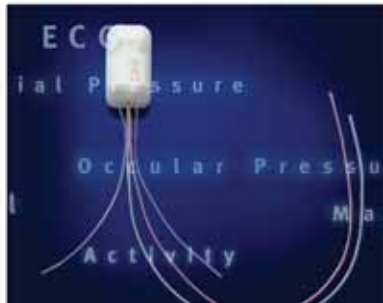
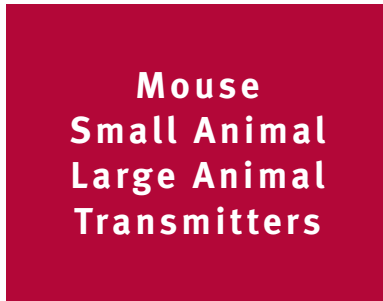
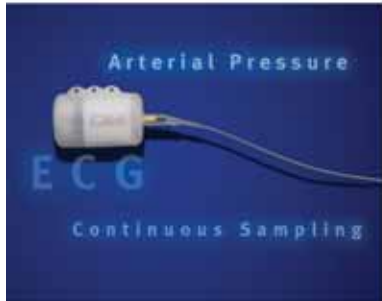
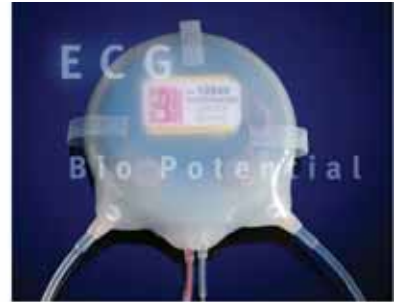
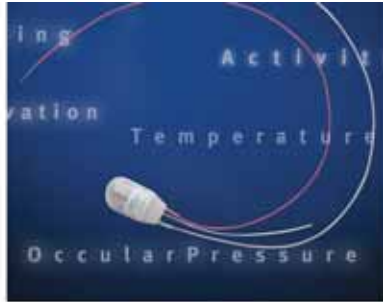
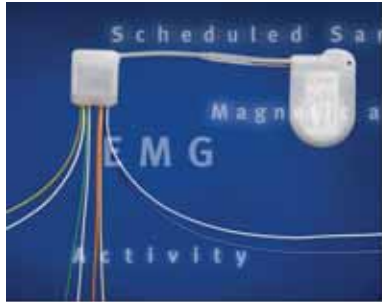


Guide to PhysioTel® Transmitters



DSI™

Proven Performance

PhysioTel™ Implantable Transmitters from DSI

PhysioTel transmitters are designed for monitoring and collecting data from conscious, freely moving laboratory animals—providing stress-free data collection while eliminating percutaneous infections. PhysioTel transmitters are offered in various sizes to support a variety of research models ranging from mice and rats to dogs and primates. The shape of DSI transmitters are also designed to accommodate both subcutaneous and intraperitoneal placement.

Parameters measured by researchers and scientists include arterial pressure, venous pressure, left ventricular

pressure, intra-ocular pressure, bladder pressure, kidney pressure, ECG, EMG, EEG, EOG, respiration, temperature, activity, as well as other parameters. DSI offers a variety of transmitters to improve data quality and simplify studies.

All PhysioTel transmitters may be switched on/off in-vivo with a magnet to extend study duration. And when a study is complete, researchers simply exchange their existing transmitter at a fraction of what they would normally pay for a new one. It's the easy way to reduce cost per study and make your research dollars go further.

Mouse Transmitters** (from 17 grams to 175 grams)

Model	Temperature	Pressure	Biopotential Channels	Battery Life (Months) Warranted	Weight (gm)	Volume (cc)	Min. Animal Weight	Max. Cage Size****
HD-X11	1	1	1	1	2.2	1.4	19 grams	33 x 33 x 14 cm
PA-C10		1		1.5	1.4	1.1	17 grams	33 x 33 x 14 cm
F20-EET	1		2	1.5	3.9	1.9	20 grams	33 x 33 x 14 cm
TA-F10	1			6	1.6	1.1	17 grams	33 x 33 x 14 cm
ETA-F10	1		1	2	1.6	1.1	17 grams	33 x 33 x 14 cm
EA-F20			1	4	3.9	1.9	20 grams	33 x 33 x 14 cm
ETA-F20	1		1	4	3.9	1.9	20 grams	33 x 33 x 14 cm

Small Animal Transmitters** (from 175 grams to 2.5 kilograms)

Model	Temperature	Pressure	Biopotential Channels	Battery Life (Months) Warranted	Weight (gm)	Volume (cc)	Min. Animal Weight	Max. Cage Size****
HD-S21	1	2	1	2	8	5.9	175 grams	42 x 42 x 18 cm
TA-F40	1			12	7.25	3.5	175 grams	42 x 42 x 18 cm
TA-F40 W/TP*	1			12	7.25	3.5	175 grams	42 x 42 x 18 cm
CA-F40			1	6	7.9	4.2	175 grams	42 x 42 x 18 cm
CTA-F40	1		1	6	8.0	4.2	175 grams	42 x 42 x 18 cm
PA-C40		1		4	7.6	4.4	175 grams	42 x 42 x 18 cm
F40-EET	1		2	3	7	3.7	175 grams	42 x 42 x 18 cm
C50-PT	1	1		2	10.2	6	175 grams	42 x 42 x 18 cm
C50-PXT	1	1	1	2	11	6	175 grams	42 x 42 x 18 cm
F50-EEE			3	2	11.5	5.5	175 grams	42 x 42 x 18 cm
F40-TT*	2			4	7.5	3.5	175 grams	42 x 42 x 18 cm
4ET-S1 and 4ET-S2***	1		4	3	12.8	8.8	200 grams	42 x 42 x 18 cm

Large Animal Transmitters** (from 2.5 kilograms and larger)

Model	Respiration	Temperature	Pressure	Biopotential Channels	Battery Life (Months) Warranted	Weight (gm)	Volume (cc)	Min. Animal Weight	Max. Cage Size****
TA-D70		1			11	40	25	2.5 kilograms	1 x 1 x 1 meter
CTA-D70		1		1	4	30.0	20.0	2.5 kilograms	1 x 1 x 1 meter
D70-EEE				3	2	37	25	2.5 kilograms	1 x 1 x 1 meter
PA-D70			1		4	37	25	2.5 kilograms	1 x 1 x 1 meter
D70-PCT +		1	1	1	3.5	49	33	2.5 kilograms	1 x 1 x 1 meter
D70-PCTP +		1	2	1	2.5	49	33	2.5 kilograms	1 x 1 x 1 meter
D70-CCTP +		1	1	2	2.5	49	33	2.5 kilograms	1 x 1 x 1 meter
D70-PCTR +	1	1	1	1	2.5	49	33	2.5 kilograms	1 x 1 x 1 meter

Warranted battery life for all PhysioTel transmitter models is based on total 'ON' time.

* Equipped with 13 cm thermistor-tipped catheter(s)

** Suggested weight ranges. Minimum animal weight may vary depending on methodology and preference. Smaller transmitters can be used with large animals when used in conjunction with an externally worn telemetry repeater.

*** 4ET transmitter is a dual module device with replaceable battery component and allows pair-housing.

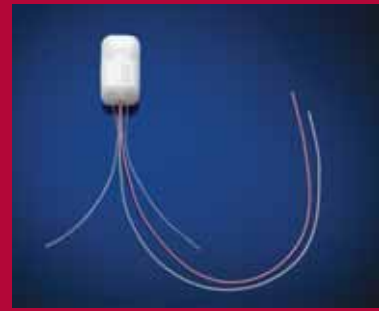
**** Cage size per one receiver. Larger cage sizes can be accommodated by use of multiple receivers. In addition, researchers may also opt to add a Multi-frequency Telemetry Repeater to an existing telemetry system in order to further extend telemetry transmission ranges.

+ Available with the Solid Tip Lead configuration.

Introducing PhysioTel HD Transmitters

The HD-S21 was the first transmitter developed as part of the new PhysioTel HD (hybrid digital) platform offering researchers the ability to record two pressures, one biopotential and one temperature signal from rats or other small animals. The HD-X11 is the second HD offering and first device to enable simultaneous pressure, biopotential and temperature monitoring from a single mouse! The HD platform leverages DSI's traditional method of transmitting physiologic signals and provides additional value through digitally encoded data including:

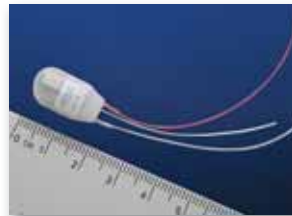
- » Device ID and serial number to ensure data are collected from intended animal
- » Calibrations to ensure accurate entry and save time during configuration
- » Battery ON time to help track study duration and device use



HD-S21



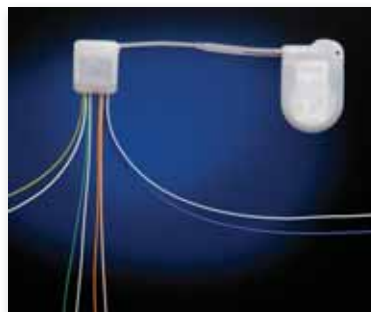
PA-C10



HD-X11



PA-C40



4ET

Parameters Measured—by Product Series

- PhysioTel™ HD series transmitters measure temperature, pressure and biopotentials in addition to digitally encoded data.
- PhysioTel™ PA series transmitters measure pressure (P) and activity (A) in mice, small animals and large animals.
- PhysioTel™ TA series transmitters measure temperature (T) and activity (A) in mice, small animals and large animals.
- PhysioTel™ EA, CA, ETA and CTA series transmitters measure biopotentials (E, C) such as ECG, EEG and EMG as well as temperature (T) and activity (A) in mice, small animals and large animals.
- PhysioTel™ Multiplus series transmitters measure combinations of pressure (P), biopotentials (E, X, C), respiration (R), temperature (T) and activity (A).



D70-PCTP



PA-D70



D70-PCTR



Several large animal transmitters are now available with the Solid Tip Lead option for a nearly artifact-free ECG via a simple surgical procedure.



To learn more, talk to a DSI representative
at 1-800-262-9687 (U.S.A. / Canada),
1-651-481-7400 (worldwide),
or visit www.datasci.com.

DSI: The Gold Standard in Physiologic Monitoring

Data Sciences International (DSI) has been providing telemetry solutions to the research community for more than 25 years. PhysioTel™ implantable telemetry transmitters provide the most cost-effective and efficient method of measuring physiologic parameters in conscious, freely moving laboratory animals. Virtually any laboratory animal can be, and has been, monitored using DSI telemetry products.

Physiologic data collection using telemetry has many advantages over older, traditional methods of data collection such as restraints, cuffs and tethers. In some cases, anesthesia is still used in obtaining physiologic data. However, the anesthesia itself may affect the data being collected. Telemetry eliminates the need for such data collection methods and provides researchers with data that are free from stress-induced artifact and the effects of anesthesia.

Advantages of telemetry include:

- » More humane than other methods of monitoring.
- » Animals can be chronically instrumented and used sequentially as their own control or in multiple studies.
- » Stress artifact induced by handling is avoided.
- » Physiologic measurements can be obtained around the clock with no lab personnel present.
- » Decreases the costs of many protocols by reducing the number of animals required.
- » Reduces animal maintenance costs.
- » Exit site infections are eliminated.

DSI™

Proven Performance

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