

# **DL10 Multichannel Receiver Decoder User Manual**



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DL10 User Manual  
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## Introduction

The DL10 Multichannel Receiver Decoder is used to convert a multichannel telemetry signal to an analog form. The DL10 is compatible only with the F20-EET, F40-EET, F50-EEE, and D70-EEE transmitters. The DL10 converts the time multiplexed digitized telemetry signal into an individual digitized signal for each telemetered channel. The analog outputs built into the DL10 then process the individual signals for each channel and convert them into analog voltages.

Each DL10 must be calibrated individually in combination with the transmitter in order to obtain accurate measurements and must be configured for the type of transmitter it is used with. The decoder must match the number of channels and the general data types of the transmitter (e.g. biopotential, pressure, temperature). For instance, a DL10 configured for a TL10M3-F50-EEE cannot be used with a TL10M2-F20-EET.

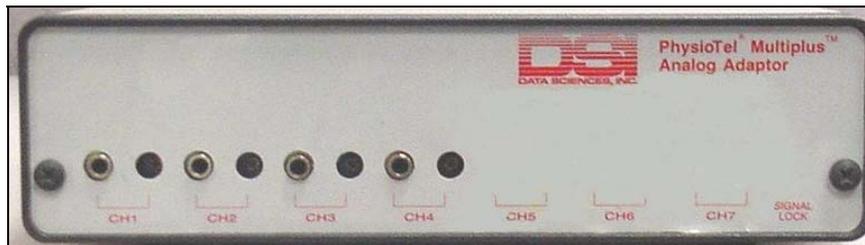


Figure 1 DL10 Front Panel

Each output has a jack and a gain control. To change the amplitude of the output at a jack, adjust the control immediately to the right using a screw driver. The “Signal Lock” LED lights when the DL10 is detecting a valid signal.

### Product Part Numbers:

The DL10 is available with 2 configurations. One supporting the F20-EET and F40-EET transmitters and the other supporting F50-EEE and D70-EEE transmitters

DL10 Analog Adapter for F20/F40-EET Transmitters	273-5004-001
DL10 Analog Adapter for F50/D70-EEE Transmitters	273-5004-002

## Getting Started

Power may be applied to the DL10 via a power supply, BCM100, or a Data Exchange Matrix (DEM). To apply power via a supply, plug the coaxial power connector of the power supply into the jack labeled “DC8-16 Volts” on the rear panel and plug the power supply into the AC voltage source. There is no power switch; therefore, power will be applied immediately upon plugging the power supply into the wall outlet.

Next, plug the receiver into the jack on the rear panel labeled “To Receiver.” If you are also recording data with the Dataquest A.R.T. system, plug a cable from the jack on the

rear panel labeled “To BCM100” to the appropriate jack on the DEM. It is not necessary to use a power supply on the DL10 if it is plugged into a BCM100 or DEM.



**Figure 2 DL10 Rear Panel**

The jacks on the front panel of the DL10 provide a 0-4 volt analog voltage output for each channel. To the right of each jack is a control that allows the gain of the respective channel to be changed. The signal lock indicator LED on the front panel identifies that the telemetry system is detecting a valid signal from the implant. This light will go out if the animal goes out of range of the receiver or if the signal is corrupted by noise.

## **Testing Operation of the DL10 with Your Transmitter**

To test the DL10 and your transmitter, follow these steps:

1. Plug a short cable with mini-jacks attachments into the appropriate connector on the decoder front panel.
2. Connect the opposite end of the cable to the appropriate inputs on your data acquisition system.
3. Next, turn on the transmitter as described in the Telemetry Information Guide and place it on top of the receiver. If you are using RPC-1 or RMC-1 receivers, place the implant on the black face of the receiver. If you are using an RLA3000 receiver, place it within 15-20 cm of the transmitter.
4. Apply an input to the transmitter.
  - For biopotential transmitters, there will often be sufficient noise inductively coupled into the sensing leads so that a signal will appear on the biopotential channels. The amplitude of these signals can often be changed by lightly grasping the leads between your thumb and index finger through the sterile pack. If you are unable to see any pen deflection for the biopotential channels under these circumstances, it will be necessary to apply a voltage to the leads with a signal generator.
  - If your transmitter measures temperature, that channel can be checked by holding a hair dryer or other heat source a few inches away from the sterile pack to cause the temperature of the transmitter body to change (the temperature sensor is usually inside the body). Under these circumstances, the change in the temperature output should be observed within a few seconds of the application of heat. Be sure that when this is done the temperature of the transmitter does not exceed 60°C. Doing so could cause permanent damage.