430)
 - 3.5F for large animals
- FDH-SERIES: LARGE ANIMAL PRESSURE CATHETERS
 - Sizes: 5F, 7F Single and Dual Sensor Catheters, Straight or Pigtail

NOTE: The SP430 Pressure Module will operate only the pressure sensor of PV catheters.

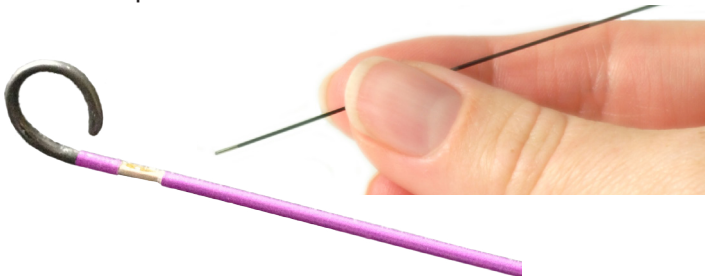
- Transpac® IV from ICU Medical (with the YS100-ADPT adapter RJ11 to HDMI)

MODES OF OPERATION

- MEA mmHg - outputs pulsatile pressure in volts
- 0 mmHg - outputs $-2.86 \pm 0.01V$ corresponding to 0 mmHg
- 100 mmHg - outputs $-0.57 \pm 0.01V$ corresponding to 100 mmHg

TRANSDUCER CONNECTOR

Pressure Input Channels Accepts 2 Pressure Transducers from 2 front panel HDMI connectors.



Transonic-Scisense solid-state Pressure Catheters

ANALOG OUTPUT SIGNALS

- Front panel BNC: 2 analog pressure signals filtered to 800 Hz
- Rear Panel Terminal Connector: 2 analog pressure signals filtered to 800 Hz; internal atmospheric pressure reference filtered to 1 Hz

ACCURACY

Refer to individual Pressure Transducer specifications

INPUT FILTER

3.5 kHz low pass

OUTPUT FILTER

800 Hz low pass

AMPLIFIER GAIN

1143

NOISE

± 10 mv or 1 mmHg

RANGE

-50 to + 300 mmHg (2.3V/100mmHg)

BAROMETRIC PRESSURE REFERENCE

0.5 mmHg combined accuracy & stability



T403 Console with TS410, TS420 and SP430 Modules

The SP430 Pressure Module installs and derives power from a Transonic 400-Series Console. Consoles can hold multiple Modules of various functionality.

