

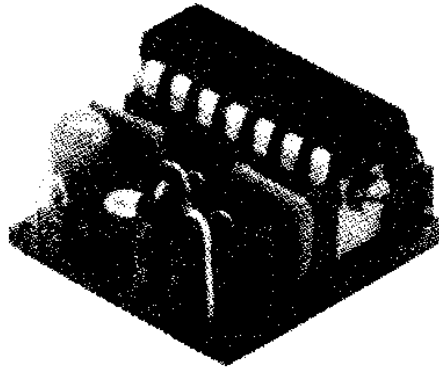
VEGA

098-0196A
INSTRUCTION
MANUAL
(Rev. A)

MODEL 188 SUB MINIATURE ENCODER FOR CTCSS SYSTEMS

The Model 188 Sub-miniature Encoder is designed for C.T.C.S.S. (Sub-audible) tone generation and for installation in highly confined areas. The 188 Encoder is fully field tuneable to any C.T.C.S.S. frequency (67 to 251 Hz) without the change of components or frequency determining elements.

MODEL 188



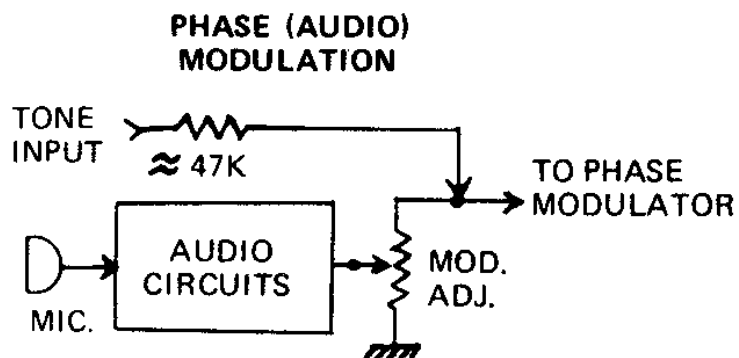
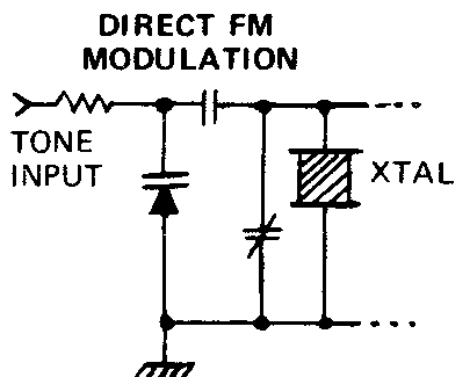
INSTALLATION

- TO MAINTAIN MINIMUM SIZE FOR HANDHELD RADIOS, ETC., AND TO PROVIDE MAXIMUM MOUNTING FLEXIBILITY, AN ADHESIVE MOUNTING PAD IS PROVIDED FOR INSTALLATION EASE. THE PAD IS SIMPLY PLACED BETWEEN THE ENCODER BOTTOM AND ANY CLEAN, DRY SURFACE IN THE RADIO. REMOVE THE PROTECTIVE TAPE FROM THE PAD FOR IMMEDIATE MOUNTING.
- FOR MAXIMUM RELIABILITY, THE ENCODER SHOULD BE MOUNTED AWAY FROM INTENSE R.F. AND MAGNETIC FIELDS.
- ADJUST FREQUENCY (R9) AND LEVEL (R10) AS REQUIRED. (NORMAL FACTORY SUPPLIED FREQUENCY IS 100.0 Hz)

CONNECTIONS

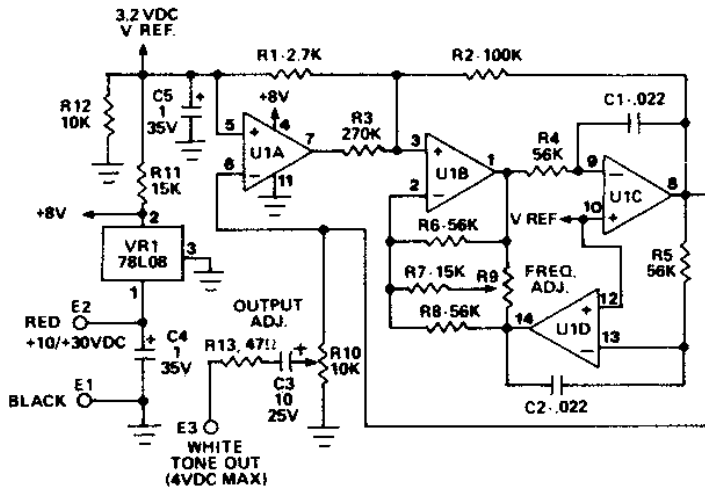
THREE LEADS ARE PROVIDED:

- RED LEAD: CONNECT TO +10 TO +30 VDC SOURCE. CAUTION, BE SURE VOLTAGE IS PRESENT IN TRANSMIT MODE.
- BLACK LEAD: CONNECT TO NEGATIVE D.C. NOTE, BEST RESULTS ARE TO CONNECT THIS NEAR WHITE LEAD.
- WHITE LEAD: TONE OUTPUT. CONNECT TO C.T.C.S.S. TONE INPUT TO TRANSMITTER. TYPICALLY ONE OF:



CAUTION: A capacitor placed in series with the output may be required if radios circuit exceeds C3's isolation. (4VDC).

SCHEMATIC DIAGRAM



MODEL 188 ENCODER

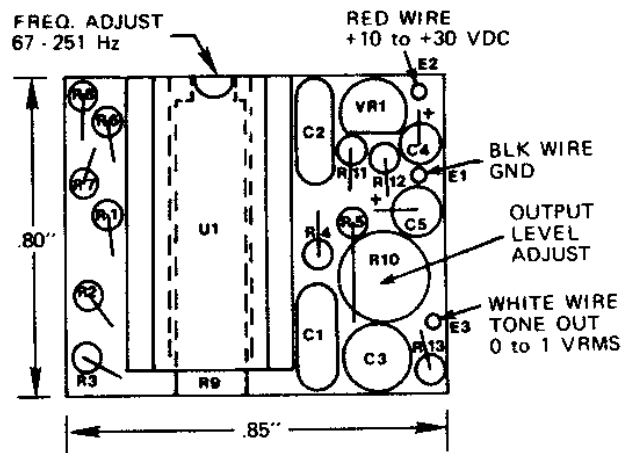
UNLESS OTHERWISE SHOWN:

- U1 IS LM324N
- R9 IS 15 TURN 10K POT.
- C1 & C2 ARE N.P.O. TYPE
- RESISTORS ARE 1/8 W, 5%

PARTS LOCATION

(TOP VIEW)

NOTE: U1 I.C. IS MOUNTED OVER R9, THE FREQUENCY ADJ. 15 TURN POTENTIOMETER



SPECIFICATIONS

SUPPLY VOLTAGE: +10 to +30 V.D.C.

CURRENT DRAIN: 9 mA typical, 15 mA maximum.

TEMPERATURE RANGE: -40°C to +75°C.

FREQUENCY STABILITY: $\pm 0.25\%$, over voltage and temperature.

FREQUENCY RANGE: 67 to 251 Hz, adjustable.

OUTPUT LEVEL: 0 to 1 VRMS (1K Ω load), adjustable.

OUTPUT LEVEL STABILITY: ± 1 dB, over voltage and temperature.

DISTORTION: Less than 1% T.H.D.

SIZE: 0.80 x 0.85 x 0.52 (H) inches. (2.2 x 2.0 x 1.3 cm).

WARRANTY

VEGA SIGNALLING PRODUCTS ARE GUARANTEED TO BE FREE OF DEFECTS AND WORKMANSHIP FOR A PERIOD OF 3 YEARS. WARRANTY IS FOR FACTORY REPAIR OR REPLACEMENT ONLY.



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