Quick Guide to the AT-4400 16 bit Digital Telemetry System

(Refer to the system manual for more detailed information)

- **Plug power in** (110V to 12 VDC adapter).
- **Plug 24' long RG58 cable from stationary pickup coil to the Receiver**. (Note: the cable is a tuned cable length—do not lengthen or shorten the cable. Longer cables are available from the factory.)
- **Ensure that the Brass Loop pickup coil is secure, and is aligned** roughly with the edge of the Transmitter's G10 glass laminate clamp collar. (Note that there is a small red wire embedded in the circumference of one edge of the collar).
- **Check that the Transmitter's clamp collar halves are connected mechanically and electrically**. Mechanically, refer to the manual for torque levels for the main mounting bolts. Electrically, the rotating transmitter coil in new style collars is connected externally with two flat metal jumpers secured with screws; older collars are connected with dowel pins between the two halves (if the system doesn't work, then unclamp the collar from the shaft to check on the pins).
- **Check that the transmitter's four input pins are connected to a full bridge strain gage (or, for a more stable dummy input, to a 0.00 V star bridge).**
    - The four main transmitter connection pins are, left to right, the + power to the strain gage, +, - strain gage inputs, and ground.
    - Note: a star dummy bridge uses four resistors in a "plus sign" layout to provide a common non-floating 0 volt input for both the positive and negative inputs of the transmitter. (If the transmitter input leads are simply shorted together, the common mode voltage of the two pins can possibly drift and rail the inputs).
- **Turn on power**. The yellow power LED and the data LED should illuminate. If the strain gage inputs are connected, then twisting the shaft will cause a voltmeter connected to the Receiver to show a change in output voltage (DC Volts).
- **Check Shunt Calibration.** When the front panel button is momentarily depressed, a signal is sent to the transmitter that sets a bit and activates a parallel shunt calibration resistance across the transmitter's negative signal input to ground. The "set-bit" information is embedded in the digital data stream that is transmitted back to the receiver, which in turn activates the LED next to the Shunt Calibration button (it only *looks* like the button turns on the LED directly!).
    - If you are using a strain gage, the shunt cal will result in a mid-range (i.e. 7 volts) output depending on the shunt resistance and the Receiver offset. If you are using a Star Bridge, the shunt cal will cause a full input deflection (10V out at the receiver). Pressing the Shunt Calibration button a second time will disengage the shunt resistance in the transmitter.
    - Note: on some systems, the shunt resistor is potted inside the transmitter module; on other systems, the shunt resistor is attached to external leads extending outside of the potting (allowing the resistor to be changed). The resistor may also be located under the G10 transmitter cover (which is secured by 2 screws).
- **Adjust Offset with the second potentiometer** (see picture on the door on the back of the Receiver). **Adjust Gain with the first potentiometer.**
- **For Receiver output gain and filter settings, refer to the manual.**

AT-4400 System Specifications: 26484 samples/ second digitizing rate
Bandwidth is antialias filtered to 2 kHz (output filtering switches in the Receiver can be set to decrease this; factory modifications can increase this)

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