

DIAGRAM NOTES
relating to
GBW 20260 Iss.1
TESTER
FOR MEASURING
PULSE, SPEED & RATIO

TITLE PAGE

Issue 1

DIAGRAM NOTES

All pages Issue 1

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relating to

GBW 20260 Iss.1

TESTER

FOR MEASURING

PULSE, SPEED & RATIO

1.0 GENERAL

- 1.1 The tester is designed to enable speed and ratio tests to be made on the pulse generator circuit of GBW 16590.

2.0 FACILITIES

Provision is made for:-

- 2.1 Obtaining access to battery and earth supplies.
- 2.2 Obtaining access to the circuit to be tested.
- 2.3 Stopping and starting the pulse generator.
- 2.4 Controlling the pulse generator circuit to change the ratio on relays LPR and M from 20% make and 80% make respectively to 50% make and 50% make respectively.
- 2.5 Changing the access from relay LPR to relay M.
- 2.6 Checking pulse speed and ratio.
- 2.7 Potentiometers RV3 and RV4 to calibrate the speed test on original set-up. Potentiometers RV1 and RV2 calibrate the tester for full scale reading on ratio and speed modes.

3.0

3.1 ORIGINAL SET-UP

The exchange voltage should be as near to 50V as practicable. Set potentiometer RV2 to mid-point.

With the tester connected to the battery supply and a source of standard speed earth pulses connected to test plug 3, operate the Impulse Speed key (KIS) and relay AS will respond to the pulses causing capacitors C1 and C2 to alternately charge and discharge across meter A. The reading of meter A is adjusted to give a correct reading by means of potentiometer RV4, which is then locked. The known pulse source is then removed and the Calibrate Meter key (KCM) is operated. Potentiometer RV3 is adjusted until Meter A gives a full scale reading. RV3 is then locked.

If the tester is to be used at this time, calibration under para. 3.2 should be followed. The above adjustment should be carried out on manufacture and on replacement of any components of the tester.

3.2 CALIBRATION

a) With the Calibrate Meter key (KCM) and Impulse Speed key (KIS) operated. Potentiometer RV2 should be adjusted to give a full scale reading on the meter.

b) Restore the Impulse Speed key (KIS) and operate Impulse Ratio key (KIR) Potentiometer RV1 should be adjusted to give a full scale reading on the meter.

Restore the Calibrate Meter key (KCM).

3.3 TESTING

Operate the Impulse Speed key (KIS) and Start Pulse key (KSP). Note the speed reading of relay LPR output.

Restore the Impulse Speed key (KIS) and operate the Impulse Ratio key (KIR). Note the ratio reading of relay LPR output (20% make).

Operate the Changeover key (KCO). Note the new reading of relay LPR output (50% make).

Operate the Relay M Test key (KMT). Note the ratio reading of relay M output (50% make).

Restore the Change-Over key (KCO). Note the new reading of relay M output (80% make).

Restore the Impulse Ratio key (KIR) and operate the Impulse Speed key (KIS). Note the speed reading of relay M output.

Restore all keys.

4.0 DETAIL

Impulse Speed key (KIS) operated.

KIS operating.

- KIS1 connects relay AS to test plug 3 (or 9).
- KIS2 connects R4 to RV2 to form a potential divider.
- KIS3) connect meter A to speed measuring network.
- KIS4)

Relay AS pulses in response to the output.

AS operating.

- AS1 causes capacitor C2 to discharge through meter A.
- AS2 causes capacitor C1 to charge.

AS releasing.

- AS1 causes capacitor C2 to charge.
- AS2 causes capacitor C1 to discharge through meter A.

The effect of relay AS pulsing is to connect to the meter, pulses of current at a rate determined by the speed of the output pulses. Increase in the pulse rate supplies more current to the meter and increases the deflection.

The ratio test is obtained by operating the Impulse Ratio key (KIR). KIR1 connects earth/disconnect pulses to the meter. Since earth tends to cause the meter to go to full deflection, if the earth is present only half of the time its effect will be to achieve half-scale deflection.

END