

PhysioTel® HD Transmitter Specifications

Model	Weight (gm)	Volume (cc)	Minimum Animal Weight	Maximum Cage Size*	Battery Life Warranted (Months)
HD-X11	2.2	1.4	19 grams (sub-cu) 30 grams (IP)	33 x 33 x 14 cm	1
HD-S21	8	5.9	175 grams	42 X 42 X 18 cm	2

Specifications are nominal. Some parameters, such as minimum animal weight, may vary depending on research methodology and preference. For example, some researchers have implanted PhysioTel HD transmitters in animals smaller than minimum animal weight specified. Larger cage sizes also can be accommodated with special configurations.

Parameters Measured	Pressure, Biopotential, Temperature, Activity
Outer Material	Silicone Elastomer (HD-S21)
Temperature Operating Range	34 to 41 °C
Shelf Life	Battery - 1 year, Sterility - 1 year
ON-Off Mechanism	Magnetically Actuated
Receiver Compatibility	Any PhysioTel RLA, RPC-1 or RMC-1

Pressure Measurement Specifications

Pressure Range	-20 to 300 mmHg
Catheter Length Options	HD-S21: 8, 10 or 15 cm HD-X11: 5 cm
Ambient Pressure Range	670 to 800 mmHg
Maximum Altitude	625 meters

Pressure Accuracy

Initial Accuracy	± 3mmHg
Pressure Drift	<2mmHg/month (Max); -0.25mmHg/month (Average)

Biopotential Channel Specifications

	<u>HD-S21</u>	<u>HD-X11</u>
Input Voltage Range	±5mV	±2.5mV
Channel Bandwidth	0.1-145Hz	0.1-200Hz

Temperature Accuracy

Initial Accuracy	0.1 °C
Resolution	0.05 °C
Temperature Drift	First two weeks ≤ .1 °C Per 6 months after ≤ .1 °C

Specifications, performance and accuracy are valid for the warranted battery life and only when data are recorded using Dataquest™ A.R.T. with factory-supplied calibration values. Transmitters may work over wider ranges with reduced accuracy.

*An externally worn [telemetry repeater](#) is available to allow retransmission of the telemetry signals using multiple frequencies over a long range (3-10m). This also permits the use of smaller transmitter models in large animals. See our website for more details.

PhysioTel® TA Transmitter Specifications

Model	Weight (gm)	Volume (cc)	Minimum Animal Weight	Maximum Cage Size*	Battery Life Warranted (Months)
TA-F10	1.6	1.1	17 g (sub-cu) 20g (IP)	33 x 33 x 14 cm	6
TA-F40	7.25	3.5	175 grams	42 x 42 x 18 cm	12
TA-D70	40	25	2.5 kilograms	1 x 1 x 1 meter	11

Specifications are nominal. Some parameters, such as minimum animal weight, may vary depending on research methodology and preference. For example, some researchers have implanted PhysioTel TA transmitters in animals smaller than the specified minimum animal weight. Larger cage sizes also can be accommodated with special configurations.

Parameters Measured	Temperature and Activity
Outer Material	Silicone Elastomer
Temperature Operating Range	34 to 41 °C
Shelf Life	Battery - 1 year, Sterility - 1 year
ON-Off Mechanism	Magnetically Actuated
Receiver Compatibility	Any PhysioTel RLA, RPC-1 or RMC-1

Temperature Measurement Specifications

Initial Accuracy	0.15 °C (TA-F10), 0.1 °C (all other devices)
Resolution	0.05 °C (TA-F10), 0.01 °C (all other devices)
Max Drift Over Warranted Battery Life	0.05 °C first month after turn on (TA-F10) 0.05 °C first two weeks after turn on (all other devices) 0.05 °C per six months thereafter (all devices)

Specifications, performance and accuracy are valid for the warranted battery life and only when data are recorded using Dataquest™ A.R.T. with factory-supplied calibration values. Transmitters may work over wider ranges with reduced accuracy.

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PhysioTel® PA Transmitter Specifications

Model	Weight (gm)	Volume (cc)	Minimum Animal Weight	Maximum Cage Size*	Battery Life Warranted (Months)
PA-C10	1.4	1.1	17 grams (sub-cu) 27grams (IP)	33 x 33 x 14 cm	1.5
PA-C40	9.0	4.5	175 grams	42 x 42 x 18 cm	4
PA-D70	37	25	2.5 kilograms	1 x 1 x 1 meter	4

Specifications are nominal. Some parameters, such as minimum animal weight, may vary depending on research methodology and preference. For example, some researchers have implanted the PhysioTel PA-C10 transmitter in mice smaller than 17 grams. Larger cage sizes also can be accommodated with special configurations. Minimum animal weight may vary based upon placement location, surgical skill and strain of animal used.

Parameters Measured	Pressure and Activity
Outer Material	Silicone Elastomer
Temperature Operating Range	34 to 41 °C
Shelf Life	Battery - 1 year, Sterility - 1 year
ON-Off Mechanism	Magnetically Actuated
Receiver Compatibility	Any PhysioTel® RLA, RPC-1 or RMC-1

Measurement Specifications

Pressure Range	-20 to 300 mmHg
Ambient Pressure Range	670 to 800 mmHg
Maximum Altitude	625 meters

Pressure Accuracy

Initial Accuracy	±3 mmHg
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Pressure Drift

PA-C10	<2mmHg/month (Max); -0.25mmHg/month (Average)
PA-C40	First month < 5 mmHg Second month < 4 mmHg Thereafter < 3 mmHg per month
PA-D70	< 2 mmHg per month nominal

Specifications, performance and accuracy are valid for the warranted battery life and only when data are recorded using Dataquest A.R.T. with factory-supplied calibration values. Transmitters may work over wider ranges with reduced accuracy.

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PhysioTel® EA, CA, ETA and CTA Transmitter Specifications

Model	Weight (gm)	Volume (cc)	Minimum Animal Weight	Maximum Cage Size*	Battery Life Warranted (Months)
ETA-F10	1.6	1.1	17 grams	33 x 33 x 14 cm	2
EA-F20	3.9	1.9	20 grams	33 x 33 x 14 cm	4
ETA-F20	3.9	1.9	20 grams	33 x 33 x 14 cm	4
CA-F40	7.9	4.2	175 grams	42 x 42 x 18 cm	6
CTA-F40	8.0	4.2	175 grams	42 x 42 x 18 cm	6
CTA-D70	30.0	20.0	2.5 kilograms	1 x 1 x 1 meter	4

Specifications are nominal. Some parameters, such as minimum animal weight, may vary depending on research methodology and preference. For example, some researchers may have implanted PhysioTel CA and CTA transmitters in animals smaller than 175 grams. Larger cage sizes also can be accommodated with special configurations.

Parameters Measured	Biopotential, Temperature, Activity
Outer Material	Silicone Elastomer
Temperature Operating Range	34 to 41 °C
Shelf Life	Battery - 1 year Sterility - 1 year
ON-Off Mechanism	Magnetically Actuated
Receiver Compatibility	Any PhysioTel RLA, RPC-1 or RMC-1

Biopotential Channel Specifications

	<u>ETA, EA Devices</u>	<u>CTA, CA Devices</u>
Input Voltage Range	±2.5mV	±10mV
Channel Bandwidth	1-200Hz	1-200Hz

Temperature Measurement Specifications

Initial Accuracy	0.1 °C
Resolution	0.01 °C
ETA-F10 Initial Accuracy	0.25 °C
ETA-F10 Resolution	0.05 °C

Max Drift Over Warranted Battery Life

F20 and F40 series	0.1 °C first two weeks after turn on 0.05 °C per six months thereafter
D70 series	0.05 °C first two weeks after turn on 0.05 °C per six months thereafter

Specifications, performance and accuracy are valid for the warranted battery life and only when data are recorded using Dataquest A.R.T. with factory-supplied calibration values. Transmitters may work over wider ranges with reduced accuracy.

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PhysioTel Multiplus Transmitter Specifications

Model	Weight (gm)	Volume (cc)	Minimum Animal Weight	Maximum Cage Size*	Battery Life Warranted (Months)
F20-EET	3.9	1.9	20 grams	33 x 33 x 14 cm	1.5
F40-EET	7	3.7	175 grams	42 x 42 x 18 cm	3
F50-EEE	11.5	5.5	175 grams	42 x 42 x 18 cm	2
C50-PXT	11	6	175 grams	42 x 42 x 18 cm	2
D70-PCT	49	33	2.5 kilograms	1 x 1 x 1 meter	3.5
D70-CCTP	49	33	2.5 kilograms	1 x 1 x 1 meter	2.5
D70-PCTP	49	33	2.5 kilograms	1 x 1 x 1 meter	2.5
D70-PCTR	49	33	2.5 kilograms	1 x 1 x 1 meter	2.5
D70-EEE	37	25	2.5 kilograms	1 x 1 x 1 meter	2
4ET-S1 and 4ET-S2	12.8	8.8	200 grams	42 x 42 x 18 cm	3 (user replaceable battery)

Specifications are nominal. Some parameters, such as minimum animal weight, may vary depending on research methodology and preference. For example, some researchers have implanted PhysioTel Multiplus transmitters in animals smaller than 175 grams. Larger cage sizes also can be accommodated with special configurations.

Parameters Measured	Pressure, Biopotential, Temperature, Activity
Outer Material	Silicone Elastomer
Temperature Operating Range	34 to 41 °C
Shelf Life	Battery - 1 year, Sterility - 1 year
ON-Off Mechanism	Magnetically Actuated
Receiver Compatibility	Any PhysioTel RLA, RPC-1 or RMC-1

Measurement Specifications

Pressure Range	-20 to 300 mmHg
Ambient Pressure Range	670 to 800 mmHg
Maximum Altitude	625 meters

Pressure Accuracy

Initial Accuracy	±3 mmHg
Pressure Drift (C50-PXT)	First month < 5 mmHg Second month < 4 mmHg Thereafter < 3 mmHg per month
Pressure Drift (D70 Series)	<2 mmHg per month nominal

<u>Biopotential Channel</u>	<u>F20-EET, F40-EET, 4ET</u>	<u>D70-EEE, F50-EEE</u>
Input Voltage Range	±1.25mV	±2.5mV
Channel Bandwidth	1-50Hz	1-100Hz
	<u>C50-PXT</u>	<u>D70-CCTP, PCT, PCTP, PCTR</u>
	±5mV	±10mV
	1-100Hz	1-100Hz

Temperature Accuracy

Initial Accuracy (D70-CCTP, D70-PCTP)	0.35 °C
Initial Accuracy (Others)	0.25 °C
Resolution	0.05 °C
Temperature Drift (D70-CCTP, D70-PCTP)	0.2 °C per month
Temperature Drift (F20-EET)	0.15 °C per month
Temperature Drift (Others)	First two weeks .1 °C Thereafter .1 °C

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F40-TT Transmitter Specifications

Model	Weight (gm)	Volume (cc)	Minimum Animal Weight	Maximum Cage Size*	Battery Life Warranted (Months)
F40-TT	7.5	3.5	175 grams	42 x 42 x 18 cm	4

Temperature

Operating range **22-41 °C**
 Accuracy .30 °C from 34-40°C
 .45 °C all other
 Drift .1 °C per 6m
 Resolution .01 °C

Battery Voltage

Continuous monitoring via parameter

Probe

1.8mm diameter

13cm thermistor-tipped probes

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