Ferranti

T.R. CELL

A broad band T.R. for operation in the frequency range 9180 Mc/s. to 10,000 Mc/s. May be used in branched duplexer or balanced duplexer systems. Specially developed for high reliability and long life.

PHYSICAL DATA.

Dimensions	See outline drawing overleaf.
Waveguide	W.G.16 (0·4" × 0·9").
Primer Terminals ...	CT1.
Mounting Position ...	Any.
Max. Waveguide Pressure	30 lbs./Sq. in.

FREQUENCY RANGE ... ... 9180 to 10,000 Mc/s.

RATINGS.

Max. Transmitter Line Power ...	200 kW.
Min. Transmitter Line Power	4 kW.
*Max. Primer Supply Voltage (Main & Aux.)	–1500 volts.
*Min Primer Supply Voltage (Main & Aux.)	–950 volts.
†Max. Main Primer Current	185 μA.
†Min. Main Primer Current	100 μA.
†Max. Aux. Primer Current	80 μA.
†Min. Aux. Primer Current	50 μA.
Ambient Temperature Range (Storage)	–40 to + 100°C.

CHARACTERISTICS.

	Average	Limit.	
Low Power Level.			
V.S.W.R. (9400–9800 Mc/s.)	1·14	1·2	
V.S.W.R. (9100–10,000 Mc/s.)	1·2	1·3	
‡Insertion Loss	0·5	0·8	dB.
High Power Level.			
Leakage at 200 kW. Peak:–			
Total Leakage Power ...	45	100	mW.
Spike Leakage Energy	0·16	0·3	ergs/pulse.
Primer Breakdown Power	150	250	mW.
Recovery Time (to –6dB Loss)	1	3	μSec
Arc Loss (at 4 kW.) ...		0·8	dB.
§Position of Min. V.S.W.	0·020	0·014 to 0·028	inches
Primer Characteristics.			
Primer Operating Voltage	210	180 to 280	volts.

OPERATING NOTES.

(1) For operation at a line power above 50 kW. a pre T.R. cell is recommended.

(2) A balanced mixer should be used wherever possible.

(3) To ensure rapid primer breakdown, the primer electrodes should be supplied from a negative voltage of at least 1,000 volts D.C.

(4) Suitable resistors should be connected in series with the electrodes to limit the current to between 100 and 185 microamperes for the main primer electrode and between 50 and 80 microamperes for the aux. primer. At least 1 megohm should be connected directly to each primer electrode terminal to prevent relaxation oscillations at the "keep alive".

(5) The maximum difference in electrical length between cells is 40 degrees.

*See "Operating Notes" (3).
†See "Operating Notes" (4).
‡With primer energised.
§Measured from input flange face.

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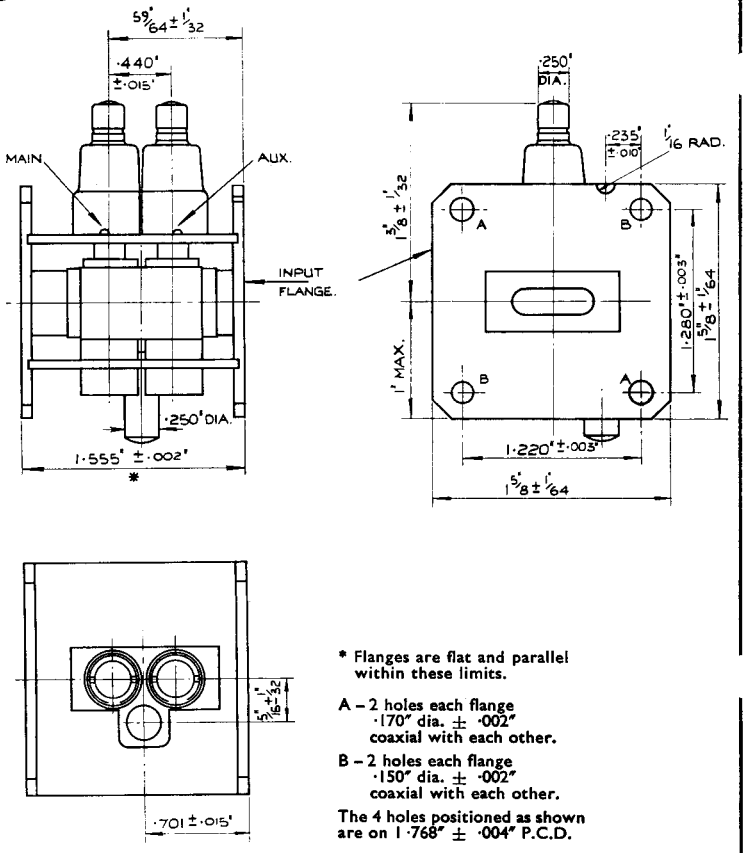

* Flanges are flat and parallel within these limits.

A – 2 holes each flange ·170″ dia. ± ·002″ coaxial with each other.

B – 2 holes each flange ·150″ dia. ± ·002″ coaxial with each other.

The 4 holes positioned as shown are on 1·768″ ± ·004″ P.C.D.