Digital Telemetry
TEL 171

The TEL 171 converts your Moseley TRC-15AW or TRC-15AR to digital metering transmission, a method that eliminates the offset and gain drift in the analog metering.

The system consists of three printed circuit boards that substitute directly for the audible metering generator, the audible metering demodulator, and the meter.

Installation is quick and simple since the same PC mounting hardware is used, and the same wiring harness connects to the new boards.

The display at the studio displays the reading with 3½ digits (-1999 to $+1999$). This reading is updated four times a second to keep the operator informed. Should metering carrier be lost, or a framing or parity error occur, the display blanks and a front panel LED indicates the problem. The display board includes a read-only memory that properly positions the displayed decimal point for each metering channel. A front panel connector is provided that supplies the displayed reading, channel select and raise/lower lines to a transmitter logger or ATS system.

Through the use of digital transmission and display, we eliminate the error inherent in analog transmission, and eliminate the error inherent in analog display: the operator who can't read meters.

Moseley, our neighbors down the road, make a good remote control. We can make it better.

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<u>TEL171 Specifications</u>

<u>H&F   1211TT Telemetry Transmitter</u>

Substitutes for Moseley 51A5416 Audible Metering Generator.

<u>A/D Conversion</u>

Resolution: 3½ digits (-1999 to +1999)
Conversion Rate: 2 conversions/second
Accuracy: Limited by temperature stability of
    reference (LM113H). 0.5% of reading, ±1 count,
    0 degrees C to 50 degrees C
Full Scale Sensitivity: 1.22 Volts for +1999 indication.

<u>Data Transmission</u>

Bit Rate: 300 Baud
Character Rate: 4 characters per conversion
Word Rate: One word per conversion (2/s), each conversion
    transmitted once with idle time between conversions.
Character Format: Start bit, six data bits, even parity
    bit, two stop bits. First four data bits carry
    digit code in BCD (except for on half digit where
    three bits carry ±, 0 or 1, and out of range
    indications). Last two data bits identify
    digit (00 is half digit, 11 is last digit).
Word Format: Digits transmitted in order (0,1,2,3).
    Data channel idle between conversions.
Encoding: FSK, 2225 Hz Mark, 2025 Hz Space.
Output Level: +1 dBm into 600 ohms, adjustable (line),
    and 5 V P-P open circuit, Z = 2.2K (subcarrier).

<u>Power Requirements</u>

Floating +15: 35 mA
Floating -15: 30 mA
        + 5: 0.2 mA
        +15: 30 mA

<u>H&F 1221TR Telemetry Receiver</u>

Substitutes for Moseley 51A5420 Audible Metering Demodulator.

Minimum Receive Level: -40 dBm (7.7 mV)
Data Output: Character parallel, negative 250 uS strobe,
    carrier, parity, and framing alarms. All TTL levels.
Power Requirements: 5V, 100 mA

<u>H&F 1231TD Telemetry Display</u>

Substitutes for Moseley meter.

3½ digit LED display with PROM programmed decimal points.
All metering and control data presented on front panel
connector for logging or ATS.
Power Requirements: +5V, 400 mA