

# TRANSMISSION EQUIPMENT

## Transmitter Manual - Braegen I (with Meter)

5.3

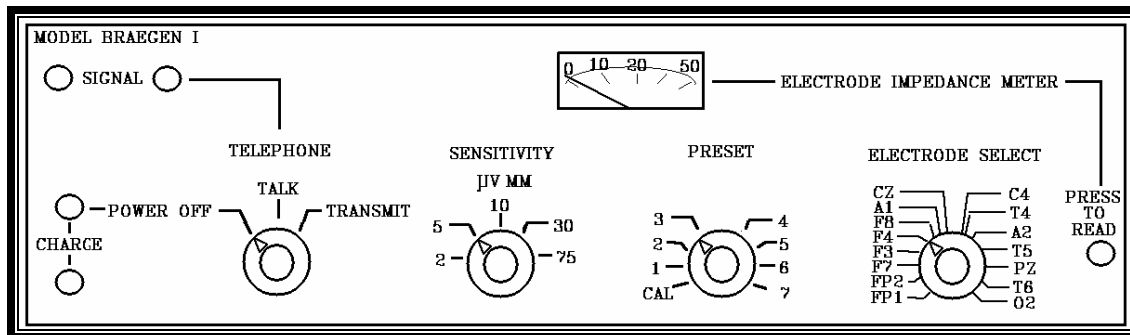
### Introduction

The Braegen I telephonic EEG transmitter is a precision clinical test instrument, which has been designed for use in conjunction with a remote receiver and an EEG writer unit to form a complete system for the telephonic transmission of 8 channels of EEG data. The transmitter has been designed for simplicity of operation and incorporates many features intended to make this instrument as uncomplicated and easy to use as possible. The quality of the final EEG recording, however, requires the conscientious efforts of the transmitting technician in patient handling, history taking, electrode application and adherence to assigned test procedures. These and other areas are covered in depth by additional technical literature available upon request from TELEMEDX Corporation. The scope of this manual is limited to those topics that relate directly to the actual operation of the transmitter. The Braegen I with Meter is commonly referred to as a Braegen II.

### Equipment Description

This section describes the operation of all controls, switches, and indicators on the Braegen transmitter. As you read through this section be sure to locate each feature as it is described in the reference figures, as well as and on the actual unit. As the transmitting technician, it is your responsibility to familiarize yourself with the location and operation of all transmitter controls.

### Front Panel Features



1. The POWER OFF-TELEPHONE TALK-TRANSMIT switch is the main operation control of the transmitter. It is set to the POWER OFF position to turn the transmitter off and to recharge the internal battery when connected to a battery charger. The RED battery charge light will turn on during charging.

The battery condition can be checked on the Meter in the TELEPHONE TALK or TRANSMIT position. The meter should register in the OK zone, indicating a full charge on the battery.

The TELEPHONE TALK position allows you to communicate with the Receiving Center by telephone. The flashing amber SIGNAL light indicates that the Receiving Center wishes to

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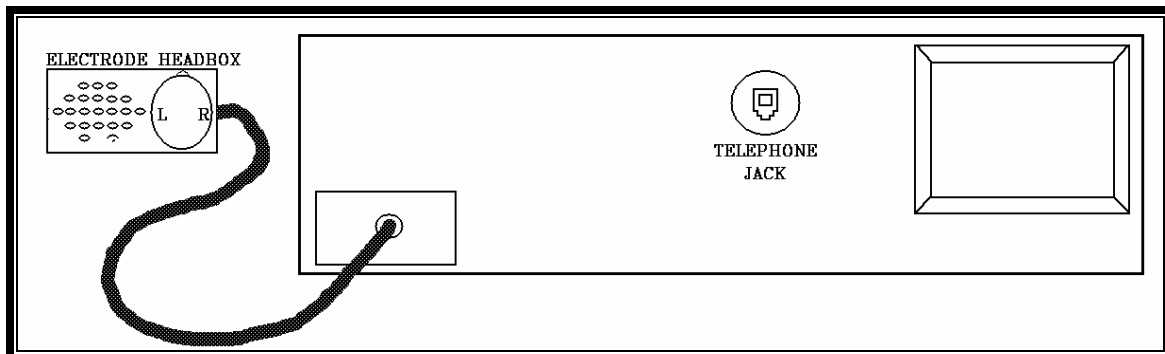
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communicate with the transmitting tech. Return the switch to TELEPHONE TALK, and pick up the telephone handset for direction.

The TRANSMIT position allows the patient EEG data to be sent to the Receiving Center.

2. The CHARGE jack is the location where the battery charger is plugged into the transmitter. The red CHARGE light will turn on during charging.
3. The BATTERY CHECK button is pressed to verify battery voltage. The green OK light will be illuminated if the battery is charged.
4. The SIGNAL button is used to notify the Receiving Center, as outlined in the Protocol procedures of Section 8.3.
5. The SENSITIVITY control determines the sensitivity of the transmitter's amplifiers in microvolts per millimeter ( $\mu\text{V}/\text{mm}$ ). These controls are normally set at "10", unless otherwise instructed by the Receiving Center. Sensitivity settings of 2, 5, 10, 30 and 75 are available.
6. The PRESET switch is used to change the Run (Montage) and selects the proper electrodes for connection to the amplifier for any given Run. In the CAL position an internal calibration signal is transmitted.
7. The ELECTRODE SELECTOR switch is used to test the impedance of the electrodes. Select the electrode to be tested, by turning the knob. Turn the POWER switch to either the TELEPHONE TALK or TRANSMIT position. Press the "press to read" button and read the meter. Good electrode contact is indicated by a reading of 2-10 K-Ohms on the meter scale. All electrodes on the ELECTRODE SELECTOR switch are tested in reference to the ground electrode.

### **Back Panel Features**



1. The PHONE jack is used for connection of the transmitter to the telephone line.

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2. The ELECTRODE HEADBOX is the means for connecting the electrodes to the transmitter. The headbox contains 22 tip jacks which are located and labeled according to the International 10-20 System. These jacks accept the individual disc electrode plugs, ear clip plugs, accessory input sensors and Electro-cap adapter cables, depending upon which system is used. Whenever a plug is inserted into an electrode jack, it should fit tightly. A firm grip is needed at the base of the plug (not the wire) to insert or remove an electrode. A loose-fitting jack can be a potential source of artifacts.

### **Top Panel Features**

To use the telephone for dialing or communication, you must turn the TELEPHONE TALK-TRANSMIT switch to the TALK position. The switch must be returned to the TRANSMIT position to send the patient's EEG.

### **Transmitter Accessories**

1. The BATTERY CHARGER is intended only for use in recharging the internal battery. One end of the charger is plugged into a 115V A.C. electrical outlet, and the other into the CHARGER jack located on the front panel of the transmitter. The battery charger should be cycled 12 hours on charge (plugged in) and 12 hours off (unplugged). A standard 24-hour timer can be used to cycle the charge time.

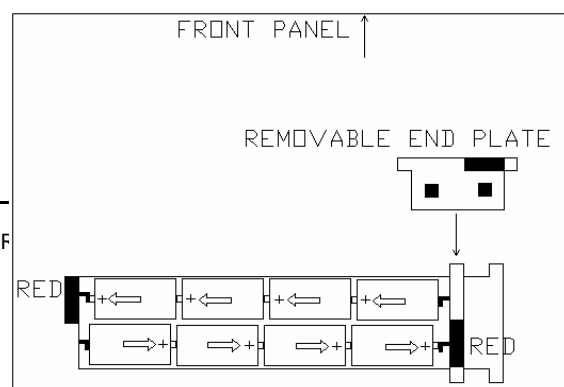
**NOTE: FOR MAXIMUM PATIENT SAFETY AND ELIMINATION OF ELECTRICAL INTERFERENCE, THE BATTERY CHARGER MUST BE DISCONNECTED PRIOR TO PATIENT CONNECTION AND TRANSMITTER OPERATION.**

2. The MODULAR DATA CORD is a phone line connection cord. One end of the data cord mates with the PHONE jack on the back panel of the transmitter, and the other with the modular wall telephone jack.
3. POWER PACK: The power pack consists of two (2) nickel cadmium rechargeable batteries. The batteries are installed in battery compartment located on the bottom panel. Two screws hold the cover plate in place.

To install the batteries:

- a) Remove the battery cover plate.
- b) Remove the adjustable battery "end plate".
- c) Insert each battery, matching the "black" and "red" polarity markers on the battery to the those in the compartment.
- d) Insert the battery "end plate". Check to see if the battery clips are making contact with the battery terminals.
- e) Replace and securely tighten the battery cover plate before normal operation.

**NOTE:** A new power pack should be charged for 24 hours before first use.



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4. BACK-UP BATTERY SUPPLY: For temporary use, it is possible to transmit data using eight (8) new "C" size alkaline flashlight batteries. When utilizing flashlight cells, the battery "end plate" must be relocated to compensate for the difference in battery size.

**NEVER CHARGE ALKALINE BATTERIES.**