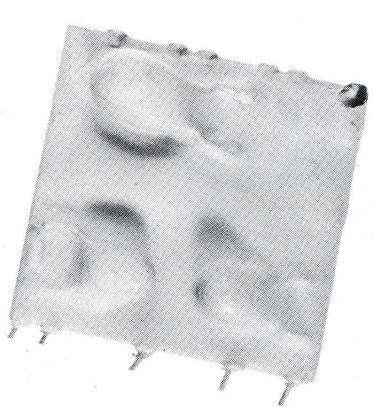
PPM5

- HYBRID PEAK PROGRAMME METER DRIVE CIRCUIT
- COMPLIES FULLY WITH IEC268–10A AND BS5428–9



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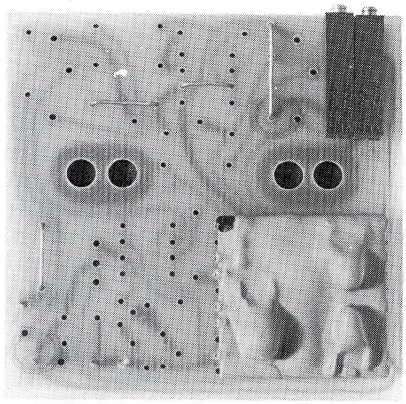
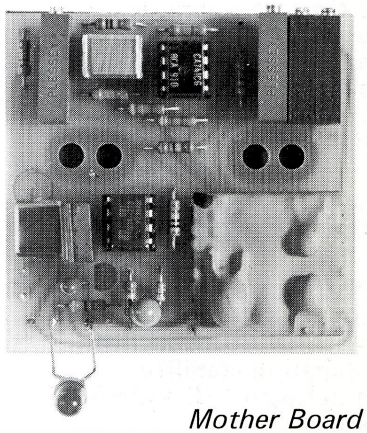


Mother Board 1



Mother Board 3

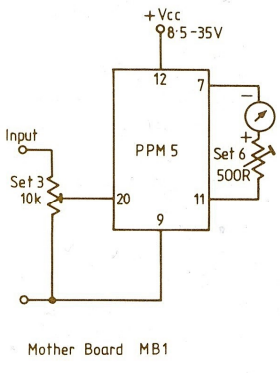
Peak programme meters conforming to the Standards are widely used in broadcasting and professional sound recording. PPM5 makes accurate peak metering available at much lower cost than previously and with the advent of digital equipment, and other audio devices which overload abruptly, PPM metering of audio signals becomes more attractive than average or VU metering.

PPM5 is truly self contained and requires the addition of just two presets (Mother Board 1). One takes up the f.s.d. tolerance of the meter movement, the other adjusts signal level and both should be full size 20 turn types for good long term stability. Where a balanced input is required a transformer may be used or alternatively the electronic balanced circuit below (MB2).

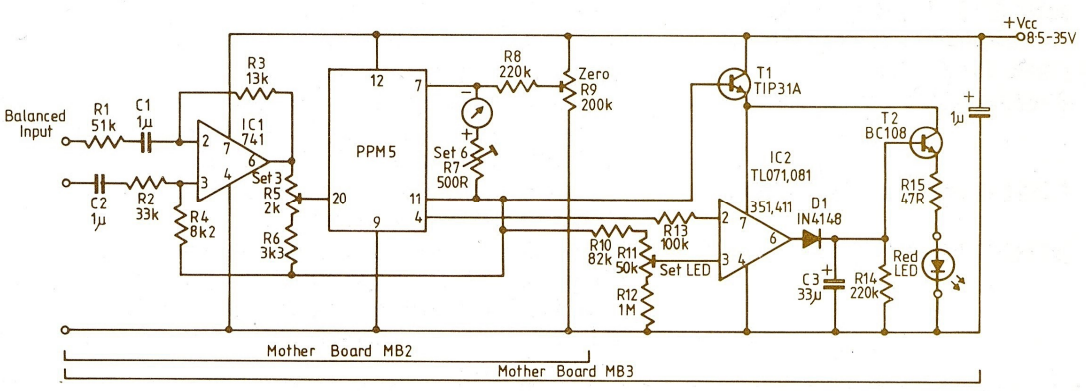
For the TWIN meter or other movements where the mechanical zero adjuster is not accessible an additional set zero preset may be included (MB2). To indicate levels beyond the permissible maximum an output may be taken from PPM5 to a PPM61/4 (+9dB) overload flasher. A circuit which meets the IBA requirements and provides constant current through the LED for any supply voltage is shown below and included on MB3.

PPM5 has remarkably low power consumption for a drive circuit conforming to the Standards as it requires only 2.5mA at 8.5V rising to 7mA at 35V plus an extra 1mA at full scale deflection. The hybrid is tolerant of poorly regulated supplies and high supply impedances, requires no local decoupling and is protected against reversed supply polarity. Just part of PPM5 may be used as the precision bipolar rectifier in an LED column display or a compressor and an applications note is available giving some circuits.

PPM5 will fit in line socket strips but only low insertion force types should be used (RS 401--699, Farnell 103–238). Universal mother boards are also available in unbalanced and balanced versions with the circuits shown below. All hybrids have good attack and decay matching which allows use with the coaxial TWIN movement without special pairing but attack and decay resistors are accessible should any different characteristic be desired. PPM5s are manufactured under BS9450 and DEF-STAN 05-21 approval. They meet BBC and IBA requirements.



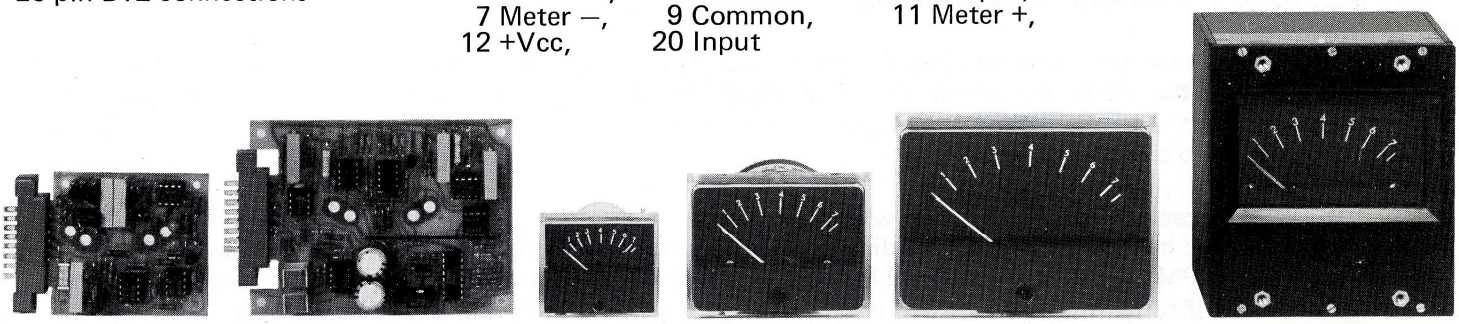
PPM5 for unbalanced inputs



PPM5 for balanced inputs with zero adjuster and +9dB overload indicator LED

PPM5 SPECIFICATION—Complies with IEC268—10A and BS5428—9 Type II. BS9450 and DEF-STAN 05-21 approved manufacture.

Input impedance	50k Ohms. Maximum permissible source impedance 2k5 Ohms
Input sensitivity for Mark 4	—13dBV.7, 170mV
Scale law	4dB increments between Mark 1 and Mark 7
Low level performance	Isolated 10ms burst of 5kHz at 30dB below Mark 6 reading gives a perceptible deflection
Calibration accuracy	Marks 2, 4, 6 ± 0.2dB; Marks 3, 5 ± 0.3dB; Marks 1, 7 ± 0.5dB
Frequency response at any Mark	31.5Hz — 16kHz ± 0.3dB 10Hz —2dB; 40kHz 0/—1dB
Rise time: response to isolated bursts of sine wave whose steady state amplitude deflects to Mk6	100ms of 5kHz 0 ± 0.5dB 10ms of 5kHz —2.5 ± 0.5dB 5ms of 5kHz —4.0 ± 0.75dB 1.5ms of 5kHz —9.0 ± 1.0dB 500μs of 10kHz —17.0 ± 2.0dB
Fall back time	Mark 7 to Mark 1 2.5 to 3s. Hybrids matched within 0.5% Suit use with TWIN movements without special pairing
Dynamic linearity and overload characteristic	When above 10 or 1.5ms burst of 5kHz is altered in level between —20dB and +10dB indications change in direct proportion ± 1dB +30dBV.7 input sustained indefinitely
Reversibility error	Bipolar rectification within 0.5dB at Mark 6 at 1kHz
Distortion introduced into 600 Ohms signal line	Sensitivity for Mark 4: OdBV.7, supply on or off, MB1 circuit, 20Hz —20kHz at +20dBV.7. Less than —70dB, 0.03%
Temperature stability, drift between +10 and +50°C	Zero ± 2% Mark 2 ± 0.8dB Mark 4 ± 0.4dB Mark 6 ± 0.2dB
Supply	+8.5V (2.5mA typ. 3mA max) to +35V (7mA typ. 8mA max)
Supply tolerance	8.5 to 35V variation: Zero ± 1%, Mark 6 ± 0.2dB
Supply impedance permissible	Any. Protected against reversed supply polarity
Radio frequency immunity	No deflection in +120dBμV/m, 84MHz, 100% AM by 1kHz sine wave
Meter movements	Left hand zero, 600 Ohms, 1mA f.s.d. special ballistics types suitable
20 pin DIL connections	Pitch 1 inch, 25.4mm: Pin 4 Rectifier output, 7 Meter —, 9 Common, 11 Meter +, 12 +Vcc, 20 Input



PPM6 *PPM7* *640* *642* *643* *TWIN*

The following range of Ernest Turner high quality special ballistics meter movements are stocked:

Type 640, 46x40mm
Type 642, 71x56mm
Type 643, 102x79mm
} Also flush mounting adaptors and illumination kits

Also available are
TWIN MOVEMENT, scale 86x54mm: mounts flush

PPM7 DRIVE CIRCUIT Under licence from the BBC and the only drive circuit allowed for monitoring main programme outputs. Intended for the most critical applications it offers performance very well within the limits required by the Standards. Balanced input, slugged operation, drives two meters, precise —20dB and —42dB steps. Supercedes PPM2

PPM6 DRIVE CIRCUIT Similar performance and tolerances to PPM2 in many respects. Unbalanced input, slugged operation, drives two meters. Supercedes PPM3

SUM AND DIFFERENCE CHANGEOVER BOARD Suits PPM2, PPM7 or BBC boards only. A push change over switch selects Left and Right or Sum and Difference.

TWIN PPM BOX Illuminated mains powered unit including sum and difference selection.

POWER SUPPLY BOARD 1 A 12VA transformer, ic regulator for 22V at 200mA to suit 24V circuits and dropper resistor to give 10.5V meter illumination for good life times from 12V 3W bulbs. Meets IEC65—2, BS415 safety.

POWER SUPPLY BOARD 2 A 6VA transformer and unregulated 12V dc output to suit PPM5s with 10.5V ac for one or two bulbs.

OTHER PRODUCTS Stereo Disc Amplifier 3 and 5, Moving Coil Preamplifier, Stabilizers and Frequency Shifters for Howl Reduction, 10 Outlet Distribution Amplifier 4, Peak Deviation Meter, Programme and Deviation Chart Recorders, Broadcast Monitor Receiver 150kHz — 30MHz, Microphone Preamplifier. Advanced Active Aerial.

SURREY ELECTRONICS